

Mecmesin

testing to perfection

Digital Torque Testers

Manually Controlled Torque Systems



Digital Torque Testers

Mecmesin's range of manually-operated digital torque testers provide a simple and cost effective method of measuring low-level torque.

There are a wide variety of objects that require the application of a torque to operate, from simple packaging and toys, to high-tech automotive and aerospace controls or medical devices.

Whatever its level of complexity, torque measurement is a common crucial ingredient in the delivery of a well designed and reliably manufactured product.

A Complete Product Range

Mecmesin's comprehensive range caters for almost any low-level torque application. Our three manually-operated digital closure testers - the Tornado, Orbis and CRC Tester offer a simple, flexible solution to torque assessment. For more technically demanding applications, requiring greater accuracy and repeatability, we also offer a range of sophisticated motor-driven torque systems.



design
quality
conformance

Why Test Torque?

Perfect Usability

Torque testing enables designers to perfect the 'fitness-for-purpose' of their products.

Example

Car steering wheel stalk controls must be easy to twist, but provide sufficient resistance to give a positive 'click' on engagement.

The child-resistant closures on medicine bottles must be sufficiently difficult to compress and twist to stop infants from removing the lid, whilst remaining sufficiently easy to open for frail and elderly users.

Conform to Standards

Torque testing can make up a vital component of a manufacturer's quality management system, enabling conformance with relevant national and international standards, as well as in-house specifications.



Guarantee Production Quality

Torque testing at the point of production guarantees superior quality manufacturing.

Example

In a beverage filling plant, in-line checks ensure that capping heads on bottling machinery apply sufficient torque to achieve an hermetic seal in the lid, but not too much as to damage the closure.

Examples

ASTM D2063-91 (Screw closures)
ASTM D3198-97 (Lug Closures)
ASTM D3810-97 (CRC closures)
ASTM D3968-97 (CRC closures)
ASTM D3469-97 (CRC closures)
ASTM D3472-97 (CRC - reverse ratchet torque)



Tornado

The Tornado is Mecmesin's most advanced manually-operated digital torque tester.

Externally, the Tornado features the same compact, rugged and portable design of the Orbis, and the same intuitive user interface and versatile fixturing. The Tornado's intelligent electronics, however, enable a broad variety of advanced additional functions, to offer enhanced practicality and versatility.

Test tamper-evident closures;
capture both 'slip torque' and
subsequent 'bridge torque' with ease.

Versatile mounting table,
adjustable to accommodate a
variety of forms. Integrated drip
tray captures any sample spillage
for ease of cleaning.

Moulded carry handle;
for easy portability.

On-board memory;
store up to 500 results internally.

Easy export of results to a PC,
printer or datalogging device via
integrated RS232 output socket.



Advanced Features

Tamper-Evident Closure Testing

The Tornado allows you to characterise the two critical torque peaks associated with tamper-evident closures; **slip torque**; effort required to initiate movement of the cap, and **bridge torque**; the smaller secondary peak associated with the effort required to break the plastic bridges between the cap and the security ring.

Four Capacity Models

The capacity of your digital torque tester should reflect the torque range of your application. If it is too low, the torque transducer risks being overloaded, whereas if it is too high, the transducer may not be sufficiently sensitive to accurately detect small peak loads. The Tornado offers four capacity models; a 1.5 N.m option for delicate assessments, and 3 N.m, 6 N.m and 10 N.m capacity models for increasingly robust applications.

Clear, intuitive controls;

dual-purpose membrane keypad allows quick access to common functions & navigation of the advanced options menu. Features lockable units & 'max display' mode.

LED and audible alarms;

establish pass/fail parameters for torque results, and set alarm notification for instant failure identification. Store 5 separate settings, with easy selection by operators.

Mains input with water resistant cover. Power Tornado directly from mains or internal rechargeable battery.

Rugged, Lightweight & Water Resistant Design (Rated to IP 54); ideal for use on the factory floor. Non-painted polypropylene case suitable for use within pharmaceutical laboratories.


Pass/Fail Alerting

Tolerance bands for acceptable torque measurements may be pre-defined, and pass/fail parameters established. Five independent settings can then be stored. LED indicators or an audible alarm (or both) then clearly identify samples that do not conform to your exact requirements.

On-board Memory

The Tornado can store up to 500 readings in its internal memory, allowing you to perform many tests in quick succession, and then view or export the results at a later time convenient to you.

Tornado Technical Specifications

	Tornado 1.5	Tornado 3	Tornado 6	Tornado 10
Measurement range	0 - 1.5 N.m	0 - 3 N.m	0 - 6 N.m	0 - 10 N.m
	0 - 15 kgf.cm	0 - 30 kgf.cm	0 - 60 kgf.cm	0 - 100 kgf.cm
	0 - 13 lbf.in	0 - 26 lbf.in	0 - 50 lbf.in	0 - 90 lbf.in
Display resolution	0.0005 N.m	0.001 N.m	0.002 N.m	0.002 N.m
	0.005 kgf.cm	0.01 kgf.cm	0.02 kgf.cm	0.02 kgf.cm
	0.002 lbf.in	0.005 lbf.in	0.01 lbf.in	0.02 lbf.in
Container diameter	10 - 78 mm	10 - 78 mm	10 - 190 mm	10 - 190 mm
Load units	mN.m, N.cm, N.m, gf.cm, kgf.cm, kgf.m, ozf.in, lbf.in, lbf.ft			
Sampling rate	5000 Hz averaged to 80 Hz or 2000 Hz peak capture (user selectable)			
Load accuracy	±0.5% of full scale			
Overload	typically 150% of full scale			
Weight	2.65 kg	2.65 kg	3 kg	3 kg
Dimensions (mm)	303 (w) x 278 (d) x 127 (h)			
Part No.	876-103	876-104	876-102	876-101

 Clockwise & counter-clockwise

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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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The Mecmesin global distribution network guarantees your testing solution is rapidly delivered and efficiently serviced, wherever you are.



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