PRECISION DISK®

500 SERIES **AIR DRILL**

2019 CASE IH SEEDING PRODUCTIVITY GUIDE

www.caseih.com

CASE IH AGRICULTURE

GENERAL INFORMATION

- Accuracy
- Versatility
- Productivity

Case IH is proud to introduce the Precision Disk 500, 500T & 500DS drills, engineered with producer input from the very start. Farmers like you told us what you want and need, and we listened. You asked for a mounted seed tank option, accurate seed placement technology, better depth control for better stands and yields, the ability to seed and fertilize in one pass and the ability to work in varying tillage and residue systems. Producers said these drills should be highly productive with minimal maintenance requirements. That they should be offered in various sizes, but still be able to be transported with ease.

We listened to you and went to work. Our team of engineers built these drills from the ground up to give producers precisely what they asked for.

The Precision Disk 500 series air drills have a frame that delivers strength, durability and reduced setup time. They feature either a single disk opener for efficient, productive seeding or an all-new double shoot disk opener for efficient one-pass seed and fertilizer placement. Growers will come to depend on the unmatched seed placement accuracy and the ability to reach higher ground speeds (5-8 mph), all with lower maintenance requirements. In addition, producers can obtain accurate seed and fertilizer placement in any tillage system, thanks to the patented, parallel-link row unit and unique design. We're proud to offer this disk drill technology customers want and need.

Welcome to your all-new Case IH Precision Disk Drill.

CONTENTS

SAFETY

At Case IH, we design and manufacture every piece of equipment with operator safety as a priority. As farm equipment has gotten larger, the size and weight of the equipment, coupled with the power of hydraulics and mechanical systems used to manipulate and control machines, makes a constant awareness of safety a foremost requirement of any operator. We also understand that seeding time places added anxiety and stress on operators who know that the success of a full year is at stake every time they go to the field. However, hurrying never relieves the operator of their responsibility to operate the machine safely. Take a few minutes to review the Operator's Manual safety information before starting each year. The payback for your time should be a safer and more successful planting season.

Do not take shortcuts. Accidents can happen in seconds, too often leaving someone plenty of time to think about how the accident could have been avoided—while they heal.

GENERAL SAFETY RULES

1. Always remember that the Operator's Manual is first and always the "go to" resource when you have questions about how to operate your machine. The following information is a generalized review of Safety rules. Refer to the Operator's Manual for complete information.

2. One of the main features of large planting equipment is the ability to quickly move from one farm to another, using public roadways. Take time to become familiar with the traffic laws in your locality and how they apply to your large planting equipment.

3. When operating on public roads always use lights, flashers and turn signals for maximum visibility. Maintain a clean and visible Slow-Moving Vehicle sign on the rear of the machine.

4. Be a good neighbor and pull over to let traffic pass, if possible, to avoid creating unnecessary delay and stress for other drivers.

5. For best field performance and the most secure road transport, make sure the weight of the implement does not exceed the recommended towing capacity of the tractor being used. This is especially important in areas with high traffic and hills that increase the braking and stopping demands necessary to maintain safe control.

6. Do not exceed the drawbar or towing capacity of the tractor. When transporting, empty seed and fertilizer boxes and tanks whenever possible to reduce tractor drawbar load and total weight.

7. When transporting equipment, maintain safe maximum travel speeds to assure complete control, and the ability to stop in case of emergency. Refer to tractor and planter Operator's Manual recommendations for maximum transport loading and weight.

8. Removing guards for service work is no excuse to leave guards off during operation. Guards are intended to protect operators and any other persons, and must remain intact and installed as originally designed.

9. Review the Operator's Manual to identify and understand the use of service locks prior to starting service operations.

10. Engage service locks for all service operations. Use jackstands or secure blocking when working under or around raised equipment. Never work on the Drill without securely setting and locking service and transport locks in position and removing machine weight from the hydraulics systems.

11. When servicing ground engaging components such as opening disks and scrapers, use special care to avoid points and edges worn sharp during use.

12. Always keep tires inflated to the specifications published in your Operator Manual. Service tires carefully, observing Operator's Manual instructions and rules.

13. Chemical application is often an integral part of planting. Use the utmost care to protect yourself, other people, and the environment from the effects of overexposure to agricultural chemicals.

14. Follow label instructions for proper chemical mixing, handling and container disposal methods.

15. Be familiar with safety procedures for immediate first aid should you accidentally contact chemical substances.

16. Use the proper protective clothing and safety equipment when handling chemicals. Don't take chances - work safe.

17. Chemicals are supplied with Material Safety Data Sheets (MSDS) that provide full information about the chemical, its effects on exposure, and first aid needs in the event of an emergency. Keep your MSDS file up-to-date and available for first responders in case of emergency.

18. Observe and inspect all warning decals on the machine, and replace any decals that are damaged and unreadable.

19. Never allow the machine to be raised or lowered while service is being performed. Numerous linkages are used to move and suspend components. Pinch points between linkage and other parts of the machine are inherent, and could cause injury to an unsuspecting worker if machine movement is initiated.

DISK DRILL CONFIGURATIONS

CASE IH PRECISION DISK DRILLS ARE AVAILABLE IN MULTIPLE CONFIGURATIONS TO MATCH ANY FARMING OPERATION:

SINGLE FOLD

- Precision Disk 500 – 30 ft.
- Precision Disk 500 – 40 ft.

DOUBLE FOLD

- Precision Disk 500 – 50 ft.
- Precision Disk 500 – 60 ft.

SINGLE FOLD – MOUNTED TANK

- Precision Disk 500T – 25 ft., 70 bushel tank
- Precision Disk 500T – 30 ft., 70 bushel tank
- Precision Disk 500T – 40 ft., 100 bushel tank

SINGLE FOLD

- Precision Disk 500DS – 30 ft.
- Precision Disk 500DS – 40 ft.

DOUBLE FOLD

- Precision Disk 500DS – 50 ft.
- Precision Disk 500DS – 60 ft.

AIR CARTS CONFIGURATIONS

TOW BEHIND

- Precision Air 2355 – 2 tanks
- Precision Air 3445 – 3 tanks
- Precision Air 3555 – 3 tanks
- Precision Air 4465 – 4 tanks
- Precision Air 4585 – 4 tanks
- Precision Air 4765 – 4 tanks
- Precision Air 4955 – 4 tanks

TOW BETWEEN

- Precision Air 2355 – 2 tanks
- Precision Air 3445 – 3 tanks
- Precision Air 3555 – 3 tanks
- Precision Air 4465 – 4 tanks
- Precision Air 4585 – 4 tanks

SERVICE INSPECTIONS

Your machine has a Product Identification Number (PIN) plate. For easy reference, locate the PIN plate and record the number. When requiring repair parts, take this number into your dealer.

Model: _____

PIN Number: _____

PRE-SEEDING INSPECTION CHECKLIST

CHECKLIST FOR YOUR "WALK AROUND" INSPECTION

Refer to the maintenance section of your operator's manual for your maintenance schedule, suggested lubricants, etc.

SEED DELIVERY

Replace/SEED DELIVERY LINES	OK	Adjust
Primary Hose Condition – Obstructions/Tightness	☐	☐
Secondary Hose Condition – Obstructions/Tightness	☐	☐
Y-Splitter Condition/Obstructions	☐	☐

SEED METER DRIVE

Install Chains	☐	☐
Lubrication	☐	☐

ROW UNIT

ROW UNIT PARALLEL LINKAGE

Linkage – wear	☐	☐

DEPTH CONTROL

Down Pressure Spring	☐	☐
Grease depth setting handle pivot point	☐	☐
Set depth	☐	☐

OPENER DISKS

Opener disk wear – Worn out at 16 in. (406 mm)	☐	☐
Bear/hub condition – smooth rotation, etc.	☐	☐

SCRAPER & TRASH SHIELD

Scraper Wear – Adjust the scraper up at opener disk diameter 17 in. (432 mm)	☐	☐
Trash Shield Wear/position	☐	☐

Replace/GAUGE WHEELS	OK	Adjust
Rubber/Rim Condition	☐	☐
Bearing Condition – smooth rotation, etc.	☐	☐
Seed flap inspection	☐	☐

FIRMING/CLOSING WHEEL

Bearing Condition – smooth rotation, etc.	☐	☐
Splits, Cracks	☐	☐

GENERAL

TIRES AND WHEELS

Inflation Pressure	☐	☐
Wear/Damage	☐	☐
Bolt Tightness	☐	☐
Walking Tandem - Grease	☐	☐
Caster	☐	☐

HYDRAULIC DRIVE

Hyd. Motor Oil Leaks	☐	☐
Shaft Alignment/U-joints	☐	☐
Drive Chain Tension/Lubrication	☐	☐
Calibrate	☐	☐

ELECTRICAL

Wire Harnesses/Tie Straps	☐	☐
Seed Sensors, clean	☐	☐
Hopper Seed Level Sensor	☐	☐
Monitor (operation, functionality)	☐	☐
Row Clutch Function	☐	☐

SERVICE INSPECTIONS

REMOVING THE DRILL FROM STORAGE

1. Clean hydraulic hose couplers before connecting to the tractor.
2. Make sure tires are properly inflated before moving the disk drill.
3. Remove protective grease and clean exposed cylinder rods.
4. Carefully raise the Disk Drill, making sure settling during storage, or other closely-parked equipment does not result in interference when raising and moving the drill.
5. Inspect the entire disk drill for signs of rodent or other damage. Check hydraulic hoses and wiring harnesses for proper routing, and tie strap as needed.
6. Re-install drive chains.
7. Lubricate all grease fittings. Do not over-grease fittings lubricated when the unit was put in storage.
8. Check seed hoses and sensors for blockages.
9. Check for debris and clean the seed tank with pressurized air if needed.
10. Read the Operator's Manual for both the drill and display operation.

OPERATION

HYDRAULIC CONTROL REQUIREMENTS

Operation of the hydraulic systems on the drill and air distribution system (mounted tank or air cart) requires the tractor to have either a load sensing hydraulic system or a closed center system with flow control. These types of hydraulic systems usually have large oil reservoirs and increased oil cooling capacity.

The required tractor capacities are listed in the Tractor Hydraulic Requirements Chart below.

PRECISION DISK 500, 500T & 500DS - TRACTOR HYDRAULIC REQUIREMENTS

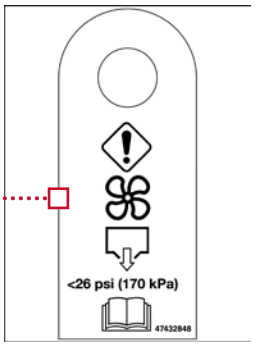
DESCRIPTION	MAX. GPM FLOW FROM TRACTOR FOR DRILL	MAX. GPM FLOW FROM TRACTOR FOR AIR CART	NUMBER OF TRACTOR REMOTES
Precision Disk 500T – all sizes	30 GPM (113 lpm) @ 2500 PSI (17.2 MPa)	None	3 (1-Lift/Lower, 2-Wing Fold, 3- Fan/Meter Drive)
Precision Disk 500 – 30 ft. & 40 ft.	15 GPM (57 lpm) @ 2500 PSI (17.2 Mpa)	26 GPM (98 lpm) @ 2500 PSI (17.2 Mpa)	2 (plus 1 Air Cart) (1-Lift/Lower, 2-Wing Fold)
Precision Disk 500DS – 30 ft. & 40 ft.	15 GPM (57 lpm) @ 2500 PSI (17.2 Mpa)	52 GPM (196 lpm) @ 2500 PSI (17.2 Mpa)	2 (plus 2 Air Cart) (1-Lift/Lower, 2-Wing Fold)
Precision Disk 500 – 50 ft. & 60 ft.	30 GPM (113 lpm) @ 2500 PSI (17.2 MPa)	26 GPM (98 lpm) @ 2500 PSI (17.2 Mpa)	2 (plus 1 Air Cart) (1-Lift/Lower, 2-Wing Fold)
Precision Disk 500DS – 50 ft. & 60 ft.	30 GPM (113 lpm) @ 2500 PSI (17.2 MPa)	52 GPM (196 lpm) @ 2500 PSI (17.2 Mpa)	2 (plus 2 Air Cart) (1-Lift/Lower, 2-Wing Fold)

OPERATION

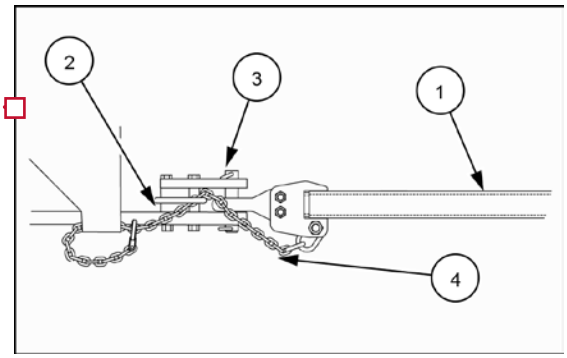
TRACTOR/DRILL HOOKUP

Some specific details that apply to general tractor/drill hook-up include:

- Tractor horsepower and weight must be adequate to maintain control of the Drill and Air Cart in the field and transport situations.
  This is especially important when operating on hilly or unstable soil, when additional control is required.
- The Precision Disk drill and 5 Series Air Cart are equipped with several hydraulic motors that require low back pressure case drain returns to the tractor. Low pressure is defined as 25 PSI or less under full-flow conditions. Refer to your tractor Operator's Manual for correct low-pressure return connections for your tractor.
- A warning tag on the case drain hose reminds the operator that incorrect connection of the case drain may damage the fan motor. Motor failures due to improper case drain connection are not covered by warranty.



- Electrical system requirements include the standard seven-pin connector socket for safety lighting.
- Tractor with ISO connect or AFS tractor wiring harness may be reguided for tractor monitoring.
- Secure the drill **(1)** to the tractor drawbar using an adequate draw pin **(3)** that is locked in place with a lynch pin or other proper locking device.
- Connect the safety chain **(4)** between the tractor and the drill as shown.
- When hitching to a tractor, route the chain through the loop near the hammer strap (if equipped) and around the drawbar intermediate support **(2)** as shown.



NOTICE: Be sure the safety chain is long enough. If using a Precision Air Cart, please check the Air Cart Operators manual for proper chain positioning. When hookup is complete, thoroughly inspect the routing of all hoses and electrical harnesses between the tractor and drill.

- Test drive the tractor/drill combination through complete right and left turns while observing the hitch area to assure no interference develops during operation and maneuvering.

GENERAL SEEDING TIPS

Several important factors must be considered when seeding. General factors are:

- Dig often to check seed depth accuracy and proper closing.
- After lowering the disk drill ranks, place the frame control remote valve in the engaged position to provide down pressure to the ranks of row units.

Check tractor hydraulic flow adjustments for each drill function run direct from the tractor (Air Fan/ Seed Drive & Lift/Lower) after reaching operating temperature. **Do not** set the flow levels to 100% and leave. Flow levels should be set just above the required amount to reduce the potential for overheating and power consumption.

The correct speed for seeding is dependent upon the following items:

- The amount of soil disturbance that is acceptable.
- The amount of ridging or stepping caused by the rear openers.
- The amount of unnecessary strain placed on the machine.

The speed selected will be dependent upon these factors and will vary with soil conditions. The usual speed is between 5-8 mph (8-13 km/h)

- When working on rough ground, or when making sharp turns, be sure to reduce the operating speed as this also causes unnecessary strain on the machine.
- Raise the openers out of the ground to make headland or sharp turns.

ADJUSTMENTS

ADJUST SEEDING DEPTH (1)

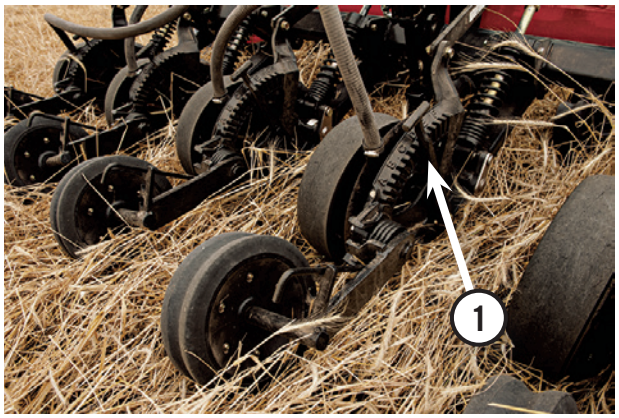
PD 500 & 500T – 0-3.5 in. depths available (0-8.9 cm)

PD 500DS –

- When placing seed with the Precision Placement Knife – 0-2.5 in. depths available (0-5.1cm) in .25 in. increments
- When placing seed with the Earth Metal® coulter – 1.25-3.5 in. depths available (3.18-8.9 cm)

The openers that are in the wheel or tractor tire tracks may need to be set to a different depth. Check the seeding depth and adjust opener depth as required.

NOTE: The range of seeding depth minimum and maximum will vary depending on seeding conditions and coulter wear.



ADJUST THE CLOSING WHEEL PRESSURE

At 1.5 in. of depth the pressure will be:

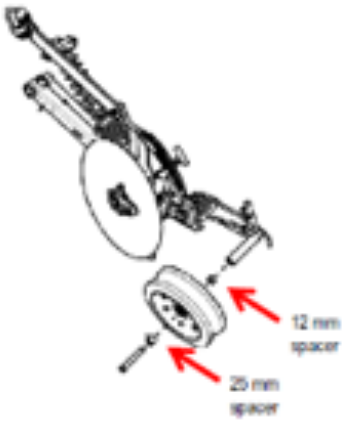
- Position 3 – 84 lbs., will exert high firming pressure.
- Position 2 – 71 lbs., will exert medium firming pressure.
- Position 1 – 59 lbs., will exert low firming pressure.

NOTE: Position 2 is recommended for most field conditions and a starting point

NOTE: Evaluate the closing quality. Depending on the seeding depth (typically around 1.25 in. (3.18 cm)), the closing wheel may have to be shifted to improve closing.

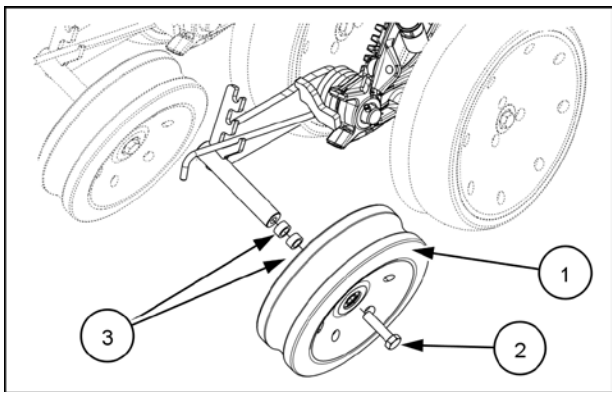
Starting in 2016 on PD 500 & 500T, shorter closing wheel arm now installed with two spacer (12 mm (~0.5 in.) and 25 mm (~1 in.) in spacer widths) options for repositioning the closing wheel for different opener depth settings.

NOTE: the deeper the opener disk is positioned, the wider the trench becomes and thus the closing wheel needs to be repositioned to properly close the trench.



- 12 mm spacer positions the wheel in original position for Precision Disk Drill product line
- 25 mm (~1 in.) spacer for deeper seeding depths (typically below 1.25 in.), when closing wheel requires repositioning to close seed trench
- 3 depth position options
  - 12 mm (~0.5 in.) depth= 12 mm (~0.5 in.) spacer
  - 25 mm (~1 in.) depth = 25 mm (~1 in.) spacer
  - 37 mm (~1.5 in.) depth = 12 mm + 25 mm spacer.

For pre-MY16 PD 500 & PD 500T a kit is available from your Case IH dealer (P/N – 47579960) to move the closing wheel either ½ in. (1.27 cm) or 1 in. (2.54 cm). This kit contains parts for eight row units.



ADJUSTMENTS

ADJUST DOWN PRESSURE

The hydraulic down pressure system across the full width of the Precision Disk 500, 500T & 500DS can be adjusted, depending on how the Disk Drill is optioned. In-cab down pressure is standard, Manual down pressure adjustment is available. The down pressure can be infinitely adjusted via a keypad or three, easy to use preset down pressure settings (press and hold the button to set).

The tractor hydraulic circuit must have continuous flow in order that the opener down pressure circuit is pressurized. Available down pressure range is between 200-1300 psi (25 ft. & 30 ft.) or 200-1450 psi (40 ft., 50 ft., & 60 ft.) to provide ample down pressure in any soil condition.

Potential Starting Ranges:

- Min till/conventional till – 200-600psi.
- No-till – 600psi +.
- Double Shoot – 400 -800psi.

NOTE: Set the down pressure to achieve adequate opener penetration and depth control.

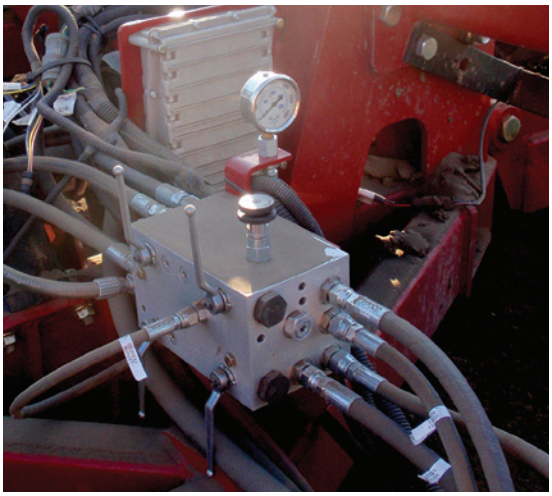
NOTE: The tractor hydraulic circuit must have continuous flow in order that the opener down pressure circuit is pressurized.

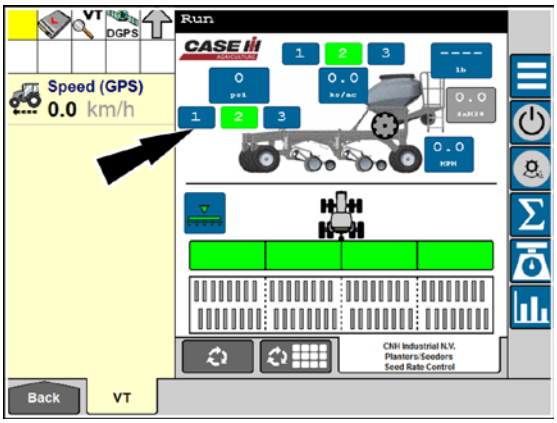
DOWN PRESSURE SETUP AND TARGET ADJUSTMENT

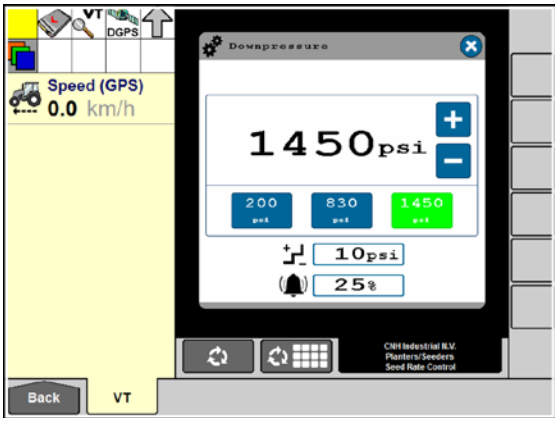
The tractor hydraulics must be engaged for the active pressure control on the down pressure cylinders to function.

1. Press the down pressure button on the “Run” screen.
2. Directly enter a new target value or use the + / – buttons to step the target up or down.
3. Use a quick press on a preset to switch to that rate. Pressing hold a preset to save the current target to the preset.
4. A preset with no assigned value will show dashes (– —) and cannot be selected until a value is saved to it.
5. Set down pressure alarm thresholds and sensitivity of control.

NOTE: A pressure alarm will occur if the actual pressure differs from the target by the specified percentage.







ADJUSTMENTS

OPENER DISK INSPECTION

The Earth Metal® opener disks when new are 18 in. (45.7 cm) in diameter. The opener disk should be replaced when disks are worn to 16 in. (40.6 cm). The disk measurement can also be made from the cast hub, the measurement are as follows: Disk edge to hub is 6-1/8 in. when new, 5-5/8 in. when half worn (17-in. diameter), and 5-1/8 in. when fully worn (16-in. diameter).

NOTE: A symptom of a worn disk is excessive hair pinning and reduced seeding depth.

Opener Disk to Gauge Wheel Gap

The gauge wheel should be as close as possible to the opener disk, without actually touching at any point.

- Test the gap by turning the opener disk. The gauge wheel should just brush the coulter at one point along the rotation.
- Add shims to the gauge wheel assembly if the opener disk and gauge wheel are too tight.

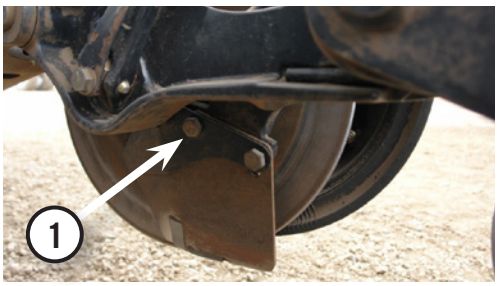
NOTE: It is important that there is a small gap between the opener disk and the gauge wheel lip. If there is constant pressure against the gauge wheel, premature wear and increased fuel consumption will occur.

SCRAPER ADJUSTMENT

Adjustment to the scraper and trash shield may be needed for development of a high quality seed and fertilize trench as the opener disk wears.

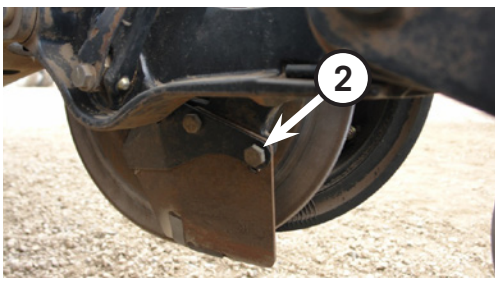
The scraper and trash shield can be adjusted up and down by removing the retaining bolts and moving the scraper higher as the opener disk wears (typically at 17 in. (43 cm) the scraper will need to be adjusted to the next notch higher)

There should be no larger than a 0.051 in. (1.3 mm) gap between the blade and scraper at any point along the front edge of the scraper. If hair pinning at the top or bottom of the scraper is experienced, the scraper may need to be adjusted with washers.



BUILD-UP AT TOP OF SCRAPER

If build-up is occurring where the scraper and trash shield meet, add a washer **P/N 86632589** to the front bolt **(1)** between the scraper bolt, the scraper and the scraper mount. Torque the bolts to **85 lb. ft. (115 N·m).**



BUILD-UP AT BOTTOM OF SCRAPER

If build-up is occurring where the scraper and trash shield meet, add a washer **P/N 86632589** to the back bolt **(2)** between the scraper bolt, the scraper and the scraper mount. Torque the bolts to **85 lb. ft. (115 N·m).**

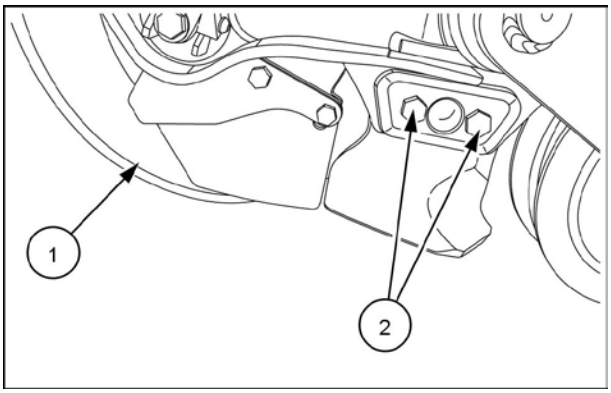
For 2018 a new scraper design has been release. All model year '18 Precision Disk 500 series air drill where shipped with the new scraper. This scraper feature a engineered hard surface coating for extended life. These scraper are also available as a service part numbers **P/N 481888187 & 48188190.**

ADJUSTMENTS

PRECISION PLACEMENT KNIFE™ ADJUSTMENT

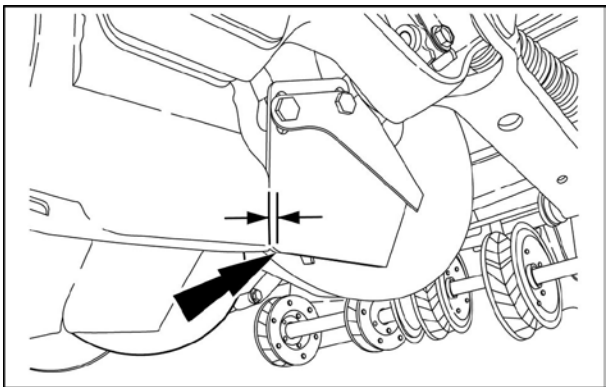
Adjustment of the Precision Placement Knife is needed when the scraper and trash shield are adjusted to compensate for opener disk wear.

- Move the Precision Placement knife upwards once the coulter **(1)** has worn to a diameter of 43 cm (17 in).
- Loosen the bolts holding the knife to the opener backbone **(2)** to allow the knife to be moved upwards on notch.
- Position the new knife directly behind the disk scraper and slightly above the bottom edge.
- Torque the bolts to **121 lb. ft. (164 N·m).**



Scraper to Knife Opener Gap

Check the opener to scraper gap. Adjust the Precision Placement Knife or the scraper so that the gap is between **0.1 – 0.3 in.** Scraper always needs to be proud of the Precision Placement Knife.

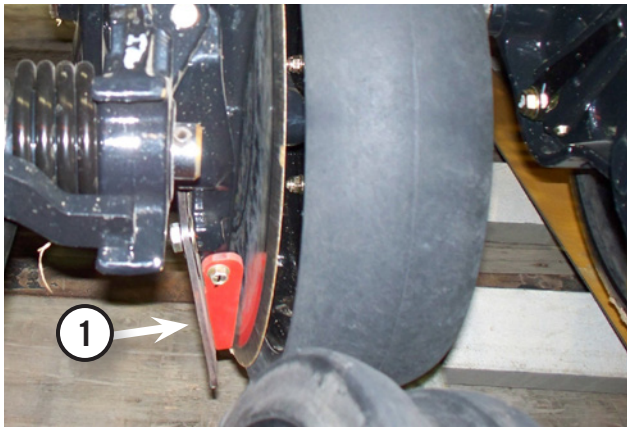


SEED FLAP INSPECTION

A seed flap deflector is located behind the scraper and seed tube to help contain any seed and fertilizer that might attempt to bounce out of the seed and fertilizer trench.

Check the seed flap **(1)** for wear or breakage.

If openers are plugging, the seed flap can be removed when seeding in wet conditions.



ADJUSTMENTS

SINGLE RANK OPERATION

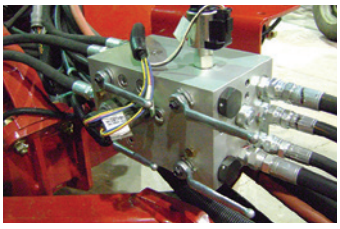
The drill spacing on **7.5 in. (19.1 cm)** drills can be changed to **15 in. (38.2 cm); 10 in.(30.5 cm)** drills can be changed to **20 in. (61 cm),** by locking out one rank of openers and setting the flow dividers to only put seed to the either the front or back rank.

TIP!

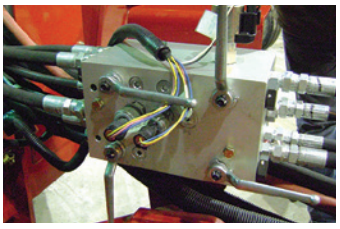
Either rank can be used to seed with in this situation. It may be desirable to switch from back to front or front to back each year to keep opener disk wear even.

Wet and/or soft conditions may require both ranks to be placed in the ground to help float through the conditions.

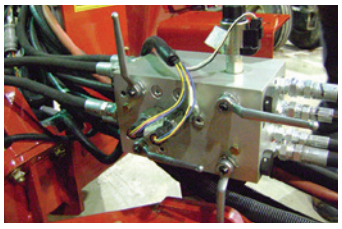
1. Lift both ranks up to the their fully lifted position.
2. Adjust the correct combination of levers on the hydraulic block to lock either the front or rear rank up.



All ranks in use and seeding



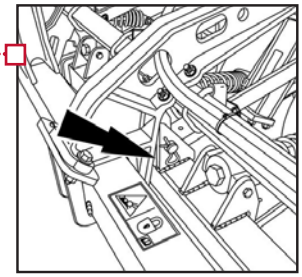
Front rank in use and seeding

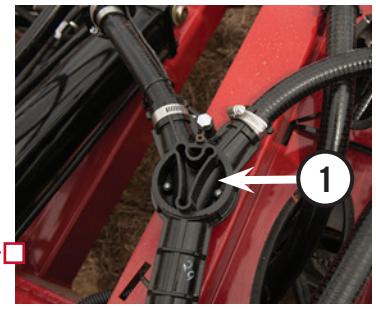


Rear rank in use and seeding

3. Insert the mechanical lock-up pins in the rank that is not seeding.
4. Use the flow divider on each y-splitter (500T only) to direct the product flow as required. The arrow **(1)** on the splitter shows the product flow. Full seeding is shown.

   For the Precision Disk 500 w/ Air Cart, header inserts are available to split rank apply. See your dealer for details.

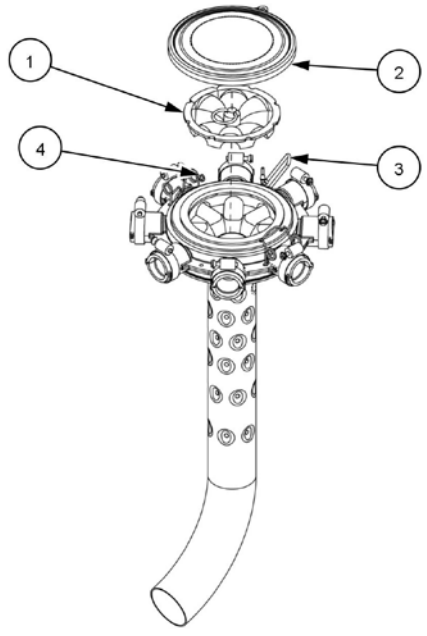




NOTE: Remember to adjust the Flow Set-up to detect the proper rows on Precision Disk 500T OR change run configuration in Precision Air 5 series cart display.

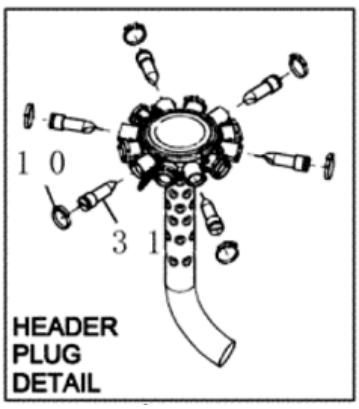
For Split Rank operation on PD 500 in 7.5 in. spacing, EZ-Flow Header Inserts **(1)** must be ordered from your Case IH dealer.

- 47418902 – Split Rank Header Insert for 30 ft. – 7.5 in. spacing
- 47418903 – Split Rank Header Insert for 40 ft. – 7.5 in. spacing
- 47505141 – Split Rank Header Insert for 50 ft. – 7.5 in. spacing
- 47505146 – Split Rank Header Insert for 60 ft. – 7.5 in. spacing



For Split Rank operation on PD 500 and PD 500DS in 10 in. spacing, Header Plugs must be ordered from your Case IH dealer.

- 87401070 – EZ-flow header plugs

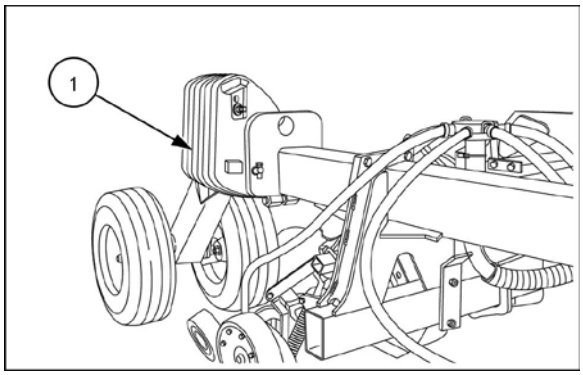


ADJUSTMENTS

WEIGHT PACKAGE

Certain conditions may require the addition of weight to the rear of the toolbar **(1)**.

Use only the weight brackets specifically designed for the drill. The brackets are available from your dealer (for single shoot) and should be mounted as far rearward as possible on the wing spar beams. The bracket for double shoot drills are standard equipment and are assembled. The brackets will accept standard Case IH tractor weights.



Recommended Ballast

SINGLE SHOOT DRILL						
	100% BALLAST					
Size	Left Outer Wing	Left Inner Wing	Center Section	Right Inner Wing	Right Outer Wing	Total
30 ft.	—	600	1400	600	—	2600
40 ft.	—	600	1400	600	—	2600
50 ft.	600	—	—	—	600	1200
60 ft.	600	—	—	—	600	1200
DOUBLE SHOOT DRILL						
	50% BALLAST*					
30 ft.	—	500	1000	200	—	2000
40 ft.	—	500	1000	200	—	2000
50 ft.	500	1000	1000	1000	500	4000
60 ft.	500	1000	1000	1000	500	4000
	100% BALLAST**					
30 ft.	—	1000	2000	1000	—	4000
40 ft.	—	1000	2000	1000	—	4000
50 ft.	1000	2000	2000	2000	1000	8000
60 ft.	1000	2000	2000	2000	1000	8000

NOTE:

0% to 50% Ballast – If seeding in very soft soil conditions or high moisture conditions, ballast may be removed if observe excessive soil compaction from rear carrier wheels.

* 50% Ballast – Recommended for average moisture and soil types.

** 50% to 100% Ballast – Recommended if rear carrier wheels losing firm contact with ground while seeding and/or inconsistent seeding depth.

MAINTENANCE

SINGLE SHOOT DRILL

Maintenance Action	Adjust	Check	Grease	Ops Manual Page No.
As Required				
Primary run quick connect	•			6-7
Seed flap inspection		•		6-8
Mud scraper and trash shield	•			6-9
Packer wheel position	•			6-10
Gauge wheel to opener disk gap	•			6-11
Every 10 Hours or Daily				
Daily inspection		•		6-18
Wheel bolt torque		•		6-19
Frame weights		•		6-19
Every 50 Hours or Yearly				
Caster wheel			•	6-20
Air package		•		6-20
Wheel bearings			•	6-20
Wheel hub			•	6-21
Rear wheel			•	6-21
Hydraulic system		•		6-21
Electronics		•		6-21
Disk opener			•	6-22
Opener disk inspection and replacement		•		6-22
Disk scrapers		•		6-23

DOUBLE SHOOT DRILL

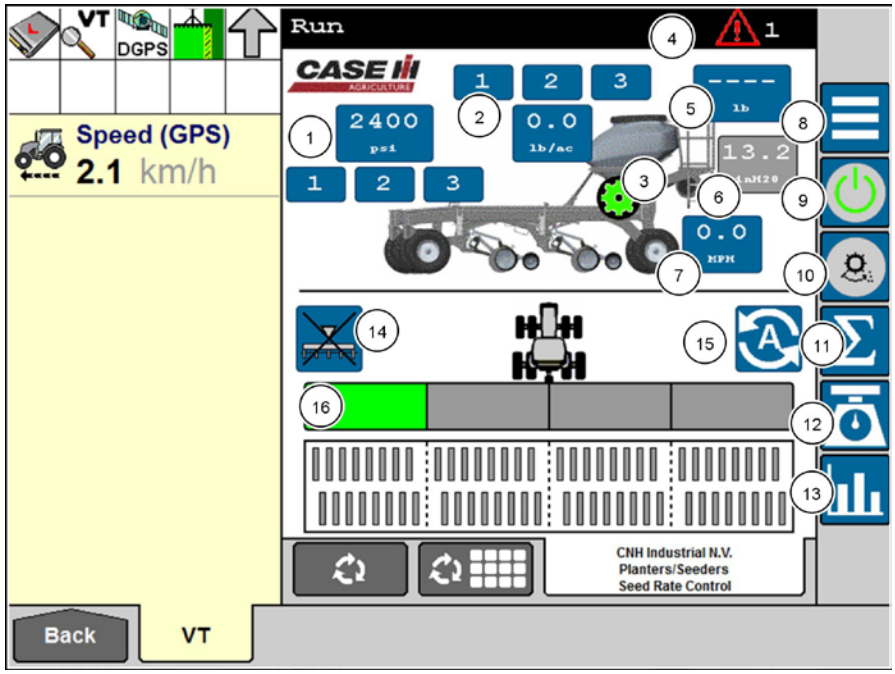
Maintenance Action	Adjust	Check	Grease	Ops Manual Page No.
As Required				
Primary run quick connect	•			6-7
Seed flap inspection		•		6-12
Mud scraper and trash shield	•			6-13
Packer wheel position	•			6-15
Gauge wheel to opener disk gap	•			6-16
Every 10 Hours or Daily				
Daily inspection		•		6-18
Wheel bolt torque		•		6-19
Frame weights		•		6-19
Every 50 Hours or Yearly				
Caster wheel			•	6-20
Air package		•		6-20
Wheel bearings			•	6-20
Wheel hub			•	6-21
Rear wheel			•	6-21
Hydraulic system		•		6-21
Electronics		•		6-21
Disk opener			•	6-24
Opener disk inspection and replacement		•		6-24
Disk scrapers		•		6-24
Seeding tool – Check		•		6-24

USER INTERFACE

PRECISION DISK 500T

When you turn on the display, the "Run" screen will be displayed.

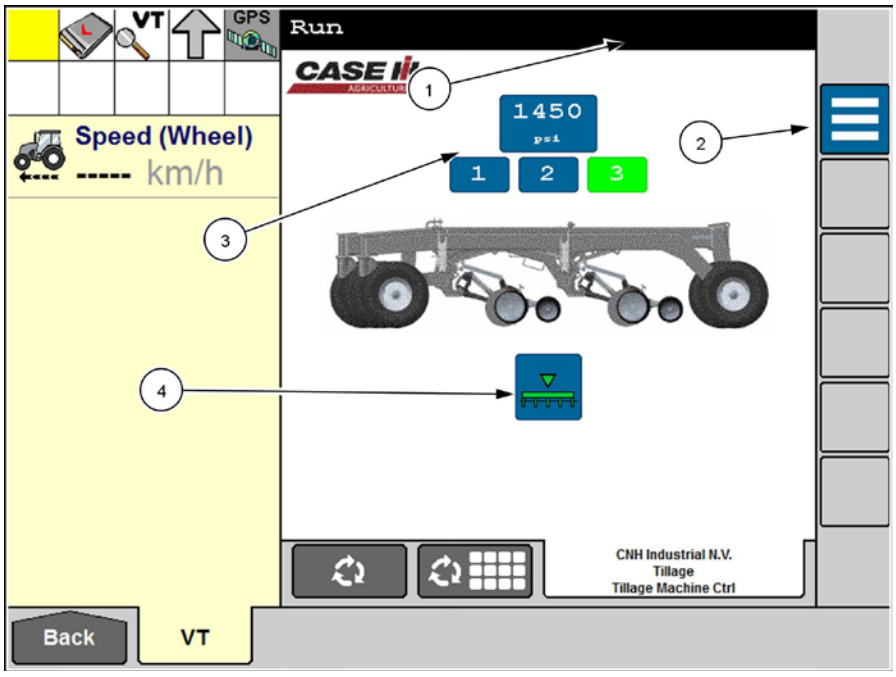
NOTE: The screen display may be different than shown depending on the installed options.



1 Down pressure preset button and display.
2 Application rate preset buttons and display.
3 Click on the tank to turn the meters on. If a product calibration for that tank has not been completed, you can jump to the meter calibration.
4 Alarm status area. If there are any alarms or faults, there will be an indicator in this area.
5 The weight of the product in the tanks is displayed here, if the drill has weigh scales installed.
6 Fan air pressure display.
7 Speed indicator and speed source selection. Click here to select the speed input.
8 Click here to access the Main Menu. Main Menu has calibrations, diagnostics, setup and reset menu items.
9 Click on the master switch to turn all enabled meters on and off.
10 Prime switch. Prime will turn enabled meters for 10 seconds to start to fill the system with product to help avoid misses in the field.
11 Press here to see application totals.
12 View the weight of the product in the tanks and zero the scale.
13 Change the display from bar graph to sensor view.
14 Work switch state display.
15 Section control more. Available only on four-section drills.
16 Section control section state and user interface. Press a section on the screen to turn that section on or off.

PRECISION DISK 500 & 500DS

When you turn on the display, the "Run" screen will be displayed.



1 Status bar for alarms and fault indicators
2 Press here to access the Main Menu. Main Menu has diagnostics, setup and reset menus
3 Down pressure preset buttons and display (if installed)
4 Work switch and work switch state selection (if installed) – press here to select work switch type

SEED METERING AND DISTRIBUTION SYSTEMS
— PRECISION DISK 500T ONLY —

SEEDING WITH A HYDRAULIC DRIVE DRILL

Hydraulic drive seeding equipment require different operating techniques than ground drive. Follow these tips to have a successful seeding season.

- Utilize "Prime Control" if starting to seed with the drill in the ground and starting from 0 mph. This will limit the gaps left due to Product Delay. A seeding gap could be seen, if prime control is not used.
- Maintain constant and high enough engine RPM levels to keep high quality seeding operation. This engine RPM is typically between 1800-1900 engine RPMs. See the tractor operator's manual.
- Avoid sudden changes in ground speed to keep consistent placement.

Please reference the "Working Operations" Section 5-1 of the Drill Operator's Manual for more details.

WEIGH SCALES

For MY 18, Case IH introduce factory-installed weigh scales as an option. Weigh scales help to:

- Measure the weight of product remaining in the tank.
- Put only the amount of seed required to complete a field or farm in the tank.
- Reduce the amount of left-over seed.
- Reduce time during seed variety changeover.

The load cell reports to the remote scale display. An operator can easily read the amount of seed in the tank from this location.

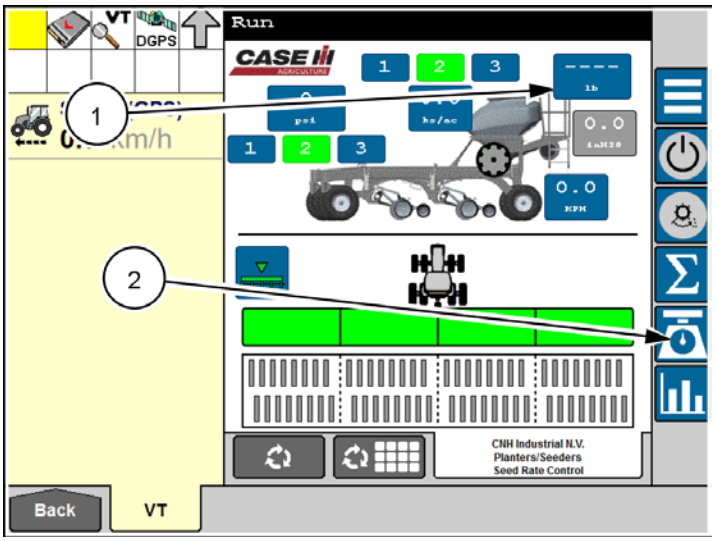
The weigh scale system is also integrated into the drill electronic system This means the weights are available on both the remote display and the in-cab display.

The main display is located at the top of the handrail on the rear platform. On the cab display weight will be displays on the main run screen at all time **(1)** or by pressing the soft key **(2)** to display on a separate page, from here the scale can be zeroed out.

Resetting the tare on either display will also reset the weights on the opposite display.

NOTE: The drill must be level for an accurate reading to occur.

NOTE: MY 18 and newer PD 500T order without scale can be retrofitted with p/n 48054001



SEED METERING AND DISTRIBUTION SYSTEMS
— PRECISION DISK 500T ONLY —

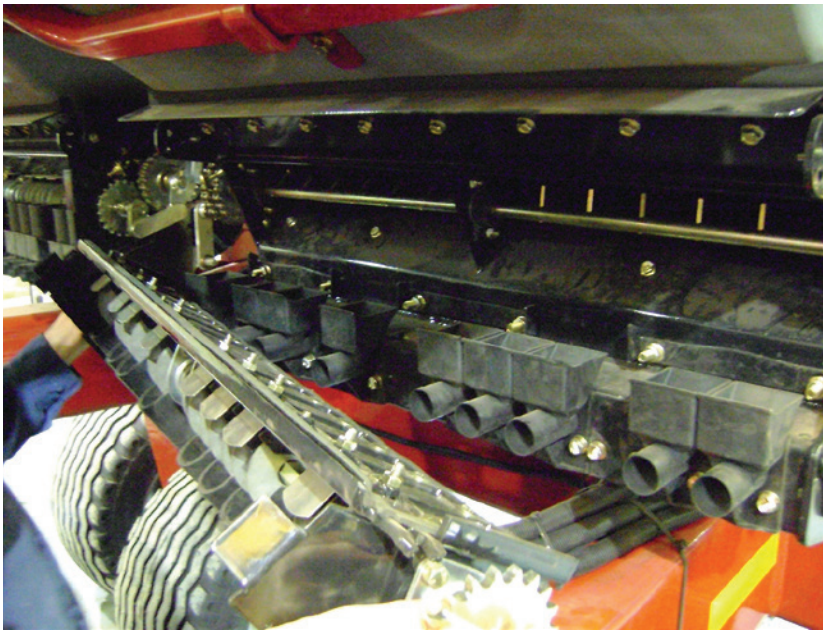
SELECT SUITABLE METER ROLLERS

	Extra Fine	Fine	Coarse
			
Alfalfa	**Recommended**	Not recommended	Not recommended
Canola	**Recommended**	Not recommended	Not recommended
Barley	Not recommended	Not recommended	**Recommended**
Flax	Not recommended	**Recommended**	Not recommended
Oats	Not recommended	Not recommended	**Recommended**
Rice	Not recommended	Not recommended	**Recommended**
Sorghum (Milo)	**Recommended – 5-40 lb/ac (5.6 -44.8 kg/ha)**	**Recommended – 25-120 lbs/ac (28-134.4kg/ha)**	Not recommended
Soybeans	Not recommended	Not recommended	**Recommended**
Wheat	Not recommended	Not recommended	**Recommended**

SEED METER CHANGING

Changing the meter roller assembly for different crop types is easily done by removing the current door/meter assembly and installing the new roller/door assembly. The assemblies are removed by simply unscrewing one bolt on each side of the meter, unhooking the agitator linkage and then removing the entire assembly.

Note: Seed must be drained from the tank prior to removing the meter assembly.

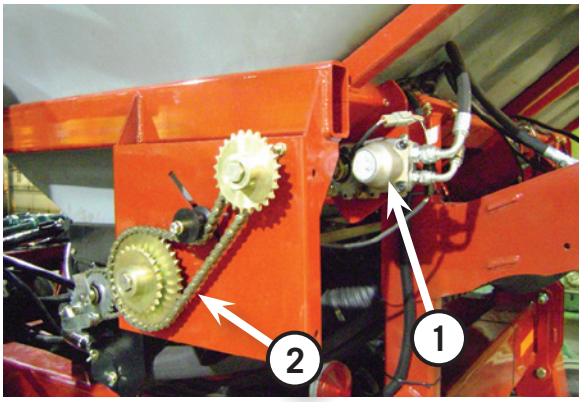


SEED METERING AND DISTRIBUTION SYSTEMS
— PRECISION DISK 500T ONLY —

HYDRAULIC DRIVE AND GEAR RATIO ADJUSTMENT

The seed meter rollers are driven by a smooth running hydraulic drive **(1)**. The single hydraulic motor provides the needed power and torque to seamlessly turn the seed drives at the required speed for precise rate control. The built-in speed sensor provides the needed feedback to accurately control motor speed.

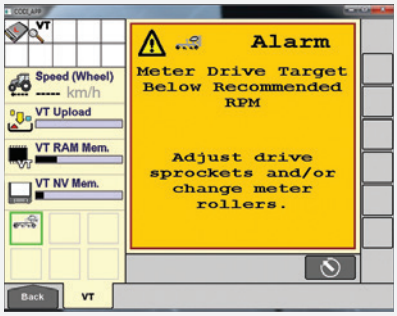
The sprocket combination **(2)** can be changed to achieve the proper meter speed range for a seed type. There are three different ratios 1:1 and 3:1 and 1.4:1



Note: The sprocket ratio as shipped with the drill is 1.4:1 (one 28–tooth sprocket and one 20–tooth). For low to moderate rates of product, you may need to configure the drive sprockets to change the gear ratio to 3:1 from the factory shipped configuration. An indication that the sprocket ratio should be changed is an occurrence of "Rate out of Range" alarms. Meter speed should be kept between 15 and 110 RPMs for proper operation.

TIP!

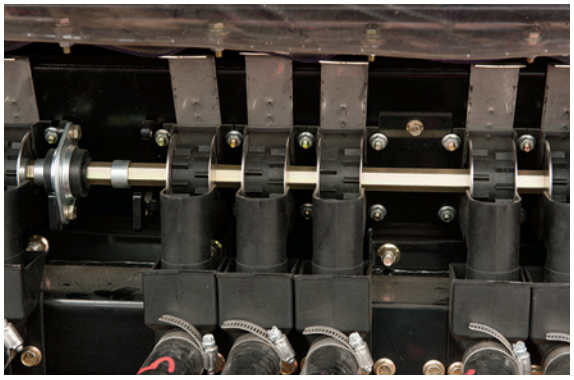
The AFS Pro 700 or ISOBUS compliant display provides a warning if the meter speed is too slow or too fast for the ground speed and product application rate. In that instance the drive sprocket ratio will likely need to be changed.



SUGGESTED RATIOS PER CROP TYPE	
Alfalfa	3:1
Canola	3:1
Barley	3:1
Flax	3:1
Oats	3:1
Rice	3:1
Sorghum (Milo)	3:1
Soybeans	3:1 or 1:1 / 1.4:1
Wheat	1:1 / 1.3:1

ADJUSTING SEED GATE POSITION

The seed gates regulate the amount of seed pouring from the tank into the meter roller segments. The gates need to be opened prior to seeding. Each gate has detents which allows the operator consistent adjustment between four positions –Closed, 1/3 open, 2/3 open and fully open.

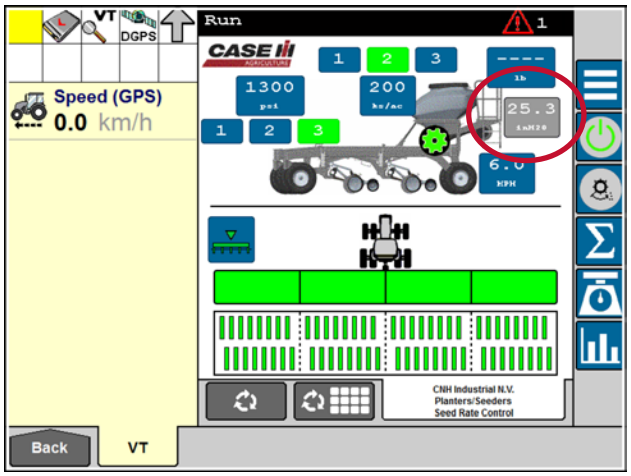


GATE POSITION PER CROP TYPE	
Alfalfa	1/3 open
Canola	2/3 open
Barley	Full open
Flax	2/3 open
Oats	Full open
Rice	Full open
Sorghum (Milo)	2/3 open
Soybeans	Full open
Wheat	Full open

SEED METERING AND DISTRIBUTION SYSTEMS
— PRECISION DISK 500T ONLY —

FAN PRESSURE ADJUSTMENT

The AFS Pro 700 or ISOBUS compliant display provides feedback on the air pressure provided. The operator simply adjusts the hydraulic oil flow rate from the tractor remote valve to adjust to the desired air pressure rate shown on the display. Proper air pressure level is determined by an open hose test.



DETERMINING ADEQUATE CARRYING VELOCITY – OPEN HOSE TEST

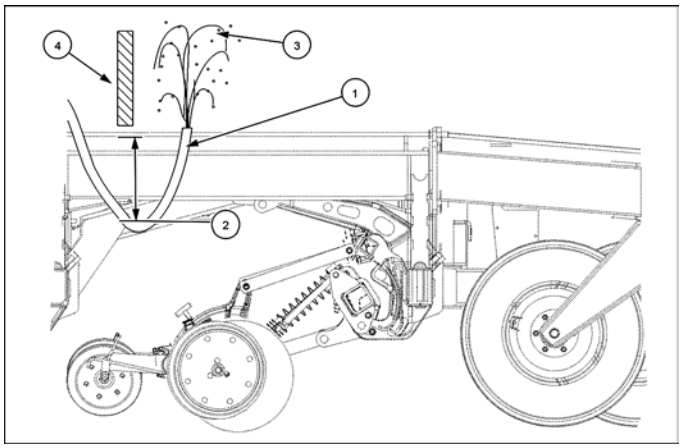
This calibration is critical to ensure optimal air velocity to carry seed from the mounted tank seed meter out to the row units.

- Too much air may cause the seed to have inaccurate placement in the seed furrow
- Too little air may cause seed to not consistently carry to all rows which will result in inconsistent seeding and can cause blockages

NOTE: To check if the fan speed and meter gate settings are suitable for seeding, check product placement behind several openers and observe the seed planting depth.

Use the following open hose test to determine adequate carrying velocity:

1. Remove one secondary hose **(1)** from an outside opener.
2. Fasten the hose **(1)** to the frame of the seeding tool.
   - The hose should be no more than **12 in. (30 cm)** below the bottom of the frame member, as shown **(2)**.
   - Ensure the end of the hose **(1)** is flush with the top of the frame member, the outlets face straight up and the hose is not kinked.
3. Open the seed gates to all runs
4. Begin seeding at normal operating speed.
5. From a safe distance, observe the product coming out of the hose end.
   - The product **(3)** should discharge about **12-24 in. (31-61 cm)** above the hose **(4)**
   - STOP the meters if the product is not **12-24 in. (31-61 cm)** out of the tube.
   - Adjust the fan pressure to reach a product discharge of **12-24 in. (31-61 cm).**



Note: In some crop types, the heights of 12-24 in. may not be achieved (large soybeans or example).

SEED METERING AND DISTRIBUTION SYSTEMS
— PRECISION DISK 500T ONLY —

PERFORM PRODUCT CALIBRATION

Product metering calibrations are critical to accurately apply the correct seeding rates and are recommended for the following occasions:

- New precision disk drill
- Start of season
- Crop Type change
- Weight of crop change
- Seed meter roll change
- Gear set change (From 1:1 / 1.3:1 ratio to 3:1 ratio or visa versa)
- Major component change

To calibrate, you will need:

- Container, bag or pails to capture product at 2-3 locations across the unit.
- Weigh scale (A scale is available from your Case IH Dealer – P/N 47486597)
- Flat Screwdriver or 5/16-inch nut driver to remove/tighten the hose clamp
- Seed in the tank

The calibration number provides input to the drill controller regarding how much seed is being distributed based on seed meter configuration and crop.

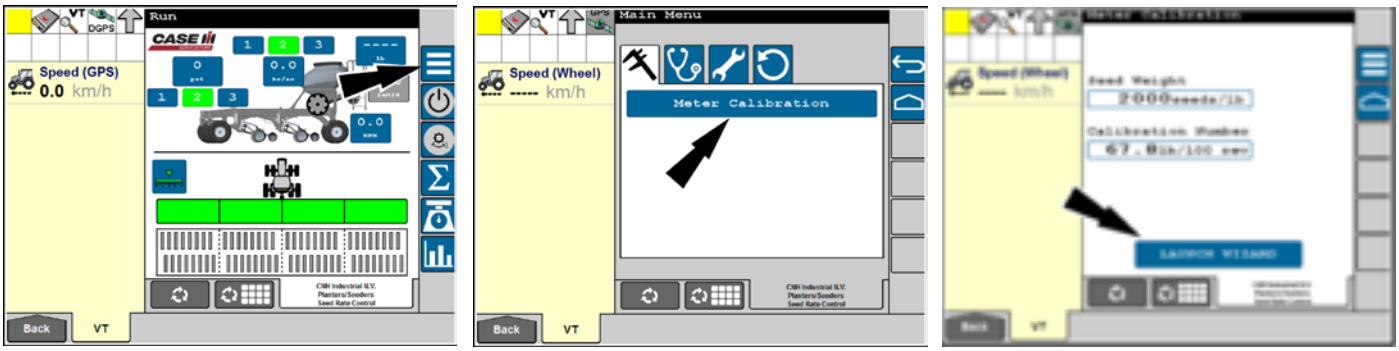
- Calibration number is “lbs (kg) /100 rev(olutions)” of the seed drive motor output shaft (not the meter)
- Factory calibration value is set to “0lbs / 100 rev”

If a reliable cal number has been found in previous calibrations, the valid calibration number can be enter manually, if desired.

Use the calibration Wizard for instructions to perform the calibration.

CALIBRATION WIZARD

To access the Meter Calibration Select Menu Button > Calibration tab and press Meter Calibration. Follow the on-screen instructions.



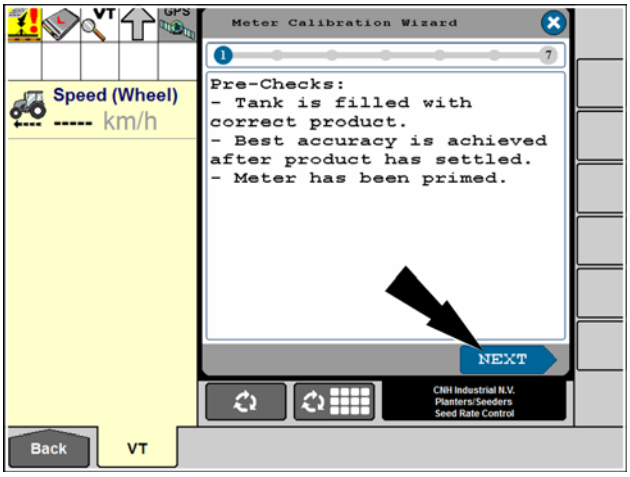
The calibration screen with “Launch Wizard” will appear. The screens will guide you through the step-by-step process.

SEED METERING AND DISTRIBUTION SYSTEMS
— PRECISION DISK 500T ONLY —

CALIBRATION WIZARD (continued)

STEP 1

- **Pre-Checks.** Check that the tanks are filled with the desired product, the meter has been primed and the seed gates have been adjusted.

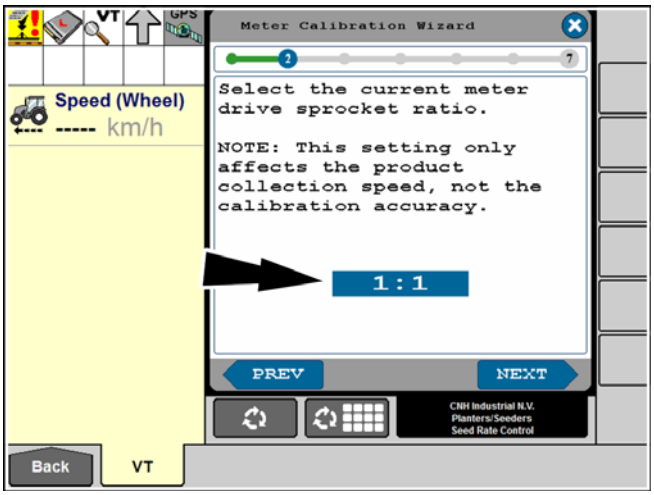


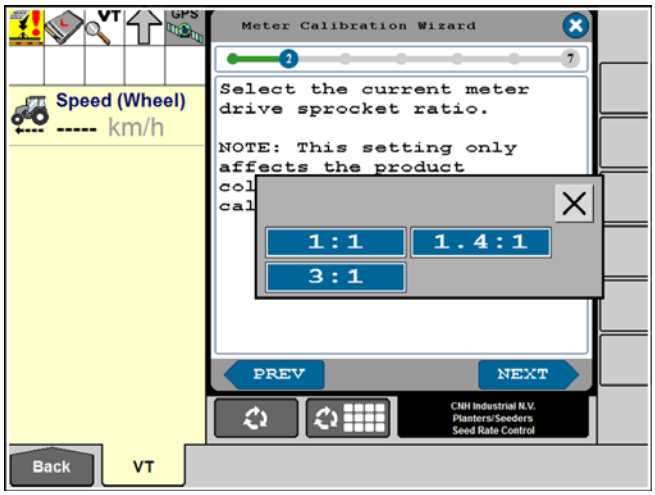
TIP!

Only open the seed gate above the meter sections that seed will be caught from. All other can remain closed to prevent unwanted seed loss.

STEP 2

- Select the current meter drive sprocket ratio





SEED METERING AND DISTRIBUTION SYSTEMS
— PRECISION DISK 500T ONLY —

CALIBRATION WIZARD (continued)

STEP 3

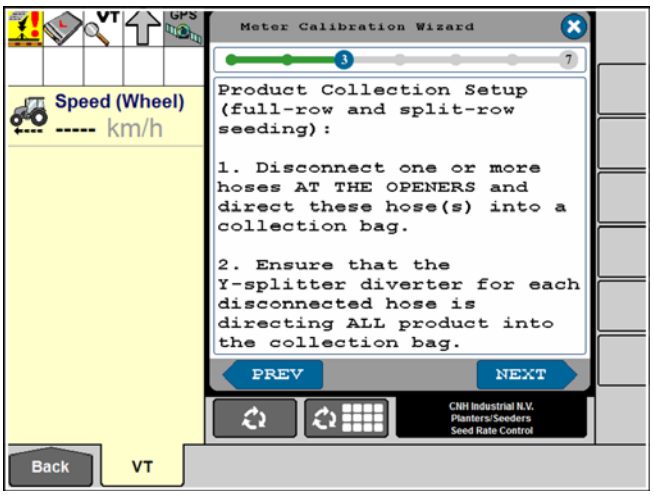
- **Product Collection Setup** – Follow the instructions on the screen to attach the calibration bags.

  Weigh each of the collection bag/container and record the weight(s).

  Disconnect either the Primary hose from the Y-Splitter or both secondary hoses from the row unit and adjust the Y-Splitter so that all the product from one meter section/primary run is directed in to the collection bag or bucket. All of the product from both hoses must be collected for an accurate calibration!

TIP!

Tie the bag shut or cover the container so no seed is able to escape during the calibration. If no stationary calibration switch is installed, attached the bag securely to the frame of the drill.

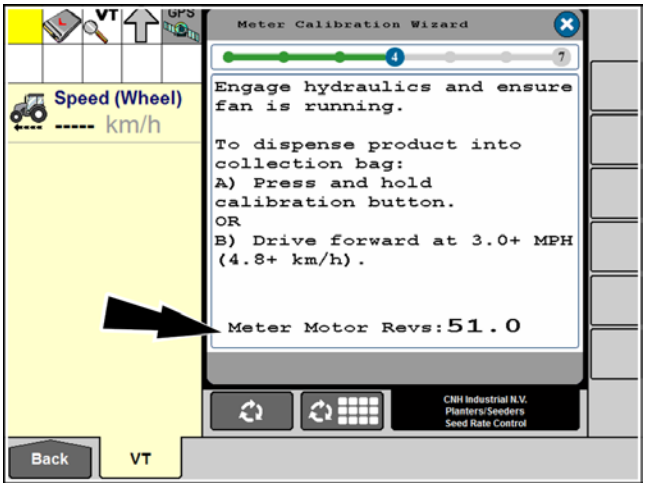


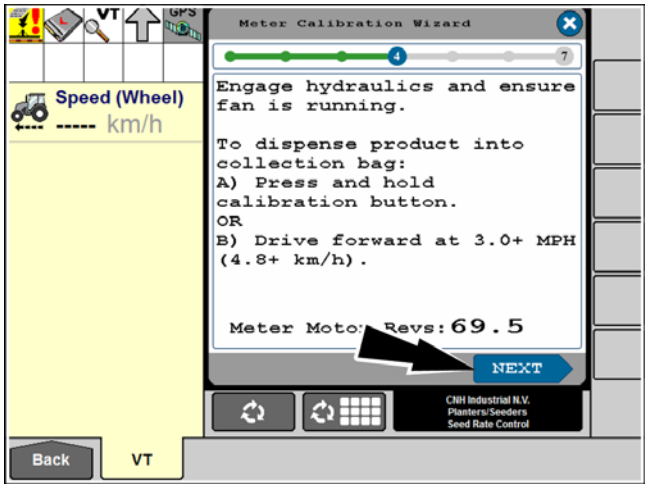
TIP!

Collect product from several locations across the drill (ex. One collection point per meter section)

STEP 4

- **Start the calibration** – Either begin to drive forward or press and hold the calibration button (if equipped). The number of motor revolutions will start to count up. Stop driving forward or release the calibration button. Press **NEXT**.





SEED METERING AND DISTRIBUTION SYSTEMS
— PRECISION DISK 500T ONLY —

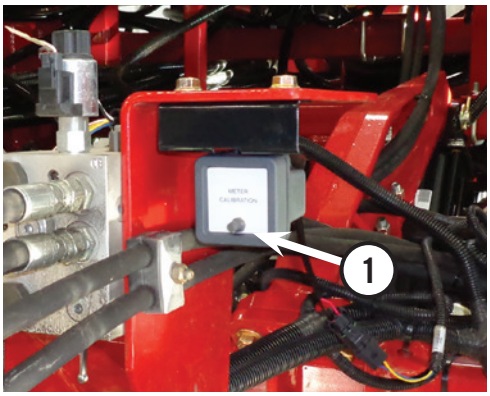
CALIBRATION WIZARD (continued)

Drills without a Calibration Switch

If no calibration switch is installed on the drill begin driving above 2.5 mph (4-5 km/h). When ground speed above 2.5 mph is reached the meter will begin to turn at the RPM programmed in step 3. It is recommended to drive 3 mph or over during this calibration.

Drills with a Calibration Switch

If a calibration switch **(1)** is installed on the drill, press and hold the switch. The meters will begin to turn and product will be metered.



Note: In both calibration methods, the 'targets counted' window will begin counting when the meter begins to turn. This number indicates that the system knows the meter is turning. The number shown does not have an affect on the final calibration number.

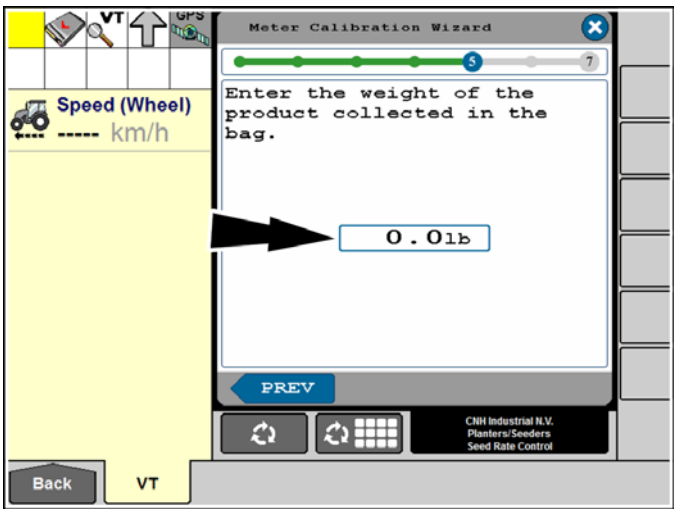
Note: In either configuration, collect a measurable amount of seed in the collection bag (5 lbs. minimum).

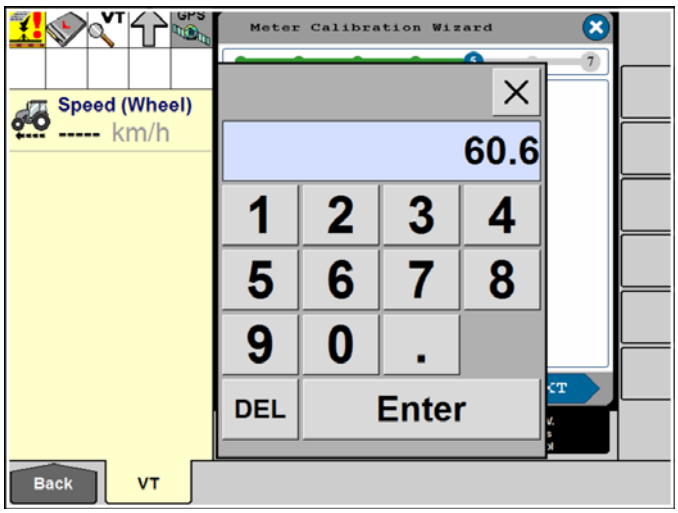
STEP 5

- Enter the weight of the collected product. Be sure to subtract the weight of the bag. Add all of the product weights together and enter the total weight.

  In either configuration, collect a measurable amount of seed in the collection bag (5 lbs. minimum).

  Note: The weight should be calculated in tenths of a pound (or kg). Do not enter ounces!





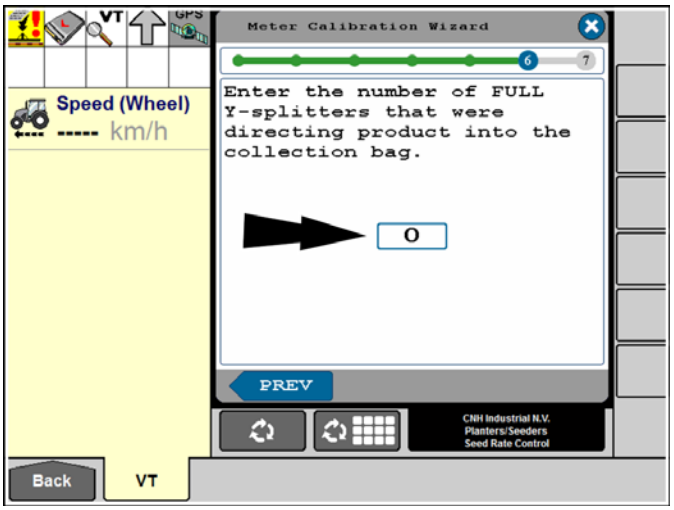
TIP!

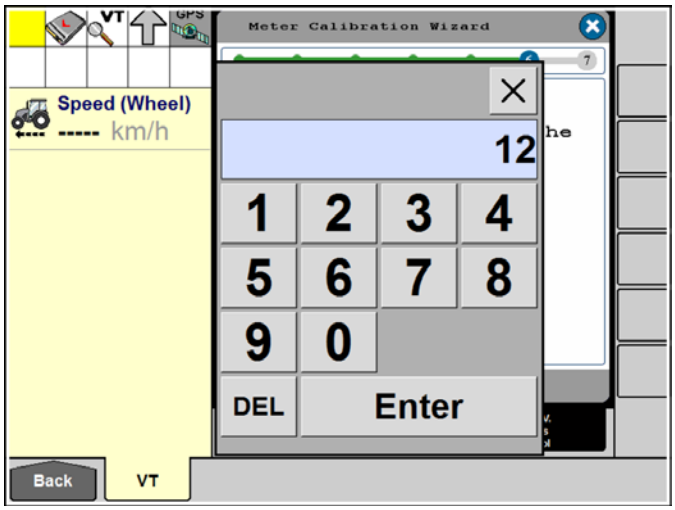
The weight of each bag should be nearly the same. If the weights of the containers vary significantly, empty the containers and perform the calibration again.

SEED METERING AND DISTRIBUTION SYSTEMS
— PRECISION DISK 500T ONLY —

STEP 6

- Enter the number of runs seed collect from. This is the number of Y-splitters used for calibration, not the total amount on the machine.



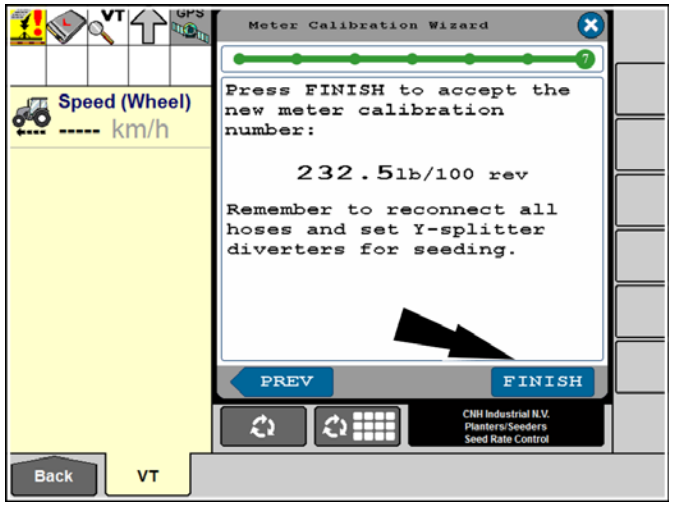


STEP 7

- Press **FINISH** to accept the calibration number and exit the calibration. The new calibration number is now entered in the meter calibration page.

TIP!

To ensure an accurate calibration value, repeat the calibration and compare values. The values should be similar.



SEED METERING AND DISTRIBUTION SYSTEMS
— PRECISION DISK 500T ONLY —

STEP 8

- **Record the Calibration Number –** If there is a chance that the seed size will be used again in the future, record the calibration number and other settings here to reference in the future. An example is provided.

CROP TYPE	SEED SIZE	METER ROLLER TYPE	METER DRIVE RATIO	CALIBRATION VALUE (LBS/100 REV)
Ex.: Soybeans	2720 sds/lb	Coarse	3:1	57

TIP!

An easy to follow video of the calibration process is available on web. Please scan the QR bar code to be linked directly to the video.

SEED METERING AND DISTRIBUTION SYSTEMS
— PRECISION DISK 500T ONLY —

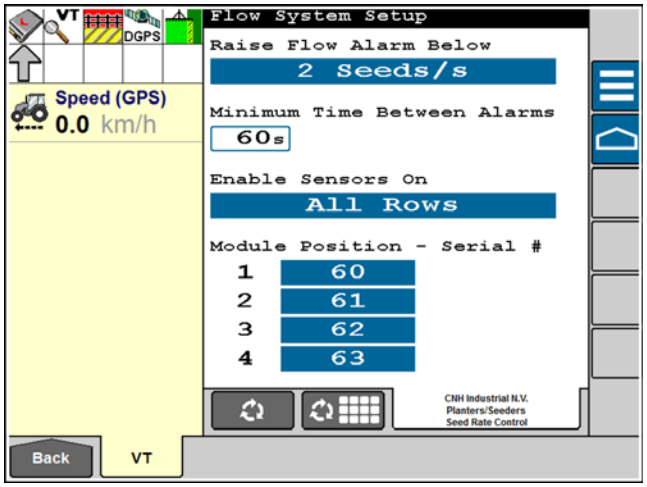
FLOW SYSTEM SETUP

Select the main menu button > Setup tab > Flow System Setup to access

From this screen the following can be adjusted / changed:

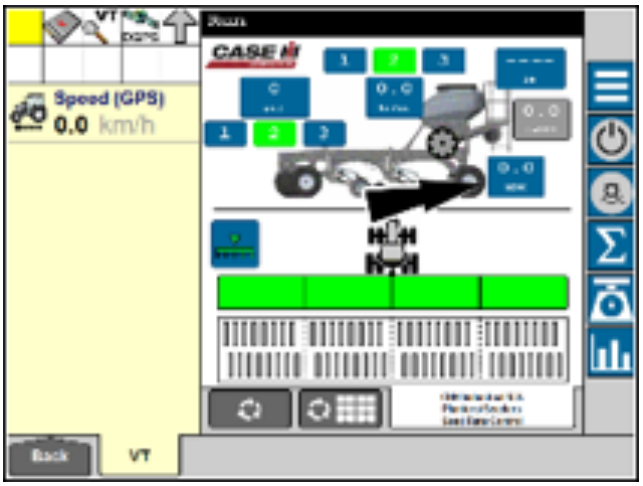
- **Raise Flow Alarm below 2 Seeds/s –** to set the system sensitivity.
- **Minimum Time Between Alarms** is set to **60 s –** to set the minimum amount of time after an alarm has been raised before another will be raised.
- **Enable Sensors –** set which rows you are seeding with.
- **Module Position – Serial # –** shows the Serial number of module across the machine

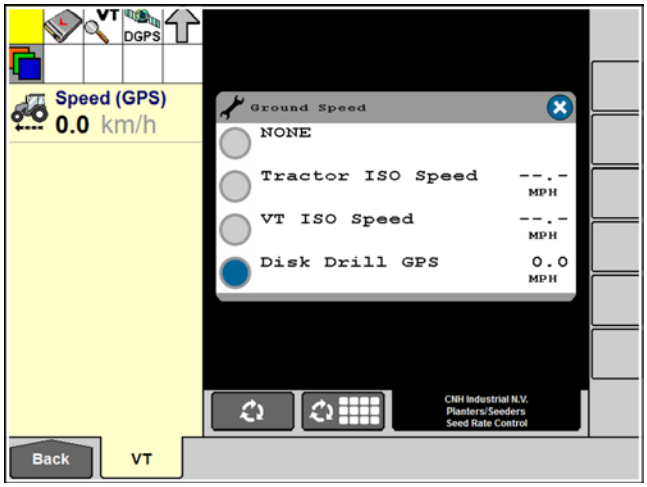
NOTE: Seed counts can vary considerably depending on product type and application rate. When seeding a new product for the first time, set to the highest sensitivity value (2 Seeds/s) to minimize the possibility of an unreported no-flow condition. If false no-flow alarms occur, select the next highest sensitivity value. Repeat if necessary until false no-flow alarms are eliminated.



SPEED SETUP

Press the speed setup from the “Run” screen.





NONE
- This is the default setting. For the drill to function you will need to select another speed source.

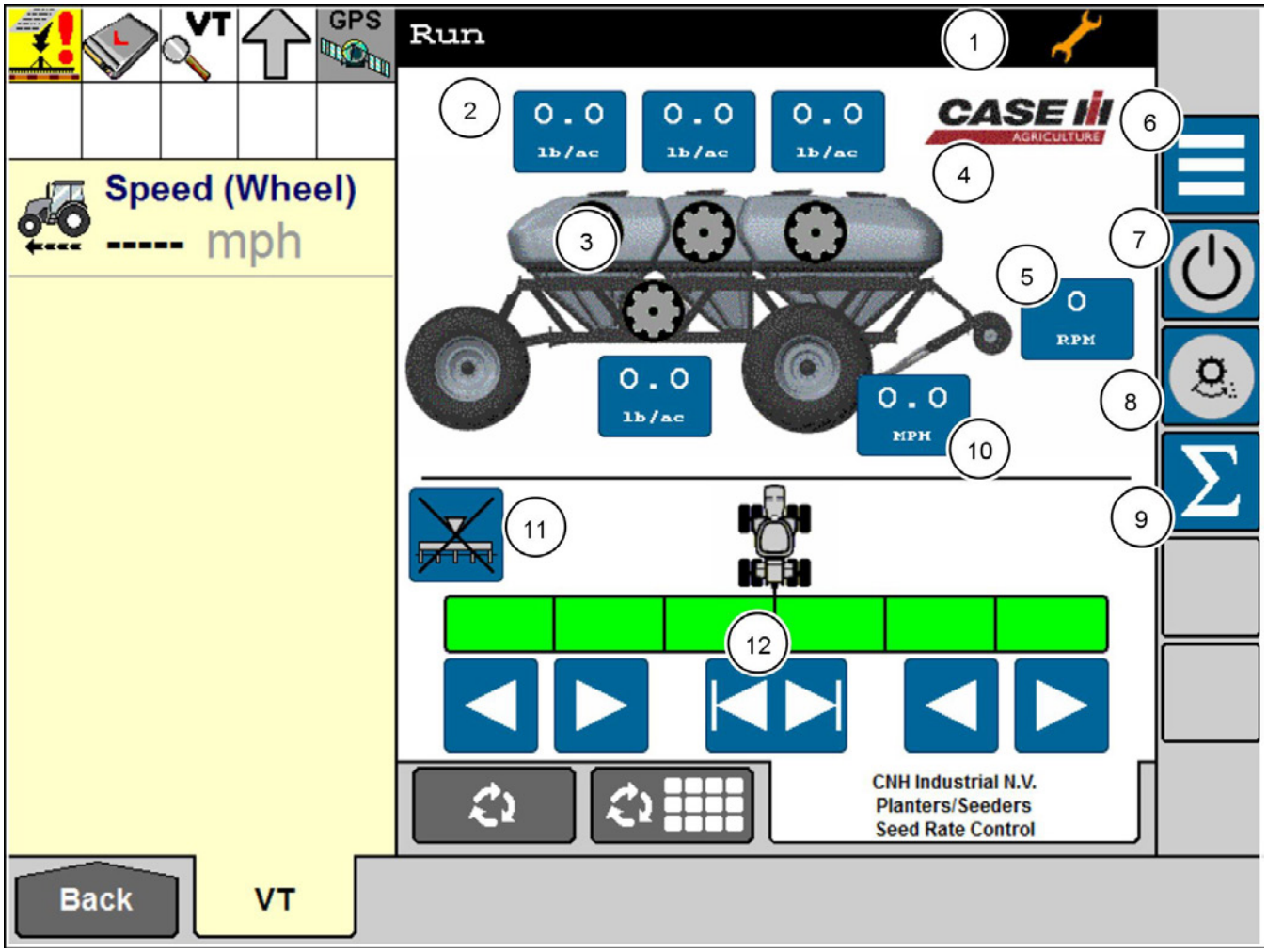
Tractor ISO Speed
- Speed input from the tractor radar and wheel speed.

VT ISO Speed
- Speed input from the Virtual Terminal GPS or Radar

Disk Drill GPS
- Optional GPS speed sensor for drill. (Option not shown if GPS is not installed.)

PRECISION AIR 5 SERIES AIR CARTS

USER INTERFACE SCREEN



1 The wrench indicates that setups have not been completed.

2 This is the tank application rate indicator. It will show the rates as-applied. Press on this item to set the target rate, step size and application rate alarm. There will be an application rate indicator for each of the air cart tanks.

3 Press on the tank to turn the meters on. If a product calibration for that tank has not been completed, you can jump to the meter calibration.

4 Upper fan display and alarm settings. Press here to set the upper and lower alarm thresholds.

5 Lower fan display and alarm settings. Press here to set the upper and lower alarm thresholds.

6 Press here to access the Main Menu. Main Menu has calibrations, diagnostics, setup and reset menu items.

7 Press on the master switch to turn all enabled meters on and off.

8 Prime switch. Prime will turn enabled meters for 10 seconds to start to fill the system with product to help avoid misses in the field.

9 Press here to see application totals. Tank product levels will be displayed if ultrasonic tank sensors are installed.

10 Speed indicator and speed source selection. Press here to select the speed input.

11 Work switch and work switch state selection. Press here to select work switch type.

12 Section control section state and user interface.

PRECISION AIR 5 SERIES AIR CARTS – THE PERFECT PARTNER

ACCUSECTIONAL MODULAR METERING SYSTEM

The 5-sereis air cart feature a modular metering design

Metering Considerations

In order to meter product:

- There must be measured ground speed (unless using the priming function).
- The work switch (if equipped) must be engaged (seeding tool in ground).
- A distance calibration number must be entered if the air cart speed sensor is being used as the speed source.
- Each tank that will be applying product must have a calibration number.
- The meter master must be enabled on the display or on the switchbox (if equipped).
- The tank(s) must be enabled on the display or on the switchbox (if equipped).
- A target rate must be entered for each tank that will be applying product.
- Fan(s) should be on at operating RPM. Alarms will be raised and plugging will occur if the fan speed is not high enough.
- Seed tool opener spacing and number of primary runs must be correctly entered in the display so that the seeding tool width is correct.

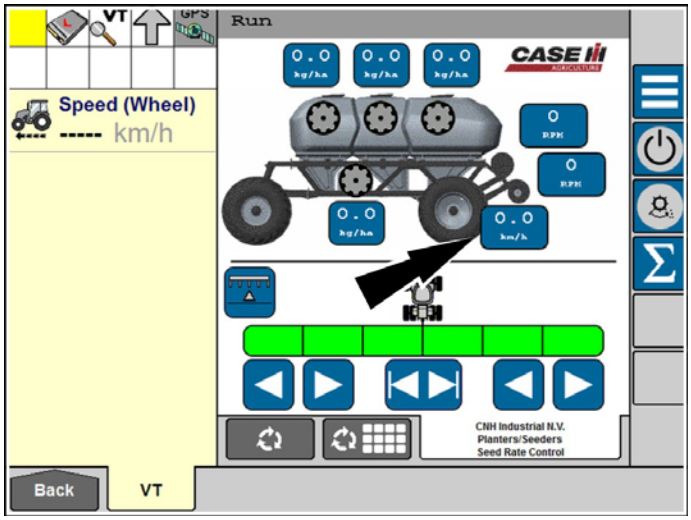
NOTE: For tanks that are not being metered from, close the seed gates, pressurization valve, and tank shut-off. Over-application of product may occur if non-metering tanks are pressurized and gates are left in metering position.

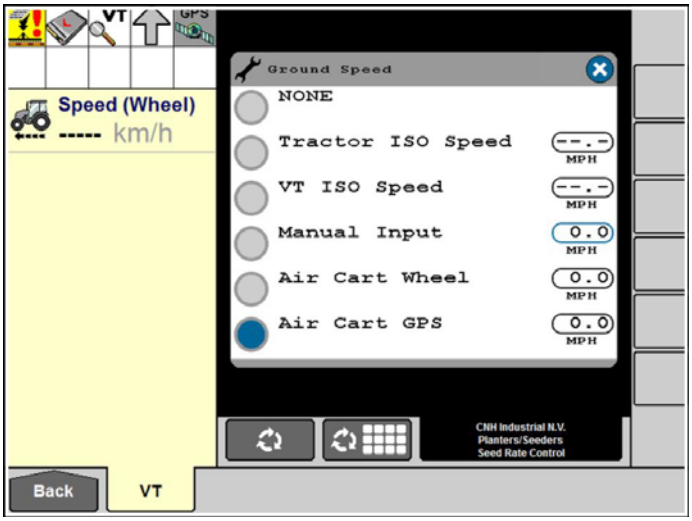
PRECISION AIR 5 SERIES AIR CARTS

ACCUSECTIONAL MODULAR METERING SYSTEM (continued)

Speed Source Selections

For the Air Cart metering system to function a speed source is needed. To select the speed source press the speed readout button.





The following option are available:

NONE – This is the default setting. For the air cart to function you will need to select another source.

Tractor ISO Speed – Speed input from the tractor GPS or radar.

VT ISO Speed – Speed input from the Virtual Terminal (VT) GPS or radar.

Manual Input – Operator entered speed.

Air Cart Wheel – Speed input from the air cart wheel speed sensor.

Air Cart GPS – Speed input from the optional GPS speed sensor for air cart.

NOTE: This calibration is required if the air cart speed sensor is being used as the speed source.

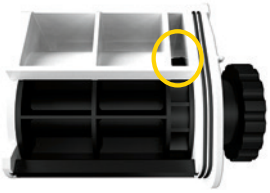
PRECISION AIR 5 SERIES AIR CARTS

METER CARTRIDGES ASSEMBLIES

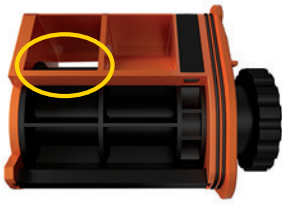
Three different types of color coded cartridges and five different rollers give you the ability to plant almost any seed or apply fertilizer.

Available Cartridges

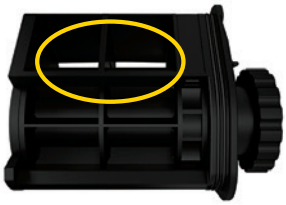
Narrow Meter Cartridges –
Color code White,
Product is metered through the smallest section



Half Width Cartridges –
Color code Red,
Product is metered through one large section

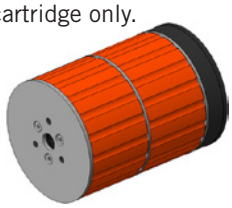


Full Width Cartridges –
Color code Black,
Product is metered through both large sections

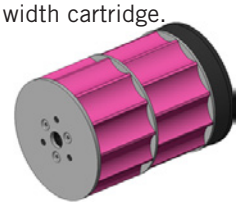


Available Rollers

18 Flute Roller –
Color code orange, use for inoculants and other low rate products, used with half-rate cartridge only.



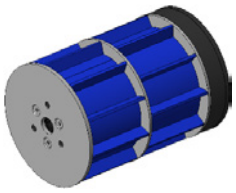
12 Flute Roller –
Color code pink, use for low rate fertilize and some small seeded crops, with full & half width cartridge.



6 Flute Standard Roller –
Use for general metering, used with all cartridges.

6 Flute Extent Wear roller –
Color code black, use for high rate of fertilizer.

10 Flute Roller –
Color code blue, use for lower application rate metering in full & half width cartridges.



The variety of cartridge and roller combinations are interchangeable which let you tailor the set-up to lower rates when splitting one product from multi tanks. The air cart design also makes the cartridges easy to remove, change and service:

Each 5-series air cart are shipped with the following Cartridges & roller:

Two tanks carts (PA 2355):

- 2 black sets / 1 red set and 1 white set of cartridges & 2 sets of 6 Flute Standard Rollers

Three tanks carts (PA 3445 & 3445):

- 3 black sets / 1 red set and 1 white set of cartridges & 3 sets of 6 flute standard coarse Rollers

Four tank carts (PA 4465/4585/4765/4955)

- 3 black sets / 1 red set and 1 white set of cartridges & 4 sets of 6 flute standard coarse Rollers

NOTE: Select the meter cartridge and roller recommended for the product being applied. If your product is not listed here, select a meter roller and cartridge for a similar product listed in the table or contact your dealer.

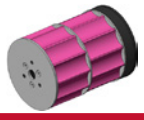
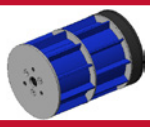
ROLLER SELECTION GUIDE

1. Cartridge rates listed apply for ground speeds ranging from 4.0 – 5.5 mph (see chart on next page). Actual application rates can vary depending on several factors (not limited to but including): product bulk density, particle size, seed treatment, moisture content, humidity, air pack configuration, row spacing and ground speed.
2. Roller Selection Guide User Steps:
   a. Determine desired seeding rate in lbs./ac.
   b. Go to the chart and locate the correct product on the left-hand side of the chart.
   c. Within that product row, find the rate range that has your desired seeding rate in the middle of the range limits.
   d. Read the selected cartridge off the left side of the chart and the selected roller off of the top of the chart.

   Note: When two ranges are equally appropriate, choose the lower range to ensure a higher RPM. This will result in the best seed placement accuracy in the field.
3. For products with kernel diameter larger than 10 mm (3/8 in.), meter rollers may need to be adapted. Contact your dealer for more information.
4. If metering the same product out of multiple tanks and low meter rpm is an issue, meter from 1 tank at a time.

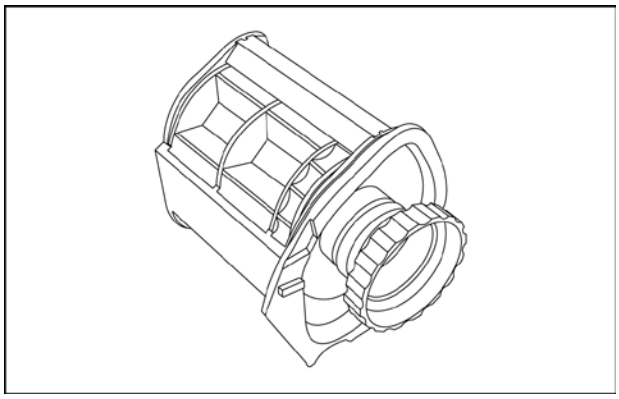
PRECISION AIR 5 SERIES AIR CARTS

ROLLER SELECTION GUIDE (continued)

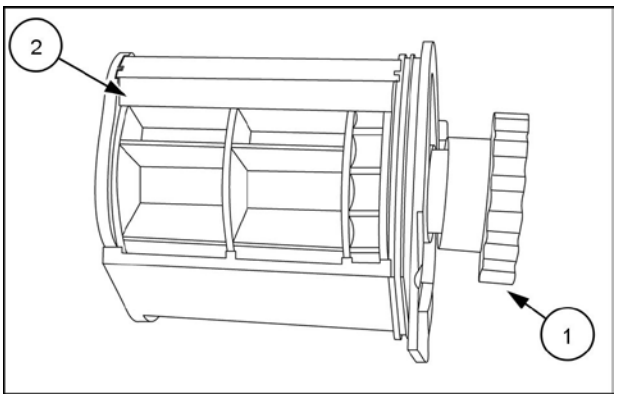
METER ROLLER		18 Flute Orange	12 Flute Pink	10 Flute Blue	6 Flute Black Extended Wear	6 Flute Black
						
PRODUCT	**Cartridge Type**	**Rate Recommendation for Cartridge and Roller Combination Product Rate measured in lbs./acre**				
Fertilizer			15-80	34-185	61-336	
			29-160	67-371	122-672	
Alfalfa						2.0-8.9
			8-67			
Barley				20-124	37-225	37-225
				41-248		
Canary Seed			20-78	47-180		
			40-156			
Canola						2.5-8.1
Duram				60-158	108-287	108-287
				119-317		
Flax			20-63	46-145		
			40-125			
Inoculants						
		2.0-7.6				
Large Beans					35-155	35-155
					69-525	69-525
Lentils				35-155		
				69-310		
Mustard						2.0-8.6
			8-65			
Oats					30-150	30-150
				33-166		
Peas					75-230	75-230
				83-253	150-459	150-459
Rye				35-145		
Sorghum (Milo)						1.5-8.3
Soybeans				30-155		
Wheat				30-150	55-272	55-272
				60-300		

PRECISION AIR 5 SERIES AIR CARTS

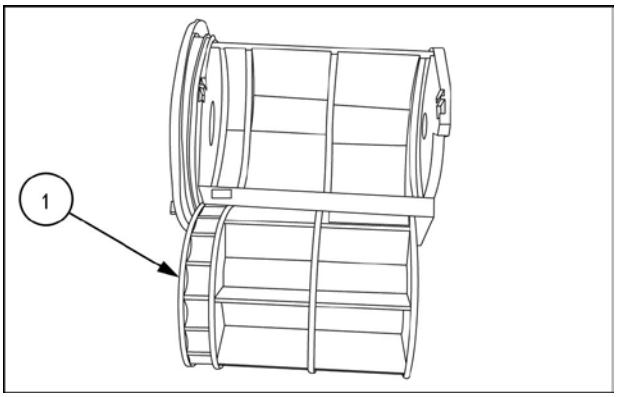
CHANGING CARTRIDGES AND ROLLERS



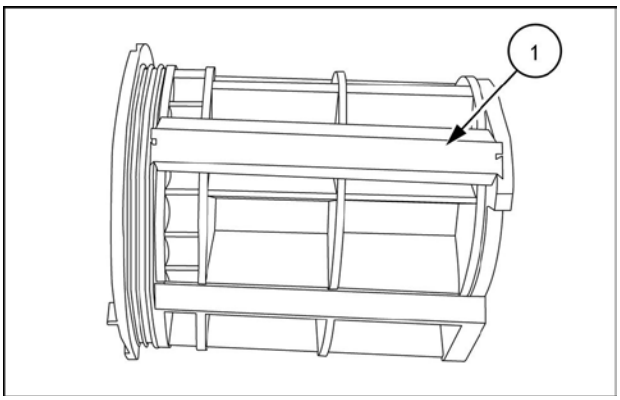
- Remove meter cartridges from the meter bank.



1. Rotate the knob **(1)** counter-clockwise and pull to remove.
2. Remove the cross brace **(2)**.



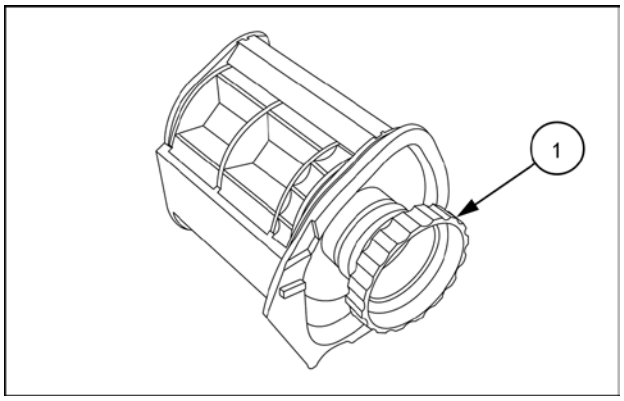
3. Remove the roller **(1).**
4. Clean all the meter cartridge components completely.



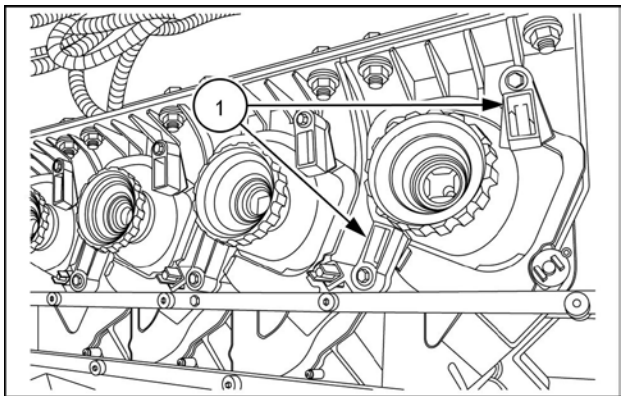
5. Place the roller back in the cartridge and install the cross brace **(1)**. Ensure that the narrow roller section is aligned with the corresponding slot in the cartridge.

PRECISION AIR 5 SERIES AIR CARTS

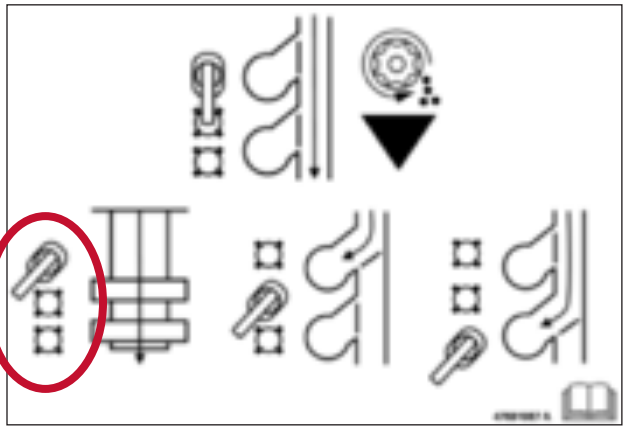
CHANGING CARTRIDGES AND ROLLERS (continued)



6. Insert the locking knob **(1)** into the cartridge assembly.
7. Turn the knob 1/4 turn clockwise to lock it into place



To remove the cartridge/roller assemble from the AccuSectional meter housing, Open the cartridge lock clips **(1)**. Each meter cartridge assembly is held in place by two clips. Also the gate position handle needs to be in the clean-out position.



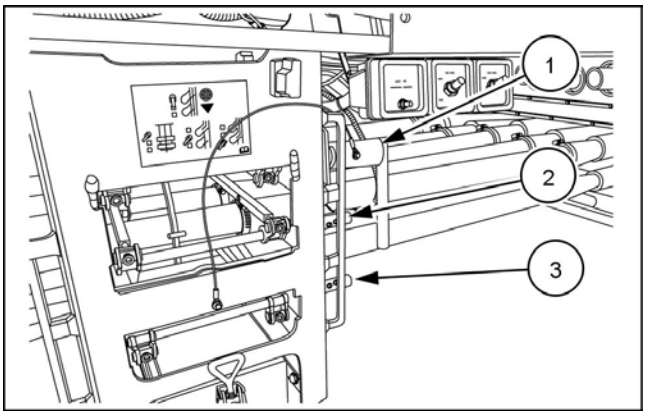
PRECISION AIR 5 SERIES AIR CARTS

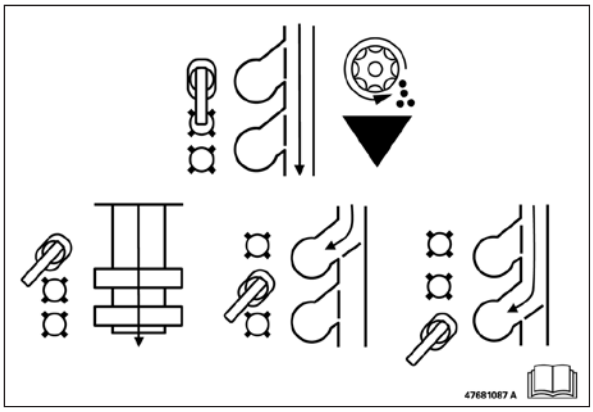
SEED GATE POSITION AND PRODUCT FLOW

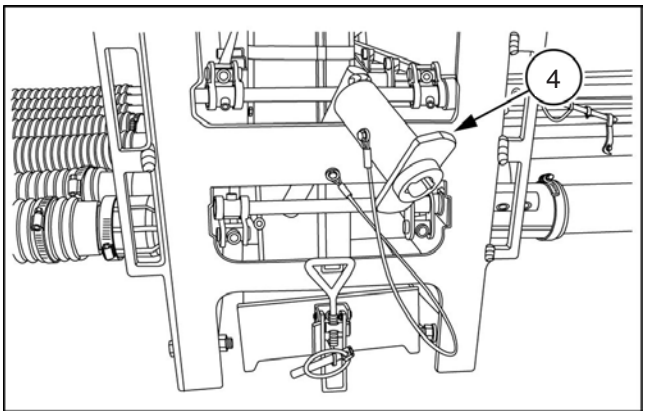
On a double shoot air cart the gates are located as shown.
On a single shoot cart the Bottom run handles **(3)** will not be present.

NOTE: Do not force the gates when you are changing the position. If you find you need to use excess force, there may be a blocked meter cartridge or other damage. Using excessive force may cause the connector link to trip on the diverter gate shaft.

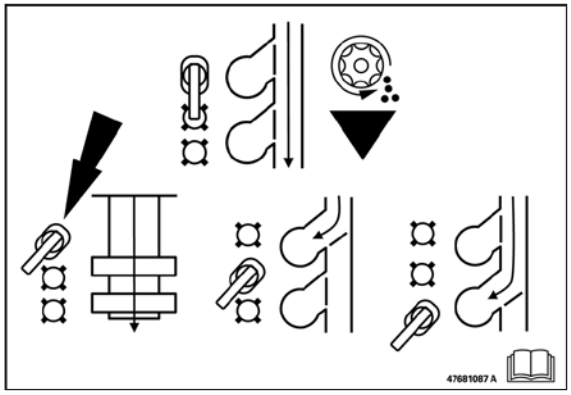
POSITION	FUNCTION
1	Clean-out Position
2	Top Run
3	Bottom Run
4	Calibration

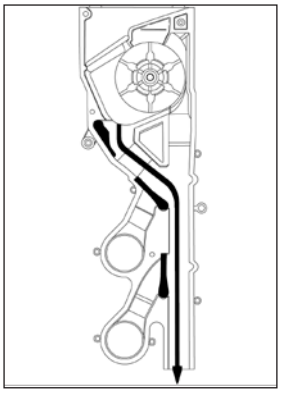






1. If the clean-out position is selected, the product flows though the meter cartridges and out the bottom of the meter bank without the rollers turning. The top and bottom seed gates are closed.

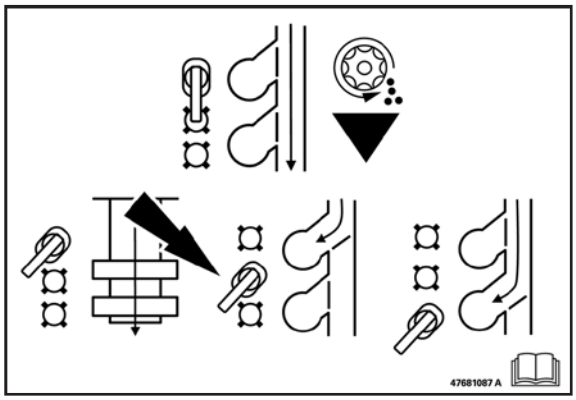


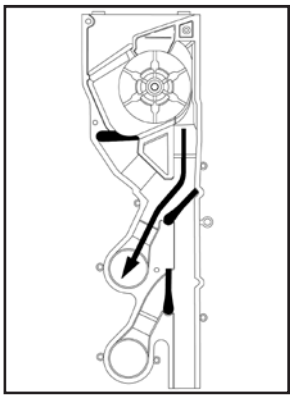


PRECISION AIR 5 SERIES AIR CARTS

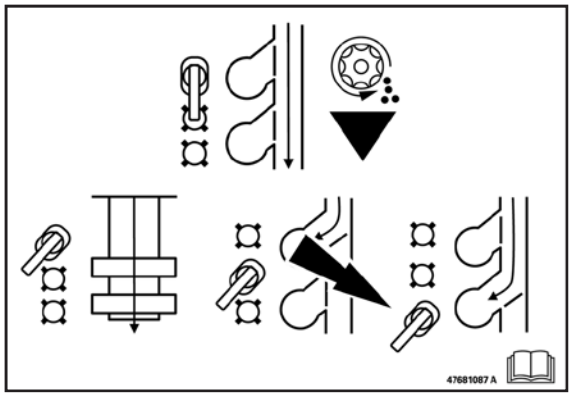
SEED GATE POSITION AND PRODUCT FLOW (continued)

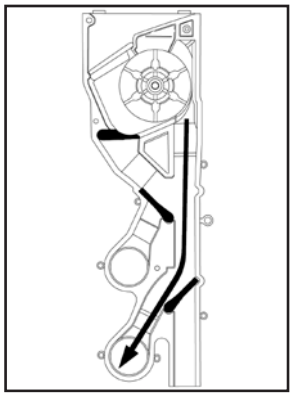
2. If the top run is selected, the top seed gate is open so that product flows into the top manifold tubes.



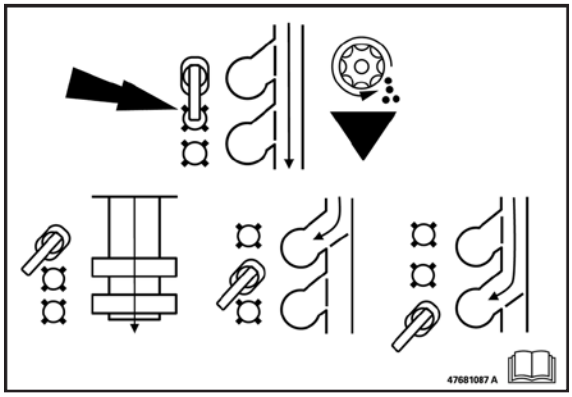


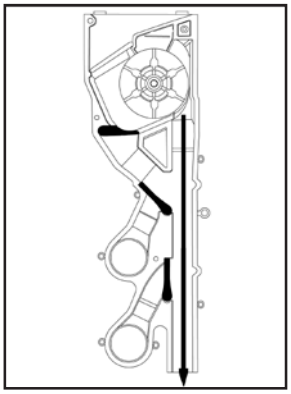
3. If the bottom run is selected, the bottom seed gate is open so that product flows into the bottom manifold tubes.





4. During calibration, the seed gates are closed to the manifold tubes. Product is dispensed from the meter cartridges and through the meter bank into the calibration bag when the motors are operating.





Meter Diverter Gates – Fertilizer and Humid Conditions

To prevent product build-up within the meters, it is recommend to use the following procedure to clear any blockages periodically.

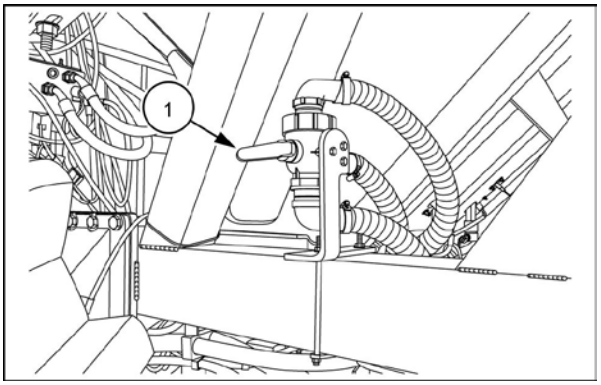
1. Cycle upper meter diverter gates three times without locking in place to dislodge any debris build up.
2. Cycle lower meter diverter gates three times without locking in place to dislodge any debris build up.
3. Set diverter gates back to intended seeding position.
4. Remove bottom clean-out door to clear any debris buildup in bottom of clean-out chute every 50 hours.
5. Return to tractor and start air cart fan(s) to dislodge any debris in the links.
6. Check seed tool openers to confirm product is flowing.

PRECISION AIR 5 SERIES AIR CARTS

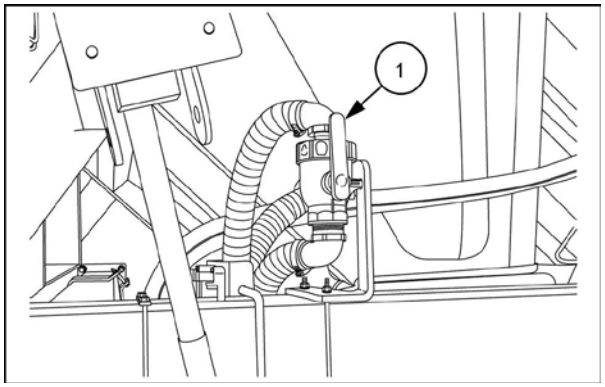
AIR VALVE POSITION

There is one air valve for each tank for double-shoot systems. The valve is used to select the appropriate fan for pressurizing the tank. Single-shoot air carts do not have air valves.

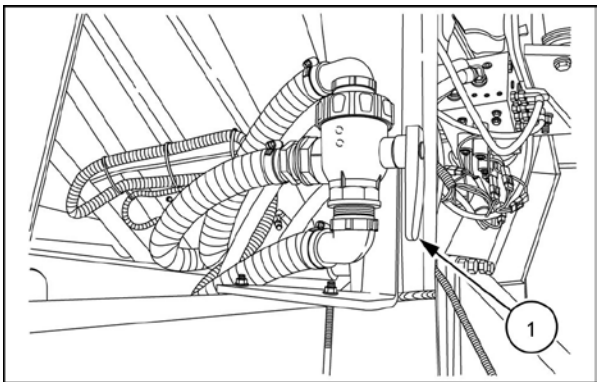
- Turn the valve to the off (horizontal) position **(1)** if a tank is not being used
- Turn the valve to the upper position if the upper fan is used for that tank. (2nd picture)
- Turn the valve (1) to the bottom position if the lower an is used for that tank.



- Turn the valve to the upper position **(1)** if the upper fan is used for that tank



- Turn the valve **(1)** to the bottom position if the lower an is used for that tank



NOTE: If the tank is being metered through the lower run, the tank should be pressurized by the lower fan.

NOTE: If the wrong position for the valve is selected, the application rate could be inaccurate. If pressure sensors are installed, pressure alarms will occur.

NOTE: Use the lower fan (and lower run) for higher rate products in double-shoot applications. The alternator will turn at a higher speed to charge the system.

PRECISION AIR 5 SERIES AIR CARTS

CLEAN-OUT DOOR AND CALIBRATION BAGS

The air cart meter banks each have a meter clean-out door. This door needs to be removed for tank cleaning and during product calibration.

Two calibration bags are supplied with your air cart. They are used to collect product during a meter calibration. They are also used to collect and direct product from the tanks and meters into a hopper (auger or conveyor) when a clean-out is performed.

NOTE: The clean-out doors must be installed when operating the air cart in the field.

NOTE: Keep the meter clean-out door for each tank with the tank that it was removed from. The latch and guide rails are adjusted for each tank and may not seal properly if fitted to a different tank.

METER-PRODUCT CALIBRATION

A meter-product calibration number is required for each meter-bank on the air cart. The purpose of the calibration is to measure the displacement of the meter roller for a given number of roller rotations for the current product being metered.

- New product always requires a product calibration be performed.
- For product where the meter calibration number is known, the calibration number may be entered directly into the display, but should be avoided.

NOTE: It is strongly recommended to do a product calibration each time a product is used. This will account for product characteristics (density, moisture, flow) of the product at the time of seeding. Directly entering the calibration number can result in inaccurate application rates.

NOTE: The displayed application rate is a theoretical application rate calculated using ground speed, meter RPM, seeding tool width and a meter calibration number. If any of the setups or calibrations have been done incorrectly, the displayed application rate will not be accurate.

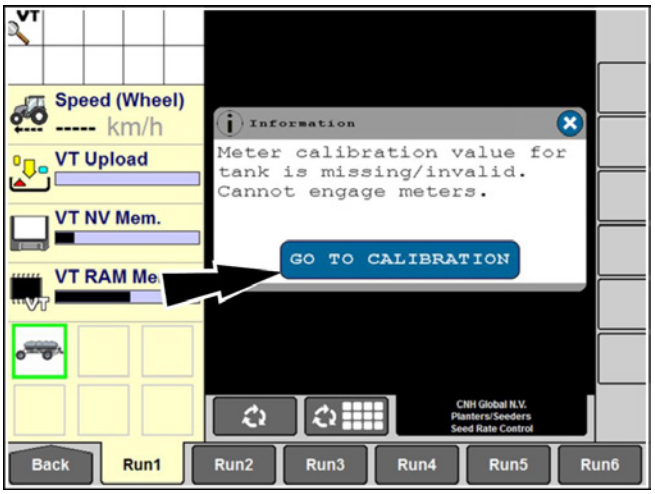
Single Meter Calibration

- Single meter calibration is available. You can calibrate a tank using only one meter for easier collection. This is recommend as a periodic check of metering accuracy OR if the product has previous been calibrate for the particular tank/meter assembly
- It is recommended to perform a full meter calibration for greater accuracy. Especially if it is the first time the product being used has been calibrated for this tank/meter assembly

PRECISION AIR 5 SERIES AIR CARTS

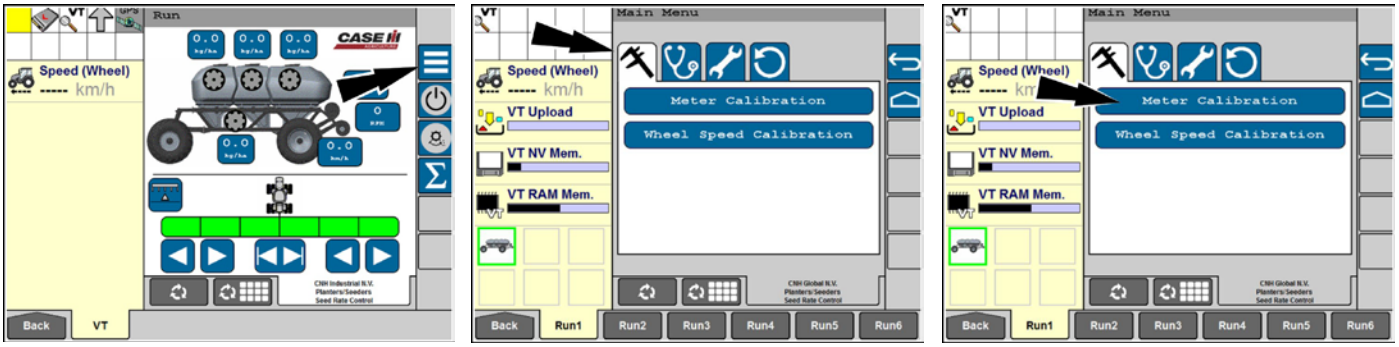
PRODUCT CALIBRATION PROCEDURES

NOTE: There will not be a product calibration number in the display the first time you connect. A system message will pop up if operator attempts to engage a tank with a calibration number equal to 0.



Calibration Wizard

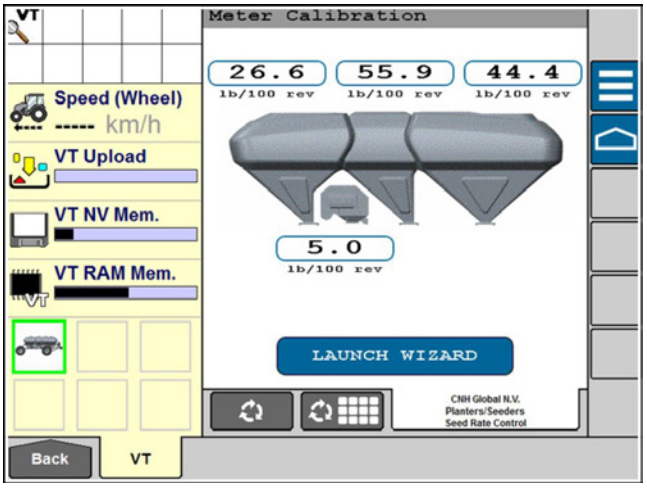
To access the Meter Calibration Select Menu Button > Calibration tab and press Meter Calibration. Follow the on-screen instructions.



Previously calculated calibration number(s) will be shown along with the "LAUNCH WIZARD" button.

- Press on the tank calibration number you wish to update
- Use the keypad to enter a previously determined calibration number.

NOTE: For the greatest accuracy, always perform an actual product calibration using the wizard. Direct entry of an existing number can lead to inaccurate application rates as it does not take into account changes in product and environmental conditions.



PRECISION AIR 5 SERIES AIR CARTS

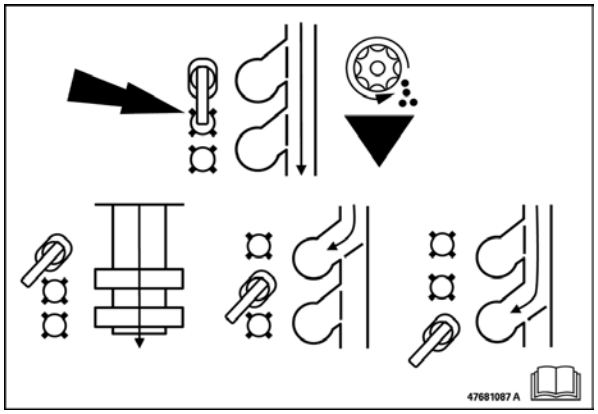
PRODUCT CALIBRATION PROCEDURES (continued)

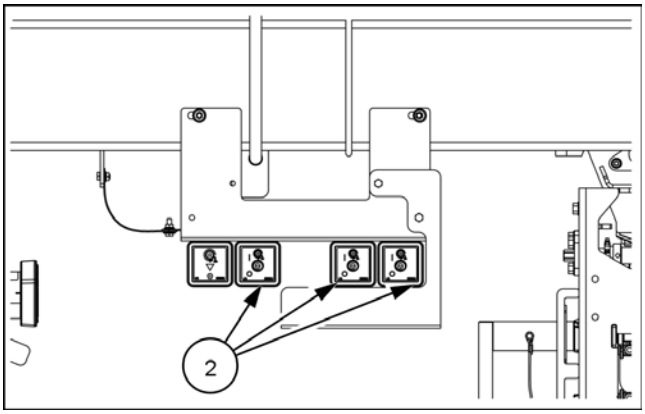
To Calibrate One or More Sets of Meters

AT AIR CART:

1. Remove the meter clean-out door from each of the tank meter banks that need to be calibrated. You can calibrate one or more meter banks at the same time.
2. Ensure tank shut-off are open and meters are primed with product
3. Attach a calibration bag to each meter bank that is being calibrated.

4. Check that the meter gates are in the calibration position.
5. Turn on the air cart tank calibration toggle switches **(2)** for only those tanks you intend to calibrate. The switches are located on the left side of the air cart.





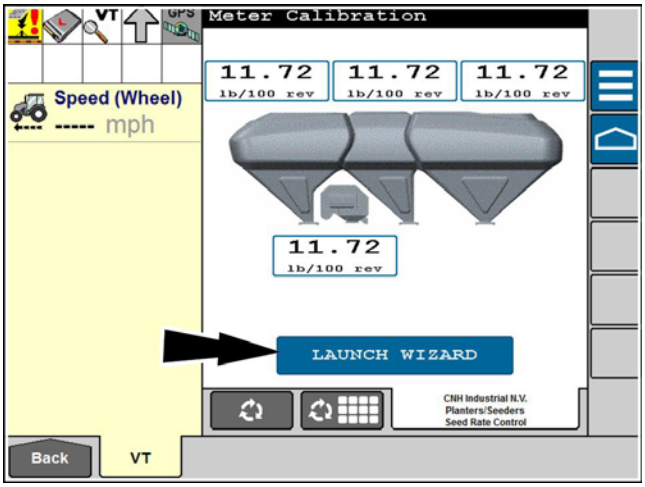
PRECISION AIR 5 SERIES AIR CARTS

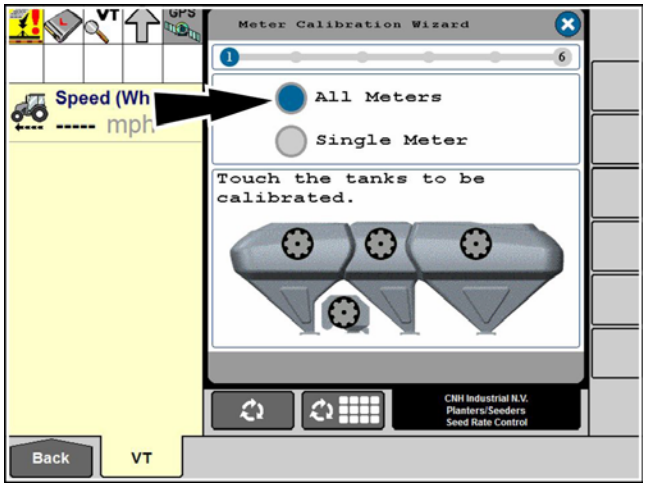
PRODUCT CALIBRATION PROCEDURES (continued)

To Calibrate One or More Sets of Meters (continued)

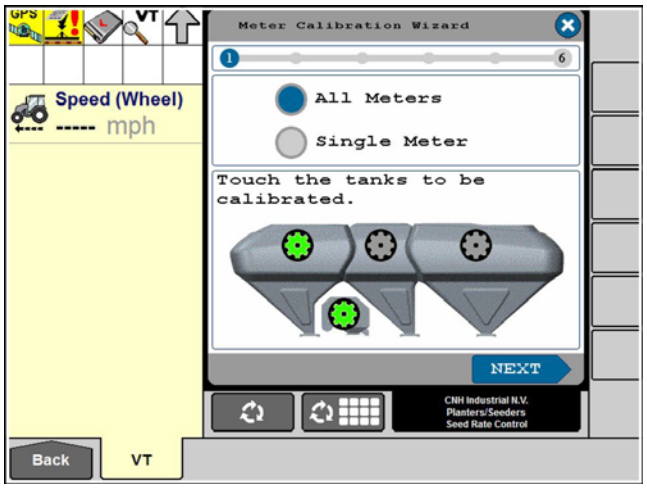
AT THE DISPLAY:

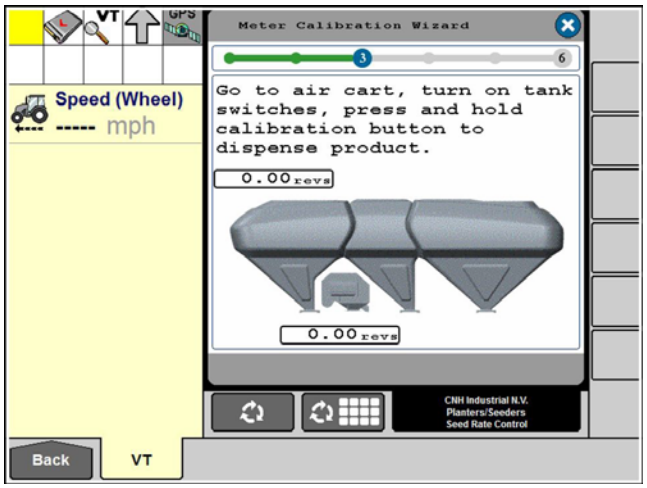
6. Press **LAUNCH WIZARD** to start the calibration. The screens will guide you through the step-by-step process.
7. Choose the calibration type.
   - Pick "All Meters" if you are calibrating all the meters across the air cart.
   - Pick "Single Meter" if you are calibrating a single meter per tank.





8. Pick the tank(s) that you wish to calibrate by touching the tanks on the screen, then press **NEXT**. Refer to the checklist to be sure all conditions are met.
9. Press **NEXT** to start the calibration, The display will show the meter revolutions counting up when the calibration switch is pressed (Proceed to Air Cart).





PRECISION AIR 5 SERIES AIR CARTS

PRODUCT CALIBRATION PROCEDURES (continued)

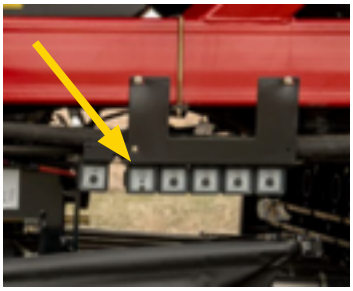
To Calibrate One or More Sets of Meters (continued)

AT AIR CART:

10. Remove the scale from the storage location and hang it on the hooks on the left side of the frame. Place the calibration bag on the scale and Tare the empty calibration bag.

11. Place the calibration bags under the tanks selected for calibration.

12. Press and hold the meter calibration switch to collect a sample of each product in each meter bag or pail. If one bag approaches full, turn off the air cart tank calibration switch for that meter and continue collecting a sample for the other meters. Do not overfill the bags or run the meter roller empty.



NOTE: The more product you catch in the bags, the more accurate the calibration will be. Collect at least 20 lb. (10 kg) of product from each tank.

13. Weigh the collected product. Be sure to subtract the weight of the calibration bag or pail. Make note of the weight so that you can enter it in the display.

NOTE: A mistake in weighing will result in incorrect amounts of product being applied during field operation.

NOTE: The scale shows both Metric and Imperial units. Be sure to use the same units that you have used to set up the display. Capacity of supplied scale is 55lb (25kg)

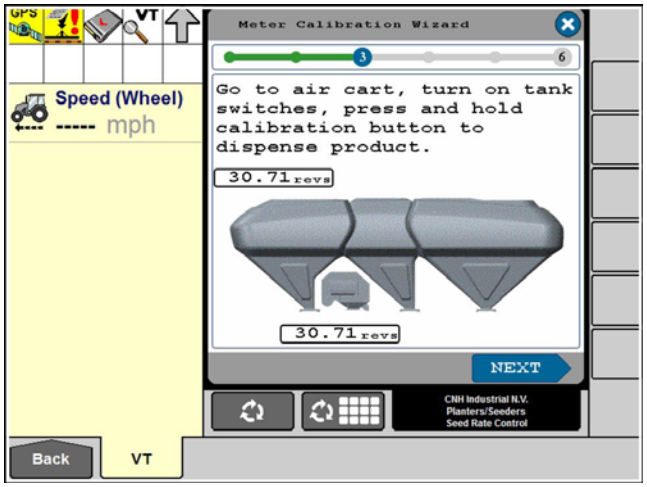
PRECISION AIR 5 SERIES AIR CARTS

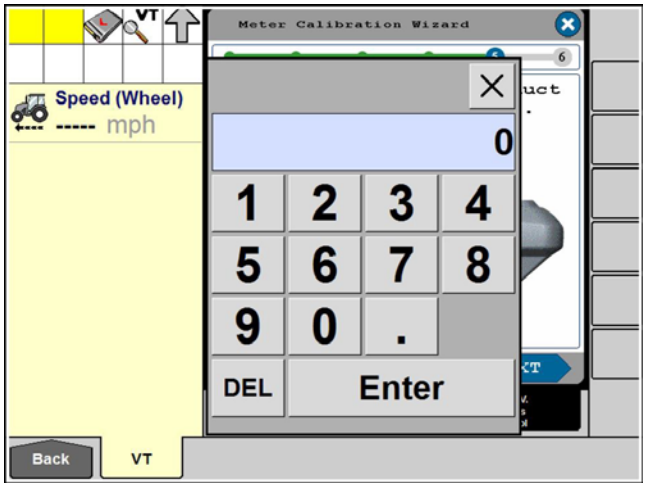
PRODUCT CALIBRATION PROCEDURES (continued)

To Calibrate One or More Sets of Meters (continued)

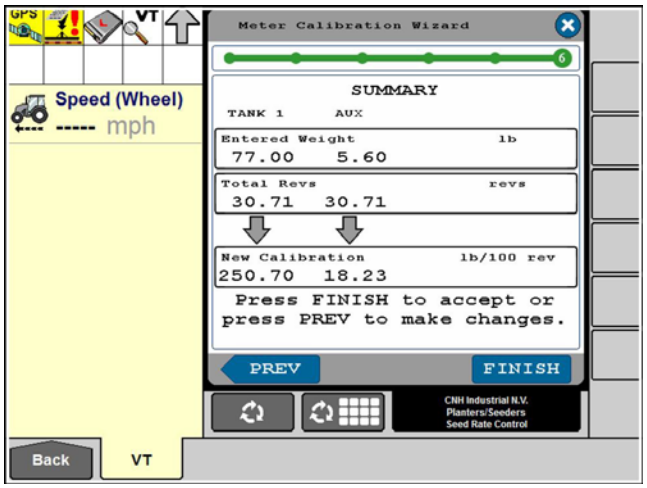
AT THE DISPLAY:

14. The total meter revolutions for each tank will be displayed. For each tank being calibrated, enter the weight(s) collected into the input box using the key pad for the corresponding tank.





A **SUMMARY** screen is shown when the calibration is complete. The previous calibration number and the new calibration number are both shown. The display now shows the new meter/product calibration numbers for each meter.



15. Press **FINISH** to apply the new calibration numbers and return to the **Main Menu.**

NOTE: The tank meter switches are only used during calibration. They have no impact on regular field operation whether they are left ON or OFF.

PRECISION AIR 5 SERIES AIR CARTS

PRODUCT CALIBRATION PROCEDURES (continued)

PRODUCT	CARTRIDGE	ROLLER	APPLICATION RATE	CALIBRATION (LB/100rev)	COMMENTS

PRECISION AIR 5 SERIES AIR CARTS

OPERATING THE FAN

Certain Precision Air 5 series air cart come equipment with ¾ inch ISO couplers. A ¾ inch couplers provide less restriction to flow than a ½ inch coupler, This doesn't provide for more flow / minute (GPM) but does provide for less buildup of heat in the system and conserve HP in the system. These couplers are recommend to be used when running large sized drills and when and Air cart is running higher application rates.

NOTE: For greater metering capacity on the tow-between carts, the couplers can be changed to **3/4 in.**

SINGLE-SHOOT AIR CARTS	
Tow-Behind	**Tow-Between**
3/4 in. couplers (fan) X 2	**1/2 in.** couplers (fan) X 2
Case drain	Case drain
DOUBLE-SHOOT AIR CARTS	
Tow-Behind	**Tow-Between**
3/4 in. couplers (fan) X 4	**1/2 in.** couplers (fan) X 4
Case drain	Case drain

AIR CART	AIR CART HORSEPOWER						
	Precision Air 2355	Precision Air 3445	Precision Air 4465	Precision Air 3555	Precision Air 4585	Precision Air 4765	Precision Air 4955
SINGLE-SHOOT	82 HP (60 kW)	70 HP (51 kW)	75 HP (55 kW)	85 HP (63 kW)	90 HP (66 kW)	115 HP (83 kW)	140 HP (103 kW)
DOUBLE-SHOOT	90 HP (66 kW)	100 HP (74 kW)	105 HP (77 kW)	115 HP (83 kW)	120 HP (88 kW)	145 HP (107 kW)	170 HP (125 kW)

NOTE: The case drain line must be properly connected at all times. Damage to the hydraulic motor seal will occur within a few seconds if this line is not connected when the air cart hydraulics are operated. This line is a drain line only and must not be connected to any high pressure coupler.

NOTE: Use a tractor with a load sensing hydraulic system or a closed center hydraulic system with flow control for optimal fan control.

Fan speed on a 5 series air cart is set with a the tractor remote circuit. Prior to setting the fan speed, allow the tractor hydraulic oil to warm up to operating temperature. After engage the hydraulics to the fan , throttle up the tractor engine to operating speed. Adjust the detent pressure for the tractor remote to hold the lever in operating position.

PRECISION AIR 5 SERIES AIR CARTS

DETERMINING ADEQUATE CARRYING VELOCITY – OPEN HOSE TEST

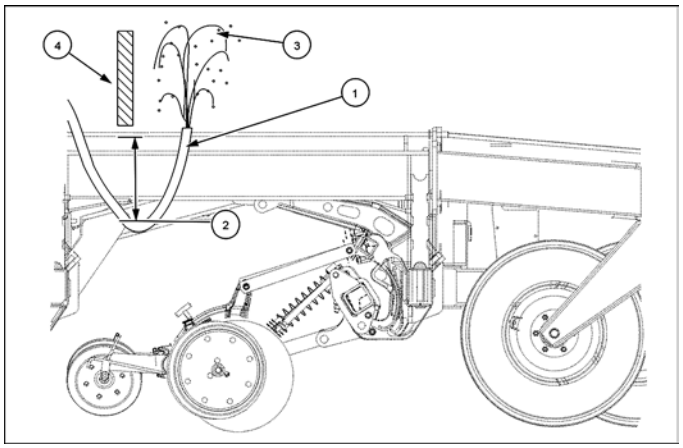
This calibration is critical to ensure optimal air velocity to carry seed from the mounted tank seed meter out to the row units.

- Too much air may cause the seed to have inaccurate placement in the seed furrow
- Too little air may cause seed to not consistently carry to all rows which will result in inconsistent seeding and can cause blockages

NOTE: To check if the fan speed and meter gate settings are suitable for seeding, check product placement behind several openers and observe the seed planting depth.

Use the following open hose test to determine adequate carrying velocity:

1. Remove one secondary hose **(1)** from an outside opener.
2. Fasten the hose **(1)** to the frame of the seeding tool.
   - The hose should be no more than 12 in. (30 cm) below the bottom of the frame member, as shown **(2)**.
   - Ensure the end of the hose **(1)** is flush with the top of the frame member, the outlets face straight up and the hose is not kinked.
3. Open the seed gates to all runs
4. Begin seeding at normal operating speed.
5. From a safe distance, observe the product coming out of the hose end.
   - The product **(3)** should discharge about **12-24 in. (31-61 cm)** above the hose **(4)**
   - **STOP** the meters if the product is not **12-24 in. (31-61 cm)** out of the tube.
   - Adjust the fan pressure to reach a product discharge of **12-24 in. (31-61 cm)**.



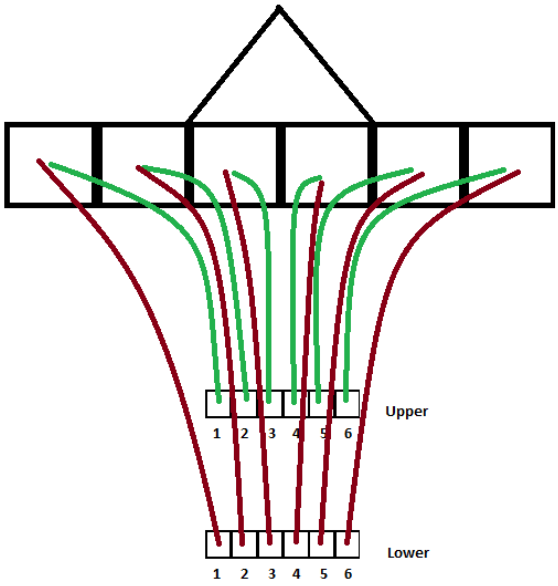
NOTE: In some crop types, the heights of 12-24 in. may not be achieved (large soybeans or example).

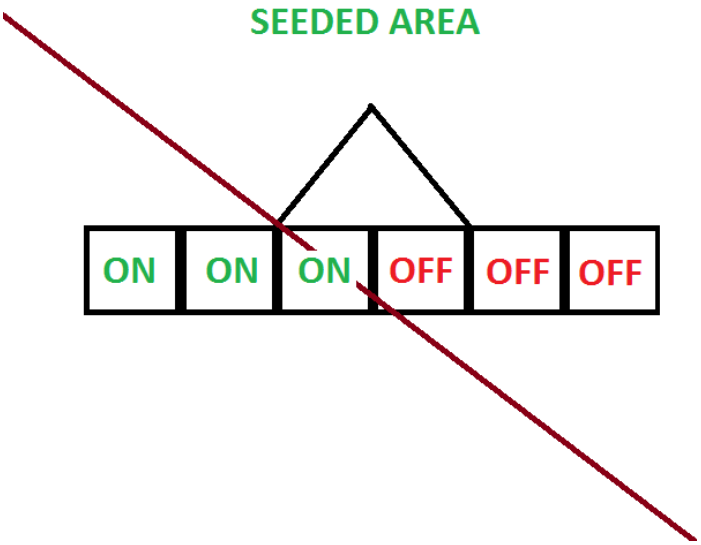
PRECISION AIR 5 SERIES AIR CARTS

AIR PACKS - CONNECTION

The routing and connection of the drill air pack to the cart is ***CRITICAL!***

- Any errors made in connecting the cart to the drill can have negative impacts on customer crops
- Section Control (both Manual and Automatic) require that all sections of the drill be connected to the correct sections of the cart
- The plenum has a patented design feature to balance the air run to run when the outlet lines are connected matching the setup instructions
  - ✔ The left most run on the cart is connected to the left most run on the drill and we match the run on the drill to the tower on the cart.





- Customers that want to utilize section control require 2 unlock codes. You need to order the Task controller unlock as well as the section control unlock.
- If a customer only orders the Task controller unlock all you will be able to do is vary the rate of product applied based on a prescription. Section control unlock is required to turn off the flow of product to individual towers as they travel into seeded area.

  - If section control is purchased on the original order then the section control will be unlocked at the factory
  - If section control is purchased and wanted to be added to a dealer stock unit then you must purchase the unlock code

OFF SEASON STORAGE

To get the most out of your Air Cart every season, proper cleaning and storage is very important.
After the end of very season of use do the following:

- Drain any remaining product in tank, never store product in the tanks
- Sweep any remaining product that is in tank into meters.
- Cycle the tank shut-off gate three times to dislodge any debris build up under the gate.
- Clean tank and meter modules completely
- Remove all metering cartridges, disassembly them and clean thoroughly
- For complete clean-out:
    1. Use an air wand when tank shut-off gate is closed to remove any debris buildup under tank shut-off gate.
    2. Flush the meter boxes with water through the lid tank, this will helps dissolve fertilizer build up and remove it from the tank and meter assemblies.
- Return all metering cartridges to the proper spot in the metering assembly and secure, never store the Air Cart without the metering cartridges in the metering assembly.

NOTE: At no time should corrosive fertilizer or similar materials be allowed to remain in the tank or meter banks for extended periods of time.

NOTE: When pressure washing the air cart, do not direct the spray directly at electrical connectors, Universal Control Module (UCM), or the motors . Not all connectors are rated for pressure washing so water entry into the connector may occur.

NOTE: Do not spray directly at the low bin sensors or pressure sensors (if equipped) since they are not rated for pressure washing.

Rust on the stainless steel manifold tubes may be caused by exposure to road salt during transport or fertilizers during field operation. The stainless steel tubes must remain electrically grounded to the air cart frame. This grounding is in place to protect the operator from receiving static shocks.

The rust is cosmetic and will not affect the performance of the air cart, and can be cleaned with the following procures:

NOTE: Recommend cleaning supplies BAR KEEPERS FRIEND® CLEANSER & SCOTCH-BRITE® NON-SCRATCH SCOUR PAD. Use only original formula BAR KEEPERS FRIEND CLEANSER on the stainless steel tubes. This particular cleanser contains oxalic acid which adds a protective oxide layer to the stainless steel pipes to add further corrosion protection.

1. Dampen a blue SCOTCH-BRITE NON-SCRATCH SCOUR PAD with water.
2. Apply the BAR KEEPERS FRIEND CLEANSER to he SCOTCH-BRITE NON-SCRATCH SCOUR PAD.
3. Scrub the tubes to remove the rust. The BAR KEEPERS FRIEND CLEANSER works best when applied as a thick paste. Use water as required to form a thick paste
4. Allow the paste to sit on the tubes for 10 to 15 minutes.
5. Rinse the tubes thoroughly with fresh, clean water.

NOTE: Do not use any metallic scouring pads such as steel wool on the stainless steel tubes.
Using metallic pads will promote rusting of the stainless steel tubes.

OFF SEASON STORAGE

ANNUAL CHECK GROUNDING SYSTEM

Air carts generate static electricity during operation (seeding and filling). The air cart has a number of systems to prevent static from damaging electronic devices and to prevent static shocks to the operator.

1. Check the grounding system annually before seeding to ensure the grounding ins functioning correctly
2. Use a multi-meter set to resistance (ohms) to check that each system is still electrically grounded to the air cart frame. Readings under 1 Ω are good. Readings over 1 Ω should be investigated and corrected.
3. Connect the black lead of the multi-meter to the ground strap on the Universal Control Module (UCM) controller.
4. Remove and re-install the spring clips that ground the stainless steel pipes to remove any packed in dirt and ensure a good electrical connection is present.
5. Use the red lead of the multi-meter to check the connection to following locations:
    - Bottom right pipe between each meter
    - Bottom left pipe between each meter
    - Top right pipe between each meter
    - Top left pipe between each meter
    - Front left lower bolt on the meter sub-frame
    - Rear left lower bolt on the meter sub-frame
    - Front right lower bolt on the meter sub-frame
    - Rear right lower bolt on the meter sub-frame
    - Lid bushing on each plastic tank
    - Ladder in each plastic tank

NOTES

SAFETY NEVER HURTS!™ Always read the Operator's Manual before operating any equipment. Inspect equipment before using it, and be sure it is operating properly. Follow the product safety signs, and use any safety features provided. CNH America LLC reserves the right to make improvements in design and changes in specifications at any time without notice and without incurring any obligation to install them on units previously sold. Specifications, descriptions and illustrative material herein are as accurate as known at time of publication, but are subject to change without notice. Availability of some models and equipment builds varies according to the country in which the equipment is used.

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