INSTRUCTION MANUAL

FOR THE

WYZENBEEK WEAR TESTER

SAFETY INSTRUCTIONS

Due to the potential hazards associated with any electrical instrument it is important that the user is familiar with the instructions covering the capabilities, and the operation of the instrument. The user should ensure that all reasonable safety precautions are followed and if in any doubt should seek professional advice before proceeding.

The instrument is designed for use by suitably trained, competent personnel in a controlled working environment and is intended for use as an abrasion tester only.

There are many moving parts and all reasonable steps have been taken to ensure the operator protection. Incorrect or miss-use of the instrument could result in injury or damage to the instrument. Therefore, please follow these instructions and operate the machine in a safe manner. Please consider these moving parts before setting up the machine to run tests.

The intent use of the instrument is for residential, commercial and light industrial environment as describe in EN 50081-1

Schap Specialty Machine, Inc. cannot be held responsible for any unauthorised modifications to this tester.

WARNING

This unit contains moving parts and hazardous live voltage. Under no circumstance should the user try to prevent or restrict the movement of parts, close the ventilation, or attempt to gain access to the internal circuitry, either personally or with the aid of foreign bodies.

PROVISION FOR LIFTING AND CARRYING

When unpacking or moving this unit extreme care is required, owing to its physical construction and weight. It is recommended that accepted lifting and carrying procedures are employed, that two (2) people do the moving, and that personnel wear the appropriate Personal Protective Equipment (PPE), such as safety shoes and a waist harness. If the unit is to be moved an appreciable distance/height it is recommended that it is moved via suitable mechanical assistance, such as a fork lift truck or hoist.

OPERATING ENVIRONMENT

This unit is intended to be used in a residential, commercial and/or light industrial environment, in conformance with BSEN 50081-1 and BSEN 50082-1.
The following list gives examples of locations in which the instrument might be located; workshops, laboratories and service centres (locations which are considered to be commercial or light industrial).

CLIMATIC ENVIRONMENT

The unit is intended to operate within the following conditions

i) Temperature range: 5-55 deg Celsius
ii) Humidity range: 30-95% RH
iii) Altitude: up to 2000 meters above sea level.

The Wyzenbeek Tester is intended to be stored in a temp range of –25 - +25 deg Celsius.

ELECTRICAL INFORMATION

This unit complies with BSEN 61010-1 1993 safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use.

INSTALLATION CATEGORY AND POLLUTION DEGREE

Installation category III
Pollution Degree 2

ELECTRICAL SUPPLY

220/240V - 50Hz Single Phase
or
110/120V - 60Hz Single Phase

Fuse requirements 10A

The machine has been wired per your order instructions.

WARNING LABEL SYMBOLS

Number	Symbole	Publication	Description
1		IEC 417, No. 5031	Direct current
2		IEC 417, No. 5032	Alternating current
3		IEC 417, No. 5033	Both direct and alternating current
4		IEC 617-2, No. 02-02-06	Three-phase alternating current
5		IEC 417, No. 5017	Earth (ground) TERMINAL
6		IEC 417, No. 5019	PROTECTIVE CONDUCTOR TERMINAL
7		IEC 417, No. 5020	Frame or chassis TERMINAL
8		IEC 417, No. 5021	Equipotentiality
9		IEC 417, No. 5007	On (Supply)
10		IEC 417, No. 5008	Off (Supply)
11		IEC 417, No. 5172	Equipment protected throughout by DOUBLE INSULATION or REINFORCED INSULATION (equivalent to Class II of IEC 536 –see annex H)
12 (see note)	 Background colour – yellow; symbol and outline – black	ISO 3864, No. B.3.6	Caution, risk of electric shock
13	Symbol under consideration		Easily–touched higher temperature parts
14 (see note)	 Background colour – yellow; symbol and outline – black	ISO 3864, No. B.3.1	Caution (refer to accompanying documents)

SECTION 1 INTRODUCTION

General

The Wyzenbeek Wear Tester provides the capability to test Abrasion Resistance according to ASTM D 4157. A copy of this standard can be purchased from ASTM on line.

SECTION 1 Operating Principles

The Wyzenbeek Wear Tester combines in a small conveniently operated mechanism, a proven principle of abrasion. The unit gives quick results indicative of the actual wear experienced by fabric during use.

COVER: The mechanism for abrading the samples is contained under a clear polycarbonate cover. When this cover is opened the machine will stop running. This clear polycarbonate cover is intended to protect personnel from physical harm.

ABRASIVE MATERIAL: The tester has four sample holding arms, each sample being held under a measured tension and pressure. The fabric is subjected to the action of the abrasive material clamped on an oscillating drum operating under the samples. The tester is supplied with one Wyzenbeek screen installed, with the small wire side up against the test fabric. Duck cloth (#8 or #10) can also be used as an abrasive material.

SETTING TENSION: Each sample holding arm has two rubber covered sample clamps, pivoted to swing in the cored hole of the over arm. The forward sample clamp has a graduated scale bar on which a 340g weight slides. This is the Tension adjustment. Movement of this 340g weight along the bar changed the tension, with the weight being the furthest from the clamp giving the most weight against the fabric/sample. The setting of this weight is at the discretion of the tester, and is usually done in compliance with the end customer's test requirements.

SETTING PRESSURE: The rear sample clamp butts against a knurled thumb screw, to provide for taking up of the slack without altering the hold on the yarns of the cloth. There is a second scale bar in the center of the sample holding arm on which a 150g weight slides. This is the Pressure adjustment. The tension and the pressure values on the sample should be adjusted according to ASTM recommended settings or those agreed on by the customer and the tester. NOTE: the gradations on the scale bars are marked in Pounds Force but can be converted to Newtons. Care should be taken to calibrate the tension and pressure values with the appropriate measurement device prior to running a test.

SAMPLE EXAMINATION: The sample holding arm can be lifted by squeezing the two fingers at the operator's end of the holding arm. Once you squeeze these together, the arm is free to be lifted. When the sample holding arm is lifted, the sample rises with it and clears away from the curved pressure

pad. This allows examination of the sample without disturbing its setting in any way. Provision is made for different thickness of materials by the use of an adjustment screw on top of the pressure bar. NOTE: these sample bars must be put back into place before operating the machine.

ATTACHING THE ABRASIVE MATERIAL: The abradant is held on the surface of the drum by two long toothed clamp bars, pivoted along the center so that both a clamping and a stretching force is exerted on the abradant. The lever to facilitate loading of the abradant is situated just inside the machine door. A micro switch on this door will cut off the power to the machine if this door is opened while the unit is moving. After opening the door, with the machine off, the operator can put their hand into the cabinet and find the lever. Moving the lever (it will only move one way) will allow for the clamping mechanism to open. Now the abrasive material can be installed onto the drum. After the abradant is placed, the operator MUST make sure that their fingers, hands, etc are NOT in contact with the clamping mechanism. Then the operator can re-insert their arm into the cabinet and move the lever back to the previous position, allowing for the clamps to hold onto the abradant material. When this is finished the operator MUST pull their hand out of the cabinet, close the door, and use the knob to secure the door again. If the door is not secured properly, the machine will NOT operate.

VACUUM PIPES: Two (2) slotted vacuum pipes are located over the abrasive drum. These vacuum pipes are connected to a vacuum fan inside the enclosure which exhausts through the rear of the machine. The volume of air being pulled over the abrasive surface keeps it free from lint and dust and also aids in maintaining an even temperature during the test.

Four samples can be tested simultaneously. The machine operates at 90 double rubs per minute.

SECTION 2 UNPACKING AND INSTALLATION

2.1 Unpacking

The Wyzenbeek Wear Tester is shipped fully assembled and ready for use. The unit should be unpacked close to the area where it is to be installed as the unit is heavy.

Testing should be carried out in the standard atmosphere for testing i.e. 21°C ± 1°C and 65% RH ± 2% (Please see Specification ASTM 4157).

Carefully unpack the unit and inspect for any transit damage. In the unlikely event of any part of the unit being damaged please contact the Customer Service Manager at the address below:

SCHAP SPECIALTY MACHINE, Inc.
17309 TAFT RD.
SPRING LAKE, MI 49456
U.S.A.

PHONE : 616-846-6530
FAX : 616-846-6675
e-mail: sales@schapmachine.com

2.2 Installation

The unit should be placed on a sturdy bench or table capable of taking the weight of the unit (60 kgs).

SECTION 3 OPERATING INSTRUCTIONS

3.1 Setting the counter

To set the counter, push the up arrow key or the left arrow key. The right digit will begin flashing. Use the up arrow key to increase the value to the desired number. Press the left arrow key to move to the next digit to the left. Again use the up arrow key to set the value. Continue this process until the correct number is showing on the counter. Press the "P" button to accept this figure.

RESET: Even if you do not wish to change this figure, you should press the red button to reset the counter to "0" prior to starting a new test.

The counter is now set for this number of rubs, the unit will automatically stop after this number of rubs has been completed.

3.2 To cover the drum

To conduct a test, the drum should be covered with an appropriate abradant material. This should be # 0 Emery paper, #10 Cotton Duck or 50 x 70 Steel Screen. The emery paper abradant should be changed for each test. With the power switched off, open up the door on the front of the machine. With your hand inserted into the cabinet you will find a lever inside toward the back. When the lever is in the locked position, it is pushed back. When it is in the unlocked position it is pulled forward (see page 7 for more details).

NOTE: THE LEVER IS ON A STRONG SPRING TO KEEP THE ABRADANT IN PLACE, CARE SHOULD BE TAKEN THAT FINGERS ARE NOT TRAPPED WHEN LOCKING THE ABRADANT IN PLACE.

The unit will come complete with stainless steel mesh screen in place on the drum. This can be used as an alternative to the emery paper abradant. When this stainless steel screen needs to be replaced contact Schap Specialty Machine, Inc. for replacements. It is to be installed with the small wire size up (against the fabric).

With the lever in the unlocked position, place enough abradant material on the drum to cover the four abrading heads (9.50" x 12.00"). Note: depending on the size of the sandpaper sheets, this may need more than one sheet to be used.
When the paper is flat and in place, the lever should be locked into place. Close the door in the front of the unit. Note: the unit will not operate until this door is completely closed.

3.3 Sample Preparation

Samples should be taken according to agreed procedures.
Test specimens should be cut with the long length in the warp direction.
The test specimen should be cut 73 mm x 245mm (See ASTM-4157, Sect 8).
The number of specimens to be tested should be agreed between interested parties.

Condition the samples in the standard atmosphere for testing.

Unless otherwise specified, the samples should be abraded on the face of the fabric.

3.4 Test procedure.

Place the specimen in the clamps with the long direction parallel to the direction of abrasion. Lower the bar until it latches into the hole in the lock bar. Draw the specimen tight enough to bring the weighted tension bar into a horizontal position. If the specimen stretches during the test, bring the tension scale bar back into a horizontal position by adjusting the screw behind the rear clamp.
Depending on the thickness of the specimen, adjust the knurled screw on the top of the over arm to allow the pressure bar to rest in the horizontal position.

NOTE: Unless otherwise specified, abrade the specimen using a 2 lb tension weight and a 3 lb pressure weight for 250 continuous cycles with No. 1 emery paper.

The percentage loss in breaking strength can then be calculated according to ASTM D 1682.

Alternatively the sample can be tested up to the point of rupture.
The sample being tested at the agreed load until rupture occurs.

Note this number as the result of the test.

SECTION 4 TEST REPORT

The test report for the specimen should contain the following information:

- State that the specimen was tested according to ASTM D 4157.
- Details of the specimen to be tested
  - Description of the material/fabric
  - Description of how the sample was prepared
  - Description of the fabric or yard/thread supplier.
- Type of abradant used.
  - Wyzenbeek 50 x 70 wire screen
  - Duck cloth: #8 or #10
  - Emery cloth, 30
- Tension used.
- Pressure used.
- Average loss in breaking strength if this method is used.
- Number of rubs to rupture if this method is used.
- Effect of rubbing on lustre, colour, pilling, thickness, loss of pile etc.
- Any deviation from this standard.

SECTION 5 MAINTENANCE

- Oil all moving parts regularly, using a good grade of machine oil.
- If you find that a part is broken, you can contact Schap Specialty Machine for a replacement part or to service/repair your machine. Contact us at sales@schapmachine.com
- Rubber pad care: the machine is shipped with the rubber pads in place ready to run the tests. The bottom of these pads are shaped to make overall contact with the contour of the drum. If the material being tested does not show even wear on the entire surface, check the rubber pads.
- How to re-shape old or newly installed pads. Place a piece of 50 or 60 grit emery paper on the drum. Pressure weights should be set for the least amount of weight and set the counter for 60 cycles. At the end of this cycle lift the arms and brush away the accumulated rubber on the pad. Repeat the cycle until the curve of the pad is shaped to the contour of the drum.
- You can purchase additional Rubber pads by contacting Schap Specialty Machine at sales@schapmachine.com

  CAUTION: Do not start motor until the unit arms are locked in the front bar.

  CAUTION: All Power should be disconnect and the machine should be turned off before servicing

SECTION 6 TROUBLESHOOTING

If you find that the machine will not start, then please check these items first:

- The front metal door is not closed properly, or the knob is not turned properly to engage the sensor and allow the machine to run.
- Check to make sure that the machine is plugged in.
- Check to make sure that the polycarbonate cover is down and in place, so that the sensor is engaged and the machine can operate
- The 10 amp fuse may be tripped. Please examine the fuse to see if it is still functioning. Replace it with an identical fuse if it needs to be replaced.

If you find that the samples are not being tested properly:

- Make sure that the arm clamps are properly set in place
- Make sure that the abradant is properly clamped in place
- Make sure that the rubber pads are not worn too much
- Make sure that the tension and pressure setting are correct on the sample clamps