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User manual

AGRETO Soil Compaction Tester

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1. Introduction

Thank you for choosing an AGRETO 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 AGRETO Soil Compaction Tester
- 1 tip 13 mm
- 1 tip 19,5 mm
- 1 User Manual

3. Intended use

The AGRETO 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.

4. Security

4.1 Safety instructions for the buyer



IMPORTANT!

Make sure that each person who works for the first time with the AGRETO Soil Compaction Tester, has read and understood this manual.



DANGER!

Make sure that the AGRETO Soil Compaction Tester is kept in a place that is not accessible to unauthorized persons.

4.2 Safety instructions for the operator



DANGER!

The AGRETO Soil Compaction Tester may only be operated by persons who are familiar with the operation of the device.



PRECAUTION!

Keep the work area clean! Soiled areas contributes to accidents.

4.3 Personal protective equipment



WARNING!

For people who work with the device, the wearing of safety gloves is required.



WARNING!

For people who work with the device or remain in the work area, the wearing of safety shoes is required.

4.4 Residual hazards

Working with the device residual risks may arise for persons and objects that cannot be prevented by design or technical protection measures.



DANGER!

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



WARNING!

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



WARNING!

The AGRETO Soil Compaction Tester must not be operated in explosive areas.

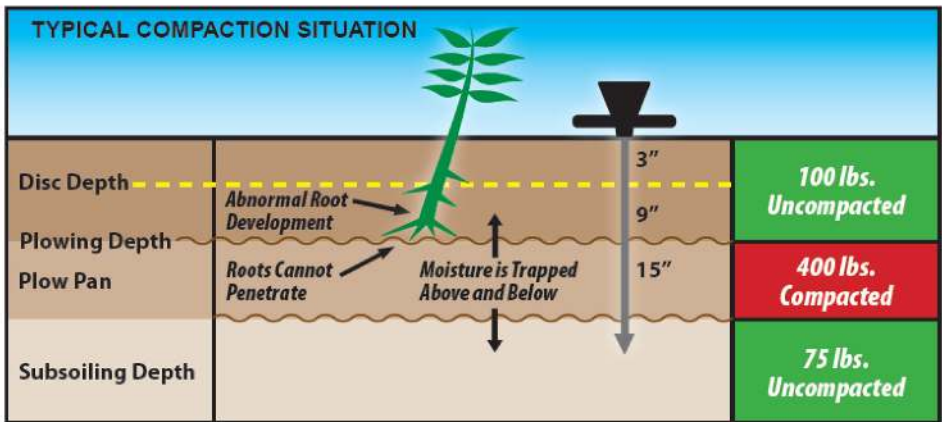
5. Technical Specifications

- Probe stainless steel, handle made from anodized aluminium
- Probe diameter: 12 mm
- Analog manometer
- Measuring range from 0 to 400 psi
- Box dimensions: 970x330x70 mm (LxWxH)
- Device dim: 900x310x60 mm (LxWxH)
- Weight: 2150 g
- Usable probe length: 750 mm

6. What is 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 moisture 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 compaction layer will continue to get denser and thicker.



7. Impacts of a soil compaction problem

- 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 with no rain. 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 more easily be washed away and not absorbed or even become more concentrated causing plant damage. This can result in reduced crop yield.

8. Best time to use the tester

The best time to use the tester is in early spring before you till the soil. The soil should have a good moisture content because the moisture content and soil texture will affect the readings of the Soil Compaction Tester.

It is best to compare the readings of the same soil type and moisture content.

After tilling the AGRETO Soil Compaction Tester will determine how deep you actually worked the soil.

9. Commissioning

The AGRETO Soil Compaction Tester is supplied ready for use.

10. Working with the device

- Choose the tip that best suits the type of soil you have. The small tip is used for firm soil and the larger tip is used for loose soil.
- 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 AGRETO 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. There is a compacted layer when the pressure at a certain depth always rises abruptly and upon further plunges drops down.
- Repeat the measurements at different places. If you drive more frequently in certain tracks, then the soil compaction might be higher there.

11. 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.

12. Troubleshooting

12.1 No reaction on the manometer

When no pressure is shown on the manometer during measuring, hydraulic oil should be refilled. Do exactly as it is described here:

- Press the probe completely into the handle.
- Slide the bracket for the second tip completely to handle and fix it.
- Open the locking screw with a 4 mm Allen key.
- Pull the probe exactly 12 mm out of the handle. Use the tip holder for distance measurement. In this case some oil can resign.
- Fill the chamber by the hole completely up to the thread with standard hydraulic oil. Use a syringe with needle.
- Press the probe exactly 4 mm into the handle. Use the bracket of the tip to measure the distance again.
- If it is necessary fill the chamber up to the thread again.
- Close the locking screws.
- If necessary, change the sealing ring (aluminum sealing ring 6x10x2mm).

12.2 Damages on the device

- Please contact the manufacturer or your dealer.

13. Warranty

Over and above statutory warranty for AGRETO Soil Compaction Tester following warranty provisions apply:

- The AGRETO electronics GmbH guarantees the function and repairs or replaces all the parts that have a material or manufacturing damage within the warranty period.
- Warranty services will be performed by the AGRETO electronics GmbH.
- The decision on the existence of a warranty claim is sole responsibility of the AGRETO electronics GmbH.
- The warranty period begins with the first accounting to an end customer and ends 5 years from this date of invoice.
- 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.

14. Disposal



Dispose of the AGRETO 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

15. Imprint

All information, specifications and illustrations are as of 2016, subject to technical changes or design changes.

All information in this manual are supplied without liability despite careful preparation. A liability by the author is excluded.

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