

Soil Compaction Tester SWSCT08180



JOHN DEERE

ISSUE: 29MAY2015

John Deere Merchandise Division

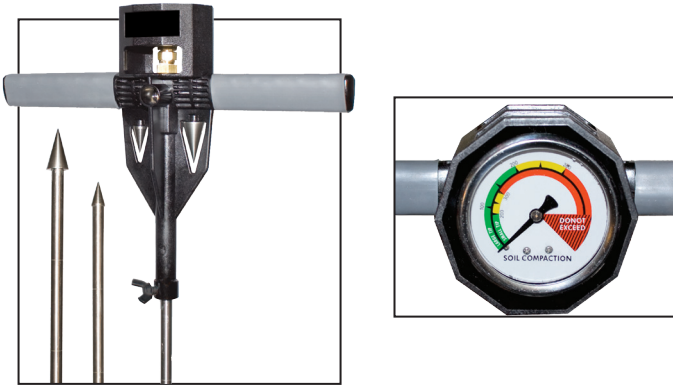
SWSCT08180

Litho in U.S.A.

ENGLISH

DOCU-M0116 0515

Introduction



THANK YOU for purchasing a John Deere Product.

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and remain with the machine when you sell it.

WRITE IDENTIFICATION NUMBERS in the Specifications section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. If this manual is kept on the machine, also file the identification numbers in a secure place off the machine.

WARRANTY is provided through John Deere dealers for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change specifications, the warranty will become void and field improvements may be denied.

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Contents

	Page
Safety _____	1
Operation	
What is Soil Compaction _____	2
What are the Impacts of a Soil Compaction Problem _____	2
What to Do About a Soil Compaction Problem _____	3
What is a Soil Compaction Tester _____	3
Best Time to Use the Soil Compaction Tester _____	4
Unpacking the Soil Compaction Tester _____	4
Using the Soil Compaction Tester _____	5
Service	
Product Warranty and Repair Program _____	6
Record Serial Numbers _____	6
Manufacturer's Contact Information _____	7

CAUTION: The Soil Compaction Tester may cause harm if used improperly. Please use the pointed tips with care.

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Safety

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



RECOGNIZE SAFETY INFORMATION

A signal word - DANGER, WARNING or CAUTION - is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.



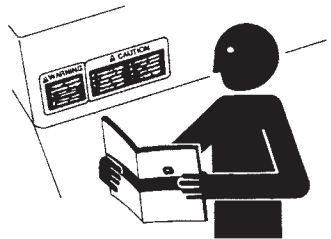
FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

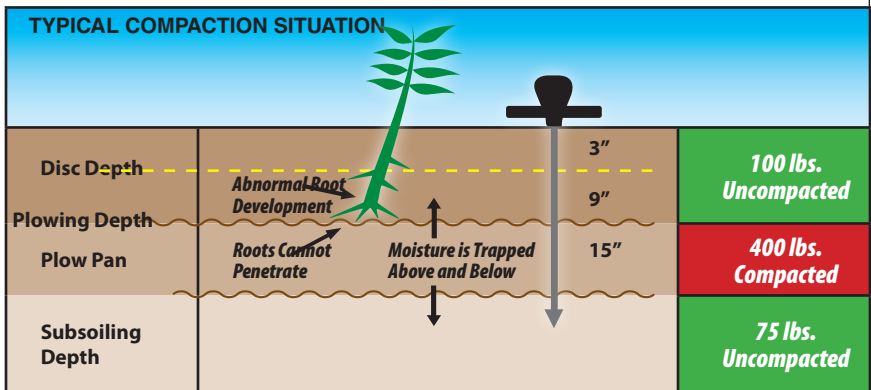


Operation

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.



WHAT ARE THE IMPACTS OF A SOIL COMPACTION PROBLEM?

1. 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.
2. You may already be aware of soil compaction but not have the tools to determine if it is a problem. For example, unnecessarily trying to correct soil compaction by tilling to a deeper depth can be a waste of time and money.
3. Your crop yield can be reduced by as much as 50% because of poor root and plant development.

Operation

4. 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.
5. 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.

WHAT TO DO ABOUT A SOIL COMPACTION PROBLEM?

If you have determined that you have a soil compaction problem and at what depth the compaction exists, your solution could be as easy as one of the following:

- Reducing traffic in the affected areas of the field.
- Seeding cover crops that will improve water management.
- Choosing a tillage tool that will penetrate the compacted area of the field.

Your local agricultural extension office is a good source of information to help you determine what can be done to help correct and prevent soil compaction problems.

WHAT IS A SOIL COMPACTION TESTER?

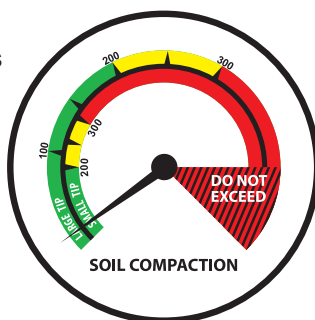
Your Soil Compaction Tester is a penetrometer which measures the compaction of soil and is based on the ASAE S313.3 standard. The tester is supplied with two tips: a small tip (1/2" diameter) for use in firm soil and a large tip (3/4" diameter) for use in soft soil. The dial has two scales (one for each tip) that are calibrated in pounds per square inch of the base area of the cone shaped tip.

THE DIAL IS COLOR-CODED FOR REFERENCE:

Green (0 - 200 psi)
Good Growing Conditions

Yellow (200 - 300 psi)
Fair Growing Conditions

Red (300 psi and above)
Poor Growing Conditions



NOTE: The gauge is engineered to have a positive load, thus the needle does not always contact the pin on the low end of the green scale. This will not affect the readings for either index scale.

Operation

BEST TIME TO USE THE SOIL COMPACTION 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. Check a fence row and then check the field area for comparison. Several tests should be made in an area to get a more accurate reading.

The Soil Compaction Tester will help you determine if you have a compaction layer and, if so, the depth of the layer. After tilling, the tester will determine how deep you actually worked the soil and if your tillage operation solved the problem.

UNPACKING THE SOIL COMPACTION TESTER

Remove the Soil Compaction Tester from the box. An adjustable shock collar is installed on the shaft of the Soil Compaction Tester next to the plastic housing. This collar is used during shipping and storage to protect the dial from damage should an impact on the shaft occur.

Loosen the wing nut on the shock collar and slide it down at least an inch away from the plastic housing. Visually inspect the tester for damage and check that the gauge indicator is pointing to "0". If it is not, pull on the shaft or gently tap the glass on the gauge. If it does not return to "0" contact the Agratronix customer service department.

The gauge is filled with nontoxic, non-flammable silicone oil. You may notice a small air bubble in the dial face which is perfectly normal. The silicone oil is used to dampen the shock to the gauge in case the tester is dropped. If the silicone oil is leaking from the dial contact the Agratronix customer service department.

Your Soil Compaction Tester has a built in hanger hole in the back. Using the supplied nail, the tester can be conveniently hung and stored on a wooden beam, wall or even above a work bench.

Storage of the tester by hanging prevents damage during times when it is not in use.

Operation

USING THE SOIL COMPACTION TESTER

1. Loosen the wing nut on the shock collar and slide the collar down the shaft at least 1" away from the plastic housing.
2. Your tester includes 2 tips (large and a small) that are stored in the tester housing. The tips can be removed by simply unthreading them from the housing. (***The tips are threaded on to the housing not snapped on.***)

Choose the tip that best suites the type of soil you have. The small tip is used for firm soil and the larger tip is used for loose soil.

**It is recommended that you start with the small tip and obtain some readings. If you feel the readings are very low or the soil is very loose then change to the larger tip.*

Once you have chosen a tip, thread the tip on to the end of the Soil Compaction Tester's shaft.

Note: No valid readings can be obtained from the tester if a tip is not attached to the end of the shaft.

3. Position the tip of the tester on the ground in the area you wish to test. Apply even downward pressure on both handles of the tester to keep the shaft and tip penetrating the soil at a slow even pace.
4. The tester shaft is marked at three inch intervals for easy depth measurement. As the tester's shaft penetrates the soil, the gauge readings at the 3", 6", 9", 12", 15" and 18" depths should be recorded. (Be sure to use the correct scale for the size tip that you are using on the shaft as indicated on the dial face)
5. A compacted layer can be determined by the gauge indicator increasing upward into the red range and then moving back down into the yellow or green 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.

Note: multiple readings must be taken from each area of the field. To get an accurate determination of whether or not you have a soil compaction problem and at what depth the problem exists. The same procedure should be repeated in other areas of the field as well. One area may not represent the condition of the whole field.

6. When the tester is not in use, loosen the shock collar's wing nut and slide the shock collar up the shaft until it comes in contact with the plastic housing and tighten the wing nut. This will help prevent damage to your Soil Compaction Tester.
7. When the tester is not in use, loosen the shock collar's wing nut and slide the shock collar up the shaft until it comes in contact with the plastic housing and tighten the wing nut. This will help prevent damage to your Soil Compaction Tester.

Service

PRODUCT WARRANTY AND REPAIR PROGRAM

Warranty is provided through John Deere dealers for customers who operate and maintain their equipment as described in this manual. See warranty tag for terms and conditions.

The warranty does not cover:

A — Products which have been altered or modified in ways not approved by John Deere.

B — Depreciation or damage caused by normal wear, accident, lack of reasonable and necessary maintenance as specified in this manual, improper maintenance, improper protection in storage, or improper use or abuse.

C — Transportation, mailing and service call charges for warranty service.

Should your product fail after the warranty period, it can be reconditioned for a nominal charge. See your John Deere dealer for further information.

RECORD SERIAL NUMBER

NOTE: The tester serial number is located on the bottom of the unit.

Write your model number, serial number, and date of purchase in the space provided below. Your dealer needs this information when ordering parts and when filing warranty claims.

Model _____

Serial No. _____

Date of Purchase _____

(To be filled in by purchaser)

Manufacturer's Contact Information

MANUFACTURER'S CONTACT INFORMATION



TOLL-FREE 1-800-821-9542

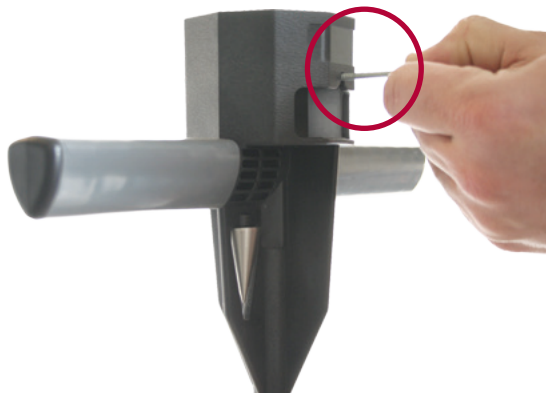
330-562-2222

FAX 330-562-7403

WWW.AGRATRONIX.COM

10375 STATE ROUTE 43
STREETSBORO, OH 44241
USA

HANGER HOLE NAIL



All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Medidor de compactación De los suelos SWSCT08180



JOHN DEERE

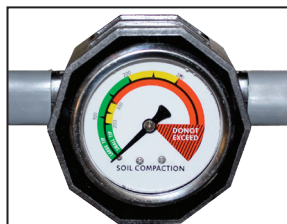
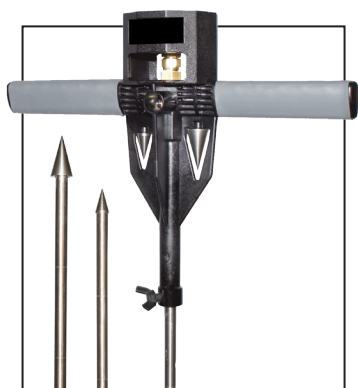
ISSUE: 29MAY2015

John Deere Merchandise Division

SWSCT08180

Impreso en los E.E.U.U.
ESPAÑOL
DOCU-M0116 0515

Introduction



THANK YOU for purchasing a John Deere Product.

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and remain with the machine when you sell it.

WRITE IDENTIFICATION NUMBERS in the Specifications section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. If this manual is kept on the machine, also file the identification numbers in a secure place off the machine.

WARRANTY is provided through John Deere dealers for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change specifications, the warranty will become void and field improvements may be denied.

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Contents

	Page
Safety _____	1
Operation	
Components _____	2
Operating Conditions _____	3
Operational Messages _____	3
Moisture Limit Guidelines _____	4
Operating Procedure – Preheating _____	5
Operating Procedure – Normal Operation _____	6
Average Moisture Measurement Functions _____	9
Select a Different Grain _____	10
Weight Test – Test Weight Accuracy _____	11
Select a Different Language _____	12
Adjust Grain Offset (bias/calibration) _____	13
Clear Grain Offset _____	13
Turn Backlight On or Off _____	14
Temperature and Test Weight Units _____	14
Auto Off Setting _____	15
LCD Contrast _____	16
Personalizing and Updating the Tester _____	16
Troubleshooting _____	17
Service	
Check Battery Power Levels and Replace Batteries _____	18
Clean the Tester – Test Cell _____	19
Clean the Tester – Top Ring _____	20
Error Codes _____	21
Warranty _____	22
Record Serial Numbers _____	22
Accessories _____	23
Manufacturer’s Contact Information _____	24

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Safety

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



RECOGNIZE SAFETY INFORMATION

A signal word - DANGER, WARNING or CAUTION - is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.



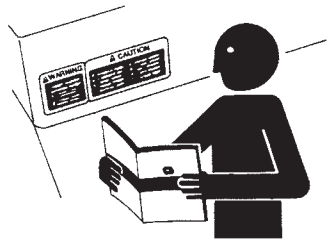
FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

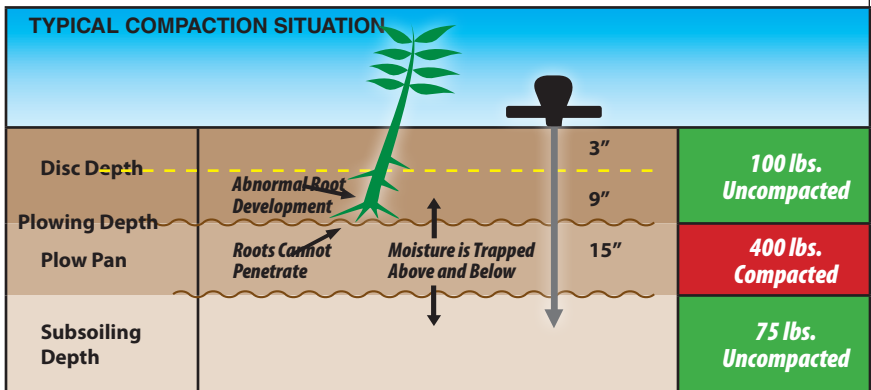


Operation

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.



WHAT ARE THE IMPACTS OF A SOIL COMPACTION PROBLEM?

1. 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.
2. You may already be aware of soil compaction but not have the tools to determine if it is a problem. For example, unnecessarily trying to correct soil compaction by tilling to a deeper depth can be a waste of time and money.
3. Your crop yield can be reduced by as much as 50% because of poor root and plant development.

Operation

4. 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.
5. 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.

WHAT TO DO ABOUT A SOIL COMPACTION PROBLEM?

If you have determined that you have a soil compaction problem and at what depth the compaction exists, your solution could be as easy as one of the following:

- Reducing traffic in the affected areas of the field.
- Seeding cover crops that will improve water management.
- Choosing a tillage tool that will penetrate the compacted area of the field.

Your local agricultural extension office is a good source of information to help you determine what can be done to help correct and prevent soil compaction problems.

WHAT IS A SOIL COMPACTION TESTER?

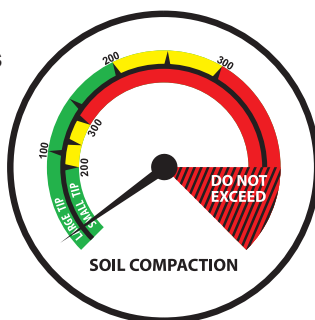
Your Soil Compaction Tester is a penetrometer which measures the compaction of soil and is based on the ASAE S313.3 standard. The tester is supplied with two tips: a small tip (1/2" diameter) for use in firm soil and a large tip (3/4" diameter) for use in soft soil. The dial has two scales (one for each tip) that are calibrated in pounds per square inch of the base area of the cone shaped tip.

THE DIAL IS COLOR-CODED FOR REFERENCE:

Green (0 - 200 psi)
Good Growing Conditions

Yellow (200 - 300 psi)
Fair Growing Conditions

Red (300 psi and above)
Poor Growing Conditions



NOTE: The gauge is engineered to have a positive load, thus the needle does not always contact the pin on the low end of the green scale. This will not affect the readings for either index scale.

Operation

BEST TIME TO USE THE SOIL COMPACTION 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. Check a fence row and then check the field area for comparison. Several tests should be made in an area to get a more accurate reading.

The Soil Compaction Tester will help you determine if you have a compaction layer and, if so, the depth of the layer. After tilling, the tester will determine how deep you actually worked the soil and if your tillage operation solved the problem.

UNPACKING THE SOIL COMPACTION TESTER

Remove the Soil Compaction Tester from the box. An adjustable shock collar is installed on the shaft of the Soil Compaction Tester next to the plastic housing. This collar is used during shipping and storage to protect the dial from damage should an impact on the shaft occur.

Loosen the wing nut on the shock collar and slide it down at least an inch away from the plastic housing. Visually inspect the tester for damage and check that the gauge indicator is pointing to "0". If it is not, pull on the shaft or gently tap the glass on the gauge. If it does not return to "0" contact the Agratronix customer service department.

The gauge is filled with nontoxic, non-flammable silicone oil. You may notice a small air bubble in the dial face which is perfectly normal. The silicone oil is used to dampen the shock to the gauge in case the tester is dropped. If the silicone oil is leaking from the dial contact the Agratronix customer service department.

Your Soil Compaction Tester has a built in hanger hole in the back. Using the supplied nail, the tester can be conveniently hung and stored on a wooden beam, wall or even above a work bench.

Storage of the tester by hanging prevents damage during times when it is not in use.

Operation

USING THE SOIL COMPACTION TESTER

1. Loosen the wing nut on the shock collar and slide the collar down the shaft at least 1" away from the plastic housing.
2. Your tester includes 2 tips (large and a small) that are stored in the tester housing. The tips can be removed by simply unthreading them from the housing. (***The tips are threaded on to the housing not snapped on.***)

Choose the tip that best suites the type of soil you have. The small tip is used for firm soil and the larger tip is used for loose soil.

**It is recommended that you start with the small tip and obtain some readings. If you feel the readings are very low or the soil is very loose then change to the larger tip.*

Once you have chosen a tip, thread the tip on to the end of the Soil Compaction Tester's shaft.

Note: No valid readings can be obtained from the tester if a tip is not attached to the end of the shaft.

3. Position the tip of the tester on the ground in the area you wish to test. Apply even downward pressure on both handles of the tester to keep the shaft and tip penetrating the soil at a slow even pace.
4. The tester shaft is marked at three inch intervals for easy depth measurement. As the tester's shaft penetrates the soil, the gauge readings at the 3", 6", 9", 12", 15" and 18" depths should be recorded. (Be sure to use the correct scale for the size tip that you are using on the shaft as indicated on the dial face)
5. A compacted layer can be determined by the gauge indicator increasing upward into the red range and then moving back down into the yellow or green 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.

Note: multiple readings must be taken from each area of the field. To get an accurate determination of whether or not you have a soil compaction problem and at what depth the problem exists. The same procedure should be repeated in other areas of the field as well. One area may not represent the condition of the whole field.

6. When the tester is not in use, loosen the shock collar's wing nut and slide the shock collar up the shaft until it comes in contact with the plastic housing and tighten the wing nut. This will help prevent damage to your Soil Compaction Tester.
7. When the tester is not in use, loosen the shock collar's wing nut and slide the shock collar up the shaft until it comes in contact with the plastic housing and tighten the wing nut. This will help prevent damage to your Soil Compaction Tester.

Service

PRODUCT WARRANTY AND REPAIR PROGRAM

Warranty is provided through John Deere dealers for customers who operate and maintain their equipment as described in this manual. See warranty tag for terms and conditions.

The warranty does not cover:

A — Products which have been altered or modified in ways not approved by John Deere.

B — Depreciation or damage caused by normal wear, accident, lack of reasonable and necessary maintenance as specified in this manual, improper maintenance, improper protection in storage, or improper use or abuse.

C — Transportation, mailing and service call charges for warranty service.

Should your product fail after the warranty period, it can be reconditioned for a nominal charge. See your John Deere dealer for further information.

RECORD SERIAL NUMBER

NOTE: The tester serial number is located on the bottom of the unit.

Write your model number, serial number, and date of purchase in the space provided below. Your dealer needs this information when ordering parts and when filing warranty claims.

Model _____

Serial No. _____

Date of Purchase _____

(To be filled in by purchaser)

Manufacturer's Contact Information

MANUFACTURER'S CONTACT INFORMATION



TOLL-FREE 1-800-821-9542

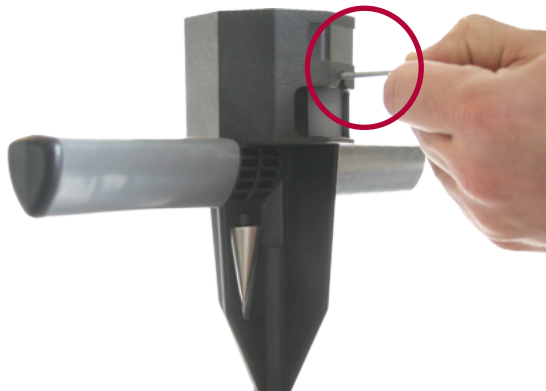
330-562-2222

FAX 330-562-7403

WWW.AGRATRONIX.COM

10375 STATE ROUTE 43
STREETSBORO, OH 44241
USA

HANGER HOLE NAIL



All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Testeur de Compactage des sols SWSCT08180



JOHN DEERE

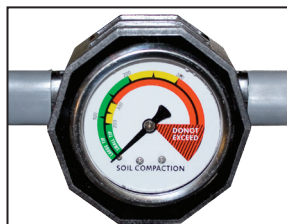
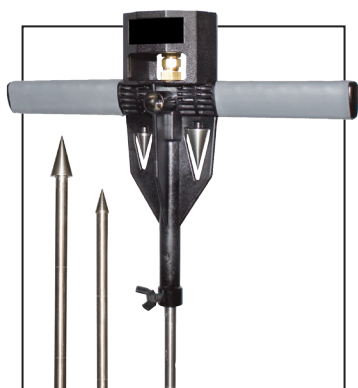
ISSUE: 29MAY2015

John Deere Merchandise Division

SWSCT08180

Imprimé aux Etats-Unis
FRANÇAIS
DOCU-M0116 0515

Introduction



THANK YOU for purchasing a John Deere Product.

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and remain with the machine when you sell it.

WRITE IDENTIFICATION NUMBERS in the Specifications section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. If this manual is kept on the machine, also file the identification numbers in a secure place off the machine.

WARRANTY is provided through John Deere dealers for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change specifications, the warranty will become void and field improvements may be denied.

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Contents

	Page
Safety _____	1
Operation	
Components _____	2
Operating Conditions _____	3
Operational Messages _____	3
Moisture Limit Guidelines _____	4
Operating Procedure – Preheating _____	5
Operating Procedure – Normal Operation _____	6
Average Moisture Measurement Functions _____	9
Select a Different Grain _____	10
Weight Test – Test Weight Accuracy _____	11
Select a Different Language _____	12
Adjust Grain Offset (bias/calibration) _____	13
Clear Grain Offset _____	13
Turn Backlight On or Off _____	14
Temperature and Test Weight Units _____	14
Auto Off Setting _____	15
LCD Contrast _____	16
Personalizing and Updating the Tester _____	16
Troubleshooting _____	17
Service	
Check Battery Power Levels and Replace Batteries _____	18
Clean the Tester – Test Cell _____	19
Clean the Tester – Top Ring _____	20
Error Codes _____	21
Warranty _____	22
Record Serial Numbers _____	22
Accessories _____	23
Manufacturer’s Contact Information _____	24

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Safety

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



RECOGNIZE SAFETY INFORMATION

A signal word - DANGER, WARNING or CAUTION - is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.



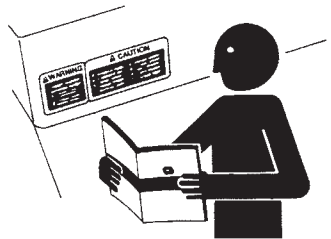
FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

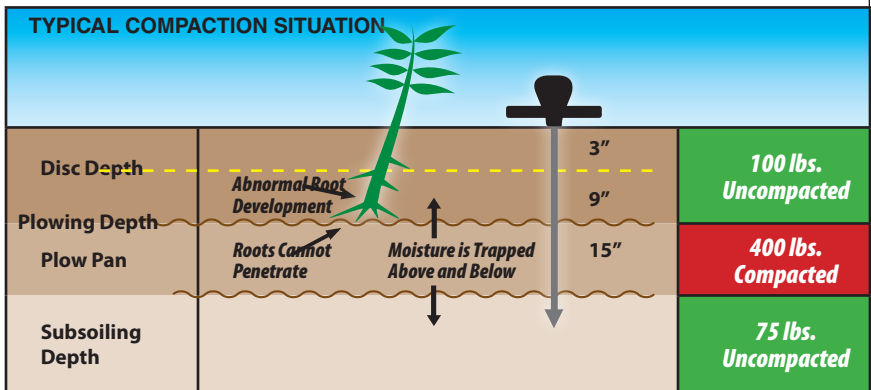


Operation

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.



WHAT ARE THE IMPACTS OF A SOIL COMPACTION PROBLEM?

1. 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.
2. You may already be aware of soil compaction but not have the tools to determine if it is a problem. For example, unnecessarily trying to correct soil compaction by tilling to a deeper depth can be a waste of time and money.
3. Your crop yield can be reduced by as much as 50% because of poor root and plant development.

Operation

4. 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.
5. 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.

WHAT TO DO ABOUT A SOIL COMPACTION PROBLEM?

If you have determined that you have a soil compaction problem and at what depth the compaction exists, your solution could be as easy as one of the following:

- Reducing traffic in the affected areas of the field.
- Seeding cover crops that will improve water management.
- Choosing a tillage tool that will penetrate the compacted area of the field.

Your local agricultural extension office is a good source of information to help you determine what can be done to help correct and prevent soil compaction problems.

WHAT IS A SOIL COMPACTION TESTER?

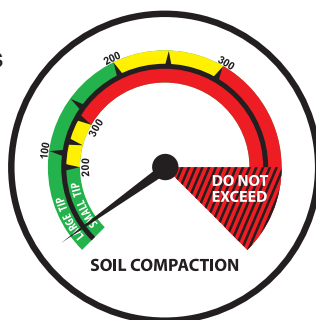
Your Soil Compaction Tester is a penetrometer which measures the compaction of soil and is based on the ASAE S313.3 standard. The tester is supplied with two tips: a small tip (1/2" diameter) for use in firm soil and a large tip (3/4" diameter) for use in soft soil. The dial has two scales (one for each tip) that are calibrated in pounds per square inch of the base area of the cone shaped tip.

THE DIAL IS COLOR-CODED FOR REFERENCE:

Green (0 - 200 psi)
Good Growing Conditions

Yellow (200 - 300 psi)
Fair Growing Conditions

Red (300 psi and above)
Poor Growing Conditions



NOTE: The gauge is engineered to have a positive load, thus the needle does not always contact the pin on the low end of the green scale. This will not affect the readings for either index scale.

Operation

BEST TIME TO USE THE SOIL COMPACTION 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. Check a fence row and then check the field area for comparison. Several tests should be made in an area to get a more accurate reading.

The Soil Compaction Tester will help you determine if you have a compaction layer and, if so, the depth of the layer. After tilling, the tester will determine how deep you actually worked the soil and if your tillage operation solved the problem.

UNPACKING THE SOIL COMPACTION TESTER

Remove the Soil Compaction Tester from the box. An adjustable shock collar is installed on the shaft of the Soil Compaction Tester next to the plastic housing. This collar is used during shipping and storage to protect the dial from damage should an impact on the shaft occur.

Loosen the wing nut on the shock collar and slide it down at least an inch away from the plastic housing. Visually inspect the tester for damage and check that the gauge indicator is pointing to "0". If it is not, pull on the shaft or gently tap the glass on the gauge. If it does not return to "0" contact the Agratronix customer service department.

The gauge is filled with nontoxic, non-flammable silicone oil. You may notice a small air bubble in the dial face which is perfectly normal. The silicone oil is used to dampen the shock to the gauge in case the tester is dropped. If the silicone oil is leaking from the dial contact the Agratronix customer service department.

Your Soil Compaction Tester has a built in hanger hole in the back. Using the supplied nail, the tester can be conveniently hung and stored on a wooden beam, wall or even above a work bench.

Storage of the tester by hanging prevents damage during times when it is not in use.

Operation

USING THE SOIL COMPACTION TESTER

1. Loosen the wing nut on the shock collar and slide the collar down the shaft at least 1" away from the plastic housing.
2. Your tester includes 2 tips (large and a small) that are stored in the tester housing. The tips can be removed by simply unthreading them from the housing. (***The tips are threaded on to the housing not snapped on.***)

Choose the tip that best suites the type of soil you have. The small tip is used for firm soil and the larger tip is used for loose soil.

**It is recommended that you start with the small tip and obtain some readings. If you feel the readings are very low or the soil is very loose then change to the larger tip.*

Once you have chosen a tip, thread the tip on to the end of the Soil Compaction Tester's shaft.

Note: No valid readings can be obtained from the tester if a tip is not attached to the end of the shaft.

3. Position the tip of the tester on the ground in the area you wish to test. Apply even downward pressure on both handles of the tester to keep the shaft and tip penetrating the soil at a slow even pace.
4. The tester shaft is marked at three inch intervals for easy depth measurement. As the tester's shaft penetrates the soil, the gauge readings at the 3", 6", 9", 12", 15" and 18" depths should be recorded. (Be sure to use the correct scale for the size tip that you are using on the shaft as indicated on the dial face)
5. A compacted layer can be determined by the gauge indicator increasing upward into the red range and then moving back down into the yellow or green 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.

Note: multiple readings must be taken from each area of the field. To get an accurate determination of whether or not you have a soil compaction problem and at what depth the problem exists. The same procedure should be repeated in other areas of the field as well. One area may not represent the condition of the whole field.

6. When the tester is not in use, loosen the shock collar's wing nut and slide the shock collar up the shaft until it comes in contact with the plastic housing and tighten the wing nut. This will help prevent damage to your Soil Compaction Tester.
7. When the tester is not in use, loosen the shock collar's wing nut and slide the shock collar up the shaft until it comes in contact with the plastic housing and tighten the wing nut. This will help prevent damage to your Soil Compaction Tester.

Service

PRODUCT WARRANTY AND REPAIR PROGRAM

Warranty is provided through John Deere dealers for customers who operate and maintain their equipment as described in this manual. See warranty tag for terms and conditions.

The warranty does not cover:

A — Products which have been altered or modified in ways not approved by John Deere.

B — Depreciation or damage caused by normal wear, accident, lack of reasonable and necessary maintenance as specified in this manual, improper maintenance, improper protection in storage, or improper use or abuse.

C — Transportation, mailing and service call charges for warranty service.

Should your product fail after the warranty period, it can be reconditioned for a nominal charge. See your John Deere dealer for further information.

RECORD SERIAL NUMBER

NOTE: The tester serial number is located on the bottom of the unit.

Write your model number, serial number, and date of purchase in the space provided below. Your dealer needs this information when ordering parts and when filing warranty claims.

Model _____

Serial No. _____

Date of Purchase _____

(To be filled in by purchaser)

Manufacturer's Contact Information

MANUFACTURER'S CONTACT INFORMATION



TOLL-FREE 1-800-821-9542

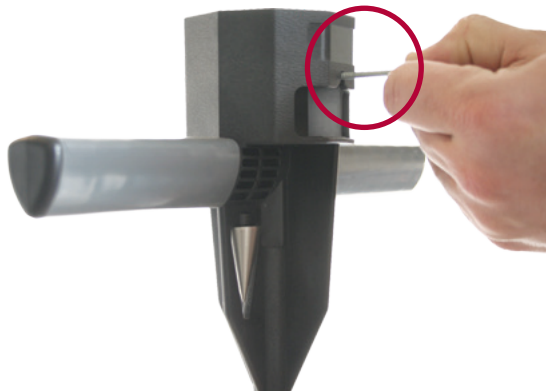
330-562-2222

FAX 330-562-7403

WWW.AGRATRONIX.COM

10375 STATE ROUTE 43
STREETSBORO, OH 44241
USA

HANGER HOLE NAIL



All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Soil Compaction Tester SWSCT08180



JOHN DEERE

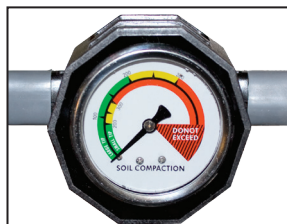
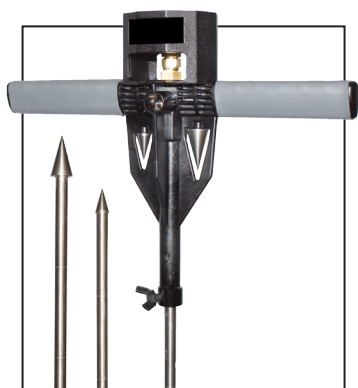
ISSUE: 29MAY2015

John Deere Merchandise Division

SWSCT08180

Impresso em U.S.A.
Portuguese
DOCU-M0116 0515

Introduction



THANK YOU for purchasing a John Deere Product.

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and remain with the machine when you sell it.

WRITE IDENTIFICATION NUMBERS in the Specifications section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. If this manual is kept on the machine, also file the identification numbers in a secure place off the machine.

WARRANTY is provided through John Deere dealers for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change specifications, the warranty will become void and field improvements may be denied.

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Contents

	Page
Safety _____	1
Operation	
Components _____	2
Operating Conditions _____	3
Operational Messages _____	3
Moisture Limit Guidelines _____	4
Operating Procedure – Preheating _____	5
Operating Procedure – Normal Operation _____	6
Average Moisture Measurement Functions _____	9
Select a Different Grain _____	10
Weight Test – Test Weight Accuracy _____	11
Select a Different Language _____	12
Adjust Grain Offset (bias/calibration) _____	13
Clear Grain Offset _____	13
Turn Backlight On or Off _____	14
Temperature and Test Weight Units _____	14
Auto Off Setting _____	15
LCD Contrast _____	16
Personalizing and Updating the Tester _____	16
Troubleshooting _____	17
Service	
Check Battery Power Levels and Replace Batteries _____	18
Clean the Tester – Test Cell _____	19
Clean the Tester – Top Ring _____	20
Error Codes _____	21
Warranty _____	22
Record Serial Numbers _____	22
Accessories _____	23
Manufacturer’s Contact Information _____	24

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Safety

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



RECOGNIZE SAFETY INFORMATION

A signal word - DANGER, WARNING or CAUTION - is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.



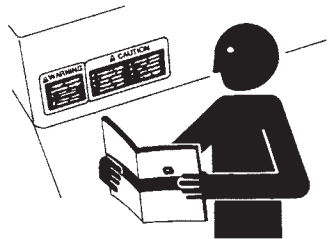
FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

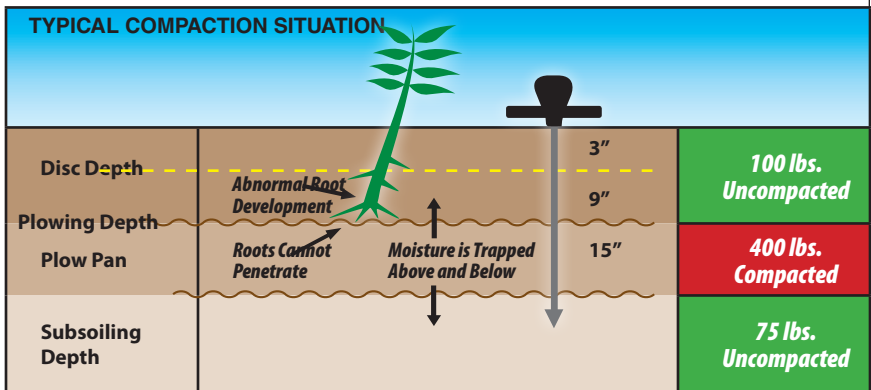


Operation

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.



WHAT ARE THE IMPACTS OF A SOIL COMPACTION PROBLEM?

1. 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.
2. You may already be aware of soil compaction but not have the tools to determine if it is a problem. For example, unnecessarily trying to correct soil compaction by tilling to a deeper depth can be a waste of time and money.
3. Your crop yield can be reduced by as much as 50% because of poor root and plant development.

Operation

4. 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.
5. 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.

WHAT TO DO ABOUT A SOIL COMPACTION PROBLEM?

If you have determined that you have a soil compaction problem and at what depth the compaction exists, your solution could be as easy as one of the following:

- Reducing traffic in the affected areas of the field.
- Seeding cover crops that will improve water management.
- Choosing a tillage tool that will penetrate the compacted area of the field.

Your local agricultural extension office is a good source of information to help you determine what can be done to help correct and prevent soil compaction problems.

WHAT IS A SOIL COMPACTION TESTER?

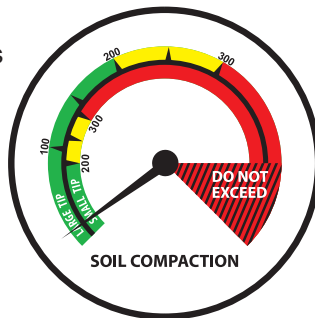
Your Soil Compaction Tester is a penetrometer which measures the compaction of soil and is based on the ASAE S313.3 standard. The tester is supplied with two tips: a small tip (1/2" diameter) for use in firm soil and a large tip (3/4" diameter) for use in soft soil. The dial has two scales (one for each tip) that are calibrated in pounds per square inch of the base area of the cone shaped tip.

THE DIAL IS COLOR-CODED FOR REFERENCE:

Green (0 - 200 psi)
Good Growing Conditions

Yellow (200 - 300 psi)
Fair Growing Conditions

Red (300 psi and above)
Poor Growing Conditions



NOTE: The gauge is engineered to have a positive load, thus the needle does not always contact the pin on the low end of the green scale. This will not affect the readings for either index scale.

Operation

BEST TIME TO USE THE SOIL COMPACTION 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. Check a fence row and then check the field area for comparison. Several tests should be made in an area to get a more accurate reading.

The Soil Compaction Tester will help you determine if you have a compaction layer and, if so, the depth of the layer. After tilling, the tester will determine how deep you actually worked the soil and if your tillage operation solved the problem.

UNPACKING THE SOIL COMPACTION TESTER

Remove the Soil Compaction Tester from the box. An adjustable shock collar is installed on the shaft of the Soil Compaction Tester next to the plastic housing. This collar is used during shipping and storage to protect the dial from damage should an impact on the shaft occur.

Loosen the wing nut on the shock collar and slide it down at least an inch away from the plastic housing. Visually inspect the tester for damage and check that the gauge indicator is pointing to "0". If it is not, pull on the shaft or gently tap the glass on the gauge. If it does not return to "0" contact the Agratronix customer service department.

The gauge is filled with nontoxic, non-flammable silicone oil. You may notice a small air bubble in the dial face which is perfectly normal. The silicone oil is used to dampen the shock to the gauge in case the tester is dropped. If the silicone oil is leaking from the dial contact the Agratronix customer service department.

Your Soil Compaction Tester has a built in hanger hole in the back. Using the supplied nail, the tester can be conveniently hung and stored on a wooden beam, wall or even above a work bench.

Storage of the tester by hanging prevents damage during times when it is not in use.

Operation

USING THE SOIL COMPACTION TESTER

1. Loosen the wing nut on the shock collar and slide the collar down the shaft at least 1" away from the plastic housing.
2. Your tester includes 2 tips (large and a small) that are stored in the tester housing. The tips can be removed by simply unthreading them from the housing. (***The tips are threaded on to the housing not snapped on.***)

Choose the tip that best suites the type of soil you have. The small tip is used for firm soil and the larger tip is used for loose soil.

**It is recommended that you start with the small tip and obtain some readings. If you feel the readings are very low or the soil is very loose then change to the larger tip.*

Once you have chosen a tip, thread the tip on to the end of the Soil Compaction Tester's shaft.

Note: No valid readings can be obtained from the tester if a tip is not attached to the end of the shaft.

3. Position the tip of the tester on the ground in the area you wish to test. Apply even downward pressure on both handles of the tester to keep the shaft and tip penetrating the soil at a slow even pace.
4. The tester shaft is marked at three inch intervals for easy depth measurement. As the tester's shaft penetrates the soil, the gauge readings at the 3", 6", 9", 12", 15" and 18" depths should be recorded. (Be sure to use the correct scale for the size tip that you are using on the shaft as indicated on the dial face)
5. A compacted layer can be determined by the gauge indicator increasing upward into the red range and then moving back down into the yellow or green 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.

Note: multiple readings must be taken from each area of the field. To get an accurate determination of whether or not you have a soil compaction problem and at what depth the problem exists. The same procedure should be repeated in other areas of the field as well. One area may not represent the condition of the whole field.

6. When the tester is not in use, loosen the shock collar's wing nut and slide the shock collar up the shaft until it comes in contact with the plastic housing and tighten the wing nut. This will help prevent damage to your Soil Compaction Tester.
7. When the tester is not in use, loosen the shock collar's wing nut and slide the shock collar up the shaft until it comes in contact with the plastic housing and tighten the wing nut. This will help prevent damage to your Soil Compaction Tester.

Service

PRODUCT WARRANTY AND REPAIR PROGRAM

Warranty is provided through John Deere dealers for customers who operate and maintain their equipment as described in this manual. See warranty tag for terms and conditions.

The warranty does not cover:

A — Products which have been altered or modified in ways not approved by John Deere.

B — Depreciation or damage caused by normal wear, accident, lack of reasonable and necessary maintenance as specified in this manual, improper maintenance, improper protection in storage, or improper use or abuse.

C — Transportation, mailing and service call charges for warranty service.

Should your product fail after the warranty period, it can be reconditioned for a nominal charge. See your John Deere dealer for further information.

RECORD SERIAL NUMBER

NOTE: The tester serial number is located on the bottom of the unit.

Write your model number, serial number, and date of purchase in the space provided below. Your dealer needs this information when ordering parts and when filing warranty claims.

Model _____

Serial No. _____

Date of Purchase _____

(To be filled in by purchaser)

Manufacturer's Contact Information

MANUFACTURER'S CONTACT INFORMATION



TOLL-FREE 1-800-821-9542

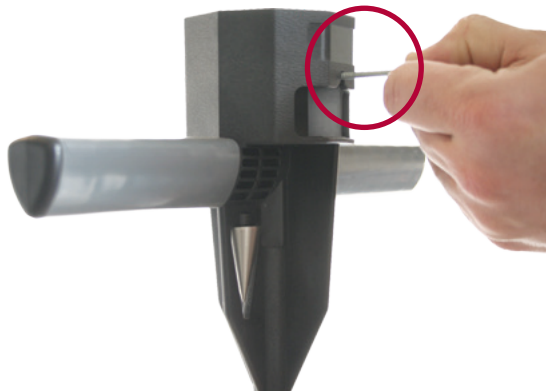
330-562-2222

FAX 330-562-7403

WWW.AGRATRONIX.COM

10375 STATE ROUTE 43
STREETSBORO, OH 44241
USA

HANGER HOLE NAIL



All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.