

## New Machines to Improve Current Hardness Testing Methods

Tinius Olsen have introduced a new generation of instruments to their highly successful FH Series of hardness testers, with the launch of the new Micro Vickers, Vickers and Micro Brinell FH3 and FH14.

The machines are improving on conventional hardness testing methods, with the introduction of new features such as digital/optical image evaluation and combined intuitive operator software, helping eliminate operator influence on final test results.



The incorporation of a unique force actuator system, which utilises an electronically controlled closed loop system and advanced force sensor technology, also allows for forced feedback data to achieve absolute accuracy, reliability and repeatability on each of the forces used for a specific test.

“In addition to the advanced electromechanical force application system, the FH-3 offers superior quality mechanical and optical components, as well as innovative software functions of I-Touch™ workflow control,” said Sean Malloy, Hardness Application Testing and Technical Specialist at Tinius Olsen.

“This allows file storing, test program setting and storing, limit settings, conversions to other hardness scales, system setup and convex and concave test settings that contribute to the high reproducibility of test results.”

“The new instruments are still easy to navigate through all the functionality, making it easy for an operator to learn the machine operating routine. Therefore training is simplified. There is also the ability to store results with pictures, which enables recall of those pictures for re-evaluation of the measuring process.”

The new FH3 and FH14 Series are also designed to be incorporated within an automated system, which collects data from multiple machines performing tests simultaneously. This can be a combination of tensile, dimensional, hardness and flexure testing, with all samples being robot fed.



In addition to freeing up technicians for other tasks, the automated system ensures precise sample positioning and imaging, enhanced accuracy, an extremely high level of repeatability and overall increased productivity.

It again helps eliminate operator-related errors caused by eye strain, fatigue and inevitable inconsistencies, which can be a common problem in micro hardness testing.

“We have 6 models in the FH14 segment with a load range of 1gram to 31.25 Kgf. The FH14 Series of testers can do micro/macro Vickers, Knoop and by request the FH14 can do light force Brinell testing as well. It’s a marvellous combination of testing in one package,” continued Sean.

“The FH3 series carries many of the same attributes of the FH14 series but increases the amount of space to accommodate the larger than normal samples. This is done with 2 different models and a load range of 200 grams to 62.5 Kgf – not only is the sample accommodations increased from the FH14 series but the load range is expanded to higher Vickers and Brinell testing.”

“These 2 models will complement each other with their excellent load range and advanced technology, notwithstanding the exceptional value they will bring to the testing industry that demands testing equipment, technical support and service excellence all from the same company - a one stop shop if you like.”

### **Key Features of the new FH3 and FH14 Series**

- \* Up to 3 stacked load cells with accuracy of less than 0.5 %
- \* Turret capable of housing up to 4 different objective – 2 indenters
- \* Anti-collision technology within the turret to protect samples and the machine from inadvertent contact
- \* Multi positional touch screen display comes as standard
- \* Easy operator navigation through all functionality that can be outfitted with 4 graduating levels of automation. This includes a motorised stage performing pattern testing with automatic results, without adding complicated functions to confuse the person performing the testing.
- \* Ability to store results with pictures, recall and export to network storage giving the ability to backup and store results over a lengthy period of time
- \* The ability to view the indentation through a microscope and camera to scrutinise the measurement, with Dual optical paths allowing both functions to operate simultaneously.

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