Operating Instructions

Universal Friction Tester (UFT)

RHOPOINT UFT
UNIVERSAL FRICTION TESTER

Thank you for purchasing this Rhopoint product.

Please read these instructions carefully before operating this product and retain them for future reference. The images shown in this manual are for illustrative purposes only.

Manufactured by Rhopoint Instruments in the United Kingdom

This instruction manual contains important information about the setup and use of the Rhopoint Universal Friction Tester (UFT). It is therefore essential that the contents be read before powering up and using the instrument.

If this instrument is passed to other users you must ensure that the instruction manual is supplied with the instrument. If you have any questions or require additional information about this product, please contact the Rhopoint Authorised Distributor for your region.

The technology and components used in the device are based on state-of-the art optic and electronics. As part of Rhopoint Instruments commitment to continually improving the technologies used in their products, they reserve the right to change information included in this document without prior notice.

Contents

Storage and Handling

To ensure safe and reliable operation of this instrument it should be placed on a rigid, flat, level surface.

Prevent exposure of the instrument to direct sunlight for prolonged periods of time and to continuous humidity and condensation.

Do not place the instrument near electromagnetic fields or in an environment with excessive vibrations.

The instrument's metal body and touchscreen are resistant to a variety of solvents; however, the recommended cleaning method is by using a soft damp cloth.

Only use approved accessories and spare parts. All spare parts are available from Rhopoint Instruments Ltd and approved distributors.

Do not attempt to open the instrument. There are no user serviceable parts inside. Please contact Rhopoint Instrument or an approved distributor for your service requirements

About the Universal Friction Tester

The Universal Friction Tester (UFT) is an easy-to-use instrument designed for the measurement of static and dynamic coefficient of friction, peel, tear and seal adhesion testing.

The instrument is designed for use in the production environment as a simple QC checking instrument. Optional full analysis software is available providing batch-to-batch comparisons, PDF reporting and the ability to create bespoke tests. This software can be included with the instrument when purchased or added as an upgrade at a later time to provide this functionality.

Who measures slip/friction?

Friction testing is extensively used in the packaging industry to measure the "slippiness" of a product, with the aim of predicting feeding and running speed on an automatic gluing, erecting, filling or packaging line. Other industries that test for slip include the paper industry (for the automatic feeding of photocopy paper, envelopes and banknotes), flooring manufacturers(for the anti-slip properties of polishes), plastic manufacturers (the frictional properties of packaging).

What is slip/ friction? A product's "slippiness" is characterised by its coefficients of friction-

Static coefficient of friction=Fs/N

Dynamic coefficient of friction=Fd/N

Where Fs is the maximum static frictional force and the Fd is the average dynamic frictional force. N is the Normal force, i.e.the force of gravity acting on the sample and test sled.

In practical terms, the static slip relates to the force required to get two resting surfaces moving, dynamic slip is the smaller force that is required to keep the surfaces moving once this initial "inertia" is overcome. These values are expressed as ratios and do not have units, they are quoted as a decimal value between 0 and 1,for example a surface might have static slip coefficient of 0.35 and a dynamic slip coefficient of 0.18.

How is Coefficient of Friction Measured (COF)?

All methods of COF measurement involve preparing a sample into two flat pieces, the samples are placed together and a weight is applied (the normal)force. One of the samples is held in a fixed position, a force is applied to the other sample until they begin to slip against one another.

Flat Bed Friction Testing

To measure Static and Dynamic coefficients of friction it is necessary to use a fixed bed instrument. These instruments use a motor to pull a sled across the sample, using a load cell to measure the forces. Original slip testing instruments were converted tensile testers that used a cord to pull the sample. The use of a cord has now been removed from most friction measurement standards due to the uncertainty added by its own elasticity and problems with sample positioning. The UFT from Rhopoint uses mechanical linkages to apply the force and uses automatic sled placement for very accurate sample positioning with variable dwell time setting before testing.

How can Coefficient of Friction (COF) Values relate to packaging speeds?

COF can often be related to the feeding and running attributes of products, for example food cartons have a slip coefficient that is related to the type of varnish applied, how well it has been cured and how thickly it has been applied. Cartons that have a very low static coefficient of friction may have handling difficulties asthey will tend to slide apart and are difficult to place into feeding hoppers. In contrast products which have a high coefficient of friction will tend to stick together and are prone to misfeeding due to multiple cartons entering the packaging line. Different packaging lines will often require products with specific surface frictional profiles to achieve their highest running and feeding speeds, it is only by measuring and specifying these values that a manufacturer can achieve maximum productivity.

What parameters affect Coefficient of Friction (COF)Values?

COF is primarily influenced by the chemical composition of the surface and its physical profile. In packaging the surface chemistry is often elated to coatings applied to a carton or the additives in a plastics film. In the paper and board making industries the friction characteristics are related to the physical profile of the sample-paper fibres, coating composition and smoothness etc.

How can detailed Frictional Force measurement help improve Productivity?

In addition to simple static and dynamic COF values the UFT-LAB produces detailed force curves which detail the surface characteristics across the test area. These force curves identify any inconsistencies on the sample surface that may reduce packing or feeding performance in the production environment. The unique strength of the UFT-LAB is that profiles can be overlayed for comparison, allowing identification of substrate or coating changes that can cause problems with product runnability. This powerful feature can highlight subtle differences in substrates or coatings that allow the user to fine tune their product for their production conditions giving optimum feeding, running and packing speeds.

Accessories

The instrument is supplied as a standard package complete with all accessories required to power and operate the unit.

Universal Friction Tester (UFT)

- Universal Friction Tester
- Traceable calibration certificate
- 1 x bulls eye spirit level
- 2 x sample securing clamps, 4 x sample securing magnet pins
- 1 x 100g calibration check weight
- 1 x calibration pulley attachment with fixing attachments
- Peel and seal testing attachment
- USB drive containing documentation
- DC power pack with mains cables.

Optional Accessories

- UFT Lab software package
  Optional full analysis software allows for detailed statistical and graphical analysis of results, full PDF reporting and the creation of custom test routines.
- Universal Sample Cutter
- Sample cutting templates

Functional Overview
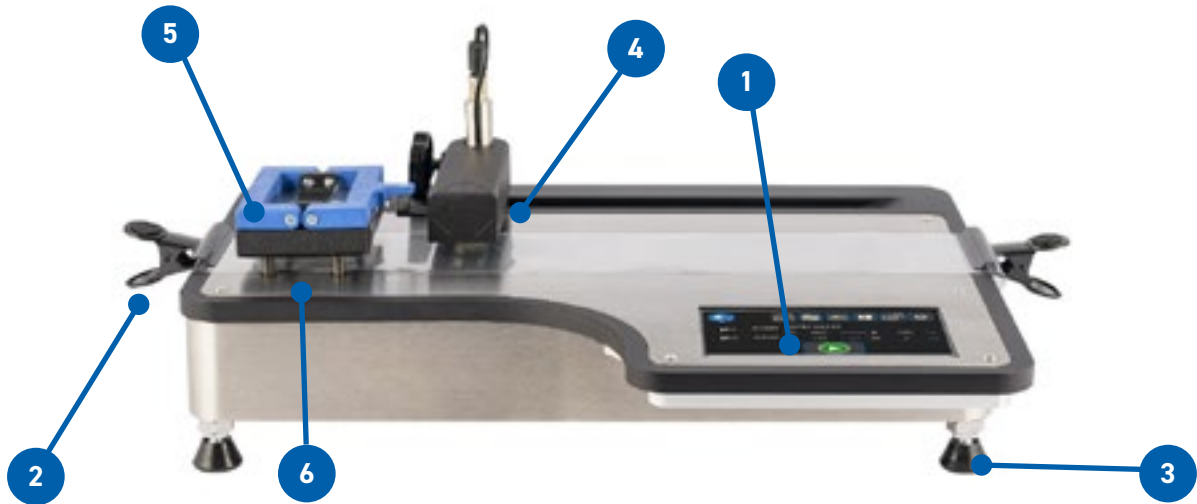
Label No.	Function
1	Display and touch-screen
2	Sample securing magnets/clips
3	Levelling feet
4	Sled traverse arm
5	Sled
6	Automatic sled placement pins
7	USB socket
8	Ethernet connector
9	PSU Connnector / Power Switch
10	LED status indicator
11	Mains connection

Icons Used

Tabs	Function
	Main Screen (Home)
	Friction test settings menu
	Peel and seal test settings menu
	Tear test settings menu
	Instrument settings menu
	Power off
	Tare
	Emergency Stop
	Traverse arm, return to home position

⚠ WARNING– THE UFT HAS MOVING PARTS THAT MAY CONSTITUTE A PINCHING RISK FOR FINGERS. REASONABLE CARE MUST BE TAKEN AT ALL TIMES – DO NOT TOUCH THE MOVING PARTS DURING OPERATION AND ENSURE HAIR AND CLOTHING IS KEPT CLEAR.

Unpacking / Set Up

Unpack the unit carefully and check the contents against the packing list.

Place the instrument on a suitable rigid surface avoiding areas where vibration may affect measurements, i.e. close to heavy machinery.

Ensure the instrument is level before use by placing the included spirit level central on the measurement platen and adjusting the levelling feet until the spirit level bubble remains central. This is important and must be periodically checked and adjusted each time the equipment is relocated.

Power

The UFT is powered by a low voltage DC power supply that must be connected to an appropriate mains power input connector.

Switching the Unit On/Off

The UFT has a built in CPU which takes approximately 30 seconds from power up to boot into measurement mode.

⚠️ The UFT has a built in CPU which takes approximately 30 seconds from power up to boot into measurement mode.
It is important that the user follows the power up and power down procedures below. With the mains power supply connected, turn the isolation switch to the on position.
After approximately 30 seconds the blue power status led will pulse on and off.
When the blue status LED is pulsing, the instrument can be powered up. Power up the instrument by pressing the power switch (8), the blue power status led will start to flash on and off indicating the power up sequence - please note the front screen remains OFF until this sequence is complete (15 seconds). Once the screen is ON the power led will stop flashing and stay lit.
DO NOT switch off the power during boot up as the instrument may enter a recovery mode. If this occurs, please contact Rhopoint Service for instructions on re-initializing the instrument.
To power down the unit press the power off icon, a larger icon will be displayed on the screen. Press and hold the power icon until the green ring around the icon is complete, the unit will then power off.
Turn the power switch off, the instrument can now be safely disconnected from the power supply.

It is important that the user follows the power up and power down procedures below.

With the mains power supply connected, power up the instrument using the power switch (8), a blue power led underneath will illuminate and start to flash on and off indicating the power up sequence - please note the front screen remains OFF until this sequence is complete (15 seconds). Once the screen is ON the power led will stop flashing and stay lit.

It is not advisable to switch off the power during boot up as the instrument may enter a recovery mode. If this occurs, please contact Rhopoint Service for instructions on re-initializing the instrument.

To power down the unit press the power off icon, a larger icon will be displayed on the screen. Press and hold the power icon until the green ring around the icon is complete, the unit will then power off. Turn the power switch off, the instrument can now be safely disconnected from the power supply.

> ⚠ WARNING – THE UFT IS FITTED WITH A PRECISION LOAD CELL, IT IS IMPORTANT TO ENSURE THAT THE SLED TRAVERSE ARM IS NOT BLOCKED BY ANY OBSTRUCTIONS ON THE TEST BED WHEN IN MOTION. IN BUILT LOAD CELL PROTECTION WILL PREVENT DAMAGE TO THE INSTRUMENT BY STOPPING TRAVERSE MOVEMENT IF EXCESSIVE PRESSURE IS MONITORED ON THE ARM. ALWAYS REMOVE THE SLED AND SAMPLES FROM THE INSTRUMENT BEFORE RETURNING THE LOAD CELL TO THE HOME POSITION.

Taring the instrument

After powering up it is necessary to tare (zero) the instrument. To do this, press the tare icon on the touchscreen (as shown below).

⚠ ENSURE THE SLED IS NOT ATTACHED TO THE INSTRUMENT
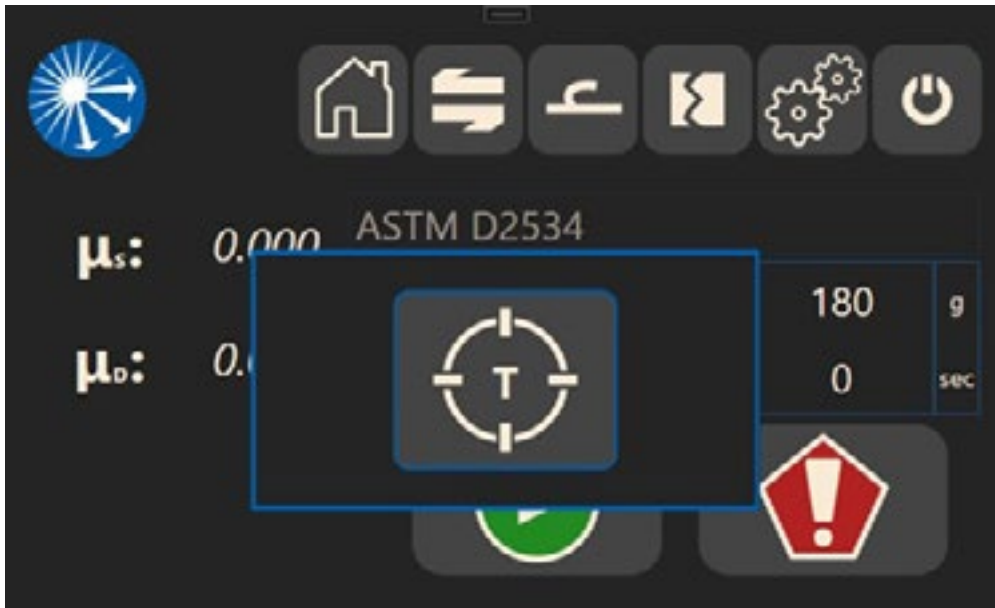
Once the UFT has tared the traverse arm will require resetting to its home position. The screen will display an icon as shown below, press the icon to reset the traverse arm.
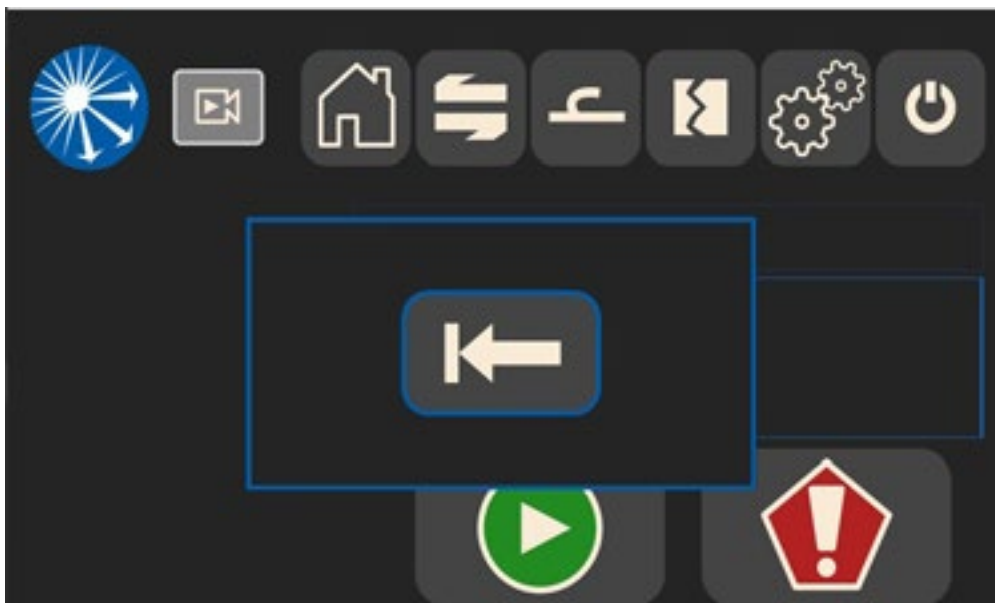
Friction Testing
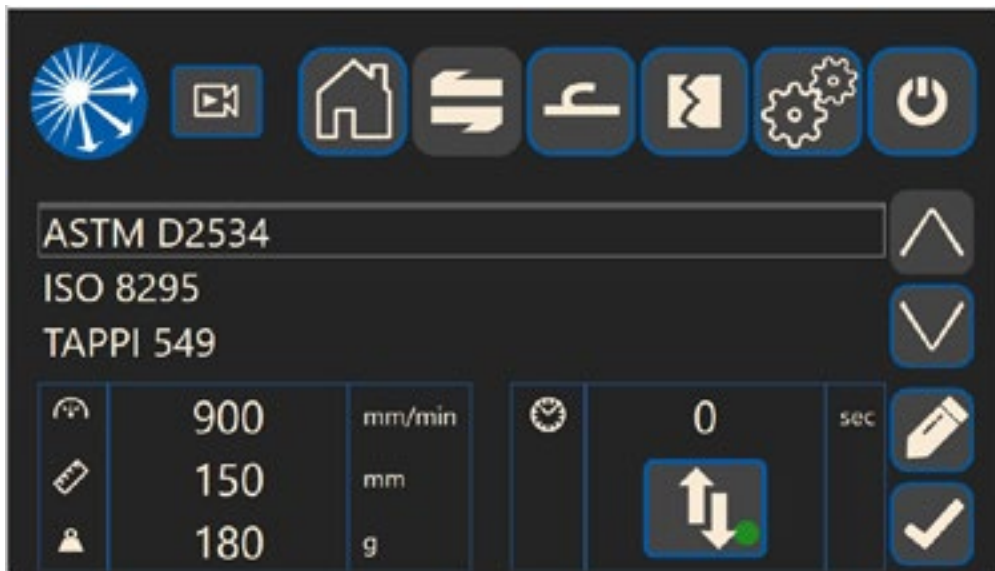
The Friction Testing settings menu allows the user to select either a preset standard test method from the displayed list or set their own custom test according to their requirements. Select the test method by using the ⋀ or ⋁ buttons and confirm using ✓

The screen will display the test parameters for each method –

Traverse speed

Test distance

Applied weight

Dwell time

Enable / disable sled lift for test.

Each standard test can be edited by pressing the ✎ button to allow certain parameters to be adjusted to suit the sample size being tested.
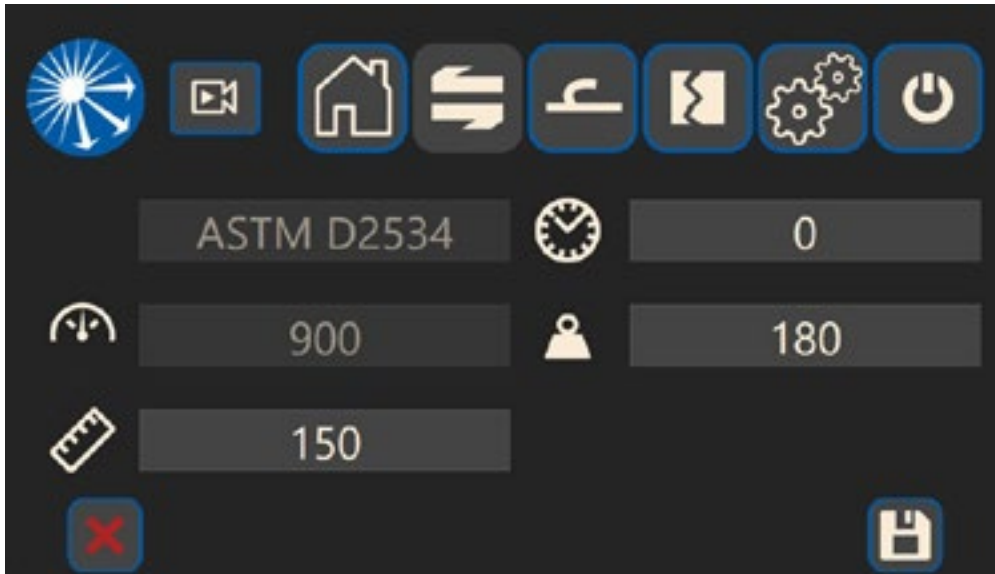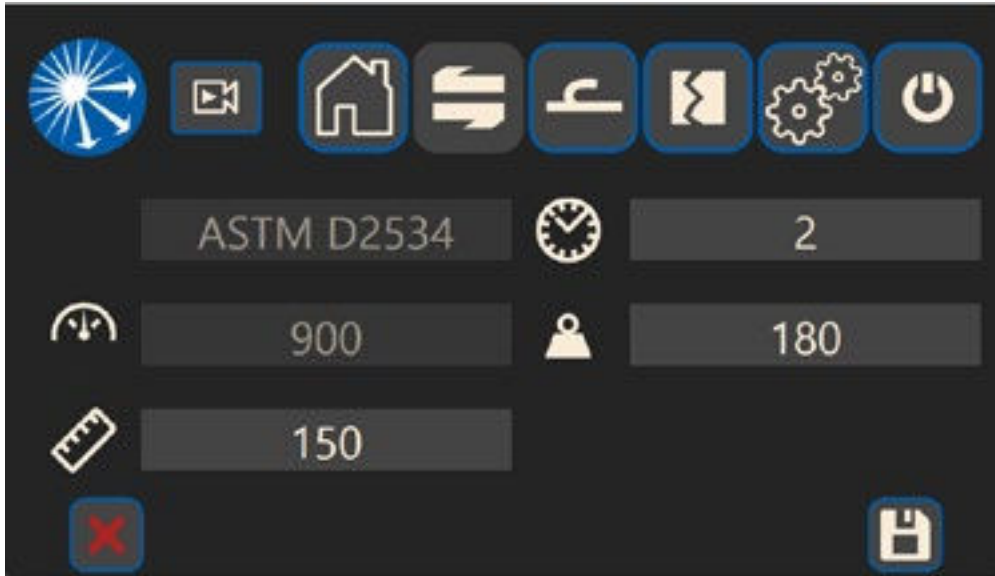
Parameters that can be adjusted are displayed in white.

To change a parameter press the corresponding numeric entry box
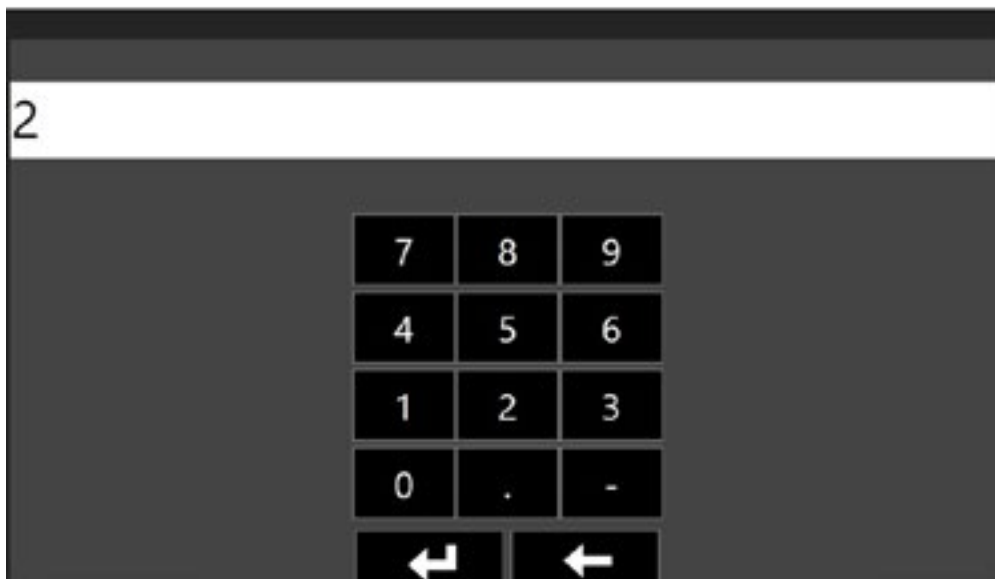
A keypad will be displayed, enter the value required and press to return to the previous menu.

Press to save the value(s). The display will return the settings menu.

The UFT allows for one custom test method to be configured and stored in the instrument.

The UFT Lab software allows unlimited custom tests. To create a new custom test, edit and re-name the test XCustom. This will then create a new XCustom test that can then be updated when another custom test is required.

Sample preparation and loading

⚠️ Ensure the samples to be tested are uncreased and free from contamination such as dust, oils etc. Take care not to touch the actual surfaces to be measured

When using the UFT for friction testing, one sample is mounted on the instrument test bed and the other on the sled. Clamps either end of the instrument test bed allow a sample of 70mm x 350mm(min) to be secured onto the test bed. If the test sample is smaller than this it can be secured at just one end or by using tape. If using tape, avoid placing this in the test area particularly if measuring thin samples such as plastic film.

The sample size for the sled should be 63.5mm square. When measuring flexible samples, the size can be 63.5x148mm and wrapped around the sled. The foam pad on the bottom will ensure a 63.5mm square contact area.

Flexible samples

Cut the sample to 63.5x148mm (template available as optional extra). Place the sled on the centre of the sample and secure one end under the retaining arm on the sled. Repeat for the other end..

Non-Flexible samples

Cut the sample to 63.5 x 63.5mm (template available as optional extra). Place the sample on the sled using thin double-sided tape.

Non-Flexible Samples ISO15359 Method

This standard requires the compressible foam pad to be on the test bed instead of the sled. It also requires a mechanism to stop the sled from twisting during the test. A separate sled is offered for this test method as an optional extra..

Adjusting the load cell height

The load cell link on the sled and the load cell should be level. If the load cell is too high it will elevate the front of the sled reducing the contact of the sample. Use the adjusting screw on the load cell arm to unlock the mechanism. Manually raise or lower the arm to the correct position and then lock into place by tightening the adjusting screw.l
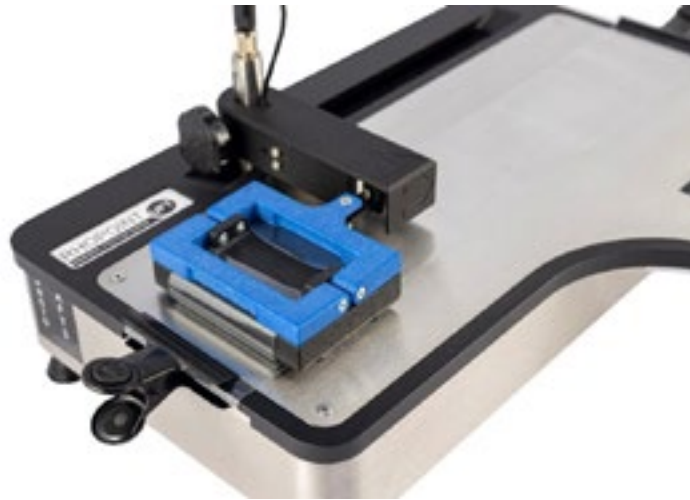
Making a measurement

With the samples correctly mounted onto the test bed and sled a test can be made. Ensure the test parameters have been setup correctly for the test required.

Press to return to the home screen.

Press to start the test,

During the test the emergency stop button can be pressed to immediately stop the test. Pressing this will abort the test and the screen below will be displayed –

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When the test has successfully completed the screen below will be displayed and the Static and Dynamic COF will be shown on the left side of the screen.

For both screens - Press , a warning message will be displayed advising to check that test track is clear; press it again to return the traverse arm to its home position

⚠ REMOVE THE SLED FROM THE LOADCELL. PLACE AWAY FROM THE TEST BED OF THE INSTRUMENT

Peel and Seal Testing

The Peel Testing settings menu allows the user to select either a preset standard test method from the displayed list or set their own custom test according to their requirements. Select the test method by using the ∧ or ∨ buttons and confirm using ✓

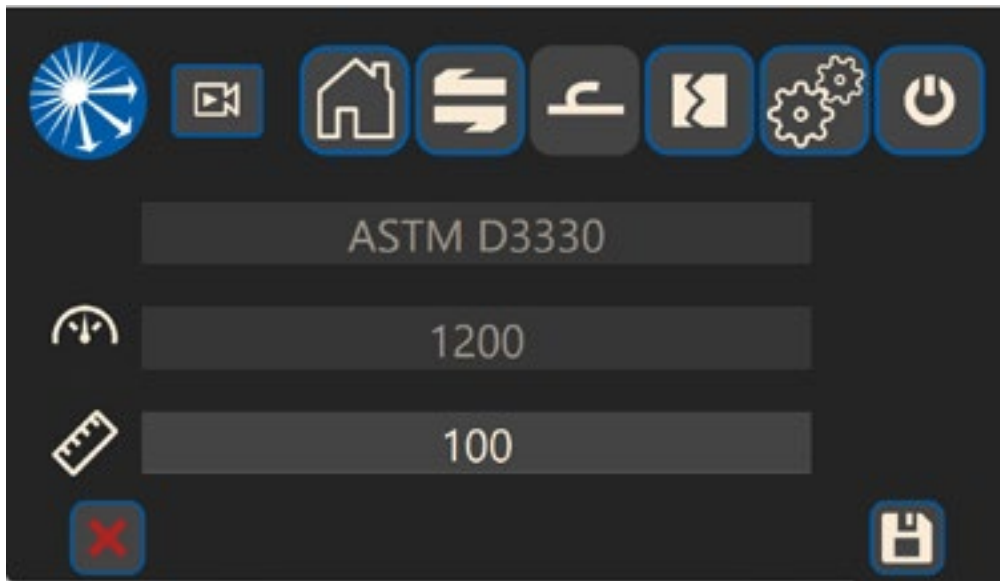The screen will display the test parameters for each method –

⌂ Traverse speed   📏 Test distance

In this menu the type of peel test can be selected

use the ∧ or ∨ buttons to select. Peel tests available are 180, T, 90, S

Each standard test can be edited by pressing the ✎ button to allow certain parameters to be adjusted to suit the sample being tested.

Parameters that can be adjusted are displayed in white.

To change a parameter press the corresponding numeric entry box

A keypad will be displayed, enter the value required and press [⏎] to return to the previous menu.

Press [💾] to save the value(s). The display will return the settings menu.

The UFT allows for one custom test method to be configured and stored in the instrument.

Sample preparation and loading

Sample clamps and fixings are supplied as standard with the UFT for Peel Testing.

180° Peel Testing

For 180° peel testing the UFT should be configured as shown in the image above.

The 180° peel test measures the force needed to separate bonded materials using an 180° angle of separation. It is suitable for testing a flexible material that is bonded to a rigid substrate.

Screw in the test fixture post at one end of the UFT and slide one of the clamps onto the post. Fit the other clamp onto the traverse arm, taking care not to put excessive load or twist the arm.

Clamp one end of the peel test plate into the clamp fitted to the fixture post.

Cut the sample to 25mm x 200mm (template available as optional extra). Mount one half of the sample on the peel test plate and wrap the other half back on itself and secure the end in the clamp on the traverse arm.

Making a measurement

With the sample correctly mounted onto the test bed a test can be made. Ensure the test parameters have been setup correctly for the test required.

Press to return to the home screen.
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Press to start the test, if for any reason the emergency stop button is pressed during the test follow the instructions as described earlier.

When the test has successfully completed the screen below will be displayed and the Force and test distance will be shown on the left side of the screen

Press , a warning message will be displayed advising to check that test track is clear, press it again to return the traverse arm to its home position.

T Type Peel Testing

For T type peel testing the UFT should be configured as shown in the image above.

The T type test measures the force required to separate two flexible substrates that have been bonded together.

Screw in the test fixture post at one end of the UFT and slide one of the clamps onto the post as shown. Fit the other clamp onto the traverse arm as shown, taking care not to put excessive load or twist the arm.

Cut the sample to 25mm x 200mm (template available as optional extra).

Peel one end of the sample apart and clamp one end of the unbonded sample into the clamp on the test fixture post the other into the clamp on the traverse arm. This will form a T with the bonded length in the middle floating freely.

Making a measurement

With the sample correctly mounted onto the UFT a test can be made. Ensure the test parameters have been setup correctly for the test required.

Press to return to the home screen.

Press to start the test, if for any reason the emergency stop button is pressed during the test follow the instructions as described earlier.

When the test has completed successfully the screen below will be displayed and the Force and test distance will be shown on the left side of the screen.

Press , a warning message will be displayed advising to check that test track is clear, press it again to return the traverse arm to its home position

90° Peel Testing

For 90° type peel testing the UFT should be configured as shown in the image above.

The 90° peel test measures the force required to separate bonded materials using a 90° angle of separation. It is suitable for testing a flexible material that is bonded to a rigid substrate.

Screw in the peel wheel spindle pin to the end of UFT test plate.

Cut the sample to 25mm x 200mm (template available as optional extra).

Apply the sample to be tested round the Peel 90 wheel. Slide the wheel with the sample fitted onto the spindle pin. Clamp the end of the sample into the sample clamp.
Fit the sample clamp to the load cell, take care, do not put excess load or twist.

Cut the sample to 25mm x 200mm (template available as optional extra).

Making a measurement

With the sample correctly mounted onto the UFT a test can be made. Ensure the test parameters have been setup correctly for the test required.

Press to return to the home screen.

Press to start the test, if for any reason the emergency stop button is pressed during the test follow the instructions as described earlier.

When the test has completed successfully the screen below will be displayed and the Force and test distance will be shown on the left side of the screen.

Press , a warning message will be displayed advising to check that test track is clear, press it again to return the traverse arm to its home position

Seal Testing

For seal testing the UFT should be configured as shown in the image above.

The S peel test is the tensile strength of the seal at ambient temperature. It is the maximum force required to separate the two layers of a seal under particular conditions.

Screw in the test fixture post at one end of the UFT and slide one of the clamps onto the post as shown. Fit the other clamp onto the traverse arm as shown, taking care not to put excessive load or twist the arm.

Cut a segment of the seal to produce a test strip (25.4 mm wide and at least 75 mm long). The edges must be clean-cut and perpendicular to the direction of the pouch seal. Depending on which technique is being used as per the test method mount each side of the sample into the sample clamps.

Making a measurement

With the sample correctly mounted onto the UFT a test can be made. Ensure the test parameters have been setup correctly for the test required.

Press [home icon] to return to the home screen.

Press to start the test, if for any reason the emergency stop button is pressed during the test follow the instructions as described earlier.

When the test has completed successfully the screen below will be displayed and the Force and test distance will be shown on the left side of the screen.

Press , a warning message will be displayed advising to check that test track is clear, press it again to return the traverse arm to its home position

Tear Testing

For Tear testing the UFT should be configured as shown in the image above.

The Tear test is the force required to make a tear in a sample.

Screw in the test fixture post at one end of the UFT and slide one of the clamps onto the post as shown. Fit the other clamp onto the traverse arm as shown, taking care not to put excessive load or twist the arm.

Cut the sample to 50 x 200mm with a cut in the middle as defined in the specification (template available as optional extra).

Separate each side of the sample and clamp one end into the clamp on the test fixture post the other into the clamp on the traverse arm. This will form a T with the uncut length in the middle floating freely.

Making a measurement

With the sample correctly mounted onto the UFT a test can be made. Ensure the test parameters have been setup correctly for the test required.

Press to return to the home screen.

Press to start the test, if for any reason the emergency stop button is pressed during the test follow the instructions as described earlier.

When the test has completed successfully the screen below will be displayed and the Force and test distance will be shown on the left side of the screen.

Press , a warning message will be displayed advising to check that test track is clear, press it again to return the traverse arm to its home position

Settings Menu

The instrument settings menu allows general configuration of the UFT.

Settings Menu Home

Taring Options

Press to perform a load cell check

Press to re-tare

Press to return to home menu

 Sled lift and traverse arm operation –

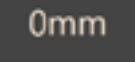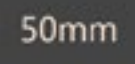Press to return traverse arm to home position (with emergency stop)
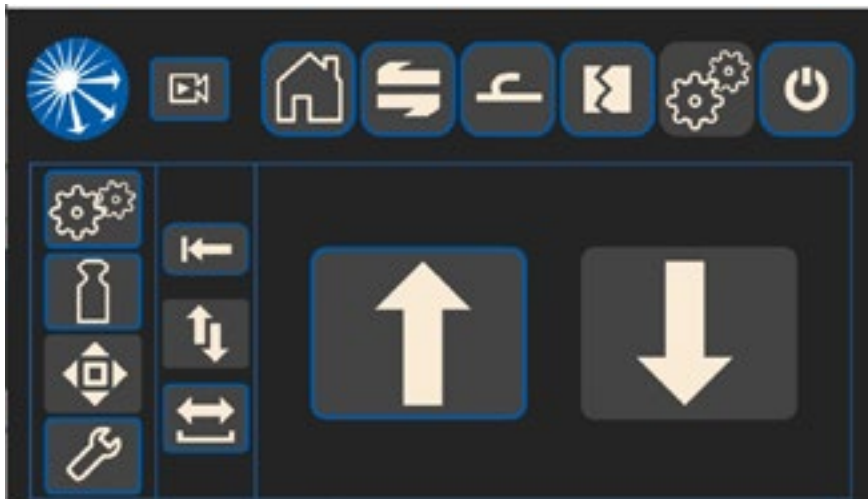
Press to raise sled lift pins

Press to lower sled lift pins

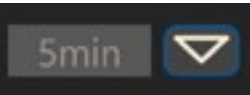Press to set traverse arm at 0mm home position

Press to set traverse arm 50mm from home position to check distance travelled is correct.

Press to return to home menu

 Display configuration

Press to enable / disable sleep mode

Press to lower sled lift pins

Press to switch between high and low contrast background

Press to select language

 Ethernet connection configuration

(Only active when using LAB software)

IP Address ---.---.---.---

Gateway ---.---.---.---

Mask ---.---.---.---

Port 0

Press to connect to PC, indicator will turn green when connected and display connection details.

 System information

Displays system configuration information and diagnostics

 Factory menu for firmware upgrades

Full Analysis Software

The Universal Friction Tester software features graphical reporting of results and allows unlimited custom test routines to be created in minutes. Tolerances for both static and dynamic COF can be set for each test routine allowing for easy identification of non-conformances.

Multiple tests can be run per file and a graphical trace given for each. A master or reference file for the material can be overlaid to give a quick visual comparison of batch-to-batch consistency and quality.
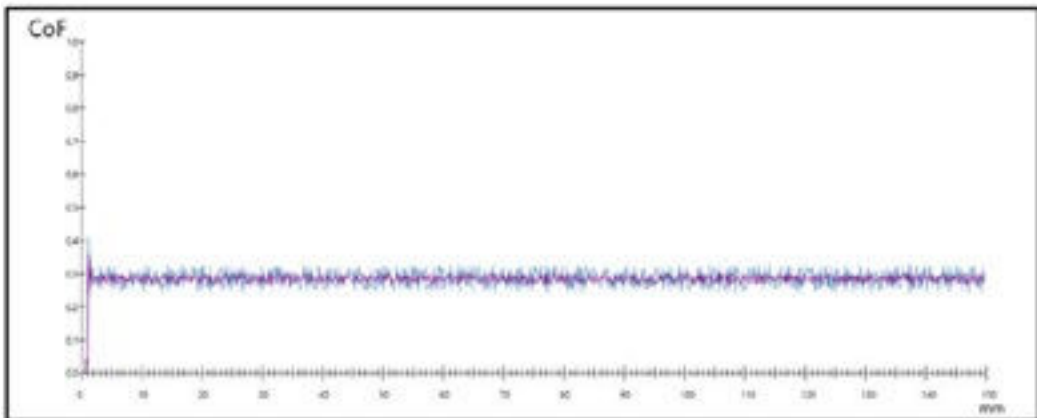
Full graphical and statistical analysis of test results can be printed to PDF for easy reporting.
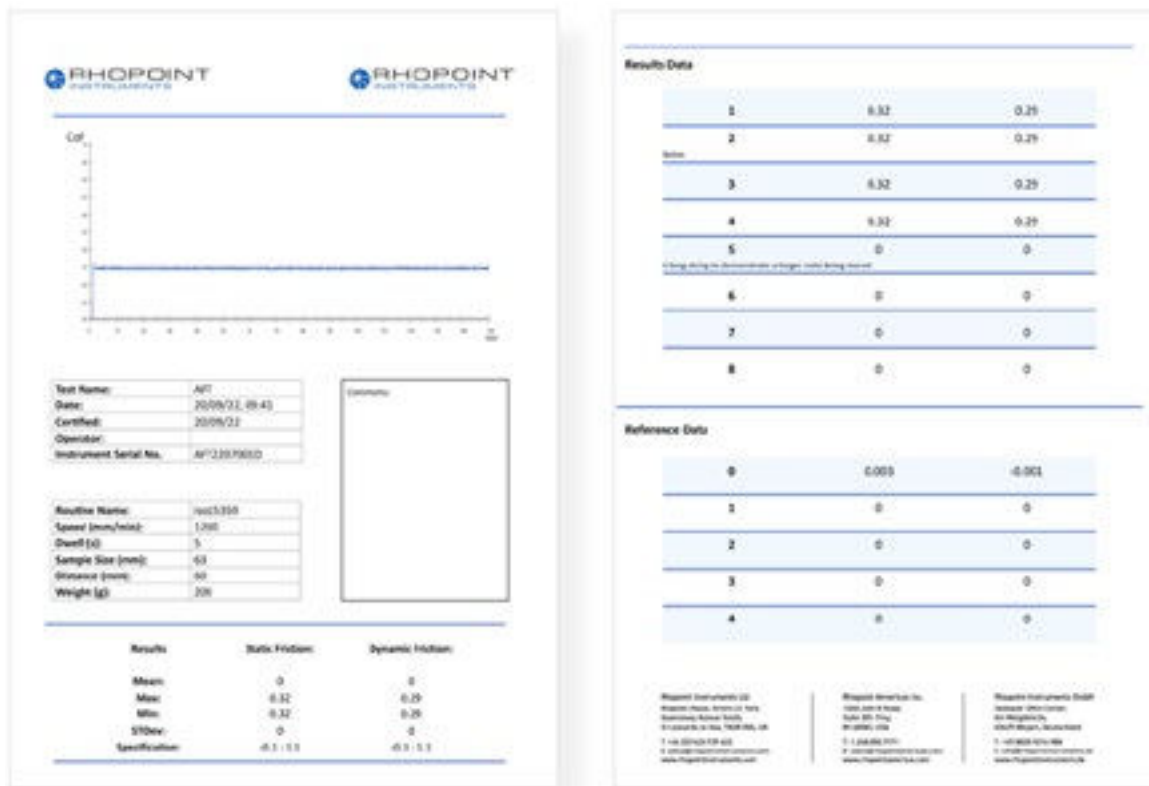
Multiple tests can be run per file and a graphical trace given for each. A master or reference file for the material can be overlaid to give a quick visual comparison of batch-to-batch consistency and quality.

Software Installation

The software can be installed on a PC running Windows 10 (or later). It is supplied on a USB memory key along with a copy of this manual. To install, insert the USB key into an available USB port and use File Explorer to navigate to the device. Copy all files to any desired location on the PC's hard drive. Click setup to run the software.
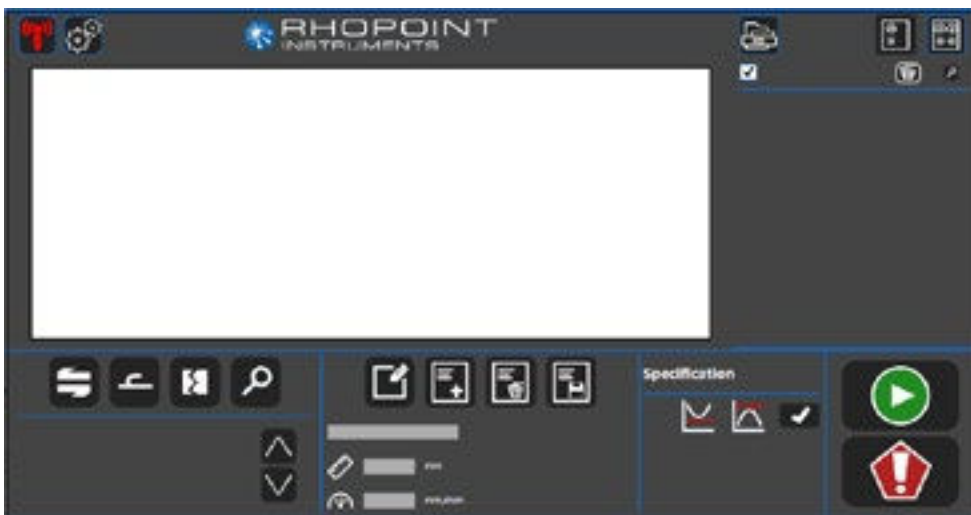

Included with the software is a USB to ethernet converter and an ethernet cable. Plug one end of the ethernet cable into the converter and the other into the ethernet connector on the UFT. .

Ethernet
Connector

Plug the USB connector on the converter into an available USB socket on the PC.

To connect the PC to the UFT, click the red antennae icon in the top left-hand corner of the display, a connection prompt will be displayed
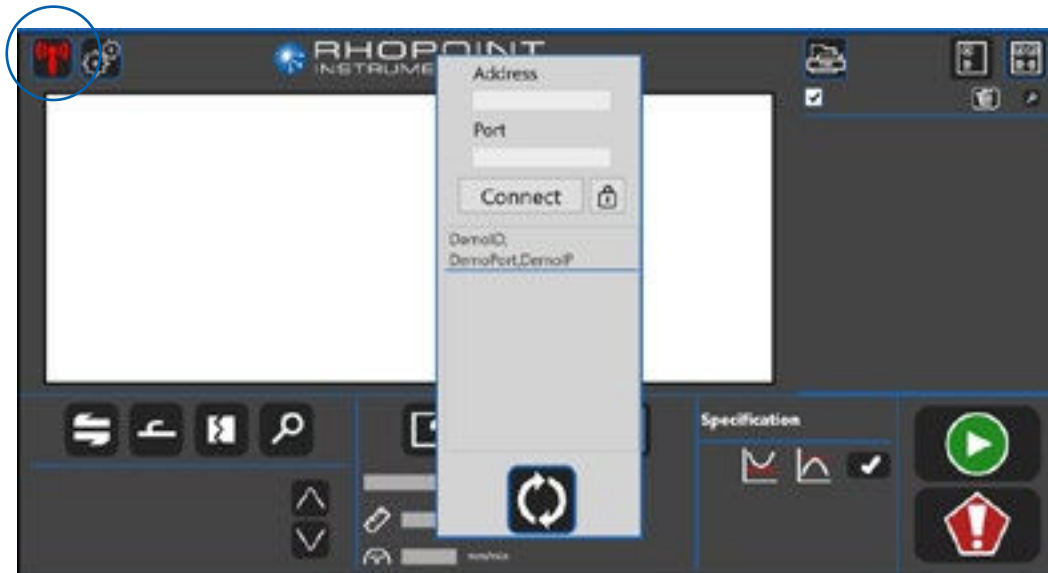
Click the icon to refresh the connection list, then click Connect. Note: as there is only one device directly connected to the PC there will only be one address displayed. In a LAN application, multiple UFT's on a network can be individually selected and controlled. The padlock icon is used to unlock the Address and Port boxes to enable manual entry.
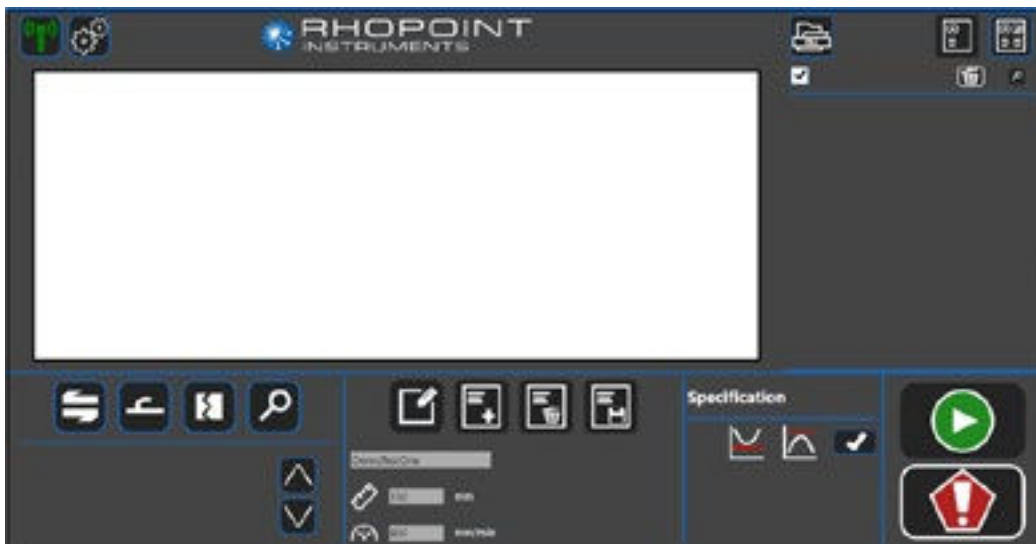
When successfully connected, the antennae icon will turn green, the UFT can now be remotely controlled using the software.

Software Functionality

The bottom left-hand section of the display allows the selection of the type of test and previously saved test configurations.

Icon	Label
	Friction Test
	Peel Test
	Tear Test
	Show all Tests

Use the up and down icons to move through the list.

Each time a test is highlighted the corresponding test parameters (speed and distance) are displayed in the lower mid-section of the display.
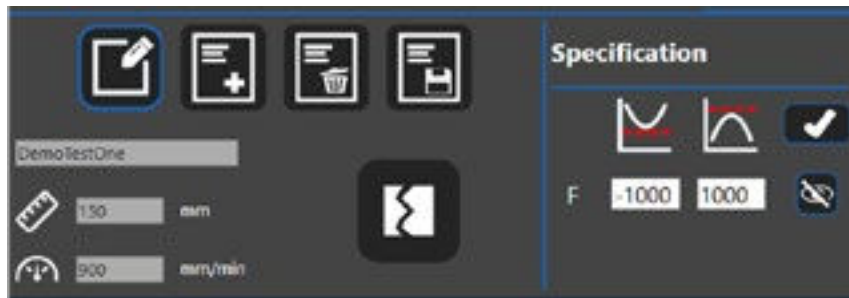
This section also allows the user to Edit a test, Add a new test, Delete a test and Save a test. It also allows the addition of max and min limits for both Static and Dynamic COF for the required specification.

To edit a test click this will allow access to the Add, Delete and Save buttons.

The data entry boxes underneath will become accessible.

When a test has completed, measurement data is displayed in the top right-hand section.

In this section, notes can be added after each measurement in the white boxes (1) to the right of the data. Simply click on the box to add the note.

Each time a test is highlighted, the corresponding test parameters (speed and distance) are displayed in the lower mid-section of the display.
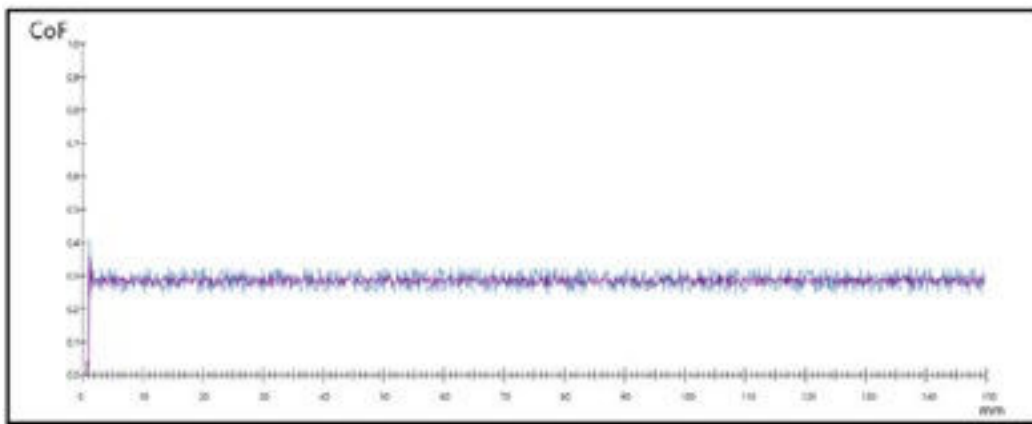
When selected (2) the measurements are displayed on the displays central area.

Multiple results can be displayed for comparison, to change the colour of each measurement click on the coloured area (3) next to the tick box.
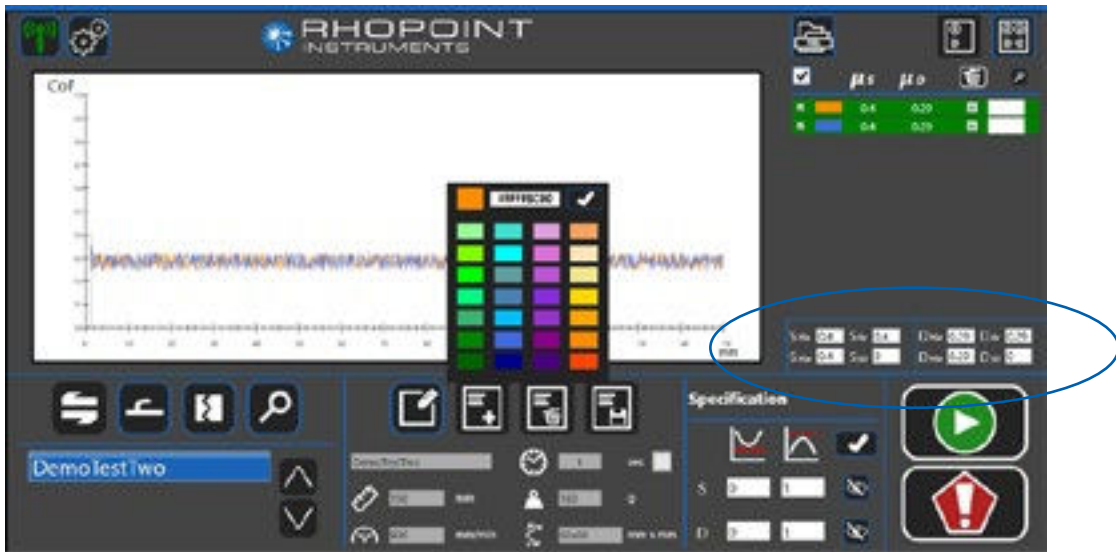
Statistical information is updated each time a measurement is made and is displayed a the bottom of this section.

Measurement data can also be selected for deletion by using this tick box and clicking the delete button. To delete all measurements select the "select all" box at the top row to select all measurements and click the delete button.

At the top of this section there are buttons for printing measurement data, displaying current measurement data and uploading previously stored measurement data for comparison.

To print click the button a new window will be displayed

This window allows the results to be output in various formats. The main comments area allows the user to enter details about the sample.

The operator name can be entered into the window underneath. Clicking the address button allows entry of the users address. All this information will be included in the output file in a preformatted template.

The results can be output in pdf, csv, or both. Clicking the relevant button prompts the user for a location to store the results output.

The load button allows previously stored results to be uploaded to either continue adding further measurements or to output again in pdf, csv or both.

The two buttons at the top right-hand side of this section allows the user to view the current results   or

to upload a file containing previously saved measurement results for comparison.

Click   to return to the main screen
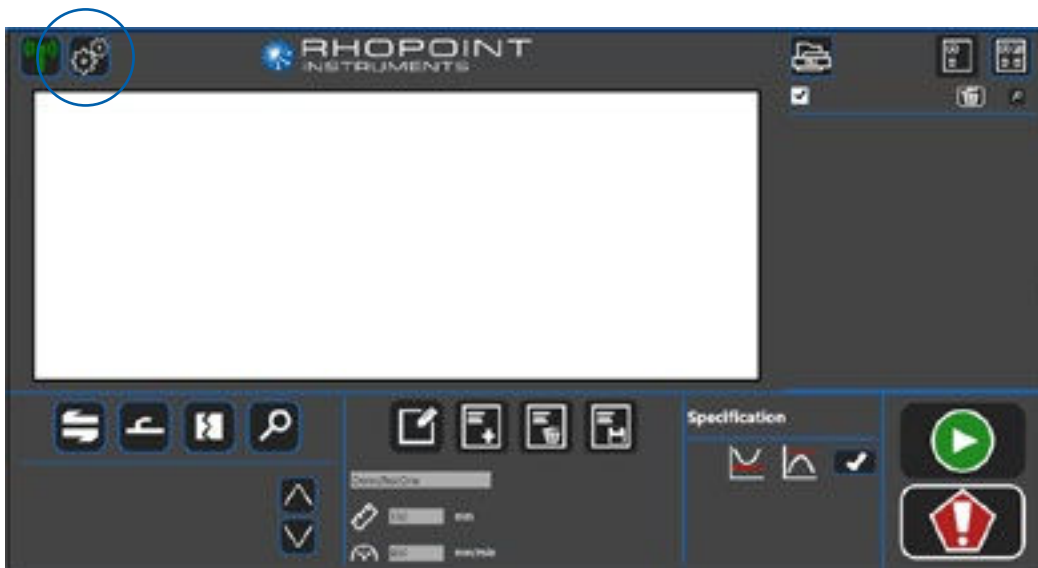
In the top left-hand corner of the screen the settings icon can be used to set the user interface.
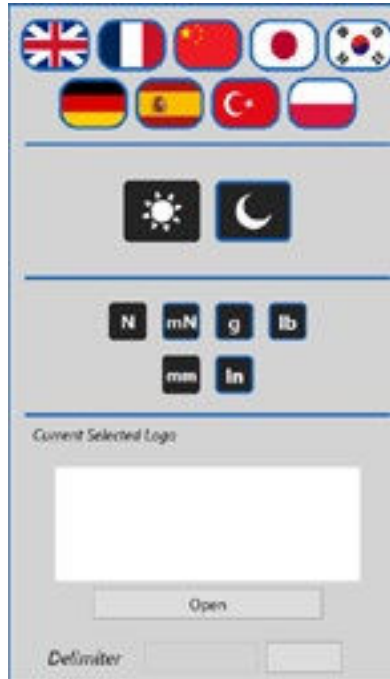
This screen allows the setting of language, light / dark display mode, and the unit of measure. It also allows a company logo/contact details to be uploaded in .jpg format to be used in all reports. The size can be in a ratio of 2084x248 pixels. As long as the ratio is the same, the scaling will be correct. Lastly the data delimiter can be set.

Notes

EC DECLARATION OF CONFORMITY

WE   Rhopoint Instruments Ltd, Rhopoint House,
Enviro 21 Park, Queensway Avenue South,
St Leonards on Sea, East Sussex, TN38 9AG

DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE PRODUCTS

Universal Friction Tester (UFT)

TO WHICH THIS DECLARATION RELATES ARE IN CONFORMITY WITH THE FOLLOWING STANDARDS

BS EN ISO 12100:2010
BS EN 61000-4-2:2009
BS EN 61000-4-3:2020
BS EN 61000-4-4:2012
BS EN 61000-4-5:2014+A1:2017
BS EN 61000-4-6:2014
BS EN 61000-4-8:2010
BS EN 61000-4-11:2020

FOLLOWING THE PROVISIONS OF DIRECTIVES

EU 2015/863 Restriction of Hazardous Substances (RoHS Directive)
2006/42/EC Machinery Directive

Rhopoint Instruments Ltd
29 August 2023

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Tony Burrows, Managing Director

Authorised representative within the EU – Rhopoint Komponenten GmbH, An der Kanzel 2, D-97253 Gaukonigshofen, Germany.

Rhopoint Instruments Ltd

Rhopoint House, Enviro 21 Park,
Queensway Avenue South,
St Leonards on Sea, TN38 9AG, UK

T: +44 (0)1424 739 622
E: sales@rhopointinstruments.com
www.rhopointinstruments.com

Rhopoint Americas Inc.

1000 John R Road,
Suite 209, Troy,
MI 48083, USA

T: 1.248.850.7171
E: sales@rhopointamericas.com
www.rhopointamericas.com

Rhopoint Instruments GmbH

Seebauer Office Center,
Am Weiglfeld 24,
83629 Weyarn, Deutschland

T: +49 8020 9214-988
E: info@rhopointinstruments.de
www.rhopointinstruments.de

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