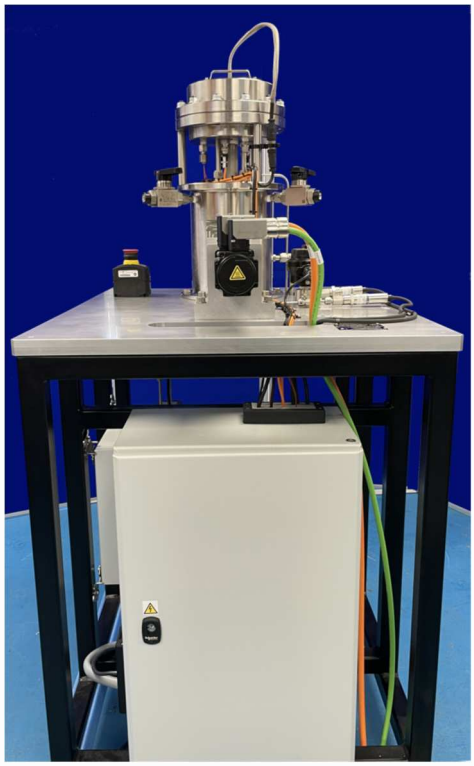
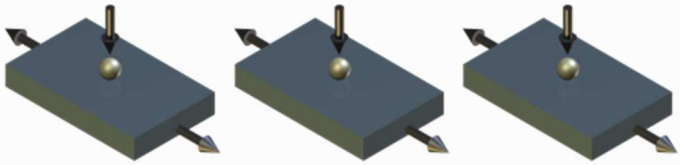
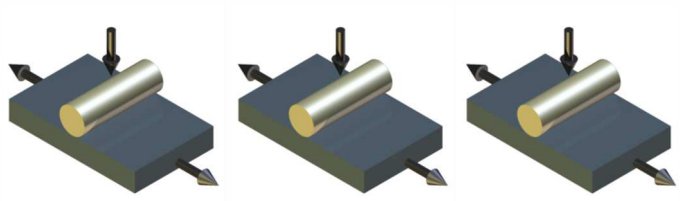
TE 60 HIGH PRESSURE HYDROGEN RECIPROCATING TRIBOMETER



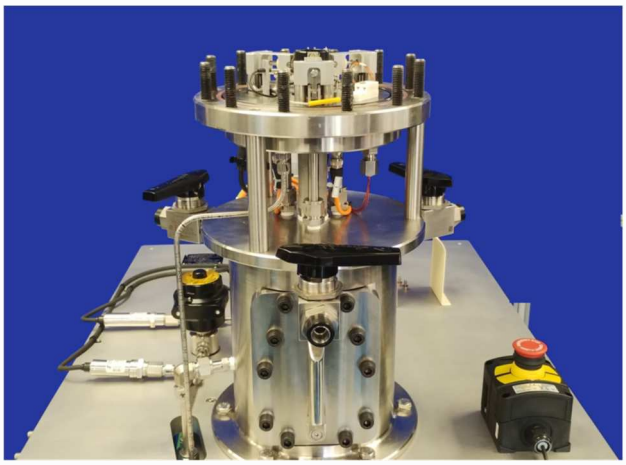
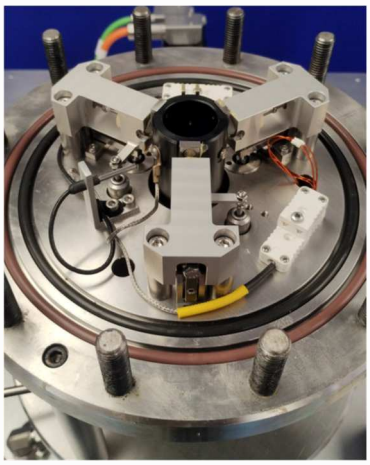




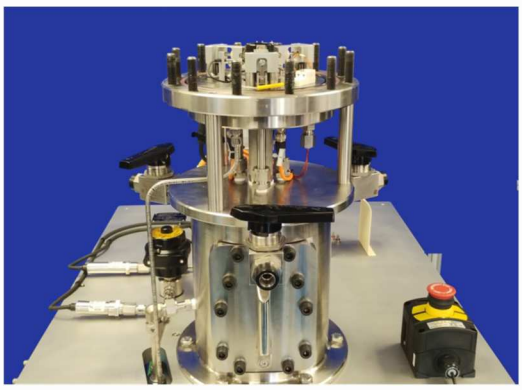
Description

TE 60 is a three-station reciprocating tribometer, designed around a high pressure chamber, for experiments under hydrogen and other gases. It includes a vacuum pump for purging the chamber before charging with a chosen gas, so can also be used for tests under medium vacuum. Tests may be run with plate specimen temperatures from -50°C to +150°C.

Chamber

The test assembly, comprises three ball or line contact fixed specimen carrier assemblies, mounted on the top of the pressure vessel. A reciprocating drive projects upwards between the fixed specimen carriers and has locations for three plate specimens.


Reciprocating motion is generated by a manually adjusted, variable stroke, crank mechanism, a lower chamber. This is driven by an externally mounted, ATex rated, geared servo motor, via a magnetic coupling.

Load is applied by pre-tensioning load springs with dead-weights, with the extended springs clamped and the dead-weights removed before the chamber is pressurised.

Evacuating, Purging, Charging and Venting

The chamber is supplied fitted with the necessary ports and valves and pressure/vacuum sensors to allow charging of the system. External gas handling and venting systems are not included, but must be installed by the user, in accordance with local standards and safety requirements.

It is recommended that all gas connections are hard plumbed in industry standard stainless steel tubing. It is essential that potentially explosive and asphyxiating gases are safely discharged, outside the laboratory, in accordance with local safety regulations.

The normal procedure for charging is to start by evacuating the chamber, to remove as much air as possible. The chamber is then purged, then pressurised, with nitrogen or inert gas. The purge gas is then vented and evacuated. The chamber is then slowly charged with hydrogen (or other test gas) and the specimens soaked for the required number of hours, before the test is started. At the end of the test, hydrogen is slowly vented from the chamber, if necessary, diluted with nitrogen or inert gas.

Peripheral Systems

A cartridge heater and temperature controller are provided for heated tests and a laboratory refrigeration unit with refrigerant probe for cooled tests.

Control and Data Acquisition

Control and data acquisition facilities are provided by a PC in conjunction with a Serial Link Interface Module, High Speed Data Acquisition Card and COMPEND control and data acquisition software.