

TRIBOLOGY UPDATE: ISSUE 44 – June 2024

This is the latest issue of our Tribology Update newsletter.

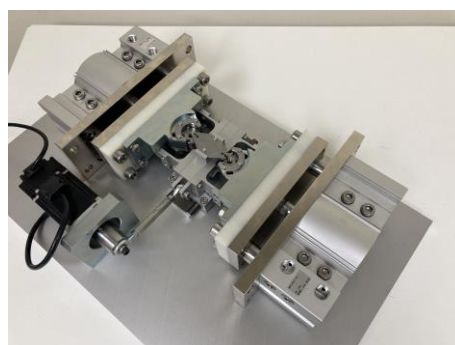
WORK IN PROGRESS – DEVELOPMENT

Miniature Oil Pre-conditioner



We have just started producing test samples with our prototype miniature reactor. Treatment processes are run under nitrogen, to avoid creation of explosive mixtures. The gases we are planning to use include 10% H₂ - 90% N₂ mixture, low concentrations of NO in N₂, low concentration of NH₃ in N₂ and superheated steam. Once generated, we plan to compare the performance of the conditioned lubricants, against untreated samples, using standard TE 77 test procedures.

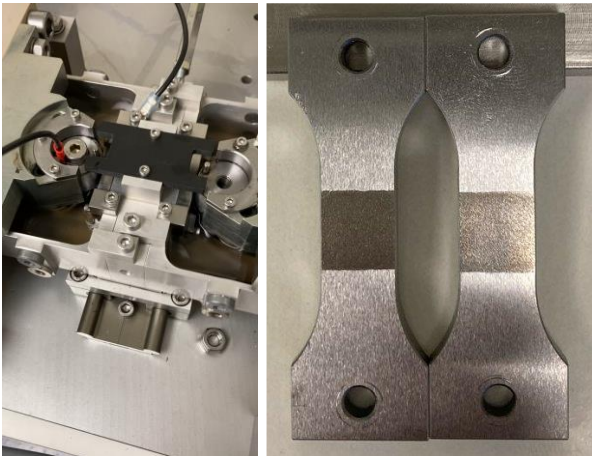
TE 55 Micro-pitting/Bearing Fretting/Adhesion Delamination



We have expanded the range of test geometries we are experimenting with on our prototype.



We have also performed tests with continuous current passing through a rolling-sliding contact.



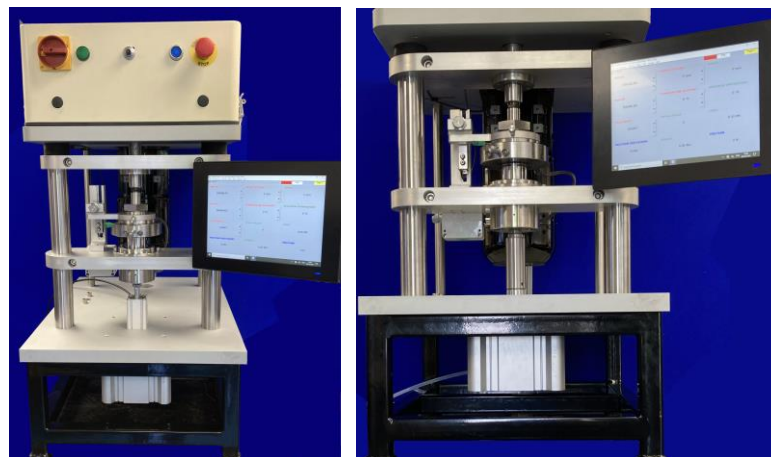
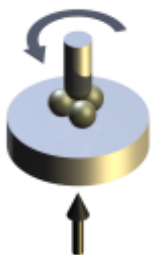
A substantial amount more work is required, but initial results are both interesting and encouraging.

COMPLETED PROJECTS – DEVELOPMENT

Value Engineered Standard Test Machines

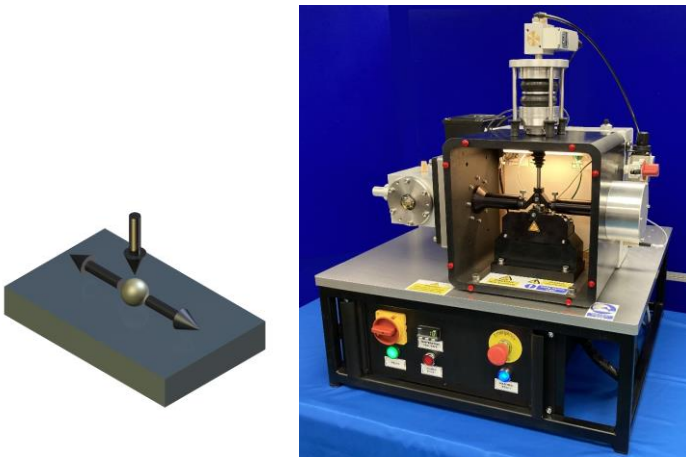
Having devoted a considerable amount of effort, in recent years, to developing a number of very challenging, high-end, test machines, we thought we would relax a bit by doing a bit of engineering design that did not involve hydrogen, high pressures or enormous speeds. The result is a new range of value engineered test machines, primarily designed for performing ASTM and similar standard tests.

Standard Test – Four Ball



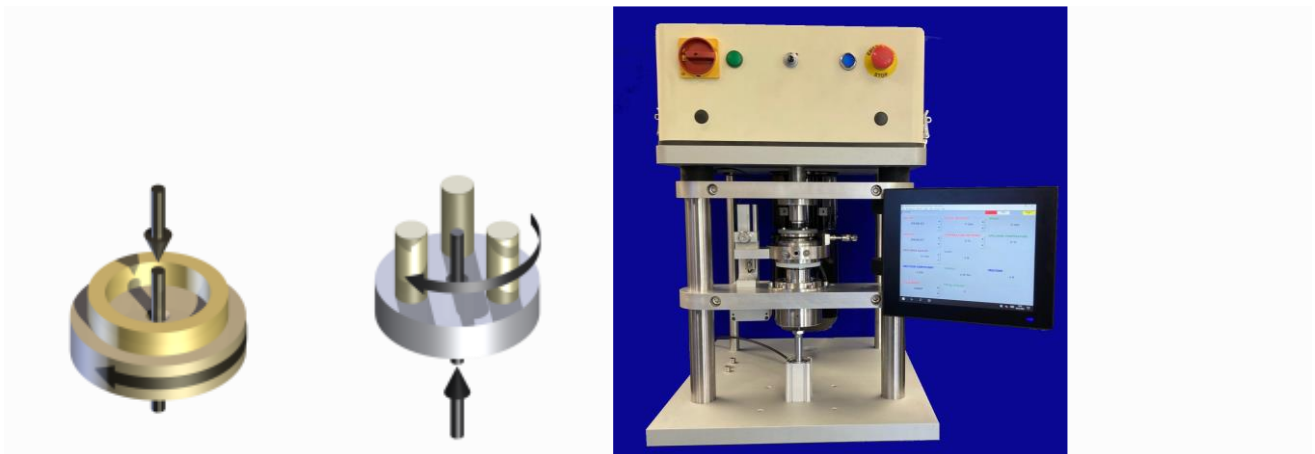
This machine incorporates two load actuators, one, low range, for four ball tests, and one high range, for four ball EP tests. A touch-screen PC is provided with pre-programmed test sequences.

Standard Test – Reciprocating Tribometer



This mechanically driven, short stroke, reciprocating tribometer can be used for running tests with ball on flat test geometry, following procedures specified in numerous ASTM standard tests.

Standard Test – Thrust Washer



This machine is designed for running dry tests in accordance with ASTM D3702 thrust washer and G99 in three pin on disc test procedures. An optional capacitance probe can be incorporated in the test assembly for on-line wear measurement.

TE 65 Multiplex Sand/Wheel Abrasion Tester



We have done a major design rationalisation and re-packaging of the TE 65, which has resulted in a price reduction of approximately 35%, compared with previous designs. The new machine is much more compact than earlier units and the frame can be disassembled for shipping.

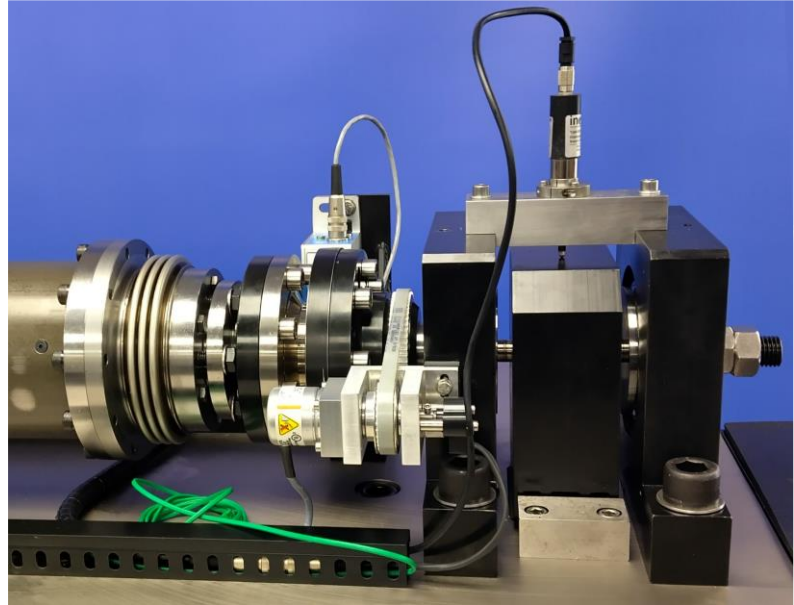
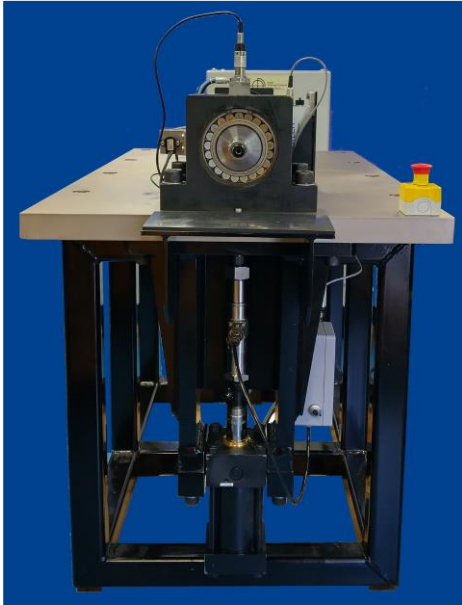
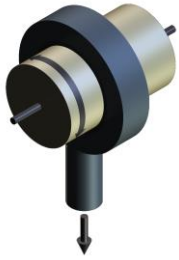
WORK IN PROGRESS – PRODUCTION



Current orders include a welcome return to production of [TE 85 Eight Station Orbital Tooth Brushing Rig](#) and [TE 89 Hip & Knee Joint Friction Simulator](#).

COMPLETED PROJECTS – PRODUCTION

[DN 22 High Load Plain Bearing Friction and Wear Rig](#)



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Phoenix Tribology Ltd