Mecmesin

testing to perfection

MultiTest-*xt* & Vortex-*xt*

Combined Start-up Manual

Touch screen, Console-controlled testing system

Force & Torque Test Solutions

To be used in conjunction with the Reference Manual on the CD supplied

Contents

The MultiTest-*xt* and Vortex-*xt*

The MultiTest-*xt* & Vortex-*xt*

Important: It is essential that you familiarise yourself with the contents of this Start-up Manual before attempting to operate your MultiTest-*xt* or Vortex-*xt* Test System.

Scope

This Start-up Manual is suitable for use with the Mecmesin MultiTest 0.5-*xt*, 1-*xt*, 2.5-*xt*, 5-*xt*, 10-*xt,* 25-*xt,* 50-*xt,* Vortex-*xt* and their derivatives *(the front cover illustrates a MultiTest 2.5-xt.)*

Before Use

Unpacking the stand

When you first receive the system, please check that there is no obvious damage to the packaging. Appendix 2 lists items which should be included with your test stand. Please contact Mecmesin or your authorised distributor immediately if any items are missing or there are signs that the packaging or the test stand itself has been damaged. Do not use the test stand until you have done so.

We strongly recommend that the packaging is kept as this can be useful if the unit needs to be returned for calibration. Appendix 3 contains instructions for repacking the test stand.

Safe Operation of the MultiTest-*xt* or Vortex-*xt*

Before you use the MultiTest-*xt* or Vortex-*xt*, you must read the guidance contained in the section 'A Guide to the Safe Use of Mains Powered Test Frames' on the safe use of this product. Test systems delivered into the European Union (EU) will have a copy of this section translated into a language appropriate for your country supplied by your Mecmesin distributor.

Failure to adhere to the guidelines for safe use given in this operating manual may result in irreparable damage to the test stand and personal injury to the operator.

A Guide to Safe Use of Mains Powered Test Frames

MECMESIN TEST FRAMES HAVE BEEN DESIGNED AND MANUFACTURED IN A CONTROLLED SYSTEM TO ENSURE COMPLIANCE WITH ALL RELEVANT EUROPEAN COMMUNITY DIRECTIVES.

DECLARATION OF CONFORMITY: A copy of the relevant Declarations of Conformity can be seen in Appendix 1. Alternatively, electronic copies are available at the 'Knowledge Centre' section of the Mecmesin website, **www.mecmesin.com**

1. Receiving and Unpacking

1.1 The specification gives the weights of the test frames. Use suitable lifting equipment to remove the test frame from the packaging.

1.2 Once safely removed from the packaging place the test frame on a stable and level work surface.

1.3 Inspect the machine for any signs of obvious transit damage.

IF ANY DAMAGE IS DISCOVERED DO NOT GO ANY FURTHER WITH INSTALLATION AND DO NOT CONNECT TO THE MAINS SUPPLY UNDER ANY CIRCUMSTANCES.

Contact your local supplier immediately who will decide the most appropriate action and rectify the situation as quickly as possible. We strongly recommend that you retain the packaging for the test frame as this can be re-used when the frame needs to be returned to your authorised Mecmesin distributor for periodic servicing and calibration. Instructions for re-packing the test frame are given in Appendix 3.

2. Installing the Machine

Note: that for test frames with a height greater than 1 metre, customers in Europe are required to ensure that for a force of 20% of machine weight, or 250 newtons (whichever is less) applied to the top of the machine shall not be capable of toppling the machine, or machine and bench together.

2.1 Bolting MultiTest Test Frames to the Work Surface

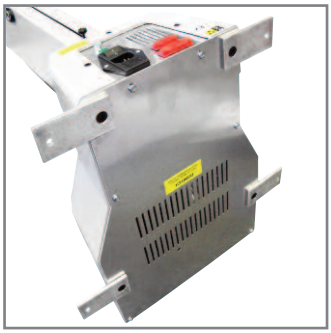
In order to comply with European regulation and safe use of the equipment, single column stands should be secured to the bench as follows:

Test stand	Height (mm)	Feet/fixing supplied	Bolting recommended?
0.5	1710	Anchor brackets	Yes
1	1510	Anchor brackets	Yes
2.5	941	Rubber feet	No*
5	1082	Rubber feet - locating eyes	Yes

* N.B. For MultiTest-*xt* Console controlled frames we recommend that the console is located below the information label on the mounting rail for stability. If the Console is to be mounted above this point, please contact your authorised Mecmesin agent to purchase a set of Anchor Brackets.

The extended length test stands MultiTest 0.5 and MultiTest 1 are supplied with base anchoring brackets to allow the test stands to be bolted to a bench.

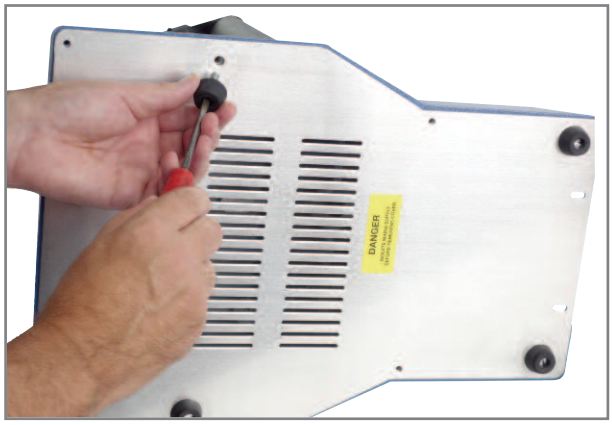
'Locating eye' on MultiTest 5



Note: when securing the Console to the test frame do not exceed the recommended height of 700mm (26.6″) as this can cause stability problems with the test frame.

Fitting the feet to the stand

The MultiTest 2.5 and MultiTest 5 are supplied with rubber feet. Support the stand and fit the four rubber feet to the base of the stand.



Fitting rubber feet to the base of the test stand

2.2 Ensure adequate ventilation

To prevent overheating, ensure that all the air ventilation vents on the test frame are not obstructed. Where a Console is fitted, it is cooled by an internal fan; make sure that when fitted to the test frame the Console air vents are not obstructed.

3. Check the setting for the electrical supply

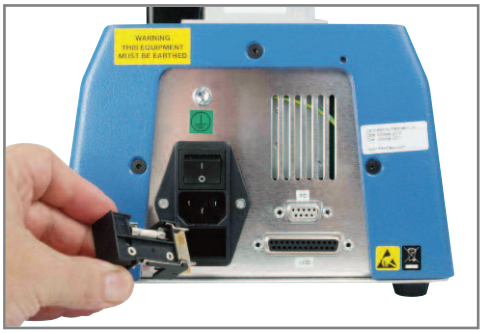
Connecting a mains powered test frame to the wrong supply will almost certainly cause extensive damage to the equipment. Mecmesin test frames must only ever be connected to a mains power installation that has a fully installed earthing system.

CONNECTING A MAINS POWERED TEST FRAME TO AN ELECTRICAL POWER OUTLET WITHOUT AN EARTH CONNECTION IS EXTREMELY DANGEROUS AND COULD LEAD TO A RISK OF ELECTROCUTION.

Combined mains switch and voltage selector. This unit is set to 220-240V ac

The combined mains input socket and voltage selector can be found on the rear panel of single column stands and on the right hand side of twin-column force stands. It is on the rear of Vortex stands. Check that the voltage selector is set correctly for your supply. The voltage that is selected is the one that appears the correct way up when looking at the socket.

It is possible to change the voltage selection by turning off the power and removing the line cord (if fitted). The fuse cartridge can now be withdrawn. Check that both fuses of the correct rating are present, and re-fit the fuse cartridge so the desired voltage marking is the correct way up.



To change the operating voltage, remove the fuse cartridge, turn it over and re-fit

4. Operating environment

Mecmesin test frames should only ever be installed in suitable environmental conditions. The operating temperature and humidity should be within the range given in the specification.

After all the above points have been checked and confirmed to be correct you may connect the machine to the mains outlet only with the supplied mains leads.

When the power is applied with the ON/OFF switch in the ON position, four Light Emitting Diodes (LED) or the back-lit display on the front panel will illuminate as appropriate. This shows power is reaching the machine and it is ready for use.

5. Emergency stop button

Ensure that access to the **Emergency Stop** button on the front control panel is never obstructed. The Emergency Stop button will stop all movement of the crosshead or platen. Pushing the button will override all other controls. When pressed, the stop button will stay latched down, preventing any movement of the crosshead or platen. To re-set the button, rotate it about 30 degrees clockwise.

6. Operator training

Each person who is to use the machine should be fully trained in the safe use of motorised testing machines. Training can be arranged by contacting Mecmesin Ltd or an authorised distributor. The machine has the ability to generate forces large enough to cause permanent damage to human limbs, if placed between the crosshead and the base. Fingers, hands and other parts of the body should be kept away from the moving crosshead and shroud opening.

Note: that, in the case of the 5kN force testing frames and the twin-column force testing frames, the concertina dust covers conceal a potential mechanical hazard and should not be tampered with, especially when the machine is running.

6.1 Computer-controlled test frames

If the test frame is controlled by an external computer running a Microsoft Windows® operating system, then we strongly recommend that no other programs are used while Mecmesin Emperor™ Software is running. Commands and inputs to other software programs could cause problems with Emperor™ and result in unpredictable behaviour. Extra consideration should be given to systems that are connected to networks and the possibility of unexpected actions as a result of external commands.

Care should be taken with computer-controlled devices such as the mouse and keyboard such that they are not inadvertently activated possibly causing the crosshead to move unexpectedly. Ensure that the mouse is not left with the cursor positioned over any of Emperor's™ buttons which could start the crosshead moving if the mouse button were accidentally pressed.

6.1.1 Remote control software and Applications

We specifically advise against the use of remote control software including tablet "apps" that can be used to operate the system remotely from a separate device. With this type of software it is possible to reproduce the function of the controlling computer or *xt* system touch screen from another device. This could lead to an unsafe situation where the movement of the stand is controlled remotely - possibly with the operator in another location and not able to see the stand or any potential hazard.

6.2 Avoid prolonged use of the Console or keyboard and mouse

Prolonged use of devices with a touch screen or a keyboard and mouse may lead to Repetitive Strain Injury. Users should be made aware that excessive use of the keyboard and mouse or the touch screen should be avoided, and frequent rest breaks are recommended.

6.3 Program "Hold"

'Hold' and 'pause' functions are available in some programs. While a 'Hold' or 'pause' is in progress, the stand may appear to be inactive, but then may start moving again without warning. Do not attempt to adjust the grips or remove the sample until the test is completed.

An operating test stand should never be left unattended. Always disconnect the machine from the mains power supply when not in use to avoid inadvertent actuation of the machine by untrained personnel.

6.4 Finishing a test

At the end of testing it is good practice to remove the last sample from the grips. Do not leave a sample under tension or compression in a force testing frame, or under torsion in the case of a Vortex stand when the power is turned off. This could present a hazard should an attempt be made to recover the sample either before or after power is re-applied to the test frame.

6.5 Console or computer failure and operation of the front panel jog buttons

If the Console or controlling computer fails or becomes inactive, it is still possible to control the movement of the crosshead or rotary platen in the case of a Vortex stand by using the jog buttons on the front panel of the test frame. Operate the jog buttons to recover a trapped sample. Once the sample has been removed, switch off the test frame and contact your local Mecmesin distributor for advice before using the test frame again.

6.6 In the event of a mains power failure

If the mains power should fail, the test frame will stop moving, but the Console can still operate from its internal battery for some time. Some sample data may be lost depending upon what the system was doing when the power failed.

CAUTION - It is possible that when the power fails the sample could be under compression or tension in a force testing stand, or under torsion in the case of a Vortex stand. Care should be exercised when attempting to release a trapped sample from the grips. It is preferable to wait until the power is restored and then relieve the strain using the jog buttons before removing the sample.

7. Using computer-controlled or Console controlled stands with other equipment

7.1 Digital inputs and outputs

MultiTest-*i, xt* and Vortex-*i* and *xt* are provided with digital input and output connections than can be used with other devices e.g. Programmable Logic Controllers (PLC). If the stand has been connected to such an external device, it is possible for the PLC to have control over the stand. Particular attention should be paid when configuring the 'START TEST' and 'GO HOME' commands as these can cause the crosshead or platen to move without warning and without any input to the computer, Console or front panel jog buttons.

7.2 Assemblies of machines and the emergency stop button

If the test stand is to be incorporated into other 'Machines' as defined by the Machinery directive section 1.2.4.4 such as a PLC network, then it is important to note that pressing the emergency stop button on the Mecmesin test frame will not stop any machinery except the Mecmesin test stand, unless the controller is specifically programmed to perform such action in this event. Any personnel configuring such a system must be deemed 'competent' to perform such a task. It is the responsibility of the user to carry out any necessary risk assessment associated with safety-critical operation.

8. Eye protection and protective clothing

Eye protection should always be used in the form of an approved pair of safety spectacles.

Extra bodily protection may be necessary if destructive testing or volatile failure of a test piece is likely. Consideration needs to be given to the likely behaviour of the samples being tested and the use of any appropriate personal protective equipment that may be needed. A risk assessment should be carried out prior to using the test frame to ensure that all necessary safety measures have been considered and carried out.

It is important to review the risk assessment if new tests or new samples are introduced.

9. Machine guarding

If, after the risk assessment, it is considered that machine guarding is needed, then please contact your local supplier who, through the Mecmesin Sales Department, can arrange the supply of a suitable guard for the required level of protection.

10. Continued safe use

Once the machine is installed it should provide a reliable long term resource for universal testing. If however the machine fails, or appears to behave in an unusual manner, contact your local supplier for support. Do not continue to use the machine until it has been checked and if necessary, repaired and returned to a safe working condition.

10.1 Servicing and calibration

To ensure optimal safe performance, your test stand must be regularly serviced and the Intelligent Loadcell (ILC) or Intelligent Torque Cell (ITC) calibrated by Mecmesin Ltd or an authorised distributor.

If the machine is damaged in use, advise your local supplier and have the machine repaired to a safe working condition. Do not use the machine until it has been repaired.

11. Cleaning

It may occasionally become necessary to clean the outside of your test stand. This can be done by disconnecting the mains electricity supply, removing loose debris with a soft brush, then wiping with a damp cloth.

Note: when cleaning the membrane keypad, care must be taken to avoid liquids, especially alcohols, seeping around the edge of the membrane. Therefore, we recommend the use of a lightly dampened cloth to avoid liquid spillage onto the membrane. **Under no circumstances should organic solvents or any other cleaning fluid be used.**

12. Moving/Re-installing the Machine

The test stand must be powered down before attaching/removing cables. When the connectors are not in use please ensure that they are covered with the connector covers all the time. **Note:** no cable should exceed 3 metres in length.

Note: it is advisable to remove the Console, if present, from the test stand before moving the machine.

Lifting the test stand. The specification gives the weights of the test stands. Use suitable lifting equipment to remove the test stand. The preferred method of lifting MultiTest twin-column stands is by use of the supplied lifting eye-bolts fitted to the top of both columns.

IF IN DOUBT CONSULT YOUR LOCAL SUPPLIER TO ENSURE CONTINUED SAFE USE.

13. Disabling and scrapping

When the test stand has reached the end of its useful life, it should be decommissioned. Remove the electricity supply cable to the test frame and, if appropriate, the Console power adaptor.

Dispose of the test stand in accordance with all local and national safety and environmental requirements.

This page has been left intentionally blank

System Overview

The MultiTest-*xt* and Vortex-*xt* test systems are touch screen, Console-controlled test systems for tension and compression or torque measurement based on the following key components: the test stand, Intelligent Loadcell (ILC) / Intelligent Torque Cell (ITC) and touch screen controlled Console.

The Console

The Console is a touch screen device that presents the user with a choice of options to operate the test stand. Using the Console, you may enter the test conditions and other information such as the operator's name and the sample and batch numbers, without the need for a separate PC, keyboard or mouse.

The Console controls the test stand and displays and stores the test results. The test programs can be saved in a test library for future use. Up to five tests can be directly accessed using configurable 'favourite' buttons. The Console can perform calculations on the test data and customised reports can be printed. The data can be saved in the Console, and can also be sent to an external device for quality control purposes.

The Console displaying the Main Screen

The MultiTest-*xt*

The MultiTest 0.5-*xt*, 1-*xt*, 2.5-*xt* and 5-*xt* have a single column with a precision ballscrew drive. The MultiTest 10-*xt*, 25-*xt* and 50-*xt* have twin columns with dual precision ballscrew drives. The test stand provides a stable platform for the attachment of grips, holders and other fixtures. The crosshead is the part of the stand that moves up and down. The Intelligent Loadcell (ILC) is attached to the crosshead.

Jog buttons on the membrane keypad on the front of the test stand are used for moving the crosshead up and down so that grips can be fitted and samples can be positioned before the test is started. The red **Emergency Stop** button will stop the movement of the crosshead, overriding any command from the Console.

The intelligent loadcell - ILC

The loadcell is the part of the test system that measures the force applied to the sample. Loadcells are available covering a wide range of force from 2N to 50,000N.

You can quickly swap Intelligent Loadcells (ILC) and the Console will recognise the new sensor with its serial number and calibration information.

Note: the stand must be powered down and the Console returned to the main screen before plugging in or unplugging an ILC.

Fitting the Console to a single column stand

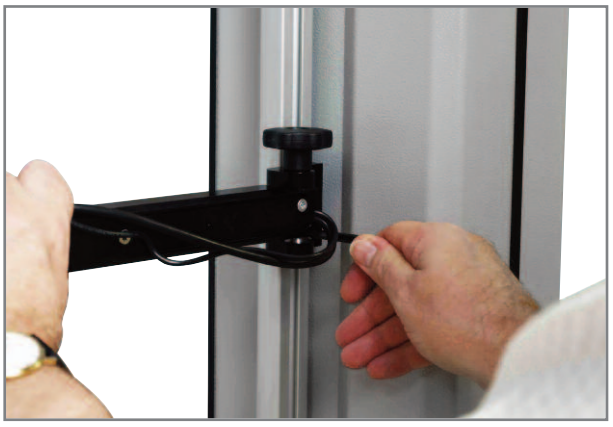
The Console is supplied fitted with security screws and nuts together with the appropriate tools for fitting the Console to the test stand. **Note:** do not use any other tools other than those provided.

Attach the Console bracket onto the test stand as shown opposite and secure the Console below the marker on the guide rail. The maximum recommended height is 700mm (27.6″). **Note:** do not exceed the recommended height as this can cause problems with the stability of the test stand.

You may find it easier to remove the Console from its bracket before attaching it to the stand. To remove the Console use the tool provided to remove the security locking collet by turning it **clockwise**. Then remove the adjusting knob, which has a conventional right-handed thread.

Use the tool to remove the security collet - N.B. this has a left-hand thread

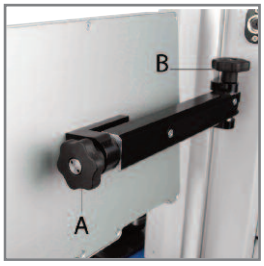
Fitting the bracket to the *xt* stand



Slide the "T" shaped securing fasteners into the slot on the rear of the stand and tighten using the Torx wrench supplied

Re-attach the Console to the bracket arm and re-fit the adjusting knob and the security collet. Tighten the security collet anti-clockwise

The angle and rotation of the Console are locked into position by detent pins and the position of the Console can be adjusted by slackening the knobs (A) to (B) and repositioning the bracket and arm on alternative pin locations.



If the Console and bracket require full disassembly only use the security tools provided. **Note:** the retaining stop (C) is rotated clockwise to remove.

Fitting the Console to a twin-column stand

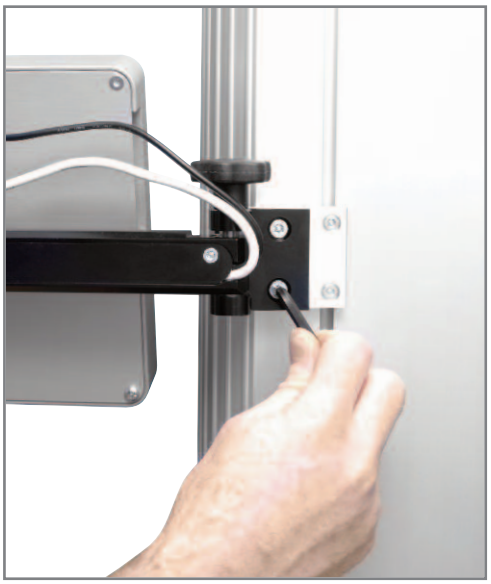
The twin-column stand is supplied with a mounting plate attached to the rear of the right-hand column.

Mounting plate on rear of right-hand column

Console with mounting bracket for a twin column stand

The Console for the twin-column is supplied with the mounting bracket fitted and the USB and power lead attached.

Fit the Console mounting bracket to the mounting plate on the rear of the right-hand column using the two Torx screws with the Torx wrench supplied.



Fitting the Console to the twin-column mounting plate

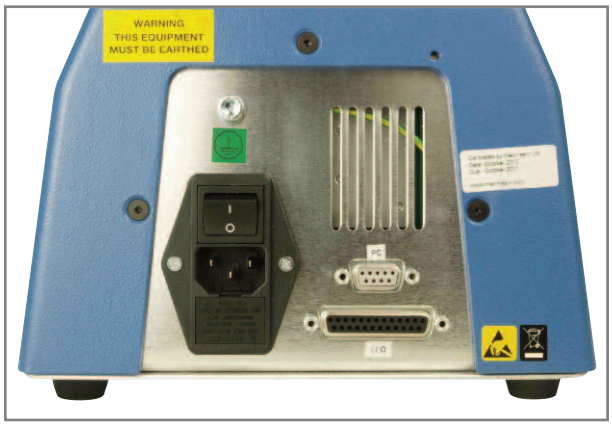
Adjusting the height of the Console

If required the Console can be moved up or down using the mounting plate screws.

The angle and position of the Console can be altered using the adjustment knobs as described for the single column stand above.

Connecting the Console power lead and USB lead to the console

The power lead and USB lead will already be connected - check that they are firmly fitted to the Console. Plug the power adaptor into a suitable socket. Plug the USB cable into the 9-way female socket labeled 'PC' on the rear of a single column stand, or the right hand side of a twin-column stand. Normally it will not be necessary to remove the USB cable, but should this be required, return the Console to the Main screen before removing the USB connector.



Rear panel of the MultiTest-*xt*

Fitting the loadcell to the stand

1. On single column test stands slide the loadcell (ILC) sideways onto the dovetail bracket at the front of the crosshead. The threaded stud must always be on the underside.

2. Tighten the securing screw using the clamp handle.

3. Plug the loadcell connector into the socket on the test stand. Twist the locking ring clockwise to secure the connector.

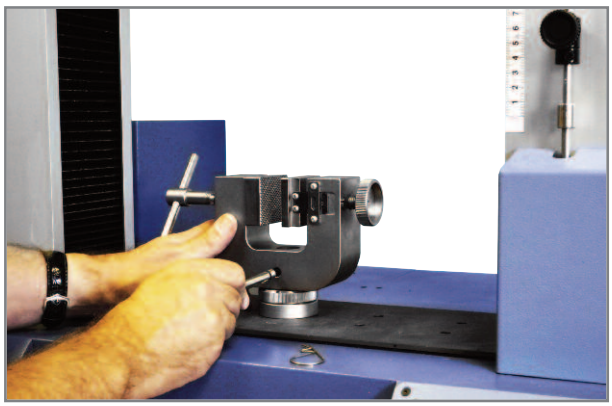
Note: The ILC is attached to a twin-column test stand by using a cap-head bolt passing down through the central hole in the moving crosshead, and securing this using an Allen key. Each loadcell is provided with a suitable Allen key.

Attaching grips and fixtures

Grips and other holding fixtures are often paired with one fixture being attached to the anvil plate, and the other to the underside of the loadcell.

Some fixtures have the QC Quick-interchange system which allows for very rapid changing of the holding fixture. With the Quick-interchange system, the grip is attached to a mounting using an 8mm (0.3") diameter pin. The grip can be fitted and removed without the need for additional tools. Be sure to fit the locking spring to secure the grip in place. Before fitting a sample check that both grips or plates are secure.

Take extra care when fitting or removing heavy grips to the underside of the loadcell. Support the accessory while the securing device is removed so that it does not fall.



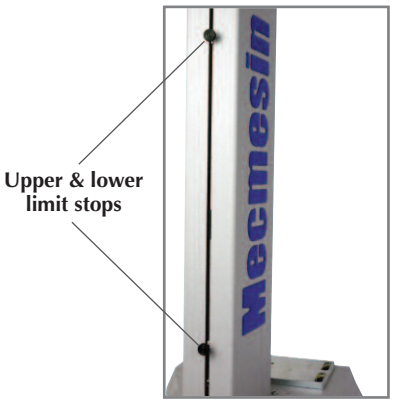
The QC system for rapid attachment of grips shown on a MultiTest 25-*xt*

Setting the limit stops

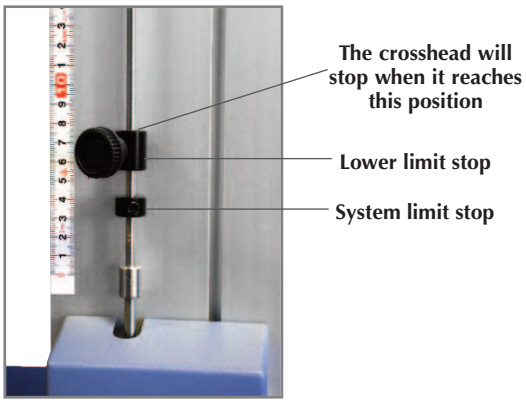
Limit stops are provided to prevent damage to the loadcell and grips. Upper and lower limit stops can be set to restrict movement of the crosshead. When the crosshead reaches a limit stop, it will stop, then reverse direction by 5mm and stop again. Set the limit stops so that the crosshead with grips fitted will stop before contact is made.

- Set limit stops after fitting the grips or sample holding accessory
- Slacken the thumbscrew
- Move the stop
- Re-tighten the thumbscrew

Remember to reset limit stops if different grips or sample holding accessories are fitted. Twin-column stands have system limit stops as well as limit stops. System limit stops should not be moved. In an emergency, to release a trapped sample the system limit can be moved, but we recommend that the stand should be returned to an authorised Mecmesin distributor for servicing and re-setting.



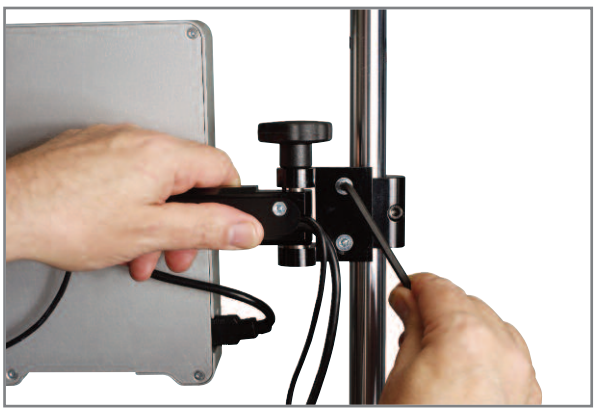
Limit stops on a MultiTest 1-*xt*



Lower limit stops on the twin-column stands

Fitting the Console to the Vortex-*xt*

Attach the collar to one of the Vortex-*xt* supports using the allen key supplied

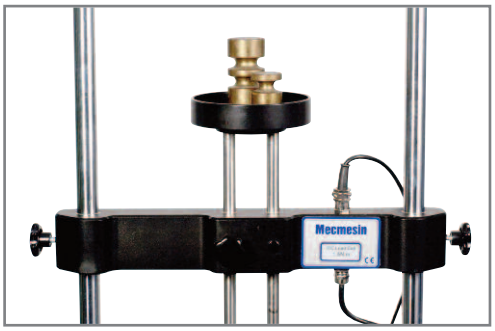


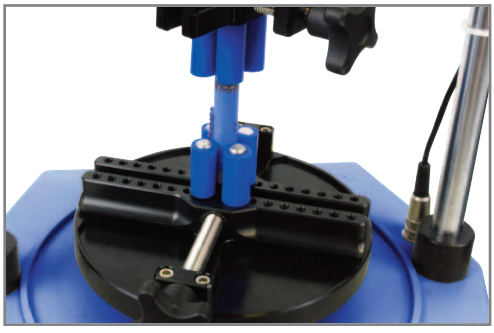
Fit the Console bracket to the collar using the Torx wrench supplied to tighten the two screws

Fitting the crosshead to the Vortex-*xt*

If preferable, it is possible to remove the Console from the mounting bracket to make fitting easier. See page 10 for instructions on how to remove and re-fit the Console from the bracket.

Slide the crosshead onto the two support columns and tighten both securing thumbscrews. Different height samples can be accommodated by moving the complete crosshead up and down. Additional adjustment is available by moving the top-load carrier. If a top-load is to be used, the securing know is generally left un-done during measurement so the carrier can slide up and down. If a top-load test is not to be used, securely tighten the locking knob after adjusting to the height required.





Connecting the Intelligent Torque Cell

Align the electrical connector of the Intelligent Torque Cell (ITC) with the mating socket on the test stand. Gently push the connector to locate then tighten the knurled locking ring in a clockwise direction.

Swapping Intelligent Torque Cells

You can swap ITC crossheads by simply disconnecting the electrical connector, removing the crosshead and then fitting another. First, return to the Main Screen and switch off the stand before unplugging the ITC. When the new ITC has been connected, switch the stand on again, and after a few seconds the new ITC will be automatically recognised.
The Console will read in the new cell's range, serial number and calibration status.

Using the *xt* system

The *xt* system has been designed to be very simple to use. There are two levels of user, and a password can be used to restrict access to either a simple choice of pre-defined tests, or access to the full capabilities of *xt* system.

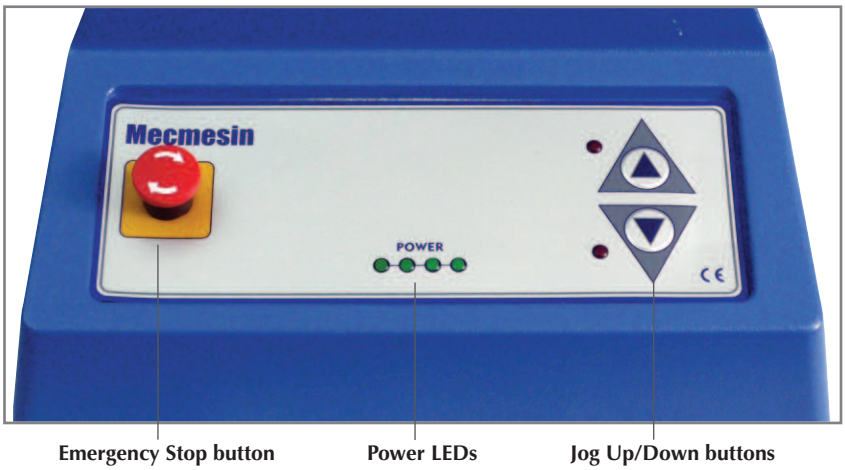
Master and operator users

Operators can select from tests that are pre-defined and for which reports have already been written, and some functions that can be assigned to each user account.

Masters have full access to all the functions of the *xt* system. A 'Master' can create and save tests, define which calculations are performed and create report templates ready to be filled in with data from the samples tested. The 'Master' user has control over which users are Operators and Masters. After starting for the first time, a password is required to proceed past the 'Splash Screen', restricting access to trained operators.

Switching on the test stand

Switch on the test stand using the main switch located on the rear on the single column stands, or on the right hand side of twin-column stands. The four green power Light Emitting Diodes (LEDs) on the front control panel will illuminate.



The MultiTest-*xt* front panel. The Vortex-*xt* front panel is very similar, but with clockwise/anticlockwise jog buttons

Emergency stop button

The **Emergency Stop** button will stop all movement of the crosshead. Pushing the button will override all other controls. When pressed, the button stays latched down, preventing any movement of the crosshead. To reset the button, rotate it about 30 degrees clockwise.

Power LEDs

Four green Light Emitting Diodes (LED) indicate that the stand is switched on.

Jog buttons

Jog buttons are used to position the crosshead or platen so that samples can be attached to the grips. There are a pair of **Jog** buttons on the test stand, and another pair on the Live Run Test Screen. The two sets of buttons function in different ways.

Test	Stand Jog Buttons Speed	Touch Screen Jog Buttons Speed
Quick Test	Factory set fixed rate	Jog speed increments each time the Jog button is pressed
Program Test	Factory set fixed rate	Rate set in Program Test Setup > Test Settings
Advanced Test	Factory set fixed rate	Rate as set in Setup > Preferences

Plug in the mains adaptor for the touch screen Console.

Caution - use only the mains adaptor supplied by Mecmesin, do not use any other type.

Switching on the Touch Screen

Switch on the touch screen Console by using the slider switch located on the front of the Console. After a few seconds the splash screen will be displayed.

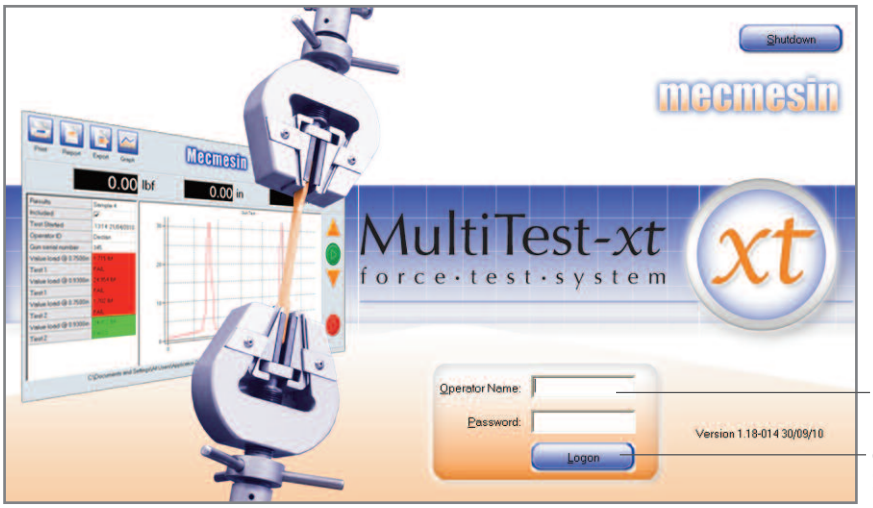
Changing the Language

See Appendix 4 for details of how to change the language of the MultiTest-*xt* system and the Console operating system.

The Touch Screen

Splash Screen

The touch screen is used to control the MultiTest-*xt* or Vortex-*xt* system. You can select operations and options by pressing or tapping on the relevant button on the touch screen.



Splash Screen

Keyboard Ghost

Splash Screen with keyboard "Ghost"

To make an entry in an entry box, tap the screen to reveal a "keyboard ghost". Tap the ghost to display the pop-up keyboard

‘Pop-up’ Keyboard

Splash Screen showing the pop-up keyboard used to enter a User Name

Navigating the ‘pop-up’ keyboard

When you need to enter information such as the User Name or the sample number, a ‘pop-up’ keyboard is available. Display the ‘pop-up’ keyboard by tapping on the relevant entry box. A “keyboard Ghost” will appear. Tap on the “keyboard Ghost” to reveal the pop-up keyboard.

Text is entered by pressing on the appropriate key. Spaces are entered using the ‘space bar’ on the bottom row of the keyboard. Numbers are entered using the keys on the first row of the keyboard.

Corrections can be made by using the ⇦ **Bskp** key or the **Del** key. You can position the cursor over the character you want to change by using the ←→↑↓ Keys.

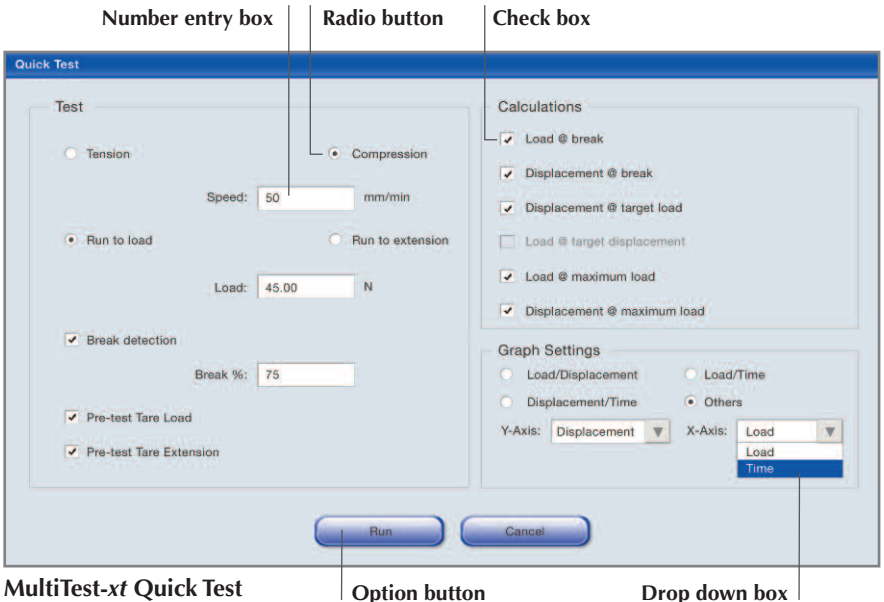
Using a stylus

You can also use a stylus to ‘tap’ the screen if this is more convenient. A stylus can be used to press option buttons, radio buttons or check boxes. It can also be used to select characters from the ‘pop-up’ keyboard by pressing the relevant key.

Caution: Using a stylus may reduce the life of the touch screen. Under no circumstances should sharp instruments be used to operate the touch screen.

Screen Elements

In the diagram below the ‘Compression’, and ‘Run to load’ radio buttons have been selected. Also the ‘Break detection’ check box has been selected and values for the ‘Speed’, ‘Load’ and ‘Break %’ have been entered by using the ‘pop-up’ keyboard.



MultiTest-*xt* Quick Test Set-Up Screen

Option buttons

Pressing an option button will select it. This may make take you to another screen, or it may choose an option.

Radio buttons

Radio buttons allow the item to be selected or not selected.

Check box

A check box is similar to a radio button. Selecting the option will display a ✓ inside the box.

Entry box

An entry box is used to enter text or numbers - for example the Username.

Drop-down box

A drop-down box provides a list of options that can be selected.

Starting for the First Time

Use the 'pop-up' keyboard to enter an Operator Name and password.

The factory defaults are:

Operator Name*	Password*	Access Privileges
operator	operator	Restricted access to pre-saved tests - if any
supervisor	supervisor	Full access to all functions

* **Note:** operator name and password are case sensitive

You can set-up Users Accounts with different levels of access to the *xt* system features later.

Front screen

Press the **Logon** button. You will be taken to the 'Front Screen'.

Front Screen

Program modes

The *xt* system has the following program modes that can be selected from the Front Screen:

- Quick Test
- Program Test
- Advanced Test - available with the upgrade package

Favourite buttons provide direct access to frequently used tests.

Quick Test

Setting the conditions for a Quick Test

Note: Details of how to run a Quick Test are given here. For information on running Program Tests and Advanced Tests please refer to the full Reference Manual on the enclosed CD or the relevant help section on the Console.

Press the **Quick Test** icon on the Front Screen.
Settings related to the most recent Quick Test are displayed.

Use the radio buttons to choose between **Tension** or **Compression.**
Use the radio buttons to choose between **Run to Load** or **Run to Displacement.**
Enter a **speed** in the speed number entry box.
If you have chosen **Run to Load**, enter the **load** in the number entry box. Alternatively, if you have chosen **Run to Displacement**, enter a **distance** in the number entry box.

Break detection

If required, select **Break Detection** by ticking the check box.
Default sensitivity is set at 75%, but you can change this. Sensitivity is equal to the percentage drop in load value required to determine a break.

Tare load or extension

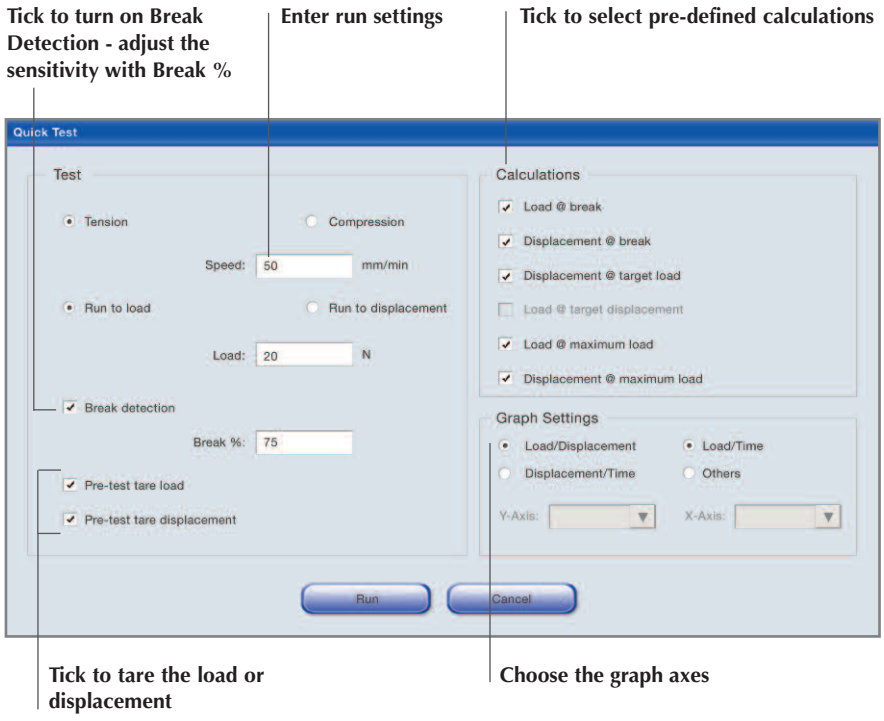
Tick the check boxes to **tare the load or the displacement** or both before starting the test.

Choosing the calculations

Tick the check box to select a pre-defined calculation:

- Load @ break
- Displacement @ break
- Displacement @ target load
- Load @ target displacement
- Load @ maximum load
- Displacement @ maximum load

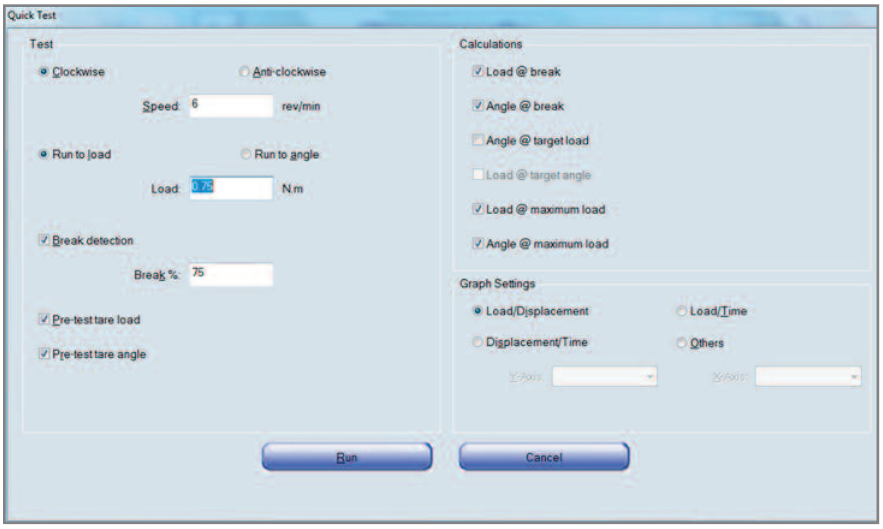
The availability of calculations is dependant upon which test mode you have selected. For example, if you have chosen to 'Run to load', then you cannot select 'Load@target extension'.



When you have made all the entries needed, press the **Run** button.
These setting will be saved, and you will be taken to the Live Test Run Screen.

The Vortex-*xt* Quick Test screen is very similar to the MultiTest-*xt* version, but with the options of 'Clockwise' and 'Anti-clockwise' for the test direction.

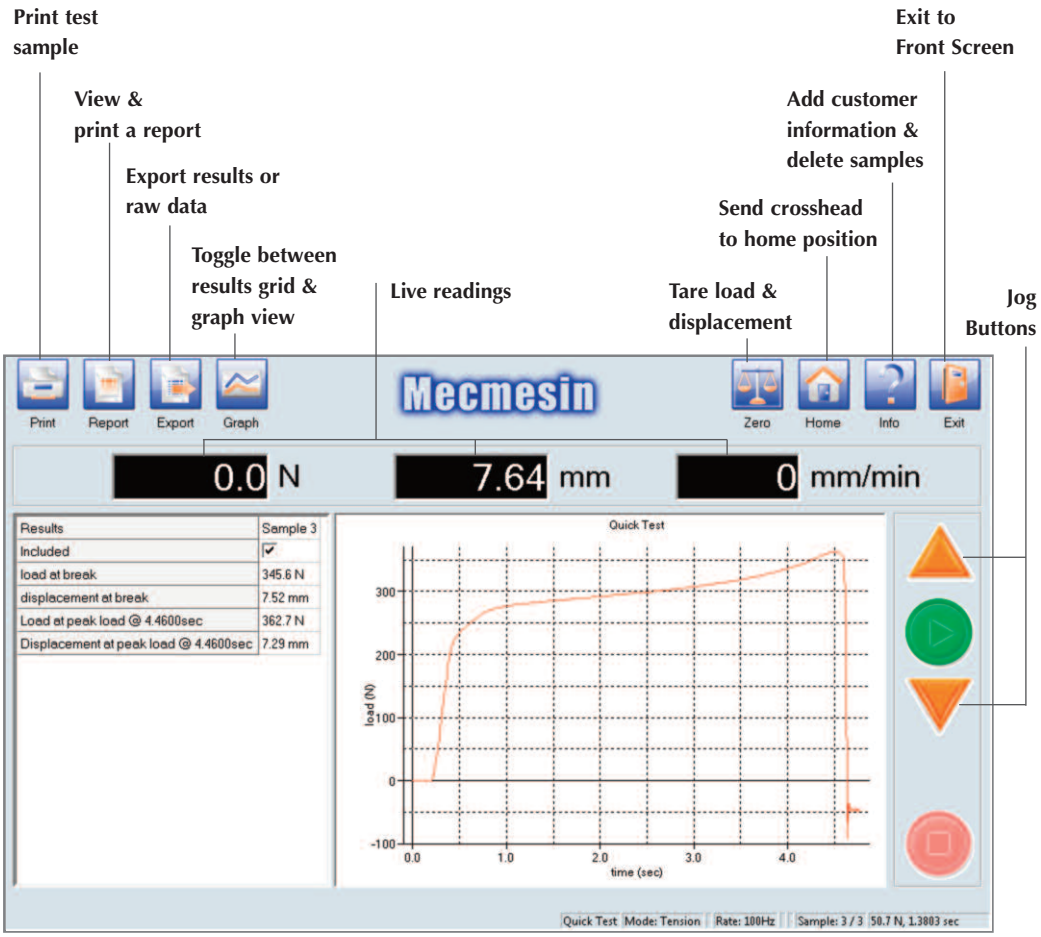
The displacement component is 'Run to Angle,' which can be set to degrees or revolutions in 'Angle units' on the **System Settings > General Settings** tab. Rotational speed is always entered as 'rev/min.' The pre-defined calculations also reflect the rotational nature of the test.



Vortex-*xt* Quick Test Screen

Live Test Run Screen

If you want to return to the Front Screen from the test set-up page at any time press the **Cancel** button. **Note:** any entries you have made will not be saved.

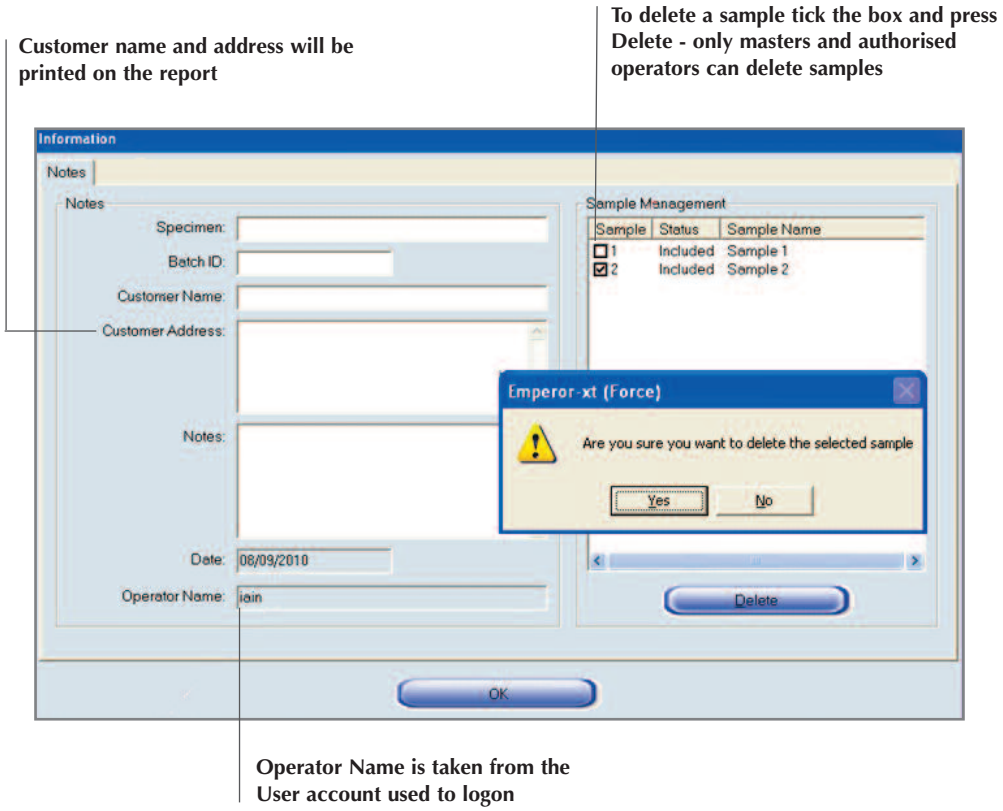


Live Test Run Screen

Start Button	Begin the test using the green '**Start**' button.
Stop Button	Abort the test using the red '**Stop**' button.
Jog Buttons	Move the crosshead up/down or clockwise/anticlockwise as appropriate
Print	Prints the results.
Report	View and print the report using the default report template.
Export	Exports results using the default export template.
Graph on/off	Toggles between the graph display and results grid.
Zero	Use to tare the load or position and set Absolute Zero.
Home	Moves the crosshead to the Home position which will be Absolute Zero or the last position tared.
Info	Use to enter customer and sample information. Also select samples to be deleted. It has a tab that provides access to the Reconnect button used to establish communication between the Console and the stand. A diagnostic report generator is provided. The Help/About tab is also located here.
Exit	Leave the Live Test Run Screen and go to the Front Screen.

Enter sample data

Press the **Info** icon to record sample and customer information.
This can be printed onto reports.



The Info Screen can also be used to delete samples. Only 'Master' users and authorised operators can delete samples.

When you have made all the entries required press the **OK** button.

These settings will be saved and you will be taken to the Live Test Run Screen.

Adust the position of the crosshead or platen

If needed use the **Jog** buttons on the front panel of the test stand or the on the Live Test Run Screen to move the crosshead up/down; on the MultiTest-*xt* or clockwise/anticlockwise on the Vortex-*xt*.

Start the test

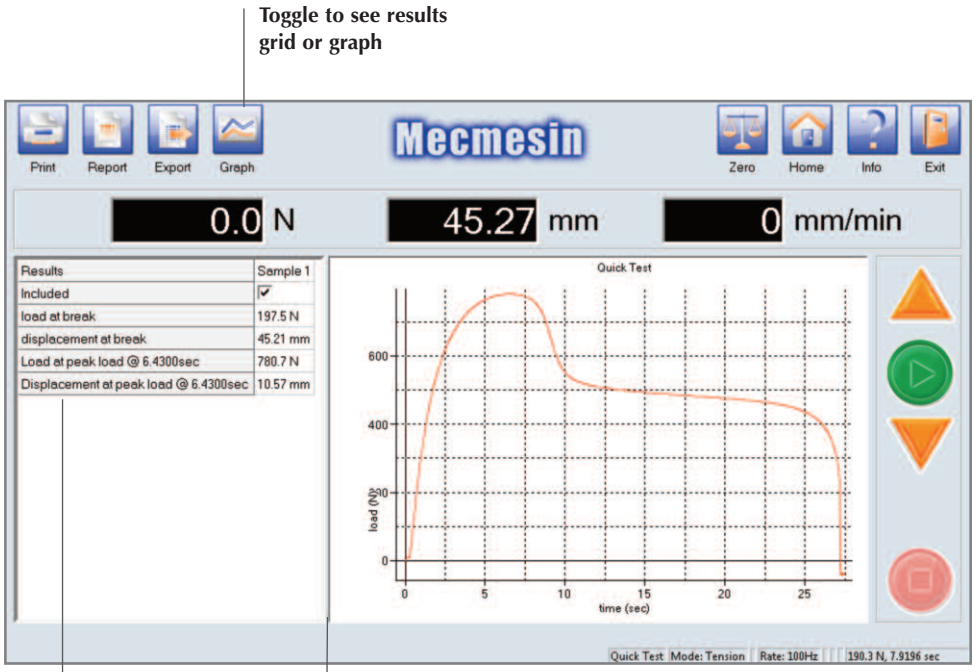
Start the test by pressing the green **Start** button on the Live Test Run Screen.

Start the Quick Test by pressing the green Start button

Viewing the test

The **Graph** icon toggles displaying the graph on or off.

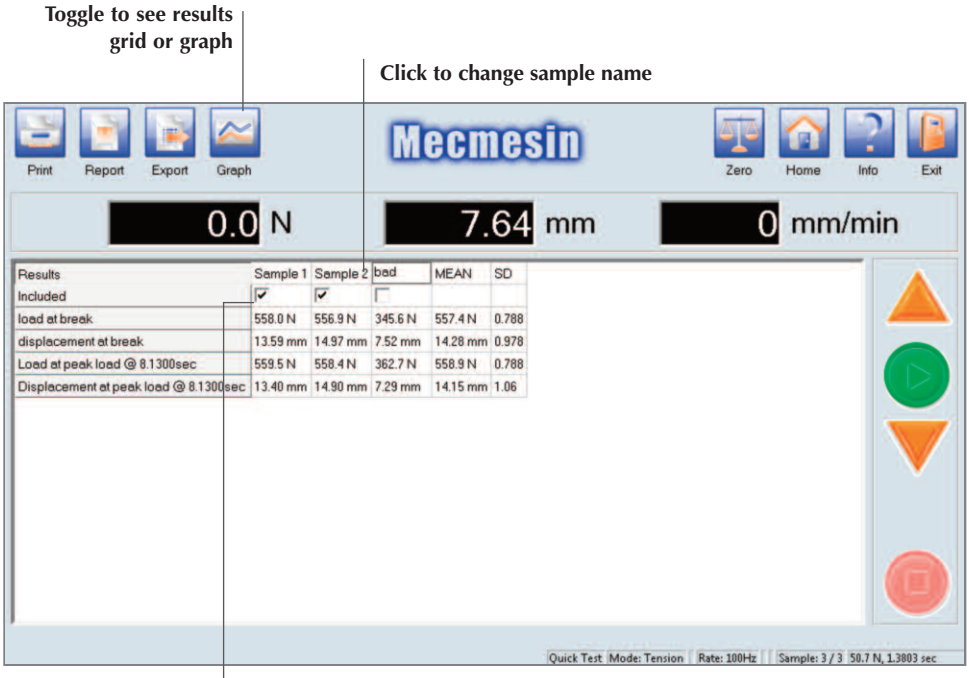
If the graph option is turned on, you will see the test progressing. Once the test is finished, if any pre-defined calculations have been selected, the results will be displayed in the left hand pane.



Live Test Run Screen displaying the graph and pre-defined calculation results

To choose which graph is displayed:

- Use the 'Graph' button to toggle to the results grid
- Check on the sample name that you wish to see (The sample name is in the top row displayed in the results grid
- Toggle back to the graph view - the graph for that sample is now displayed



Results Screen

Ending the test

You cannot save your results using the Quick Test program mode but you can print out a report.

When all the samples have been run you can:

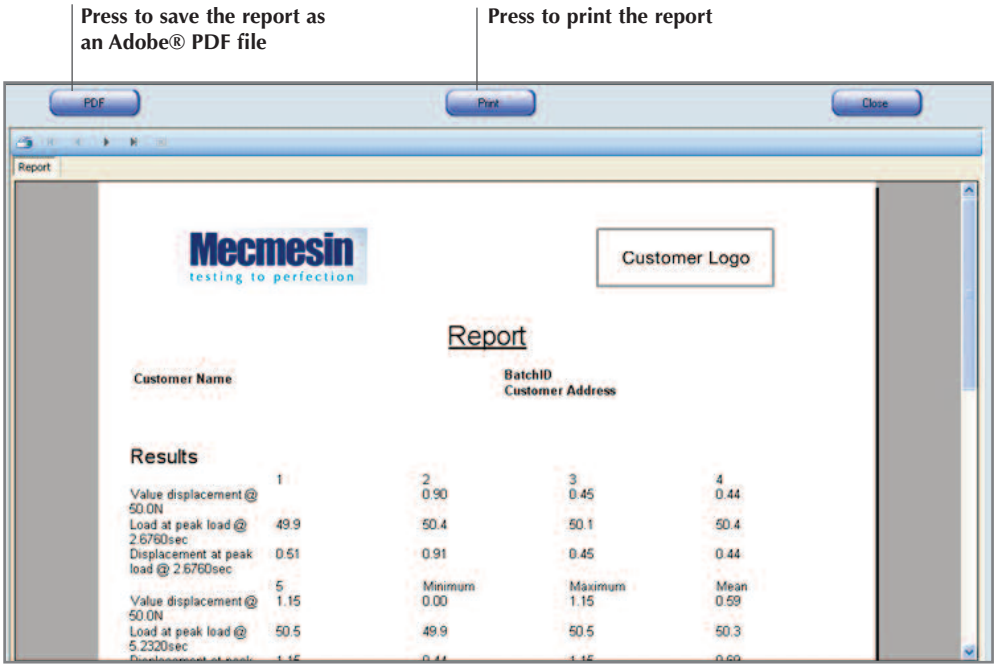
1. Print the test results using the **Print** icon.
2. Use the **Report** icon to view the results on the screen and then print the results or save the report as an Adobe® PDF file.

Printing the results

You must have a printer connected to the *xt* system Console to use the Print function. Press the **Print** icon to send the results from the Quick Test directly to a printer using a default report format.

Viewing, saving and printing a report

Pressing the **Report** icon will take you to the Report screen. Quick Test uses a default report template to display and print the results. Once the report screen has loaded, the results are displayed on the screen.



Program Tests and Advanced Tests

Details of how to run a Quick Test are given within this document. For information on running a Program Test or an Advanced Test, please refer to the full Reference Manual on the enclosed CD or relevant help section on the Console.

Closing down the *xt* system

Press the **Logoff** button on the Front Screen and you will be taken to the Splashscreen. Press the **Shutdown** button to view the shutdown options. You can:

1. Cancel and return to the Splashscreen
2. Shutdown to exit the *xt* system
3. Access Administrative tasks if you have a valid 'Master' level account username and password. Pressing the **OK** button will take you to the Windows™ operating system.

Switch off the test stand using the mains power switch on the rear of a single column test stand or on the right hand side of a twin-column test stand.

We recommend that you leave the mains adaptor for the Console plugged in and switched on. This will allow the *xt* system to restart quickly when needed again.

This page has been left intentionally blank

MultiTest-*xt* Specifications

MultiTest-*xt*		0.5	1	2.5	5	10	25	50
TEST FRAME								
Rated capacity	**N**	500	1000	2500	5000	10000	25000	50000
	kgf	50	100	250	500	1000	2500	5000
	lbf	110	220	550	1100	2200	5500	11000
Number of ballscrews		1	1	1	1	2	2	2
SPEED								
Speed range	**mm/min**	1 - 1000	1 - 1000	1 - 1000*	1 - 500	1 - 1000	1 - 1000**	1 - 400***
	in/min	0.04 - 40	0.04 - 40	0.04 - 40	0.04 - 20	0.04 - 40	0.04 - 40	0.04 - 15
Crosshead speed accuracy		±0.1% of indicated speed						
DIMENSIONS								
Distance between columns		-	-	-	-	400mm (15.7″)	400mm (15.7″)	420mm (16.5″)
Throat depth**		67mm (2.6″)	67mm (2.6″)	67mm (2.6″)	95mm (3.7″)	-	-	-
Vertical daylight***		1359mm (53.5″)	1159mm (45.6″)	590mm (23.2″)	710mm (28.0″)	1180mm (46.5″)	1140mm (44.9″)	1330mm (52.4″)
Height		1710mm (67.3″)	1510mm (59.4″)	941mm (37″)	1082mm (42.6″)	1500mm (59.1″)	1500mm (59.1″)	1931mm (76″)
Width (test frame only)		290mm (11.4″)	290mm (11.4″)	290mm (11.4″)	328mm (12.9″)	826mm (32.5″)	826mm (32.5″)	864mm (34″)
Max Width (with console fitted)		546mm (21.5″)	546mm (21.5″)	546mm (21.5″)	615mm (24.2″)	1061mm (41.8″)	1061mm (41.8″)	1099mm (43.3″)
Depth		414mm (16.3″)	414mm (16.3″)	414mm (16.3″)	526mm (20.7″)	512mm (20.2″)	542mm (21.3″)	572mm (22.5″)
Weight		43kg (95lbs)	41kg (90lbs)	27kg (60lbs)	43kg (95lbs)	115kg (254lbs)	145kg (320lbs)	290kg (639lbs)
Maximum power requirement		120 watts	200 watts	250 watts	150 watts	400 watts	450 watts	450 watts
Voltage		230V AC 50Hz or 110V AC 60Hz						
LOAD MEASUREMENT								
Available loadcell ranges	**N**	2 to 50000 (14 models)						
	kgf	0.2 to 5000 (14 models)						
	lbf	0.45 to 11000 (14 models)						
Loadcell measurement accuracy		±0.1% of full scale for loadcells from 2 to 2500N ±0.2% of full scale for loadcells from 5000 to 50000N						
Loadcell measurement resolution		1:6500						
DISPLACEMENT		±0.01mm (±0.0004″)						
Crosshead travel**		1200mm (47.3″)	1000mm (39.4″)	500mm (19.7″)	590mm (23.2″)	960mm (37.8″)	950mm (37.4″)	1100mm (43.3″)
Position control resolution								

* 2.5kN - recommended maximum speed = 750mm/min (30in/min) above 2000N
** 25kN - recommended maximum speed = 500mm/min (20in/min) above 10000N
*** 50kN - recommended maximum speed = 250mm/min (10in/min) above 25kN
**** measured on centre line of loadcell
***** measured without loadcell or grips

Note: See Technical Datasheet 431-390 for dimension drawings

Common Specifications

Operating temperature	10C - 35C (50F - 95F)
Humidity range	Normal industry and laboratory conditions
Sampling rate (Hz)	Selectable from 1000, 500, 100, 50, 10
Compensation for system movement	Yes
Loadholding	Yes
Graphical representation	Yes
Digital display of Load/Position/Speed	Yes
Output of test results to PC/Printer/Datalogger	Yes, via USB/Network Ports or Wireless Network RS232 via USB/Network converter in ASCII Format
Communication with PLC/Digital Control Interface	Yes, via programmable digital ports 6 Inputs + 6 Outputs

Options

Column gaiter
Safety guard

available upon request

Mecmesin reserves the right to alter equipment specifications without prior notice.
E&OE

Vortex-*xt* Specifications

Vortex-*xt*		0.3N.m	1.5N.m	3N.m	6N.m	10N.m
Measurement range	**N.m**	0 - 0.3	0 - 1.5	0 - 3.0	0 - 6	0 - 10
	kgf.cm	0 - 3	0 - 15	0 - 30	0 - 60	0 - 100
	lbf.in	0 - 2.7	0 - 13	0 - 26	0 - 52	0 - 90
SPEED						
Speed range		0.1 - 20 rev/min (clockwise or anticlockwise)				
Speed accuracy		±1% of indicated speed				
Speed resolution		±0.1 rev/min				
DIMENSIONS						
Maximum travel of adjustable transducer carriage		182mm (7.2″)				
Maximum headroom		505mm (19.9″) [448mm (17.6″)]*				
Width between columns		280mm (11.02″)				
Weight		24.5kg (54lb)				
Capacity of lower mounting table		10 - 190mm (0.39 - 7.5″)				
Capacity of upper mounting table		10 - 78mm (0.39 - 3.07″)				
Maximum power requirements		100W				
Voltage		230V AC 50Hz or 110V AC 60Hz				
LOAD MEASUREMENT						
Loadcell capacities		0.3, 1.5, 3, 6 and 10N.m capabilities				
Load accuracy		±0.5% of full scale				
Load resolution		1:6500				
Load units		mN.m, N.cm, N.m, kgf.cm, gf.cm, ozf.in, lbf.ft, lbf.in				
DISPLACEMENT						
Maximum displacement		2440 revs				
Displacement accuracy		0.2° per 36,000°				
Displacement resolution		0.001 revs (±0.2°)				
SOFTWARE						
Digital display of load/angle/speed		Yes				
Communication with test stand		Via RS232 port or USB port (converter supplied)				
Sampling rate		Selectable from 1000Hz, 500Hz, 100Hz, 50Hz and 10Hz				
Data output		RS232 (direct or via USB/Network converter in ASCII format) ASCII file (Export to spreadsheet, SPC package etc...)				

* with upper and lower mounting tables fitted.

Common Specifications

Operating temperature	10 - 35ºC (50 - 95ºF)
Humidity range	Normal industry and laboratory conditions
Compensation for system movement	Yes
Loadholding	Yes
Digital display of load/angle/speed	Yes
Graphical representation	Yes
Output of test results to PC/Printer/Datalogger	Yes - via USB/Network Ports or Wireless Network RS232 via USB/Network converter in ASCII format
Communication with PLC/Digital Control Interface	Yes - via programmable digital ports 6 Inputs + 6 Outputs

Options

Safety guard

available upon request

Mecmesin reserves the right to alter equipment specifications without prior notice.
E&OE

Appendix 1

Items supplied with the test stand

Your MultiTest-*xt* should be supplied with the following items:

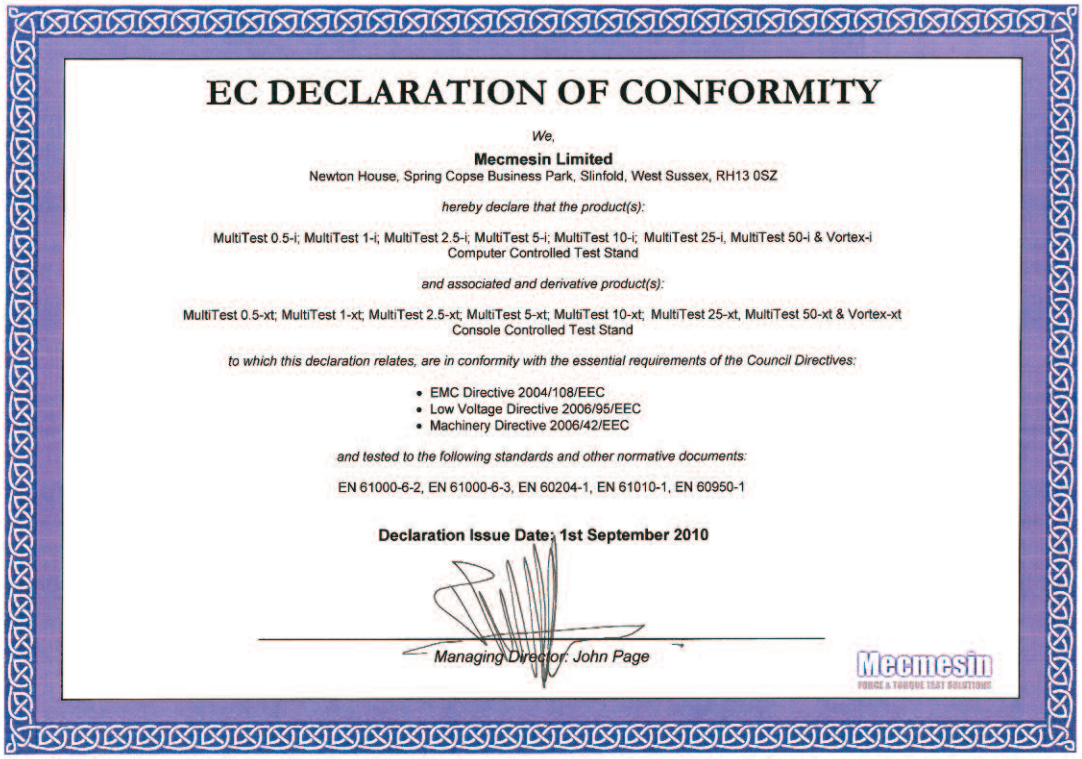
1. Test stand
2. Console fitted with arm. Power cable and USB cable
3. Tools to fit the Console to the test stand
4. CD with software and manuals for backup or running on a PC
5. Start-up guide
6. Translation of 'A Guide to Safe Use of Mains Powered Test Frames' (does not apply to English speaking countries, or countries outside European Union (EU)
7. Dovetail bracket to be fitted to the crosshead (if applicable)
8. Appropriate mains cables for the test stand and Console
9. Allen keys
10. Four rubber feet, four attachment screws and Allen key (if applicable)
11. Four base anchoring brackets (if applicable)
12. Adaptors (if applicable)

Your Vortex-*xt* should be supplied with the following items:

1. Test stand
2. Console fitted with arm. Power cable and USB cable
3. Intelligent Torque Cell (ITC), an integral part of the crosshead
4. CD with software and manuals for backup or running on a PC
5. Start-up guide
6. Translation of 'A Guide to Safe Use of Mains Powered Test Frames' (does not apply to English speaking countries, or countries outside European Union (EU)
7. Appropriate mains cables for the test stand and Console
8. Allen keys and Torx wrench

Appendix 2

Declarations of Conformity



EC DECLARATION OF CONFORMITY

We,

Mecmesin Limited
Newton House, Spring Copse Business Park, Slinfold, West Sussex, RH13 0SZ

hereby declare that the product(s):

MultiTest 0.5-i; MultiTest 1-i; MultiTest 2.5-i; MultiTest 5-i; MultiTest 10-i; MultiTest 25-i, MultiTest 50-i & Vortex-i
Computer Controlled Test Stand

and associated and derivative product(s):

MultiTest 0.5-xt; MultiTest 1-xt; MultiTest 2.5-xt; MultiTest 5-xt; MultiTest 10-xt; MultiTest 25-xt, MultiTest 50-xt & Vortex-xt
Console Controlled Test Stand

to which this declaration relates, are in conformity with the essential requirements of the Council Directives:

- EMC Directive 2004/108/EEC
- Low Voltage Directive 2006/95/EEC
- Machinery Directive 2006/42/EEC

and tested to the following standards and other normative documents:

EN 61000-6-2, EN 61000-6-3, EN 60204-1, EN 61010-1, EN 60950-1

Declaration Issue Date: 1st September 2010

Managing Director: John Page

Mecmesin
FORCE & TORQUE TEST SOLUTIONS

EC Declaration of Conformity

ASUS
Inspiring Innovation • Persistent Perfection

We, the undersigned,

Manufacturer:	ASUSTek COMPUTER INC.
Address, City:	No. 150, LI-TE RD., PEITOU, TAIPEI 112, TAIWAN R.O.C.
Country:	TAIWAN
Authorized representative in Europe:	ASUS COMPUTER GmbH
Address, City:	HARKORT STR. 21-23, 40880 RATINGEN
Country:	GERMANY

declare the following apparatus:

Product name :	**Eee PC**
Model name :	**Eee PC T101MT**

conform with the essential requirements of the following directives:

☒2004/108/EC-EMC Directive

☒ EN 55022:2006+A1:2007	☒ EN 55024:1998+A1:2001+A2:2003
☒ EN 61000-3-2:2006	☒ EN 61000-3-3:1995+A1:2001+A2:2005
☐ EN 55013:2001+A1:2003+A2:2006	☐ EN 55020:2007

☒1999/5/EC-R &TTE Directive

☐ EN 300 328 V1.7.1(2006-05)	☒ EN 301 489-1 V1.8.1(2008-04)
☐ EN 300 440-1 V1.4.1(2008-05)	☐ EN 301 489-3 V1.4.1(2002-08)
☐ EN 300 440-2 V1.2.1(2008-03)	☐ EN 301 489-4 V1.3.1(2002-08)
☐ EN 301 511 V9.0.2(2003-03)	☐ EN 301 489-7 V1.3.1(2005-11)
☐ EN 301 908-1 V3.2.1(2007-05)	☐ EN 301 489-9 V1.4.1(2007-11)
☐ EN 301 908-2 V3.2.1(2007-05)	☒ EN 301 489-17 V1.3.2(2008-04)
☐ EN 301 893 V1.4.1(2005-03)	☐ EN 301 489-24 V1.4.1(2007-09)
☐ EN 50360:2001	☐ EN 302 326-2 V1.2.2(2007-06)
☐ EN 50371:2002	☐ EN 302 326-3 V1.3.1(2007-09)

☒2006/95/EC-LVD Directive

☒ EN 60950-1:2001+A11:2004	☐ EN60065:2002+A1:2006
☐ EN 60950-1:2006	

☐2005/32/EC-EuP Directive

Regulation (EC) No. 1275/2008	Regulation (EC) No. 278/2009
☐ EN 62301:2005	☐ EN 62301:2005

☒CE marking

CE (EC conformity marking)

Position : **CEO**
Name : **Jerry Shen**

Declaration Date: Feb. 04, 2010
Year to begin affixing CE marking:2010

Signature : _____

Appendix 3

Repacking instructions for single-column MultiTest-*xt* test frames when returning to Mecmesin Ltd

1. Set the crosshead to approximately the centre of the test frame.
2. Remove the four rubber feet or base anchoring brackets from the base (if applicable).
3. Place the plastic foam collar over the column ensuring that the collar does not hang over the base casting.
4. Position the wooden back plate on the box and retain the plate through the box to the base casting using four M6x35 socket-head screws fitted with large M6 plain washers.
5. Place the separate cardboard fitted insert over the column.
6. Place the Console fitted with arm, power cable and USB cable in the separate cardboard box and put it on top of the test frame.
7. Place all other items including feet/brackets, accessories and operating manual in the box with the test frame, ensuring they are suitably wrapped for protection in transit.
8. Place two of the four plastic foam spacers into the outside box so that they will support the ends of the inner box (longest sides uppermost).
9. Carefully place inner box into outer box, ensuring that the inner box rests evenly on the foam spacers.
10. Close and then seal the inner box with a suitable adhesive tape.
11. Place the remaining two foam spacers over the ends of the inner box, so they will support the ends as per the bottom two spacers.
12. Close and then seal the outer box with a suitable adhesive tape.
13. Attach your despatch wallet with the relevant paperwork for the end destination.

Note: for repacking instructions for a twin-column MultiTest-*xt* please contact Mecmesin Ltd or your local supplier.

Repacking instructions for Vortex-*xt* test frames when returning to Mecmesin Ltd

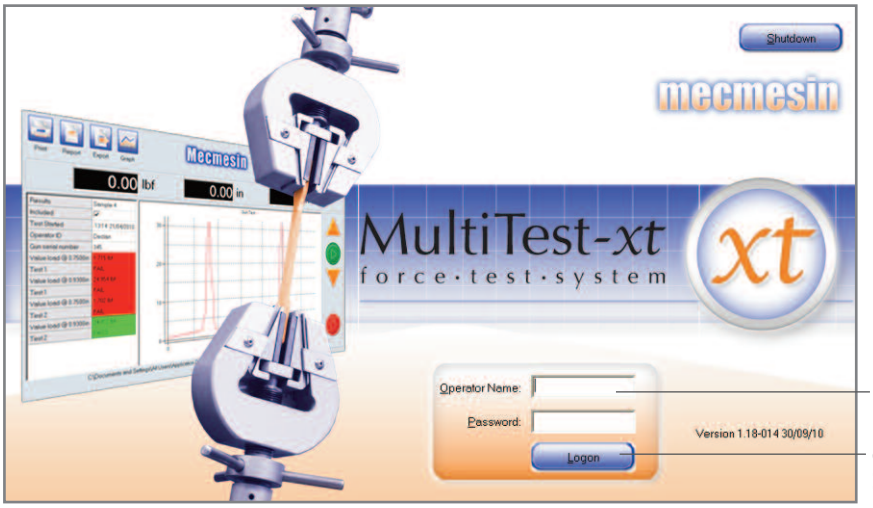
1. Set the top edge of the crosshead 100 to 225mm below the top of the side pillars to tighten both the crosshead adjustor knobs.
2. Set the loading dish to the lowest possible position, and tighten the central adjuster knob
3. Place the Vortex-*i* in the plastic foam base unit collar.
4. Place the Vortex-*i* and base unit collar into the outer box resting on two plastic foam spacers.
5. Wrap the gripping fixtures in the bubble wrap provided, place in accessories box and slide accessories box into the sleeve.
6. Place the Console fitted with arm, power cable and USB cable in the separate cardboard box and put it on top of the test frame.
7. Slide the tongue of the accessories sleeve between the upper plastic foam spacer and outer box.
8. Align the edges of the inner sleeve with long sides of the outer box.
9. Gently slide down the inner sleeve until it is flush with the outer box.
10. Close and then seal the outer box with a suitable adhesive tape.
11. Attach your despatch wallet with the relevant paperwork for the end destination.

If you have any feedback regarding Mecmesin, its products and services, which you would like to share with us, please contact us at ***info@mecmesin.com****.*

Appendix 4

Changing the language on the *xt* Console

From the Splashscreen enter a Master Level Operator Name and password. If no additional master level users have been added, you can use the default Operator Name of 'supervisor' and password 'supervisor'.



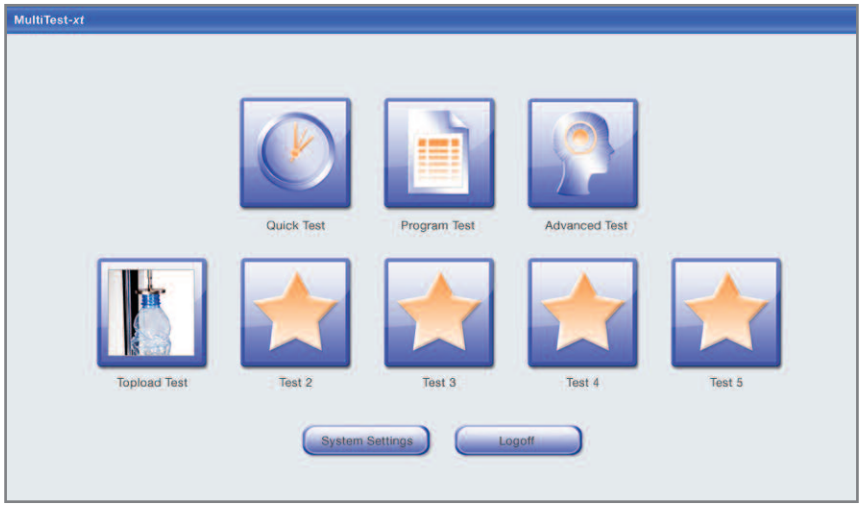
Splashscreen

Splashscreen with keyboard "Ghost"

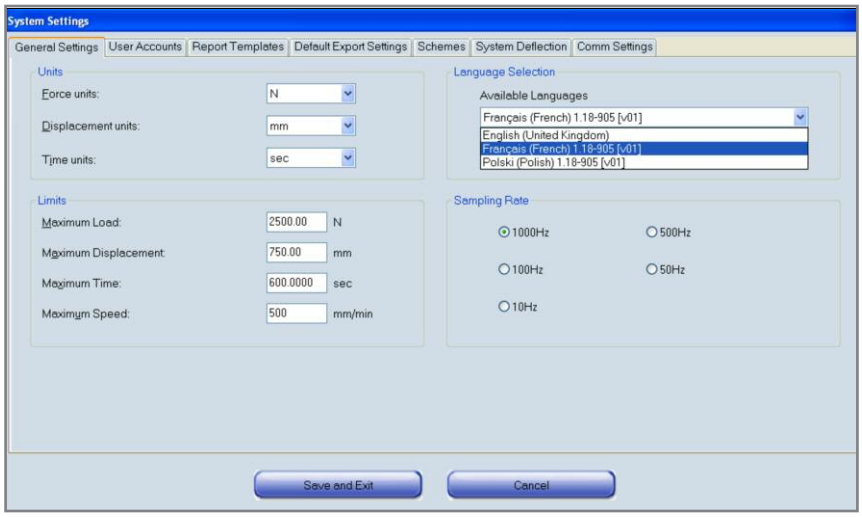
Splashscreen showing the pop-up keyboard used to enter a Username

Appendix 4

At the Main screen, press on **'System Settings'**.



The Main screen in English



The General Settings Tab of System Settings

On the General Settings tab use the **'Available Languages'** drop-down box to select the desired language and Press on **'Save and Exit'**.

You will see this message:

Appendix 4

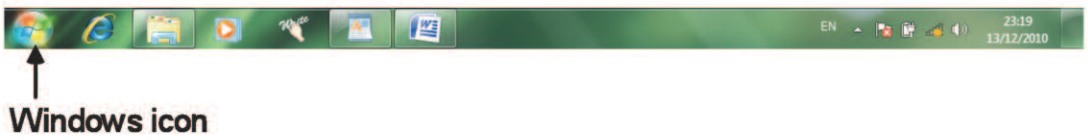
Click on 'Yes' to complete the change to the new language. You will be taken back to the Splashscreen and will need to logon again.

The Splashscreen in French

Changing the Windows 7® Operating System Language

As supplied, the language for the Windows 7® Operating System is set to English. Five other languages French, German, Italian, Spanish and Polish are also installed and directly available. More languages for the Windows 7® Operating System are available to install. If your *xt* system is connected to the Internet, other languages can be downloaded from the Microsoft Windows™ Update website. If your system is not connected to the Internet, please contact your local Mecmesin distributor about obtaining the other languages.

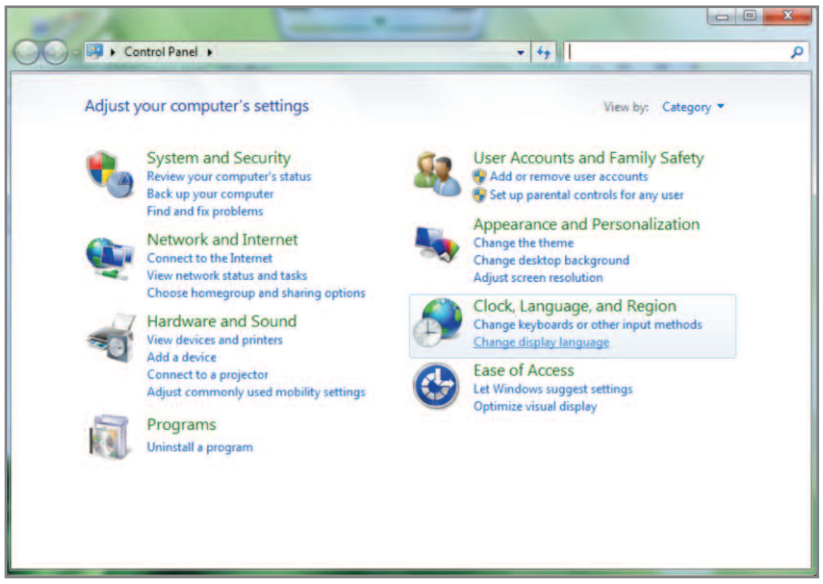
To change the Windows 7® Operating System language, first return to the front screen and press the **'Logoff'** button. Press **'Administrative Tasks'** and enter a valid Master level username and password in the dialogue box revealed. This will take you to the Windows™ operating environment.



Appendix 4

Click on the Windows™ icon to reveal the following page and click on **'Control Panel'.**

A further window is revealed - click on **'Change display languages'** in the **'Clock, Language and Region'** area.



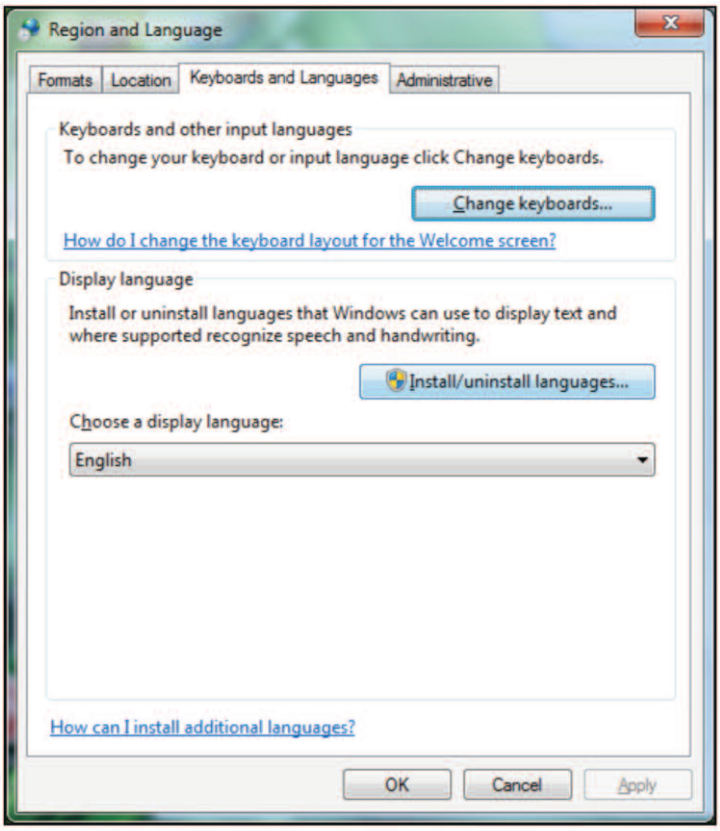
Appendix 4

Changing the language to one already installed

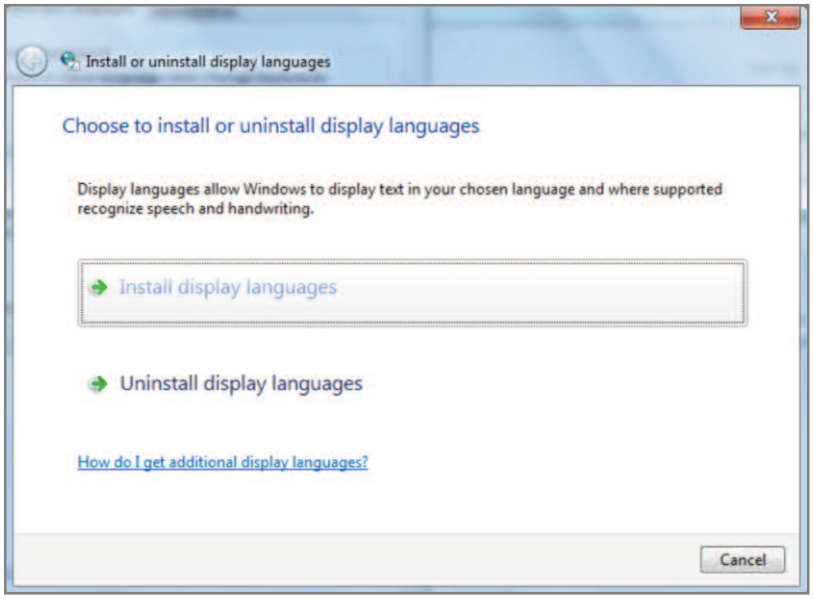
The Region and Language window is displayed. From this screen you can select one of the installed languages by choosing from the **'Choose a display language'** drop-down box.

Installing a new language

If you want to install another language, click on **'Install/uninstall languages...'.**

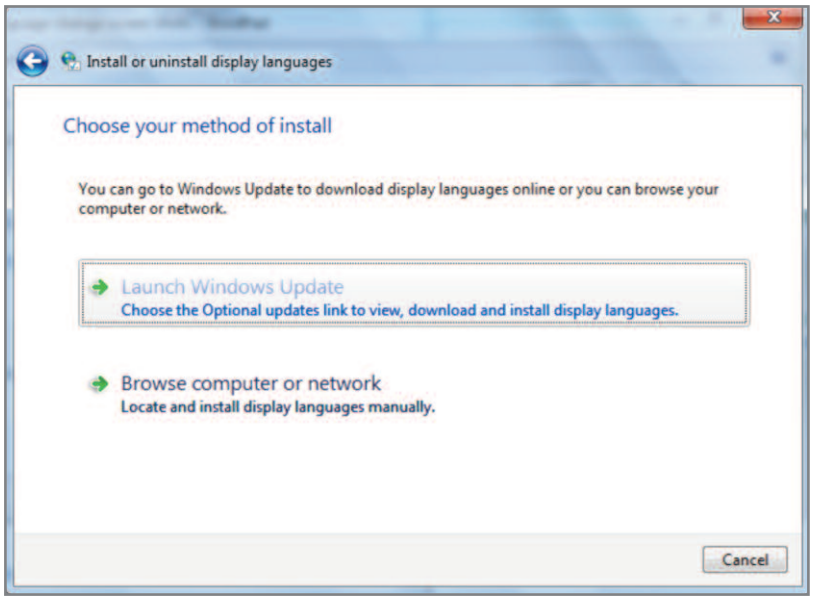


The next screen is displayed. Click on **'Install display languages'.**

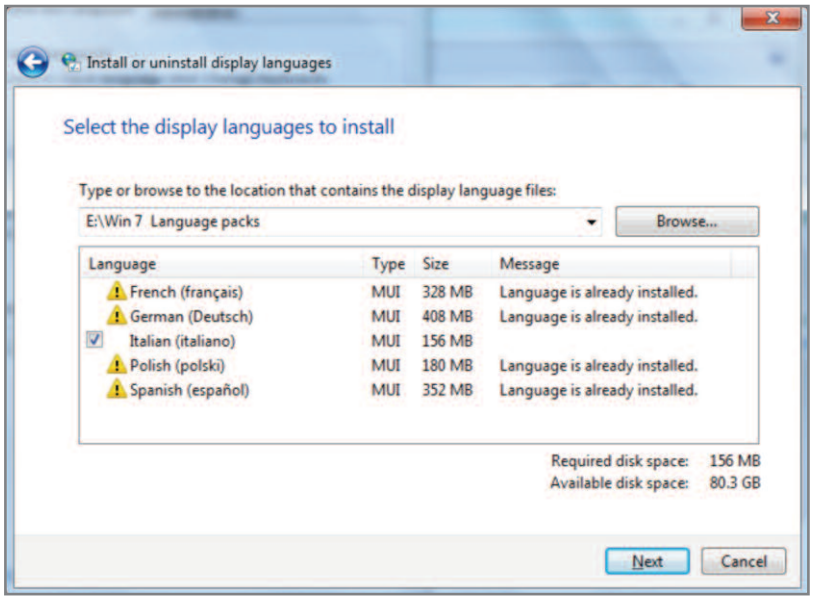


Appendix 4

If your *xt* system is connected to the Internet, click on **'Launch Windows Update'**. If you do not have an Internet connection, contact your local Mecmesin distributor who can supply the languages. For this method click on **'Browse computer or network'.**



Browse to the location where the languages are listed, and select the language to be installed and press on **'Next'.**



Acknowledge the Licensing agreement and continue installing the selected language.

This page has been left intentionally blank

Mecmesin

testing to perfection

Over 30 Years Experience in Force & Torque Technology

Formed in 1977, Mecmesin Limited is today widely regarded as a leader in force and torque technology for quality control testing in design and production. The Mecmesin brand stands for excellent levels of performance and reliability, guaranteeing high quality results. Quality control managers, designers and engineers working on production lines and in research laboratories worldwide rely upon Mecmesin force & torque measurement systems for a range of quality control testing applications, which is almost limitless.

Visit us on the web at
www.mecmesin.com

Algeria
Argentina
Australia
Austria
Bangladesh
Belgium
Brazil
Canada
Chile
China
Colombia
Costa Rica
Czech Republic
Denmark
Egypt
Finland
France
Germany
Greece
Hong Kong
Hungary
India
Indonesia
Iran
Ireland
Israel
Italy
Japan
Korea
Lebanon
Malaysia
Morocco
Mexico
Netherlands
New Zealand
Norway
Philippines
Poland
Portugal
Romania
Russia
Saudi Arabia
Singapore
South Africa
Slovenia
Slovakia
Spain
Sri Lanka
Sweden
Switzerland
Taiwan
Tunisia
Thailand
Turkey
USA
Venezuela
Vietnam

Wherever you are in the world Mecmesin can help you through its global distribution network.

BSI
UKAS QUALITY MANAGEMENT 003

Certificate No. FS 58553

DISTRIBUTOR STAMP

Head Office
Mecmesin Limited
Newton House,
Spring Copse Business Park,
Slinfold, West Sussex,
RH13 0SZ, United Kingdom.
e. sales@mecmesin.com
t. +44 (0) 1403 799979
f. +44 (0) 1403 799975

North America
Mecmesin Corporation
45921 Maries Road,
Suite 120, Sterling
Virginia 20166,
U.S.A.
e. info@mecmesincorp.com
t. +1 703 433 9247
f. +1 703 444 9860

Asia
Mecmesin Asia Co. Ltd
308 Soi Rohitsuk,
Ratchadapisek 14 Road,
Huaykwang, Bangkok, 10310,
Thailand.
e. sales@mecmesinasia.com
t. +66 2 275 2920 1
f. +66 2 275 2922

China
Mecmesin (Shanghai) Pte Ltd
Room 302, No. 172,
Daxue Lu - University Avenue,
Yangpu District, Shanghai, 200433,
People's Republic of China.
e. sales@mecmesin.cn
t. +86 21 5566 1037 / 3377 1733
f. +86 21 5566 1036

brochure ref: 431-388-03