

John Deere™ Planter Meter Test Stand



OPERATOR'S MANUAL

John Deere™ Planter Meter Test Stand

OMA107369 ISSUE E6 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:

WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

John Deere Seeding Group

PRINTED IN U.S.A.



Introduction

Foreword

READ THIS MANUAL carefully to avoid personal injury or equipment damage. Learn how to operate and service the machine correctly. If desired, see your John Deere dealer to determine if this manual and safety signs on the machine are available in other languages.

CONSIDER THIS MANUAL a permanent part of the machine and include the manuals with the machine when sold.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing the direction the implement travels when moving forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) in the Specification section. Accurately record all the numbers to help trace the machine if stolen. Your dealer also needs these numbers to order parts. File the identification numbers in a secure place away from machine.

OJ06074.0001041 -19-03OCT07-1/1

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

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Safety

Recognize Safety Information

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

Follow recommended precautions and safe operating practices.



DX,ALERT -19-29SEP98-1/1

T81389 —UN—28JUN13

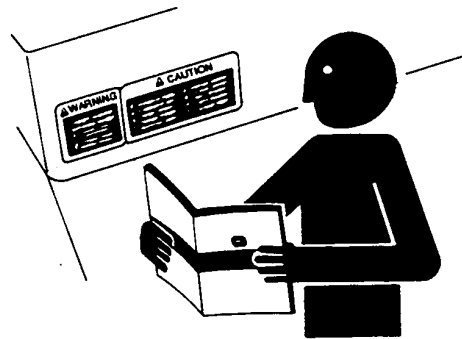
Follow Safety Instructions

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

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

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

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



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

DX,READ -19-16JUN09-1/1

TS201 —UN—15APR13

Understand Signal Words

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

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

⚠ DANGER

⚠ WARNING

⚠ CAUTION

DX,SIGNAL -19-03MAR93-1/1

TS187 —19—30SEP88

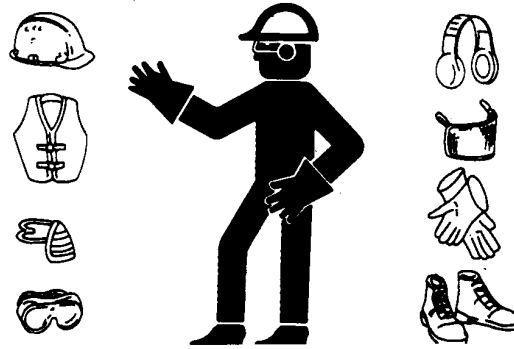
Wear Protective Clothing

Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.



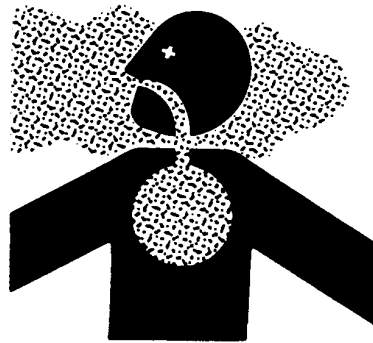
TS206 —UN—15APR13

DX,WEAR -19-10SEP90-1/1

Work In Ventilated Area

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.



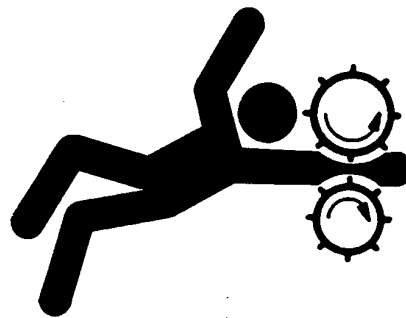
TS220 —UN—15APR13

DX,AIR -19-17FEB99-1/1

Service Machines Safely

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



TS228 —UN—23AUG88

DX,LOOSE -19-04JUN90-1/1

Practice Safe Maintenance

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.



DX,SERV -19-17FEB99-1/1

TS218 —UN—23AUG88

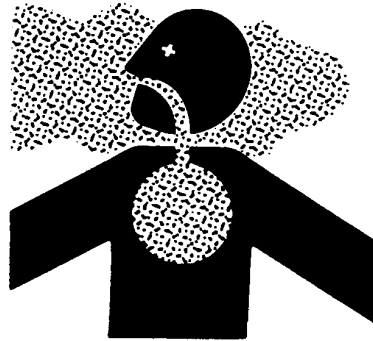
Handle Agricultural Chemicals Safely

Chemicals used in agricultural applications such as fungicides, herbicides, insecticides, pesticides, rodenticides, and fertilizers can be harmful to your health or the environment if not used carefully.

Always follow all label directions for effective, safe, and legal use of agricultural chemicals.

Reduce risk of exposure and injury:

- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
 - Chemicals labeled **'Danger'**: Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
 - Chemicals labeled **'Warning'**: Less toxic. Generally require use of goggles, gloves, and skin protections.
 - Chemicals labeled **'Caution'**: Least toxic. Generally require use of gloves and skin protection.
- Avoid inhaling vapor, aerosol or dust.
- Always have soap, water, and towel available when working with chemicals. If chemical contacts skin, hands, or face, wash immediately with soap and water. If chemical gets into eyes, flush immediately with water.
- Wash hands and face after using chemicals and before eating, drinking, smoking, or urination.
- Do not smoke or eat while applying chemicals.
- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer chemicals to unmarked containers or to containers used for food or drink.



A34471

- Store chemicals in a secure, locked area away from human or livestock food. Keep children away.
- Always dispose of containers properly. Triple rinse empty containers and puncture or crush containers and dispose of properly.

TS220 —UN—15APR13

A34471 —UN—11OCT88

DX,WW,CHEM01 -19-24AUG10-1/1

Clean Vehicle of Hazardous Pesticides

⚠ CAUTION: During application of hazardous pesticides, pesticide residue can build up on the inside or outside of the vehicle. Clean vehicle according to use instructions of hazardous pesticides.

When exposed to hazardous pesticides, clean exterior and interior of vehicle daily to keep free of the accumulation of visible dirt and contamination.

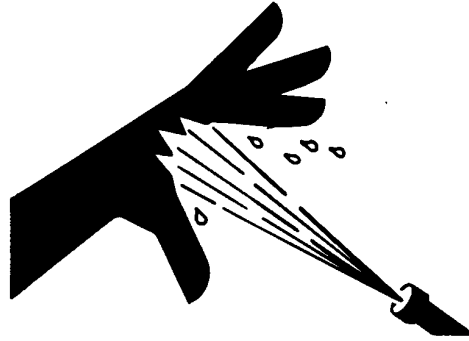
1. Sweep or vacuum the floor of cab.
2. Clean headliners and inside cowlings of cab.
3. Wash entire exterior of vehicle.
4. Dispose of any wash water with hazardous concentrations of active or non-active ingredients according to published regulations or directives.

DX,CABS2 -19-24JUL01-1/1

Protect Against High Pressure Spray

Spray from high pressure nozzles can penetrate the skin and cause serious injury. Keep spray from contacting hands or body.

If an accident occurs, see a doctor immediately. Any high pressure spray injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.



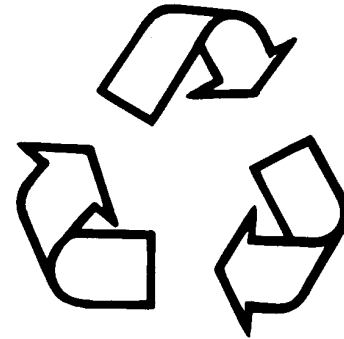
DX,SPRAY -19-16APR92-1/1

TS1343—UN—18MAR92

Decommissioning — Proper Recycling and Disposal of Fluids and Components

Safety and environmental stewardship measures must be taken into account when decommissioning a machine and/or component. These measures include the following:

- Use appropriate tools and personal protective equipment such as clothing, gloves, face shields or glasses, during the removal or handling of objects and materials.
- Follow instructions for specialized components.
- Release stored energy by lowering suspended machine elements, relaxing springs, disconnecting the battery or other electrical power, and releasing pressure in hydraulic components, accumulators, and other similar systems.
- Minimize exposure to components which may have residue from agricultural chemicals, such as fertilizers and pesticides. Handle and dispose of these components appropriately.
- Carefully drain engines, fuel tanks, radiators, hydraulic cylinders, reservoirs, and lines before recycling components. Use leak-proof containers when draining fluids. Do not use food or beverage containers.
- Do not pour waste fluids onto the ground, down a drain, or into any water source.
- Observe all national, state, and local laws, regulations, or ordinances governing the handling or disposal of waste fluids (example: oil, fuel, coolant, brake fluid);



filters; batteries; and, other substances or parts. Burning of flammable fluids or components in other than specially designed incinerators may be prohibited by law and could result in exposure to harmful fumes or ashes.

- Service and dispose of air conditioning systems appropriately. Government regulations may require a certified service center to recover and recycle air conditioning refrigerants which could damage the atmosphere if allowed to escape.
- Evaluate recycling options for tires, metal, plastic, glass, rubber, and electronic components which may be recyclable, in part or completely.
- Contact your local environmental or recycling center, or your John Deere dealer for information on the proper way to recycle or dispose of waste.

DX,DRAIN -19-01JUN15-1/1

TS1133—UN—15APR13

Replace Safety Signs

Replace missing or damaged safety signs. Use this operator's manual for correct safety sign placement.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.



TS201 —UN—15APR13

DX,SIGNS -19-18AUG09-1/1

Live With Safety

Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.



TS231 —19—07OCT88

DX,LIVE -19-25SEP92-1/1

Test Stand Assembly and Setup

Parts List

Parts Used to Assemble Test Stand

Item	Description
Base Assembly	Tube Frame with Row Unit Shank
Cap Screws (4 used)	M8 X 30 mm
Carriage Bolts (4 used)	M10 X 175 mm
Caster Wheels (4 used)	Pivot Wheels with Locks
Control Box	Box Used to Connect and Operate Test Stand
Lock Nuts (4 used)	M10 Nut
Wiring Harness (RUC #1)	Wiring Harness that Connects Control Box to Test Stand
Wiring Harness (RUC #2)	Wiring Harness that Connects to External Row Unit
Power Cord	Control Box Power Supply Cord

Parts Used to Configure Test Stand

Part Number	Description	Quantity
A31869*	M16 Lock Nut	2
A48515	14 mm Bushing	2
A78121	20 mm Bushing	2
A81338	Vacuum Sensor Zero Tube	1
A92722	Left-Hand 3 bu Hopper Support	1
A92723	Right-Hand 3 bu Hopper Support	1
A92725	Side Plate Support (ME5)	1
A92975*	Mini Hopper Pivot	1
A93595	Side Plate Support (XP)	1
A101044*	1.6 and 3 bu Hopper Pivot	2
AA22119	Hopper Hold Down Latch	2
AA37862	Vacuum Sensor Hose Fitting	1
AA40416	Vacuum Hose	1
AA79126	3 bu Hopper Support Frame	1
AA79128*	Meter Hold Down Latch	1
AA79781	Twin Row Meter Support	1
AA81424	Vacuum Sensor	1
E63524	M6 Nut	4
TY22420	Vacuum Sensor Hose (Bulk)	30 480 mm (100 ft)
03M7183	M8 X 16 mm Carriage Bolt	6
03M7184	M8 X 20 mm Carriage Bolt	2
03M7221	M6 X 16 mm Carriage Bolt	4
14H1026	#8 Nut	2
14M7298	M8 Nut	6
14M7299	M12 Nut	3
19M7342*	M16 X 55 mm	2
19M7785	M10 X 25 mm Cap Screw	4
19M7819	M12 X 90 mm Cap Screw	3
21H1339	#8 X 7/8 in Screw	2

*Parts come pre-installed on test stand.

**Parts listed in this table are included with test stand. Not all parts are used at the same time.

Additional Parts Required

Parts Required but Not Included with Test Stand	
Item	Recommended Part
5 Gallon Bucket	LPJD400
Display	GreenStar™ 3 2630 Display

Continued on next page

JM79459,0000D37 -19-13NOV15-1/2

Test Stand Assembly and Setup

Parts Required but Not Included with Test Stand

Item	Recommended Part
Display Mount	PF13005
Wet/Dry Vacuum	AC-9

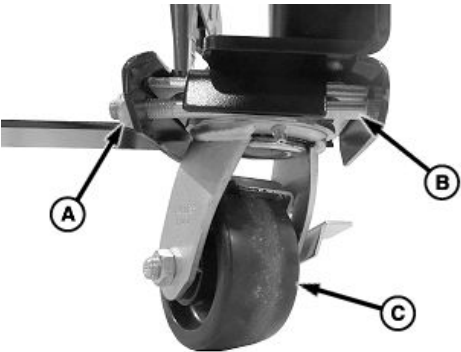
GreenStar is a trademark of Deere & Company

JM79459,0000D37 -19-13NOV15-2/2

Assemble Test Stand

1. Insert caster wheels (C) into slots on test stand.
2. Install carriage bolts (B) and lock nuts (A).

A—Lock Nut, M10 (4 used) C—Caster Wheel (4 used)
B—Carriage Bolt, M10 X 175
mm (4 used)



A88062 —UN—26OCT15

JM79459,0000D2C -19-07DEC15-1/7

3. Install control box (B) on test stand using cap screws (A).

A—Cap Screws, M8 X 30 mm (4 used) B—Control Box



A88064 —UN—27OCT15

Continued on next page

JM79459,0000D2C -19-07DEC15-2/7

NOTE: Wing nuts (C) are included with GreenStar™ display.

4. Connect PF80793 wiring harness (B) to GreenStar™ 3 2630 Display (A).
5. Install PF13005 bracket (D) on back of GreenStar™ display using wing nuts (C).

A—GreenStar Display
B—Wiring Harness

C—Wing Nut (2 used)
D—Bracket



GreenStar is a trademark of Deere & Company

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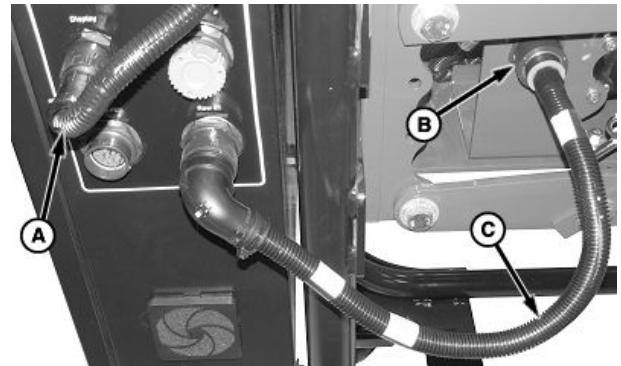
A88495 —UN—25NOV15

A88496 —UN—25NOV15

6. Connect PF80793 wiring harness (A) from display to connector on control box labeled “Display”.
7. Connect RUC #1 wiring harness (C) to connector (B).
8. Connect other end of wiring harness to connector on control box labeled “Row 1”.

A—Wiring Harness
B—Connector

C—Wiring Harness



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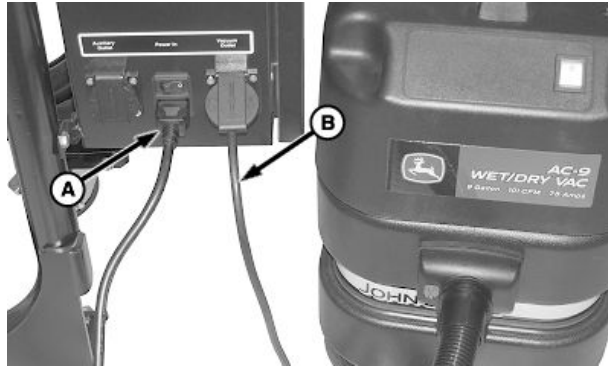
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A88066 —UN—27OCT15

9. Connect power cord (A) to control box "Power In" receptacle.
10. Connect wet/dry vac cord (B) to control box "Vacuum Outlet" receptacle

A—Power Cord

B—Wet/Dry Vac Cord



A88067—UN—27OCT15

JM79459,0000D2C -19-07DEC15-5/7

11. Drill a 3/8 in hole into one end of row unit AA40416 vacuum hose (C).
12. Thread AA37862 hose fitting (B) into hole.

NOTE: Vacuum sensor hose is supplied in 100 ft bulk roll.

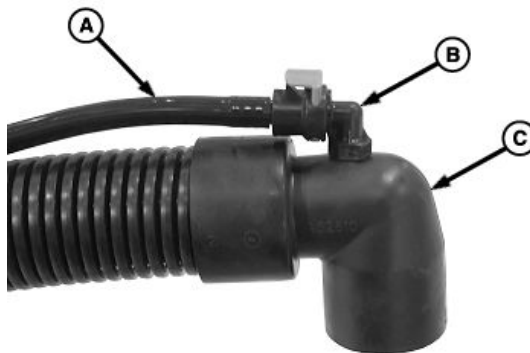
13. Cut a 1219 mm (4 ft) length of TY22420 vacuum sensor hose (A) from roll.

NOTE: Vacuum sensor hose can be trimmed to fit.

14. Attach vacuum sensor hose to hose fitting.

A—Vacuum Sensor Hose
B—Hose Fitting

C—Row Unit Vacuum Hose



A88068—UN—27OCT15

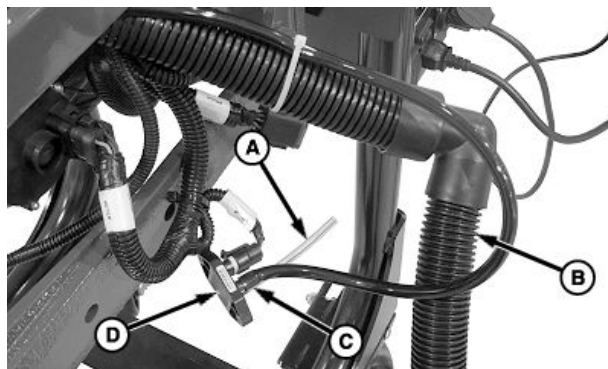
JM79459,0000D2C -19-07DEC15-6/7

15. Install A81338 tube (A) on port "P1" of vacuum sensor (D).
16. Connect vacuum sensor hose (C) to vacuum sensor port "P2".
17. Connect wet/dry vac hose (B) to row unit vacuum hose.

A—Tube

B—Wet/Dry Vac Hose

C—Vacuum Sensor Hose
D—Vacuum Sensor



A88069—UN—27OCT15

JM79459,0000D2C -19-07DEC15-7/7

Basic System Overview

The seed meter test stand is a meter runoff device used to verify seed meter functions and calibration. The test stand is designed to test various seed meters of multiple configurations. When using the test stand you can test that customer seed meters are calibrated to plant with the lowest CoV (Coefficient of Variation). While testing seed meters the operator can also inspect the meter to verify that all wear parts in good condition.

The test stand can be used with the following meters:

- MaxEmerge™ 2
- MaxEmerge™ Plus Vacuum Meters
- MaxEmerge™ Plus Plateless Meters
- MaxEmerge™ XP Vacuum Meters
- MaxEmerge™ XP Plateless Meters
- Pro-Series XP™ Vacuum Meters
- Pro-Series XP™ Plateless Meters
- MaxEmerge™ 5 Vacuum Meters
- ExactEmerge™ Meters¹

The test stand can be configured to fit the following meter configurations:

- Flipper Drive Seed Meters
- Pro-Shaft™ Drive Seed Meters
- Mini-Hopper Seed Meters
- 1.6 bu Hopper Seed Meters
- 3.0 bu Hoppers Seed Meters
- Twin Row Seed Meters

To use the test stand the operator uses the display to set the desired population, ground speed, and vacuum level

MaxEmerge is a trademark of Deere & Company
Pro-Series XP is a trademark of Deere & Company
ExactEmerge is a trademark of Deere & Company
Pro-Shaft is a trademark of Deere & Company

¹ExactEmerge™ Meters are tested by connecting Seed Meter Test Stand to row units while still on the planter.

(if applicable) for the meter being tested. These values are obtained from the customer, and are based on their usage of the meter. Once the test is started the meter is run and the seed tube sensor counts the number and frequency of seeds dropped. The monitor determines the number of skips and multiples that the meter produces, and records those on the display. Taking these two numbers into account, along with the total number of seeds delivered in the sample, the test stand computes the overall percentage of singulation. The closer the percentage of singulation is to 100% the more efficient the meter is performing. The operator can then use this information to determine what settings on the meter can be changed to deliver the best possible performance.

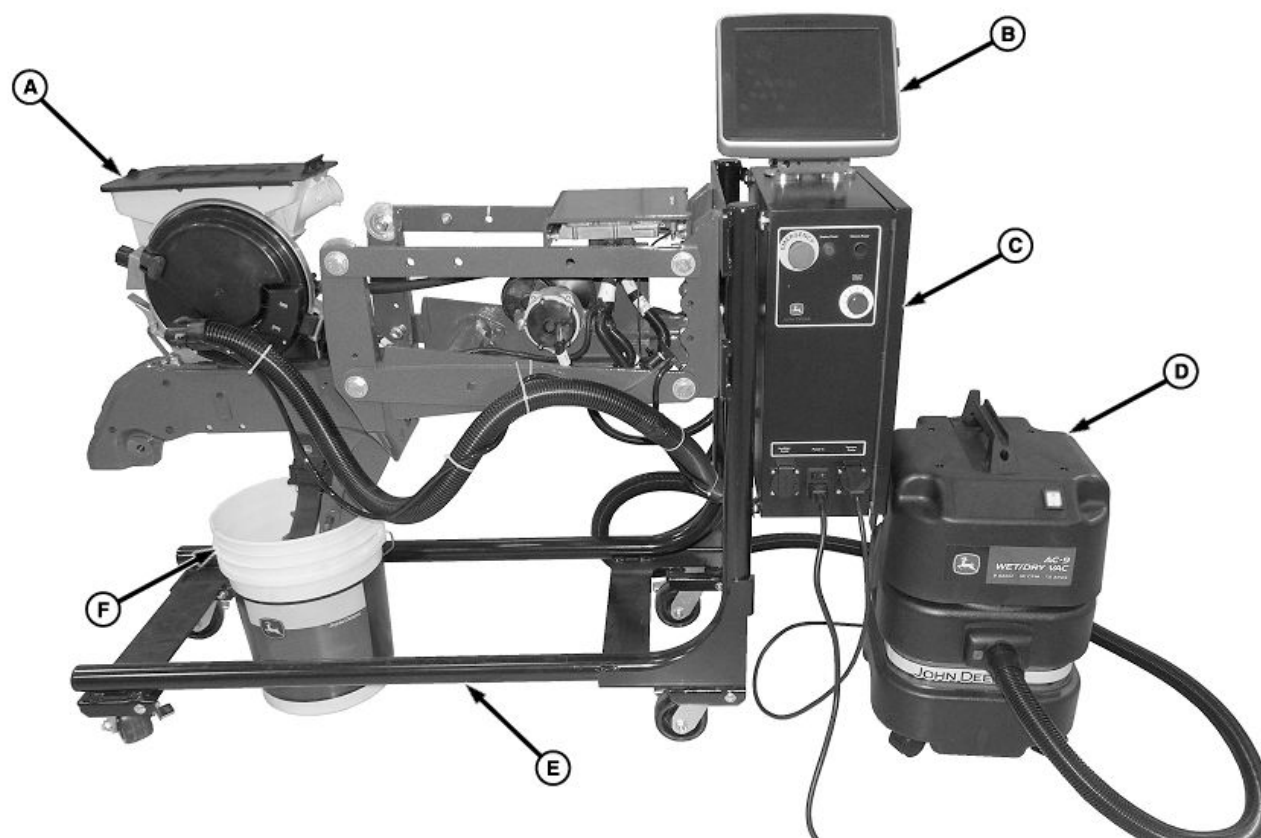
Items that can affect the percentage of singulation are:

- Condition of Seed Disk or Bowl
- Meter Hub Height (Gap Between Seed Disk or Bowl and Meter Housing)
- Condition of Vacuum Meter Seal
- Setting of Double Eliminator
- Vacuum Level
- Position of Meter Baffle
- Condition of Meter Brush
- Condition of Knockout Wheel or Seed Scraper
- Plugged or Missing Vents
- Damaged or Cracked Meter Dome
- Worn Out Springs or Fingers

JM79459,0000D2A -19-07DEC15-1/1

Basic System Component Overview

Test Stand Component Identification and Location



A—Seed Meter
B—GreenStar™ 2630 Display

C—Control Box
D—Wet/Dry Vac

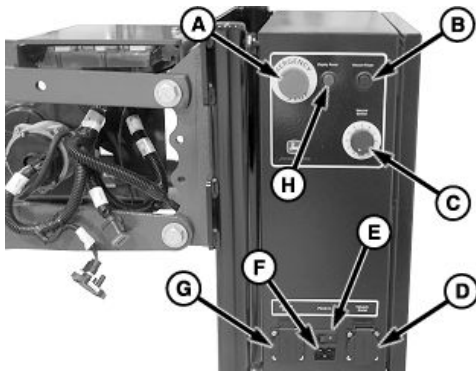
E—Test Stand
F—Bucket

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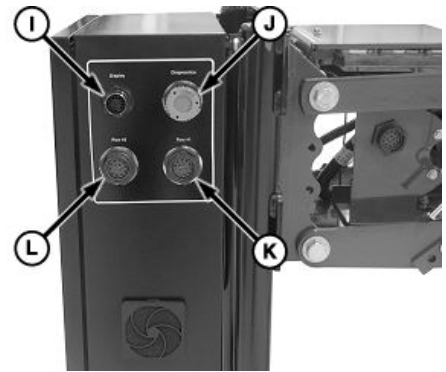
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Control Box Component Identification and Location



Left-Hand View of Control Box



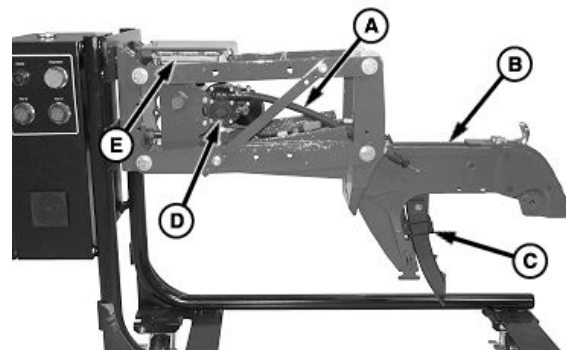
Right-Hand View of Control Box

- | | | | |
|-----------------------------|--------------------------------|--------------------------|-------------------|
| A—Emergency Stop Button | D—Vacuum Power Outlet | G—Auxiliary Power Outlet | K—Row #1 Port |
| B—Vacuum Power Switch | E—Test Stand Power Switch | H—Display Power Switch | L—Row #2 Port |
| C—Vacuum Speed Control Knob | F—Test Stand Power Supply Port | I—Display Port | J—Diagnostic Port |

JM79459,0000D2B -19-24NOV15-2/3

Shank Component Identification and Location

- | | |
|--------------------------|-----------------------------|
| A—Pro-Shaft™ Drive Cable | D—Motor with Gearbox |
| B—Shank | E—RUC (Row Unit Controller) |
| C—Seed Tube | |



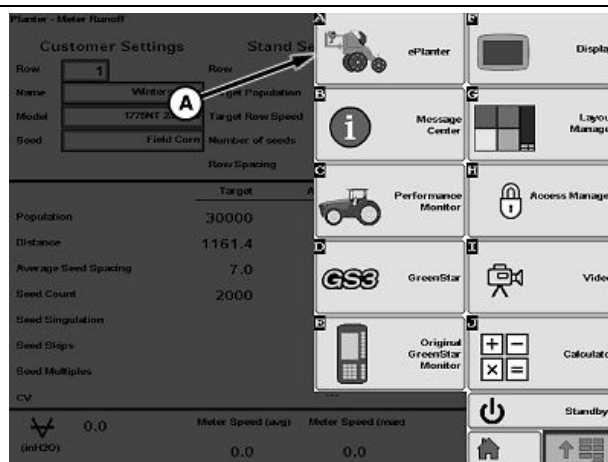
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Monitor Setup and Operation

Monitor Setup

1. Select “ePlanter” button (A).

A—ePlanter

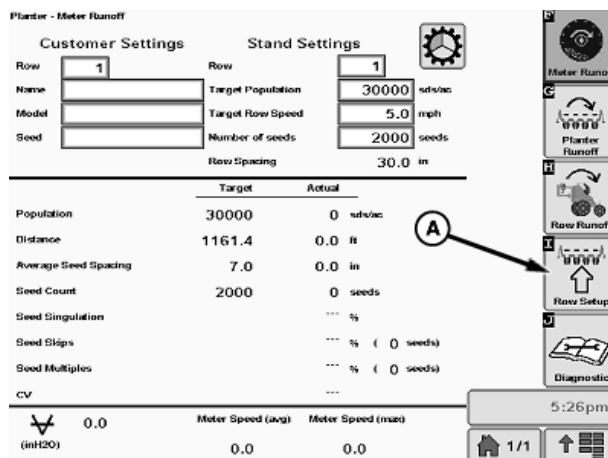


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2. Select “Row Setup” button (A) to configure row settings.

A—Row Setup



A88338 —UN—10NOV15

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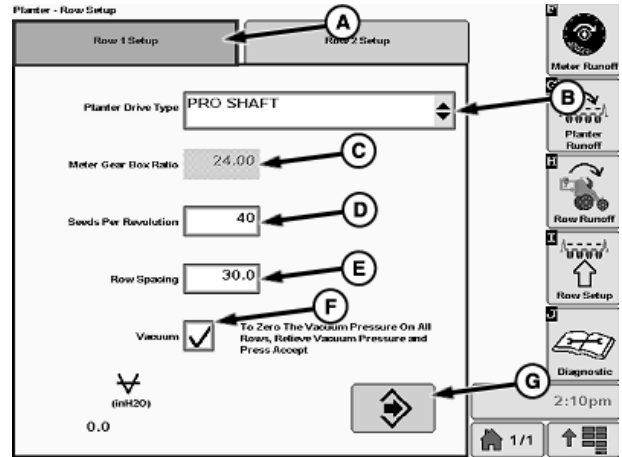
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3. Select "Row 1 Setup" tab (A). Row 1 is used to test seed meters that are placed on test stand.
4. Select "Planter Drive Type" drop-down (B).
5. Select appropriate drive type of seed meter being tested.
 - EXACT EMERGE—For ExactEmerge™ Seed Meters (EXACT EMERGE Setting is Not Used on Row 1)
 - PRO SHAFT—All Pro-Shaft™ Driven Seed Meters
 - FLIPPER DRIVE—All Flipper Drive Seed Meters
 - CUSTOM—Blank Settings to Allow for Custom Input

NOTE: "Meter Gear Box Ratio" can only be changed when "CUSTOM" meter drive type is selected.

6. "Meter Gear Box Ratio" (C) is automatically populated based on drive type selected.
7. "Seeds Per Revolution" (D) is the number of cells on seed disk in meter being tested.
8. "Row Spacing" (E) is row width of planter meters being tested.
9. "Vacuum Sensor" check box (F) turns vacuum sensor ON-OFF for vacuum meters and finger pickup meters.

NOTE: For finger pickup meters, seeds per revolution setting is 12.



- A—Row 1 Setup
 B—Planter Drive Type Drop-Down
 C—Meter Gear Box Ratio
 D—Seeds Per Revolution
 E—Row Spacing
 F—Vacuum Sensor
 G—Accept

IMPORTANT: Ensure that wet/dry vac is OFF and vacuum sensor hose not kinked or plugged before zeroing vacuum sensor.

10. Press accept (G) to zero vacuum sensor.

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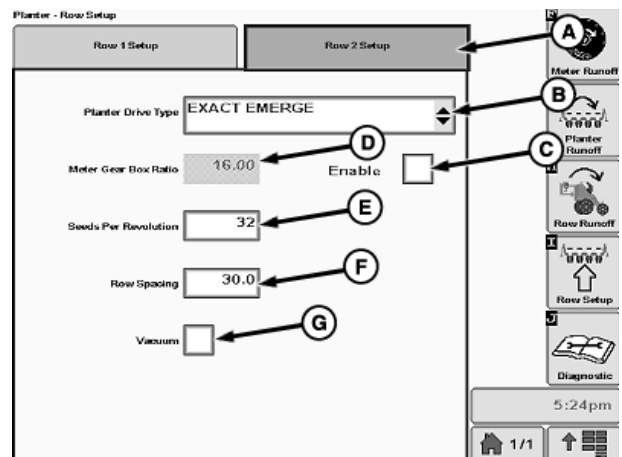
11. Select "Row 2 Setup" tab (A). Row 2 is used to test ExactEmerge™ while still on planter.
12. Select "EXACT EMERGE" from "Planter Drive Type" drop-down (B).

NOTE: Row 2 can be set up for ExactEmerge™ ahead of time. Row 2 settings will not be used until "Enable" check box is selected.

13. "Enable" check box (C) switches row being tested to row 2.
14. "Meter Gear Box Ratio" (D) is fixed at 16 for ExactEmerge™.
15. "Seeds Per Revolution" is number of active cells on seed bowl.

NOTE: Settings for corn seed bowls is 32, soy bean seed bowl is 64.

16. "Row Spacing" (F) is row width of planter meters being tested.
17. "Vacuum" (G) check box turns vacuum sensor ON-OFF.



- A—Row 2 Setup
 B—Planter Drive Type Drop-Down
 C—Enable Check Box
 D—Meter Gear Box Ratio
 E—Seeds Per Revolution
 F—Row Spacing
 G—Vacuum Sensor

JM79459,0000D2D -19-13NOV15-4/4

Monitor Operation

NOTE: When entering customer information, it helps to be as exact as possible.

1. Select "Meter Runoff" tab (E).

NOTE: Number the row units while still on planter to make identification easier.

2. Enter row number of seed meter is being tested in "Row" box (A).
3. Enter customer's name in "Name" box (B).
4. Enter planter model in "Model" box (C).

NOTE: If customer has multiple planters of the same model, consider adding a suffix to keep the planters separate.

5. Enter seed information in "Seed" box (D). This can be seed variety, shape, or any other identifying information.

Customer Settings

Row	1
Name	
Model	
Seed	

Stand Settings

Row	1
Target Pop	30000 seeds/ac
Target Row Speed	5.0 mph
Number of seeds	2000 seeds
Row Spacing	30.0 in

	Target	Actual
Population	30000	0 seeds/ac
Distance	1161.4	0.0 ft
Average Seed Spacing	7.0	0.0 in
Seed Count	2000	0 seeds
Seed Singulation	---	%
Seed Slips	---	% (0 seeds)
Seed Multiples	---	% (0 seeds)
CV	---	---

Meter Speed (avg) 0.0 Meter Speed (max) 0.0

(inH2O) 0.0

5:26pm

1/1

A—Row Number
B—Customer Name
C—Planter Model

D—Seed Information
E—Meter Runoff

JM79459,0000D2E -19-25NOV15-1/4

6. Enter "Target Population" (A) as seeds per acre. This number is obtained from the customer and is their target population.
7. Set "Target Row Speed" (B). Enter ground speed the customer most often operates their planter at in mph.
8. "Number of seeds" (C) is default at 2000 seeds. This value is the sample size of seeds to be tested.

NOTE: It is recommended to use the default setting of 2000 seeds for an accurate sample size.

A—Target Population
B—Target Speed
C—Number of Seeds

Customer Settings

Row	1
Name	Winter wheats
Model	1770 NT 24 Row
Seed	Corn-Small Round

Stand Settings

Row	1
Target Population	30000 seeds/ac
Target Row Speed	5.0 mph
Number of seeds	2000 seeds
Row Spacing	30.0 in

	Target	Actual
Population	30000	0 seeds/ac
Distance	1161.4	0.0 ft
Average Seed Spacing	7.0	0.0 in
Seed Count	2000	0 seeds
Seed Singulation	---	%
Seed Slips	---	% (0 seeds)
Seed Multiples	---	% (0 seeds)
CV	---	---

Meter Speed (avg) 0.0 Meter Speed (max) 0.0

(inH2O) 0.0

2:16pm

1/1

Continued on next page

JM79459,0000D2E -19-25NOV15-2/4

NOTE: Fill mini hoppers completely before starting test.
On larger hoppers, only fill with enough seed to ensure that meter stays full for duration of test.

9. Fill seed hopper (C) with seed.

10. Place bucket (E) under row unit to catch seed.

NOTE: Vacuum level should be set at around 12 inH2O.

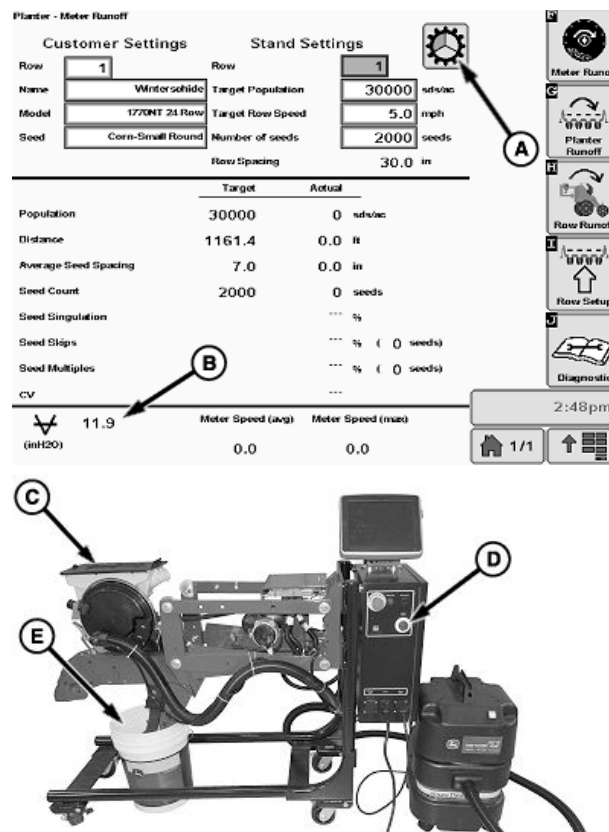
11. Use vacuum control knob (D) to set vacuum level (B).

IMPORTANT: When test is first started keep an eye on the vacuum level. Vacuum level can jump or fall as meter starts to run. Adjust control knob to bring back vacuum level near 12 inH2O

12. Press run button (A) to start test.

A—Run
B—Vacuum Level
C—Seed Hopper

D—Vacuum Control Knob
E—Bucket



Continued on next page

JM79459,0000D2E -19-25NOV15-3/4

A88489 —UN—11NOV15

A88498 —UN—25NOV15

13. Target column (A) automatically populates based on test stand settings entered.

14. When test is started, Actual column (B) starts populating and continues to record and report for the duration of the test.

15. Distance (C) is the number of feet the row unit would be traveling to plant 2000 seeds at selected population. When actual value reaches the target value the test stand will automatically stop.

NOTE: Achieving a seed singulation percentage of 98% or higher means seed meter is running at optimal performance.

16. Seed Singulation (D) is a percentage of seeds that are properly placed. This value is based on the sample size minus Seed Skips (E) and Seed Multiples (G).

17. If Seed Skips are too high some things to check are:

- Double Eliminator Set To Aggressively
- Vacuum Level is Low
- Vacuum Seal is Worn

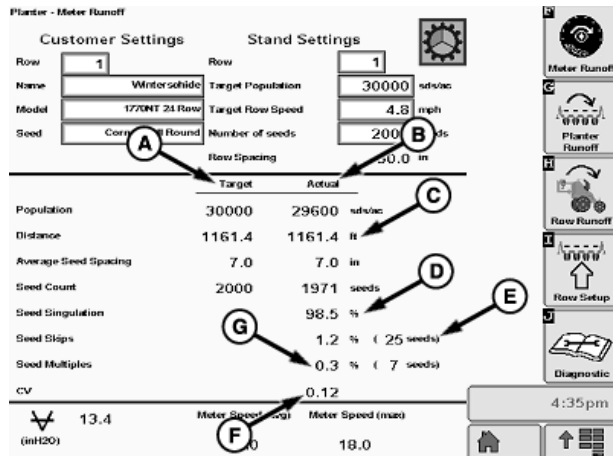
18. If Seed Multiples are too high some things to check are:

- Double Eliminator Set Too Low
- Meter Brush Worn Out

19. CV (F), or Coefficient of Variation, is a measure of seed spacing accuracy. The lower this number is the higher the accuracy of the seed meter.

20. Once test is finished, take a screen shot to record the data. (See SCREEN SHOTS AND DATA TRANSFER in this group.)

21. If seed meter performance is unsatisfactory, make necessary adjustments and repeat test.



22. Perform test on remaining seed meters on planter, taking a screen shot of each test result.

23. Once all seed meters are tested, data collected can be transferred to a computer using a USB storage device. (See SCREEN SHOTS AND DATA TRANSFER in this group.)

24. This data can then be used to show seed meter performance and how it was improved with proper seed meter settings and calibration.

JM79459,0000D2E -19-25NOV15-4/4

A88491 — UN—11NOV15

Screen Shots and Data Transfer

1. To take a screen shot of the test results, press and hold button (A) for about one second.
2. Indicator light (B) will change to red and quickly back to green when a screen shot has been successfully taken.

A—Button

B—Indicator Light



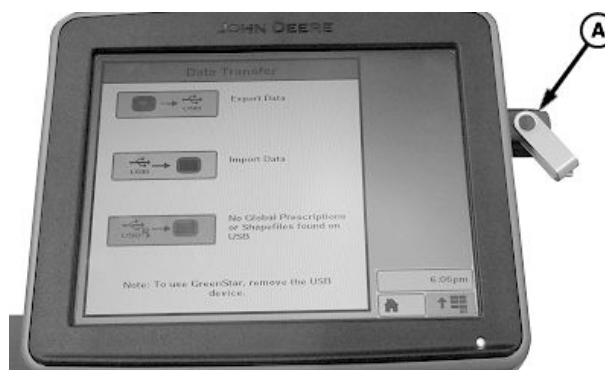
A88499 — UN—25NOV15

A88333 —UN—10NOV15

JM79459,0000FF7 -19-11APR16-1/4

3. Connect USB storage device (A) to GreenStar™ 3 2630 Display.

A—USB Storage Device



A88334 --UN--10NOV15

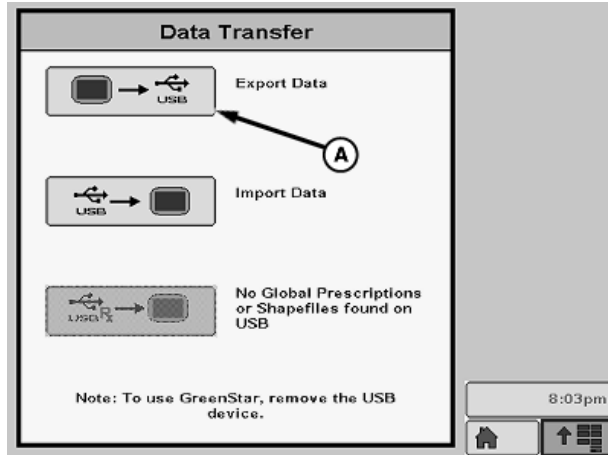
GreenStar is a trademark of Deere & Company

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JM79459,0000FF7 -19-11APR16-2/4

4. When a USB storage device is connected the “Data Transfer” page will automatically appear.
5. Select “Export Data” button (A).

A—Export Data



A88335 — UN—10NOV15

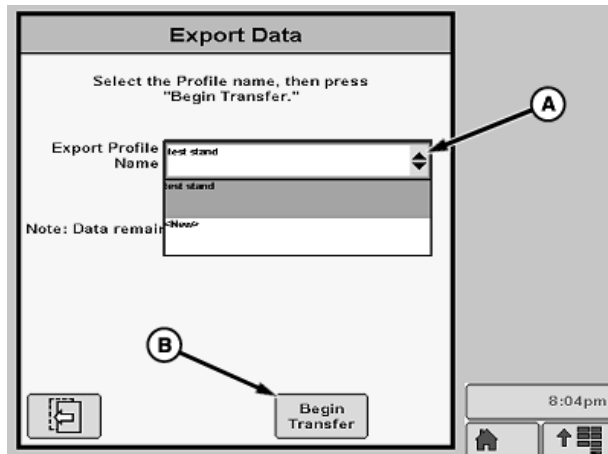
JM79459,0000FF7 -19-11APR16-3/4

NOTE: When creating a new profile it is recommended to use customers name and planter being tested to make transferred files easy to locate.

6. Use “Export Profile Name” drop-down (A) to select an existing profile or create a new one.
7. Press “Begin Transfer” button (B) to export data.
8. Progress bar will appear and let you know when transfer process is complete.
9. Once data transfer is complete you may remove USB storage device.

A—Profile Drop-Down

B—Begin Transfer Button



A88336 — UN—10NOV15

JM79459,0000FF7 -19-11APR16-4/4

Test Stand Configurations

General Information for Meter Configurations

The John Deere Planter Seed Meter Test Stand is designed to accommodate as many configurations of seed meters as possible. The test stand is designed to have the seed meter assembly removed from the planter and placed directly on the test stand. There is no need to remove the seed hopper.

Some configurations may not attach to test stand in the same manner as they would when mounted on a planter. For example, when testing a Pro-Series™ XP seed meter, the locating pin rests on the shank instead of in a hole in an adapter plate. The pivots on the meter attach to the upright bracket, and the latch attaches the rear to the shank. Even without the locating pin in a hole, the meter is secure and ready for testing.

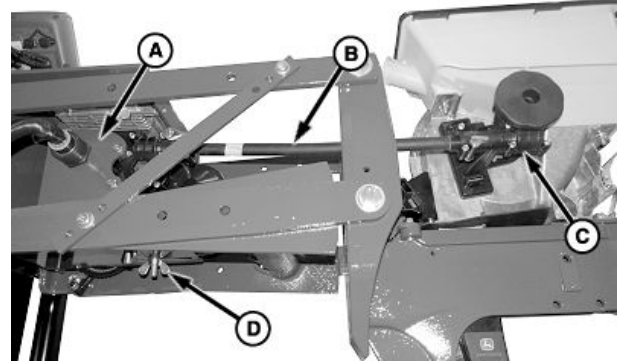
When placing a meter assembly on the test stand some parts may have a tight fit and require firm pressure to be installed. If meter is difficult to install, do not use excessive force. If a meter assembly will not fit make sure that the parts installed on test stand are for the desired configuration. Verify that parts are installed correctly and properly aligned.

The meter drive assembly is adjustable to reach the various positions of Pro-Shaft™ gearboxes on different meter configurations. To adjust drive assembly use the following procedure:

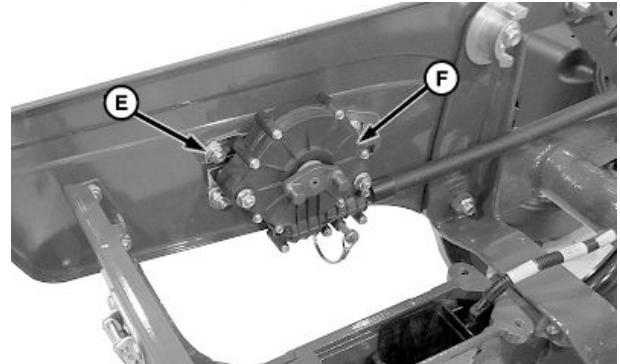
1. Loosen wing nuts (D).
2. Insert Pro-Shaft™ cable (B) into Pro-Shaft™ gearbox (C).
3. Slide drive assembly (A) until Pro-Shaft™ cable is fully seated in gearbox.
4. Flip lock on gearbox to secure cable in gearbox.
5. Tighten wing nuts.

Adjust flipper drive gearbox position to ensure proper gearbox-to-meter alignment. To adjust alignment use the following procedure:

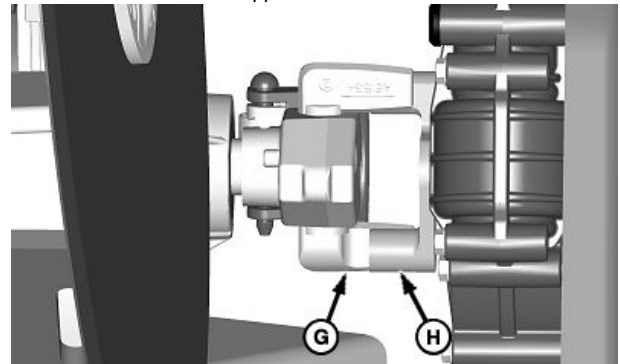
1. Loosen nuts (E).
2. Slide flipper drive gearbox (F) until drive lugs (H) are aligned with meter tabs (G).
3. Tighten nuts.



Adjust Pro-Shaft™ Cable



Flipper Drive Gearbox



Flipper Drive Alignment

A—Drive Assembly
B—Pro-Shaft™ Cable
C—Pro-Shaft™ Gearbox
D—Wing Nut (2 used)

E—Nut (3 used)
F—Flipper Drive Gearbox
G—Meter Tabs
H—Drive Lugs

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JM79459,0000D41 -19-13NOV15-1/1

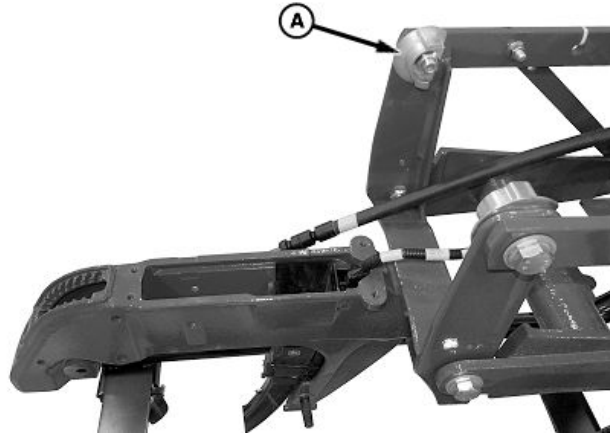
A88322—UN—04NOV15

A88323—UN—04NOV15

A88324—UN—04NOV15

MaxEmerge 2™, MaxEmerge Plus™, and MaxEmerge XP™ Meter Configurations

1.6 bu Hopper with Pro-Shaft™ Drive



A—Hopper Pivot (2 used)

Install A101044 hopper pivots (A) on upright bracket.

JM79459,0000D30 -19-17NOV15-1/10

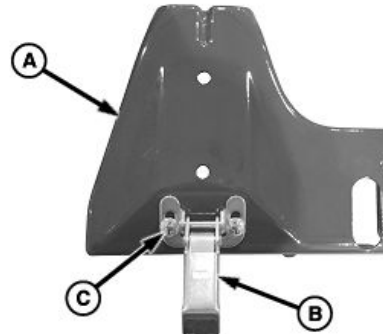
A88329 —UN—06NOV15

1.6 bu Hopper with Flipper Drive

1. Install AA22119 latch (B), using M6 X 16 mm carriage bolts (A) and nuts.

A—Support
B—Latch

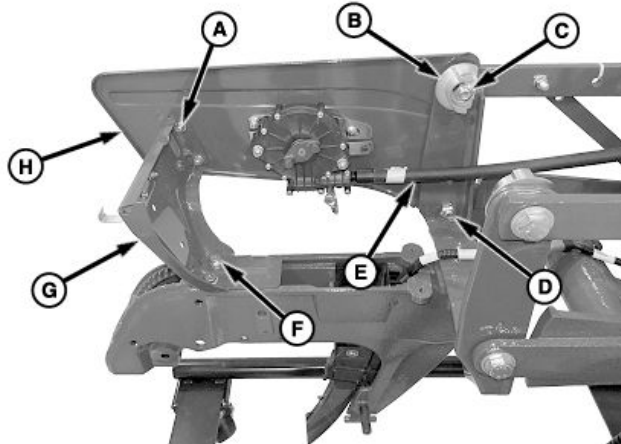
C—Carriage Bolt, M6 X 16 mm
(2 used)



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JM79459,0000D30 -19-17NOV15-2/10

A88326 —UN—05NOV15



A—Nut, M8 (2 used)
B—Hopper Pivot (2 used)

C—Nut, M16 (2 used)
D—Nut, M16
E—Pro-Shaft™ Cable

F—Cap Screw, M10 X 25 mm (2 used)
G—Support Bracket
H—Side Plate

2. Remove nuts (C) and install A101044 hopper pivots (B).
3. Install nuts but do not tighten at this time.
4. Loosen nut (D).

NOTE: Side plate is installed between upright bracket and parallel arms.

6. Tighten nuts (C and D).
7. Attach support bracket (G) to side plate using M8 X 20 mm carriage bolts and nuts (A).
8. Install M10 X 25 mm cap screws (F).
9. Connect Pro-Shaft™ cable (E).

5. Install side plate (H).

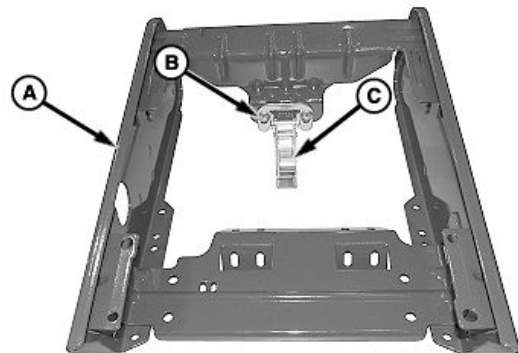
JM79459,0000D30 -19-17NOV15-3/10

3 bu Hopper with Pro-Shaft™ Drive

1. Install AA22119 latch (C), using M6 X 16 mm carriage bolts (B) and nuts.

A—3 bu Support Frame
B—Carriage Bolt, M6 X 16 mm (2 used)

C—Latch



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JM79459,0000D30 -19-17NOV15-4/10

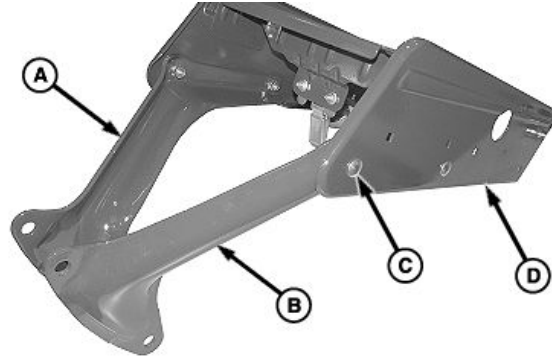
A88330 —UN—06NOV15

A88078 —UN—03NOV15

2. Attach A92723 right-hand support (A) and A92722 left-hand support (B) to AA79126 3 bu support frame (D) using M8 X 16 mm carriage bolts, and nut.

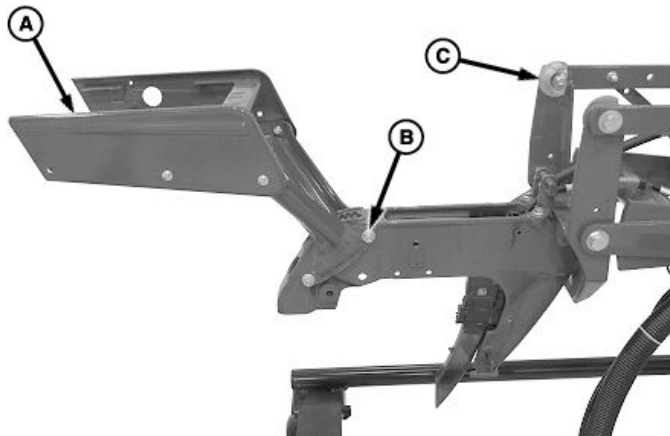
A—Right-Hand Support
B—Left-Hand Support

C—Carriage Bolt, M8 X 16 mm
(4 used)
D—3 bu Support Frame



A88079—UN—03NOV15

JM79459,0000D30 -19-17NOV15-5/10



A—Rear Support
B—Cap Screw, M12 X 90 mm (2 used)

C—Hopper Pivot (2 used)

3. Install rear support (A) using M12 X 90 mm cap screws (B) and nuts.

4. Install A101044 hopper pivots (C) using M16 X 55 mm cap screws and lock nuts.

NOTE: Ensure that hopper pivots are oriented as shown.

A88080—UN—03NOV15

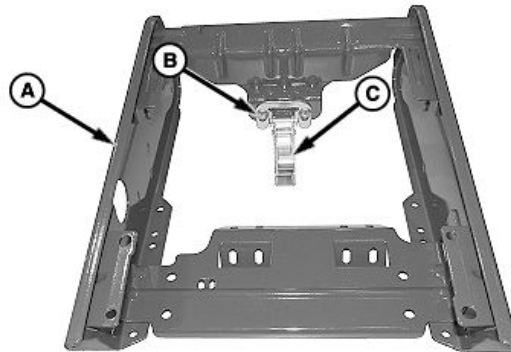
JM79459,0000D30 -19-17NOV15-6/10

3 bu Hopper with Flipper Drive

1. Install AA22119 latch (C), using M6 X 16 mm carriage bolts (B) and nuts.

A—3 bu Support Frame
B—Carriage Bolt, M6 X 16 mm
(2 used)

C—Latch



A88078—UN—03NOV15

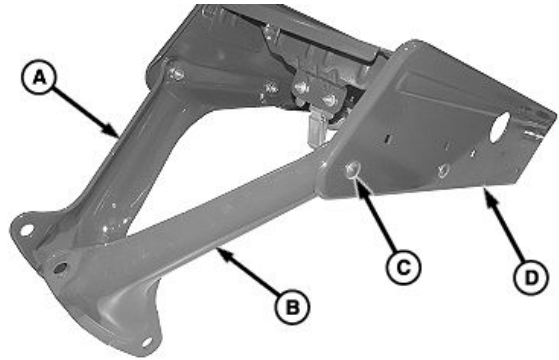
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JM79459,0000D30 -19-17NOV15-7/10

2. Attach A92723 right-hand support (A) and A92722 left-hand support (B) to AA79126 3 bu support frame (D) using M8 X 16 mm carriage bolts, and nut.

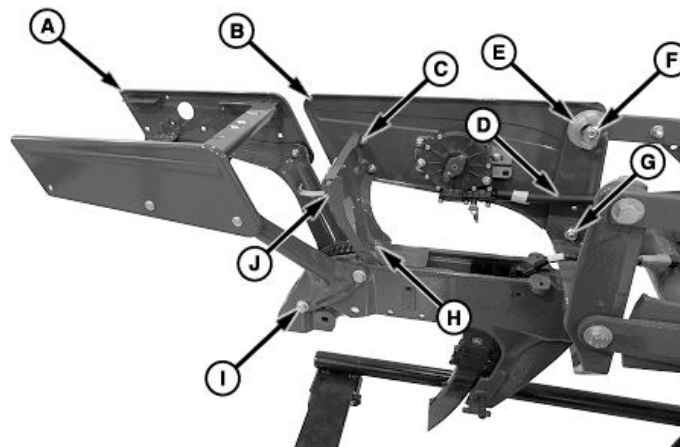
A—Right-Hand Support
B—Left-Hand Support

C—Carriage Bolt, M8 X 16 mm
(4 used)
D—3 bu Support Frame



A88079—UN—03NOV15

JM79459,0000D30 -19-17NOV15-8/10



A—Rear Support
B—Side Plate
C—Nut, M8 (2 used)
D—Pro-Shaft™ Cable

E—Hopper Pivot (2 used)
F—Nut, M16 (2 used)
G—Nut, M16

H—Cap Screw, M10 X 25 mm (2 used)
I—Cap Screw, M12 X 90 mm (2 used)
J—Support Bracket

NOTE: Ensure that hopper pivots are oriented as shown.

3. Remove nuts (F) and install A101044 hopper pivots (E).

4. Install nuts but do not tighten at this time.

5. Loosen nut (G).

NOTE: Install side plate between upright bracket and parallel arms.

6. Install side plate (B).

7. Tighten nuts (F and G).

8. Attach support bracket (J) to side plate using M8 X 20 mm carriage bolts and nuts (C).

9. Install M10 X 25 mm cap screws (H).

10. Install rear support (A) using M12 X 90 mm cap screws (I) and nuts.

11. Connect Pro-Shaft™ cable (D) to gearbox.

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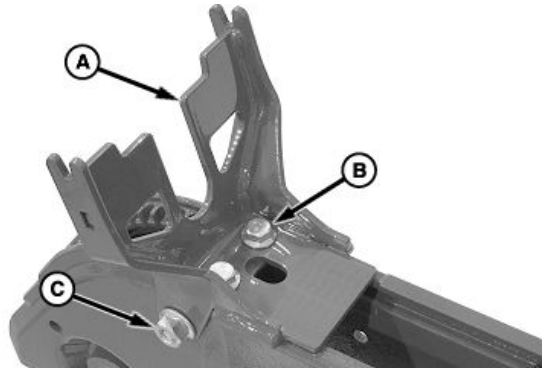
JM79459,0000D30 -19-17NOV15-9/10

A88331—UN—06NOV15

Twin Row with Pro-Shaft™ Drive

1. Install AA79781 twin row support (A) using M10 X 25 mm cap screws (B).
2. Install M12 X 90 mm cap screw and nut (C).

A—Twin Row Support
B—Cap Screw, M10 X 25 mm (2 used)
C—Nut, M12

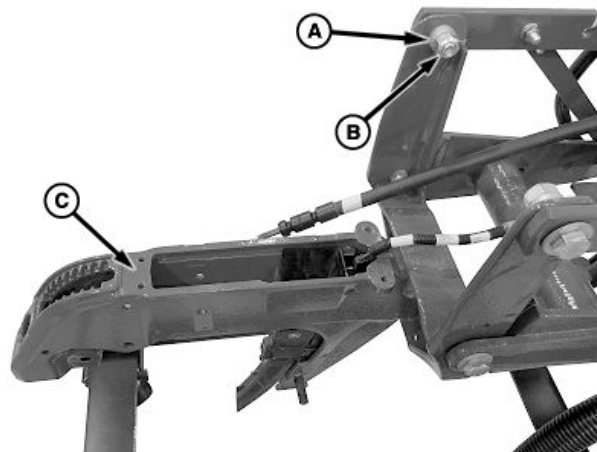


A88320—UN—03NOV15

JM79459,0000D30 -19-17NOV15-10/10

Pro-Series XP™ Meter Configurations

Mini Hopper with Pro-Shaft™ Drive



A—Bushing (2 used) B—Nut (2 used) C—Mounting Location

1. Remove nuts (B) and install A48515 bushings (A).
2. Tighten nuts.
3. Verify that there is no plate installed on the adapter mounting location (C).

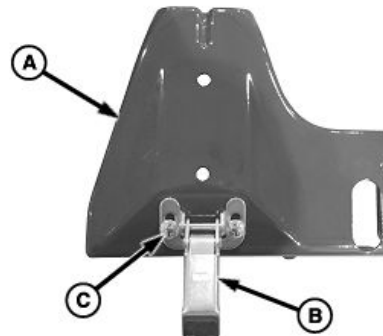
A88327—UN—06NOV15

JM79459,0000D31 -19-06NOV15-1/4

Mini Hopper with Flipper Drive

1. Install AA22119 latch (B), using M6 X 16 mm carriage bolts (A) and nuts.

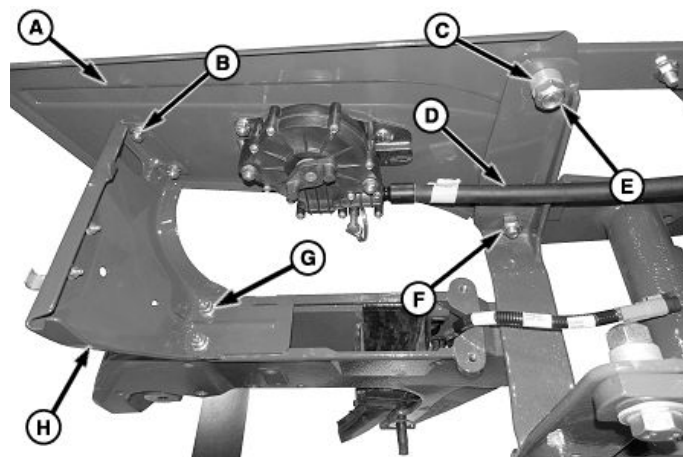
A—Support
B—Latch
C—Carriage Bolt, M6 X 16 mm (2 used)



A88326—UN—05NOV15

Continued on next page

JM79459,0000D31 -19-06NOV15-2/4



A—Side Plate
B—Nut, M8 (2 used)
C—Bushing (2 used)

D—Pro-Shaft™ Cable
E—Nut, M16 (2 used)

F—Nut, M16
G—Cap Screw, M10 X 25 mm (2 used)

H—Support Bracket

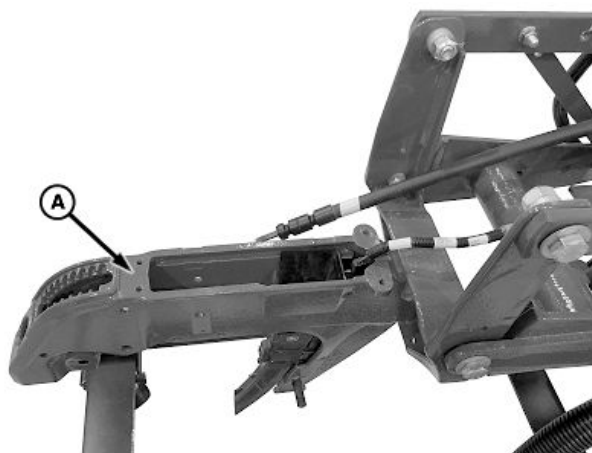
2. Remove nuts (E) and install A48515 bushings (C).
 3. Install nuts but do not tighten at this time.
 4. Loosen nut (F).
- NOTE: Side plate is installed between upright bracket and parallel arms.*
5. Install side plate (A).

6. Tighten nuts (E and F).
7. Attach support bracket (H) to side plate using M8 X 20 mm carriage bolts and nuts (B).
8. Install M10 X 25 mm cap screws (G).
9. Connect Pro-Shaft™ cable (D).

JM79459,0000D31 -19-06NOV15-3/4

A88325 —UN—05NOV15

Twin Row With Pro-Shaft™ Drive



A—Mounting Location

Verify that there is no plate installed on the adapter mounting location (A).

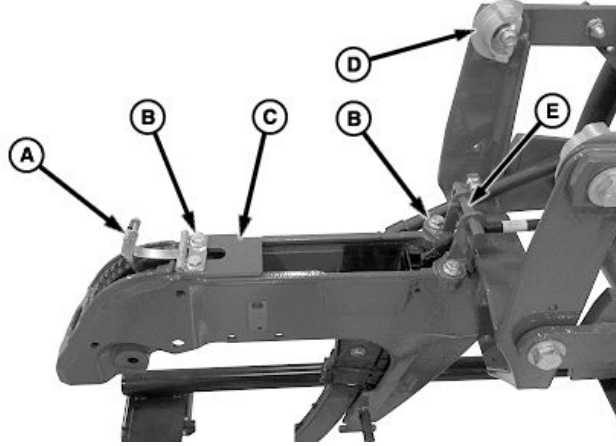
JM79459,0000D31 -19-06NOV15-4/4

A88328 —UN—05NOV15

MaxEmerge 5™ Meter Configurations

Mini-Hopper and 1.6 bu Hopper with Pro-Shaft™ Drive

NOTE: This configuration is assembled when test stand is shipped.



- A—Latch
B—Cap Screws, M10 X 25 mm (4 used)
C—Plate
D—Hopper Pivot (2 used)
E—Mini Hopper Pivot

1. Install AA79128 latch (A), plate, and A92975 mini hopper pivot using M10 X 25 mm cap screws.
2. Install A101044 hopper pivots (D) using M16 X 55 mm cap screws and lock nuts.

NOTE: Ensure that hopper pivots are oriented as shown.

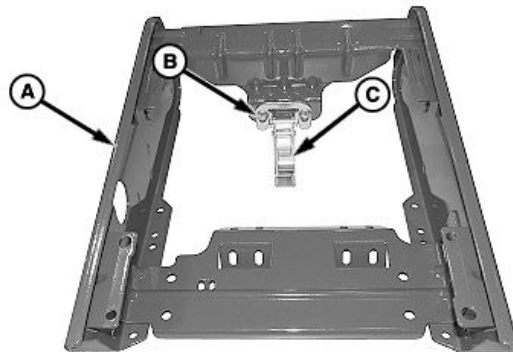
JM79459,0000D32 -19-04NOV15-1/6

A88077—UN—03NOV15

3 bu Hopper with Pro-Shaft™ Drive

1. Install AA22119 latch (C), using M6 X 16 mm carriage bolts (B) and nuts.

- A—3 bu Support Frame
B—Carriage Bolt, M6 X 16 mm (2 used)
C—Latch



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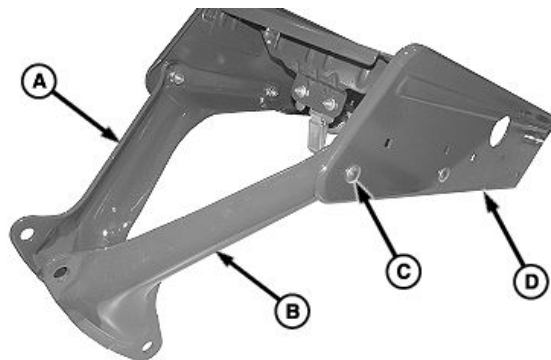
JM79459,0000D32 -19-04NOV15-2/6

A88078—UN—03NOV15

2. Attach A92723 right-hand support (A) and A92722 left-hand support (B) to AA79126 3 bu support frame (D) using M8 X 16 mm carriage bolts, and nut.

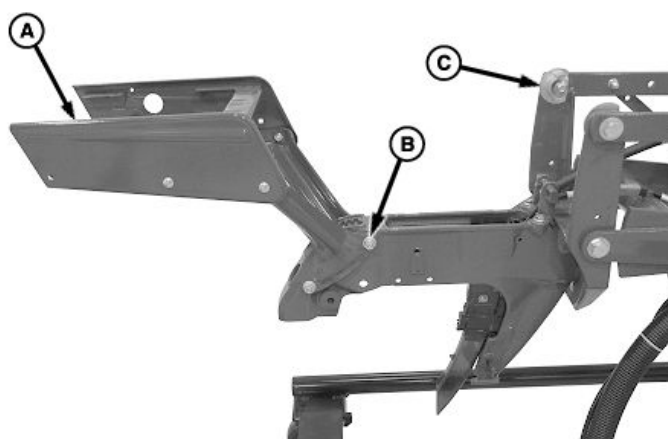
A—Right-Hand Support
B—Left-Hand Support

C—Carriage Bolt, M8 X 16 mm
(4 used)
D—3 bu Support Frame



A88079—UN—03NOV15

JM79459,0000D32 -19-04NOV15-3/6



A—Rear Support
B—Cap Screw, M12 X 90 mm (2 used)

C—Hopper Pivot (2 used)

3. Install rear support (A) using M12 X 90 mm cap screws (B) and nuts.
4. Install A101044 hopper pivots (D) using M16 X 55 mm cap screws and lock nuts.

NOTE: Ensure that hopper pivots are oriented as shown.

A88080—UN—03NOV15

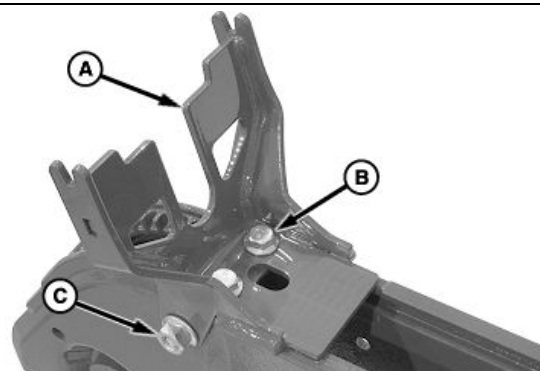
JM79459,0000D32 -19-04NOV15-4/6

Twin Row with Pro-Shaft™ Drive

1. Install AA79781 twin row support (A) using M10 X 25 mm cap screws (B).
2. Install M12 X 90 mm cap screw and nut (C).

A—Twin Row Support
B—Cap Screw, M10 X 25 mm (2 used)

C—Nut, M12

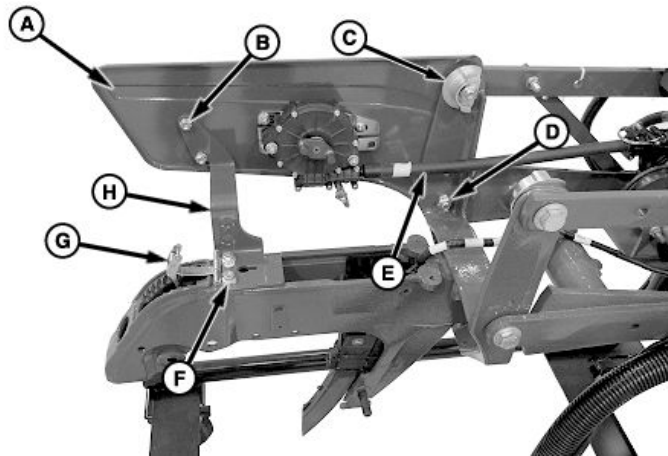


A88320—UN—03NOV15

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JM79459,0000D32 -19-04NOV15-5/6

1.6 bu Hopper with Flipper Drive



A—Side Plate
B—Nut, M8 (2 used)
C—Hopper Pivot (2 used)

D—Nut, M16 (2 used)
E—Pro-Shaft™ Cable

F—Cap Screw, M10 X 25 mm (2 used)
G—Latch
H—Support

NOTE: Side plate is installed between the upright bracket and parallel arms.

1. Loosen nuts (D) and install side plate (A).

NOTE: Ensure that hopper pivots are oriented as shown.

2. Install hopper pivots (C).

3. Attach A92725 support (H) to side plate using M8 X 20 mm cap screws and nuts (B).

4. Install AA79128 latch (G) using M10 X 25 mm cap screws (F).

5. Connect Pro-Shaft™ cable (E) to gearbox on side plate.

JM79459,0000D32 -19-04NOV15-6/6

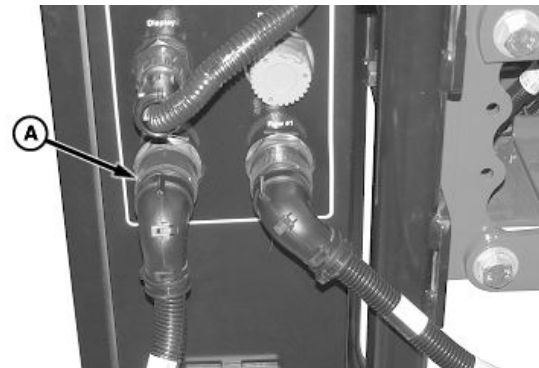
A88321—UN—03NOV15

ExactEmerge™ Meter Configurations

ExactEmerge™ seed meters can be tested using planter seed meter test stand, but are not mounted to the test stand. ExactEmerge™ seed meters are tested while still mounted on planter. To test ExactEmerge™ meters, position planter seed meter test stand near row unit to be tested and connect using the following instructions.

1. Connect RUC #2 wiring harness (A) to “Row #2” port on control box.

A—Wiring Harness



ExactEmerge is a trademark of Deere & Company

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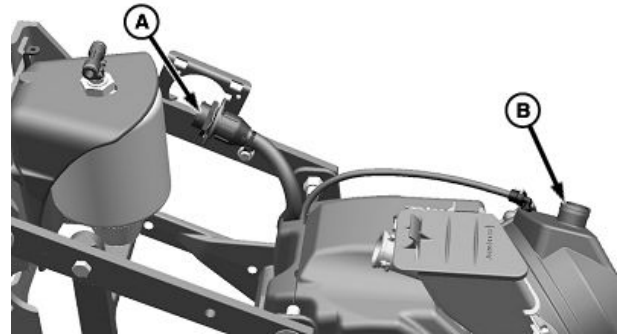
JM79459,0000D33 -19-16NOV15-1/2

A88075—UN—03NOV15

2. Connect RUC #2 wiring harness to connector (A).
3. Connect vacuum hose from test stand to vacuum port (B).
4. Place a bucket under the row unit to catch seed.

A—Connector

B—Vacuum Port



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Troubleshoot

Monitor Display

Symptom	Problem	Solution
Monitor display is blank.	Monitor not powered.	Check display power switch on control box is ON.
		Check control box main switch is ON.
	Emergency stop button is pressed.	Twist and pull out on emergency stop button to reset.
Monitor control keys do not function.	Monitor not responding.	Cycle monitor power.
	Monitor defective.	Replace monitor.
"These rows have a vacuum sensor error" message.	Vacuum sensor is not communicating with display.	Verify that vacuum sensor is connected.
	Vacuum sensor is defective.	Replace vacuum sensor.
"The following rows have a seed sensor or harness issue" message.	Seed sensor is disconnected.	Check seed sensor connections.
	Seed sensor is defective.	Replace seed sensor.
"Seed Metering System Issue on the Following Rows" message.	Meter motor disconnected.	Check meter motor connection.
	Meter motor harness has broken wire.	Replace meter motor wiring harness.
	Meter motor is defective.	Replace meter motor.
"The following Row Unit Controllers are offline" message.	Row unit wiring harness is disconnected.	Check wiring harness connections between row unit and control box.
	Row unit wiring harness is disconnected from row unit controller (RUC).	Check wiring harness on row unit is connected to row unit controller (RUC).
	Row unit controller (RUC) is blank.	See your John Deere dealer.

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Test Stand

Symptom	Problem	Solution
Seed meter does not turn when motor is turned ON. (Pro-Shaft™ Drive)	Pro-Shaft™ cable is not connected.	Connect Pro-Shaft™ cable to meter and lock into place.
Seed meter does not turn when motor is turned ON. (Flipper Drive)	Pro-Shaft™ cable is not connected to flipper drive gearbox.	Connect Pro-Shaft™ cable to flex drive gearbox.
	Meter tabs on flipper drive are locked into disconnect position.	Unlatch meter tabs on flipper drive to engage drive lugs.
Seed spacing is too wide or too close.	Meter gear box ratio is incorrect.	Ensure planter drive type is correct on "Row Setup" page.
Singulation percentage suddenly drops drastically during test.	Insufficient seed pool in meter.	Ensure enough seed is added to seed hopper to keep meter full throughout the test.
	Seed has "bridged" in hopper stopping seed flow to meter.	Gently shake seed meter during test to prevent seed "bridging" and stopping seed flow.
Test stand does not turn ON.	No power to test stand.	Connect power cord to test stand. Turn test stand main power switch ON.
Vacuum level does not change on display when Wet/Dry Vac turned ON or adjusted.	Vacuum level sensor hose not connected.	Connect vacuum sensor hose to vacuum level sensor and vacuum hose fitting.
Wet/Dry Vac is not functioning.	No power to Wet/Dry Vac.	Ensure that Wet/Dry Vac is plugged into "Vacuum Outlet", control box vacuum switch is ON, and power switch on Wet/Dry Vac is ON.

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