



OPERATOR'S GUIDE



TruBurst⁴ Intelligent Bursting Strength Tester

7" Capacitive Colour TFT
Touchscreen

Covering Serial Numbers
1440/15/1001
& upwards

Extraordinary Testing Solutions

James H. Heal & Co. Ltd.
Halifax, England

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Setting the Standard



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TABLE OF CONTENTS

JAMES HEAL	5
Setting The Standard.....	5
Areas of Expertise	5
Introduction	6
TruBurst ⁴ Intelligent Bursting Strength Tester	6
Key Features	6
Service & Calibration	6
Technical Assistance.....	6
Standards.....	7
Health & Safety.....	8
James Heal Service & Calibration	9
Care and Maintenance.....	10
Daily Checks	10
Annual Checks	10
First Time Installation.....	11
The Essential Features Of TruBurst ⁴	12
Unpacking.....	15
Unpacking Checklist.....	15
How To Order Supplies & Accessories	16
Getting started	19
Preparing The Instrument & Setting Up	19
Connecting To Electrical Supply	19
Connecting To Compressed Air Supply	20
Instrument Setup	21
Changing the Test Area (also referred to as Dome or Test Bell).....	21
Using The Touchscreen	24
Main Menu	24
Standard Settings.....	25
Test & Report Screen.....	26
Overview Of Touchscreen	27
Installing Testwise Lite.....	28
Connecting TruBurst ⁴ to a PC.....	28
Hardware Connections.....	28
Software (data logger) Installation.....	28
Performing Bursting Tests.....	29
Pressure Control Method.....	29
Flow Control Method	32

User Defined Standards	35
Installation.....	36
Electrical.....	36
Fuses	36
Compressed Air.....	37
Technical Data	38
CE Conformity	39
Pneumatic Scheme	40
Revision History	41

JAMES HEAL

At James Heal, we are dedicated to designing and developing high precision testing instruments and test materials for physical and colour fastness testing. Our worldwide Service and Calibration division and expert technical assistance complement our product range, adding real value to your laboratory testing activities.

Setting the Standard

We are committed to forming close relationships and have established numerous partnerships within the textile industry, from trade and standards organizations, to test houses, customers and distribution partners.

With a heritage spanning more than 140 years, we have evolved and grown through a culture of continuous improvement, resulting in a thorough understanding of the applications, operating conditions and requirements of customers worldwide – from independent testing Laboratories and test houses, to fabric suppliers, manufacturers and retailers.

Using knowledge and expertise, we consistently set the industry standard through product innovation and technology, with customer and user needs, present and future, driving our technological advancements. You can be assured that with James Heal, you will always receive the highest levels of product quality and customer service. We have Agents and Distribution partners all over the globe, ensuring locally available product whenever, and wherever you need it.

Areas of Expertise

Textile: Colour Fastness

- Chlorinated Water
- Dry Cleaning
- Dry Heat
- Hot Pressing
- Laundering
- Light
- Perspiration
- Phenolic Yellowing
- Print Durability
- Rubbing
- Washing
- Water

Textile: Physical

- Abrasion
- Bursting Strength
- Compression and Puncture
- Crease and Wrinkle Recovery
- Crimp
- Drape
- Durability
- Flammability
- Mass per unit area
- Pilling and Fuzzing
- Security of Attachments
- Seam Slippage
- Shrinkage
- Snagging
- Spray Rating
- Stretch and Recovery
- Surface Deterioration
- Tear Strength
- Tensile Strength
- Washing and Drying

Non-Textile

- Bursting strength of nonwovens, plastics, paper and medical products
- Micro-scratching of laminates, wooden, painted, automotive and high gloss surfaces
- Physical and colour fastness testing of leather
- Rubbing fastness of laminates and wooden surfaces
- Tear strength of paper and plastics

INTRODUCTION

TruBurst⁴ Intelligent Bursting Strength Tester

TruBurst⁴ has been designed with James Heal's unique product signature and has been produced completely with the user in mind. We have combined James Heal's technical and performance expertise, with intuitive design and operation to produce the most ergonomic and user friendly instrument.

Key Features

- 7" Capacitive colour TFT touchscreen
- Automatic flow calibration for M&S P27
- Sliding interlocked safety guard
- Selectable Statistics
- Programmable clamp pressure

Service & Calibration

- Worldwide Service
- ISO 17025 based Calibration Service
- 18 Months Warranty

Technical Assistance

- Operator Training
- Knowledge Transfer
- Applications Support
- Engineering Support

Standards

- Adidas® Test Method 4.09
- ASTM D 3786
- EDANA 80.3
- ISO 2758
- ISO 13938:2
- LEVI STRAUSS & CO
- M&S P27 Fabric
- M&S P27 Lace
- NEXT TEST METHOD 22
- WOOLMARK TM29
- + 5 User defined

HEALTH & SAFETY

- Read this manual carefully before operating the instrument.
- **TruBurst⁴** has a mass of approximately 70kg, therefore assistance from a colleague or suitable lifting apparatus is recommended.
- **TruBurst⁴** complies with the [CE Conformity](#) in full
- Ensure the instrument is isolated from the electrical supply before removing any covers. Covers should only be removed by a qualified Engineer or Electrician.
- Have the instrument serviced and calibrated at least once a year by a James Heal Service and Calibration Engineer.
- **TruBurst⁴** utilises [Compressed Air](#) . Compressed air is potentially dangerous if misused. Never apply compressed air to the surface of the human body.
- Do not use any compressed gasses other than compressed air.
- Never use oxygen, nitrogen, argon, helium, hydrogen, acetylene, propane or butane.
- Never tamper with the interlocked safety guard or attempt to use **TruBurst⁴** without the safety guard in place. Tampering with the safety guard will expose the operator to serious risk from injury.
- Never use **TruBurst⁴** for anything other than what it is designed for



JAMES HEAL SERVICE & CALIBRATION

James Heal Service & Calibration is a totally comprehensive, worldwide support programme.

When you buy instrumentation from us, it is the beginning rather than the end of an Association.

Our aim is simple:

To provide precisely the services you need to maintain and protect the value of your investment.

For any enquires you may have regarding your instrument please contact James Heal Service & Calibration by e-mail, phone or fax.

In all communications please quote the serial number of your instrument and the software version number

For example: 1440/15/1001 and V1.00.

James Heal Service & Calibration contact details:

E-mail support@james-heal.co.uk

Telephone +44 (0) 1422 366355

Fax +44 (0) 1422 352440

CARE AND MAINTENANCE

TruBurst⁴ has been designed using specially selected materials and components to ensure maintenance free operation for long periods of time. Although TruBurst⁴ is almost maintenance free, it is recommended that the following checks be made:

Daily Checks

- Ensure the TruBurst⁴ is clean and free from fibres or debris.
- Test Domes should be cleaned with a non-abrasive cotton cloth and a non-solvent cleaning solution.
- Check the condition of the Diaphragm for abrasion or excessive deformation. Replace if necessary.
- Check transparency of the safety guard and test domes. Frosted or cracked test domes/safety guard must be replaced to maintain safety.
- If the optional high-pressure compressor has been purchased, refer to compressor instruction manual for maintenance checks. Check the oil level and drain condensation from the air reservoir on a weekly basis.
- Check for air leaks. Leaks can usually be heard. Excessive leakage wastes electricity and could cause the compressor to overheat.
- TruBurst⁴ has an integral self-draining air filter that removes particles and moisture. Occasionally a few droplets of water may be found underneath the instrument when the filter automatically drains. This is perfectly normal and any water should evaporate quickly.
- Fuses are located in the Mains Input.

Annual Checks

- Check the condition of the O-ring seal. This should be free from cuts or abrasion, replace if necessary.
- Check the general condition of the Perspex test Domes. Test Domes should be highly transparent and free from scratches or abrasion, replace if necessary.
- Check the transparency of the Safety Guard. A frosted or damaged guard must be replaced to maintain safety.
- Powerful magnets are used on the Dome assemblies. These magnets may attract iron particles. These can be easily removed using an adhesive tape.

FIRST TIME INSTALLATION

If you are commissioning the [TruBurst⁴](#) unit, please read the following sections in the following order.

Note: They may not necessarily appear in the same order in the manual as listed below. If you are using a softcopy of the manual, you can click on each section in turn in the contents menu or on the links below and the document will automatically skip to the correct page.

- [Unpacking](#)
- [Installation](#)
- [Electrical](#)
- [Compressed Air](#)

Once the [TruBurst⁴](#) is commissioned, follow these sections:

- [The Essential Features Of TruBurst4](#)
- [Using The Touchscreen](#)
- [Performing Bursting Tests](#)

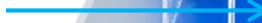
THE ESSENTIAL FEATURES OF TRUBURST⁴

7" Capacitive colour TFT touchscreen



Pre-programmed standards with 5 user defined

Blue/White LED illuminated test area



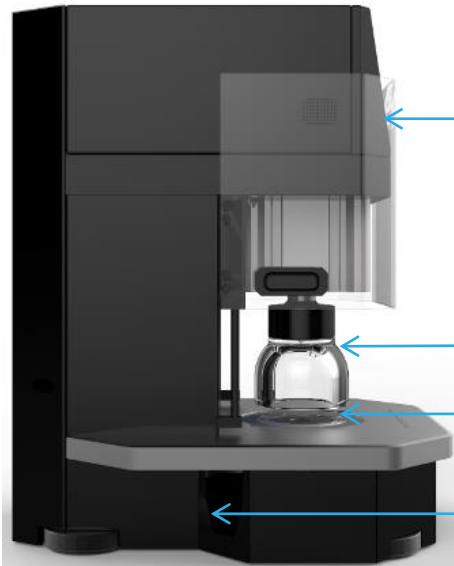
Sliding Interlocked safety guard





Lifting Points

To avoid damaging TruBurst⁴, lift the instrument using only the lifting points indicated



Left Hand Side View

Touch Screen

Dome Assembly

Diaphragm area

Mains Input



Right Hand Side View

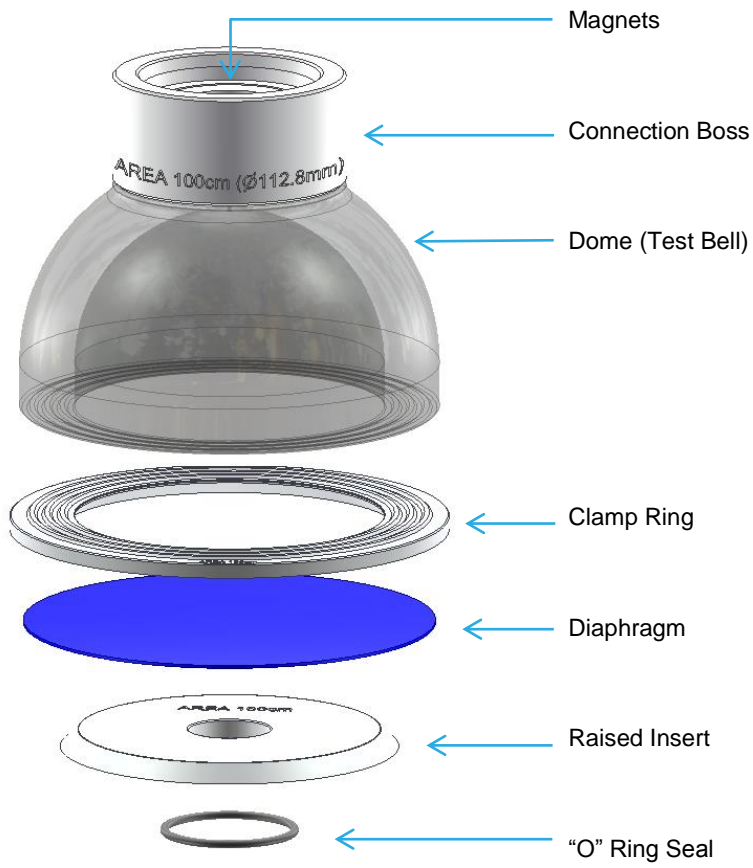
Foot Switch Jack

USB Port

Calibration Port.

Compressed Air Input

Dome Assembly



UNPACKING

- Remove the tape from the packing case lid and open.
- Carefully remove the packaging and contents from the packing case. Note that any accessories ordered with the instrument are packed with the instrument.
- Remove the sleeve and then very carefully lift the instrument and place it on a firm flat surface.
- Do not dispose of any packaging material until all standard and optional accessories ordered are fully accounted for. If there are any discrepancies, please contact your supplier immediately.

Unpacking Checklist

Please check the serial number plate to confirm that the supply voltage and frequency are in accordance with your order. Also, check the items listed in the tables below are present

Standard Accessories

905-511	TruBurst4 Model 1440 90-264V 50/60Hz	1
142-326	Mains Lead Set Angled	1
160-486	TruBurst4 Footswitch	1
327-266	Flexible Black Nylon Pipe (5 m)	1
794-819	Pneumatic Adaptor for US	1
794-993	TestWise Lite for TruBurst (supplied without Dongle)	1
154-195	USB2 Lead A-B Transparent 2m Right Angled	1
297-029	CD Operators Guide TruBurst ⁴	1

HOW TO ORDER SUPPLIES & ACCESSORIES

Recommended Initial Starting Kits

905-511	1 x TruBurst4 Model 1440 90-264V 50/60Hz
794-684	1 x 7.3 cm ² Dome Assembly
794-683	1 x 10 cm ² Dome Assembly
794-682	1 x 50 cm ² Dome Assembly
794-681	1 x 100 cm ² Dome Assembly
777-133	20 x Packs (10) Diaphragms
202-810	1 x UKAS Certificate of Calibration
783-217	1 x Compressor
140-spares	1 x 2-year Spares Kit
794-994	TestWise for TruBurst Supplied with Lincensing Dongle to access additional features such as stretch & recovery and creep analysis
	TruBurst is supplied as standard with TestWise Lite for TruBurst (794-993). To access the more advanced features of TestWise then 794-994 is required.
905-511	TruBurst4 Model 1440 90-264V 50/60Hz Maximum Bursting Pressure: 1000 kPa (145 psi) Standard accessories:
142-326	1 x Mains Lead Set Angled
160-486	1 x TruBurst4 Footswitch
327-266	1 x Flexible Black Nylon Pipe (5 m)
794-819	1 x Pneumatic Adaptor for US
794-993	1 x TestWise Lite for TruBurst (supplied <u>without</u> Dongle)
154-195	1 x USB2 Lead A-B Transparent 2m Right Angled
	Test Areas
794-684	7.3 cm² Specimen Clamp
794-683	10 cm² Specimen Clamp
794-682	50 cm² Specimen Clamp
794-681	100 cm² Specimen Clamp
794-685	7.8 cm² Specimen Clamp (for Paper)
	Diaphragms
777-133	Reinforced Diaphragms (1mm thick) - per pack (10)
777-133	Reinforced Diaphragms (1mm thick) - per 2 packs (10)
777-133	Reinforced Diaphragms (1mm thick) - per 5 packs (10)
777-133	Reinforced Diaphragms (1mm thick) - per 10 packs (10)
777-133	Reinforced Diaphragms (1mm thick) - per 20 packs (10)
777-134	Plain Diaphragms [M&S P27 and Adidas 4.09] (1mm thick) - per pack (10)
777-134	Plain Diaphragms [M&S P27 and Adidas 4.09] (1mm thick) - per 2 packs (10)
777-134	Plain Diaphragms [M&S P27 and Adidas 4.09] (1mm thick) - per 5 packs (10)
777-134	Plain Diaphragms [M&S P27 and Adidas 4.09] (1mm thick) - per 10 packs (10)

777-134	Plain Diaphragms [M&S P27 and Adidas 4.09] (1mm thick) - per 20 packs (10)
777-135	Reinforced Diaphragms (1.5mm thick) - per pack (10)
777-135	Reinforced Diaphragms (1.5mm thick) - per 2 packs (10)
777-135	Reinforced Diaphragms (1.5mm thick) - per 5 packs (10)
777-135	Reinforced Diaphragms (1.5mm thick) - per 10 packs (10)
777-135	Reinforced Diaphragms (1.5mm thick) - per 20 packs (10)
777-150	Low Pressure Diaphragms (0.2mm thick) - per pack (10)
777-150	Low Pressure Diaphragms (0.2mm) - per 2 packs (10)
777-150	Low Pressure Diaphragms (0.2mm) - per 5 packs (10)

TruBurst Verification Foils

Only suitable for use with TruBurst2 and TruBurst4

766-600	TruBurst Verification Foil No.1 for 50 cm² Dome - 60-140 kPa - per pack (5)
766-601	TruBurst Verification Foil No.2 for 50 cm² Dome - 140-260 kPa - per pack (5)
766-602	TruBurst Verification Foil No.3 for 50 cm² Dome - 280-410 kPa - per pack (5)
766-603	TruBurst Verification Foil No.4 for 50 cm² Dome - 450-550 kPa - per pack (5)
766-604	TruBurst Verification Foil No.5 for 50 cm² Dome - 560-700 kPa - per pack (5)
766-605	TruBurst Verification Foil No.6 for 50 cm² Dome - 750-920 kPa - per pack (5)
766-607	TruBurst Verification Foil No.1 for 7.3 cm² Dome - 160-270 kPa - per pack (5)
766-608	TruBurst Verification Foil No.2 for 7.3 cm² Dome - 260-370 kPa - per pack (5)
766-609	TruBurst Verification Foil No.3 for 7.3 cm² Dome - 370-480 kPa - per pack (5)
766-610	TruBurst Verification Foil No.4 for 7.3 cm² Dome - 480-620 kPa - per pack (5)

Starting Kits

Unless purchasing a Recommended Initial Starting Kit, at least one **Specimen Clamp** and one **pack of Diaphragms** should be ordered, in addition to the TruBurst⁴.

Cyclic Testing

Cyclic testing is only available from TestWise for TruBurst (with Dongle) software.

Typical Cyclic Testing Environment

- Cycles - 300
- Pressure - 500 kPa/70psi
- Cycle time – 5 seconds

Air Supply

It is essential that the delivered air supply is *clean and dry*.

The air supply can be delivered via:

- Factory airline (minimum free air delivery 33 litres per min/1.13 cfm)
- Optional compressor

[Optional Compressor](#)

- Delivers optimal testing conditions for both conventional burst and cyclic testing
- Expands the upper limit of available pressure from typical factory air lines (to 1000kPa/145psi)
- Supplied with a filter and a regulator

[Personal Computer](#)

The requirements for connecting TruBurst4 to a Personal Computer are:-

- TruBurst4 Data Logger software on CD-ROM - supplied as standard
- USB2 Lead A-B Transparent 2m Right Angled - *supplied as standard*
- PC with a spare USB port running Windows 7 or later operating system - ***not supplied***

GETTING STARTED

Preparing the Instrument & Setting Up

Stand the instrument on a firm, level table or surface.

Connecting to Electrical Supply

The instrument is wired for a universal mains input: single phase 85-264VAC 50-60 Hz. **TruBurst⁴** will automatically adjust for the above voltages.

Connect the instrument to the correct electrical supply using the mains lead supplied. The power rating for **TruBurst⁴** (excluding Printer and PC) is 60 watts.



Connecting To Compressed Air Supply

Using the Laboratory or “Factory” Compressed Air Supply

Air consumption will vary according to the type and frequency of testing being carried out.

The following compressed air supply is recommended for normal continuous testing in accordance with ISO 13938-2:

Free Air Delivery:	33 litres/min
Maximum pressure:	10 bar (145psi) regulated
Minimum pressure:	6 bar
Filtration:	5 microns (absolute) or better to remove excess particulates, oil and moisture.

The capacity of **TruBurst⁴** will be limited to the pressure of the compressed air supply.

TruBurst⁴ is fitted with on-board filtering. However, a heavily contaminated compressed air supply (not filtered) will result in early blockage of the on-board filter element.

James Heal Optional Air Compressor:

The optional compressor is supplied with a filter and regulator fitted as standard. The compressor has sufficient air delivery for normal testing in accordance with ISO 13938-2 with a 50% duty cycle. This is equivalent to one burst every 60 seconds for continuous use.

Cyclic Testing:

(TestWise with Licensing Dongle to access additional features 794-994)

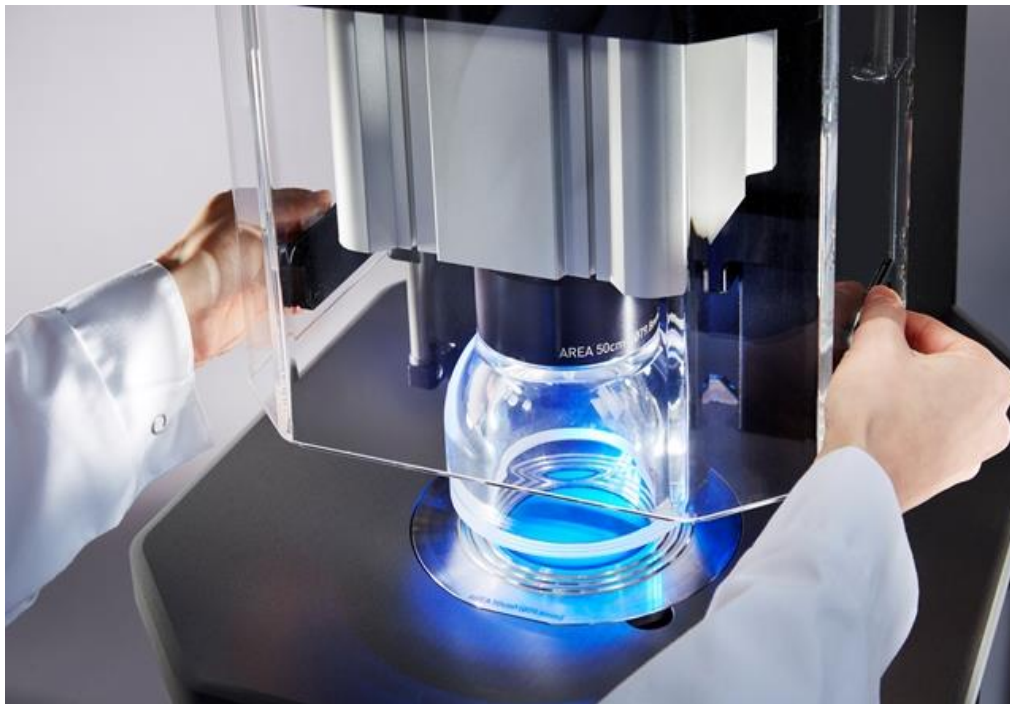
TruBurst⁴ has the facility to perform cyclic testing. The target pressure, test duration and frequency will dramatically affect the compressed air consumption. The compressed air supply should be sized to satisfy testing requirements. The supply of compressed air should be regulated to 10 bar maximum.

Instrument Setup

Switch **TruBurst⁴** on using the switch at the left hand side of the instrument. Allow the instrument to warm up for 5 minutes before commencing testing.

Changing the Test Area (also referred to as Dome or Test Bell)

It is not necessary to switch off the instrument to change test areas. Ensure the instrument is in the unclamped (open) position with any specimens removed.



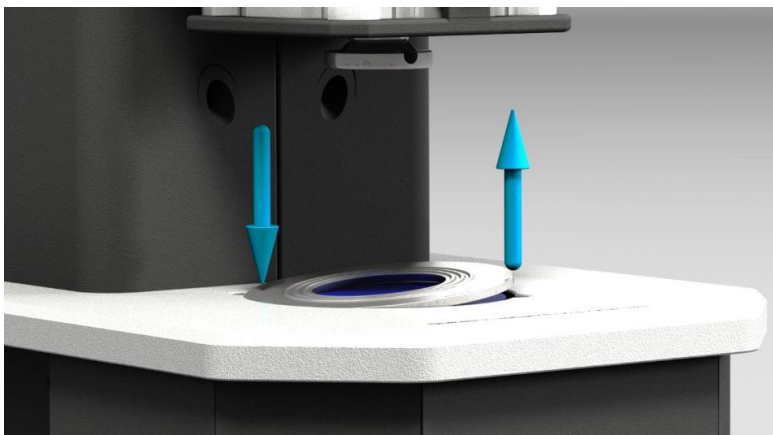
Stand in front of the instrument. With both hands using the handles, slide the safety guard upwards until it locks into place,
The instrument will not operate when the guard is up.

Remove the test dome from the end of the clamp piston by carefully pulling downwards. The dome is held secure by magnetic force. Place the test dome where it cannot roll and be damaged.

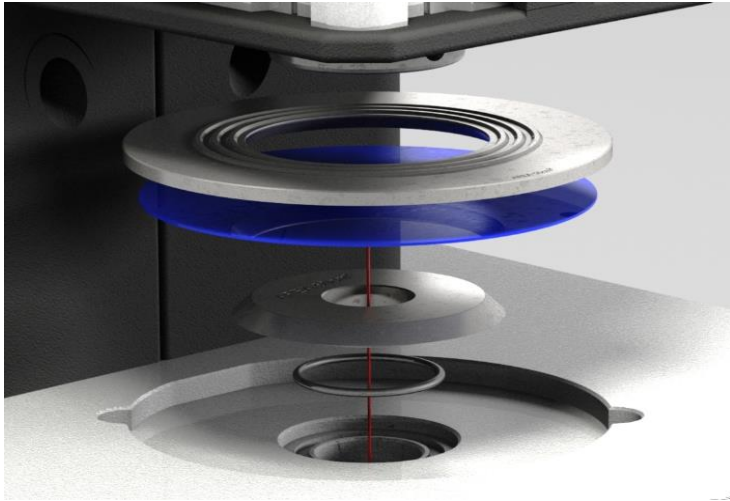


With the test dome removed, the stainless steel clamp ring can be removed by pressing with your thumb on the top surface close to the outer edge. The clamp ring will lift up at the opposite edge.

Remove the rubber diaphragm and replace if damaged or worn. The stock code for re-ordering is marked on the diaphragm. Alternatively see accessories list



Remove the raised insert by pulling vertically upwards. Ensure the rubber O-ring seal remains seated in the groove. Replace if damaged.



Replace the raised insert with the desired test area.

Note: the test area (cm²) and diameter (mm) is marked on each part.

Lay the rubber diaphragm centrally over the raised insert.

Note: it is advisable to use a different diaphragm for different test areas.

Replace the clamp ring over the top of the diaphragm, locating in the diaphragm housing.

Note: the clamp ring has a flat edge. This is an anti-rotation feature and must be aligned with the profile of the diaphragm housing.

Assemble the test dome onto the end of the clamp piston.

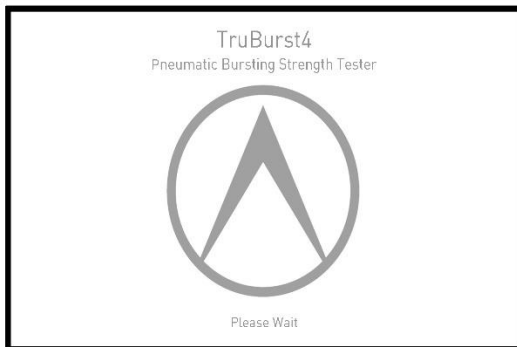
The test dome is held in place by magnetic force.

Slide the safety guard back down to the test position.

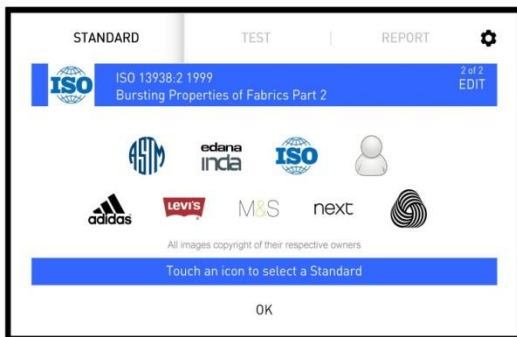


USING THE TOUCHSCREEN

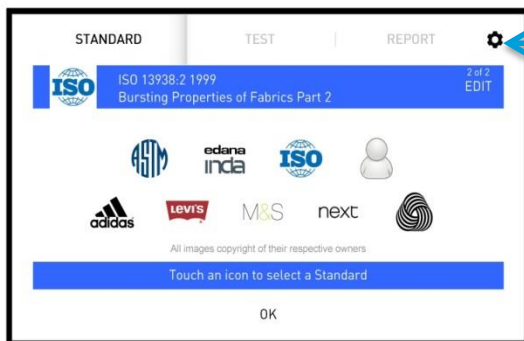
Main Menu



Main start up screen when instrument is powered up

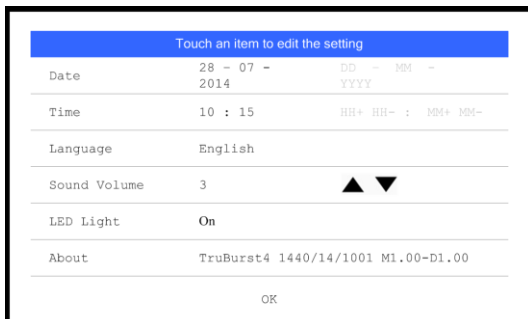


Main menu screen



By touching the setting button in the top right hand corner on the Main Screen, you can edit specific setting such as:

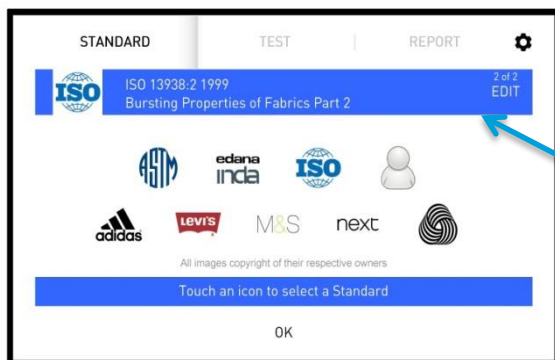
- Date
- Time
- Language
- Sound Volume
- LED Light



Touch the item to edit.

This screen also displays Instruments serial number.

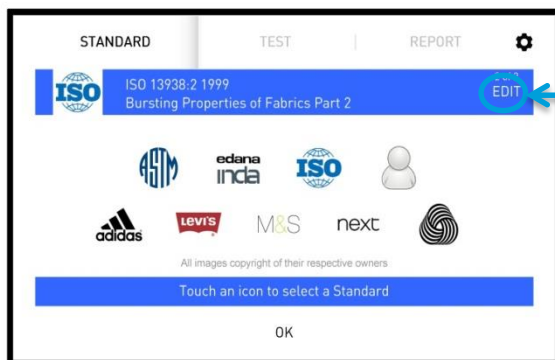
Standard Settings



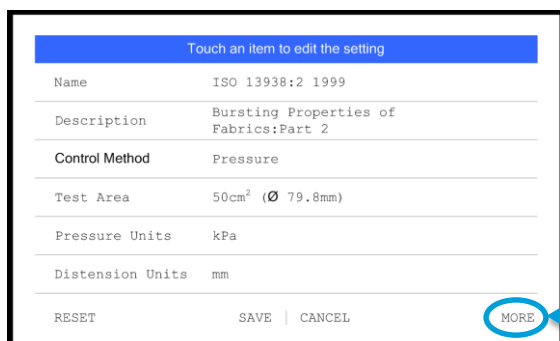
Main menu screen:

To select a standard touch one of the relevant icons. Some icons have more than one standard.

By touching the blue bar along the top this allows you to access alternative standards.



To change the test parameters – touch “EDIT”



If required, touch an item to edit.

Touch “MORE” for additional settings.



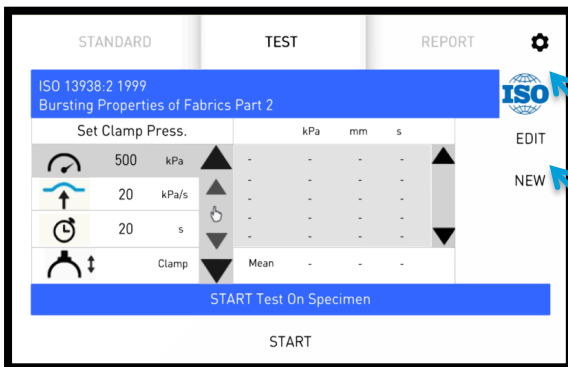
If required, use the arrows to edit

Touch “MORE” for additional settings.



Selectable Statistics:
Touch the statistics which you would like to be displayed on the test report.

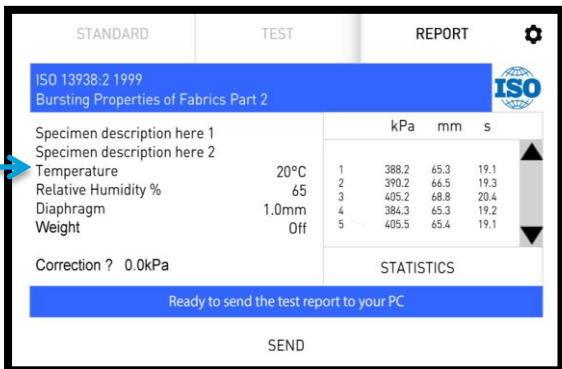
Test & Report Screen



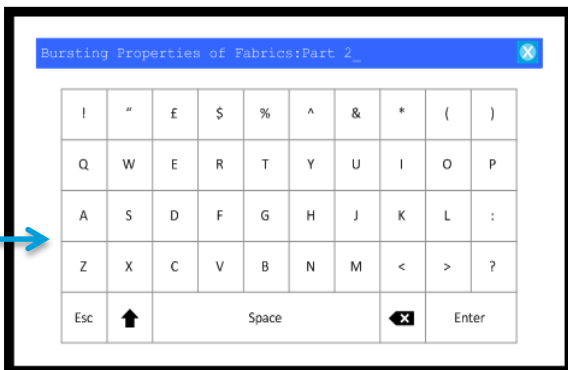
The test screen stores each result & also shows live data during the test.

You can also change the following setting on this screen:

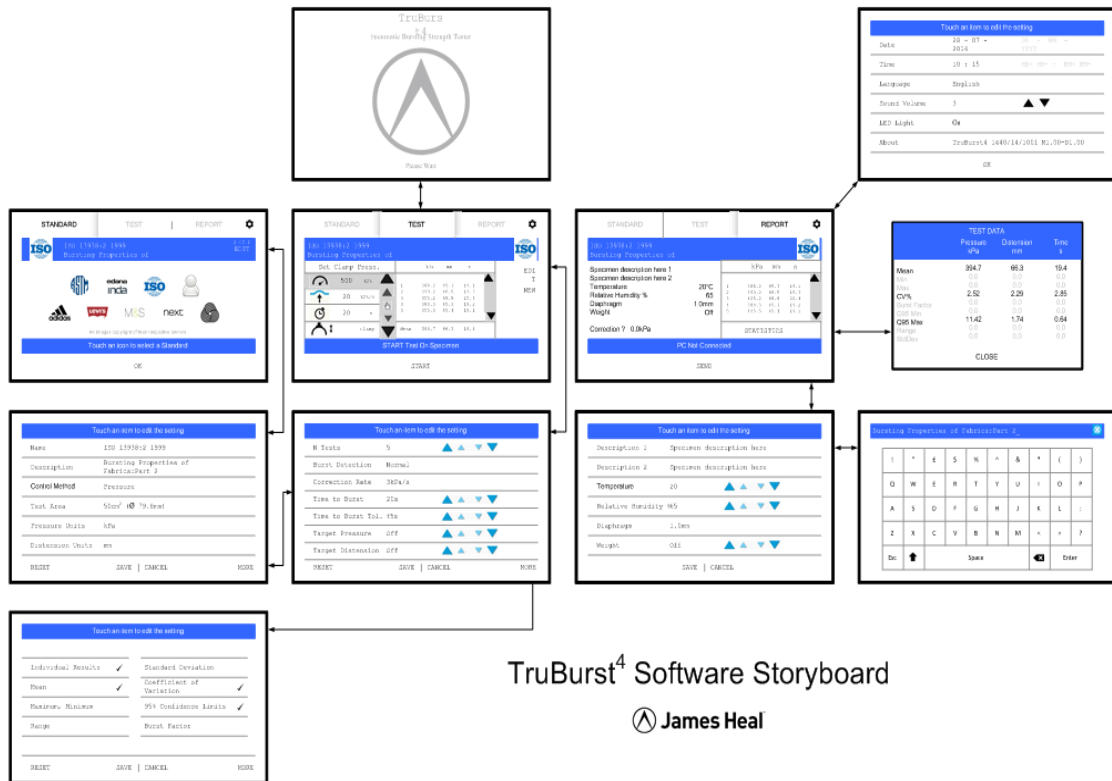
- Programmable Clamp pressure
- Pressure rate
- Time setting
- Access to Instrument setting (as described above)
- "EDIT" Standard (as described above)
- Start "NEW" test.



Report Screen:
Touch "specimen description" & edit using the keypad show below.



Overview of Touchscreen



TruBurst⁴ Software Storyboard



INSTALLING TESTWISE LITE

Connecting TruBurst⁴ to a PC

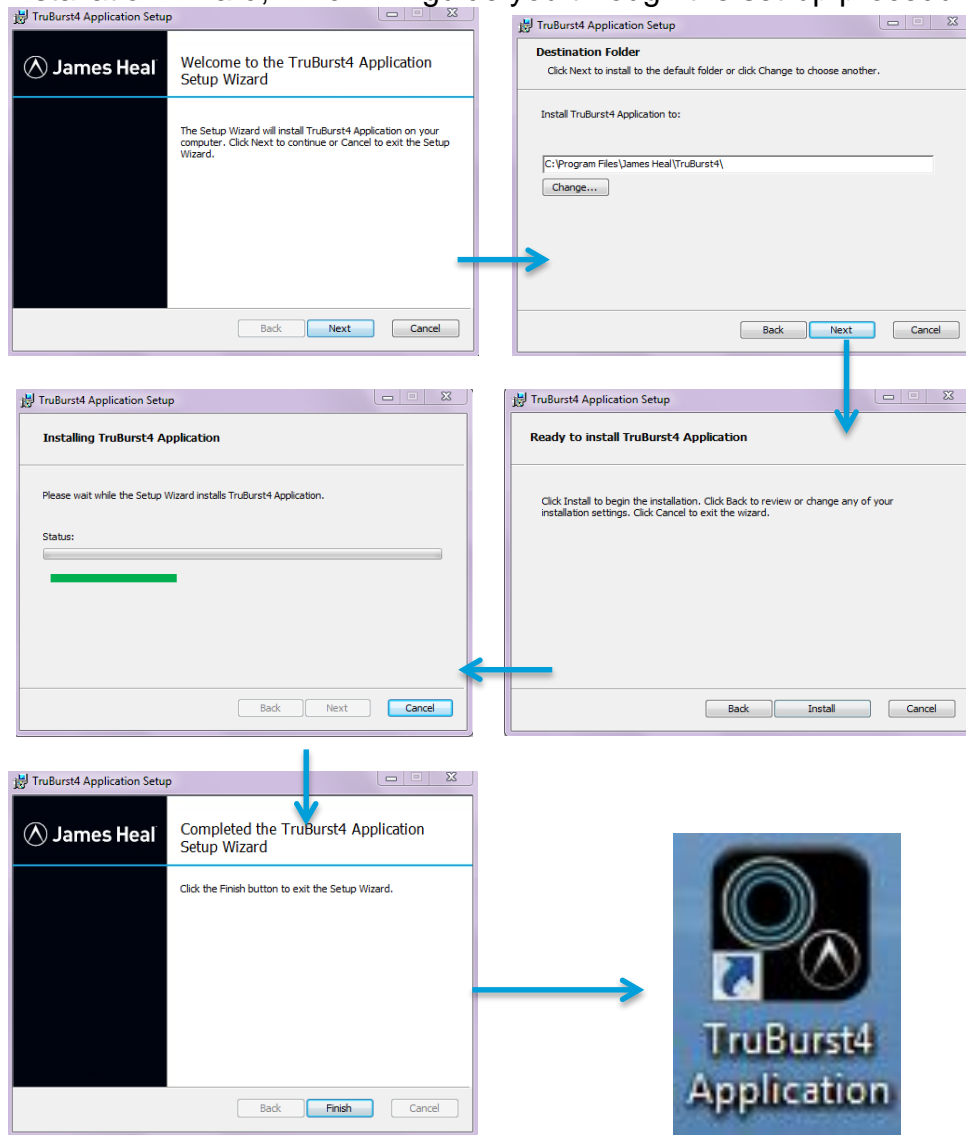
Hardware Connections

With the power off, connect one end of the serial interface cable to the 9-way D-type connector on the right of TruBurst⁴ and the other end to a spare COM port on your PC.

Power up the PC then TruBurst⁴. If your computer does not have a 9-way D-type connector you can use a USB-to-Serial adaptor instead.

Software (data logger) Installation

Insert the CD into your DVD/CD-ROM drive. The set-up program will start the installation wizard, which will guide you through the set-up procedure.

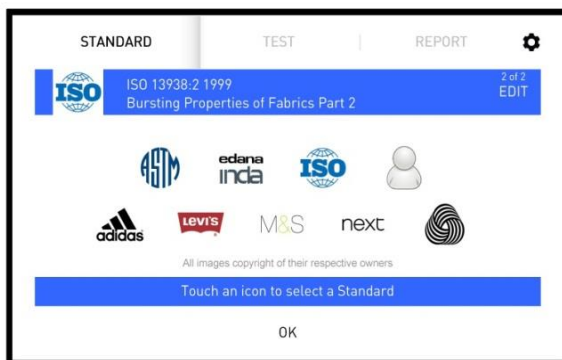
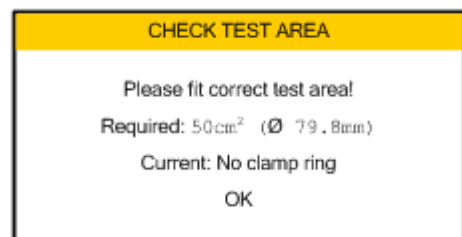
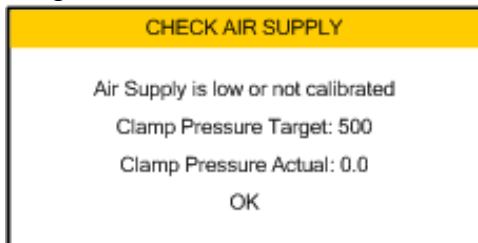


PERFORMING BURSTING TESTS

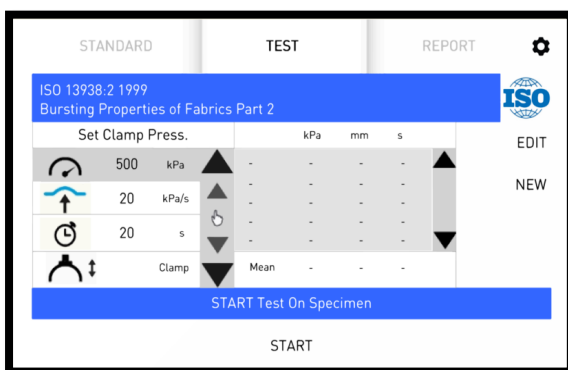
Pressure Control Method

This example uses the standard ISO 13938-2 test method and guides you through performing a burst test, applying a diaphragm correction and sending the results to the [TruBurst⁴ Data Logger \(TestWise Lite\)](#) on a PC.

Before commencing with a test check the air supply is on & the correct test area is being used



Touch the ISO icon then touch OK.

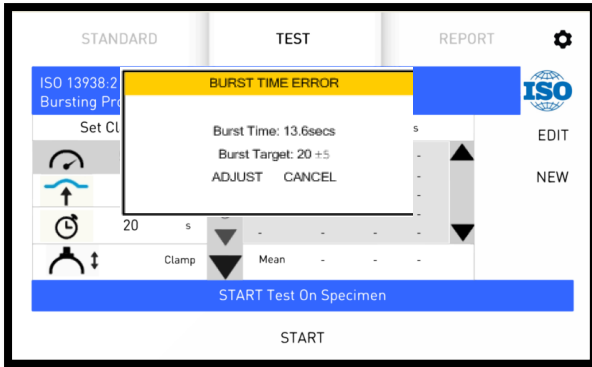


Start the Test

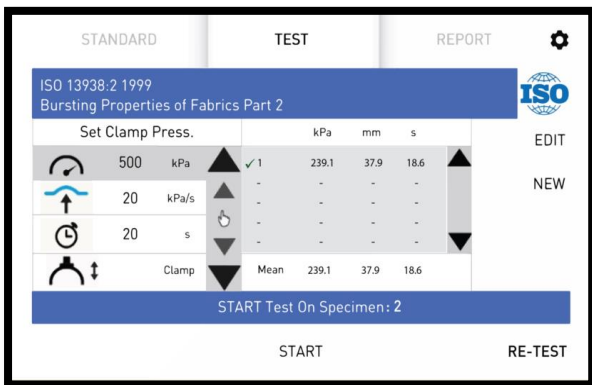
Place your specimen under the Test Dome and make sure it is perfectly flat. Now touch **START** and the clamp will be lowered onto the specimen & the test will begin

Did you know?

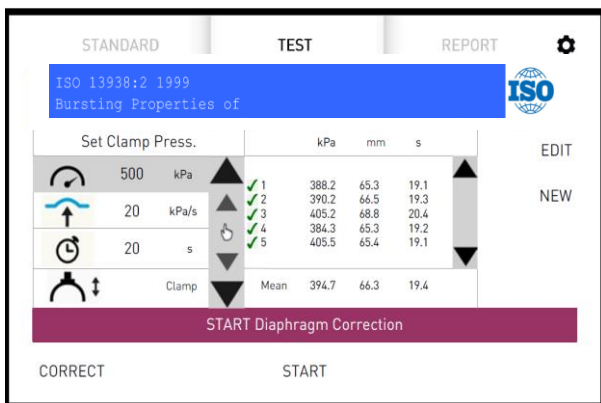
For hands-free operation of the Clamp you can use the supplied footswitch.



ISO 13938:2 requires the time to burst to be 20 ± 5 seconds. If the first test is not within the correct time an error message will appear on the screen. If you touch “ADJUST” TruBurst⁴ will automatically adjust to the correct pressure.



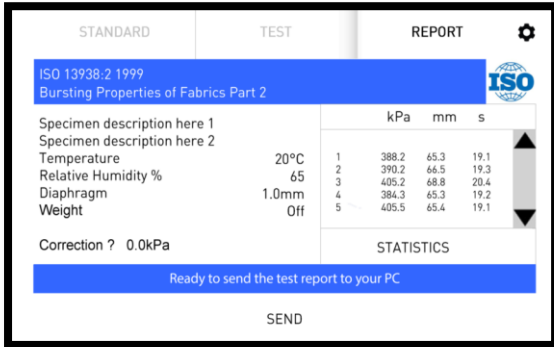
The instrument will automatically stop if it detects a burst and will display the final test result.



This screen is automatically displayed when you have completed the required number of tests. Touch “START” to continue with Diaphragm Correction. TruBurst⁴ will inflate to the average distension height of the tests you have just performed.



Once the Diaphragm correction is complete, touch “REPORT”



Touch “specimen description” & enter your own sample reference using the key pad below.

Touch “SEND” to transfer your results to the PC.



James Heal - TruBurst Results
ISO 13938:2 1999
 Bursting Properties of Fabrics:Part 2
 Woven Orange Fabric

Temperature: 20 °C
 Relative Humidity: 65%
 Weight: 0
 NTests: 5 / 5
 Diaphragm: 1.0mm
 Test Area: 500mm² (70.8mm Dia)
 Inflation Rate: 10kPa/s
 Correction Rate: 0kPa/s
 Burst Detect: Normal
 Clamp Pressure: 500 kPa
 Target Pressure: 0kPa
 Target Distension: 0.0mm

Test	kPa	mm	s
1	188.3	15.0	19.9
2	167.3	15.1	17.8
3	178.8	14.7	19.0
4	194.1	14.7	19.5
5	190.0	14.9	20.0
Mean	181.7	14.9	19.2
Q95	11.3	0.2	1.1
Q95 Max	193.0	15.1	20.3
Q95 Min	170.3	14.6	18.2
CV%	5.0	1.3	4.6

Diaphragm Correction: 11.0kPa
 Instrument Model: 1440
 Instrument Serial: 1440/14/1002
 Software Version: 1.0.5.0
 Hardware Version: 010714

Example of TestWise Lite test report

Flow Control Method

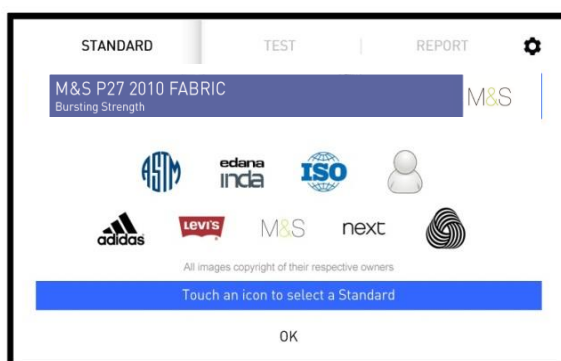
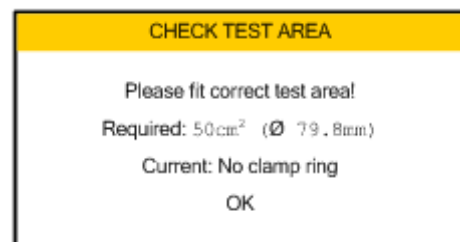
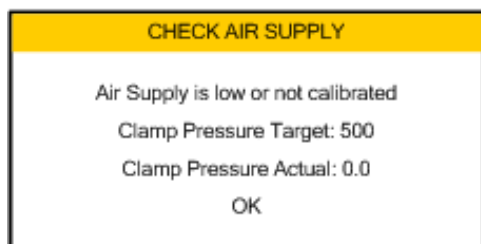
This example uses the Marks & Spencer standard M&S P27:2010 (FABRIC) test method and guides you through performing a burst test and sending the results to the [TruBurst⁴](#) Data Logger on a PC.

Before commencing with a test check the air supply is on & the correct test area is being used

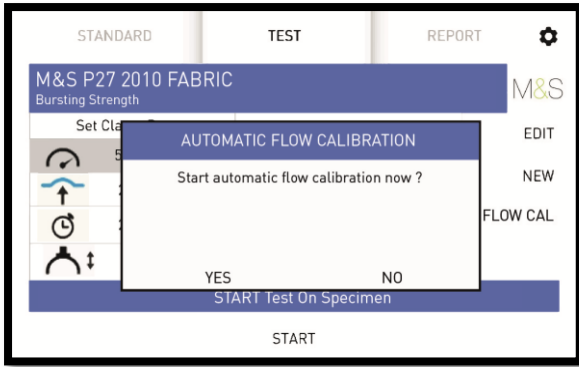
Check that the supply pressure from the compressor is 6 ± 0.2 bar.
(600 ± 20 kPa or 87 ± 3 PSI).

Only use the 777-134 Plain Diaphragm (1mm) pack 10 for M&S and Adidas test methods.

These are **green** in colour to differentiate them from the reinforced varieties, which are **blue**.



Touch the M&S icon then touch OK.



Before testing can commence the flow need to be calibrated.

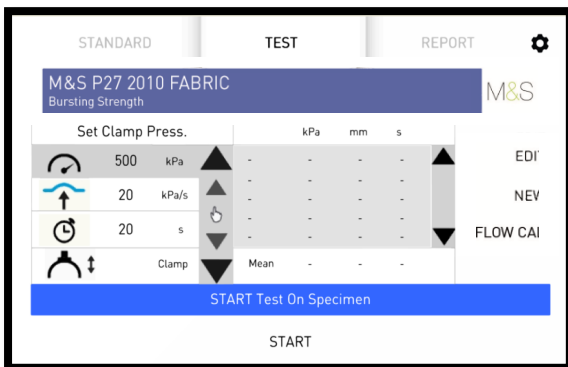
Check the testing pressure rate by placing the Metal Plate between the Test Dome and the Clamp Ring / Diaphragm.

Touch “YES” to start automatic flow calibration.

TruBurst⁴ will automatically calibrate to the correct rate of 120 kPa in 5s (24 ± 1 kPa/s) for Fabrics OR is 225 kPa in 5s (45 ± 1 kPa/s) for Lace.

If the instrument is not working check the following :

- The Perspex safety guard is in place.
- The correct test dome is fitted.
- The compressed air supply is connected correctly.
- The O-ring below clamp ring / diaphragm is fitted.
- Diaphragm is not damaged / leaking.

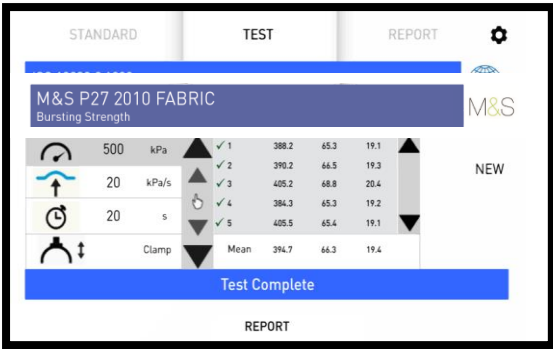


Start the Test

Place your specimen under the Test Dome and make sure it is perfectly flat. Now touch **START** and the clamp will be lowered onto the specimen & the test will begin

Did you know?

For hands-free operation of the Clamp you can use the supplied footswitch.



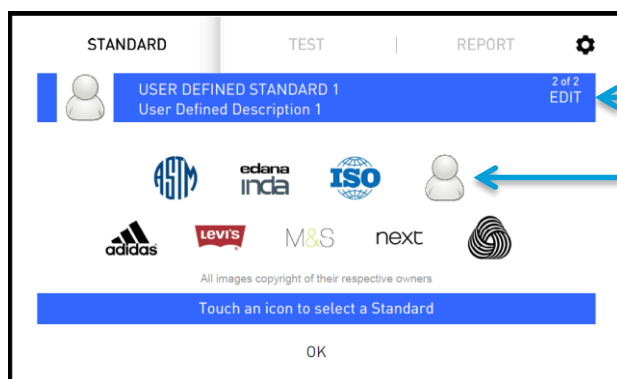
Once the required number of specimens is complete, touch “REPORT”



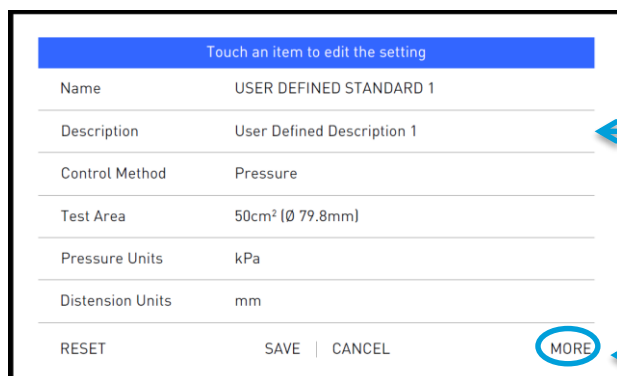
Touch “specimen description” & enter your own sample reference using the key pad.

Touch “SEND” to transfer your results to the PC.

User Defined Standards



You can create your own standards by touching the user defined standard icon. To change the test parameters – touch “EDIT”



Touch an item to edit the setting

Touch “MORE” for additional settings.



Touch an item to edit the setting

Touch “MORE” for additional settings.



Selectable Statistics: Touch the statistics which you would like to be displayed on the test report.

Touch “SAVE”

INSTALLATION

The **TruBurst⁴** is delivered on a wooden palette. Use a forklift truck or hydraulic pump trolley to move the packing case as near as possible to the final location. Once in position, follow the instructions in the Unpacking Section to remove the outer case.

The **TruBurst⁴** can now be lifted from its palette and in to location using a pump truck if available, or a by hand. If lifting by hand a minimum of 3 people will be required. These instruments are heavy and should be moved with care. Do not dispose of any packaging material until everything is accounted for.

Electrical

- Stand the instrument on a firm and level surface.
- Connect the electrical power supply to the mains input using the lead provided.
- The power rating for **TruBurst⁴** is 60W.

Fuses

Two (2) fuses are fitted, located at the rear of the machine beneath the mains lead socket.

To replace a fuse, isolate from the mains supply, place a screw driver blade in the slot of the fuse holder, then press and turn anti-clockwise approximately $\frac{1}{4}$ of a turn. The fuse holder complete with fuse is now released.

Compressed Air

- Oil lubrication of the factory compressed air supply is not required nor recommended.
- If Air Injection is to be used with the instrument, connect the air supply to the Compressed Air Input socket on the rear of the instrument.
- **TruBurst⁴** requires a pressure of 6- 10 bar
- The pneumatic connection to the instrument is 6mm diameter. An adaptor is supplied to convert 6mm to 1/4 inch BSP
- The air supply should be capable of delivering air filtered to 5 microns or better
- Ensure all equipment used for connection, including pipes and fittings have a safe working pressure greater than that of supply.
- **WARNING** – do not attempt to disconnect any pneumatic pipe without first expelling the excess air from the instrument. To do this, shut off the air supply to the instrument and run **TurBurst⁴** with Air Injection On, until all air has been expelled.
- When removing the pipe fully depress the locking ring on the pneumatic fitting, towards the instrument while simultaneously withdrawing the pipe.
DO NOT FORCE THE PIPE

TECHNICAL DATA

COMPRESSED AIR	Free air delivery	33	l/min
	Maximum pressure	10	bar
		145	psi
	Minimum pressure	6	bar
	Filtration	≤5	micron

PRESSURE RANGE	10 bar Subject to suitable air supply		
	Accuracy +/- 0.5% of full scale		
	0.2	-	1000.0 kPa
	0.002	-	10.197 kg/cm ²
	0.04	-	145.04 PSI
	0.002	-	10.000 bar
	0.2	-	1000.0 kN/m ²

PRESSURE INFLATION RATE	0.1	-	100.0 kPa/s
	0.002	-	1.020 kg/cm ² /s
	0.04	-	14.50 PSI/s
	0.002	-	1.000 bar/s
	0.2	-	100.0 kN/m ² /s

DISTENSION RANGE	Non-contact Class 2 laser measurement		
	Accuracy +/- 0.5% of full scale		
	0.1	-	70.0 mm
	0.01	-	7.00 cm
	0.001	-	2.756 inches

SPECIMEN	Area	Diameter	Height
	7.3cm ²	30.5mm	30mm
	7.8cm ²	31.5mm	30mm
	10cm ²	35.7mm	30mm
	50cm ²	79.8mm	70mm
	100cm ²	112.8mm	70mm

STATISTICS Mean, maximum, minimum, range, standard deviation, coefficient of variation, 95% confidence limits, burst factor/index and %decay analysis for up to 500 tests

SERIAL INTERFACE RS232 9-way male 'D' type connector
38400-baud, 8-data bits, 1-stop bit, no parity
Data logger software supplied on CD-ROM for PC

DIMENSIONS 520mm x 400mm x 633mm

WEIGHT 70kg

ELECTRICAL Single Phase 85-264Vac 50-60Hz 60W max

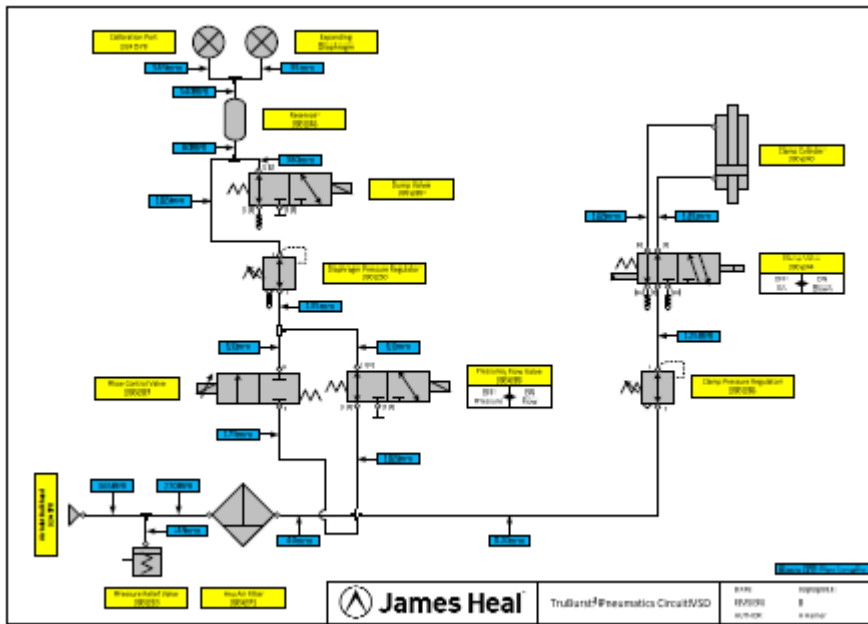
CE Conformity

TruBurst⁴ is CE marked.

It therefore complies with the following directives:

- Machinery Directive 2006/42/EC
- Low Voltage Directive 2006/95/EC
- Electromagnetic Compatibility Directive 2004/108/EC
- Safety of Laser Products Part 1(IEC 60825-1:2001)
- RoHS Directive 2002/95/EC
- WEEE Directive 2002/96/EC

Pneumatic Scheme



REVISION HISTORY

See front cover for Publication number, e.g., 290-1440-1

Revision	Date	Originator	Details Of Revision
1	25/02/2015	LW	