AG139
Accelerated Polishing Machine

Impact Test Equipment Ltd
www.impact-test.co.uk & www.impact-test.com
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SAFETY NOTICE

WARNING  DO NOT CONNECT THE ACCELERATED POLISHING MACHINE TO ELECTRICAL POWER UNTIL YOU HAVE READ THESE INSTRUCTIONS COMPLETELY. KEEP THESE INSTRUCTIONS IN A CONVENIENT LOCATION FOR FUTURE REFERENCE. TO GUARD AGAINST INJURY, THE FOLLOWING BASIC SAFETY PRECAUTIONS MUST BE OBSERVED IN THE USE OF THIS PRODUCT.

GENERAL SAFEGUARDS.

- Use the machine only for its intended purpose.
- Do not place anything on the machine other than the equipment supplied or recommended by the manufacturer.
- All protection guards and covers must be in place and properly secured before operating the machine.
- Do not allow untrained personnel to operate the machine without supervision from a trained operator.

ELECTRICAL SAFEGUARDS.

WARNING  LETHAL VOLTAGES MAY BE EXPOSED IF COVERS ARE REMOVED WHilst CONNECTED TO THE SUPPLY.

- The machine must be connected to a supply voltage corresponding to the electrical rating plate.
- Unplug the machine before moving it, or when it is not in use.
- Trailing leads must be covered, sign-posted, or secured to avoid trip hazards.
- Observe all Hazard Warning notices.
PERSONAL SAFEGUARDS.

- Do not tamper with the machine whilst it is operating.

- Care must be taken when removing / replacing the Road Wheel. It is heavy.

- Loose clothing must be properly secured.

- Suitable personal protective clothing should be worn when operating or cleaning the machine, e.g. coveralls, eye protection, safety shoes. In addition, gloves and a breathing mask should be used when dispensing the emery flour powder.

- Local health & safety regulations must be observed.

CLEANING

- **DISCONNECT FROM THE ELECTRICAL SOURCE BEFORE CLEANING THE MACHINE.**

- When cleaning the machine do not use a pressure hose directed against the bearings or electrical components.

- Remove the feeder(s) from the machine prior to cleaning. Do not immerse the feeders in any liquid or clean with solvents. Adequate cleaning is achievable with an air hose and a good quality brush.

TRANSIT TY WRAPS

Remove the transit Ty wraps located on the Main Armature, Mains Lead and the Flour Feeder.
**Function**
The function of the Accelerated Polishing Machine is to produce polished stone samples of aggregates used in road surfaces, to simulate actual road conditions. The samples produced form an integral part of the Polished Stone Value (PSV) Test. The PSV Test is a friction test that calculates a measure of resistance to skidding, performed using a Skid Resistance Tester.

**Road Safety**
The use of PSV’s in road construction has had a major influence in the reduction of accidents.

**Standards**
In order to understand and carry out the PSV Test, one of the following documents is necessary: BS 812 Pt 114, BS EN 1097-8:2000, ASTM E303.

**Operation Overview**
Fourteen specimen aggregate samples are clamped around a rotating Road Wheel. These samples are subjected to two timed stages of abrasive polishing under a loaded rubber tyre. First by Corn Emery grit, and secondly by Flour Emery powder.
Machine Features

- Heavy welded steel mainframe, standing on adjustable anti-vibration mounts.
- A steel main spindle running in sealed ball bearings, protected by a labyrinth seal. (The spindle is axially loaded to eliminate end-play).
- 3Ø motor with speed control and an adjustable timing belt drive.
- A digital timer enabling accurate tests.
- Accurately machined moulds for the manufacture of specimens.
- Specimens located on a Road Wheel by rubber rings and held by a simple side fixing.
- Tyred wheel easily removed for replacing worn tyres.
- Water, gravity fed, from a high level tank through a calibrated flow meter.
- A removable Collecting Tray for spent abrasive and water.
- A mechanical lifting device to lower and raise the loaded tyre to the running surface.
- 24V AC feeders and control circuits for safety.
- An Electro-magnetic safety switch to ensure that removable safety covers are in place.
- Tamper-proof machine screws on access covers.
- Electrical hazard warning labels.
- CE certified.
1. **INSTALLATION AND LEVELLING.**

1.1 On receipt, inspect the unit for any damage incurred during transit. Check the loose components against the Packing List below.

<table>
<thead>
<tr>
<th>Qty</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Operating Instructions</td>
</tr>
<tr>
<td>4</td>
<td>Specimen Moulds</td>
</tr>
<tr>
<td>2</td>
<td>Mould Plates</td>
</tr>
<tr>
<td>1</td>
<td>Flour Spreader</td>
</tr>
<tr>
<td>1</td>
<td>Feeder Unit (Corn Emery)</td>
</tr>
<tr>
<td>1</td>
<td>Feeder Unit (Flour Emery)</td>
</tr>
<tr>
<td>1</td>
<td>Water Tower &amp; Bracket Assembly</td>
</tr>
<tr>
<td>1</td>
<td>Drip Tray</td>
</tr>
<tr>
<td>1</td>
<td>Tyred Wheel (Flour Emery)</td>
</tr>
<tr>
<td>4</td>
<td>Anti-Vibration Mounting Pads</td>
</tr>
<tr>
<td>1</td>
<td>1.2mm Hexagon Socket Wrench</td>
</tr>
<tr>
<td>1</td>
<td>4mm Hexagon Socket Wrench</td>
</tr>
<tr>
<td>1</td>
<td>5mm Hexagon Socket Wrench</td>
</tr>
<tr>
<td>1</td>
<td>6mm Hexagon Socket Wrench</td>
</tr>
<tr>
<td>1</td>
<td>17mm Hexagon Socket Wrench</td>
</tr>
<tr>
<td>4</td>
<td>Rubber Rings (Road Wheel)</td>
</tr>
<tr>
<td>1</td>
<td>Certificate for Tyre Rubbers</td>
</tr>
<tr>
<td>1</td>
<td>Weight</td>
</tr>
</tbody>
</table>

1.2 Fit the following loose packed items on to the machine:

(a) Corn Emery Feeder Unit (Black Hopper) to the Mounting Block on the top right hand side of the machine.

(b) Drip Tray below the Road Wheel.

(c) Water Tower & Bracket Assembly, inc. water feed pipe. **Do not over tighten the pipe gland, but ensure it is airtight.**

(d) The Weight onto the Pivoted Arm. **This operation requires two personnel.**

1.3 BS812 requires the machine to be rigidly mounted on a firm and level concrete base. The Anti-vibration Mounting Pads supplied are considered acceptable for mounting on any firm and rigid level surface.

1.4 Levelling. It is important when levelling the machine to maintain the running face across the tyre in a horizontal plane. This can be achieved by placing a spirit level laterally across the Pivoted Arm of the machine and adjusting the front in relation to the rear. When running, with the Flour Emery Feeder in operation and with the correct water/powder ratio, the slurry formed on the
tyre will tend to take up a distinct track at some position across the running face of the tyre. The object of this levelling procedure is to ensure that this track is centrally disposed across the tyre.

1.5 Check that the Corn Emery Tyred Wheel is fitted to the Pivoted Arm, and that this arm is lifted clear of the Road Wheel by turning the Handwheel (situated behind the weight), fully clockwise. Remove the front cover from the machine. Then remove the large retaining screw on the end of the Main Spindle (using the 17mm Hexagonal Socket Wrench), and pull the Road Wheel off.

2. **ELECTRICAL INSTALLATION.**

2.1 Check that the electrical specification of the machine is suitable for the available supply. The unit is wired through the Flexible Cable provided. Connection to the supply can be either through a fused three-pin plug, or preferably through a fused switch connected as follows:

- Brown - Live
- Blue - Neutral
- Green/Yellow - Earth

The fuse must be rated at:
- 13 Amps on 220 / 240v AC.
- 16 Amps on 110v AC.

Running the machine supply voltage through a 30mA RCD (Residual Current Device) is recommended.

2.2 With the Feeder located in its Mounting Block, electrically connect the Feeder Unit by pushing the miniature plug fitted to the flexible lead into the socket of the feeder.

2.3 The Control Unit electronically controls the machine. This is situated at the back of the machine. Separate switches give control of the Start/Stop operation, the Feeders, and the Motor speed. **The motor will only operate if the front cover is in place, and the timer has been pre-set.** The Feeder will only operate with the Motor switch in the ON position.

2.4 Protection fuses are fitted to the Control Unit panel for the incoming supply voltage and the 24V displays supply. Fuse rating as marked.

2.5 The START/STOP switch indicates the electrical status of the machine.

a) The central “eye” of the switch glows dimly when power is applied. This indicates a state of “readiness”, i.e. the safety cover is in place, internal interlocks are engaged and 24V AC is available to the feeders.
b) On depressing the START button, the “eye” will glow brightly.

c) An unlit “eye”, indicates that the machine has either “timed out” or the safety cover isn’t fitted.

3. PREPARING SPECIMENS.

3.1 Sand, Cement, and Mortar Specimens are now considered obsolete.

3.2 **Resin Specimens** - It is essential to retain the Metal Backing Plate firmly clamped to the mould until the resin has completely cured. Premature withdrawal will allow the specimen to lift at the ends and from a radius smaller than that required to match the mounting surface of the wheel, with a resultant cracking of the specimen and uneven running of the tyre.

3.3 Further information on the preparation of specimens is detailed in BS EN 1097-8:2000.

4. MOUNTING SPECIMENS ON THE ROAD WHEEL.

4.1 Remove the Road Wheel from the machine using the 17mm Hexagonal Socket Wrench. Lay the Road Wheel flat on a firm level surface. With the 6mm Hexagonal Socket Wrench, withdraw the 6 socket cap retaining screws securing the Front Clamping Ring. Note: There are 3 ‘Jacking’ holes provided in this ring to facilitate easy removal.

4.2 Place a rubber ring over the Road Wheel periphery and locate the specimens into the Rear Clamping Ring. Lift the rubber ring to locate it between the specimen and the chamfer machined on the outer diameter of the clamping ring locating groove. Tie a cord around the periphery of the specimens to hold them tight to the wheel.

4.3 Place the second rubber ring over the specimens and fix the Front Clamping Ring to the wheel. Check that this rubber ring is correctly located and that the specimens are correctly seated. Tighten the 6 socket cap fixing screws and remove the cord.

4.4 The specimens should now be held firmly without any damaging pressure exerted. Ensure that a true running surface has been obtained.

4.5 Mount the Road Wheel on to the machine Main Spindle and lock the Retaining Disc and Screw into position, using the 17mm Hexagonal Socket Wrench.
5. **WATER FEED.**

5.1 Remove the Water Tank Lid and fill the tank to a level so that the water is approximately 25mm from the tank lip. Refit the Water Tank lid and ensure that it is secure. Open the valve on the tank outlet and adjust the knurled knob at the base of the flowmeter to the required flow. (Nominally 110 cc/min).

**NOTE:** Do not close this valve completely as this can damage the needle.

5.2 A full tank of water will last for approximately one hour. Repeated fillings will be required for tests exceeding this period.

**NOTE:** Care must be taken when refilling the water tank during operation. Spillage could result in an electrical malfunction. If practical, suspend the test and remove the power before refilling the Water Tank.

6. **CORN EMERY FEED.**

6.1 Locate the Corn Emery Feeder in its Mounting Block and align centrally over the Feed Chute. Plug the flexible feeder lead into its socket on the side of the Feeder Hopper. Switch on and check the free rotation of the feeder (i.e. the Drive Pulley is rotating at its nominal speed of 6 rpm\(^{-1}\)). The feeder is factory set to operate within the required limits of 20 to 35 gms / min. (Nominally 27 gms / min). The rate of feed can be finely adjusted by setting the Slide Plate on the front of the hopper, using the 4mm Hexagonal Socket Wrench. Varying the hopper height using the 4 M5 screws effects coarse adjustment.

\(^{-1}\) Note: The Corn Feeder Drive Belt rotates at approximately 2½ rpm.

6.2 Switch off the feeder. Fill the hopper with Corn Emery abrasive. (A full hopper will last approximately one hour). Switch on and check the feed over a short period of time. Check that the abrasive flows freely down the chute to the point of contact of the tyred wheel with the specimen.

6.3 Adjust the water flow at a rate sufficient to carry the Corn Emery at a steady rate down the chute without blocking. Excess water reduces the effective polishing.

6.4 Reset the Timer to zero before starting the timed test.

6.5 With the machine running, lower the tyred wheel onto the specimens by rotation of the handwheel situated behind the weight. The machine will stop automatically upon reaching the Timer pre-set figure.

6.6 Adjust the Road Wheel rotation speed to 320-rpm ±5 with the Speed Control on the Control Unit. (The speed can be “locked in position” by pressing down the lever on the speed control potentiometer).
6.7 On completion of the timed run, raise the pivoted arm clear of the Road Wheel. **Disconnect the machine from the supply voltage.** Release the safety cover and remove the Road Wheel from the machine. Thoroughly clean out the spent abrasives.

6.8 **It is essential to clean the feeder thoroughly at the end of each run.**

7. **FLOUR EMERY FEED.**

7.1 Lift the Tyred Wheel Cover and change the Corn Emery Tyre for the Flour Emery Tyre by unscrewing and withdrawing the Locating Screw. Remove the black Blanking Plate from the cover.

7.2 Locate the Flour Emery Powder Sprayer on to the Tyred Wheel Cover (2 Hexagonal Socket Cap Head Screws). Check that the sprayer is set level and at the correct height to allow the tip of the felt pad to just **clear** the running face of the tyre.

7.3 Locate the Flour Emery Feeder into its Mounting Block on top of the mainframe and align with the Flour Sprayer aperture. Insert the plug originally located in the Corn Emery Feeder into the Flour Emery Feeder. Switch on and check the free rotation of the feeder (i.e. the Drive Pulley is rotating at its nominal speed of 1½ RPM). The Feeder Unit is factory set to operate within the limits of 2 to 4 gms/min. (Nominally 3 gms/min). The rate of feed may be finely adjusted by setting the slide plate on the front of the hopper. Varying the hopper height using the 4 M5 screws carries out coarse adjustment.

7.4 Fill the Hopper with Flour Emery Powder. Switch on and check the feed over a short period of time, check that the powder flows freely into the powder spreader at all times.

7.5 Adjust the water feed to within the limits required. Ideally the water/powder mix should produce slurry which will just adhere to the running surface of the tyre. A dry mix will produce a hard crust and a wet mix will tend to wash the wheel clean.

7.6 Reset the Timer to zero before starting the timed test.

7.7 Adjust the Road Wheel rotation speed to 320-rpm ±5 with the Speed Control on the Control Unit.

7.8 On completion of the timed run, raise the pivoted arm clear of the Road Wheel. **Disconnect the machine from the supply voltage.** Release the
safety cover and remove the Road Wheel from the machine. Thoroughly clean out the spent abrasives.

7.9 It is essential to clean the feeder thoroughly at the end of each run.

8. GENERAL CONDITIONS.

8.1 These operating conditions are complementary to BS812 Pt.114 & BS EN 1097-8:2000 or ASTM E303.

8.2 All guards are to be securely placed into position when test is in progress.

8.3 The machine should be sited in a draught free, dry and dust free location.

8.4 When cleaning the machine do not use a pressure hose directed against the bearings or electrical components.

9. ROUTINE MAINTENANCE AND ADJUSTMENT.

9.1 Isolate the machine electrically before attempting any maintenance.

9.2 All bearings are grease packed on assembly and do not require any routine attention.

9.3 Before each test very lightly oil the Sintered Bronze Bushes situated on the Pivot Pin of the Pivoted Arm, and wipe clean.

9.4 Drive Belt Adjustment. Remove the rear cover over the Drive Pulleys. Slacken the 4 Motor Slide Plate nuts. Adjust the tensioning screw below the Motor Slide Plate. Tighten the 4 Motor Slide Plates nuts. A slack drive belt will jump the teeth and a tight one will overload the bearings.

9.5 Rubber Tyre Replacement. To change a tyre, remove the 3 Hexagonal Socket Cap Screws within the Wheel Hub and lightly press on the raised centre of the Hub, on the same side of the wheel from which the cap head screws were withdrawn.

9.6 Timed Tests. The Timer should be pre-set to the required test time by the Operator. Using the procedure outlined at paragraph 10. The machine will stop automatically when the pre-set time is reached. The Timer is pre-set at the factory to 3 hours.

9.7 The Timer operates on an additive principle. To start an initial series of tests the Timer must be reset to zero by depressing the RED Button (on the timer fascia). If a test is interrupted/suspended within the pre-set time,
there is no need to reset the Timer to continue the test. The machine can be
restarted with the Start/Stop Switch in the normal manner. The machine will
continue its test until the pre-set time is reached.

9.8 The Feeder Units must be set with a gap between the bottom of the Hopper
and the surface of the belt to allow free rotation. If necessary, adjustment is
carried out using the 4 M5 Slotted Screws. The normal factory setting is
0.25/0.38mm.

9.9 The Motor Switch has a “no volt” release trip for safety (i.e. the motor needs to
be restarted by depressing the ‘START’ button).

9.10 When the Road Wheel is removed, ensure that it is replaced the correct way
round. The front of the wheel is either stamped “FRONT” or marked by a
“Yellow Disc” on the side facing outwards.

9.11 Not In Use. When the machine is not in use, lightly oil the Main Spindle and
Road Wheel Bore. Remove the Tyred Wheel(s) and store appropriately.

9.12 Further maintenance information is outlined in BS EN 1097-8: 1999 Annex C.

NOTE : The machine will not start until the removable front
cover is in place, and the timer has been pre-set.
10. TIMER SETTING / ADJUSTMENT.*

10.1 To set / adjust the timer

   a) Press Red Button (Reset).
   b) Press P (Program button).
   c) Press the horizontal arrow key  to select required digit. Displayed in the format ‘hh.mm.ss’.
   d) Press the vertical arrow key  to select required number.
   e) Repeat ‘c’ and ‘d’ until the required time is set.

Note: The Timer is not adjustable whilst the machine is running.

10.2 To adjust the road wheel R.P.M.

While the machine is running the RPM is displayed on the digital readout. To alter the speed of the Road Wheel turn the adjustment control clockwise or anti-clockwise as required.

Note: Minimum and maximum shaft rotation speeds (approximately 310 & 446 rpm) have been factory set.

*For later models please refer to Appendix A
# FAULT DIAGNOSIS

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine will not start</td>
<td>No power</td>
<td>1. Check supply fuse&lt;br&gt;2. Check 10A fuse in Control Unit</td>
</tr>
<tr>
<td></td>
<td>Stop/Start not illuminated</td>
<td>Fit/Refit safety cover.</td>
</tr>
<tr>
<td></td>
<td>Timer not set/reset or timed out</td>
<td>Reset timer or set timer as per paragraph 10</td>
</tr>
<tr>
<td>No displays</td>
<td>24V supply failure</td>
<td>Check 0.2A fuse in Control Unit</td>
</tr>
<tr>
<td>Excessive vibration</td>
<td>Drive belt too tight</td>
<td>Adjust Drive Belt as per paragraph 9.4</td>
</tr>
<tr>
<td></td>
<td>Road Wheel loose</td>
<td>Check that the Road Wheel retaining disc is fitted and that the securing screw is tight</td>
</tr>
<tr>
<td>Feeder(s) fail to operate</td>
<td>No power</td>
<td>1. Check that the flexible feeder cable is correctly inserted into its socket</td>
</tr>
<tr>
<td></td>
<td>Maladjusted feed</td>
<td>2. Adjust hopper height to release pressure on the belt&lt;br&gt;3. Adjust hopper slide plate to allow free rotation of the drive belt</td>
</tr>
<tr>
<td>Clogged Corn Feeder chute</td>
<td>Maladjusted feed / water flow rate</td>
<td>Adjust hopper slide plate and/or water flow until condition desists</td>
</tr>
<tr>
<td>Clogged Flour Spreader chute</td>
<td>Maladjusted feed / water flow rate</td>
<td>1. Adjust hopper slide plate to decrease the flow rate of the emery flour powder&lt;br&gt;2. Adjust the water flow rate until the condition desists&lt;br&gt;3. Check the alignment of the Flour Spreader in relation to the Road Wheel</td>
</tr>
</tbody>
</table>
SUPPLY AND REPLACEMENTS PARTS.

1. AGGREGATE SUPPLIES

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>SUPPLY QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Stone</td>
<td>25Kg Bag</td>
</tr>
<tr>
<td>Criggion Stone</td>
<td>25Kg Bag</td>
</tr>
<tr>
<td>Corn Emery</td>
<td>25Kg Bag</td>
</tr>
<tr>
<td>Flour Emery</td>
<td>25Kg Bag</td>
</tr>
<tr>
<td>Leighton Buzzard Sand†</td>
<td>25Kg Tub</td>
</tr>
</tbody>
</table>

† Special Order Only.

2. REPLACEMENT PARTS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimen Mould</td>
</tr>
<tr>
<td>Specimen Mould Plate</td>
</tr>
<tr>
<td>Tyred Wheel</td>
</tr>
<tr>
<td>Felt Seal - Main Spindle</td>
</tr>
<tr>
<td>Felt Pad - Flour Spreader</td>
</tr>
<tr>
<td>Rubber Rings (Set of 4)- Road Wheel</td>
</tr>
<tr>
<td>Timing Belt</td>
</tr>
<tr>
<td>Drive Belt Feeder</td>
</tr>
<tr>
<td>Pneumatic Tyre (ASTM)</td>
</tr>
</tbody>
</table>

Factory Settings

Prior to despatch, the Accelerated Polishing Machine and its accompanying accessories are tested mechanically and electrically. The table below details the factory default parameters.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>FACTORY SETTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flour Flow Rate</td>
<td>3 gms/min ±1</td>
</tr>
<tr>
<td>Corn Flow Rate</td>
<td>27 gms/min ±7</td>
</tr>
<tr>
<td>Water Flow Rate</td>
<td>110 cc/min</td>
</tr>
<tr>
<td>Load on Sample</td>
<td>725 N ± 10</td>
</tr>
<tr>
<td>Wheel Alignment</td>
<td>≤ 0.8mm</td>
</tr>
<tr>
<td>RPM (variable)</td>
<td>320 rpm ±5</td>
</tr>
<tr>
<td>Shaft Speed (min/max)</td>
<td>310 / 446 rpm</td>
</tr>
<tr>
<td>Timer (test time value)</td>
<td>3 hours</td>
</tr>
</tbody>
</table>
**PSV TESTS - PRODUCT RANGE**

In accordance with BS EN 1097-8:2000, to determine the PSV it is necessary to use the Skid Resistance Tester & Base Plate.

**Skid Resistance Tester**

**Introduction**

The Skid Resistance Tester was originally developed by the Transport Research Laboratory (TRL) to study the problems in design and maintenance of public highways. It’s also known as the British Pendulum Tester, Portable Skid Resistance Tester and the Pendulum Tester.

The Skid Resistance Tester is used to test the Skid Resistance Value (SRV) of existing road surfaces.

The Skid Resistance Tester measures the frictional resistance between a rubber slider mounted on the end of a pendulum arm and the test surface. This provides highway and flooring engineers with a routine method of checking the resistance of wet and dry surfaces to slipping and skidding.

The Skid Resistance Tester has a robust and rigid design for protection against wear and tear, weathering and dirt contamination.

The instrument is now used in many applications to test the slip resistance on pedestrian walkways and flooring, within offices, hospitals, shopping centres and factories, both at the design stage and also in the investigation of accidents.

**Machine Operation**

The Skid Resistance Tester is based on the Izod principle. A pendulum consisting of a tubular arm rotates about a spindle attached to a vertical pillar. At the end of the tubular arm a head of constant mass is fitted with a rubber slider. The pendulum is released from a horizontal position so that it strikes the sample surface with a constant velocity. The distance travelled by the head after striking the sample, is determined by the friction to the sample surface. A reading of Skid Resistance Values is obtained.
Physical Data (Boxed)

Width 70 cms  
Depth 30 cms  
Height 70 cms  
Volume 0.15 cu meters  
Weight 31 Kg

Standard Accessories

Carrying Case - Sturdy case with dense foam inserts giving excellent protection.  
‘F’ Scale - Built in, for use with small slider set for 76mm-slide length.  
Set of 6 Sliders - Certificate included. (Choice of large or small).  
125-127mm Setting Gauge - Used to set slide length for road / floor testing.  
Thermometer - For recording the air and surface temperature.  
Brush - For removing unwanted dirt or grit from the test area.  
‘C’ Spanner - For attaching and releasing the arm to the rotating head.  
17mm Spanner - For fitting rear foot.  
Allen Keys - for various adjustments.  
Water Spray Bottle - For wetting the test surface.  
Feet Pads - For placing under the levelling feet when on soft ground.  
Operating Instructions - A guide to road, floor and PSV testing.  
Calibration Certificate - Certifying the machine has been calibrated to BS EN 1097-8:2000 (accredited under ISO 9003).

BASE PLATE

The base plate is used in conjunction with the skid tester and is used to hold the PSV samples in place.
AGGREGATE ABRASION MACHINE

Introduction

Inadequate abrasion resistance of road surfacing aggregates means an early loss of the texture depth required to maintain high speed skidding resistance.

The Aggregate Abrasion Machine provides engineers with a medium to test and measure the resistance of aggregate to surface wear by abrasion. The Aggregate Abrasion Value (AAV).

Determination of AAV

The AAV is a measure of the percentage loss, in mass, of chippings. The AAV ranges from about 1 for hard flints, to over 16 for aggregates normally considered too soft for use in road surfaces.

Machine Operation

Two specimens are pressed against the surface of a steel disc rotating in a horizontal plane. Sand, fed by hoppers, is used as an abrasive. The disc is spun for 500 revolutions, as determined by a pre-set digital revolution counter. The amount of material abraded is then measured by calculation of the weight loss of the aggregate.

Electrical supply - 230V AC, Single Phase 50Hz.

Physical Data

| Width  | 80 cms |
| Depth  | 70 cms |
| Height | 110 cms |
| Volume (packed) | 0.79 cu meters |
| Weight | 170 Kg |

Standard Accessories

2 Specimen Moulds - For manufacturing test samples.
2 Flat Plates - For levelling the test sample base.
2 Trays - For collecting spent abrasives.

Operating Instructions
EC Declaration of Conformity

Impact Test Equipment Ltd
Stevenston
Ayrshire
KA20 3LR

Declares that:

Accelerated Polishing Machine - Serial No.

Date of Manufacture:

Supplied to                  order number

Complies with:


And

EN60204 part 1:1998 Safety of Machinery-Electrical equipment of Machines.
BS EN 1097-8:2000 the official English Language version of EN 1097-8:1999 Tests for mechanical and physical properties of aggregates- part 8: determination of polished stone value.

Signed                Name.

Date

Duly authorised to sign on and behalf of Impact Test Equipment Ltd,
Appendix A
Controller Programming
(multi-language)

Impact Test Equipment Ltd
www.impact-test.co.uk & www.impact-test.com
**Anschlussbelegung**

- **Input Signal and Control Inputs**
  - SELV, Class II (Limited Power Source)
- **Programmierung sperren**
- **Lock progr. and presets**
- **Display**
  - Startegy: Memory value -> 0
- **Input Filter**
  - Sub Mode: Subtrahierend / subtracting
- **Einstellung von Vorwahlwerten über die Tastatur**
  - Startegy: 0...2 V DC; High: 3,5...30 V DC

**Technische Daten**

- **Power supply**
  - AC: 24 VDC/50 mA
- **Housing**
  - Plastic Polycarbonate / Polycarbonate UL94 V-2
- **Vibrations stability**
  - EN 60068-2-27  100G / 2ms / XYZ  / 3 times in each direction

**Mechanische Daten**

- **Dimensions**
  - EN 60352.0009 - Index B
- **Weight**
  - 800 g
- **Relay contact C.1  Output 1**
  - 3 A/ 250 V AC  5x10⁴; 3 A/ 30 V DC 5x10⁴
- **Response time of the outputs**
  - 5 ms / 0.75 ms
- **Maximal Werte dürfen auf keinen Fall überschritten werden!**
- **Grounding**
  - SELV circuits, reinforced / double insulation

**Verfügbarkeit**

- **Order Code**
  - K 040 0230

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**Display**

- **Display Preset**: Memory value -> 0
- **Inp A**: Zähleingang ohne Funktion
- **Display 0**: Preset value
- **Reset Mode**: Restart function

**Anzeige schaltet in den Editiermodus. Mit**

- **Inp A**: ohne Funktion
- **Reset switch**: Restart function
- **Reset mode**: Restart function

**Unterbrechung**

- **Programmierung beendet**
  - EndPrG Programmierung beenden

---

**Fehlererkennung**

- **Störung**: Fehlerwert
- **Programmierung beendet**
  - EndPrG Programmierung beendet

---

**Anzeige**

- **Display**
  - Value: 0...99.9999 Value: 999999
- **Input signals**
  - SELV, Class II

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**Steuereingänge**

- **Common connection signal and control inputs**
  - SELV, Class II

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**Anschluss**

- **Input signal and control inputs**
  - SELV, Class II (Limited Power Source)

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**Display**

- **Display Preset**: Memory value -> 0
- **Inp A**: ohne Funktion
- **Reset switch**: Restart function
- **Reset mode**: Restart function

**Unterbrechung**

- **Programmierung beendet**
  - EndPrG Programmierung beendet

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**Fehlererkennung**

- **Störung**: Fehlerwert
- **Programmierung beendet**
  - EndPrG Programmierung beendet

---

**Anzeige**

- **Display**
  - Value: 0...99.9999 Value: 999999
- **Input signals**
  - SELV, Class II

Gleichzeitige Anzeige des Istwert und der Vorwahl.


Es muss sichergestellt werden, dass umlaufend um das Gehäuse nicht mehr als 250V nicht überschritten wird.


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