

Soil Compaction Tester



User Manual

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1. Introduction

Thank you for choosing this Soil Compaction Tester. You have got a robust tool for daily practice.

Please read this manual carefully before operating the unit.

2. Scope of delivery

- 1 soil compaction tester
- 1 tip 13 mm
- 1 tip 20 mm
- 1 user manual

3. Technical specifications

- Probe and handle: stainless steel
- Probe diameter: 12 mm
- Analog manometer
- Measuring range from 0 to 100
- Box dimensions: 970x330x70 mm (LxWxH)
- Device dim: 900x310x60 mm (LxWxH)
- Weight: 2150 g
- Usable probe length: 750 mm

4. Intended use

The Soil Compaction Tester is used to determine soil compaction on agricultural land by insertion of the probe into the soil and reading the plunge resistance on the manometer during plunge.

User information

- Store the device on a dry place at room temperature.
- Make sure that the lance is not tilted or bent during insertion.
- When transporting make sure that no one is injured by the tip.

5. Safety instructions



DANGER!

During the handling of the device there may be a risk of injuries because of the tip



WARNING!

The Soil Compaction Tester must not be operated in the area of live parts and wiring. There is a risk of electric shock!



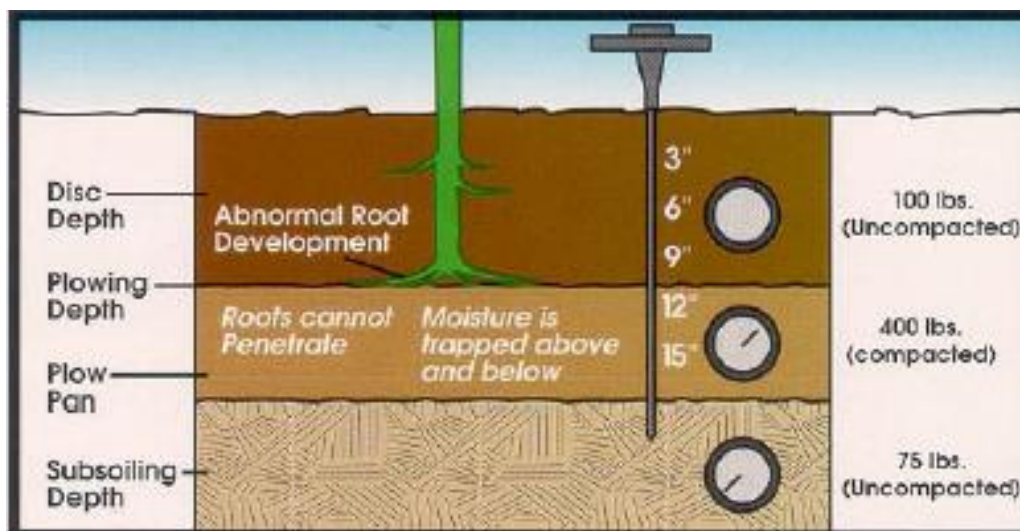
Please try to avoid accidental injuries. For that reason, always assure to wear safety shoes and gloves while you are working with the penetrometer.



6. About soil compaction

Soil compaction can occur in any type of soil. Years of traffic and tillage can cause soil particles to group together and fill in air spaces in the soil creating a "plow pan" below the tillage area. When this happens, a hard layer is formed making it difficult for water and roots to penetrate the soil.

Some soil types are more susceptible to compaction than others; but once a compaction layer is formed, and moisture and traffic continues, the compacted layer will continue to get denser and thicker.



7. Adverse effects of soil compaction

- Compacted soil is much harder to work. This will cause you to use more power and take longer to till, wasting fuel, time and money.
- Your crop yield can be reduced by as much as 50% because of poor root and plant development.
- Compacted soil can prevent water from penetrating deeper into the soil. This can reduce plant development and yield especially during dry periods without rainfall. Compaction can also lead to surface water retention making the field more difficult to work in the spring and fall seasons.
- In compacted soil, fertilizers, pesticides and herbicides can be washed away more easily and, as not absorbed, even become more concentrated causing plant damage. This can result in reduced crop yield.

8. Best time of application

The best time to determine the soil compaction of agricultural areas is in early spring before the soil gets tilled. The soil moisture level should be relatively high as the moisture content and soil texture will affect the readings of the Soil Compaction Tester. For that reason, always compare measuring results of the same soil type and a similar moisture content.

Measurements after tilling will determine how deep you actually worked the soil.

9. How to work with the device

Choose the size of the tip, depending from the type of soil you are going to test. The small tip of 13 mm is used for heavy soils and the larger tip of 19 mm is used for light soils.

The display is divided into three differently coloured areas:

Green (0-200psi = 0-15 bar) → good growth of most plants

Yellow (200-300psi = 15-22,5 bar) → moderate growth

Red (300psi+ = 22,5 bar+) → poor growth

- Slowly insert the probe into the soil. Hold the probe only at the handle and not at the display.
- You can read the plunge depth on the Soil Compaction Tester. The bracket for the second tip can be used as indicator for the plunge depth.
- The pressure profile is displayed continuously. Watch the pressure profile during the plunge. A compacted layer is indicated, when the pressure jumps up at a certain soil depth, and drops down again when the tester is penetrated deeper.
- Repeat the measurements on several points of the tested area. If you drive frequently on certain tracks, the soil compaction is very likely to be higher there.

10. Cleaning and maintenance

- Clean any visible dirt on the device with a cloth and possibly with usual detergents.
- Store the device on a dry and secure place.

11. Troubleshooting

- In case of device damages contact the distributor or the manufacturer.

12. Warranty

Warranty for the Soil Compaction Tester is 2 years, following warranty provisions apply:

- Prerequisite for warranty service are the presentation of the original invoice and compliance with all elements of this instruction manual.
- Excluded from warranty are wear, normal wear and tear, damage due to misuse, negligence or accident.
- When processing a warranty claim transport costs incurred will be charged to the buyer.

13. Disposal



Dispose of the Soil Compaction Tester in the definitive shutdown or parts of environmentally friendly (metal to the respective metal scrap, plastic to plastic waste, etc. - Do not dispose as household waste!)

Detailed information can be found in Directive 2002/96/EC