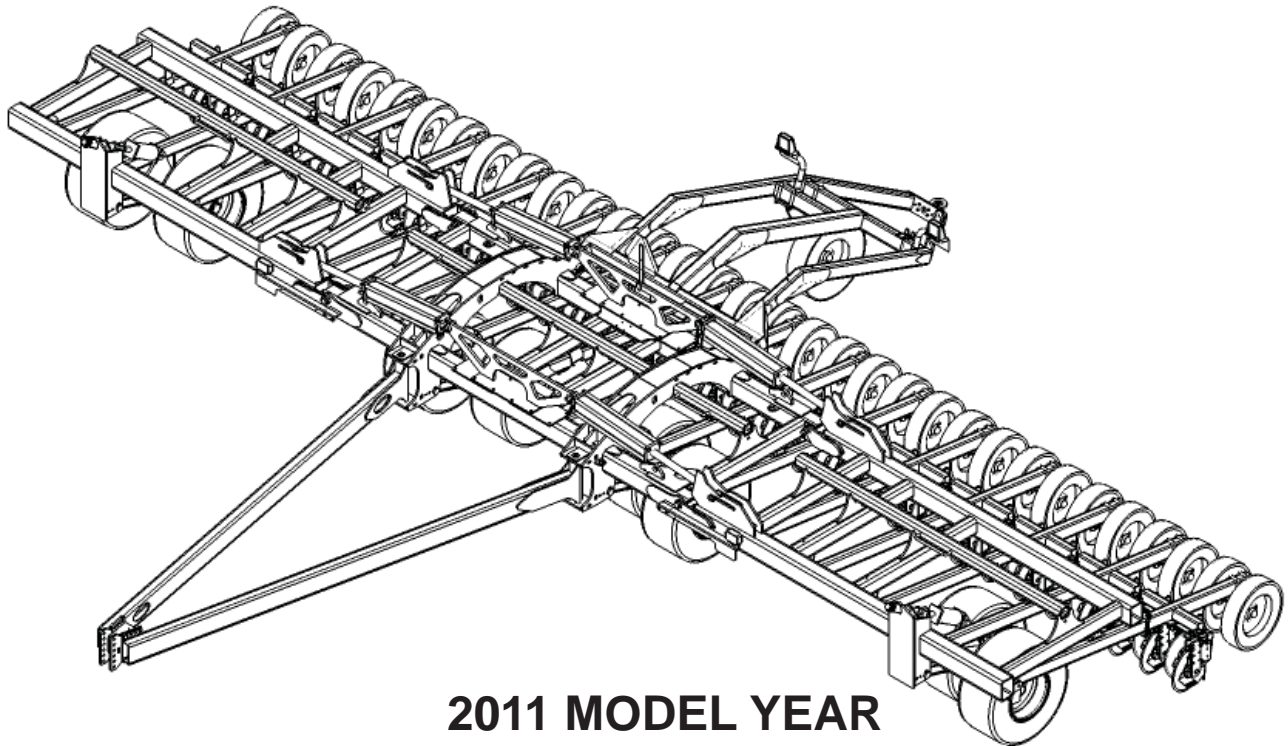


# Amity

TECHNOLOGY



## OWNERS OPERATING MANUAL



2011 MODEL YEAR

# Single Disc Drill

Amity Technology, LLC  
2800 7th Avenue North  
Fargo, ND 58102  
(701) 232-4199  
[www.amitytech.com](http://www.amitytech.com)

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1. **General Provisions.** This Warranty shall apply to the original purchaser of (1) any new and unused machine manufactured by Amity Technology, LLC ("Amity"), and (2) any new and unused part which is manufactured by Amity for use in an Amity machine, jointly referred to as "Products," whether such Product is purchased through a dealer or directly from Amity. Under this Warranty, Amity will repair or replace, as it chooses in its sole discretion, any covered Product, or any component thereof, which Amity determines to be defective. This Warranty shall be in effect for a period of twelve (12) months ("the Warranty Period"), beginning on the date of delivery of the covered machine or part by the dealer or Amity to the purchaser ("the Warranty Start Date"). The purchaser must pay the cost of transportation of a Product to be repaired or replaced to and from an authorized Amity dealer. This Warranty may not be transferred from the original purchaser of a Product to any other person. This Warranty does not give a purchaser the right to any relief other than repair or replacement of the Product, and it specifically does not allow for consequential or incidental damages, exemplary or punitive damages, or costs and fees.
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3. **Procedures for Obtaining Service.** To secure Warranty service, a purchaser must (1) report the defect to an authorized dealer and request repair within 45 days of the failure and within the Warranty Period; (2) present evidence that this Warranty applies to the Product; (3) present evidence of the Warranty Start Date; and (4) bring the Product to an authorized Amity dealer within a reasonable period of time after reporting the defect.
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6. **Dispute Resolution.** Any controversy or claim arising out of or relating to this Warranty must be settled by arbitration in Fargo, North Dakota, at a time and location designated by the arbitrator, but not exceeding 30 days after a demand for arbitration has been made, and may be conducted by electronic, video, or other technical means. Arbitration will be conducted by the American Arbitration Association in accordance with its Rules of Commercial Arbitration, and judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. The arbitrator will have the authority to order Amity to undertake a repair or replace any Product, at its election, if the arbitrator finds that this Warranty requires Amity to do so. The arbitrator will not have the authority to impose any other remedy against Amity, including without limitation consequential or incidental damages, exemplary or punitive damages, or costs and fees.

• AMITY TECHNOLOGY, LLC • 2800 7TH AVENUE NORTH • FARGO, ND 58102 • e-mail address: [info@amitytech.com](mailto:info@amitytech.com) •

**(701) 232-4199      fax (701) 234-1716**

Prices subject to change without notice

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# CONGRATULATIONS!

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Congratulations on your purchase of a Single Disc Drill! Your Single Disc Drill has been designed to be durable, versatile, and simple to use.

The following pages contain important information about the safe operation, adjustments, and maintenance of your implement. Read this manual carefully to learn how to set up, operate and use this equipment.

## PRECAUTIONS

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### Safety First

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The purpose of this manual is to assist you in safely operating and maintaining your Amity Technology equipment. It is the responsibility of the owner to ensure that anyone operating this equipment thoroughly reads and understands the information in this document.

It is not possible to overstate the importance of safety. Serious injury or death can result from improper operation of any farm equipment. We have taken great care to point out potential hazards that require special consideration.

#### **Warning and Caution Symbols**



*This manual uses the following symbols to signify caution and warning. For your own safety take note of these symbols and exercise caution when working with this equipment.*



#### **Warnings**

***ALWAYS** know your equipment. Read the owners manual before operating.*

***DO NOT** allow anyone to ride on the air system.*

***ALWAYS** install and transport stops when transporting the drill.*

***ALWAYS** use an adequate tow vehicle.*



***ALWAYS** remember to properly secure the safety chain.*

***DO NOT** Transport at speed greater than 20 MPH (32 KmPH) for 30ft and 40ft drills and 15MPH for 50ft and 60ft drills.*

***DO NOT** modify or alter this equipment without first contacting Amity Technology, LLC.*

#### **Caution**



***ALWAYS** keep decals free of dirt and replace if they become damaged. See the parts section for proper placement.*

***ALWAYS** avoid high-pressure fluids. Use a piece of cardboard to search for suspected hydraulic leaks.*

## Product Identification Number

---

The Manufacturer has placed a Product Identification Number (P.I.N.) tag on your implement. **It is located on the main frame tube in front.**

Record the Model and Serial Number of your implement below. You will reference this number when ordering repair parts or when requesting information for your implement. When ordering parts or when requesting information or assistance, always give the model (30 ft, 40 ft, 50 ft, 60 ft) and product identification number.

**Model** \_\_\_\_\_

**S/N** \_\_\_\_\_



# SINGLE DISC DRILL OPERATING

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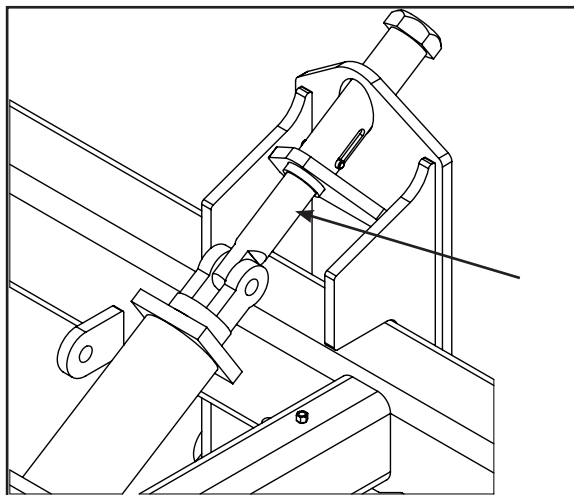
## Leveling

---

The Single Disc Drill requires no front to rear leveling as the entire row units are on a single rank. Side to side leveling is accomplished by adjustment rods on the wing cylinders.

### *Note*

*It is normal for the drill frame to be angled down in the front. This allows for better ground clearance when the row units are raised.*



*Adjustment Rod*

## Leveling Procedure

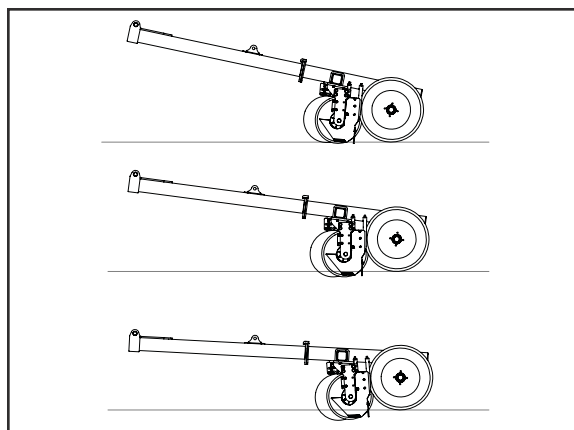
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1. Park the drill on a level surface.
2. Rephase the depth cylinders by holding the hydraulic lever in the raised position until all of the cylinders are fully extended.
3. Measure the distance from the ground to the top of the front frame bar of the drill on the main frame.
4. Adjust the threaded rods on the **wing** depth cylinders until all frame measurements are the same.
5. Make sure to tighten the jam nuts on all adjustment rods.

## Depth Setting

---

The depth of the single disc row units is controlled by the packer wheels. Because the wheels are very close to the discs, depth control is very precise and will maintain an even depth for seeds planted at any depth. Each of the toolbars on the drill is totally independent so ground following is superior even on uneven terrain.



*Seeding Depth Angle*



Seeding depth is set by the height of the drill frame. As the drill is raised, the seeding depth is decreased. As the drill is lowered, the seeding depth is increased. Frame height is controlled by depth control collars in the lift cylinders. The same combination of collars needs to be used on each cylinder location.

Seeding depth needs to be determined by finding seeds in the furrow behind the drill. A seed finding tool with a ruler inscribed on it is available to help determine seed depth. Use the tool to uncover seeds in the seed furrow. Place the flat blade of the tool on the packer track and press the short end of the tool into the seed furrow next to the uncovered seed until the tool is level with the field surface. The seeding depth can be read on the inscribed ruler.



*Locate seed behind packer wheels*

### Depth setting tip:

When setting the depth, start at a shallow seeding depth and set deeper as needed. Starting at a depth deeper than the desired seeding depth will needlessly bring up muddy soil.



*Seed finding tool 34569*

## Depth Control Hydraulics

The wheels that carry the drill also set the depth for the drill. They are installed in a master, slave configuration. One feature of this design is the ability for the operator to "rephase" or re-coordinate the cylinders so that they are all at the same level. Rephasing purges any air out of the cylinders to their fully extended position.

The procedure to rephase the cylinders is to hold the hydraulic lever in the raised position for several seconds after the cylinders have reached their fully extended position. It is a good operating practice to rephase the cylinders several times a day while making field end turns.



*Depth stops on cylinders*

## Depth Control Flow Divider

---

The flow divider valve maintains equal height of the SDD as the drill is raised and lowered. If an unequal balance between the LH and RH side of the drill occurs, or if there is an uneven level between cylinders on one side of the drill, the system can be equalized by fully raising the main lift and maintaining continuous flow to the system for a period of time. This will allow the flow divider valve to synchronize the LH and RH side of the drill as well as allowing the phasing cylinders to flush and level out. This procedure can only be performed when raising the drill, not lowering.

If air is introduced into the main-lift circuit either from a hydraulic leak or from maintenance, the system must be purged. This can be accomplished by raising and lowering the main lift circuit many times while intermittently holding the pressure in the raise position.



*Flow divider valve lower right in photo*

## Headland Turns

---

The preferred procedure when making field end turns is to raise the drill frame. By this method, the row units maintain down pressure. If the row units are raised on the turns, it is likely that you will be well into the next pass before down pressure is fully restored.



## Depth Stop Progression

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| B    | B    | B    | B    | B    | B    | B    | B    | B    | B    | B    | B    | B    | S    | S    | S    | S    |
| S    | S    | S    | S    | S    | S    | S    | S    | S    | S    | S    | S    | S    | G    | G    | G    | G    |
| G    | G    | G    | G    | G    | G    | G    | G    | G    | G    | R    | G    | R    | G    | G    | G    | G    |
| G    | G    | G    | G    | G    | G    | G    | R    | G    | R    | R    |      |      | G    | R    | G    | R    |
| G    | G    | G    | G    | R    | G    | R    | R    |      |      |      |      |      | R    | R    | R    | R    |
| R    | R    | R    | R    | R    |      |      |      |      |      |      |      |      | R    | R    |      |      |
| R    | R    | R    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| R    | R    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| R    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 8.25 | 7.75 | 7.5  | 7.25 | 7.00 | 6.75 | 6.50 | 6.25 | 6.00 | 5.75 | 5.5  | 5.25 | 5.00 | 4.75 | 4.50 | 4.25 | 4.00 |
| 21.0 | 19.7 | 19.1 | 18.4 | 17.8 | 17.1 | 16.5 | 15.9 | 15.2 | 14.6 | 14.0 | 13.3 | 12.7 | 12.1 | 11.4 | 10.8 | 10.2 |

inches  
cm

|      |      |      |      |      |      |      |      |      |      |      |      |     |     |
|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|
| S    | S    | S    | S    | S    | S    | S    | S    | G    | R    | G    | R    | G   | R   |
| G    | G    | G    | G    | G    | R    | G    | R    | R    | R    | R    | R    |     |     |
| G    | G    | R    | G    | R    | R    |      |      | R    | R    |      |      |     |     |
| G    | R    | R    |      |      |      |      |      |      |      |      |      |     |     |
|      |      |      |      |      |      |      |      |      |      |      |      |     |     |
| 3.75 | 3.50 | 3.25 | 3.00 | 2.75 | 2.50 | 2.25 | 2.00 | 1.75 | 1.50 | 1.25 | 1.00 | .75 | .50 |
| 9.5  | 8.9  | 8.3  | 7.6  | 7.0  | 6.4  | 5.7  | 5.1  | 4.4  | 3.8  | 3.2  | 2.5  | 1.9 | 1.3 |

inches  
cm

**Note:** The values in this chart represent the total length of depth stops installed.  
See decal on Single Disc Drill

When starting for small grains or beans the 5 inch (12.7 cm) combination (BLUE, SILVER, RED) would be a good starting point, from there add or remove stops to obtain the desired seeding depth.

When starting with canola, the 7 inch (17.8 cm) combination (BLUE, SILVER, GREEN, GREEN, RED, RED) would be a good starting point, from there add or remove stops to obtain the desired seeding depth.

Equal number of stops should be installed in all depth cylinders. Refer to the rephasing procedure if a cylinder(s) do not retract completely against stops when lowering drill.

Depth stop kits and individual stops are available through Amity Service Parts if replacements are needed.

34693 Kit-depth stop, contains stops listed below

66022 Stop .50 in -1.27 cm Red-3

66203 Stop .75 in -1.91 cm Green-3

54004 Stop 1.5 in-3.81 cm Silver-1

66025 Stop 3.0 in-7.62 cm Blue-1

## Down Pressure - Floating Rear Hitch

The down pressure on the row units is controlled by a hydraulic cylinder on each toolbar. The cylinders provide a constant down pressure on the toolbars through their entire range of motion. An active hydraulic circuit maintains uniform pressure to each cylinder and is controlled on the go by the operator. The down pressure on the floating rear hitch models can be adjusted from 200 PSI to 1200 PSI.

## Setting the Down Pressure Floating Rear Hitch

The down pressure on the drill has to be set high enough for disc penetration and proper packing. The amount of down pressure required will vary based on field conditions, seeding depth, soil type, and ground speed. Inspect the packer wheel track after the first pass in every field to ensure the down pressure is set correctly. Increase the pressure setting if the track is very light or not present. Decrease the pressure setting if the track is very deep and over compacting the soil. In hard conditions your drill may require an optional ballast kit to add weight to the wing frames.

Ensure the tractor hydraulic remote is set to provide approximately 5-7 gallons-per-minute of flow. Contact your dealer for information on how to set the tractor remote hydraulic flow. Too low of a flow setting will result in slow reactions to terrain changes, while too high of a flow setting will result in excess back pressure which artificially raises the pressure setting and causes erratic pressure readings.

To set maximum pressure on the row units, increase down pressure until you see the carrying wheels start to rise off of the ground. Slightly reduce the pressure to ensure that the frame wheels maintain contact with the ground. Carrying the frame so that the wheels are off of the ground will cause lack of depth control.

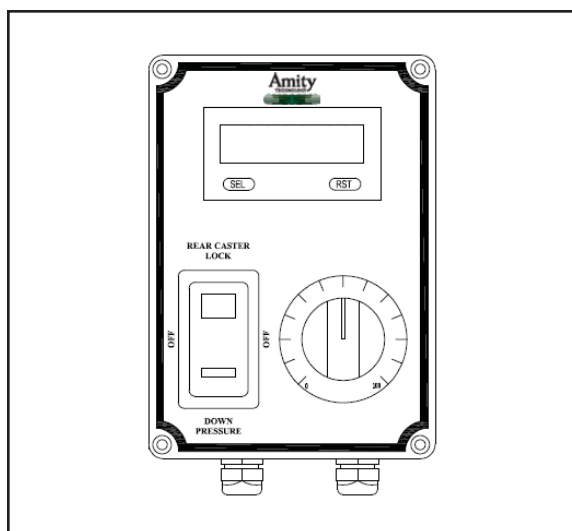
In very light soil conditions, the pressure can be reduced to approximately 200 psi on the cylinders. If the packer tires still are making larger than desired furrows, the hydraulic lever can be set to float to take away all down pressure from the cylinders. With the tractor valve in float the openers operate only on their weight.

### Operating tip:

If the drill is getting bogged down in mud, increasing the pressure to maximum will lift the frame wheels well off of the ground and transfer weight to the tractor drawbar to help you get out of trouble.



*Down pressure cylinders*



*Down pressure control box in cab*



*Control vlave*

## Down Pressure - Hydraulic Lift Assist

---

The down pressure hydraulic system on units equipped with the Hydraulic Lift Assist behaves differently than on units equipped with the floating rear hitch. This particular system uses the same down pressure cylinders, pressure control valve, control box, and shares the same general principle of operation as units with a floating rear hitch, but has a different method of setting the down pressure and hydraulic flow.

### Integrated Pressure Control Valve with Flow Control

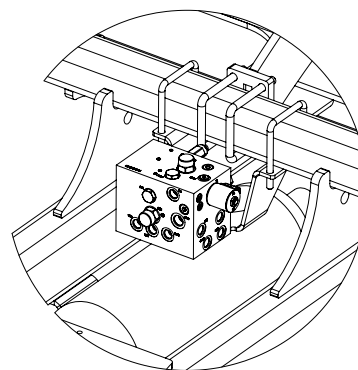
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The pressure control valve is integrated into the hydraulic lift assist control valve block in order to simplify the external hydraulic plumbing and reduce leak points. A fixed 5 gallon per minute flow control valve is also included in this block which regulates the amount of flow being provided to the down pressure system. This valve takes the guesswork out of setting hydraulic flow from the tractor remote. It is recommended to set the hydraulic remote controlling the toolbar/down pressure to 100% output. This flow setting will saturate the fixed flow control valve, allowing it to maintain a constant oil supply to the down pressure system. This flow setting will ensure that the tractor valve is fully open in order to reduce the back pressure on the down pressure return line.

---

#### **Note**

*Ensure that the tractor remote for the down pressure hydraulics is always engaged (ON) during field operation and set to 100% flow. Constant pressure is needed for proper down pressure operation and for proper operation of the Regeneration valve.*



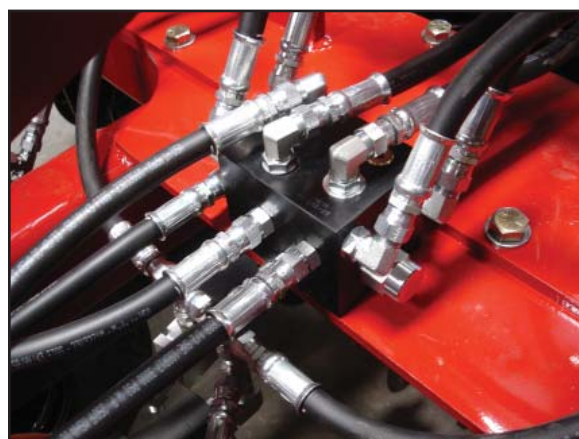
*Integrated pressure control valve*

## Setting the Down Pressure Hydraulic Lift Assist

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An additional shuttle valve is used on the down pressure circuit which puts the system into "Regeneration Mode" when the toolbars are lowered. Regeneration mode optimizes the operation of the down pressure system by reducing the working volume of the down pressure cylinders. This means that less hydraulic oil and more hydraulic pressure is needed to operate the system. Regeneration mode is automatically engaged/disengaged by the lowering and raising of the toolbars.

Approximately 3X more pressure is needed on units equipped with the regeneration valve to produce the same amount of down pressure. For example, if 500 psi of down pressure is the optimum setting on a unit with a floating rear hitch with standard down pressure hydraulics, then 1500 psi is the optimum setting on a unit with the regeneration valve. The Hydraulic Lift Assist pressure control valve can be adjusted from 150 psi to 2500 psi.



*Regeneratijon Valve*

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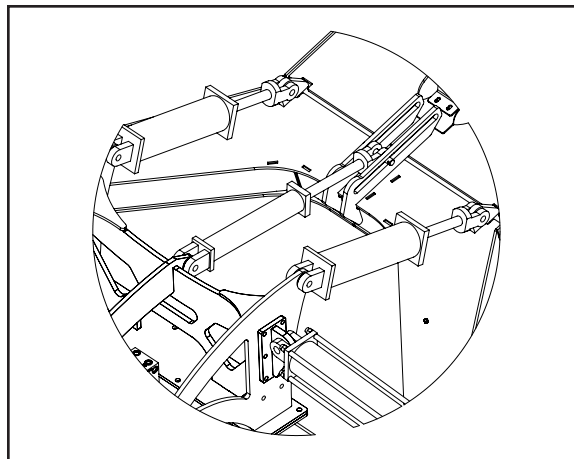
#### **Note**

*Do not use "Float" with units equipped with the Hydraulic Lift Assist. Placing the toolbar tractor remote in float will not allow the Hydraulic Lift Assist to follow uneven terrain during seeding and will cause the Lift Assist to carry the main frame off of the ground. For applications where no down pressure is required, set the down pressure to the minimum setting (~150 psi).*

## Weight Transfer System

---

Units equipped with the Hydraulic Lift Assist also utilize an additional hydraulic cylinder that transfers weight from the rear hitch onto the drill frame during seeding. Weight is transferred proportionally to the down pressure setting, the higher the down pressure setting the more weight is transferred. Weight is only transferred when down pressure is being applied to the toolbar. The weight transfer cylinder is automatically engaged when the toolbars are lowered and automatically disengaged when the toolbar are raised to allow for proper operation of the Hydraulic Lift Assist system during transport.



*Weight transfer cylinder*

Units equipped with the weight transfer cylinder will no longer be able to suspend the carry tires off the ground by raising the down pressure setting to the maximum pressure. The carry tires, however, can be suspended off the ground if the drill is stationary (not moving) and the frame is lowered from its maximum position to its minimum position while maintaining the highest down pressure setting (2500 psi).



Caution!

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*Ensure the weight transfer cylinder is fully extended into the slot mechanism on the lift assist before transporting your drill. This can be accomplished by engaging the hydraulic remote to raise the toolbars. This can be done with the toolbar transport lock valve open or closed*

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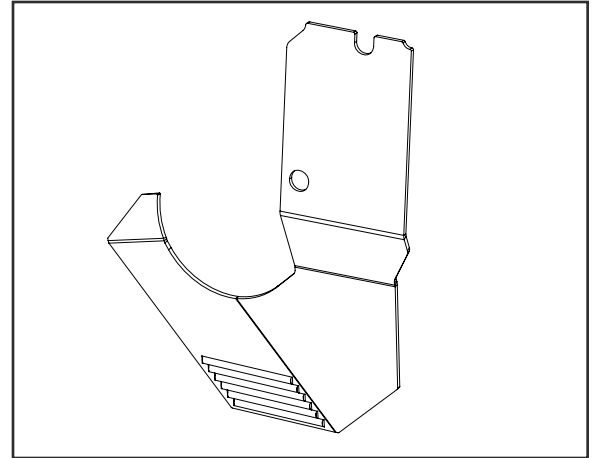
### **Note**

*The toolbar and wing hydraulic circuit must be connected directly to the factory installed hydraulic remotes on your tractor. This circuit is not intended to be used with aftermarket add-a-valve units or similar type devices. These devices are very restrictive to hydraulic flow and the increased back pressure will inhibit proper operation of your implement.*

## Scraper Adjustment

---

When properly set, the set scrapers will have contact along the entire leading edge of the scraper, but will not drag hard enough on the disc to inhibit turning. Two adjustments on the scraper when properly set will keep the soil and crop residue from getting between scraper and disc blade yet operate at a low pressure so the scrapers obtain maximum life. The lower bolt on the scrapers will set the spring tension on the scraper and needs to be tightened until the scraper is against the disc along the entire leading edge. Make sure that the scraper is in the middle of the slot on the top nut while setting the bottom nut.

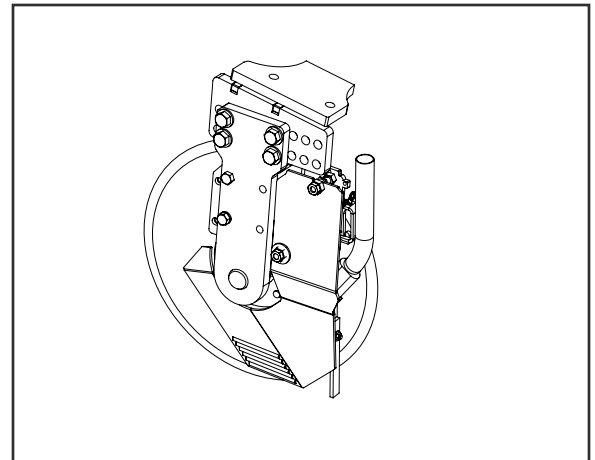


*Seed Scraper*

## Scraper Adjustment Procedure

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- With two flat .50" washers assembled under bottom spring tighten the shouldered adjusting nut (lower nut) until the scraper just touches the disc all along the leading edge keeping the top grooved nut in a neutral position (scraper not touching either side of groove).
- Tighten the upper grooved nut until the bottom corner of the edge of the scraper touching the disc just lifts off the disc. Back off the grooved nut until the scraper again just touches the disc all along the edge.



*Seed scraper adjustment points*

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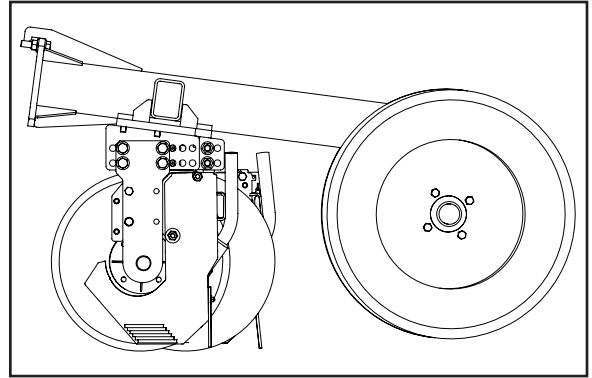
### **Note**

*Discs and scrapers have a coating of paint on them when shipped from the factory. It may take a few passes in the field before scrapers are wearing against discs properly. Some periodic adjustments to scrapers may be required depending on soil, residue conditions and scraper wear.*



## Seed Row Offset

The seeding disc pairs can be offset between a minimum of .5 inches to a maximum of 6.5 inches. They are preset at the factory to 4.5 inches. If the offset is too small, in wet sticky conditions, soil will be carried around with the discs causing an uneven seed bed. If offset is too large, the soil movement may not be enough for adequate packing. In very dry, sandy soils it may be beneficial to reduce the offset. In extremely wet, sticky soils, if soil rolls forward between the discs, increase the offset.



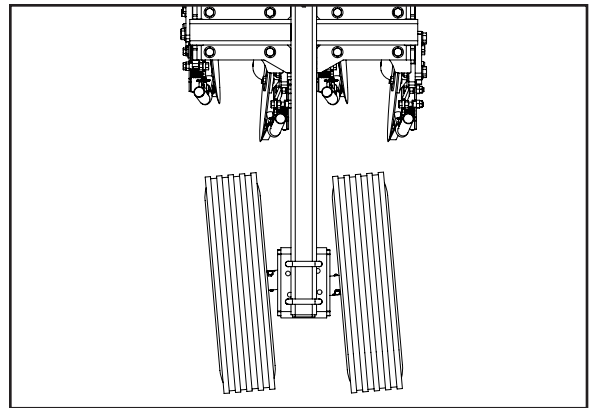
*Seed strut assembly*

## Packing System

Each packer tire on the drill packs the two seeding rows in front of it as well as the fertilizer furrow if the optional fertilizer attachment is installed. The packer tires are set to operate at a skewed angle. This has two benefits:

1. Soil loosened by the discs is pushed more reliably into the seed furrows.
2. In wet, sticky conditions, the scuffling action on the tires results in the tires running cleaner than if they ran straight.

Half of the tires are skewed to the right and half to the left to eliminate side draft on the drill.

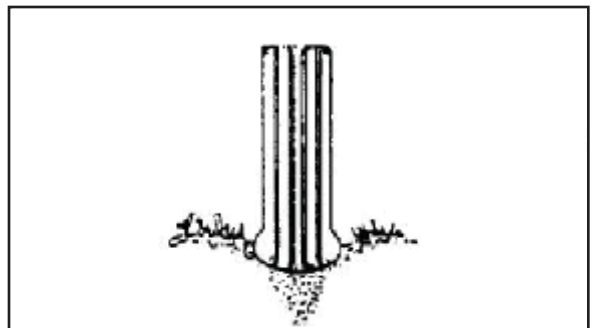


*Packer tires skewed to the left*

## Packer Tire Pressure

Dry soil conditions - 10-15 PSI set at factory

Wet soil conditions - Pressure can be set as low as 8 PSI to allow tire to flex to shed mud



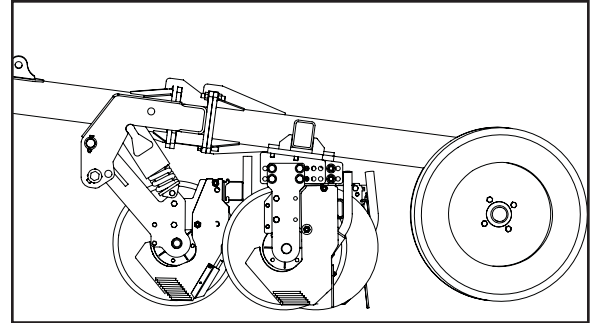
*Packer tire at lower pressure*

## Fertilizer Bander Attachment

The addition of the fertilizer bander attachment allows placing ammonia, dry or liquid fertilizer between each pair of seed rows. The depth on the fertilizer opener is set approximately one inch deeper than the seed openers when assembled at the factory.



*High speeds in rocky soil types may cause damage to the fertilizer bander attachment as well as cause inconsistent product placement.*



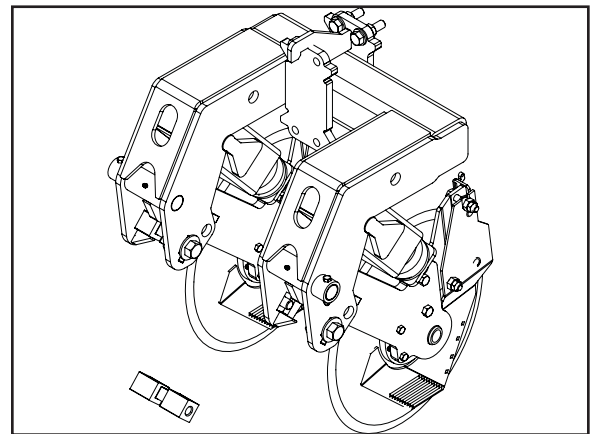
*Fertilizer bander*

## Adjusting Bander Depth

Depth on the fertilizer opener is set by means of a cam block on the lower front of the fertilizer assembly. Grooves in the cam block act as an adjustable stop for the fertilizer strut, setting the cam to a shallower slot reduces depth and setting the cam to a deeper slot increases depth.

To adjust the cam:

1. Raise toolbars fully off the ground.
2. Place a wood block under the depth on fertilizer bander.
3. Lower the toolbar to compress the spring on fertilizer bander.
4. Remove bolt from one end of the cam bar.
5. Slide cam bar out of the mount and rotate to a new position.
6. Insert cam bar and secure with bolt and washer.



*Depth block fertilizer bander*

## Hydraulic Lift Assist Rear Hitch

A lift assist rear hitch is standard equipment on 50 ft and 60 ft drills and an option on 40 ft drills. On the 40 ft drills, the lift assist hitch is required if the drill has mid row fertilizer attachments or if the 5250 air system is used with the drill as a pull behind tank.

The purpose of the hitch is to assist carrying the drill when it is being transported. A hydraulic accumulator pressurizes the cylinders on the hitch in transport to carry a portion of the weight of the drill and to transfer a portion of the weight of the drill to the tractor.

When the drill wings are raised the accumulator will charge to the proper pressure automatically. The accumulator will automatically discharge when the drill wings are lowered.

The rear lift assist system utilizes a hydraulic control valve and hydraulic accumulator to:

- Maintain constant pressure on the rear lift assist cylinders when transporting the Single Disc Drill.
- Minimize pressure for reduced weight transfer while seeding in the field.

The rear lift assist system is pressurized as the wings are folded. The rear lift assist lockout valve must be open for the system to be pressurized. (see decal 36102) **Ensure that the main lift system is in transport height before pressurizing the rear lift assist.** After the wings are folded, check the rear lift assist pressure gauge to ensure proper transport pressure is in the **Green** area on gauge and subsequently close the lockout valve to isolate the system from the tractor. If proper pressure is not met, the wings can be unfolded and folded again in order to achieve proper transport pressure.

The transport system is de-pressurized automatically when the wings are unfolded. The rear lift assist lockout valve must be open for the system to be de-pressurized. If the pressure is not released from the system from un-folding the wings, hold the hydraulic remote in the lower position to fully extend the wing cylinders until the rear lift assist pressure drops to zero. .

---

### Note

*The rear lift assist system must be depressurized and the lockup valve must be open before the SDD can be used for seeding, this allows the rear transport wheels to float over the field*



*Rear hitch lift assist*



*Accumulator and control valve*

The rear lift assist pressure gauge is marked with an optimum range that the pressure should be within for seeding. If the pressure is ever above the seeding range, check to ensure the rear lift assist lockout valve is open. The lift assist pressure can be relieved by extending the wing cylinders all the way and holding them out until the pressure drops within normal range.

The rear lift assist control valve is calibrated at the factory and does not require adjustments.



## Lockout Valve Positions

---

When tractor is Dis-Connected:

- Lift Assist - Closed
- Toolbar - Open

When Transporting:

- Lift Assist - Closed
- Toolbar - Closed

When Seeding:

- Lift Assist - Open
- Toolbar - Open



Valve on left is **Lift Assist**, Valve on right is **Toolbars**

*Lock out valves in closed position  
see decals 36102 & 36103*

## Hydraulic Lift Assist Caster Lock

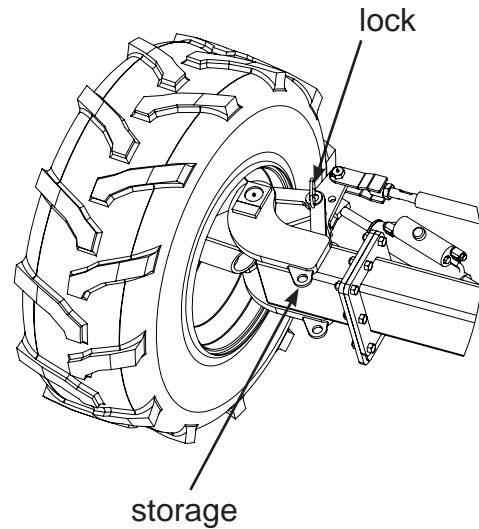
The wheels on the hydraulic lift assist are mounted on a caster-type steering system. This steering system must be locked when transporting your unit or when backing up with your unit.

- **Transport:** Always install the supplied caster lock pins when transporting your drill. Install both caster lock pins into the left and right steering knuckle when the wheels are aligned in the straight ahead position. Do not use the remote cylinder locking feature for transport.
- **Field Use:** Ensure the caster lock pins are dis-engaged and are in the storage position. Ensure "Down pressure" is enabled on the control box. The caster wheels on the Hydraulic Lift Assist must be free to turn when in the field.
- **Backing Up:** Your Single Disc Drill is equipped with a hydraulic lock cylinder that can be locked remotely from control box in the tractor cab. This feature is designed for use ONLY when backing up. Ensure the wheels on the Hydraulic Lift Assist are in the straight position before locking this cylinder. Do not use this feature for transport, use the supplied caster lock pins.

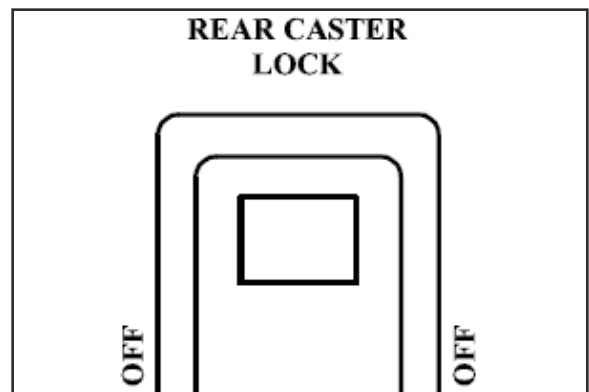
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### *Note*

*When energizing the Caster Lock Cylinder with the remote "Rear Caster Lock" switch, the cylinder will lock and hold the lift assist steering system in whatever position its currently at, which may not be turned straight. Ensure the wheels are turned straight before using this feature. Do not use this feature when transporting your drill.*



*Rear lift assist pin locations*



*Rear Caster Lock Switch*



## Connecting to Tractor

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When hitching to tractor, connect the hydraulic hoses so that hydraulic power can be used to raise or lower the front hitch to match the tractor drawbar. Keep the drill frame lowered to the depth control collars and use the down pressure circuit to adjust the hitch level. Be sure to attach the safety chain before transporting drill. A jack is provided on the front hitch of the SDD with rear assist to aid in connecting tractor.

## Unhooking the Drill From Tractor (Preferred method wing down)

---



**WARNING:** The Single Disc Drill with floating hitch has a large amount of up force with the row unit off of the ground. It is imperative to lower the drill frame completely and rest the row units on the blocks when disconnecting from the tractor. Failure to do so may result in sudden upward movement of the hitch that could result in injury or death. Use extreme caution and stand well clear when moving tractor away from the drill. (See decals 36099 & 36101)

## Unhooking Instructions With Wings Folded or Unfolded

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- Remove all lift cylinder depth stops.
- Park implement on firm level ground and block main frame tires.
- Install wing lock pins (wings folded only).
- Fully raise toolbars (cylinders retracted).
- Place blocks under discs on all main frame toolbars to support and stabilize implement. Blocks may vary in height depending on ground contour.
- Lower main frame until hitch is floating in tractor clevis.
- Install depth stops to take up remaining stroke on the main frame lift cylinders.
- Use jack to support hitch.
- Unhook hydraulic/electrical lines and safety chains before driving away.
- Unhook all hydraulic/electrical lines and unhook the safety chain from the tractor. Use the jack to raise the hitch off the tractor's drawbar.

## Transporting

---



**WARNING:** The 30 ft and 40 ft Single Disc Drill without rear wheel assist have a large amount of up force on the front hitch with the row units off of the ground. Tow only with a tractor or truck with sufficient weight to counter the up force. Make sure the toolbar lockup valve is in the closed position to transport. If SDD is equipped with rear assist, make sure pressure gauge dial is in the *Green* area to transport.



**CAUTION:** Always maintain proper tire air pressure

**30 ft and 40 ft** Main tire pressure - 75 psi (See decal 36105)

Wing, Lift Assist and Floating Hitch - 40 psi

**50 ft and 60 ft** Main tire pressure - 90 psi (See decal 36288)

Wing, Lift Assist - 40 psi

## Transport Speeds

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**WARNING:**

*30 ft and 40 ft* Max towed speed is 20 MPH (32 km/hr) (See decal 65277)

*50 ft and 60 ft* Max towed speed is 15 MPH (24 km/hr) except downhill, speed must be reduced to 10 MPH (16 km/hr). (See decal 36264)



**WARNING: NEVER TRANSPORT FULLY LOADED AIR CART BEHIND SINGLE DISC DRILL.** Always fill air car with product in the field being seeded. (See decal 36106)



**WARNING: All Single Disc Drills are equipped with wing locks, make sure pins are installed before transporting. Always remove wing locks before unfolding.** (See decal 65302)



**WARNING: Always transport Single Disc Drills with mechanical toolbar locks engaged.** (see page 23)

## Folding and Unfolding Wings

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**ALWAYS UNFOLD ON LEVEL GROUND**



**CAUTION: Never fold and unfold the Single Disc Drill while in motion. Always bring tractor and implement to a complete stop before doing so. Folding and unfolding while in motion may cause damage to the wing lift components and cylinders.**



**Caution: When folding wings up before transport, make sure the frame is at the height you will be transporting in. This will insure proper pressurization of the rear lift assist circuit.**

## Toolbar Lock Operation

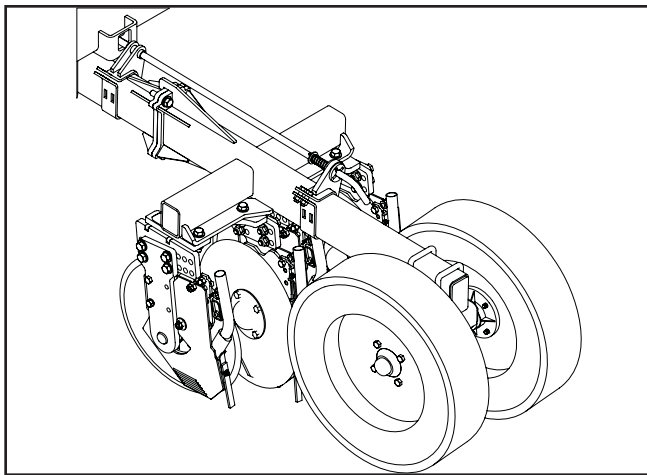
Use toolbar lock when working under implement or transporting drill for long distances.

Locking:

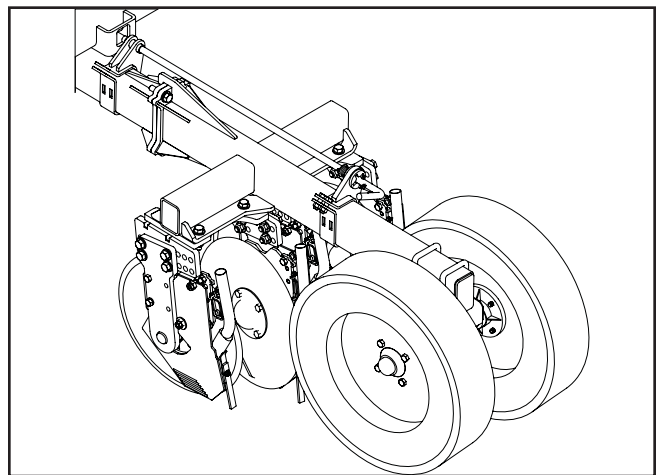
1. Raise toolbars fully off the ground.
2. Pull handle straight back towards packer tire until roll pin A comes out of lock groove.
3. Rotate handle until roll pin A is lined up with alignment groove.
4. Allow spring to pull handle forward until roll pin B sits in lock groove.
5. Repeat steps 1 through 4 for all toolbars.

Unlocking:

1. Raise toolbars fully to release pressure between locking pawl and striker.
2. Pull handle straight back towards packer tire until roll pin A comes through alignment groove.
3. Rotate handle, in the opposite direction of locking, until roll pin A is lined up with lock groove.
4. Allow spring to pull handle forward until roll pin A sits in lock groove.
5. Repeat steps 1 through 4 for all toolbars.



*Toolbar locked*



*Toolbar unlocked*

## Wing Lock Operation

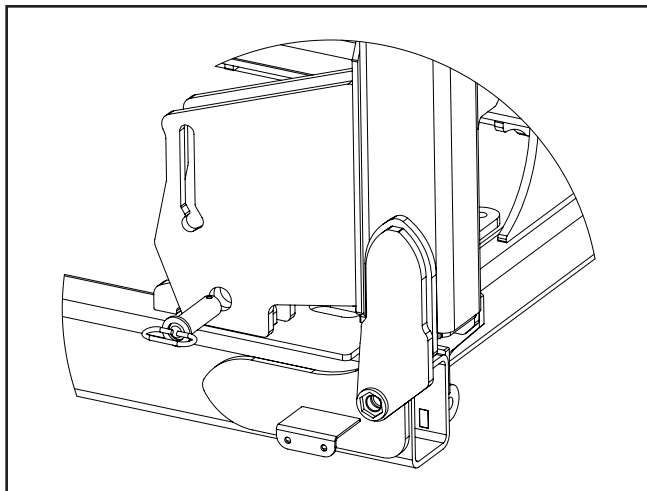
Use wing locks when transporting drill. (See decal 65277)

Locking:

1. Raise toolbars fully off the ground.
2. Remove wing lock pin from holder and place pin through hole A, B, and C.
3. Place keeper pin into wing lock pin.
4. Repeat steps 1 through 3 for the remaining three wing lock pins.

Unlocking:

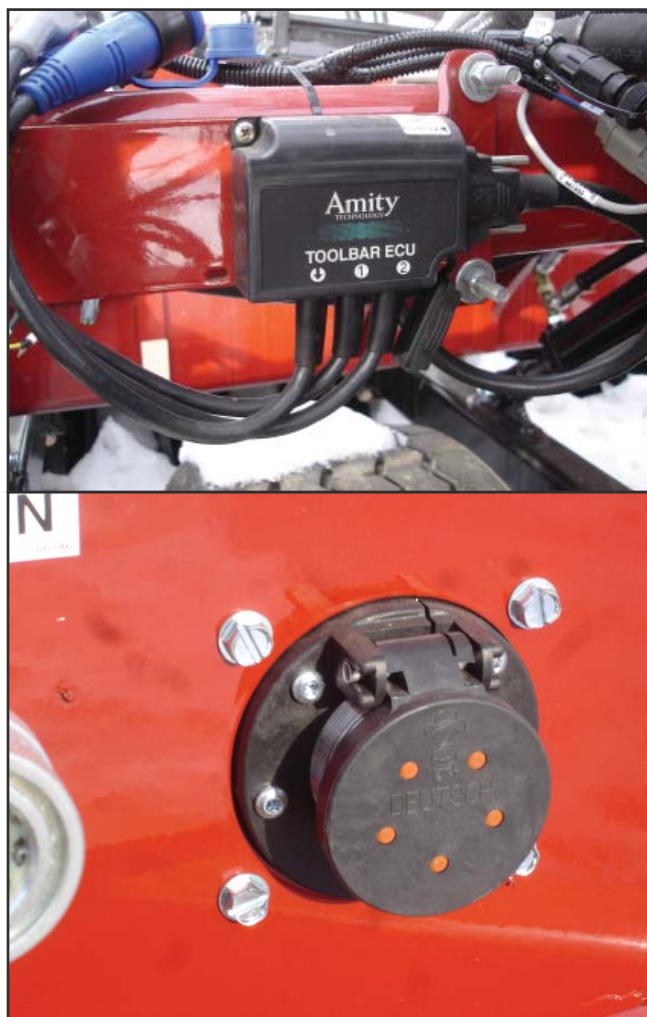
1. Remove keeper pin from wing lock pin.
2. Remove wing lock pin from holes A, B, and C.
3. Place wing lock pin in holder.
4. Place keeper pin into wing lock pin.
5. Repeat steps 1 through 4 for the remaining three wing lock pins.



*Wing lock*

## ISO-Bus Wire Harness

Your Amity Single Disc Drill is equipped with an ISO-Bus 11783 compatible wire harness. This harness utilizes standardized 9-pin metal connectors at the front and rear of the drill which provides a link to tractors and air systems that are ISO-Bus compatible. This harness also includes a breakout in the center of the drill which can be used to connect various electronic controllers (Toolbar ECU, NH3 ECU) to the ISO-Bus.



*ISO-Bus Connector and Toolbar ECU*

## Lubrication

The following lubrication points should be greased

### Every 16 working hours

- Transport wheel walk beams
- Transport wheel struts
- Rear hitch pivots
- Fertilizer attachment pivots

### Every 50 working hours

- Main frame wing hinge areas
- Wing fold link areas on 50 ft and 60 ft machines

### Weekly

- Check tire pressure on transport tires on main frame of drill. Maintain at 75 PSI on the 30 ft and 40 ft drills and 90 PSI on the 50 ft and 60 ft drills

### Seasonally

- Grease packer and disc hubs. It is acceptable to grease the hubs until grease appears at the seal. No damage to the seal will result. Once a few hubs have been greased and you know how many strokes it takes for grease to appear, grease remaining hubs 5 strokes less. Excess grease at the hubs will attract dirt.
- Check the caster lock cylinder for proper oil level. (Hydraulic Lift Assist models only)
- Check the Nitrogen Pressure on the Accumulator for the rear assist system. See your dealer for specifications and proper procedures for inspection and charging if required. The pre-charge specification is 1750 PSI and should be checked when the Hydraulic Lift Assist is depressurized.

## Maintenance

- Check jam nuts carrier wheels- wing lift bolts after 50 working hours
- Check main carrier wheel lug nuts after 50 working hours and transporting 50 miles

## Storage

It is recommended to store drill with the wings down (field position) to prevent water from sitting on the wheel and disc bearing seals.

- Disconnect wing lift cylinders and retract rods into cylinder
- Block cylinders up to avoid damage when retracting and extending rods
- If cylinder rods are left exposed, apply a rust preventative coating to the surfaces

## Removing from Storage

- Lubricate the implement
- Check tires for correct air pressure
- Inspect hydraulics
- Inspect scrapers, discs, air hoses
- Make sure warning and tail lamps are operating properly



## Single Disc Drill Specifications

| Width                             | 30                                  | 40   | 50   | 60                                     |
|-----------------------------------|-------------------------------------|--|--|--|
| Sections                          | 3                                   | 3  | 5  | 5                                      |
| Total weight                      | 21,200 lbs<br>(9,616 kg)            | 26,500 lbs<br>(12,020 kg)                          | 39,000 lbs<br>(17,690 kg)                  | 44,000 lbs<br>(19,960 kg)              |
| Weight w/banders                  | 24,500 lbs<br>(11,113 kg)           | 31,000 lbs<br>(14,060 kg)                          | 45,000 lbs<br>(20,400 kg)                  | 51,000 lbs<br>(23,130 kg)              |
| Weight of ballast kit             | 1,280 lbs (581 kg)                  | 1,620 lbs (735 kg)                                 | 2,220 lbs (1,007 kg)                       | 2,900 lbs (1,315kg)                    |
| Working width                     | 30 ft (9.1 m)                       | 40 ft (12.2 m)                                     | 50 ft (15.2 m)                             | 60 ft (18.3 m)                         |
| Transport width                   | 14 ft 3 in (4.3 m)                  | 18 ft 11 in (5.8 m)                                | 21 ft 6 in (6.6 m)                         | 21 ft 6 in (6.6 m)                     |
| Transport clearance               | 0-20 in (50.8 m)                    | 0-20 in (50.8 m)                                   | 0-20 in (50.8 m)                           | 0-20 in (50.8 m)                       |
| Transport height                  | 14 ft - 15 ft 6 in<br>(4.42-4.72 m) | 16 ft - 17 ft 10 in<br>(5.13 - 5.44 m)             | 13 ft 6 in - 15 ft 4 in<br>(4.11 - 4.67 m) | 16 ft - 17 ft 10 in<br>(5.13 - 5.44 m) |
| Tires / Main frame                | 36 X 17.5 20 ply                    | 36 X 17.5 20 ply                                   | 36 X 17.5 20 ply                           | 36 X 17.5 20 ply                       |
| Tires / Wings                     | 36 X 17.5 8 ply                     | 36 X 17.5 8 ply                                    | 36 X 17.5 8 ply                            | 36 X 17.5 8 ply                        |
| Hydraulic Lift Assist             | n/a                                 | Req'd with banders                                 | Standard                                   | Standard                               |
| Tractor Requirements              | 210-260 hp                          | 250-320 hp   | 300-360 hp                                 | 360-425 hp                             |
| # seed openers                    | 48                                  | 64   | 80   | 96                                     |
| # fertilizer openers              | 24                                  | 32   | 40   | 48                                     |
| disc size                         | 18                                  | 18   | 18   | 18                                     |
| Packing pressure                  | Operator adjusted                   | Operator adjusted                                  | Operator adjusted                          | Operator adjusted                      |
| Seeding Depth                     | 0-3 in (0-7.6 cm)                   | 0-3 in (0-7.6 cm)                                  | 0-3 in (0-7.6 cm)                          | 0-3 in (0-7.6 cm)                      |
| Length of opener                  | n/a                                 | n/a  | n/a  | n/a                                    |
| Row spacing                       | 6 - 9 in (15-23 cm)<br>paired row   | 6 - 9 in (15-23 cm)<br>paired row                  | 6 - 9 in (15-23 cm)<br>paired row          | 6 - 9 in (15-23 cm)<br>paired row      |
| Rear Hitch Capacity<br>(vertical) | FRH: 1,000 lbs<br>(454 kg)          | FRH: 1,000 lb (454 kg)<br>HLA: 7,000 lbs (3175 kg) | HLA: 7,000 lbs<br>(3175 kg)                | HLA: 7,000 lbs<br>(3175 kg)            |

|                             |                      |                                |
|-----------------------------|----------------------|--------------------------------|
| 1 Hectare = 2.47 Acres      | 1 lb = 0.45359 kg    | 1 bushel = 1.2445 cubic ft     |
| 1 acre = 43,560 square feet | 1 lb = 16 oz         | 1 bushel = 0.0352 cubic meters |
| 1 acre = .404 Hectares      | 1 kg = 35.3 oz       | 1 bushel = 9.31 gallons        |
| 1 inch = 2.54 cm            | 1 oz = 0.028 kg      | 1 PSI = 6.8948 kPa             |
| 1 foot = 0.3048 m           | 1 mph = 1.609 kph    | 1 GPM = 3.785 LPM              |
|                             | 1 mile = 1.609347 km |                                |

## Formulas

$$Rate (lbs/min) = \frac{Width (ft) * Speed (mph) * Field Rate (lbs/acre)}{495}$$

$$Performance (acres/hr) = \frac{Width (ft) * Speed (mph)}{8.25}$$

**! WARNING**

**DO NOT OPERATE  
WING LIFT  
CYLINDERS WITHOUT  
RESTRICTORS INSTALLED**

65275

**! WARNING**

**Always secure folding  
section with lock pin  
when in upright position.**

65302

**! WARNING**

- Read the Operator's Manual.
- Learn to operate this machine safely.
- NO RIDERS.
- For road travel, use flashing lights and a SMV sign as required and restrict travel speed to prevent implement from swaying.
- Observe highway traffic regulations.


65301

**! WARNING**

- Read Operator Manual and Refer to Decal for Towing information.
- Read Operator Manual and Refer to Decal for unhooking procedures.

36101

**! WARNING**



**TOWING AND  
UNHOOKING HAZARD**

**This implement hitch exerts high upward force on the tractor drawbar:**

- When towing implement some of the load will be removed from the tractor rear tires making the rear end lighter.
- Failure to observe the unhooking procedures may cause injury or death.

**UNHOOKING INSTRUCTIONS  
(Wings Folded or Wings Unfolded):**

1. Remove all lift cylinder depth stops.
2. Park implement on firm level ground and block main frame tires.
3. Install wing lock pins (wings up only).
4. Fully Raise toolbars (cylinders retracted).
5. Place blocks under discs on all main frame toolbars to support and stabilize implement. Blocks may vary in height depending on ground contour.
6. Lower main frame until hitch is floating in tractor clevis.
7. Install Depth Stops to take up remaining stroke on the main frame lift cylinders.
8. Use jack to support hitch.
9. Unhook hydraulic/electrical lines and safety chains before driving away.

36099

**! WARNING**

**INJURY OR DEATH MAY OCCUR IF YOU DO  
NOT FOLLOW THESE INSTRUCTIONS:**

- Never transport fully loaded Air Cart behind implement.
- Fill Air Cart with product in the field being seeded.

36106

**! WARNING**

**ESCAPING HYDRAULIC OIL UNDER PRESSURE CAN  
CAUSE SERIOUS INJURY IF IT PENETRATES THE SKIN.  
SEE A DOCTOR IMMEDIATELY IF INJURED.**

**RELIEVE HYDRAULIC PRESSURE BEFORE  
DISCONNECTING ANY HYDRAULIC LINE.**

**WEAR GOGGLES AND USE CARDBOARD OR WOOD AS A  
BACKSTOP WHEN SEARCHING FOR HYDRAULIC LEAKS.**

65645



## CAUTION

- NEVER ENABLE THE ELECTRO-HYDRAULIC “CASTER LOCK” FEATURE WITHOUT MAKING SURE THE HYDRAULIC LIFT ASSIST WHEELS ARE IN THE STRAIGHT POSITION
- DO NOT ENABLE THE FEATURE FOR TRANSPORTING THE DRILL

36318



## DANGER

**Keep clear when  
wings are lowering.**

65303



## DANGER

**Avoid contact with  
electric lines.**

65276

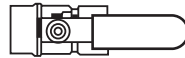


## WARNING

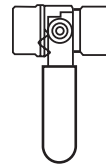


- OPENING THE TOOLBAR TRANSPORT LOCK VALVE MAY CAUSE THE TOOLBARS TO DROP TO THE GROUND.
- ENSURE THE AREA UNDER THE TOOLBARS ARE CLEAR OF PEOPLE AND OBSTRUCTIONS.
- FAILURE TO CLEAR THE AREA MAY RESULT IN SERIOUS INJURY OR DEATH.

36100



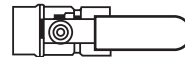
OPEN



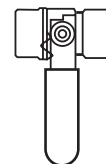
CLOSED

**LIFT-ASSIST LOCK VALVE**  
REFER TO THE OPERATORS MANUAL FOR  
DETAILS ON THE OPERATION OF THIS VALVE

36102



OPEN



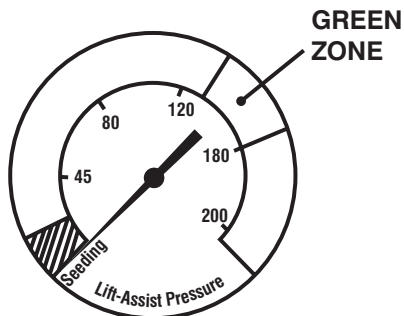
CLOSED

**TOOLBAR TRANSPORT VALVE**  
REFER TO THE OPERATORS MANUAL FOR  
DETAILS ON THE OPERATION OF THIS VALVE

36103



## WARNING



### LIFT-ASSIST PRESSURE GAUGE

- The Hydraulic Lift-Assist Pressure must be in the “Green” zone when the implement is being transported in order to properly distribute the load on the tires.
- See Owners Manual for More Information. Tire and or Frame failure resulting in serious injury or death may result if the unit is transported and the pressure is not in the “Green” zone.
- Do not attempt to perform service on a pressurized system.

36104



## WARNING

**INJURY OR DEATH MAY OCCUR IF YOU DO NOT FOLLOW THESE INSTRUCTIONS:**

- Never transport fully loaded Air Cart behind implement.
- Fill Air Cart with product in the field being seeded.

36106



## CAUTION

**TIRE PRESSURE:  
MAIN TIRE PRESSURE - 75 PSI  
WING, LIFT-ASSIST AND  
FLOATING HITCH - 40 PSI**

36105

*30' and 40' Drills*



## CAUTION

**TIRE PRESSURE:  
MAIN TIRE PRESSURE - 90 PSI  
WING, LIFT-ASSIST AND  
FLOATING HITCH - 40 PSI**

36288

*50' and 60' Drills*

## IMPORTANT

**TRACTOR DRAWBAR REQUIRES A MINIMUM VERTICAL DOWN-LOADING CAPABILITY OF 5800 LBS.**

**TRACTOR OR OTHER TOWING DEVICE MUST BE PROPERLY EQUIPPED BEFORE TRANSPORTING THIS DRILL.**

**IF TOWING DRAWBAR DOES NOT MEET THIS NEED, A DRAWBAR HELPER IS REQUIRED TO ACHIEVE THE LOADING REQUIREMENT.**

**FOR YOUR SAFETY, NEVER TOW THIS DRILL WITHOUT INSURING THAT THE TOWING DEVICE MEETS THE STATED REQUIREMENT.**

**NEVER TOW THIS DRILL IN SPEEDS IN EXCESS OF 20 MPH (32 KM/HR).**

65277

*30' and 40' Drills*

## IMPORTANT

**TRACTOR DRAWBAR REQUIRES A MINIMUM VERTICAL DOWN-LOADING CAPABILITY OF 5800 LBS.**

**TRACTOR OR OTHER TOWING DEVICE MUST BE PROPERLY EQUIPPED BEFORE TRANSPORTING THIS DRILL.**

**IF TOWING DRAWBAR DOES NOT MEET THIS NEED, A DRAWBAR HELPER IS REQUIRED TO ACHIEVE THE LOADING REQUIREMENT.**

**FOR YOUR SAFETY, NEVER TOW THIS DRILL WITHOUT INSURING THAT THE TOWING DEVICE MEETS THE STATED REQUIREMENT.**

**NEVER TOW THIS DRILL IN SPEEDS IN EXCESS OF 15 MPH (24 KM/HR).**

**NEVER TOW THIS DRILL DOWN HILL IN SPEEDS IN EXCESS OF 10 MPH (16 KM/HR).**

36264

*50' and 60' Drills*