James Heal
Extraordinary Testing Solutions

AquAbrasion

WET ABRASION TESTER

The AquAbrasion is an accurate and repeatable way of conducting wet abrasion testing, which we have proven to be a crucial step in establishing the durability of outdoor wear.

It uses a controlled pump system to dose fabric specimens with liquid which keeps the specimen wet for the duration of the test.

MODEL NO: 1819 | STOCK CODE: 902-982

KEY BENEFITS

CONSISTENT MOISTURE DELIVERY
A controlled pump system delivers deionised water or perspiration solution in a standard dosage, ensuring samples remain wet throughout the test.

TESTWISE TOUCH
AquAbrasion is programmed and operated using the TestWise operating system. The simple system makes test setup easy with minimal training time required.

ENGINEERED WATER MANAGEMENT
The base plate is designed so that water is channelled into drainage apertures, managing the disposal of water from the instrument.

EASILY ACCESSIBLE
The design of the instrument enables ergonomic access to all stations from the front. The hinged lid provides easy access to each of the separate stations.

COMPLETE FLEXIBILITY
AquAbrasion retains the functionality of an original 9 station Martindale; it can perform dry and wet abrasion and tests the same standards and retailer test methods.

REPLICATING OUTDOOR WEAR
Fabric is abraded against itself while wet to replicate real life situations, such as a sleeve rubbing against the body of a garment in inclement weather conditions.

MARKET SECTORS/ PRODUCT TYPES

OUTDOOR WEAR

FOOTWEAR

WOVEN & KNITTED FABRICS

LEATHER

SOCKS

CARPETS

COATED FABRICS FOR UPHOLSTERY

EDGES ON COLLARS, CUFFS, BAGS

THE TESTS

ABRASION - CAN BE TESTED WET & DRY

Abrasion is the surface wear caused by rubbing with another material. The consumer would expect textiles and other products to withstand a certain amount of deterioration.

The abrasion test on the AquAbrasion takes a specimen and rubs it against an abrasive material in the shape of a lissajous pattern while applying water simultaneously.

PILLING - CAN ONLY BE TESTED DRY

Pilling is the formation of small balls of entangled fibres on the surface of fabric, a deterioration which is generally unacceptable to consumers.

The pilling test on the AquAbrasion passes a test specimen over either the same fabric or an abradant at a defined force in the shape of lissajous pattern.

SUMMARY OF TEST METHODS

Wet Testing

ISO 17704 **ISO 20344 Part 6.12**

James Heal are working on further addendum to existing standards to include wet abrasion, we will update you in due course.

Dry Testing

Arcadia	ASTM	BS
Arcadia AG35 Arcadia AG32 Arcadia AG34 Arcadia AG33 Arcadia AG61 Arcadia AG75 Arcadia AG26	ASTM D4966 ASTM D4970	BS 2543 BS 3424-24 BS 5690:1979 BS 5690:1988 BS 5690:1991 BS 8428
EN	**EN ISO**	**ISO**
EN 13520 EN 14325 EN 14465 EN 14605 EN 343 EN 388 EN 530 EN 943-1 EN 943-2 EN 13770 EN 15973 EN 16094 EN 16094:2012	EN ISO 12947 EN ISO 12945-2	ISO 17704 ISO 5470-2 ISO 17076-2 ISO 26082-1 ISO 12947-1 ISO 12945-2
ALCA	**M&S**	**Next**
IUP 48-2 IUP 53-1	M&S P19 series M&S P17 M&S P18C	Next 18 series Next TM26
VDA	**Volvo**	**Woolmark**
VDA 230-211 VDA 230-212	Volvo 1024, 7122	Woolmark TM196 Woolmark 112
AS	**IHD**	**IS**
AS 2001	IHD-W-445	IS 12673
IWTO	**PV**	**SABS**
IWTO 40	PV 3975	SABS 1009
SFS	**SN**	**TWC**
SFS 4328	SN 198525 SN 198529	TWC 112

AQUABRASION AT A GLANCE

Drains built into the base plate drain excess water.

Water is supplied to the stations via their own individual tubes.

Hinged top for easy access to individual stations.

Quick lock clamping rings for efficient loading of samples.

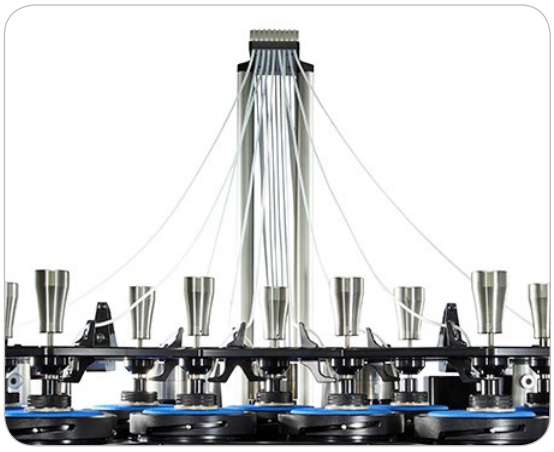
Emergency stop button for user safety.

Integrated touchscreen with easy to use controls, individual hold function and test completion time.

Access each of the nine individual stations from the front.

The attached motor controls the speed with which water is transferred to the samples.

CONSISTENT MOISTURE DELIVERY

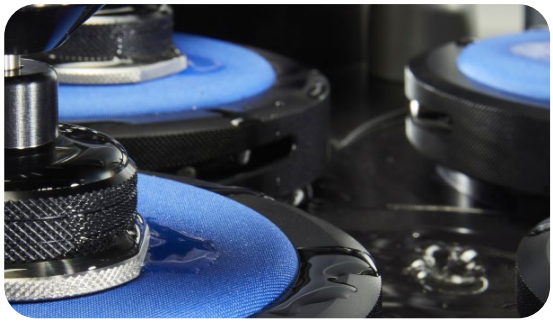


The revolutions per minute (RPM) of the pump determines the flow rate of the liquor through the tube onto the specimen. A standard dosage can be set for a test, ensuring samples remain wet for the duration.

The system can dose deionised water to replicate rain, perspiration solution for sweat or other aqueous liquors such as chlorinated water and saliva solutions.

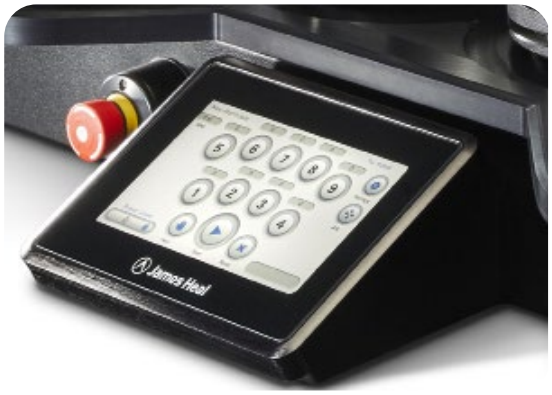
This method is controlled, ensuring repeatability and accuracy for all testing.

ENGINEERED WATER MANAGEMENT



Drains built into the base plate of the AquAbrasion remove the build up of water during testing. It is collected in an easily removable reservoir for later disposal. This prevents the bath from overflowing and mitigates the risk of flooding, which means the instrument can be left to test unsupervised.

TOUCHSCREEN



Our designers worked closely with users and our textile technologists laboratory to produce an intuitive touchscreen. This makes accessing and navigating the different AquAbrasion test setting very quick and simple.

As the format mirrors that of similar everyday devices competency is rapidly achieved.
The touchscreen is made with toughened cover glass which has been set to replicate laboratory wear and tear conditions.

More features of the touchscreen software can be found further in the Sales Tool Kit document.

ULTIMATE FLEXIBILITY

AquAbrasion retains the functionality of a 9 station Martindale, and can be used to test dry abrasion and pilling as well as wet abrasion. This means it can test to all the test methods and retailer standards that a Martindale can.

It can be set up to perform wet and dry abrasion concurrently on different stations, and can also test different liquid solutions concurrently using multiple beakers.

REPLICATING OUTDOOR WEAR

The AquAbrasion abrades fabric against itself while wet to replicate real life situations, such as a sleeve on a cagoule rubbing against the body of a wearer. This testing replicates the use of outdoor wear in inclement conditions, providing a more representative test for brands and manufacturers.

Our testing has shown that fabrics subjected to wet abrasive stress degenerate at a faster rate both aesthetically and physically.

EASILY ACCESSIBLE STATIONS

The design of the AquAbrasion enables access to all stations from the front, through the jog function. This ergonomic access makes it easy to check and change samples, an improvement on other similar instruments on the market.

The hinges, positioned at the back of the instrument, enable the lid to be fully opened and provide access to the different tables. As the lid remains attached to the instrument there is no need to lift and remove it.

QUICK LOCK CLAMPING RINGS

Precision quick lock clamping rings, engineered from aerospace grade aluminium in house in the UK, twist onto each station securing test materials in place with ease. This reduces the setup time of each test, increasing productivity and throughput.

CUSTOMISABLE TEST SETTINGS

There are a number of customisable and preconfigured setting options available with the AquAbrasion. Users can control the speed in which liquid is transferred to the test sample, the speed of the instrument's revolutions and the type of liquid used during testing.

These options help make the instrument extremely adaptable, capable of carrying out a variety of different tests.

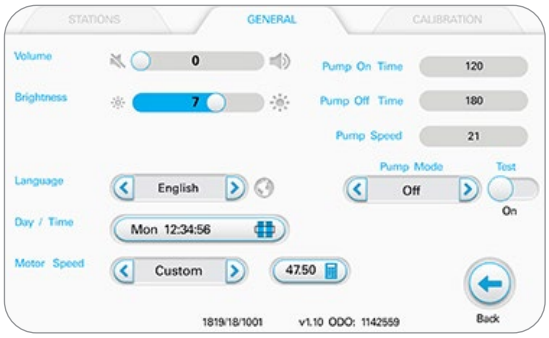
PEDIGREE & EXPERTISE

James Heal was involved in the development of the original Martindale with Dr Martindale and WIRA in the 1940s. We have since established our position as a leading supplier, selling thousands of Martindales in the subsequent decades.

Part of our position as a trusted manufacturer comes from using the instrument ourselves in our ISO 17025 compliant in-house laboratories. Every day we test materials using the same methods as our customers, and apply this expertise to designing and manufacturing an instrument that exceeds the requirements of a laboratory setting.

AquAbrasion is the next step in development for our flagship Martindale instrument.

JOG FUNCTION AND VARIABLE SPEED



A simple jog function allows the operator to slowly move the top plate into the most suitable position to mount the abrasive fabric. This means the top plate does not need to be removed in between day to day tests.

Accurate testing and control over the instrument are available from the outset.

Testing can be set at variable speeds - Slow (12rpm), Normal (47.5rpm), and Fast (71.3rpm) - you can perform tests as stated in the standards or change the speed if users want to develop their own method.

YOU MAY ALSO WANT...

TITAN 5kN/ 10kN

Our range of Titan Universal Strength Testers, available in both 5kN and 10kN capacity models, can accurately test the stress and strain of a diverse range of applications including yarns, fabrics, seams, shoes, ropes, straps and many more.

The instrument is extremely user friendly, operated using TestWise Software, which contains over 500 pre-loaded standards, a hand held controller, automated test set-up and a wide range of interchangeable tools.

TRUBURST

The TruBurst delivers unprecedented functionality capable of carrying out a range of extensive tests on an extremely broad range of materials. This includes a wide range of materials: textiles, medical supplies, paper tin foil and plastic items.

To complement the instrument we also provide a broad range of plain, reinforced and low pressure diaphragms and verification foils, developed in line with major retailer standards, including M&S, P27 and Adidas.

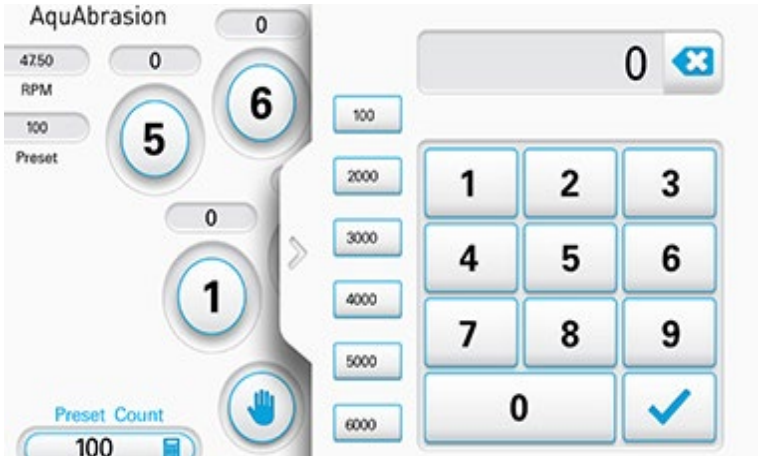
SPRAY RATING TESTER

The Spray Rating Tester performs a shower test to determine the resistance of fabric to surface wetting by water. Its easy handling and precise components ensure accurate and convenient testing of waterproof materials and high-tech fabrics.

The spray rating tester comprises of a stainless steel framework, incorporating a funnel. The spray nozzle is a machined component which ensure the water flow is always correct. The specimen holder facilitates rapid and secure mounting of specimen in the correct position on the instrument.

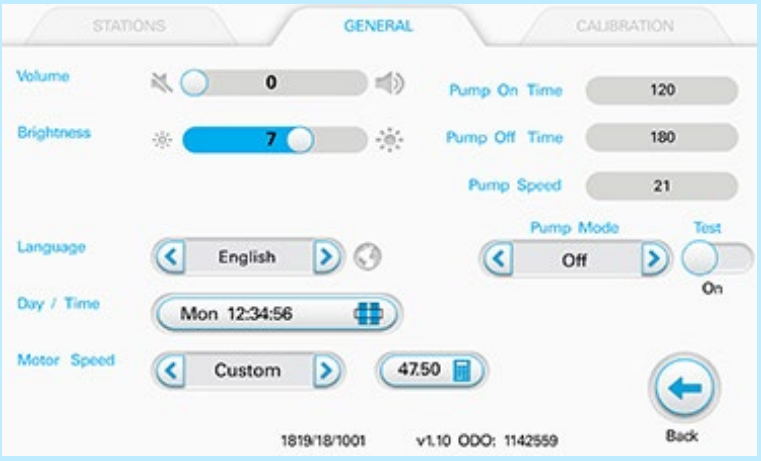
AQUABRASION TOUCHSCREEN

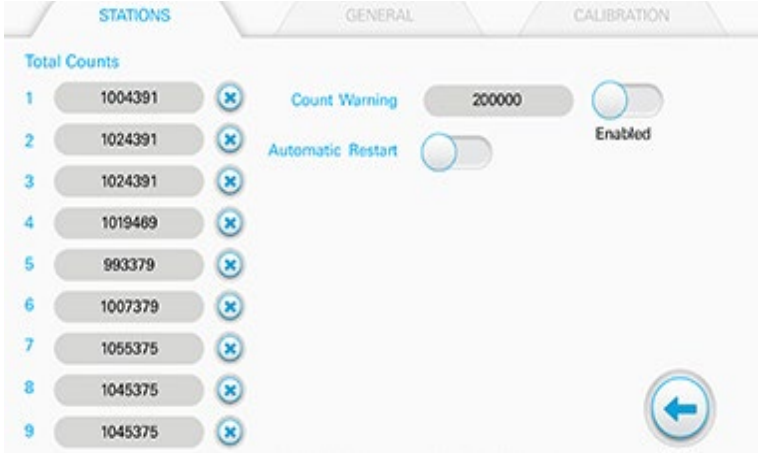
End of test visibility
The display shows the Test End time and a progress bar, which allows the user to leave the instrument to work on other tasks and return on completion, a more efficient use of their time.



Quick and easy to set a test
Clear, easy to use controls make setting up any test quick to do. Any user can pick up the process quickly as the screen is instinctive and intuitive, minimising training time.

Easily accessible settings
From the top menu bar users can easily set the pump speed and on/ off timings. There is also settings for screen brightness, volume, date and language.

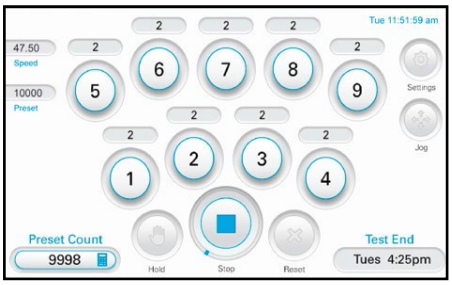




Rub Count Tracker
From the 'stations' top menu bar users can easily track the number of rubs applied to each individual station. This gives users complete control during testing.

AQUABRASION TOUCHSCREEN LANGUAGES

The AquAbrasion Touchscreen can be set in a total of 9 different languages, all of which are listed below. This further compliments how easy AquAbrasion is to use, enabling the user to work with a language they understand.



English

中文/ Chinese

Español/ Spanish

Deutsche/ German

Français/ French

বাঙালা/ Bengali

Italiano/ Italian

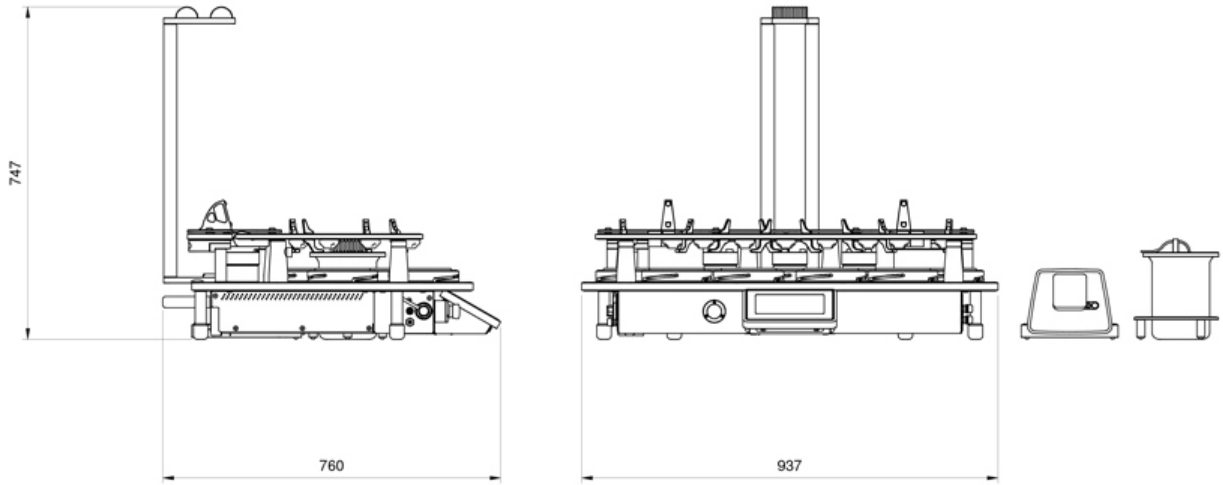
हिन्दी/ Hindi

Türk/ Turkish

Changing the language is easy, simply access the settings menu on the top bar of the screen, and toggle through to select the required language.

DIMENSIONS AND WEIGHT

Instrument Dimensions	Height (mm)	Depth (mm)	Width (mm)	Weight (kg)
AquAbrasion	747	760	937	150



Item:	Comment:
Electricity	110 to 230 V ± 10%, 50/ 60 HZ, 60 W (mains electricity must be free from spikes and surges exceeding 10% of normal voltage) (Universal Voltage & Frequency)
Air	Not required
Bench or Floor Standing	Bench
Water Supply	Not required
Drainage	Not required
Air Extraction	Not Required
Conditioning	It is recommended the instrument is located within a conditioned atmosphere