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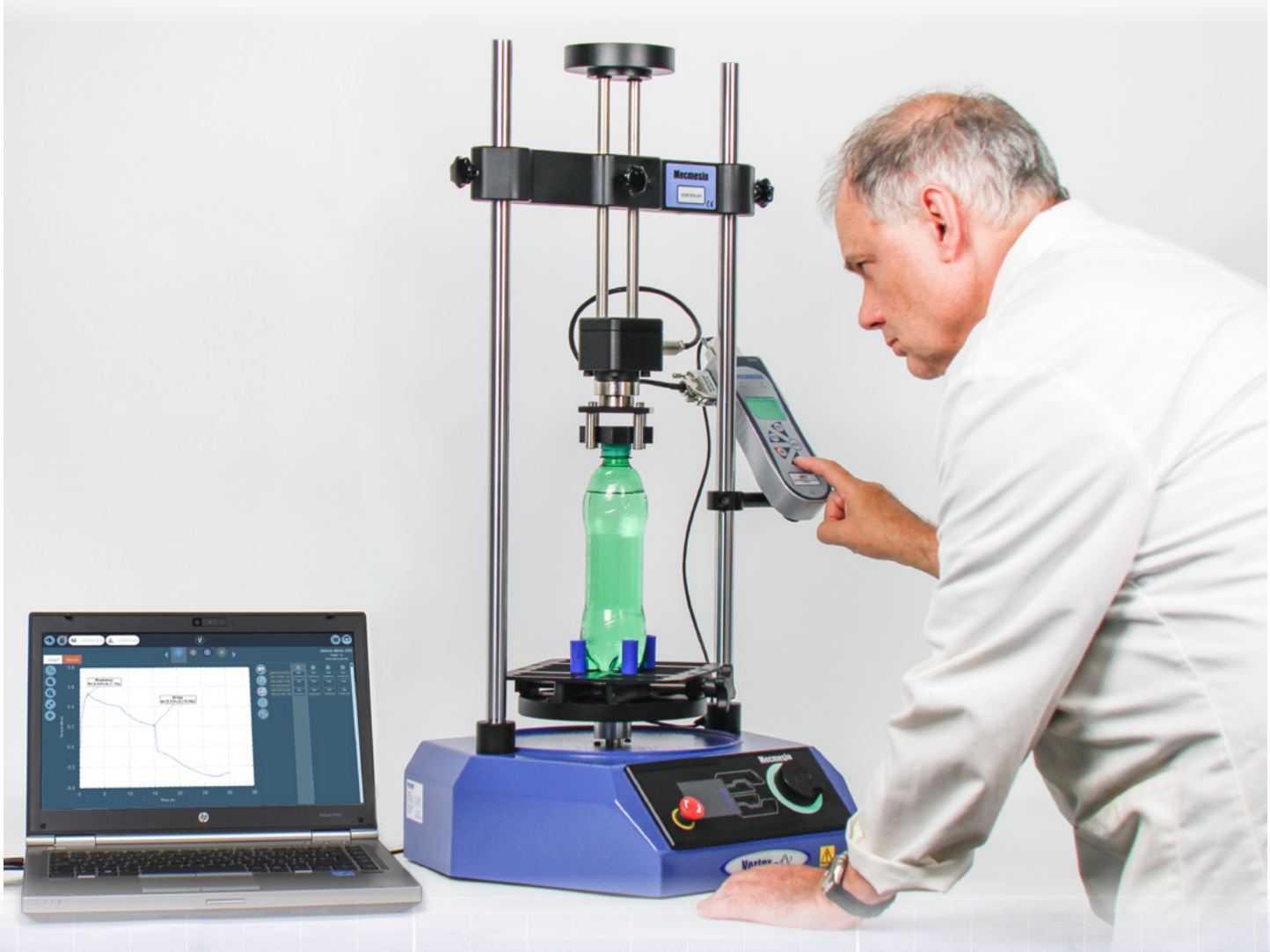
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Mecmesin

testing to perfection

Vortex-*dV*

Digital Motorised Torque Testing System with *VectorPro*™ *Lite* data acquisition software





Closure Torque



Torque to Turn



Fastening Torque

Vortex-*dV*

Digital Motorised Torque Testing System

Key Features

The Vortex-*dV* is a versatile and affordable torque testing system, comprising a precision-controlled motorised stand with a choice of torque transducers, an AFTI digital torque display and data capture unit, and a range of grips and fixtures. This robust and simple to use system is suited to either R&D in the laboratory, or quality control in the production area. It improves greatly on manual units with accurate gripping and precise speed control, and in batch testing, eliminates user repetitive strain injury.

4 models
- 1.5 N.m
- 3 N.m
- 6 N.m
- 10 N.m

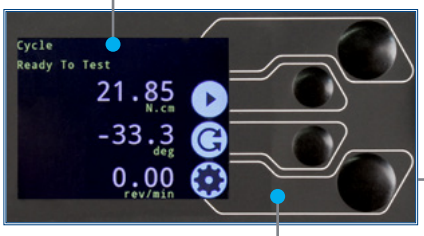
4 test modes
- Manual bidirectional control
- Run to or between positions
- Run to break
- Run to torque

Grips and fixtures

A range of standard fixtures is available, including mounting tables and chucks. Custom fixtures, including dedicated mandrels, available on request.

Control panel display

Clear indication of speed, angle and torque.

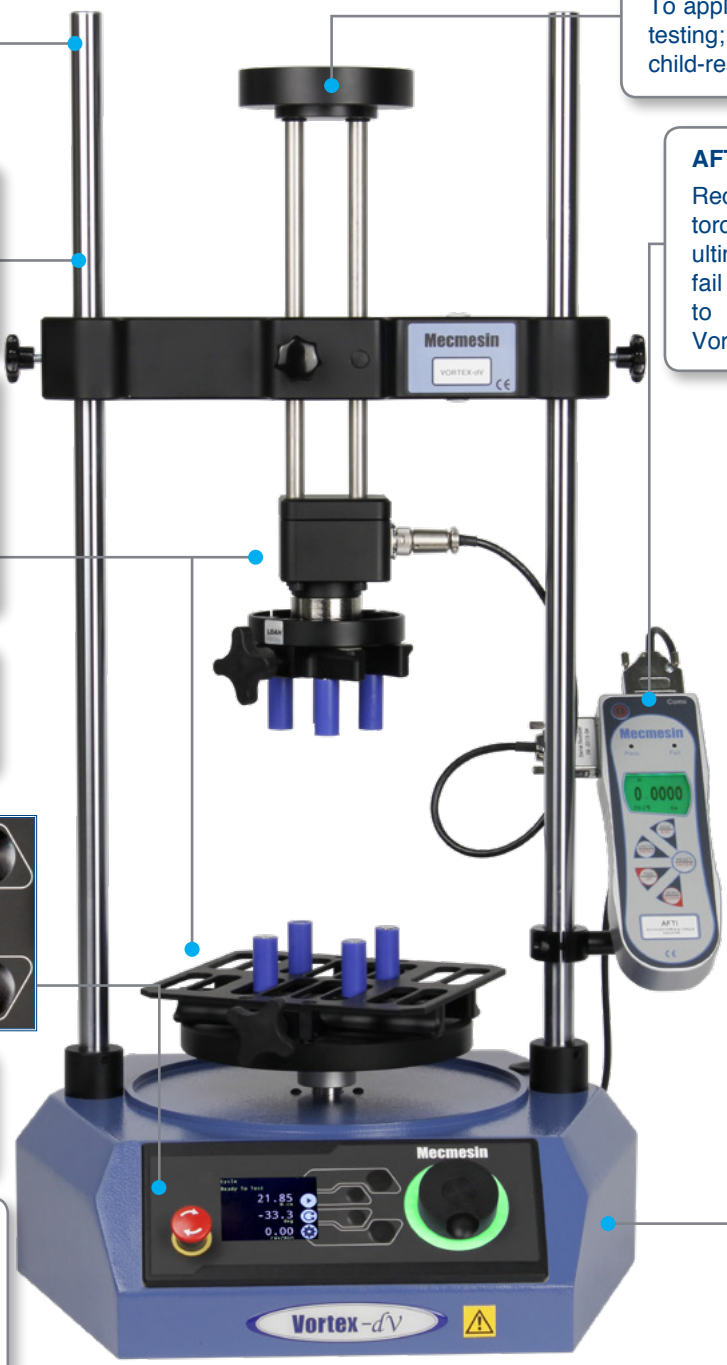


4 simple buttons to operate

Just 4 multifunction buttons for all settings and operation.

USB Connection

Connect to a PC with VectorPro™ Lite software, for test settings and results storage, streaming data, graph plotting, calculations, and basic statistics.



Top load tray

To apply static loads during testing; particularly suitable for child-resistant closure testing

AFTI Display Unit

Receives, stores and transmits torque data, captures first and ultimate peak values, with pass/fail indicator, and can be used to set control limits for the Vortex-*dV*.



Multifunction wheel

Fine control allows precise setting of speed and position.

Coloured LEDs clearly indicate machine status during testing.

Robust, rigid construction

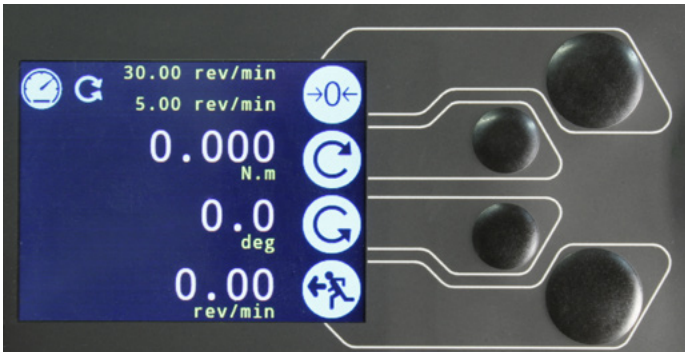
Splash proof and suitable for either laboratory or factory floor environments.

Vortex-*dV* Controls

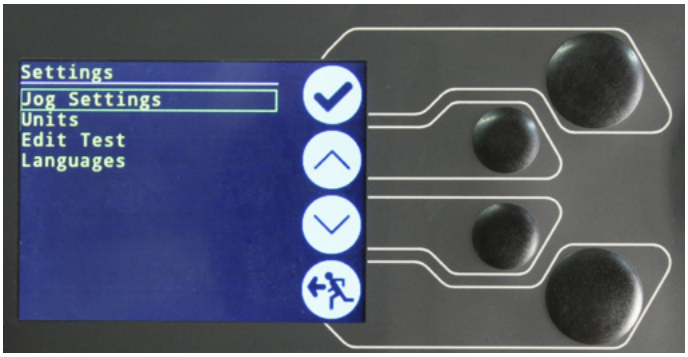
The Vortex-*dV* has a simple-to-use front panel for precise selection of test parameters. Based on the tried and tested Vortex frame, it has completely new control electronics to deliver superior performance combined with affordability.

It can be used standalone with an AFTI torque display unit, or combined with VectorPro™ Lite for acquisition, plotting and analysis of data with controlled storage of test routines.

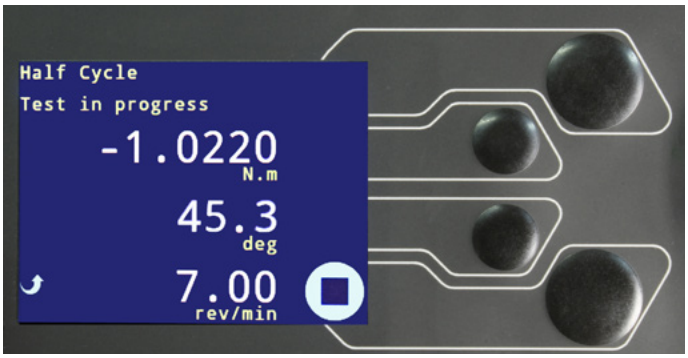




◄ Clear colour display of status, clockwise and anticlockwise speeds, position and torque.



◄ Four multifunction buttons for all settings and operation. Multi-language display.



◄ Continuous live readings during testing, including status and cycle count, plus peak and break capture by AFTI, or full data capture and plotting with VectorPro™ Lite.



▲ Lights indicate stand status
Dial positions drive spindle precisely
Centre button confirms menu settings

Specifications

Vortex-dV		1.5 N.m	3 N.m	6 N.m	10 N.m
Measurement range	N.m	0 – 1.5	0 – 3.0	0 – 6.0	0 – 10.0
	kgf.cm	0 – 15	0 – 30	0 – 60	0 – 100
	lbf.in	0 – 13	0 – 26	0 – 52	0 – 90
Dimensions					
Maximum travel of adjustable transducer carriage		182 mm (7.2″)			
Maximum headroom		505 mm (19.9″) [448 mm (17.6″)]*			
Width between columns		280 mm (11.02″)			
Weight		19.5 kg (48 lb)			
Power requirements					
Voltage		230 V AC 50 Hz or 110 V AC 60 Hz			
Max power		100 W			
Torque measurement (AFTI)					
Torque accuracy		0.5% of full scale			
Torque units		mN.m, N.m, kgf.cm, lbf.in, ozf.in (as per AFTI)			
Speed					
Speed range		0.1 rev/min to 30 rev/min (clockwise and anticlockwise)			
Speed accuracy		±1% of indicated speed			
Speed resolution		0.01 rev/min, (0.1°/s)			
Displacement					
Maximum displacement		8000 revs			
Displacement accuracy		0.2° per 36,000°			
Displacement resolution		0.1° (0.001 rev)			

*** with upper and lower mounting table fitted**

Build the system that is right for you…

To configure a **Vortex-*dV* system** you need to purchase separately:

- the Vortex-*dV* stand
  - The Vortex-*dV*'s multi-function wheel allows you to set test speed, direction of rotation and to select from pre-set routines:
    - Half cycle - Multiple cycles
    - Run to limit - Run to angle
- a choice of 1.5 N.m, 3 N.m, 6 N.m, or 10 N.m static torque sensors
- AFTI torque display unit and interface cable
  - The AFTI display unit, when connected to a torque sensor continously measures torque and captures the peak value.
  - Results can be transmitted to a PC or printer.
- an appropriate grip to hold your sample
  - An extensive range of grips and fixtures is available to hold your samples – consult Mecmesin for advice.

and to expand functionality much further:

- VectorPro™ Lite test data acquisition software (see pages 6-7)

▶ AFTI Torque Display





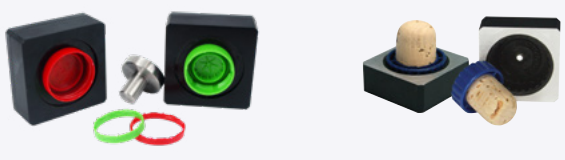
▲ versatile mounting tables



▲ 4-jaw chucks



▲ half-round jaw sets

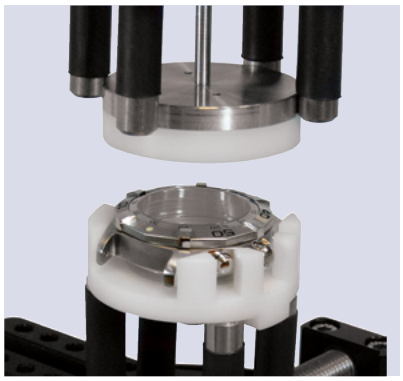


▲ dedicated closure mandrels

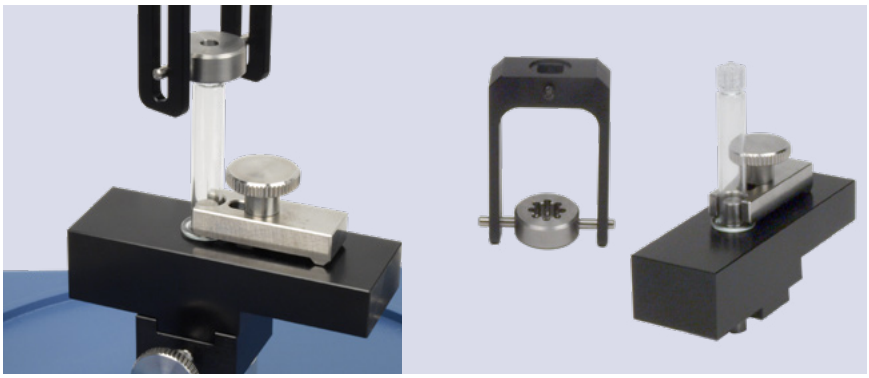
Accurate sample holding

Mecmesin offers a wide range of standard grips and fixtures suitable for most testing. We also offer a custom engineering service to design and manufacture exact-fit closure mandrels for the most accurate testing of closure torques. Many torque tests involve asymmetric samples, for which we also can devise specialised grips to ensure accurate axial alignment. The key to repeatable testing is not only a constant test speed but also uniform, consistent gripping of the sample.

Typical Applications



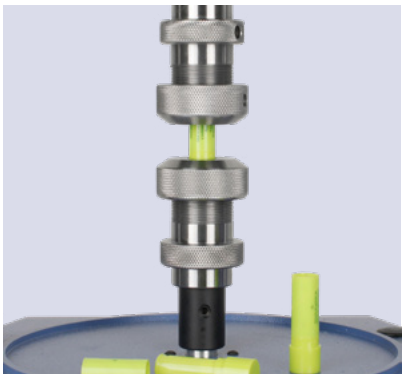
▲ watch bezel



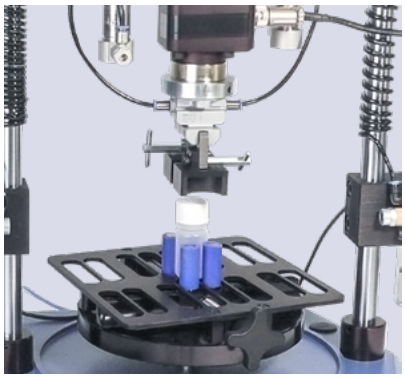
▲ medical devices: luer locks



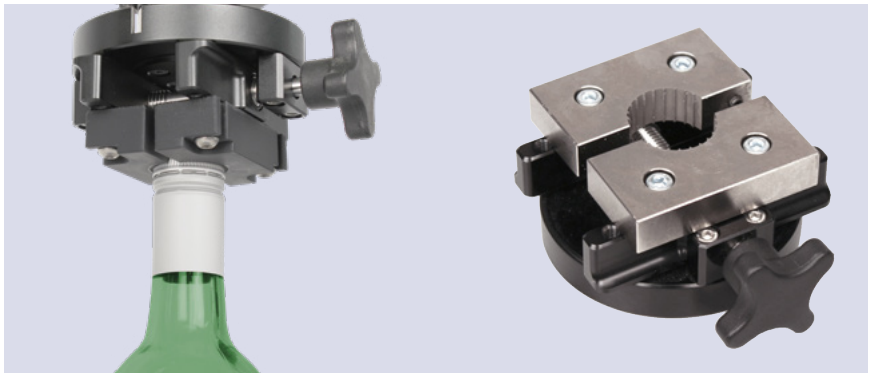
▲ valves: radiator thermostat



▲ cosmetics packaging



▲ child resistant closures (CRC)



▲ Stelvin® / ROPP closures (metal)



▲ twist-off crown corks



▲ tamper-evident closures (plastic)

** for comprehensive details of our gripping solutions for closures, go to http://www.closuretesting.com*

VectorPro™ Lite

Test Data Acquisition Software

Collect and control your test data, and interface with shopfloor SPC systems.

VectorPro Lite enables the same basic test routines that are available through the Vortex-*dV* panel controls, to be set up and stored on a PC, with their settings, for re-use. Any single test routine can be uploaded from VectorPro™ Lite to the Vortex-*dV* and can be run from the software to provide real-time torque/angle/time plotting.



Supplied with individual USB Software License key

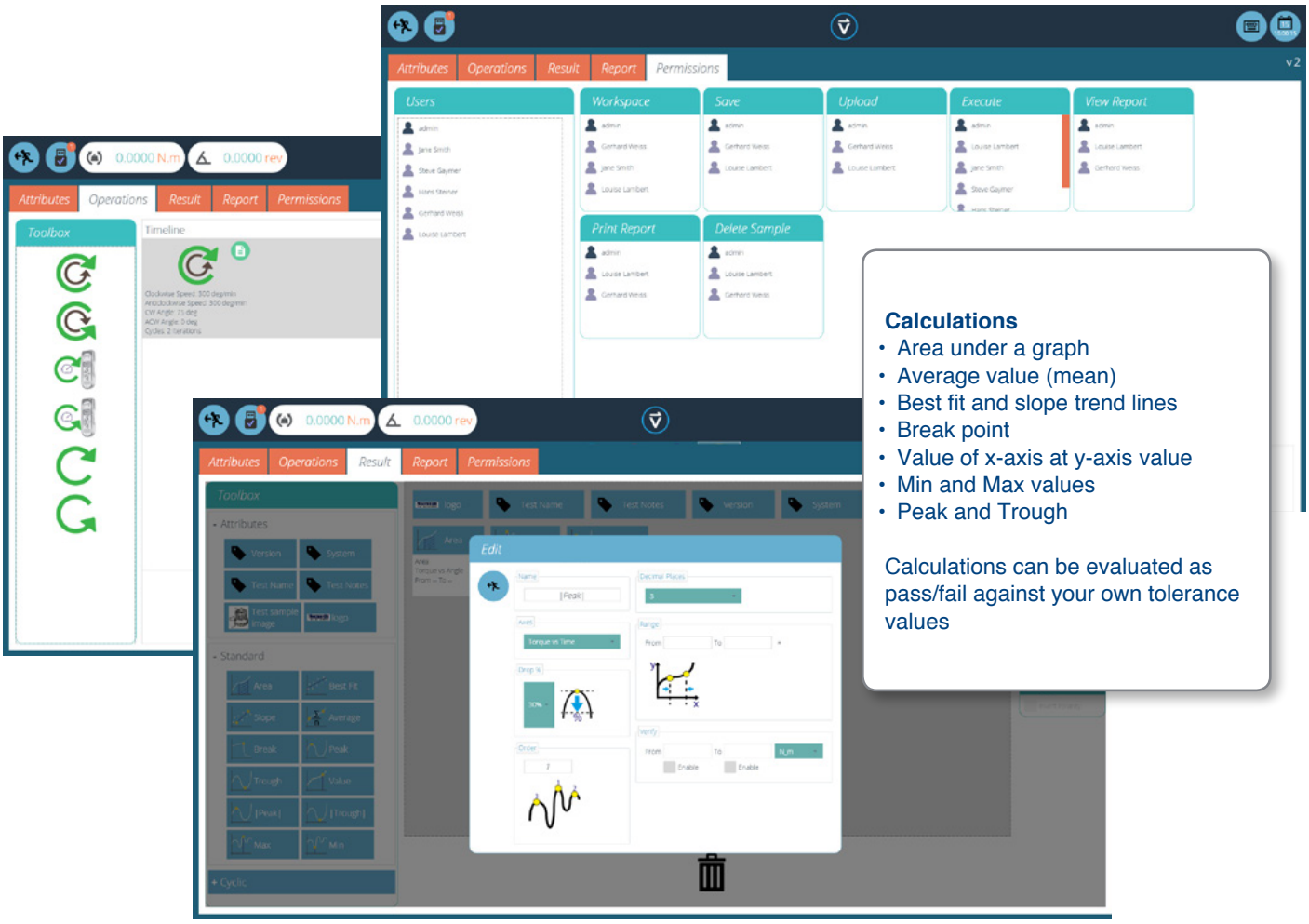
Standard calculations can be added to the test profiles to provide a selected range of results, basic statistical analysis, and pass-fail criteria for samples tested. Results and raw data are stored, and can be exported as .tab, .csv or Excel® files for external SPC programs, or printed in report format.

Personalised user accounts with simplified workspaces

Create personalised workspaces to simplify operations. Apply permissions to control who can access, run, edit or create tests, view results, and produce reports.

Drag and drop test-building

Drag and drop all the elements needed to create a test routine, apply calculations and build reports. Create repeatable tests in moments and refine them as you go. Each test profile has full version tracking and results storage, along with customisable test summary information.



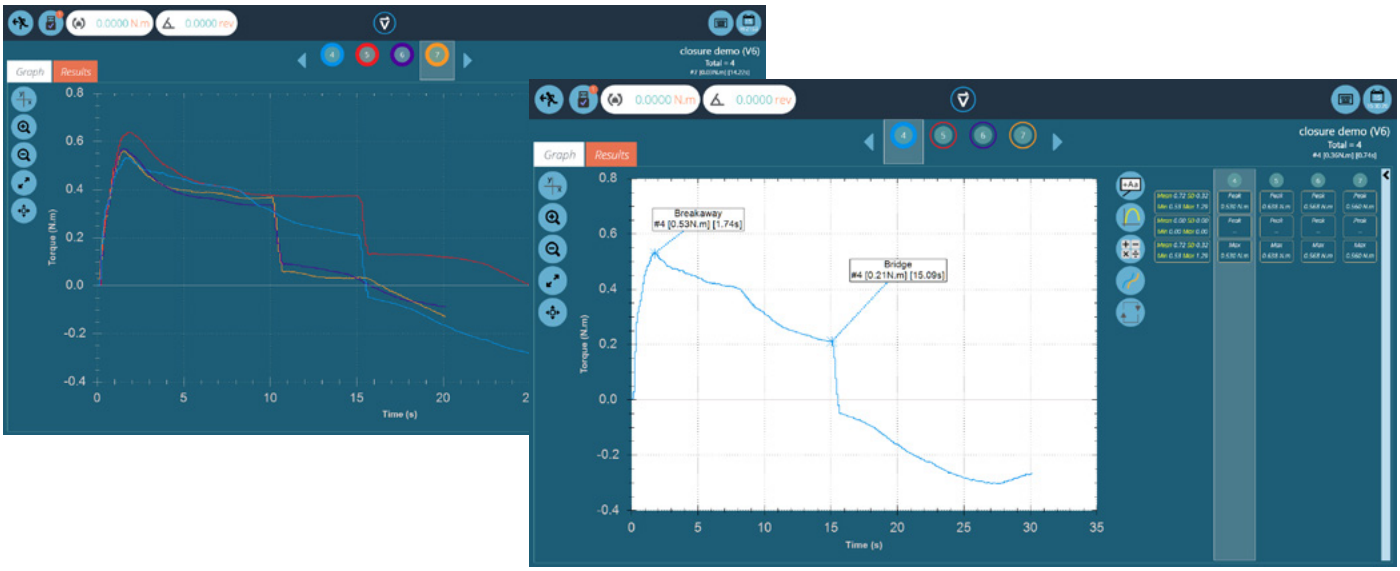
Calculations

- Area under a graph
- Average value (mean)
- Best fit and slope trend lines
- Break point
- Value of x-axis at y-axis value
- Min and Max values
- Peak and Trough

Calculations can be evaluated as pass/fail against your own tolerance values

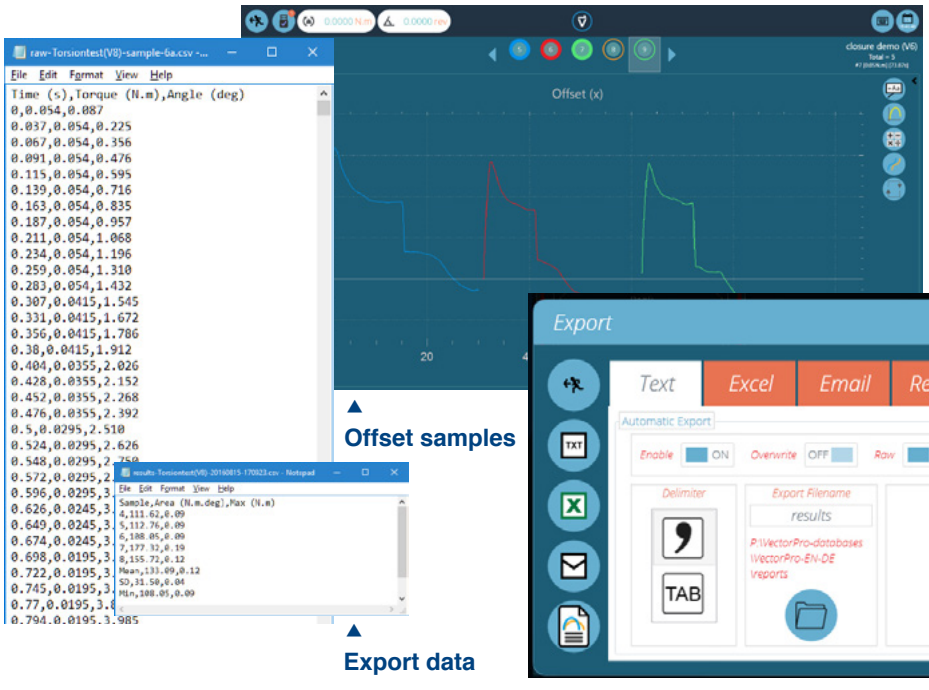
Live plotting of tests

View tests as they run, with instant calculation or pass/fail results. Get in close to your sample data: Switch axes, zoom, pan, view data point values. Offset sample traces for clarity and comparison. Any results can be re-viewed at any time.



Results handling

- Compare the plots of tested samples and add spot calculations not included in the test profile.
- Select out the samples you want to compare, and adjust calculation parameters temporarily or to save.
- Export raw data, or results, to delimited or Excel files, email a table of results. Create a report of results, graphs and notes to print or save as PDF.



Offset samples

Export data

User-defined report templates

Mecmesin

testing to perfection

Mecmesin - a world leader in affordable force and torque testing solutions

Since 1977, Mecmesin has assisted thousands of companies achieve enhanced quality control in design and production. The Mecmesin brand represents excellence in accuracy, build, service, and value. In production centres and research labs worldwide, designers, engineers, operators, and quality managers endorse Mecmesin force and torque testing systems for their high performance across countless applications.

www.mecmesin.com



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