Soil Compaction Tester

EN USER INSTRUCTIONS

THANK YOU FOR PURCHASING WILE PENETROMETER

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The Penetrometer (soil compaction tester) makes it easy to measure soil compaction at different depths. The delivery set includes two interchangeable tips for different soil compaction levels.

Read this manual carefully and keep it with the tester. The tester does not require special maintenance. To clean the tester, wipe it with a dry or damp cloth. Do not use strong detergents, and make sure that moisture does not get inside the tester.

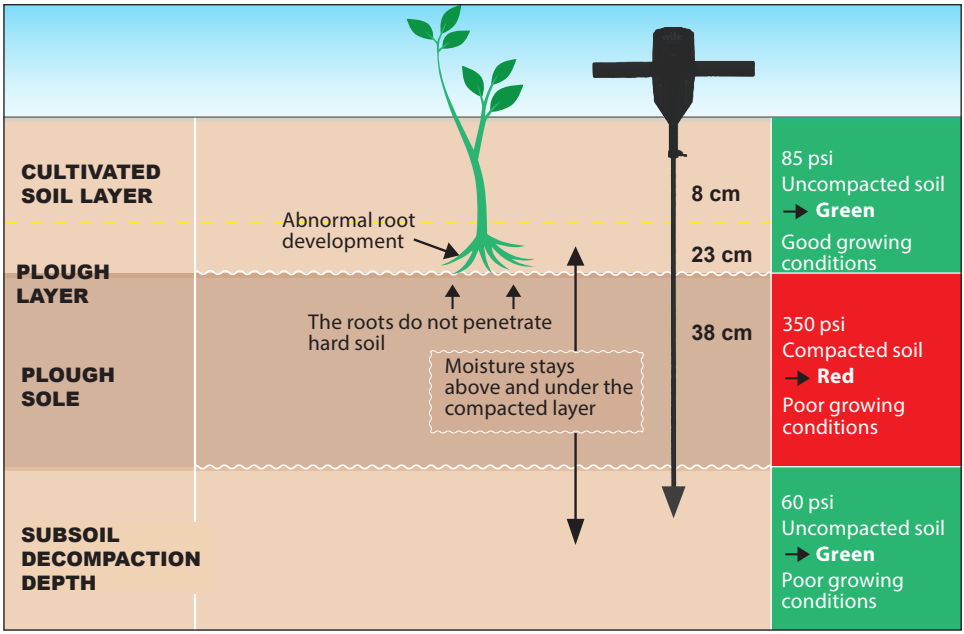
Store the tester in a dry place, preferably at room temperature.

CAUTION: The Soil Compaction Tester may cause harm if used improperly. Please use the pointed tips with care. Beware not to push the device into electrical cables, water pipes, or other underground vulnerable or hazardous structures.

SOIL COMPACTION

Soil compaction occurs in many different soil types. Water and plant roots cannot penetrate hard compacted soil properly. Compaction can also cause other problems:

1. Cultivating compacted soil is slower and more difficult, which increases not just the time spent to do the work, but also the fuel consumption of work machines.
2. The quantities harvested can drop significantly if roots of plants cannot develop properly.
3. Compacted soil prevents water from being absorbed deeper into the soil, so plants do not get enough water and nutrients. Standing water on the ground surface may also interfere with work in the area.
4. Unabsorbed nutrients are more easily washed away from the field.



USE

The optimum time to use the tester is in early spring before sowing or in autumn before tilling the soil. The soil should be moist when measuring. Very dry soil can produce results that are too high, while very moist soil gives too low readings. Measurements should be taken from several different places in order to form a reliable overall picture.

Before starting, check that the needle of the tester points to zero. If this is not the case, make sure that the arm locking ring is released and the arm can move freely.

The tester is filled with non-toxic and non-flammable silicone oil. A possible small air bubble visible in the tester is normal. Silicone oil softens the impact created in a possible fall and thus protects the tester against damage.

We recommend storing the tester by hanging it from the hanging hole on the back of the tester.

FIXING THE COMPACTION

If the soil has become too compact and the depth where compaction has occurred has been established, it is possible to take corrective measures. You can avoid unnecessary traffic in areas with compacted soil, rotate crop varieties that improve the soil, or use appropriate tillage machines to break up soil compaction.

USING THE TESTER

1. Release the locking ring and move it at least a few centimetres down.
2. The tester comes with two measuring tips. The small tip is intended for firm soil and the larger one for soft soil. It is advisable to start measuring with the small tip and if it does not give proper readings and the ground is soft, you can replace it with the larger tip. Once you have selected the tip, screw it tightly onto the thread on the end of the Penetrometer.
3. Place the tip on the ground and press the tester down evenly and calmly.
4. The shaft of the tester has marking lines every 7.5 cm intervals for easy depth measurement. Record the readings taken at different depths. Make sure that the dial you use is intended for the tip that you are using for measurement.
5. A layer is deemed compacted if the pointer of the tester moves into the red area and then returns to the yellow or green area as the tester tip passes through the compacted layer. Pay particular attention to the depths at which the more compacted layer begins and where it ends. Repeat the test several times at each area to verify your findings.
6. After the measurement is completed, place the clamping ring back against the plastic body of the product to protect it against (shock) damage.

MEASURING SOIL COMPACTION

The Wile Penetrometer (soil compaction tester) can be used to determine soil compaction and the depth at which the possible compacted patches are located. The dial of the tester is based on the ASAE S313.3 standard. The tester is equipped with two tips of different sizes, the smaller of which is intended for firm soil and the larger one for soft soil. The dial of the tester has separate graduations for each of the tips.

THE COLOUR SCHEME OF THE DIAL IS AS FOLLOWS:

GREEN 0–200 psi / (0–14 kg/cm^2)

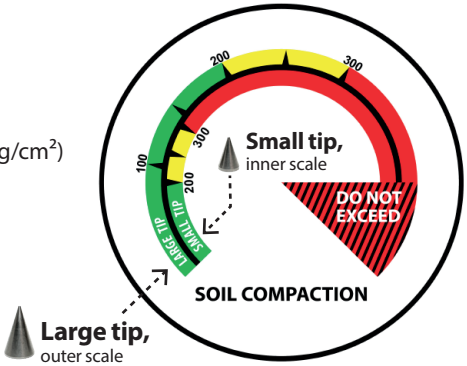
➡ Good growing conditions

YELLOW 200–300 psi / (14–21 kg/cm^2)

➡ Fair growing conditions

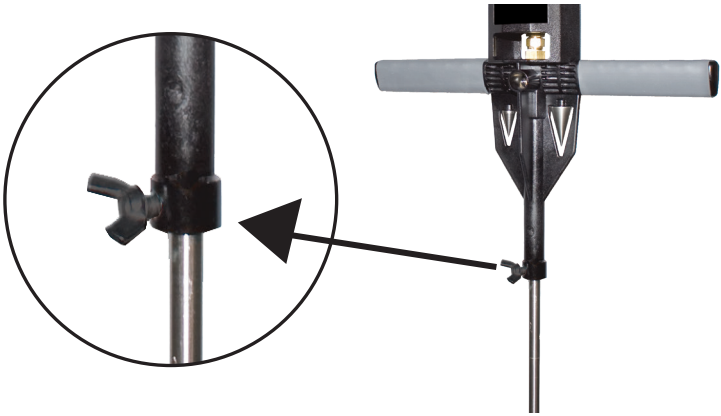
RED above 300 psi / (21 kg/cm^2)

➡ Poor growing conditions



The shaft of the tester has a ring that can be tightened to prevent the movement of the shaft and prevent the tester from being damaged during transport. The ring can also be used to mark the desired depth to which the measurement is extended.

Note that at the beginning of the measurement process, the ring must be moved down, so that it does not prevent the movement of the arm.



WARRANTY

The Penetrometer (soil compaction tester) has a one-year warranty against material and manufacturing defects.

The warranty is effective for a period of 12 months from the date of purchase. The customer has to deliver the defective product to the manufacturer or the seller. A description of the defect, contact information, and a copy of the purchase receipt showing the date of purchase has to be provided with it. The manufacturer will repair the defective product or replace it with a new product as soon as possible. The manufacturer's maximum liability is limited to the purchase price of the product.

The manufacturer is not responsible for damages resulting from careless handling, misuse or repairs made by a third party. The warranty does not cover any consequential damages that are directly or indirectly caused by the use of the product or the fact that it could not be used.

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