

Soil Compaction Tester

PRODUCT MANUAL

Item # 6100



Spectrum[®]
Technologies, Inc.

This Soil Compaction Tester is a penetrometer which measures the firmness (compaction) of soil. The instrument is supplied with two tips; a 1/2" tip for use in firm soil and a 3/4" tip for use in soft soil. The dial indicator has two scales (for 1/2" and 3/4" tip) that are calibrated in pounds per square inch of the base area of the cone (tip) and are color coded for reference only. The colors are:

- Green (0-200 PSI)
- Yellow (200-300 PSI)
- Red (300+ PSI)

Most crop roots can grow well in the green range, fair in the yellow range, and poor in the red range.

The best time to use the tester is in early spring or when the soil has a good moisture content. Because soil moisture content and soil texture will affect the readings, the soil compaction tester is best used to compare the readings of the same soil type and moisture content. Check a fence row and then a field area for comparison. Several tests should be made in an area to get a more accurate reading.

The soil compaction tester should be used before you till to see if you have a compaction layer and to determine how deep your compaction layer is, and after you till to see how deep you actually worked the soil and if your tillage operation solved the problem.

UNPACKING

Remove the Soil Compaction Tester from the carton.

A saddle clamp is installed on the shaft of the Soil Compaction Tester next to the plastic housing. This clamp is used during shipment to protect the gauge from damaging spikes which may occur if the tester is dropped.

Note: Retain this clamp and reinstall in the even the tester is ever shipped.

Remove the clamp and visually inspect the tester for damage. Check the gauge indicator, it should be on "0". If not, pull on the shaft or gently tap the gauge. If it does not return to "0", contact your vendor.

The gauge is filled with silicone as shown by the bubble in the indicator face. This silicone is used to dampen the shock to the gauge in case the tester is dropped. If the silicone is leaking, contact your vendor.

OPERATION

To use the Soil Compaction Tester, proceed as follows:

1. Select and install the tip (1/2" or 3/4") for your soil.
2. Apply even pressure to the handles on the instrument to keep the rod point penetrating the soil at a slow, even pace.
3. The penetrating rod is marked at three inch intervals for easy depth measurement. As the instrument's rod penetrates the soil, the gauge readings at the 3", 6", 9", 12", 15", and 18" depths should be noted.

A compacted layer will be shown by the gauge indicator increasing upscale into the red range and then moving back down scale after passing through the compacted layer. The depth of the beginning of the compacted layer and depth of leaving the compacted layer should be noted. It can be determined by taking multiple readings if a compaction layer exists, at what depth and how thick.

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