

IMPACT TESTER

BEVS 1601

User Manual



Version 201412

This manual shall be read carefully before starting. Directions included in this operation manual shall be strictly followed.

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1. Company Profile

BEVS Industrial Co., Ltd. is a leading manufacturer that specializes in coatings, ink, painting, resin testing instruments and laboratory whole solution.

We offer the complete and unique products in this field to meet customer's challenging demands of today and tomorrow, the products are complied with the standards of ISO, ASTM, DIN, BS, EN etc.

With strong supports and hard work by lots of end-users and worldwide agents, BEVS become more and more famous in the world and provides more competitive values for our customers.

2. Product Introduction

Many surface coatings are subject to the risk of damage by impact. Falling-weight testers (Tubular Impact Testers) allow reproducible conditions of impact to be defined. The BEVS1601/2 allows pass/fail limits to be established and a classification of the coating to be achieved.

The BEVS1601/2 Tubular Impact Tester is designed to conform to ASTM D 2794 Falling Weight Test. We advise customers to obtain and maintain an up to date copy of the relative specification.

Main features:

- Falling weight (Impactor/indenter) BEVS1601/2 is fitted with 4lb
- Indenter diameter 0.625" (15.9mm)
- Die (Anvil) diameter 0.642" (16.3mm)
- Drop height: as set for different model
- Sample held by two spring clips
- Facility to add extra weight

3. Important Safety Instructions

3.1 Ensure instrument is bolted down

3.2 When using instrument, use one hand to release impacter and keep other hand away. Do not hold on to test sample.

3.3 Keep clear of lifting knob of falling weight (Impacted).

3.4 When instrument is not in use, lower impacted to bottom of tube.

4. Features

This instrument consists of a graduated vertical tube mounted into a solid base. This tube acts as a guide for an impacting weight of pre-determined mass. The height from which this falls is variable. By using the locking collar, exactly the same force of impact can be produced for each test.

5. Installation

5.1 See Point 11, Working Environment.

5.2 Remove all packing material.

5.3 Bolt the instrument on to a firm level surface i.e. concrete, steel or stone, using two 8mm bolts by 40mm long minimum.

A workbench is not solid enough!

Fixing centers for bolts is 227mm to be at least 150mm from front of mounting surface and/or 200mm from the back of mounting surface.

5.4 Check tube is vertical.

If necessary use steel shim under feet of instrument to set tube to vertical.

6. Calibrating the Impact Tester

6.1 Impacter

Remove falling weight from instrument by first removing release mechanism (taking care not to lose the two small clamp pads situated between clamp screws and tube).Lift falling weight to top of tube, whilst holding falling weight at top of tube unscrew lifting knob rod. The falling weight may now be removed by lifting it out of the tube.

Weigh the falling weight together with its knob and handle. The weight is to be 4lb \pm 0.01lb for BEVS1601/2.

Remove impacter from guide bush by lifting out and Inspect the 5/8" ball for any damage.

Assemble falling weight, release mechanism and impacter back into the instrument using reverse procedure to dismantling, ensure handle is screwed securely home after carrying out 6.2.

6.2 Anvil

Whilst falling weight and anvil are removed (see 6.1) remove anvil from instrument by lifting from base if instrument.

Inspect the anvil for damage and corrosion.

Hole in anvil to be 16.3 \pm 0.2mm dia.

Radius on top edge of hole to be R3 \pm 0.5mm

Replace anvil in the instrument.

6.3 Scale Zero

Place a 1.2mm thick flat test piece on anvil and carefully lower impacter and then weight onto the test piece. Lower the release mechanism and turn release ring handle so as to capture the weight. Lift release mechanism until resistance of the weight is felt, then tighten the two knurled clamp screws.

The datum face of the release mechanism is the bottom face and this should now be in line with the zero line on the scale.

7. How To Make Measurements

7.1 Test Panels

Ensure panels conform to ISO 1514

Coating conforms to ISO 2808

Drying has been carried out to your requirements.

7.2 Environment

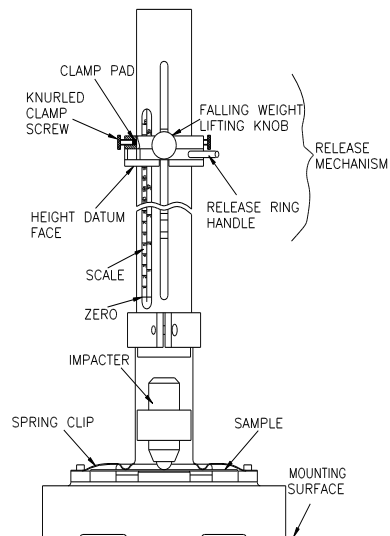
Temperature is 23 ± 2 °C

Relative humidity is 50 ± 5 %

Test panel has acclimatised for at least 16 hours.

7.3 Operation

- 7.3.1 Determine if coated face is to be up or down or both.
- 7.3.2 Set height for impacter to drop, by loosening the two small knurled clamp screws either side of the release mechanism mounted on the tube, and slide to the required height (the lower face of the mechanism is the datum face), then tighten the two screws.
- 7.3.3 Raise the falling weight using the falling weight lifting knob, rotate the release ring handle to capture the falling weight at the required height.
- 7.3.4 Place test sample panel in position.
- 7.3.5 Release the falling weight by rotating the release ring handle until the falling weight drops. Keep clear of falling handle and do not hold onto test piece.
- 7.3.6 Raise the falling weight as in 6.3.3 and remove the test panel for inspection.



8. Routine Maintenance

- 8.1 When instrument is not in use keep anvil lightly oiled to prevent corrosion.
- 8.2 Keep instrument clean.
- 8.3 Check fixing bolts are still secure.
- 8.4 Check falling weight lifting knob and handle are secure.
- 8.5 Check clamp pads are still serviceable.

9. Spares List

Impacter 5/8"
Anvil 16.3mm
Falling weight 2lb
Falling weight 4lb
Additional 1lb weight
Additional 1kg weight
Weight lifting handle
Knob (lifting handle)
Thumbscrew (2 per)
Clamp pad (2 per)

10. Specification

Physical dimensions: 253mm wide x 253mm deep x 1131mm high for BEVS1601/2

Weight (instrument): 8.5 Kg

Associated Specifications: BS6496 ASTM D 2794

Falling Weight: 4lb ± 0.01 lb 806/40 (Additional weights can be mounted onto the falling weight)

Impacter : 5/8" ball

Die(Anvil): Hole diameter 16.3 ± 0.2 mm with 3 radius on top edge

Dropping Height: Variable from zero to 40" on BEVS1601/2

Sample Clamp: Held lightly by two spring clamps

11. Working Environment:

This instrument has been designed for indoor use, in a temperature range of 23 ± 2 °C and relative humidity of 50 ± 5 %.