

Dynamic Cone Penetrometer (DCP) Field Kit

Operating Manual

Field Testing Equipment

Intended use

A manually operated dynamic cone penetrometer for in-situ assessment of the strength of soils and pavement layers by recording penetration of a cone driven by a falling hammer.

Intended users

Civil engineers, geotechnical technicians and construction quality-control staff.

Read this manual completely before first use and keep it with the product. This document provides general operating, care and safety guidance. Where the product is supplied with manufacturer labeling or instructions, those take precedence. For questions, a replacement copy, or a digital copy of this manual, email sales@scimedstore.com.

1. Safety

Safety warnings and cautions

- Wear safety boots, gloves and eye protection.
- Keep hands and fingers clear of the hammer and anvil pinch point.
- Lift the hammer only to the stop and let it fall freely; do not throw it down.
- Check for buried utilities before testing.
- Use two people when lifting and extracting the rod.
- Set up traffic control when testing on roads.
- Check all threaded joints are tight before testing.

2. Package contents

- Drop hammer
- Anvil
- Drive rod (1 m)
- Cone tip
- Base plate
- Wooden carrying box
- Manual

Check contents on receipt. Report missing or damaged items to sales@scimedstore.com within 48 hours of delivery.

3. Specifications

Hammer mass	8 kg
Drop height	575 mm
Cone	60° apex, 20 mm base diameter, replaceable hardened steel
Drive rod	1 m graduated (extension rod available)
Standards (per listing)	ASTM D6951 / D7380
CBR correlation (per listing)	$\log(\text{CBR}) = 2.465 - 1.12 \times \log(\text{DCP index, mm/blow})$

4. Unpacking and setup

- 1 Assemble the cone, drive rod, anvil and hammer rod; tighten all joints.
- 2 Check the cone tip for wear and replace if damaged.
- 3 Place the instrument vertically on the test point.
- 4 Record the initial reading on the graduated rod or reference scale.

5. Operation

Testing

- 1 One person holds the instrument vertical by the handle.
- 2 A second person raises the hammer to the top stop and releases it to fall freely.
- 3 Record penetration after each blow or set of blows.
- 4 Continue to the required depth or until refusal per your test method.
- 5 Calculate the DCP index (mm per blow) for each layer.
- 6 Convert to CBR using the correlation required by your project specification.

Extraction

- 1 Remove the hammer if needed.
- 2 Extract the rod by lifting the hammer upward against the handle stop or using an extraction jack.
- 3 Take care not to bend the rod.

6. Cleaning and disinfection

- Remove soil from all parts after testing.
- Wipe dry and lightly oil steel parts to prevent rust.

7. Maintenance and storage

- Store disassembled in the wooden box in a dry place.
- Check the cone tip and replace when worn.
- Check the rod for straightness.
- Inspect threads and keep them clean.

8. Troubleshooting

Problem	Likely cause	What to do
Rod not vertical	Uneven surface or tilting	Re-level the base and hold the rod upright
Joint loosening	Threads not tightened	Tighten all joints before testing
Erratic readings	Stone or obstruction	Move to a new test point
Rod difficult to extract	Deep penetration in stiff soil	Use extraction method; avoid bending the rod

9. Disposal

- Recycle steel parts at a metal recycling point.
- Dispose of wooden box per local rules.

10. Warranty and support

Products are covered by SciMed's standard warranty (12 months from purchase unless a different period is stated on your invoice). Warranty terms: scimedstore.com/pages/warranty.

Support, spare parts and additional copies of this manual: sales@scimedstore.com. Please include your order number and a photo of the product or issue.

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