

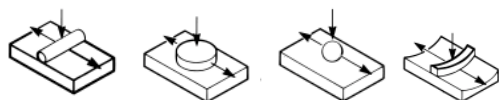
TRIBOLOGY UPDATE: ISSUE 15 - December 2004

This is the sixth e-mail issue of our regular **Tribology Update** newsletter. Abstracts describing progress with development projects are provided and further information can be viewed at our web site: www.phoenix-tribology.com. Alternatively, you may wish to contact us by e-mail at info@phoenix-tribology.com or by telephone on 44 1635 276064.

This has been an extremely busy year for us, with turnover up by 50% and a lot of first class engineering projects to keep us stretched. We have also completed a substantial amount of overseas travel with all members of staff away at one time or another. Destinations have included multiple trips to North America, the Far East and Europe. Despite a heavy work load, we have managed to continue with product upgrades and developments at a rapid pace.

WORK IN PROGRESS:

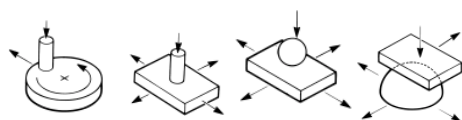
TE 77 High Frequency Friction Machine – Peltier Chiller



We have previously used Peltier chillers for cooling applications on a number of test machines and are in the process of adding this facility as an option on the TE 77, allowing specimen temperatures down to -30 C to be achieved in the reciprocating test configuration.

<http://www.phoenix-tribology.com/at2/leaflet/te77.htm>

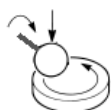
TE 79 – Multi Axis Tribometer - Design Upgrade



The TE 79 has continued to sell well meeting the requirement for a low load pin on disc and reciprocating pin on plate machine. The design has remained unchanged for nearly ten years and we are currently in the process of completing a design upgrade, with the primary objective of updating the motor and drive components.

<http://www.phoenix-tribology.com/cat/at2/leaflet/te79.htm>

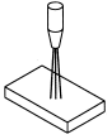
TE 92 Micro Processor Controlled Rotary Tribometer – Traction Adapter



We are currently working on the design of a new ball on disc adapter for the TE 92 to allow traction tests to be performed in the conventional inclined axis ball on disc configuration.

<http://www.phoenix-tribology.com/cat/at2/leaflet/te92rev.htm>

Re-circulating Slurry Jet Erosion Rig



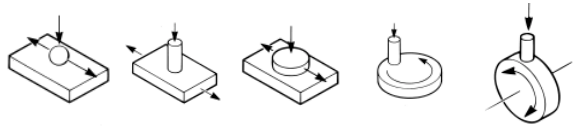
At time of going to press, we are in the process of assembling the prototype slurry jet erosion rig for the National Physical Laboratory.

SUPERSLIM Processor Upgrade:

Our standard COMPEND 2000 Serial Link Interface Module is based on a Hitachi H8/532 micro controller. This has stood us in good stead for the best part of twelve years and we are concerned that this chip may at some stage become obsolete. We have secured stock sufficient for several years' manufacture and service support, but are now starting the process of planning for a replacement. We have identified a particular Atmel micro controller as a suitable replacement, allowing enhanced performance and are aiming to design a fully backward compatible replacement for the current SLIM micro controller PCB.

WORK COMPLETED:

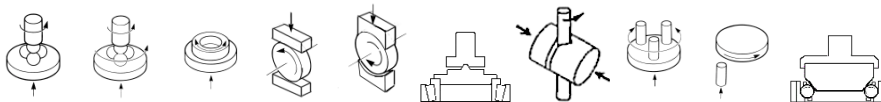
TE 88 – Multi-Station Friction & Wear Test Machine - Design Upgrade



We have completed a re-design of the TE 88 to make the unit physically smaller with the aim of reducing the size of the sub-assemblies and thus making the process of changing between test configurations easier for the operator. We have also replaced the spring balance on the loading system with a digital readout.

<http://www.phoenix-tribology.com/cat/at2/leaflet/te88.htm>

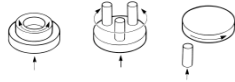
TE 92 Micro Processor Controlled Rotary Tribometer – Rationalization



Over the last couple of years we have built numerous different versions of the TE 92, TE 92HS and TE 92M machines. The former two machines have 1.44 kW motors and the latter a 4 kW motor. Recent combinations have included the standard features of the TE 92 and TE 92HS in conjunction with the 4 kW motor of the TE 92M. We have now completed a complete design review of all machines with a view to increasing the number of common components and thus interchangeability of parts and adapters. A comprehensive guide to the different options is now included on the web site.

<http://www.phoenix-tribology.com/cat/at2/leaflet/te92rev.htm>

TE 92 Micro Processor Controlled Rotary Tribometer – On-line Wear



We have now added a new test adapter for the pin on disc and thrust washer test configurations with a capacitance displacement gauge mounted centrally within the test bath targeted on the rotating upper specimen to facilitate on-line wear measurements.

<http://www.phoenix-tribology.com/cat/at2/leaflet/te92rev.htm>

DN 55 Dry Sliding and Fretting Test Machine – 1200 C Capability

We have completed several versions of the DN 55 machine during the year, with the most recent design incorporating a new furnace arrangement and test configuration allowing tests to be performed at temperatures up to 1200 C. This thus becomes the hottest tribometer we have produced to date.

<http://www.phoenix-tribology.com/cat/at2/leaflet/dn55.htm>

UPGRADES TO EXISTING PRODUCTS:

COMPEND 2000

We are continuing to provide software and hardware upgrades to existing DOS based Plint tribology products. In addition, we are more than happy to look at providing COMPEND 2000 upgrade packages for other manufacturers' test machines.

OTHER NEWS:

The Cambridge Tribology Course 2005

The 2004 course was fully subscribed. The dates for the next annual three-day course are confirmed as Wednesday 28th to Friday 30th September 2005. Details can be viewed at:

<http://www.ifm.eng.cam.ac.uk/tribology>

Contract Testing

We have now added links on our web site to various organisations interested in carrying out contract test work using Plint and other manufacturers' test machines. If anyone else is interested in having a link please e-mail us details following the format used on the web site.

<http://www.phoenix-tribology.com/cat/at2/index/contract.htm>

Further to this, early in the new-year we will be providing Falex Tribology NV in Belgium with a TE 77 High Frequency Friction Machine with the intention that they should use the machine for contract testing and also for performing demonstration tests for Phoenix Tribology.

Recently Published Papers

We continue to add new published papers to our reference database, with a full listing included on the web site. Please do continue to advise us of papers that you are publishing and that we should list.

Web Site on CD ROM

If you would like to view our web site off-line, we can provide you with a copy of the latest web site on CD ROM.

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Phoenix Tribology Ltd