

**IMPACT**  
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**1500g & 3000g  
Centrifuge Extractors  
BM050 & BM055**

Impact Test Equipment Ltd  
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User Guide  
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## Contents

Specification  
Operation  
Precautions

Page 1  
Page 2  
Page 3



## Specifications

- Centrifuge Extractor used to determine the quantitative amount of bitumen in bituminous paving mixtures.
- Bench mounting unit.
- Continuously variable speed control from 0 to 3600 rpm, through front panel mounted control knob.
- Brake control for rapid deceleration.
- 1500g (BM050) or 3000g (BM055) capacity.
- Precision machined aluminium removable cover with integral cup for adding solvent.
- Sealed, cast aluminium housing
- Dimensions (l x w x h) 559 x 305 x 508 mm
- Weight: BM050 – 35kg, BM055 - 41 kg

The Asphalt Centrifuge Extractor is designed for use in the separation of asphaltic mixtures to determine bitumen percentage. The bowl is variable from 0-3,600 rpm and the extractor is provided with a brake control for fast stopping. The aluminium bowl assembly is removable. A cup built into the housing cover allows easy pouring of the solvent into the bowl. Filter discs are available from Impact.

These operating instructions refer specifically to the BM050 1500g capacity model. They also refer to the BM055 3000g capacity model. Please note that sample and solvent volumes should be proportionally increased for usage with the BM055 3000g capacity model.

These operating instructions do not contain all the necessary information on the specific test procedures. Please refer to ASTM D-2172 or AASHTO T-164 for additional testing information.

## Operation

1. Release clamps and remove upper housing cover.
2. Lift bowl assembly from spindle. Remove knurled nut and lid.
3. Place approximately 1/3 of the extractor capacity of the bituminous sample in the bowl.
4. NOTE: To shorten the testing procedure time, pre-warm the sample to a soft consistency before placing in the bowl. Do not heat the bowl. Do not overheat the sample.
5. Distribute the sample evenly around the bowl taking care not to crush any individual particles. If sample is preheated allow it to cool before proceeding to the next step.  
Weigh bowl and sample. Record weight.
6. Assure the bowl lip is clean and place filter disc on it. Place bowl lid on bowl and secure with knurled nut. Turn nut snugly by hand.

**Caution: Over tightening may distort the bowl lid.**

7. Place the bowl assembly in the extractor with the shaft pin seated in the notch at the bottom of the bowl.
8. Replace the housing cover and secure the clamps.
9. Place a collection beaker under the discharge pipe at the left of the bowl housing.
10. Pour no more than 450 cc of trichloroethylene solvent into the filter cup of the upper housing cover

**Caution: Provide adequate ventilation when using solvents.**

Do not exceed 450 cc of trichloroethylene or flooding will occur causing damage to the motor and/or bearing and transformer. If sample has been preheated allow 2 or 3 minutes to digest. If not pre-heated allow 10 to 15 minutes to digest.

11. Start rotation slowly by turning knob on the speed control box in a clockwise direction. Increase speed gradually until fine stream of liquid is emitted from the discharge pipe. Maintain this speed until the discharge stops, and then gradually increase the speed until no further discharge is obtained.

**Caution:** A too-rapid rate of acceleration during this step may cause flooding which in turn can result in an inaccurate test and possible damage to the machine. Flooding maybe observed by a rapid and excessive discharged followed by seepage of liquid at the housing cover or the underside of the housing. Correct this condition by immediately reducing the speed.

12. Return the speed control knob to the zero position in order to apply the brake.
13. Pour in another 450 cc of solvent and repeat steps 11 and 12 in the same sequence. Continue this process until the discharging liquid appears pale amber in color. The extraction process is then complete.
14. Remove the housing cover and lift out the bowl. After removing the nut and bowl lid, wash with solvent the under surface of the lid into the beaker.
15. Carefully lift the filter disc from the bowl lip and brush any clinging particles into the bowl. The filter maybe burned over the sample for complete recovery of fines making allowances for ash correction.
16. Allow the sample to thoroughly dry for at least 15 minutes before weighing.

## **Precautions**

### **A. Loss of Fines:**

- Avoid excessive speed and acceleration especially at the beginning of a test cycle when a lot of solvent is present.
- Do not over-tighten the bowl nut.
- Use a heavier filter disc or two standard discs.
- Burn the filter over the sample. Make ash correction.
- When test is complete, carefully brush all dust from the bowl lip and underside of the bowl cover into the sample.

### **B. Warpage of Bowl and Lid**

Make the following check for possible warp age of bowl and lid.

- Put the lid in place (no filter) and hand tighten the bowl nut.
- Try to insert a 0.005" feeler gauge or shim at any point.
- If the gauge passes through, the bowl or cover should be re-faced or replaced.