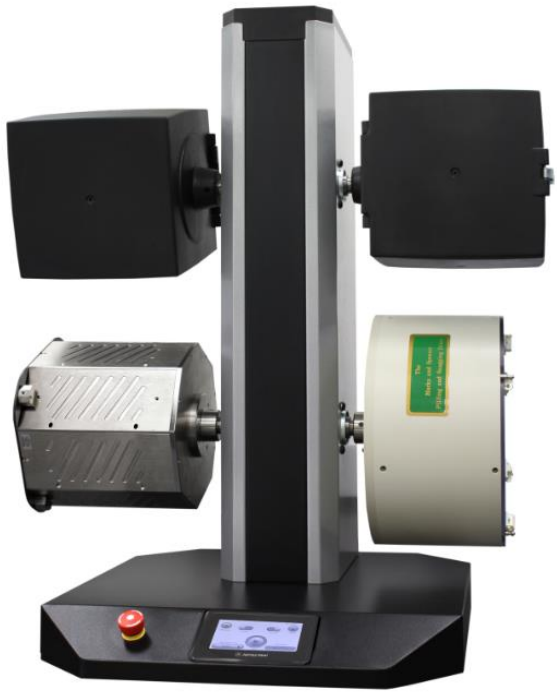
James Heal



OPERATOR'S GUIDE

Orbitor

Pilling and Snagging Tester
Model 1616

With **NEW Intuitive Touchscreen User Interface**

Serial Numbers
1616-2/16/1001 and upwards
1616-4/16/1001 and upwards

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Setting the Standard

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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 Properties

- 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

Orbitor 1616 – Pilling and Snagging Tester

The Orbitor 1616 series has been produced completely with the user in mind and features the NEW touchscreen user interface. We have combined James Heal's technical and performance expertise, with intuitive design and operation to produce the most ergonomic and user friendly Orbitor ever.

There are two standard instruments, one with 2-test positions and one with 4-test positions. To offer complete flexibility and choice, the two basic instruments can be fitted with any combination of the following test chambers:

- Pilling Box
- Snagging Box
- Pilling Drum
- Snagging Drum
- SnagPod

For safety reasons, Orbitor features a common drive system, therefore it is not possible to run test chambers at different speeds simultaneously.

Key Features

- NEW touchscreen user interface
- Preset counter for running in of new cork liners
- Ability to save the most common revolution counts
- Duration and Time End feature
- Automatic restart - the test will restart after a power failure
- Three basic modes of rotation to cover the requirements of all existing standards: 60 rpm, 30 rpm and reversal every 50 revolutions.
- Settings screen to alter volume, brightness, language, day and time.
- A brushless DC motor drives the test chambers, which ensures constant speed of rotation, the machine comes to a controlled stop automatically when the pre-set counter has been reached.
- Safety - slow ramp up to full speed allowing user to identify any issues
- Motor stops quickly if Orbitor is stopped manually

Standards

Orbitor 1616 complies with the following standards:

Pilling Box

- EN ISO 12945-1 (replaces BS 5811)
- GB/T 4802.3
- TWC TM 152 (Formerly IWS)
- NEXT TM 19
- JIS L 1076

Snagging Box

- ICI Test Method 444
- Adidas 4.08

Pilling Drum

- Marks & Spencer P18A
- Marks & Spencer P18B
- Marks & Spencer P18C

Snagging Drum

- Marks & Spencer P21A

SnagPod

- BS 8479
- Adidas 4.41

The Definition of Pilling

Pilling is the formation of small balls of entangled fibres on the surface of the fabric. Such surface deterioration is generally unacceptable to the consumer. The amount of pilling that develops is governed by the rate of fibre entanglement, the rate of surface fibre development and the rate of fibre and pills wear-off. These rates depend on the fibre, yarn and fabric properties. Many pilling tests now include assessment of fabric fuzzing, which can be a precursor to pill formation.

The Definition of Snagging

Snagging is a term used to describe undesirable surface deterioration effects such as filamentation or looping. The breaking of individual threads in a woven or knitted fabric causes the generation of this type of surface damage. Here are some use terms used in snagging tests:

Snag – an undesirable loop on the surface of a woven or knitted fabric.

Protrusion – a partially formed snag.

Filamentation – fibrous or hairy appearance on the surface of a fabric due to broken yarn filaments.

Pulled Thread – a thread in a fabric that is tighter than adjacent threads.

Shiner – a thread that is more lustrous (and usually tighter) than adjacent threads.

Indentation – a concave distortion of the fabric surface.

Scope

Orbitor can be used to test both woven and knitted materials. It complies fully with the requirements of EN ISO 12945-1 'Textiles - Determination of fabric propensity to surface fuzzing and to pilling - Part 1: Pilling Box Method.'

In addition to Orbitor, James Heal offer Martindale and Impulse to fulfil the requirements of Part 2 and 3 of EN ISO 12945.

When fitted with Pilling Drums, Orbitor complies with the requirements of Marks & Spencer for both pilling and snagging (conversion kit required).

SnagPod is available for performing snagging tests.

Principles of Pilling Box Tests

Four tubular specimens are mounted on polyurethane pilling tubes and tumbled in the cork-lined box for an agreed number of revolutions.

Specimens are usually prepared from samples which have been cleansed (wash or dry cleaned). Not only is this more representative of the fabric in use but it also helps to preserve the useful life of the cork liners.

Stringent quality control of the liners and the tubes is essential in order to ensure the critical demands of the standards are satisfied.

Principles of Snagging Tests

Snagging differs from pilling by the inclusion of standard points fitted in either the Box or the Drum. Any tendency to form undesirable potential fabric deficiencies are highlighted as the tubular specimens randomly catches on the points.

ICI 444 modifies the cork lined box used for pilling tests by including one point in the centre of each of the six (6) sides of the box.

SnagPod, which is used for BS 8479 & Adidas 4.41, has four (4) rows of 20 angled pins spaced evenly inside the octagonal chamber. It is important to ensure the correct direction of the angled pins relative to the direction of rotation.

Assessment

After tumbling, the change in surface appearance is visually assessed under controlled conditions with either the Pilling Assessment Viewer (PAV) or ProView.

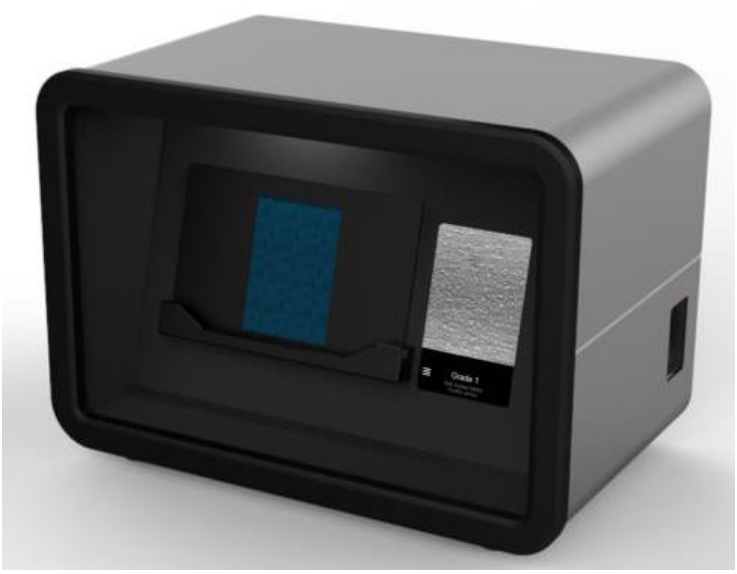
Pilling Assessment Viewer

The PAV illustrated below may be used for assessment of pilling. The primary descriptive method of assessment may be supported by photographic assessment.

The Pilling Assessment Viewer (PAV) used with EN ISO 12945-1 and -2.

ProView Universal Assessment Viewer

ProView from James Heal contains multiple sets of pilling and snagging images to aid with the assessment of knitted and woven fabrics tested on Orbitor, ProMace, Martindale and Impulse.



INSTALLATION

Health and Safety

- Orbitor 1616 has a mass of approximately 35kg, therefore assistance from a colleague or suitable lifting apparatus is recommended.
- Orbitor 1616 complies with the EU regulations in full, see page 25 for details.
- Ensure all test chambers are secure before commencing a test.
- Ensure all lids to the test chambers are securely closed and locked before commencing a test.
- Keep clear of all moving parts when the test chambers are rotating.
- A torque limiter causes the test chambers to stall if their rotation is impeded.
- Ensure the instrument is isolated from the electrical supply before removing any covers. Covers should only be removed by a qualified Engineer or Electrician.

NEVER operate Orbitor 1616 with any of the covers removed.

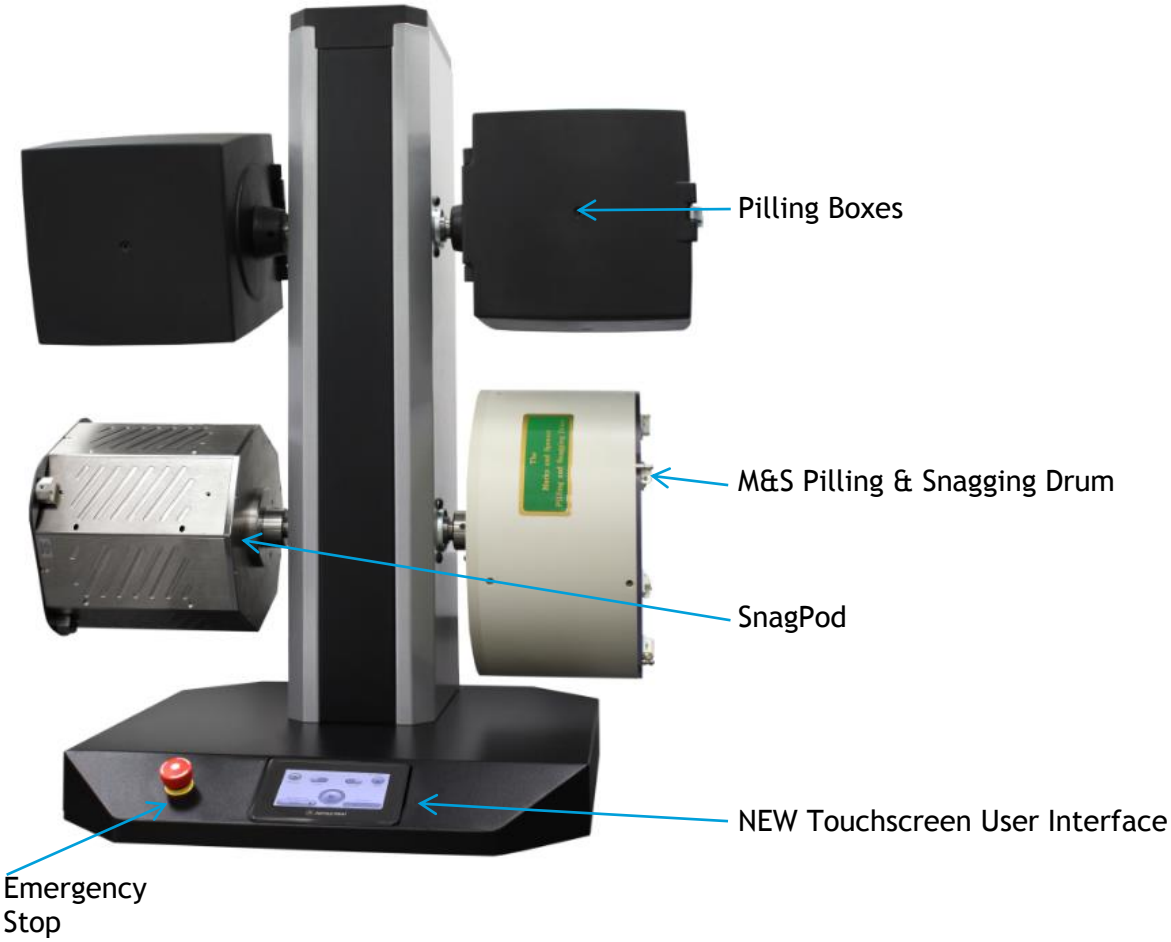
- Fuse with the correct amperage rating must be used.
- Never use Orbitor for anything other than what it is designed for.
- For Care and Maintenance requirements please refer to the appropriate section of this Operator's Guide.

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.

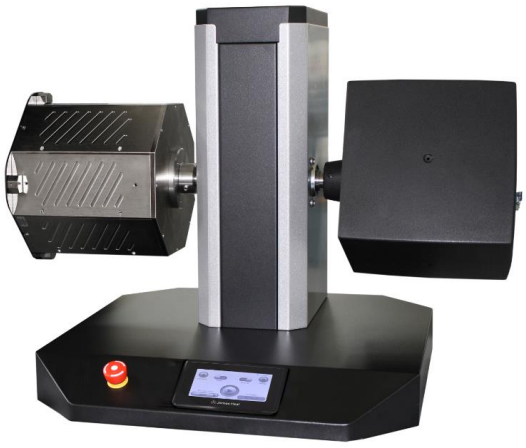
Identification of Parts

4 Station



2 Station

The 2 station Orbitor is essentially identical to the 4 station in form and function, except for the shorter column and 2 stations instead of 4.



Fuses

- One fuse is fitted, located at the back of the instrument, below the mains lead socket.
- The 1A anti-surge fuse protects the complete machine including the motor and drive.
- To replace a fuse, first isolate Orbitor from the mains supply. Place a screw driver blade in the slot of the fuse holder, then press and turn anti-clockwise approximately 1/4 of a turn. The fuse holder complete with fuse is now released.
- The power rating for Orbitor is 40 Watts.

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, e.g., 1616/16/1001 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

Unpacking check list

- Please check the instrument serial number plate corresponds with your delivery note. The serial number plate is located on the side of the instrument.
- The following standard accessories are included with each instrument, either 2 position or 4 position.

142-326	Mains Lead Set – Angled
381-413	Allen Key 4mm AF
794-521	Specimen Mounting Jig
297-042	Operator's Guide on CD

Test Chambers and Test Templates must be ordered separately – please see below for a full list of optional accessories.

How to Order

Recommended Starting Kits (pilling only - EN ISO 12945-1)

901-480	1 x **Orbitor Model 1616-2**
794-753	2 x Cork-Lined Plastic Pilling Boxes
772-101	1 x Pilling Box/Drum Test Template
794-752	2 x Packs (6) Cork Liners
789-511	1 x Pack (10) Rolls 19mm wide PVC Tape (colour: white)
708-925	1 x VeriVide Pilling Assessment Viewer 230V 50/60Hz
202-516	1 x UKAS Certificate of Calibration for Orbitor

901-481	1 x **Orbitor Model 1616-4**
794-753	4 x Cork-Lined Plastic Pilling Boxes
772-101	1 x Pilling Box/Drum Test Template
794-752	4 x Packs (6) Cork Liners
789-511	2 x Packs (10) Rolls 19mm wide PVC Tape (colour: white)
708-925	1 x VeriVide Pilling Assessment Viewer 230V 50/60Hz
202-516	1 x UKAS Certificate of Calibration for Orbitor

Recommended Starting Kits (pilling *only* - M & S P18A)

901-480	1 x **Orbitor Model 1616-2**
788-741	2 x Drums
772-101	1 x Pilling Box/Drum Test Template
788-742	1 x Pack (5) Liner Supports
789-513	1 x Pack (10) Double-sided Adhesive Tape
708-917	1 x Holoscope 230V 50/60Hz
708-915	1 x Knitted Hologram
708-914	1 x Woven Hologram
202-516	1 x UKAS Certificate of Calibration for Orbitor

901-481	1 x **Orbitor Model 1616-4**
788-741	4 x Drums
772-101	1 x Pilling Box/Drum Test Template
788-742	2 x Packs (5) Liner Supports
789-513	2 x Packs (10) Double-sided Adhesive Tape
708-917	1 x Holoscope 230V 50/60Hz
708-915	1 x Knitted Hologram
708-914	1 x Woven Hologram
202-516	1 x UKAS Certificate of Calibration for Orbitor

Recommended Starting Kits (pilling *only* - M & S P18B)

901-480	1 x **Orbitor Model 1616-2**
788-741	2 x Drums
772-101	1 x Pilling Box/Drum Test Template
788-742	1 x Pack (5) Liner Supports
789-513	1 x Pack (10) Double-sided Adhesive Tape
708-917	1 x Holoscope 230V 50/60Hz
766-460	1 x IWS Pilling Photographs SM54 for knitted fabrics
202-516	1 x UKAS Certificate of Calibration for Orbitor

901-481	1 x **Orbitor Model 1616-4**
788-741	4 x Drums
772-101	1 x Pilling Box/Drum Test Template
788-742	2 x Packs (5) Liner Supports
789-513	2 x Packs (10) Double-sided Adhesive Tape
708-917	1 x Holoscope 230V 50/60Hz
766-460	1 x IWS Pilling Photographs SM54 for knitted fabrics
202-516	1 x UKAS Certificate of Calibration for Orbitor

901-480 1 x **Orbitor Model 1616-2**
2-Position Instrument
Standard accessory:
1 x Specimen Mounting Jig 794-521

Test Chambers, Test Templates and SnagPod must be ordered separately

901-481 1 x **Orbitor Model 1616-4** 230V/110V (Switchable voltage, frequency independent)
4-Postion Instrument
Standard accessory:
1 x Specimen Mounting Jig 794-521

Test Chambers, Test Templates and SnagPod must be ordered separately

Test Chambers

794-753 Cork-Lined Plastic Pilling Box
Standard accessories:
1 pack of 4 Moulded Polyurethane Pilling Tubes (140.25mm long) 758-555
1 x Roll 19 mm wide PVC Tape 789-511 (colour: white)

794-754 **Cork-Lined Plastic Snagging Box**
Standard accessories:
6 x Snagging Pins (fitted) 511-545
1 pack of 4 Moulded Polyurethane Pilling Tubes (140.25mm long) 758-555
1 x Roll 19 mm wide PVC Tape 789-511 (colour: white)

788-741 **Pilling Drum**
Standard accessories:
3 x Packs (4) Moulded Polyurethane Pilling Tubes (70.2mm long) 758-551
1 x Ramp 788-743
1 x Liner Support 788-742
1 x Pack (20) Locking Rings 758-553
1 x Roll Double-sided Adhesive Tape 789-513

794-523 **Snagging Kit for Pilling Drum**
Comprising:
3 x Pinned Bars 789-361
2 x Bead Bags 785-251

794-726 **SnagPod (BS 8479:2008 & BHS TM46)**
Standard accessories:
2 x Packs (4) Felt-covered Polyurethane Tubes 758-554
1 x Pack (20) Locking Rings 758-553
1 x Specimen Template 772-121
1 x Pack (10) Fixing Screws for Snagging Bars 319-152
1 x Assessment Mask 766-480

201-933 *ISO Certificate of Calibration for SnagPod*

Assessment (SnagPod)

708-925 **VeriVide Pilling Assessment Viewer** 220/230V 50/60Hz
708-930 **VeriVide Pilling Assessment Viewer** 110V 50/60Hz
766-455 **1 x Set (9) SnagPod Reference Photographs**

Spares and Consumables (SnagPod)

794-824 **Snagging Bar (Pack of 4)**
319-152 **Fixing Screws for Snagging Bars** - per pack (10)
758-554 **Felt-covered Polyurethane Tubes** - per pack (4)
758-553 **Pack (20) Locking Rings** - per pack (20)
766-455 **SnagPod Reference Photographs** - per set (9)
772-121 **Specimen Template**
766-480 **Assessment Mask**

Test Templates

772-101 **Pilling Box/Drum Test Template**
772-102 **Snagging Box Test Template**
772-107 **Snagging Drum Test Template**

Spares for Pilling or Snagging Boxes

794-753 **Cork Liners for Pilling Boxes (mounted on steel plates)** - per set (6)
794-746 **Cork Liners for Snagging Boxes (mounted on steel plates)** - per set (6)
794-521 **Specimen Mounting Jig (Stand, Tube and Plug)**
758-555 **Moulded Polyurethane Pilling Tube (140.25mm long) -** per pack (4)
789-511 **Rolls of 19 mm wide PVC Tape (colour: white) -** per pack (10)
511-545 **Snagging Points for one Plastic Pilling Box -** per set (6)

If snagging parts are purchased to convert a box from pilling to snagging, a set of Cork Liners 794-746 should also be ordered.

Spares for Pilling Drum

788-743 **Ramp** - each
788-742 **Liner Supports** - per pack (5)
758-551 **Polyurethane Pilling Tubes (70.2mm long)** - per pack (4)
758-553 **Locking Rings** - per pack (20)
789-513 **Double-sided Adhesive Tape (approx. 25 mm wide x 36 yd long)** - per pack (10 rolls)

Spares for Snagging Kit for Pilling Drum

785-251 **Bead Bag** - each
789-361 **Pinned Bars** - each

2-year Spares Kit (Orbitor)

117-488*	**Controller**

Calibration

202-516	*UKAS Certificate of Calibration for Orbitor*

Assessment

708-925	**VeriVide Pilling Assessment Viewer** 230V 50/60Hz
708-930	**VeriVide Pilling Assessment Viewer** 110V 50/60Hz

The VeriVide Pilling Assessment Viewer complies with the following standards:
EN ISO 12945-1 = Orbitor
EN ISO 12945-2 = Nu-Martindale/Mini-Martindale
ASTM D 3514

708-949	**Spare Lamp D65 8W 300 mm for VeriVide Pilling Viewer**
708-908	**PilliScope (no drums)** 230V 50/60Hz
708-919	**PilliScope (no drums)** 110V 50/60Hz
708-966	**Spare Lamp 20W for PilliScope**
708-909	**Snagging Drum for PilliScope (P21A)**
708-917	**Holoscope (no holograms)** 230V 50/60Hz
708-918	**Holoscope (no holograms)** 110V 50/60Hz
708-916	**Spare Lamp 20W for Holoscope**
708-915	**Knitted Hologram (P18A)**
708-914	**Woven Hologram (P18A)**
766-460	**IWS Pilling Photographs SM 54 for knitted fabrics (P18B)**

M & S P18B : Holoscope (without holograms) plus IWS SM54 photographs.

SPARES FOR EARLIER MACHINES

Spares for earlier machines with (silver or blue) fabricated metal boxes

794-752 **Cork Liners for Pilling Boxes (mounted on steel plates)** - per set (6)
794-746 **Cork Liners for Snagging Boxes (mounted on steel plates)** - per set (6)
794-747 **Snagging Points for one Metal Pilling Box -** per set (6)

Spares for earlier machines with (blue) moulded plastic boxes

794-722 **Cork Liners for Pilling Boxes (mounted on aluminium plates)** - per pack (6)
794-727 **Cork Liners for Snagging Boxes (mounted on aluminium plates)** - per set (6)
511-545 **Snagging Points for one box** - per set (6)

Spares for earlier machines with (grey) fabricated plastic boxes

794-722 **Cork Liners for Pilling or Snagging Boxes (mounted on aluminium plates)** - per pack (6)
794-727 **Cork Liners for Snagging Boxes (mounted on aluminium plates)** - per set (6)
396-754 **Snagging Points for one box** - per set (6)

Spares for earlier machines with wood boxes

393-501 **Cork Liners for Pilling or Snagging Boxes** - per pack (6)

794-522 **Snagging Points and Mountings for one box** - per set (6)

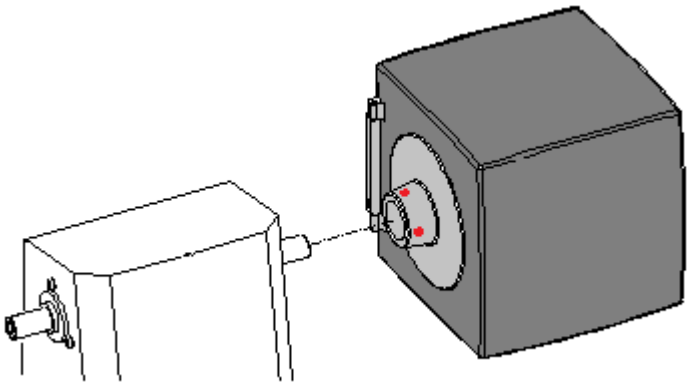
GETTING STARTED

Connecting to Services

Stand Orbitor on a firm, level surface.
Connect Orbitor to the electricity supply using the appropriate electrical lead supplied.

Mounting a Test Chamber

Extract the locking screws (2 per box) using the 4 mm ball driver provided. The locking screws can be found on the circular hub. Align the test chamber with the drive shaft, ensuring the locking screws are aligned with the dimples on the shaft. Gently slide the test chamber onto the shaft ensuring the mounting hub is fully engaged. Tighten both locking screws using reasonable force. It is important that the locking screws are fully engaged in the dimples on the drive shaft. After several hundred revolutions the test chamber may self-align causing the locking screws to become loose. At a convenient time, re-tighten the locking screws. Periodically check the screws are tight.



NEVER lift the machine by the test chambers. This will result in damage to the instrument.

Initial Set-up of Test Chambers

Test chambers should be run-in for approximately 200 hours with 4 blank tubes until the linings have stopped shedding cork dust. All cork dust must be carefully brushed out and removed. This procedure must be repeated each time the cork liners are replaced.

DO NOT inhale the cork dust.

Please refer to the Marks & Spencer test method for instructions on how to use the Marks & Spencer drum liner, support, ramp, and the fitting of snagging points to the drum.

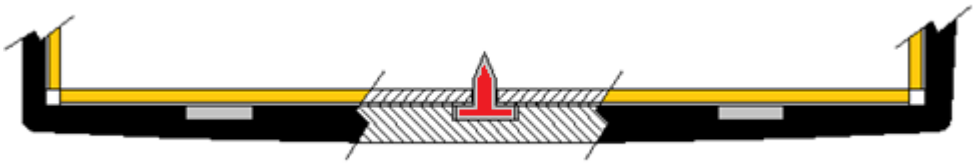
Removing Test Chambers

Test chambers can be removed simply by fully unscrewing the locking screws using the 4mm hexagon key. When the screws are fully retracted, carefully slide the box off the end of the drive shaft. Ensure both drive shaft and mounting flange are clean before reassembly.

Fitting/changing Snagging Points

James Heal supply the 'Cork-Lined Moulded Pilling Box' fitted with snagging points, however as the snagging points become less sharp with use then it will become necessary to replace them as follows:

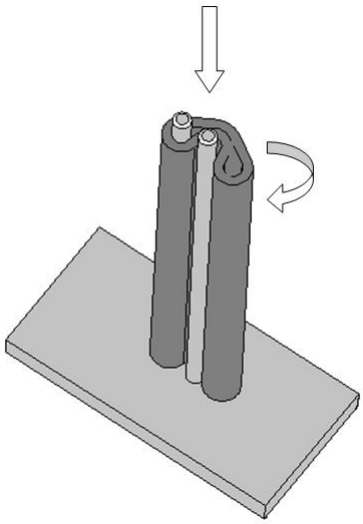
- Remove cork liners from the boxes.
- The cork liner plates have a 6 mm hole in the centre.
- Drill a 6mm hole through cork, while supporting underneath to prevent cork damage.
- Insert one snagging point through the 6mm hole/slot in each cork liner plate.
- The plastic moulded box accommodates six (6) snagging points.
- The head of each snagging point should locate in either a slot or hole in the box.
- Reassemble the six plates, bottom plate first. Replace each plate firm against the side of the box.

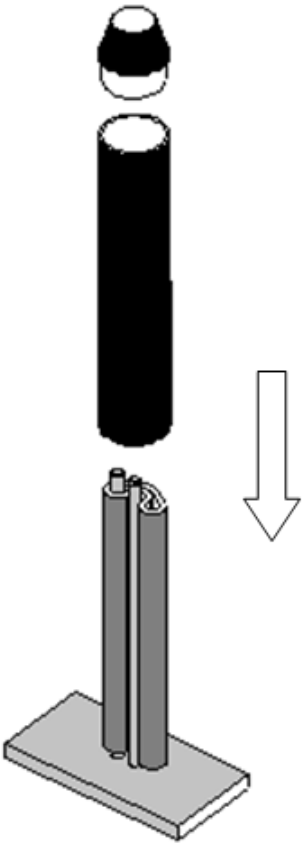


Dressing a Moulded Polyurethane Pilling Tube using the Mounting Jig

Once the required number of samples have been conditioned according to the test method, and laundered if necessary, cut and sew the specimens carefully following the test method instructions.

- Turn each specimen inside-out so that the face of the fabric forms the outside of the tube.
- Cut 12mm from one end of the fabric tube.
- Take a moulded polyurethane pilling tube place over rod A of the mounting jig, pull the tube round rod B. Push a hollow metal cylinder fitted with a tapered end plug, over the folded pilling tube.
- Slide the tubular specimen over the tapered end plug and metal cylinder.
- Grip the fabric against the rubber tube and then carefully remove the metal cylinder leaving the fabric on the rubber tube.
- To prevent fraying, cover the cut ends of the specimen with self-adhesive PVC tape (789-511) around the tube, leaving 6 mm of each end of the tube exposed.
- Once testing is complete, remove the specimens from the pilling tubes, using a "stitch unpick" (Singer seam ripper) taking special care not to touch and damage the pilling tubes.





Maintenance of Cork Liners

Before each test, it is essential to ensure that all fluff and other debris is removed from inside the test chambers, e.g. by means of a vacuum cleaning device or by using a small brush.

Periodically, it is necessary to clean the cork liners when they have become contaminated by any residue from the test specimens. A suitable cleaning solvent is industrial methylated spirit (IMS).

Note - the use of methylated spirit and other solvents may be the subject of national legal regulations for health & safety and/or environmental reasons.

Cork linings should be inspected at regular intervals and replaced when obviously "polished", damaged or soiled in such a way as to modify their frictional properties.

Maintenance of Specimen Tubes

The specimen tubes should be inspected at regular intervals in accordance with the test method specification being used, and replaced as necessary.

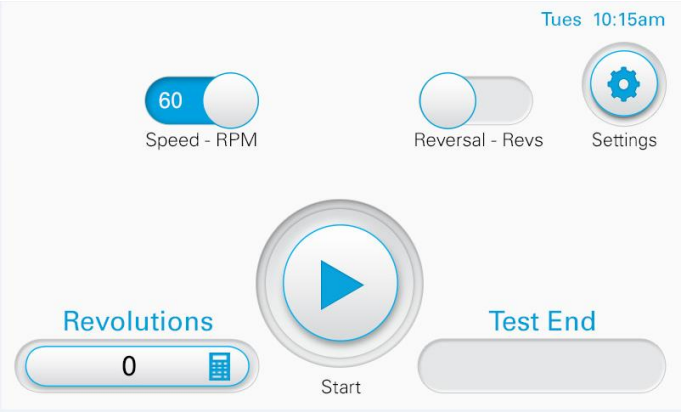
The specimen tubes (polyurethane, press-moulded tubes) should be virtually identical to each other when new. Experience of intensive use has shown that no significant wear of these tubes occurs under normal use conditions.

The most critical part of the tube is the convex outer surface at its end. New tubes should be checked on receipt to ensure that no moulding faults (e.g., flashing) have occurred in the critical region. In use, damage is unlikely; however if change should occur it is essential that the tube be replaced.

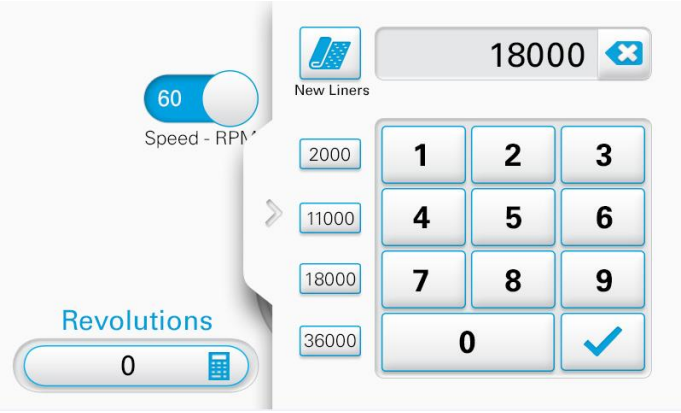
Over time, the specimen tubes will age. This will become evident if the specimen tube becomes hard and showing cracks on the ends of the tubes. If this occurs then replace the tubes.

TOUCHSCREEN USER INTERFACE

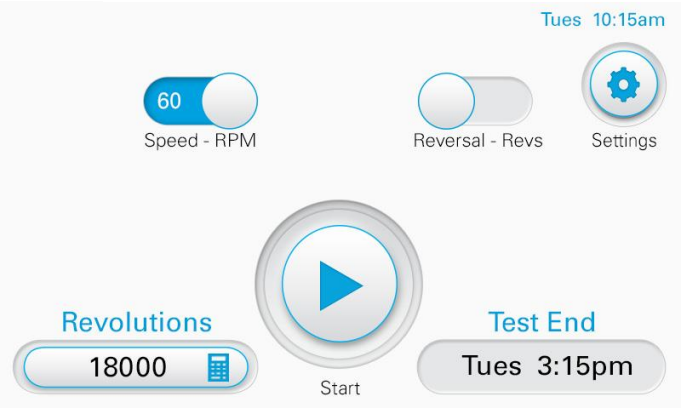
The NEW touchscreen brings new levels of ease of use and functionality, reducing training times and can be used by all levels of operator.



1. Home page

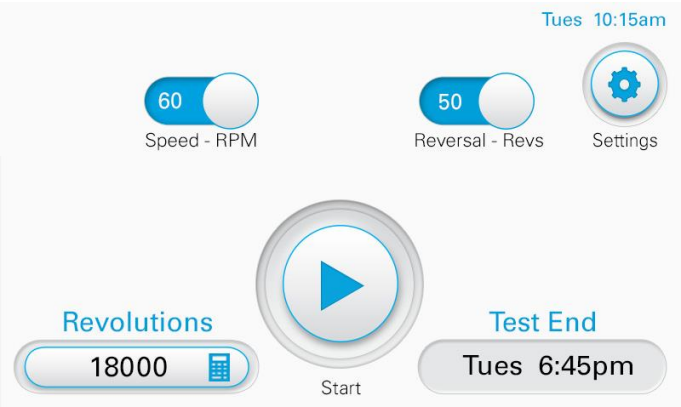


2. Revolutions can be inputted by pressing the revolutions button and typing in the number of revolutions required onto the keypad, followed by pressing the button.



3. Speed and reversal can be set manually by moving the toggle switches left or right. The option that is visible is the one selected.

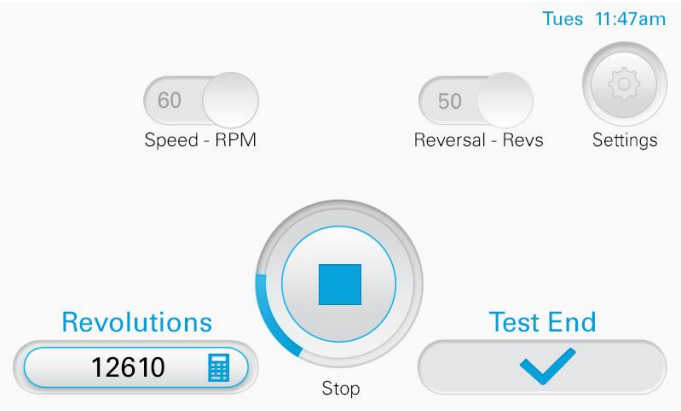
Reversal will occur every 50 revolutions.



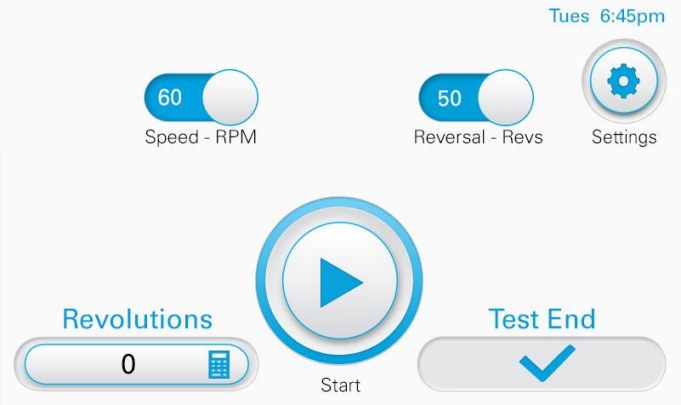
4. Once the test page is set up, all relevant test information is displayed, including number of revolutions, speed, reversal and when the test will be complete.

The operator must press the button to start the machine. 

The estimated end time will be displayed once selected but will remain live.
This will change throughout the test as the speed fluctuates minimally e.g. at 60±2rpm a 5 hour test may fluctuate within the acceptable parameters of +/- 10 minutes.



5. Whilst the test is running, all the setup buttons are greyed out and the progress ring around the stop button shows the progress of the test.



6. Once the test is complete, the progress ring will be a full circle and flash, along with the test end display showing a tick.

7. Settings – General

Parameters can be altered in general settings:

- Select Automatic Restart for the test to continue after a power failure
- Volume
- Brightness
- Language (requires a power cycle after changing)
- Day / Time

TECHNICAL DATA

EU Conformity

- Machinery Directive 2006/42/EC
- Low Voltage Directive (LVD) 2014/35/EU
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Waste Electrical and Electronic Equipment Recycling (WEEE) Directive 2012/19/EU
- Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU

REVISION HISTORY

See front cover for publication number, e.g., 290-1616-1$A

Rev	Date	Originator	Details of revision
A	16.09.16	CB	First release
B	30.11.16	CB	Remove standards screen /Replace settings image EU conformity / Add ‘user’ / Stock codes - Orbitor
C	13.4.17	CB	Remove stds buttons / Queens AE badge
D	29.10.18	SEW	Adidas 4.41 Snagging Test added to Standards & Principles.