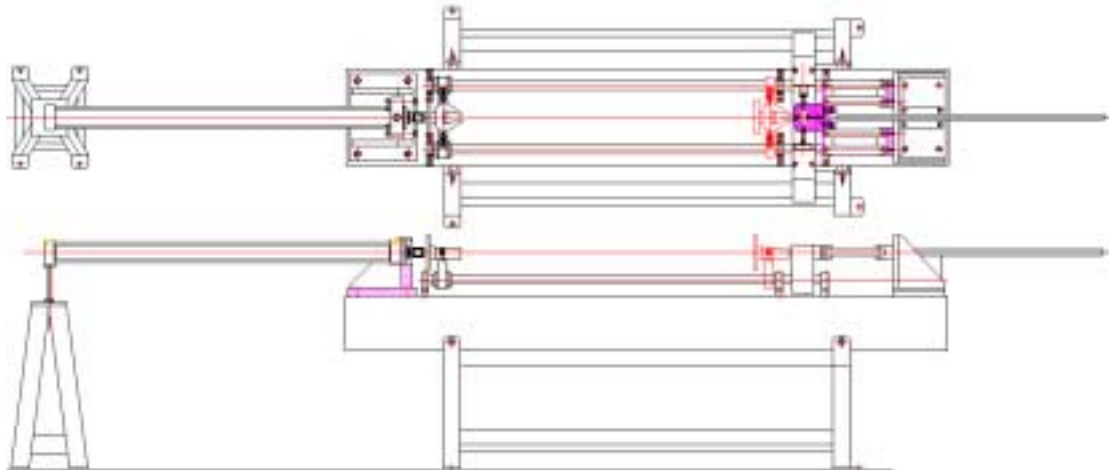


## TRIBOLOGY UPDATE: *ISSUE 22 - January 2009*

This is the latest e-mail issue of our regular **Tribology Update** newsletter. Further information can be viewed at our web site: <http://www.phoenix-tribology.com>. Alternatively, you may wish to contact us by e-mail at [info@phoenix-tribology.com](mailto:info@phoenix-tribology.com) or by telephone on 44 1635 276064.

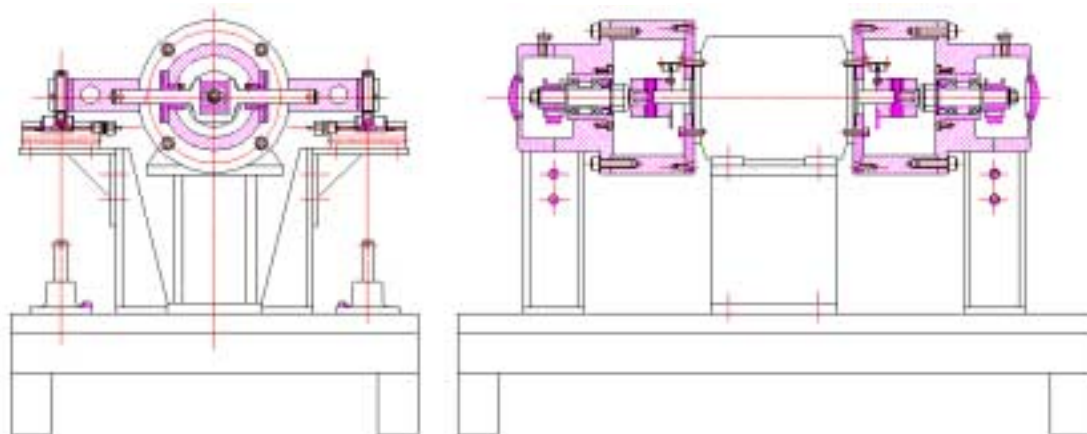
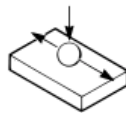
### WORK IN PROGRESS:

#### [DN 33 Draw Bead/Strip Friction Tester](#)



We are designing a modified version of the machine, with increased clamping force (40 kN), stroke (1,500 mm) and speed (400 mm/s). Tooling will be modified to include embedded heaters. The design reverts to hydraulic actuation as used on the first version of the machine.

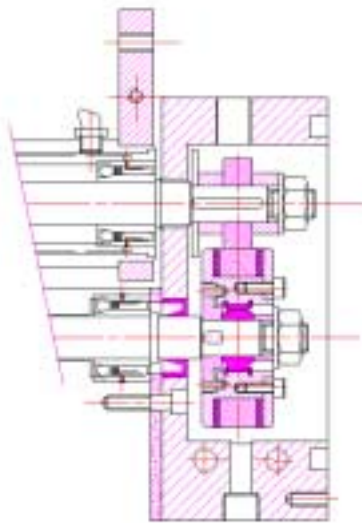
#### [TE 80-4 Lubricity Wear Test Machine](#)



We are in the process of turning the TE 80 machine from a two station reciprocating wear tester into a four station machine, by using a double ended motor.

**IN PRODUCTION:**

***TE 54 Mini Traction Machine***



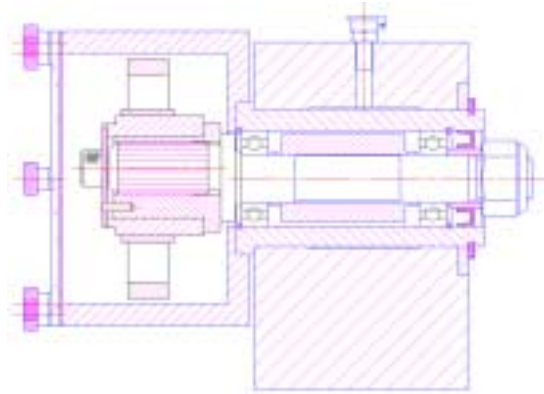
We are now producing self-aligning tooling for the TE 54 to allow it to operate with a roller on roller (line) contact as well as the standard ball on roller (point) contact.

***TE 77 Piezo Fretting Adapter***



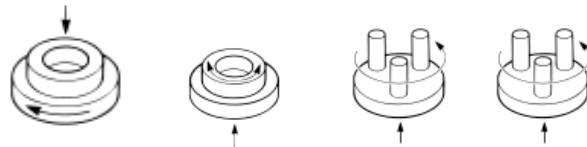
A piezo actuator drive system for fretting test applications is now available for use in place of the standard TE 77 long stroke reciprocating drive system.

### *TE 77 Continuously Variable Cam*



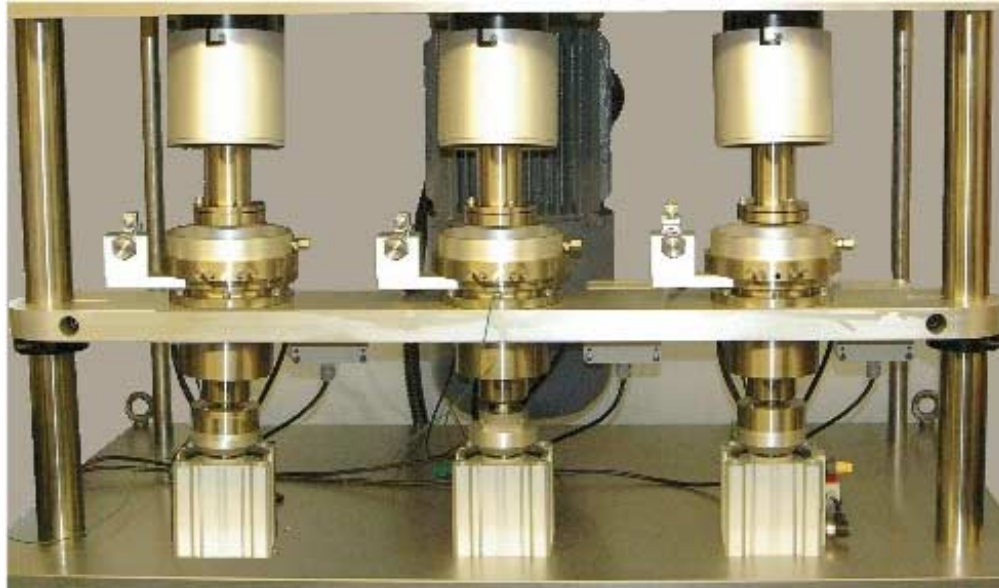
We are grateful to Dipl-Ing Stephan Conradt of Shell Macron GmbH for pointing out that the current design of 0 to 2 mm stroke continuously variable cam can in fact be used, in conjunction with the current drive shaft, to provide adjustable stroke lengths over the range 0 to 15 mm. This set us thinking! With a minor design modification, we can rationalize and simplify the range of cams offered, to provide three options, that will be included as standard on all new machines. These will give continuously variable stroke from 0 to 12.5 mm, step variable stroke from 0 to 12.5 mm in ten steps and step variable stroke from 12.5 to 25 mm in ten steps.

### *TE 93 Precision Rotary Tribometer*



The first production TE 93 unit has now been delivered. Incorporation of a linear air bushing in the loading and friction torque assembly allows precise control of the load in the range 1 to 1,000 N and corresponding precision in the measurement of friction.

## [TE 94 Multi-station Rotary Tribometer](#)



The first production TE 94 unit has now been delivered. The three station test machine is designed to perform multiple tests in the thrust washer and three pin on disc test configurations under common test conditions.

### **OTHER NEWS:**

#### [The Cambridge Tribology Course 2008/9](#)

The 2009 will take place, from Wednesday 16<sup>th</sup> to Friday 18<sup>th</sup> September 2009.

#### [Publications Library](#)

In addition to a list of publications by machine, we have added to our web site a selected list of papers written by users of Cameron-Plint, Plint and Phoenix Tribology test machines. We are not permitted to provide copies of these papers, as this would breach copyright. Legal copies can be purchased either direct from the publishers or found on-line using a suitable search engine, such as Google Scholar.

George Plint and David Harris  
**Phoenix Tribology Ltd**