MORRIS

OPERATOR'S MANUAL

EIGHT Series XL
VRT AIR CART

N44297-03A

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Section 1:
Safety

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SAFETY-ALERT SYMBOL

Watch for this symbol. It identifies potential hazards to health or personal safety. It means:

ATTENTION - BE ALERT.
Your Safety is involved.

Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.

Signal Words

The words **DANGER, WARNING** or **CAUTION** are used with the safety alert symbol. Learn to recognize the safety alerts, and follow the recommended precautions and safe practices.

Three words are used in conjunction with the safety-alert symbol:

DANGER — **Indicates an imminently hazardous situation that, if not avoided, will result in DEATH OR SERIOUS INJURY.**

WARNING — **Indicates a potentially hazardous situation that, if not avoided, could result in DEATH OR SERIOUS INJURY.**

CAUTION — **Indicates a potentially hazardous situation that, if not avoided, may result in MINOR OR MODERATE INJURY.**

Replace any **DANGER, WARNING, CAUTION** or instructional decal that is not readable or is missing. The location and part number of these decals is identified later in this section of the manual.

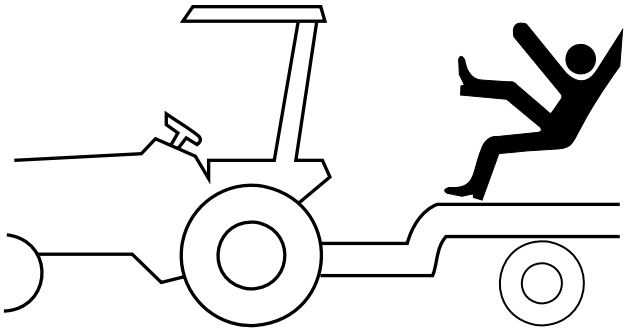
The words **Important** and **Note** are not related to personal safety but are used to give additional information and tips for operating or servicing this equipment.

IMPORTANT: Identifies special instructions or procedures which, if not strictly observed could result in damage to, or destruction of the machine, process or its surroundings.

NOTE: Indicates points of particular interest for more efficient and convenient repair or operation.

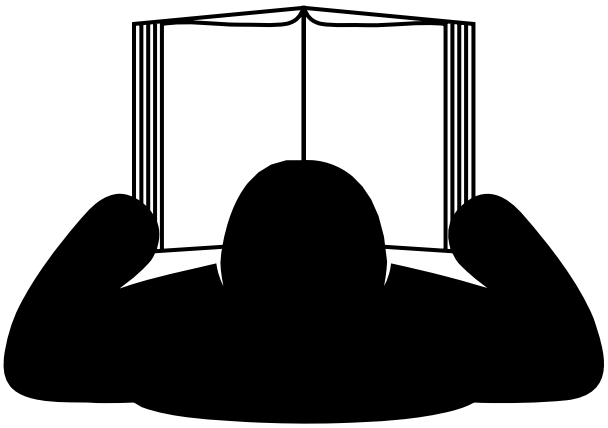
General Operation

- **DO NOT RIDE!!** Do not allow riders on the implement when in motion.
- Do not allow extra riders in the tractor unless an instructor seat and seat belt are available.
- **Check behind** when backing up.
- **Reduce speed** when working in hilly terrain.
- Never allow anyone within the immediate area when operating machinery.
- **Keep all shields in place**, replace them if removed for service work.
- Always lock auger attachment in raised position.
- Keep hands clear of tank opening when closing lid. Keep lid seal clean to ensure proper sealing.
- **Do Not enter tank unless another person is present and the tractor engine has been shut off.**



Tractor Operation

- Be aware of the correct tractor operating procedures, when working with implements.
- Review tractor operator's manual.
- Secure hitch pin with a retainer and lock drawbar in centre position.



Chemicals

- **Use extreme care** when cleaning, filling or making adjustments.
- **Always read** granular chemical or treated seed manufacturer's warning labels carefully and follow them.
- Wear close fitting clothing and appropriate personal protective equipment for the job as specified by the chemical and/or seed manufacturer.
- **Always wear** safety goggles, breathing apparatus and gloves when handling granular chemical or treated seed.
- **Do not feed** any treated seed to livestock. Treated seed is poisonous and may cause harm to persons or livestock.
- **Wash exposed skin immediately** - do not leave chemicals on your skin.
- **Properly store** chemicals in original containers with labels intact per the manufacturer's instructions.
- Always follow the manufacturer's operating instructions and warning labels when operating an ammonia tank with the equipment.
- **Do Not enter tank unless another person is present and the tractor engine has been shut off.**

Danger

Failure to comply may result in serious injury or death.

Read Operator's Manual and decals on **Ammonia** tank before operating air cart. Become familiar with all warnings, instructions, and controls.

Always wear gloves and goggles when transferring or handling ammonia.

Always stay clear of hose and valve openings.

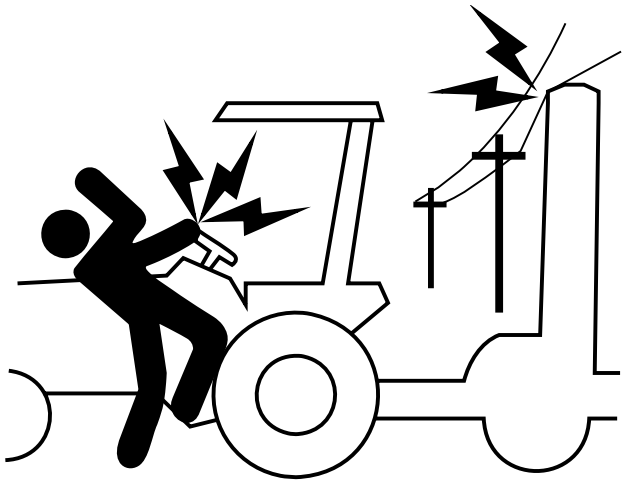
Always be sure pressure is relieved before disconnecting hoses or parts.

Always secure connecting parts and safety chains before towing ammonia trailer.

Always have ample water available in case of exposure to ammonia liquid or gases.

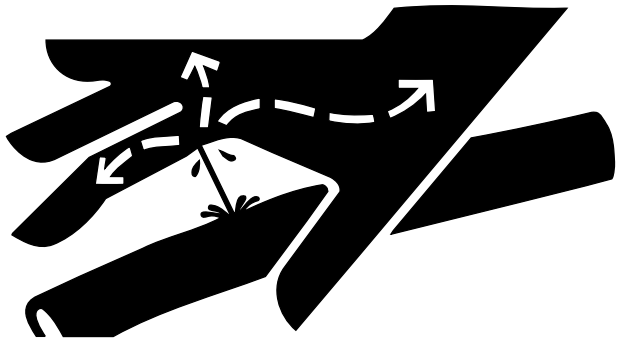
Transporting

- **Be aware** of the height, length and width of implement. Make turns carefully and be aware of obstacles and overhead electrical lines.
- Empty tanks before transporting. Do Not Exceed 20 mph (32 kph) with an empty air cart.
- Use an agricultural tractor that is large enough with sufficient braking capacity so that the weight of the loaded equipment towed does not exceed 1.5 times the weight of the tractor.
- Use flashing amber warning lights, turn signals and SMV emblems when on public roads.
- Do not transport in poor visibility.
- The slow moving vehicle (SMV) emblem and reflectors must be secured and be visible on the machine for transport.
- Avoid soft surfaces, the additional wing weight on the centre wheels could cause the machine to sink.
- Ensure safety chain is attached correctly to the towing vehicle and the hitch of the air cart.
- Check that wings are firmly seated in transport wing stops, and lock pins installed.
- Secure transport locks on depth control cylinders.
- Be familiar with, and adhere to, local laws.



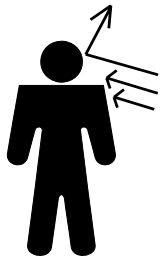
Hydraulics

- **Do not** search for high pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, thereby requiring immediate medical attention.
- Use cardboard or wood to detect hydraulic leaks - never your hands.
- Double check that all is clear before operating hydraulics.
- **Never** remove hydraulic hoses or ends with machine elevated. Relieve hydraulic pressure before disconnecting hydraulic hoses or ends.
- Maintain proper hydraulic fluid levels.
- Keep all connectors clean for positive connections.
- Ensure all fittings and hoses are in good condition.
- Do not stand under wings.



Maintenance

- **Shut tractor engine off** before making any adjustments or lubricating the machine.
- **Block** machine securely to prevent any movement during servicing.
- Wear close fitting clothing and appropriate personal protective equipment for the job.
- **Always wear** safety goggles, breathing apparatus and gloves when working on seeder filled with granular chemical or treated seed per the manufacture's instructions.
- Do not modify the machine.



Caution

Care should be taken when working near the air cart while the fan is running. Product blowing out of the system could cause personal injury.

Caution

Keep service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment.

Storage

- Store implement away from areas of main activity.
- Level implement and block up securely to relieve pressure on jack.
- Do not allow children to play on or around stored implement.
- Refer to Storage Section for more details.

Safety Signs

DANGER

CONFINED SPACE HAZARD

To Prevent Serious Injury or Death:

- **Do not enter tank.**
- **Be aware of and follow safety precautions.**
- **Read and follow chemical manufacturer's safety instructions.**

N36262

DANGER

GUARD MISSING

When this is visible

DO NOT OPERATE

N32799

DANGER

- **Hydraulic motor or engine and exhaust system becomes extremely hot from operation.**
- **Keep hands, feet and clothing away from moving parts.**
- **Keep all covers, shrouds and guards in place.**

N19023

WARNING

Personal injury or property damage may result from loss of control.

- **Always use large enough tractor with sufficient braking capacity.**
  - **Weight of fully loaded implement should not be more than 1.5 times weight of tractor.**
- **Maximum recommended towing speed is 20 mph (32 km/h).**
- **Use flashing amber warning lights and SMV emblem when on public roads, except where prohibited by law.**
- **Refer to tractor and implement Operator's Manuals for weights and further information.**

N24301

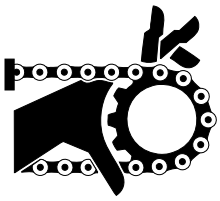
WARNING

CRUSHING HAZARD

To prevent serious injury:

- **Keep hands clear of auger arm top when moving auger.**
- **Use handle.**

N36255



WARNING

MOVING PART HAZARD

To prevent serious injury or death from moving parts:

- **Secure any guards and shields before starting.**
- **Keep hand, feet, hair and clothing away from moving parts.**
- **Disconnect and lockout power source before adjusting or servicing.**
- **Sprockets and chains CAN START MOVING even though Air Cart is stationary.**

N29355

WARNING

BURN HAZARD

To Prevent Serious Injury:

- **Do Not Touch hydraulic motor or oil lines.**
- **Hydraulic motor and oil lines become extremely hot from operation.**

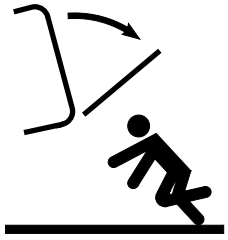
N36263

CAUTION

Secure Auger in storage position before transporting by:

1. **Locking auger cradle latch.**
2. **Locking auger arm latch.**

N36258



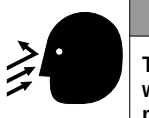
WARNING

OVERHEAD HAZARD

To prevent serious injury or death:

- **Stay away from beneath the ladder when in the raised position or being lowered.**
- **Keep others away.**

N36261



CAUTION

To avoid injury, do not open lids while fan is operating. Air gust may contain dust and particles.

N15094

Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.

Safety Signs - Continued

IMPORTANT

BEFORE FILLING TANK

- Ensure each meter is set correctly as described in the Operator's Manual.
- Ensure Tank clean out door is fully closed.

BEFORE APPLYING PRODUCT

- Set rate according to the procedure and rate chart described in the Operator's Manual.
- Take a sample and adjust the rate, if necessary.

AIR LEAKS AFFECT METERING ACCURACY

- Ensure all seals are properly positioned and all lids are tightly closed.

N42356

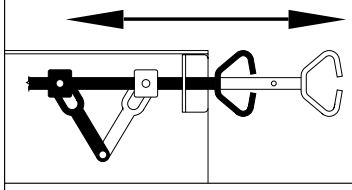
IMPORTANT

ENSURE THAT ALL WHEEL NUTS ARE TORQUED TO THE FOLLOWING:

- 5/8" Tapered Wheel Nuts - 150 ft-lbs
- 3/4" Flanged Wheel Nuts - 270 ft-lbs

N24412

IMPORTANT



Cycle Collector Valve Daily to ensure free movement. Minimum of 5 cycles.

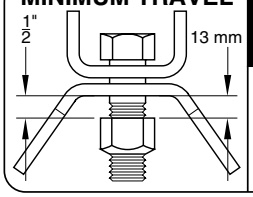
N36264

IMPORTANT

PREVENT CORROSION

Clean the Metering Body (Including Air Passages) and the Collector Body. A light coating of Silicone Lubricant or WD-40 or Penetrating Oil should be applied before storage.

N21604



IMPORTANT

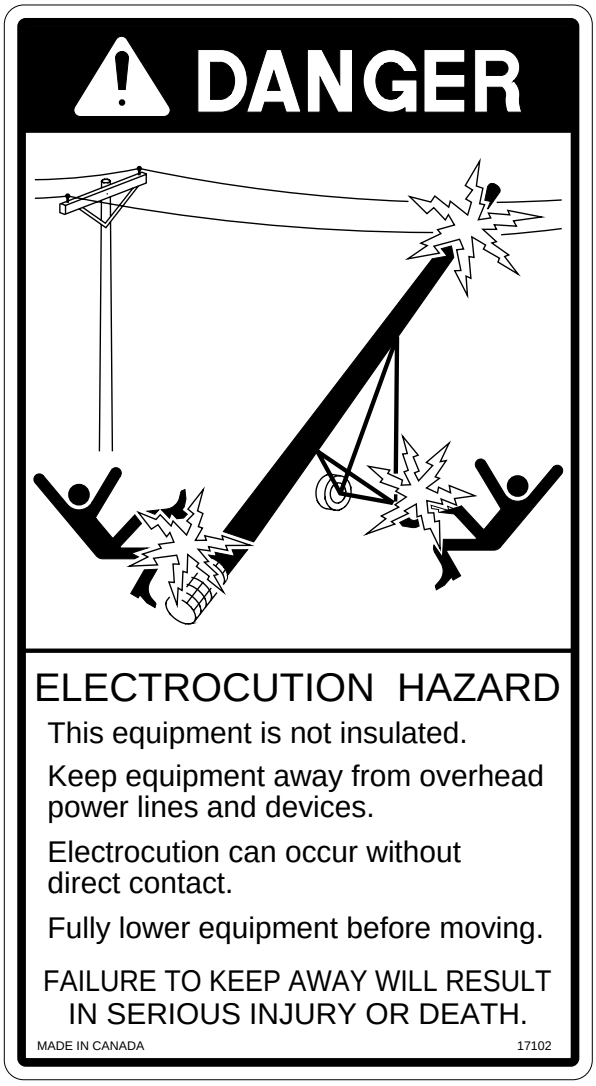
TANK BOLTS MUST BE A LOOSE FIT.

DO NOT REPLACE WITH SHORTER BOLTS.

N29729

Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.

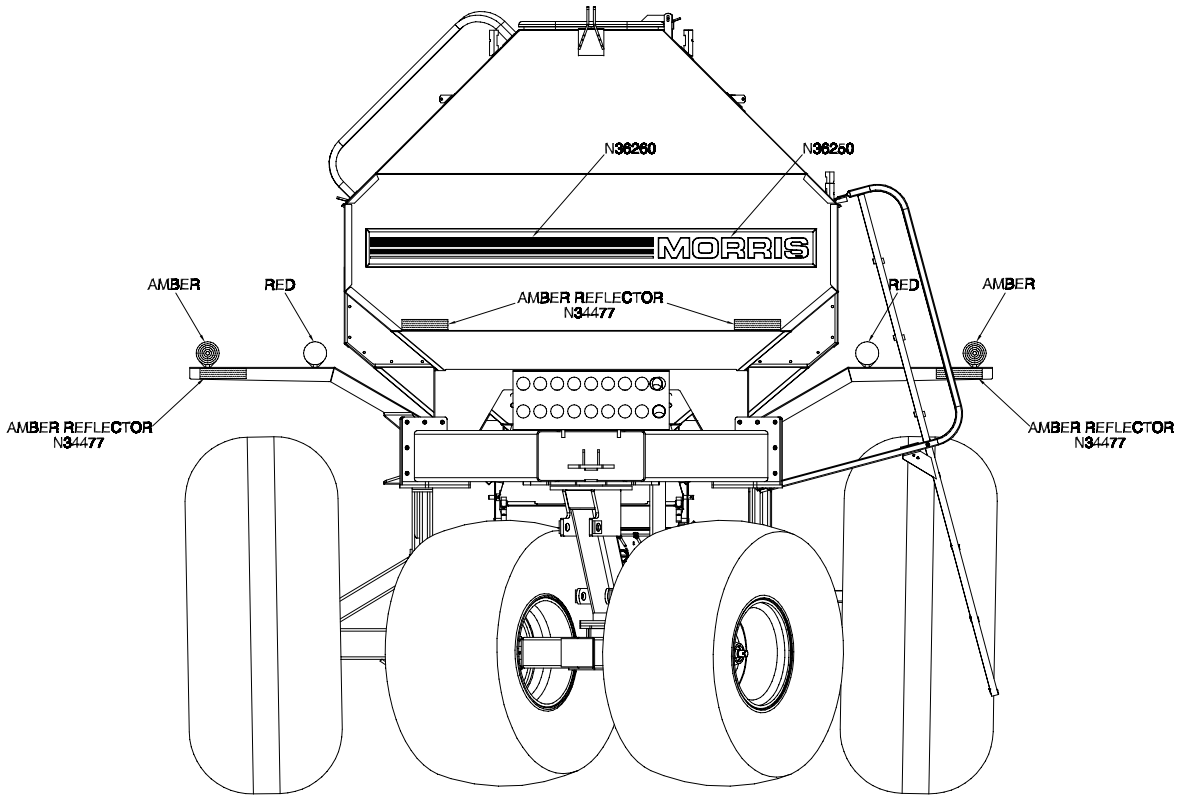
Safety Signs - Continued



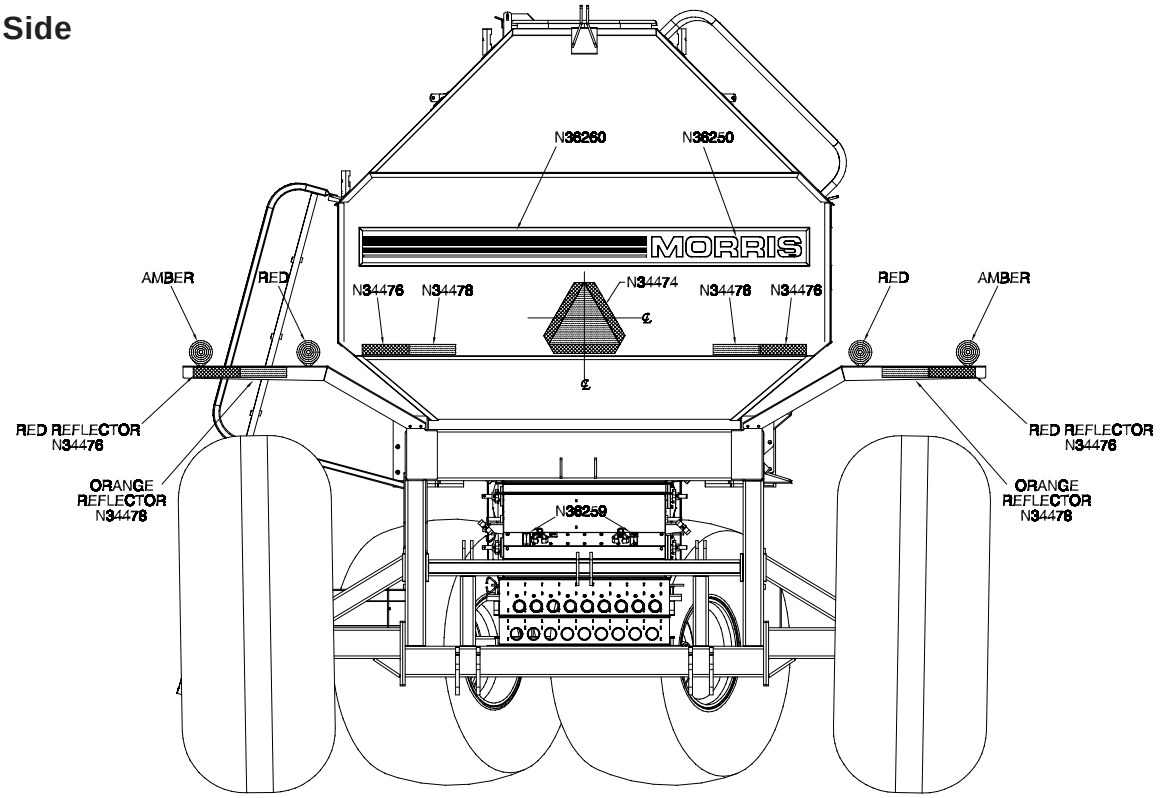
Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.

Safety Signs - Continued

Front Side

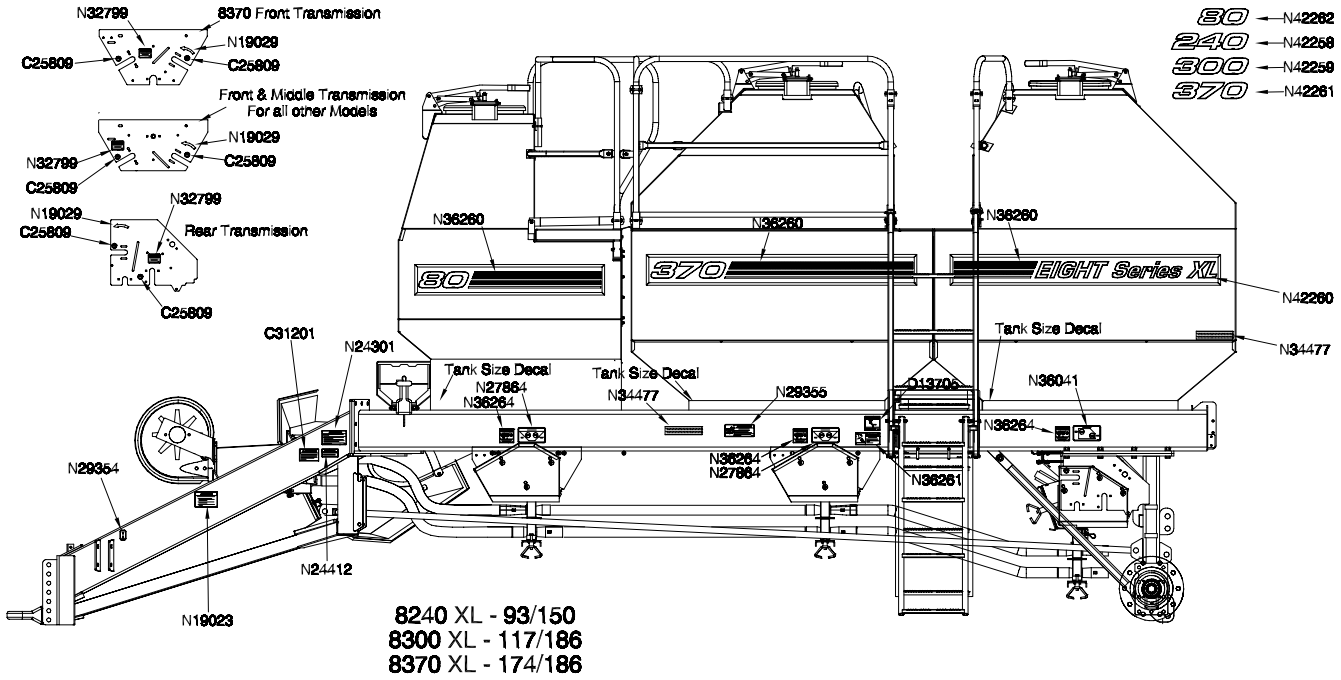


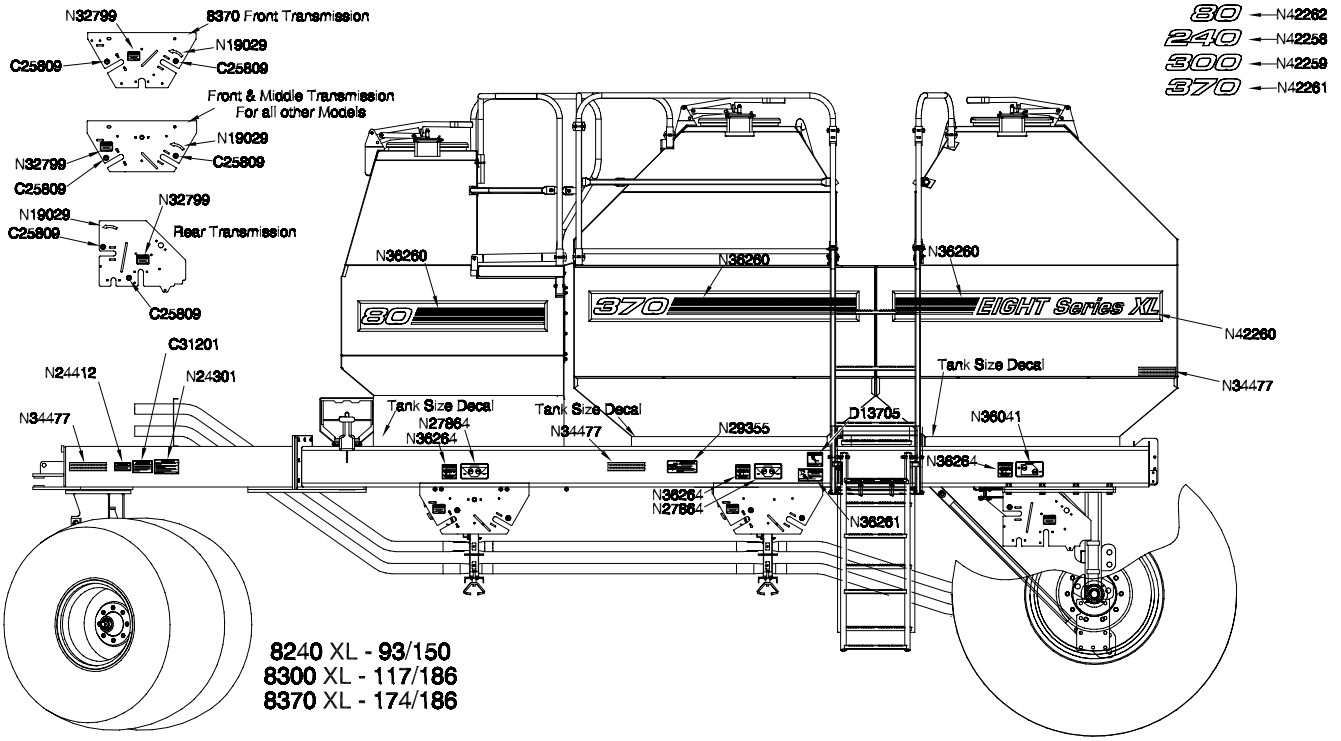
Rear Side



Safety Signs - Continued

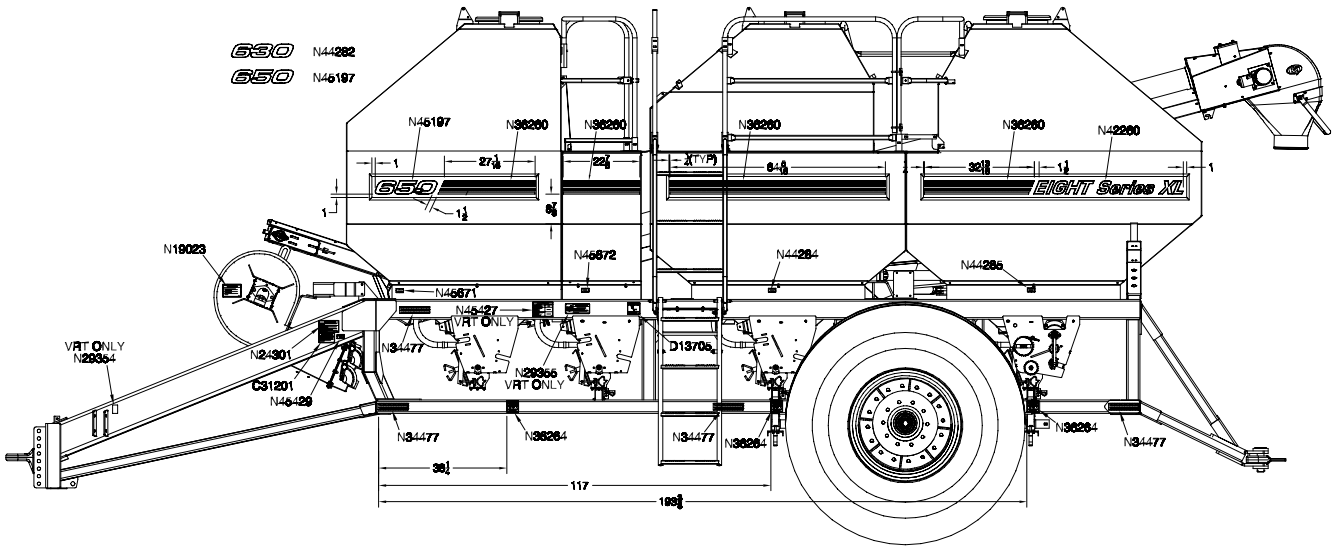
Left Side - 8240XL to 8425XL

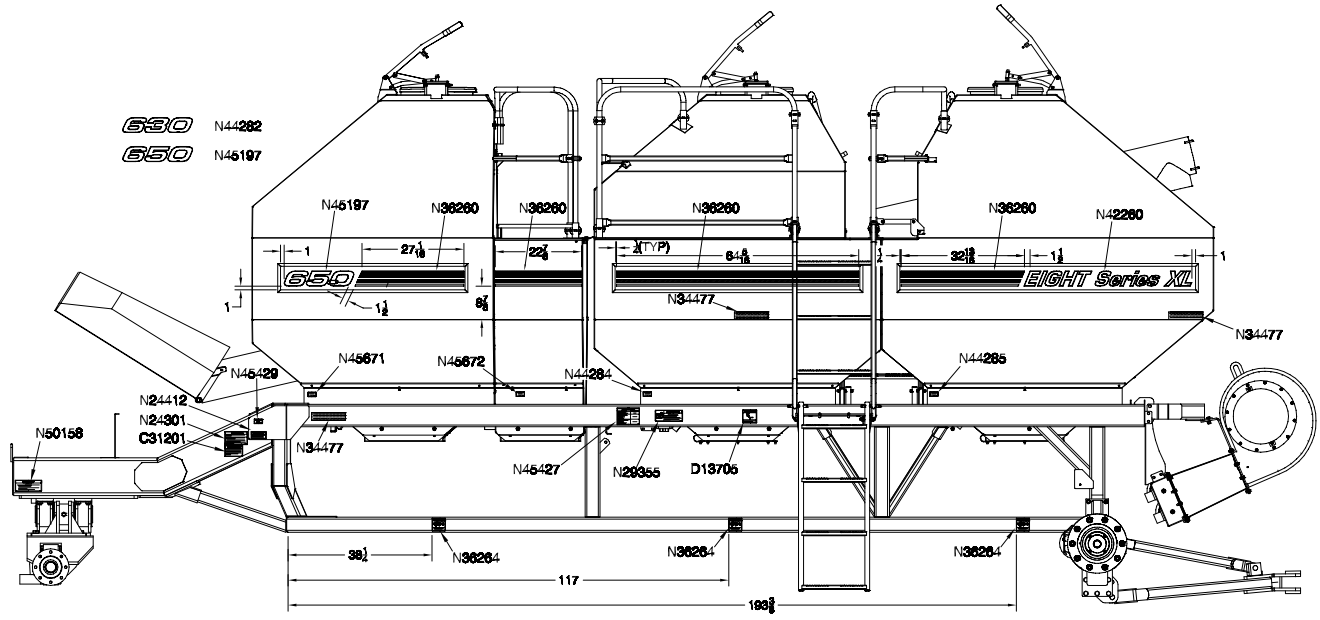




Safety Signs - Continued

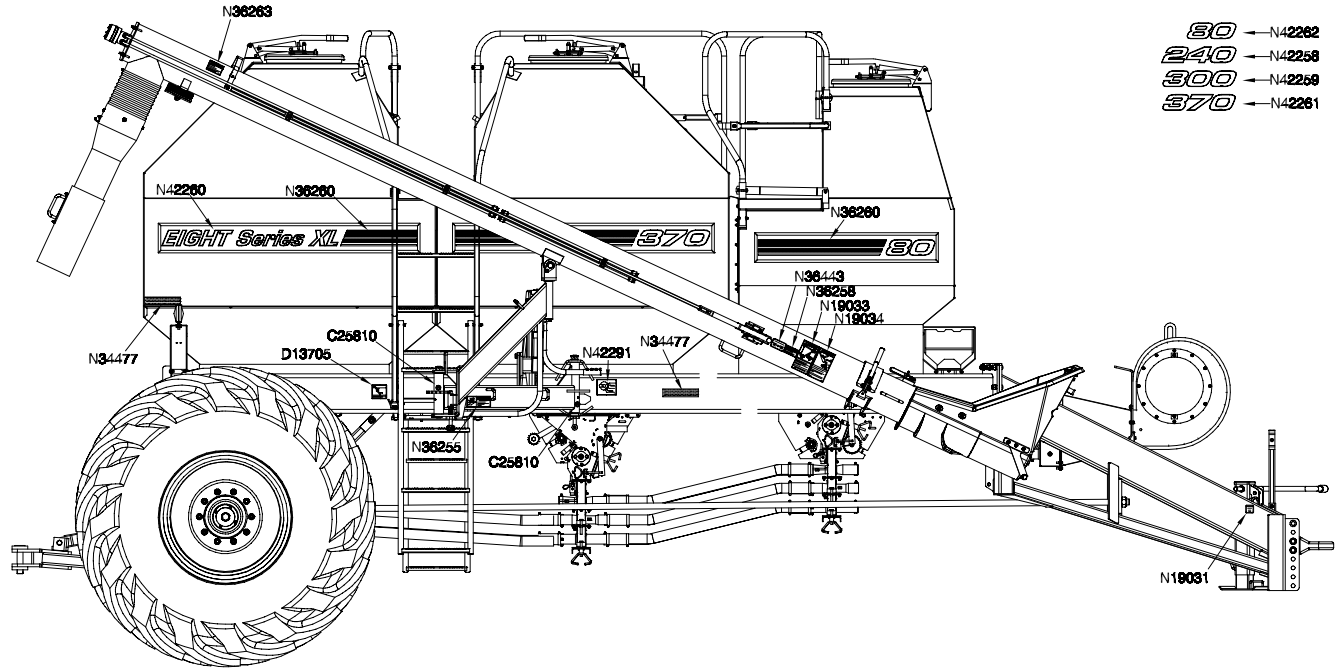
Left Side - 8435XL to 8650XL

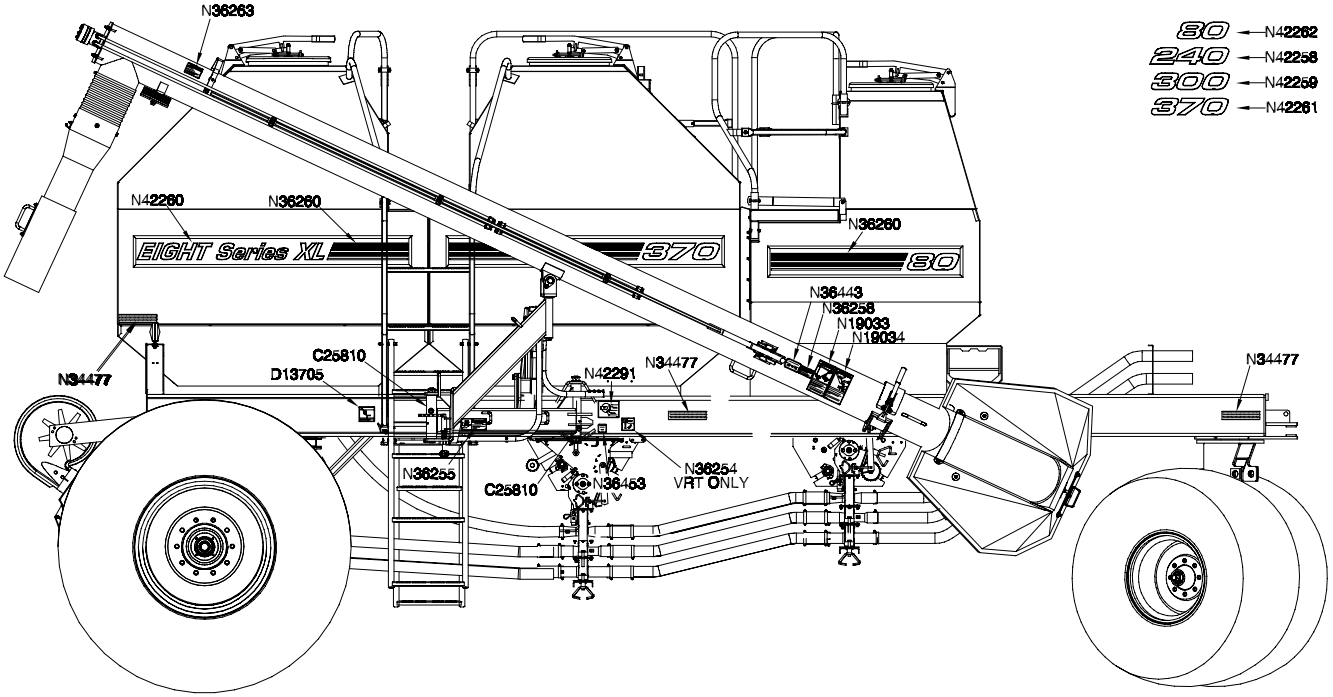




Safety Signs - Continued

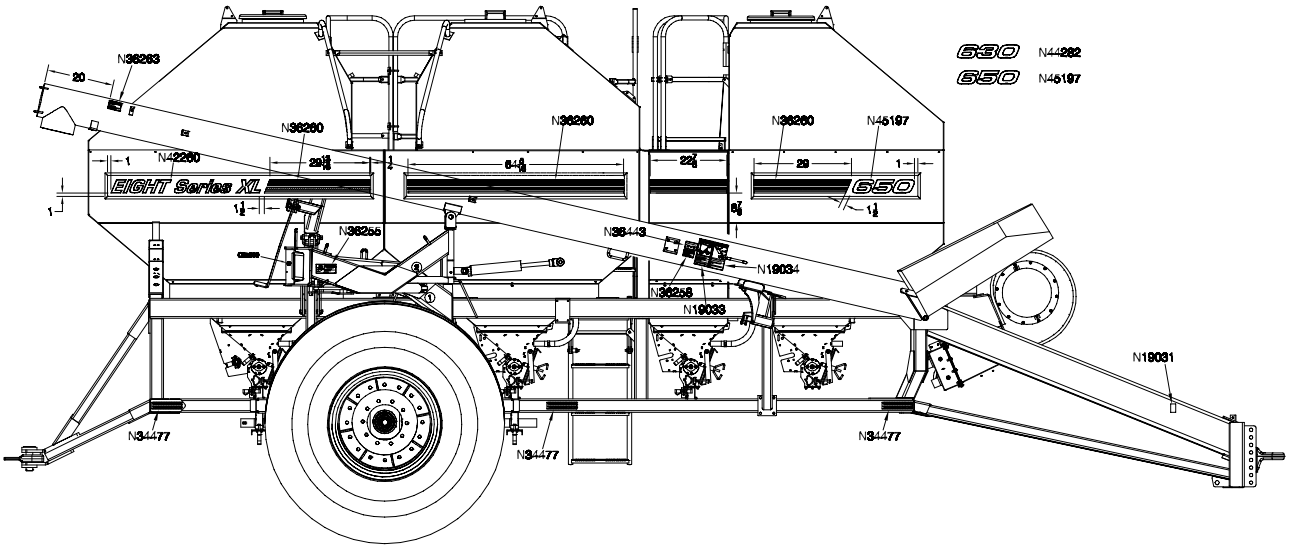
Right Side - 8240XL to 8425XL

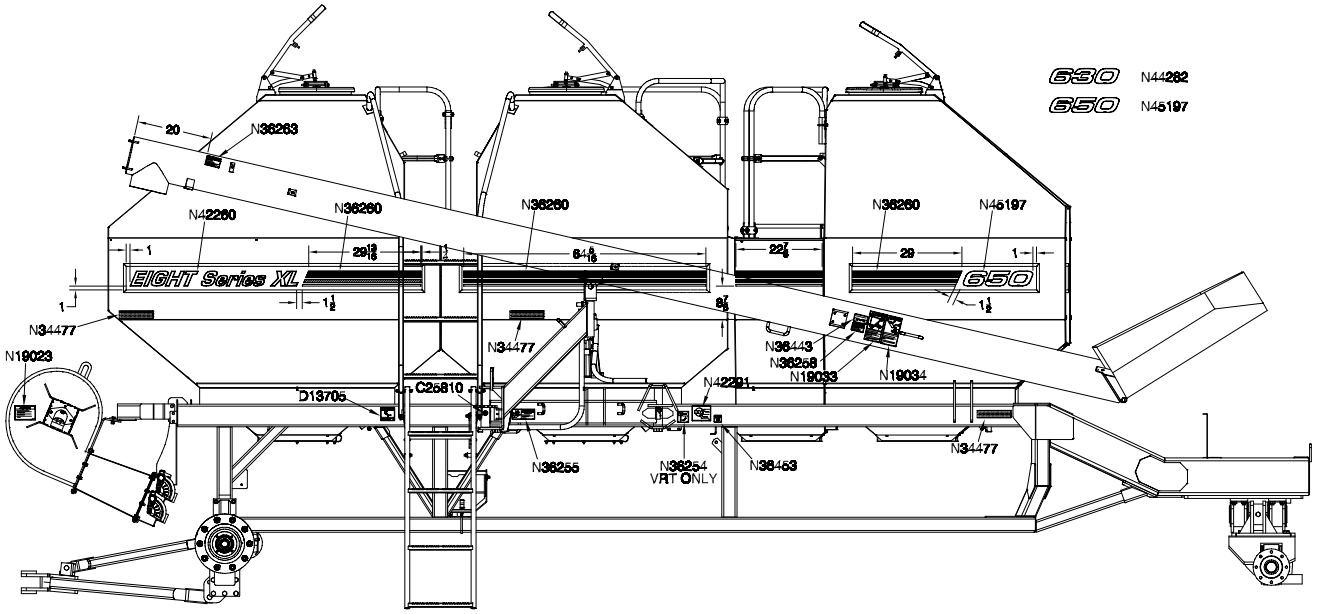




Safety Signs - Continued

Right Side - 8435XL to 8650XL





Lighting and Marking

MORRIS recommends the use of the correct lighting and marking to meet the ASAE standard for roadway travel. Be familiar with, and adhere to, local laws.

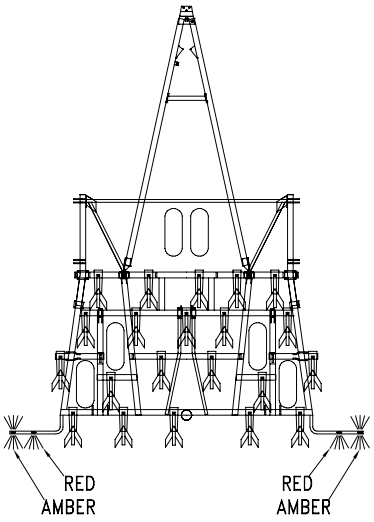
Amber warning and red taillights secured on the machine promote correct transportation of this implement.

Note: Always replace missing or damaged lights and/or connectors.

Amber warning and red taillights must be mounted to the rear of the implement and be visible from front and rear. The lights must be within 16 inches (41 cm) of the extremities of the machine and at least 39 inches (99 cm) but not over 10 feet (3 m) above ground level.

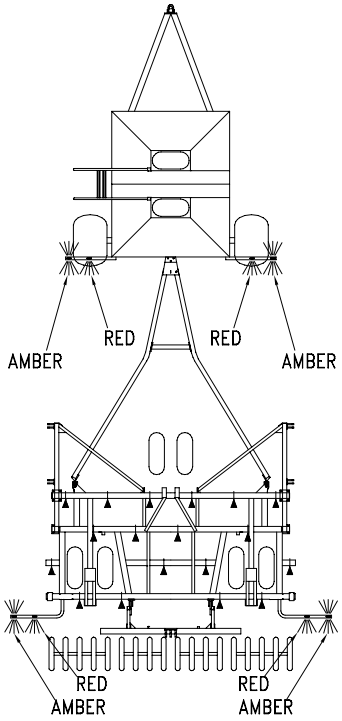
Note: Always replace missing or damaged front, side, rear reflectors and SMV emblem.

Tillage Unit



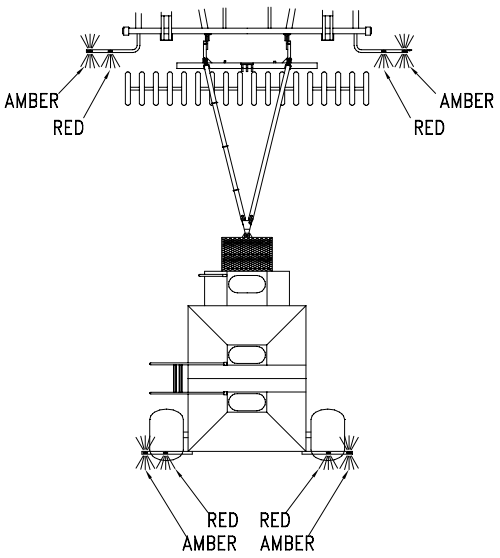
Seeding Unit

Tow Between



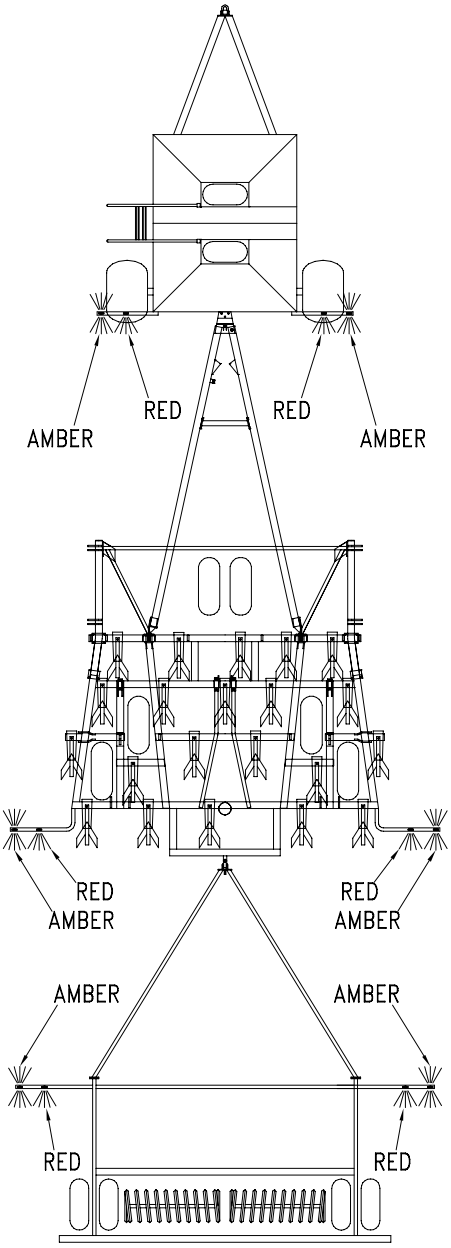
Seeding Unit

Tow Behind

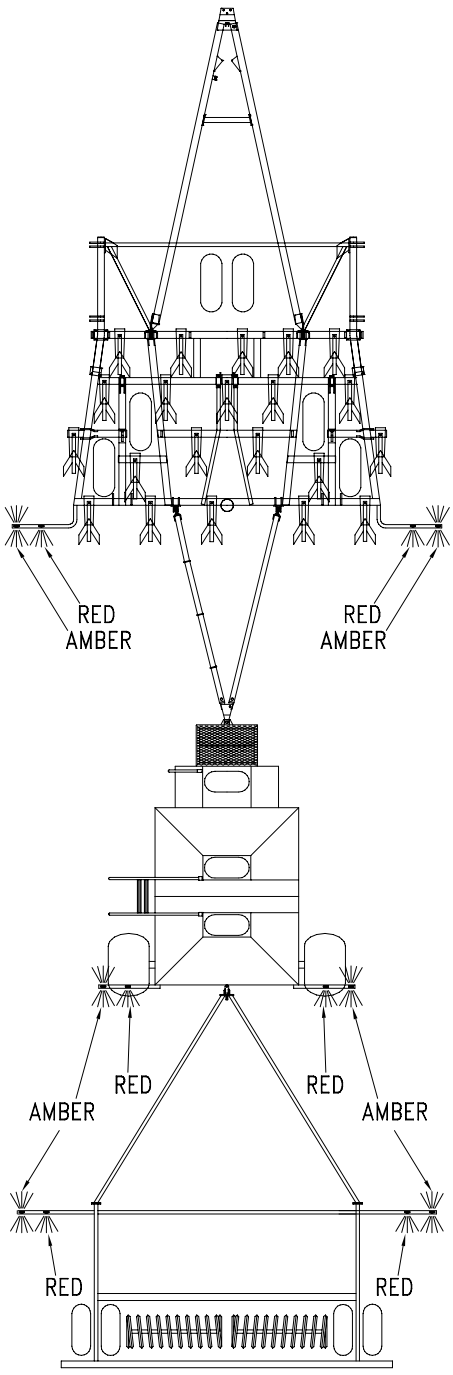


Lighting and Marking - Continued

Seeding Unit - Tow Between with Packer Bar



Seeding Unit - Tow Behind with Packer Bar



Conveyor Safety

General

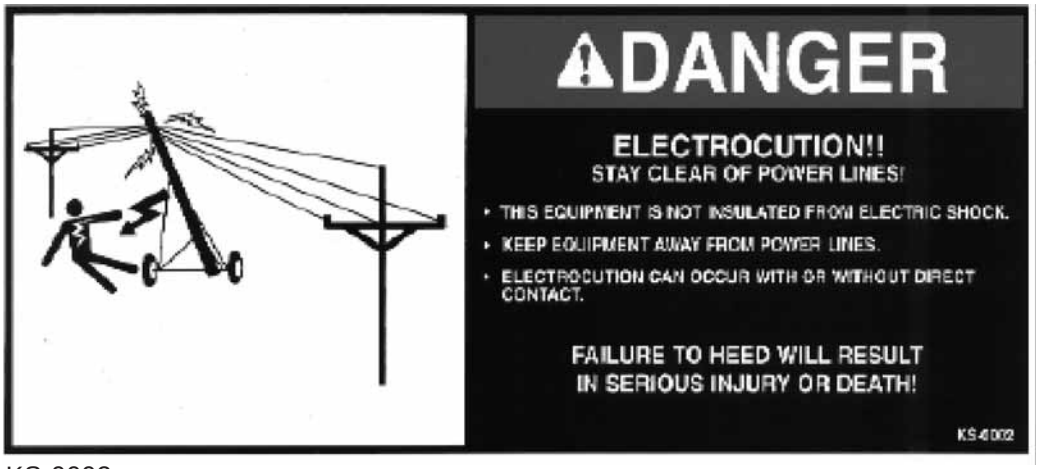
- As the owner and/or operator it is your responsibility to know what requirements, hazards and precautions exist, and to inform all personnel associated with the equipment or are in the area.
- Avoid any alteration to the equipment. Such alterations may produce a very dangerous situation, where serious injury or death may occur.
- Untrained operators subject themselves and other to serious injury or death. NEVER ALLOW untrained personnel to operate this equipment.
- Keep children and other unqualified personnel out of the working area at all times.
- NEVER start equipment until ALL persons are clear of the work area.
- Be sure ALL operators are adequately rested and prepared to perform all functions of operating this equipment.
- Keep hair, loose clothing , and shoestrings away from rotating and moving parts. Never wear loose fitting clothing when working around conveyors.
- NEVER allow anyone inside a bin, truck, or wagon which is being unloaded by a conveyor. Flowing grain can trap and suffocate in seconds.
- Keep hands and feet away from the conveyor intake and other moving parts.
- NEVER attempt to assist machinery operation or to remove trash from the equipment while in operation.
- Keep the area around intake free of obstacles that might trip workers.
- Components of this equipment have sharp edges which can scrape and/or cut an operator.
- A moving conveyor can sever an operator's limb or even kill.
- Always keep all shields and guards in place during operation.

Conveyor Safety - Continued

Safety Signs

The Safety Decals listed below are included with the conveyor, the following pages show the location of the decals on the conveyor. Inspect all decals and replace any that are worn, illegible, or missing. Contact your dealer or the factory to order replacement decals.

KS-0008

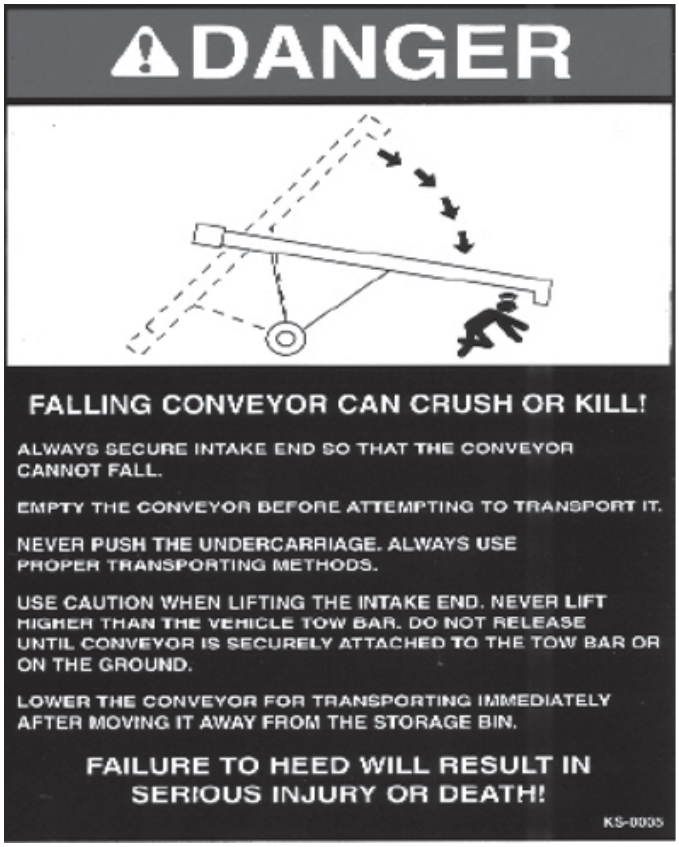


KS-0002

KS-0007

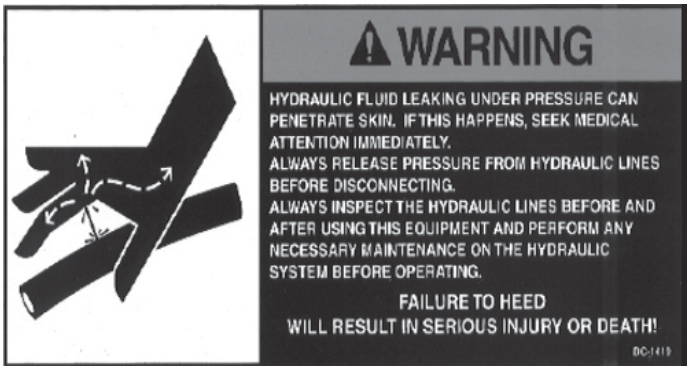
Conveyor Safety - Continued

Safety Signs - Continued



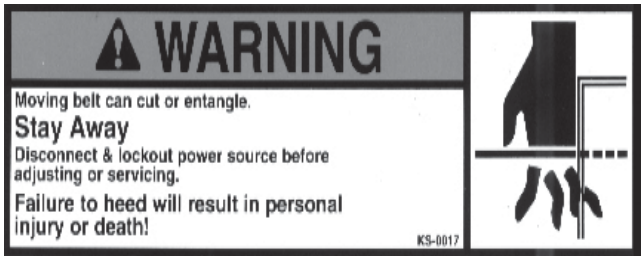
Conveyor Safety - Continued

Safety Signs - Continued



KS-1419

KS-0015



KS-0017

Conveyor Safety - Continued

Safety Signs - Continued

KS-0006

KS-0016

Notes

Section 2: Specifications

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Specifications

8240XL
Specifications and Options

Model	8240XL	8240XL
Configuration	**Tow Between**	**Tow Behind**
Length without auger (with auger)	23' 4" (7.14m) (24' 7" (7.49m))	23' 4" (7.14m) (24' 7" (7.49m))
Height	14' (4.27m)	14' (4.27m)
Width	12' 5" (3.78m)	12' 5" (3.78m)
Weight (Hydraulic Drive)	11,766 lbs. (5,348 kg)	9,595 lbs. (4,361 kg)
Safety Lights	Standard	Standard
Safety Chain	Standard	Standard
Tank Capacity - Front Tank	Optional 83 bu (2,938 l)	Optional 83 bu (2,938 l)
Tank Capacity - Middle Tank	93 bu (3,272 l)	93 bu (3,272 l)
Tank Capacity - Rear Tank	150 bu (5,278 l)	150 bu (5,278 l)
Tank Capacity - Total	**243 bu (8,550 l)**	**243 bu (8,550 l)**
Tank Screens	Standard	Standard
Tank Access Ladder R.H.S.	Standard	Standard
Rated Fan Speed	17" fan - up to 5,000 r.p.m.	17" fan - up to 5,000 r.p.m.
Fan Impeller Diameter	17" (43 cm)	17" (43 cm)
Hydraulic Drive - piston type orbit motor (Closed Centre or Closed Centre Load Sensing systems required) Hydraulic requirements for Air Cart only at Rated Fan Speed.	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)
Loading Auger	Standard (10" Dia x 21' Lg.) (0.25m Dia x 6.4m Lg.)	Standard (10" Dia x 21' Lg.) (0.25m Dia x 6.4m Lg.)
Quad Steer	N/A	Optional
Tires - Standard (Front)	N/A	(2) 21.5 x 16.1 - 10 ply rating Soft Trac
Tires - Optional (Front)	N/A	(2) 21.5 x 16.1 - 12 ply rating Lug (2) 560/65 D24 LI 140 Soft Trac (2) 500/70 R24 Lug
Tires - Quad Steer (Front)	N/A	(2) 480/70 R30 Lug
Tires - Standard (Rear)	(2) 23.1 x 26 - 12 ply rating AWT	(2) 23.1 x 26 - 12 ply rating AWT
Tires - Optional (Rear)	(2) 23.1 x 26 - 10 ply rating Rice (2) 30.5 x 32 - 12 ply rating AWT (2) 800/65 R32 - LI 172 Lug (2) 900/65 R32 - LI 172 Lug	(2) 23.1 x 26 - 10 ply rating Rice (2) 30.5 x 32 - 12 ply rating AWT (2) 800/65 R32 - LI 172 Lug (2) 900/65 R32 - LI 172 Lug
Metering - Ground Driven	Standard	Standard
Metering - Variable Rate (VRT)	Optional	Optional
Metering - GPS Compatible VRT	Optional	Optional
Meter Shut Off	Electric	Electric
Number Secondary Runs - Single Shoot	21 to 99	21 to 99
Number Secondary Runs - Double Shoot	42 to 198	42 to 198
Number Secondary Runs - Triple Shoot	63 to 297	63 to 297
Primary Hose - Diameter	2 1/2" (6.4 cm)	2 1/2" (6.4 cm)
Secondary Hose - Diameter	Standard - 15/16" (2.4 cm) Optional - 1 1/4" (3.2 cm)	Standard - 15/16" (2.4 cm) Optional - 1 1/4" (3.2 cm)
Frame	Formed heavy wall 4" x 10" (10 cm x 25.4 cm) tubing	Formed heavy wall 4" x 10" (10 cm x 25.4 cm) tubing
Walk Through Tank	Standard	Standard
Easy Clean Out System	Standard	Standard
Meter Drive Options - Second Clutch (For spot fertilizing on the go)	Standard	Standard
Monitor (Shaft Motion (3), Bin Level (3), Fan Speed, Acre Tally, Ground Speed)	Standard Optional Seed Flow	Standard Optional Seed Flow
Work Switch (Mounted to Seeding Machine)	Optional (Ground Drive Only)	Optional (Ground Drive Only)
Rear Tow Hitch	Standard (Max 26,000 lb Draft Load) (Max 11,818 kg Draft Load)	Optional (Max 15,000 lb Draft Load) (Max 6,818 kg Draft Load)
Mechanical Acre Meter	Optional (Ground Drive Only)	Optional (Ground Drive Only)
Hitch Stand	N/A	Optional

8300XL
Specifications and Options

Model	8300XL	8300XL
Configuration	**Tow Between**	**Tow Behind**
Length without auger (with auger)	23' 4" (7.14m) (24' 7" (7.49m))	23' 4" (7.14m) (24' 7" (7.49m))
Height	15' (4.57m)	15' (4.57m)
Width	13' 4" (4.06m)	12' 5" (3.78m)
Weight (Hydraulic Drive)	11,986 lbs. (5,448 kg)	9,815 lbs. (4,461 kg)
Safety Lights	Standard	Standard
Safety Chain	Standard	Standard
Tank Capacity - Front Tank	Optional 83 bu (2,938 l)	Optional 83 bu (2,938 l)
Tank Capacity - Middle Tank	117 bu (4,126 l)	117 bu (4,126 l)
Tank Capacity - Rear Tank	186 bu (6,537 l)	186 bu (6,537 l)
Tank Capacity - Total	**303 bu (10,663 l)**	**303 bu (10,663 l)**
Tank Screens	Standard	Standard
Tank Access Ladder R.H.S.	Standard	Standard
Rated Fan Speed	17" fan - up to 5,000 r.p.m.	17" fan - up to 5,000 r.p.m.
Fan Impeller Diameter	17" (43 cm)	17" (43 cm)
Hydraulic Drive - piston type orbit motor (Closed Centre or Closed Centre Load Sensing systems required) Hydraulic requirements for Air Cart only at Rated Fan Speed.	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)
Loading Auger	Standard (10" Dia x 21' Lg.) (0.25m Dia x 6.4m Lg.)	Standard (10" Dia x 21' Lg.) (0.25m Dia x 6.4m Lg.)
Quad Steer	N/A	Optional
Tires - Standard (Front)	N/A	(2) 500/70 R24 Lug Distance Center-Center Inner 40" (102 cm)
Tires - Quad Steer (Front)	N/A	(2) 480/70 R30 Lug Distance Center-Center 124" (315 cm)
Tires - Standard (Rear)	(2) 800/65 R32 - LI 172 Lug Distance Center-Center 128" (325 cm)	(2) 800/65 R32 - LI 172 Lug Distance Center-Center 128" (325 cm)
Tires - Optional (Rear)	(2) 900/65 R32 - LI 172 Lug Distance Center-Center 132" (335 cm) Duals - (4) 520/85 R38 Lug Distance Center-Center Inner 119" (302 cm) Distance Center-Center Outer 171" (434 cm)	(2) 900/65 R32 - LI 172 Lug Distance Center-Center 132" (335 cm) Duals - (4) 520/85 R38 Lug Distance Center-Center Inner 119" (302 cm) Distance Center-Center Outer 171" (434 cm)
Metering - Ground Driven	Standard	Standard
Metering - Variable Rate (VRT)	Optional	Optional
Metering - GPS Compatible VRT	Optional	Optional
Meter Shut Off	Electric	Electric
Number Secondary Runs - Single Shoot	21 to 99	21 to 99
Number Secondary Runs - Double Shoot	42 to 198	42 to 198
Number Secondary Runs - Triple Shoot	63 to 297	63 to 297
Primary Hose - Diameter	2 1/2" (6.4 cm)	2 1/2" (6.4 cm)
Secondary Hose - Diameter	Standard - 15/16" (2.4 cm) Optional - 1 1/8" (2.8 cm)	Standard - 15/16" (2.4 cm) Optional - 1 1/8" (2.8 cm)
Frame	Formed heavy wall 4" x 10" (10 cm x 25.4 cm) tubing	Formed heavy wall 4" x 10" (10 cm x 25.4 cm) tubing
Walk Through Tank	Standard	Standard
Easy Clean Out System	Standard	Standard
Meter Drive Options -Second Clutch (For spot fertilizing on the go)	Standard	Standard
Monitor (Shaft Motion (3), Bin Level (3), Fan Speed, Acre Tally, Ground Speed)	Standard Optional Seed Flow	Standard Optional Seed Flow
Work Switch (Mounted to Seeding Machine)	Optional	Optional
Rear Tow Hitch	Standard (Max 26,000 lb Draft Load) (Max 11,818 kg Draft Load)	Optional (Max 15,000 lb Draft Load) (Max 6,818 kg Draft Load)
Mechanical Acre Meter	Optional (Ground Drive Only)	Optional (Ground Drive Only)
Hitch Stand	N/A	Optional

Specifications

8336XL
Specifications and Options

Model	8336XL	8336XL
Configuration	**Tow Between**	**Tow Behind**
Length without auger (with auger)	23' 4" (7.14m) (24' 7" (7.49m))	23' 4" (7.14m) (24' 7" (7.49m))
Height	13' 4" (4.06)	13' 4" (4.06)
Width	13' 4" (4.06)	12' 5" (3.78)
Weight (Hydraulic Drive)	12,611 lbs. (5,732 kg)	10,440 lbs. (4,745 kg)
Safety Lights	Standard	Standard
Safety Chain	Standard	Standard
Tank Capacity - Front Tank	103 bu (3,650 l)	103 bu (3,650 l)
Tank Capacity - Middle Tank	93 bu (3,272 l)	93 bu (3,272 l)
Tank Capacity - Rear Tank	150 bu (5,278 l)	150 bu (5,278 l)
Tank Capacity - Total	**346 bu (12,200 l)**	**346 bu (12,200 l)**
Tank Screens	Standard	Standard
Tank Access Ladder R.H.S.	Standard	Standard
Rated Fan Speed	17" fan - up to 5,000 r.p.m.	17" fan - up to 5,000 r.p.m.
Fan Impeller Diameter	17" (43 cm)	17" (43 cm)
Hydraulic Drive - piston type orbit motor (Closed Centre or Closed Centre Load Sensing systems required) Hydraulic requirements for Air Cart only at Rated Fan Speed.	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)
Loading Auger	Standard (10" Dia x 21' Lg.) (0.25m Dia x 6.4m Lg.)	Standard (10" Dia x 21' Lg.) (0.25m Dia x 6.4m Lg.)
Quad Steer	N/A	Optional
Tires - Standard (Front)	N/A	(2) 21.5 x 16.1 - 10 ply rating Soft Trac
Tires - Optional (Front)	N/A	(2) 21.5 x 16.1 - 12 ply rating Lug (2) 560/65 D24 LI 140 Soft Trac (2) 500/70 R24 Lug
Tires - Quad Steer (Front)	N/A	(2) 480/70 R30 Lug
Tires - Standard (Rear)	(2) 30.5 x 32 - 12 ply rating AWT	(2) 23.1 x 26 - 12 ply rating AWT
Tires - Optional (Rear)	(2) 800/65 R32 - LI 172 Lug (2) 900/65 R32 - LI 172 Lug	(2) 23.1 x 26 - 10 ply rating Rice (2) 30.5 x 32 - 12 ply rating AWT (2) 800/65 R32 - LI 172 Lug (2) 900/65 R32 - LI 172 Lug
Metering - Ground Driven	Standard	Standard
Metering - Variable Rate (VRT)	Optional	Optional
Metering - GPS Compatible VRT	Optional	Optional
Meter Shut Off	Electric	Electric
Number Secondary Runs - Single Shoot	21 to 99	21 to 99
Number Secondary Runs - Double Shoot	42 to 198	42 to 198
Number Secondary Runs - Triple Shoot	63 to 297	63 to 297
Primary Hose - Diameter	2 1/2" (6.4 cm)	2 1/2" (6.4 cm)
Secondary Hose - Diameter	Standard - 15/16" (2.4 cm) Optional - 1 1/4" (3.2 cm)	Standard - 15/16" (2.4 cm) Optional - 1 1/4" (3.2 cm)
Frame	Formed heavy wall 4" x 10" (10 cm x 25.4 cm) tubing	Formed heavy wall 4" x 10" (10 cm x 25.4 cm) tubing
Walk Through Tank	Standard	Standard
Easy Clean Out System	Standard	Standard
Meter Drive Options -Second Clutch (For spot fertilizing on the go)	Standard	Standard
Monitor (Shaft Motion (3), Bin Level (3), Fan Speed, Acre Tally, Ground Speed)	Standard Optional Seed Flow	Standard Optional Seed Flow
Work Switch (Mounted to Seeding Machine)	Optional (Ground Drive Only)	Optional (Ground Drive Only)
Rear Tow Hitch	Standard (Max 26,000 lb Draft Load) (Max 11,818 kg Draft Load)	Optional (Max 15,000 lb Draft Load) (Max 6,818 kg Draft Load)
Mechanical Acre Meter	Optional (Ground Drive Only)	Optional (Ground Drive Only)
Hitch Stand	N/A	Optional

8370XL
Specifications and Options

Model	8370XL	8370XL
Configuration	**Tow Between**	**Tow Behind**
Length without auger (with auger)	23' 4" (7.14m) (24' 7" (7.49m))	23' 4" (7.14m) (24' 7" (7.49m))
Height	15' (4.57m)	15' (4.57m)
Width	13' 4" (4.06m)	13' 4" (4.06m)
Weight (Hydraulic Drive)	13,618 lbs. with 3rd tank	10,440 lbs. (4,745 kg)
Safety Lights	Standard	Standard
Safety Chain	Standard	Standard
Tank Capacity - Front Tank	Optional 83 bu (2,938 l)	Optional 83 bu (2,938 l)
Tank Capacity - Middle Tank	174 bu (6,184 l)	174 bu (6,184 l)
Tank Capacity - Rear Tank	186 bu (6,537 l)	186 bu (6,537 l)
Tank Capacity - Total	**360 bu (12,721 l)**	**360 bu (12,721 l)**
Tank Screens	Standard	Standard
Tank Access Ladder R.H.S.	Standard	Standard
Rated Fan Speed	17" fan - up to 5,000 r.p.m.	17" fan - up to 5,000 r.p.m.
Fan Impeller Diameter	17" (43 cm)	17" (43 cm)
Hydraulic Drive - piston type orbit motor (Closed Centre or Closed Centre Load Sensing systems required) Hydraulic requirements for Air Cart only at Rated Fan Speed.	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)
Loading Auger	Standard (10" Dia x 21' Lg.) (0.25m Dia x 6.4m Lg.)	Standard (10" Dia x 21' Lg.) (0.25m Dia x 6.4m Lg.)
Quad Steer	N/A	Optional
Tires - Standard (Front)	N/A	(2) 500/70 R24 Lug Distance Center-Center 40" (102 cm)
Tires - Quad Steer (Front)	N/A	(2) 480/70 R30 Lug Distance Center-Center 124" (315 cm)
Tires - Standard (Rear)	(2) 800/65 R32 - LI 172 Lug Distance Center-Center 128" (325 cm)	(2) 800/65 R32 - LI 172 Lug Distance Center-Center 128" (325 cm)
Tires - Optional (Rear)	(2) 900/65 R32 - LI 172 Lug Distance Center-Center 132" (335 cm) Duals - (4) 520/85 R38 Lug Distance Center-Center Inner 119" (302 cm) Distance Center-Center Outer 171" (434 cm)	(2) 900/65 R32 - LI 172 Lug Distance Center-Center 132" (335 cm) Duals - (4) 520/85 R38 Lug Distance Center-Center Inner 119" (302 cm) Distance Center-Center Outer 171" (434 cm)
Metering - Ground Driven	Standard	Standard
Metering - Variable Rate (VRT)	Optional	Optional
Metering - GPS Compatible VRT	Optional	Optional
Meter Shut Off	Electric	Electric
Number Secondary Runs - Single Shoot	21 to 99	21 to 99
Number Secondary Runs - Double Shoot	42 to 198	42 to 198
Number Secondary Runs - Triple Shoot	63 to 297	63 to 297
Primary Hose - Diameter	2 1/2" (6.4 cm)	2 1/2" (6.4 cm)
Secondary Hose - Diameter	Standard - 15/16" (2.4 cm) Optional - 1 1/8" (2.8 cm)	Standard - 15/16" (2.4 cm) Optional - 1 1/8" (2.8 cm)
Frame	Formed heavy wall 4" x 10" (10 cm x 25.4 cm) tubing	Formed heavy wall 4" x 10" (10 cm x 25.4 cm) tubing
Walk Through Tank	Standard	Standard
Easy Clean Out System	Standard	Standard
Meter Drive Options -Second Clutch (For spot fertilizing on the go)	Standard	Standard
Monitor (Shaft Motion (3), Bin Level (3), Fan Speed, Acre Tally, Ground Speed)	Standard Optional Seed Flow	Standard Optional Seed Flow
Work Switch (Mounted to Seeding Machine)	Optional	Optional
Rear Tow Hitch	Standard (Max 26,000 lb Draft Load) (Max 11,818 kg Draft Load)	Optional (Max 15,000 lb Draft Load) (Max 6,818 kg Draft Load)
Mechanical Acre Meter	Optional (Ground Drive Only)	Optional (Ground Drive Only)
Hitch Stand	N/A	Optional

Specifications

8425XL Specifications and Options		
Model	**8425XL**	**8425XL**
Configuration	**Tow Between**	**Tow Behind**
Length without auger (with auger)	23' 4" (7.14m) (24' 7" (7.49m))	23' 4" (7.14m) (24' 7" (7.49m))
Height	13' 4" (4.06)	13' 4" (4.06)
Width	13' 4" (4.06)	13' 4" (4.06)
Weight (Hydraulic Drive)		11,500 lbs. (5,227 kg)
Safety Lights	Standard	Standard
Safety Chain	Standard	Standard
Tank Capacity - Front Tank	130 bu (4,559 l)	130 bu (4,559 l)
- Middle Tank	117 bu (4,126 l)	117 bu (4,126 l)
- Rear Tank	186 bu (6,537 l)	186 bu (6,537 l)
- Total	**433 bu (15,222 l)**	**433 bu (15,222 l)**
Tank Screens	Standard	Standard
Tank Access Ladder R.H.S.	Standard	Standard
Rated Fan Speed	17" fan - up to 5,000 r.p.m.	17" fan - up to 5,000 r.p.m.
Fan Impeller Diameter	17" (43 cm)	17" (43 cm)
Hydraulic Drive - piston type orbit motor (Closed Centre or Closed Centre Load Sensing systems required) Hydraulic requirements for Air Cart only at Rated Fan Speed.	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)
Loading Auger	Standard (10" Dia x 21' Lg.) (0.25m Dia x 6.4m Lg.)	Standard (10" Dia x 21' Lg.) (0.25m Dia x 6.4m Lg.)
Quad Steer	N/A	Optional
Tires - Standard (Front)	N/A	(2) 560/65 D24 - LI 140 Soft Trac
- Optional (Front)	N/A	(2) 500/70 R24 Lug
- Quad Steer (Front)	N/A	(2) 480/70 R30 Lug
- Standard (Rear)	(2) 800/65 R32 - LI 172 Lug	(2) 30.5 x 32 - 12 ply rating AWT
- Optional (Rear)	(2) 900/65 R32 - LI 172 Lug	(2) 800/65 R32 - LI 172 Lug (2) 900/65 R32 - LI 172 Lug
Metering - Ground Driven	Standard	Standard
- Variable Rate (VRT)	Optional	Optional
- GPS Compatible VRT	Optional	Optional
Meter Shut Off	Electric	Electric
Number Secondary Runs - Single Shoot	21 to 99	21 to 99
Number Secondary Runs - Double Shoot	42 to 198	42 to 198
Number Secondary Runs - Triple Shoot	63 to 297	63 to 297
Primary Hose - Diameter	2 1/2" (6.4 cm)	2 1/2" (6.4 cm)
Secondary Hose - Diameter	Standard - 15/16" (2.4 cm) Optional - 1 1/4" (3.2 cm)	Standard - 15/16" (2.4 cm) Optional - 1 1/4" (3.2 cm)
Frame	Formed heavy wall 4" x 10" (10 cm x 25.4 cm) tubing	Formed heavy wall 4" x 10" (10 cm x 25.4 cm) tubing
Walk Through Tank	Standard	Standard
Easy Clean Out System	Standard	Standard
Meter Drive Options -Second Clutch (For spot fertilizing on the go)	Standard	Standard
Monitor (Shaft Motion (3), Bin Level (3), Fan Speed, Acre Tally, Ground Speed)	Standard Optional Seed Flow	Standard Optional Seed Flow
Work Switch (Mounted to Seeding Machine)	Optional (Ground Drive Only)	Optional (Ground Drive Only)
Rear Tow Hitch	Standard (Max 26,000 lb Draft Load) (Max 11,818 kg Draft Load)	Optional (Max 15,000 lb Draft Load) (Max 6,818 kg Draft Load)
Mechanical Acre Meter	Optional (Ground Drive Only)	Optional (Ground Drive Only)
Hitch Stand	N/A	Optional

8435XL, 8630XL and 8650XL - Tow Behind
Specifications and Options

Model	8435XL	8630XL	8650XL
Configuration	**Tow Behind**	**Tow Behind**	**Tow Behind**
Length from Quad Steer hitch pin to fan	36' 7" (11.15 m)	36' 7" (11.15 m)	36' 7" (11.15 m)
Height	13' 8" (4.16 m)	13' 8" (4.16 m)	13' 8" (4.16 m)
Width - Single Axle	13' 10" (4.22 m)	13' 10" (4.22 m)	13' 10" (4.22 m)
Width - Dual Axle	15' 11" (4.81 m)	15' 11" (4.81 m)	15' 11" (4.81 m)
Weight	16,890 lbs (7,661 kg)	18,000 lbs (8,165 kg)	18,250 lbs (8,278 kg)
Safety Lights	Standard	Standard	Standard
Safety Chain	Standard	Standard	Standard
Tank Capacity - Tank 1	N/A	190 bu (6,695 l)	190 bu (6,695 l)
Tank Capacity - Tank 2	N/A	N/A	28 bu (987 l)
Tank Capacity - Tank 3	203 bu (7,154 l)	203 bu (7,154 l)	203 bu (7,154 l)
Tank Capacity - Tank 4	232 bu (8,175 l)	232 bu (8,175 l)	232 bu (8,175 l)
Tank Capacity - Total	**435 bu (15,329 l)**	**625 bu (22,024 l)**	**653 bu (23,011 l)**
Tank Screens	Standard		
Tank Access Ladder R.H.S.	Standard		
Rated Fan Speed	17" fan - up to 5,000 r.p.m.		
Fan Impeller Diameter	Standard 17" (43 cm)		
Hydraulic Drive - piston type orbit motor (Closed Centre or Closed Centre Load Sensing systems required) Hydraulic requirements for Air Cart only at Rated Fan Speed.	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)		
Loading Auger	Standard (10" Dia) (25.4 cm Dia)		
Loading Conveyor	Optional		
Quad Steer	Standard		
Tires - Quad Steer (Front)	(2) 28LR26 Lug Distance Center-Center Inner 138" (351 cm)		
Tires - Standard (Rear)	(2) 900/65 R32 - LI 172 Lug Distance Center-Center Inner 132" (335 cm)		
Tires - Optional (Rear)	Duals - (4) 520/85 R38 Lug Distance Center-Center Inner 119" (302 cm) Distance Center-Center Outer 171" (434 cm)		
Metering - Ground Driven	Standard		
Metering - Variable Rate (VRT)	Optional		
Metering - GPS Compatible VRT	Optional		
Meter Shut Off	Electric		
Number Secondary Runs - Single Shoot	21 to 99		
Number Secondary Runs - Double Shoot	42 to 198		
Number Secondary Runs - Triple Shoot	Subject to availability		
Primary Hose - Diameter	2 1/2" (6.4 cm)		
Secondary Hose - Diameter	Standard - 15/16" (2.4 cm) Optional - 1 1/8" (2.8 cm)		
Frame - Trussed	4" x 6" (10 cm x 15.2cm) tubing by 4" x 4" (10 cm x 10 cm) tubing		
Walk Through Tank	Standard		
Easy Clean Out System	Standard		
Meter Drive Options -Second Clutch (For spot fertilizing on the go)	Standard		
Monitor (Shaft Motion (4), Bin Level (4), Fan Speed, Acre Tally, Ground Speed)	Standard Optional Seed Flow		
Work Switch (Mounted to Seeding Machine)	Optional		
Rear Tow Hitch	Optional (Max 15,000 lb Draft Load) (Max 6,818 kg Draft Load)		
Mechanical Acre Meter	Optional (Ground Drive Only)		

Specifications are estimates and subject to change.

Specifications

8435XL, 8630XL and 8650XL - Tow Between Specifications and Options			
Model	**8435XL**	**8630XL**	**8650XL**
Configuration	**Tow Between**	**Tow Between**	**Tow Between**
Length from hitch pin to end of Auger	33' (10.06 m)	33' (10.06 m)	33' (10.06 m)
Height	13' 8" (4.16 m)	13' 8" (4.16 m)	13' 8" (4.16 m)
Width - Dual Axle	20' (6.10 m)	20' (6.10 m)	20' (6.10 m)
Weight	19,580 lbs (8881 kg)	20,690 lbs (9385 kg)	20,940 lbs (9500 kg)
Safety Lights	Standard	Standard	Standard
Safety Chain	Standard	Standard	Standard
Tank Capacity - Tank 1	N/A	190 bu (6,695 l)	190 bu (6,695 l)
- Tank 2	N/A	N/A	28 bu (987 l)
- Tank 3	203 bu (7,154 l)	203 bu (7,154 l)	203 bu (7,154 l)
- Tank 4	232 bu (8,175 l)	232 bu (8,175 l)	232 bu (8,175 l)
- Total	**435 bu (15,329 l)**	**625 bu (22,024 l)**	**653 bu (23,011 l)**
Tank Screens	Standard		
Tank Access Ladder R.H.S.	Standard		
Rated Fan Speed	17" fan - up to 5,000 r.p.m.		
Fan Impeller Diameter	Standard 17" (43 cm)		
Hydraulic Drive - piston type orbit motor (Closed Centre or Closed Centre Load Sensing systems required) Hydraulic requirements for Air Cart only at Rated Fan Speed.	16cc 21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa) VRT requires an additional 5.5 U.S. gal/min (21 l/min)		
Loading Auger	Standard (10" Dia) (25.4 cm Dia)		
Loading Conveyor	Optional		
Tires - Standard (Rear)	Duals - (4) 800/65 R32 - LI 172 Lug Distance Center-Center Inner 132" (335 cm) Distance Center-Center Outer 208" (516 cm)		
Metering - Ground Driven	Standard		
- Variable Rate (VRT)	Optional		
- GPS Compatible VRT	Optional		
Meter Shut Off	Electric		
Number Secondary Runs - Single Shoot	21 to 99		
Number Secondary Runs - Double Shoot	42 to 198		
Number Secondary Runs - Triple Shoot	Subject to availability		
Primary Hose - Diameter	2 1/2" (6.4 cm)		
Secondary Hose - Diameter	Standard - 15/16" (2.4 cm) Optional - 1 1/8" (2.8 cm)		
Frame - Trussed	4" x 6" (10 cm x 15.2cm) tubing by 4" x 4" (10 cm x 10 cm) tubing		
Walk Through Tank	Standard		
Easy Clean Out System	Standard		
Meter Drive Options -Second Clutch (For spot fertilizing on the go)	Standard		
Monitor (Shaft Motion (4), Bin Level (4), Fan Speed, Acre Tally, Ground Speed)	Standard Optional Seed Flow		
Work Switch (Mounted to Seeding Machine)	Optional		
Rear Tow Hitch	Standard (Max 15,000 lb Draft Load) (Max 6,818 kg Draft Load)		
Mechanical Acre Meter	Optional (Ground Drive Only)		

Specifications are estimates and subject to change.

Section 3: Checklist

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Checklist

SAFETY-ALERT SYMBOL

Watch for this symbol. It identifies potential hazards to health or personal safety. It points out safety precautions. It means:

ATTENTION - BE ALERT.

Your safety is involved.

Manuals

Note: Pre-Delivery Inspection Form must be completed and submitted to Morris Industries within 30 days of delivery date.

Warranty Void if Not Registered

Parts Manual Order Part Number N42302

Assembly Manual Order Part Number N42299

Checklist

Please read the Operator's Manual carefully and become a "SAFE" operator.

Adopt a good lubrication and maintenance program.

General

____Check if assembled correctly.

____Proper chain tension.

____Check hose connections.

____Ensure cleanout door and tank lid are connected correctly.

Lubrication - Grease

____Metering Drive

____Axle Pivots

____Auger Pivots

Lubrication - Oil

____Drive chains

Tire Pressure

____See Maintenance, Section 6.

Transport

____Tighten wheel bolts.

____Check hose connections.

OWNER REFERENCE

Model: _____

Serial No: _____

Dealer: _____

Town: _____ State: _____

Phone: _____

OWNER/OPERATOR: _____

Date: _____

TAKE SAFETY SERIOUSLY.

DO NOT TAKE NEEDLESS CHANCES!!

Notes

Section 4: Introduction

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Introduction

This Operator's Manual has been carefully prepared to provide the necessary information regarding the operation and adjustments, so that you may obtain maximum service and satisfaction from your new MORRIS EIGHT Series XL Air Cart.

To protect your investment, study your manual before starting or operating in the field. Learn how to operate and service your EIGHT Series XL Air Cart correctly, failure to do so could result in personal injury or equipment damage.

If you should find that you require information not covered in this manual, contact your local MORRIS Dealer. The Dealer will be glad to answer any questions that may arise regarding the operation of your MORRIS EIGHT Series XL Air Cart.

MORRIS Dealers are kept informed on the best methods of servicing and are equipped to provide prompt efficient service if needed.

Occasionally, your EIGHT Series XL Air Cart may require replacement parts. Your Dealer will be able to supply you with the necessary replacement parts required. If the Dealer does not have the necessary part, the MORRIS Factory will supply the Dealer with it promptly.

Your MORRIS EIGHT Series XL Air Cart is designed to give satisfaction even under difficult conditions. A small amount of time and effort spent in protecting it against rust, wear and replacing worn parts will increase the life and trade-in value.

Keep this book handy for ready reference at all times. It is the policy of Morris Industries Ltd. to improve its products whenever it is possible to do so. The Company reserves the right to make changes or add improvements at any time without incurring any obligation to make such changes on machines sold previously.

Introduction - Continued

The MORRIS EIGHT Series XL Air Cart represents the latest in Air Cart design technology. There are eight sizes: 243 bushel two tank cart, 303 bushel two tank cart, 346 bushel three tank cart, 360 bushel two tank cart, 433 bushel three tank cart, 435 bushel two tank cart, 625 bushel three tank cart and a 653 bushel four tank cart with hydraulic fan drive. Each cart incorporates a four wheel, wide-stance high clearance frame. The high clearance frame gives easy access to the metering wheels and the easiest cleanout in the industry. The 8240 has a 38:62 tank split, the 8300 has a 39:61 tank split, the 8336 has a 29:26:45 tank split, the 8370 has a 48:52 tank split, the 8425 cart has a 30:27:43 tank split, the 8435 has a 46:53 tank split, the 8630 cart has a 30:33:37 tank split and the 8650 cart has a 29:4:31:36 tank split. The tank lids are easily accessed by the convenient stairs and tank walkway.

Each tank has its own metering system and metering drive. Included with the unit is a sample collector box that an operator can use to confirm seeding rates.

The metering system incorporates spiral fluted wheels. The size of the metering wheel is matched to the number of outlets on the patented flat fan divider giving the best in accuracy. The spiral fluted metering wheels combined with the multi-range transmission allows a full range of products such as canola and peas to be seeded without having to change the metering wheels.

The VRT system enables the operator the ability to increase or decrease application rates from the tractor seat by pressing a button. Application rates can be changed on the go in increments of 5% from the operator set application rate (Max/Min - 50%). This gives the producer the ability to match application rates to varying soil requirements.

The VRT monitor with its easy to read display and Smart Sensors make basic operation effortless with unmatched reliability. Advanced functions are simple to program and the monitor can be quickly plugged into the harness at the air cart for ease of calibration. The monitor constantly monitors shaft rotation and bin levels, and with just a push of a button displays fan speed, ground speed, field acres seeded, total acres seeded and actual application rates per acre. Real time actual application rate of two tanks can be displayed simultaneously on the monitor display.

Each metering shaft **(up to four)** is independently driven by a hydraulic motor. The hydraulic motors are independently controlled through electric solenoid valves. The VRT system senses ground speed and adjusts the hydraulic valves to maintain precise meter shaft rotation vs ground speed at a frequency of 20 times per second. The VRT system has the flexibility to allow the use of either tank for fertilizer or seed as well as the third tank or granular tank.

Standard Features

Hydraulic Auger

The 10” diameter hydraulic auger is designed to make loading and unloading product from the air cart tank very simple and easy.

Fast, easy unloading and loading of all tanks is possible with the high output well balanced auger.

Right Hand Side Ladder

This ladder allows the operator easy access to the walkway and tank lids making filling the tanks more convenient.

Options

Full Bin Indicator

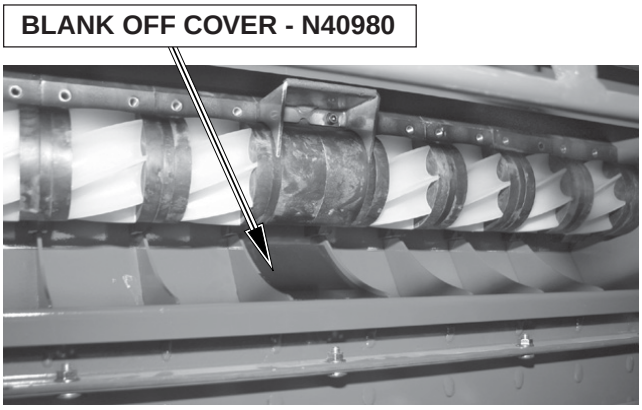
The Morris EIGHT Series XL Air Cart can be equipped with an optional full bin indicator to alert when bins are full during loading.

Full Bin Indicator - Optional

Blank Off Cover - N40980

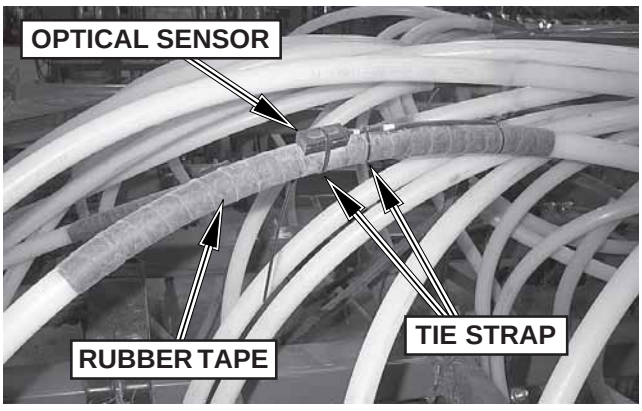
The blank off cover closes off any unused openings in the collector body. The blank off cover prevents the unused run from filling with product.

Note: The blank off cover and run caps must be removed before storage to clean out any particles that accumulated during use.



Flow Sensors

This option requires the use of Blockage Modules. The Blockage Modules signal the monitor on the loss of flow at any sensor.

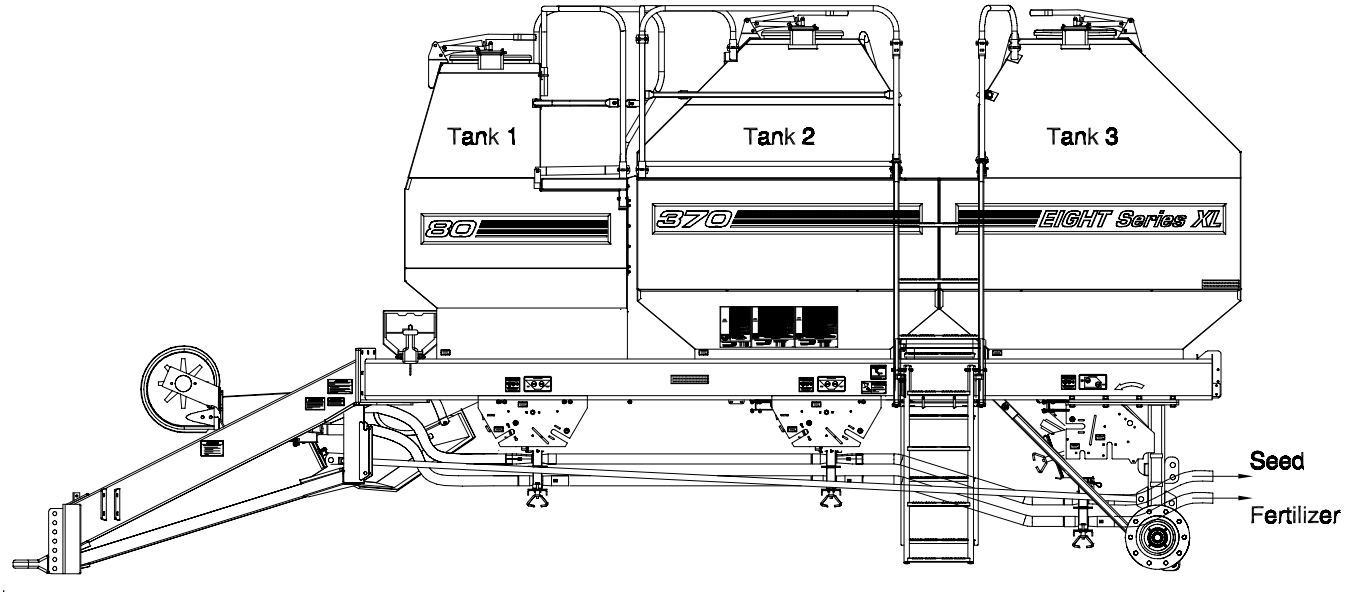


Optical Sensor Installation

Options - Continued

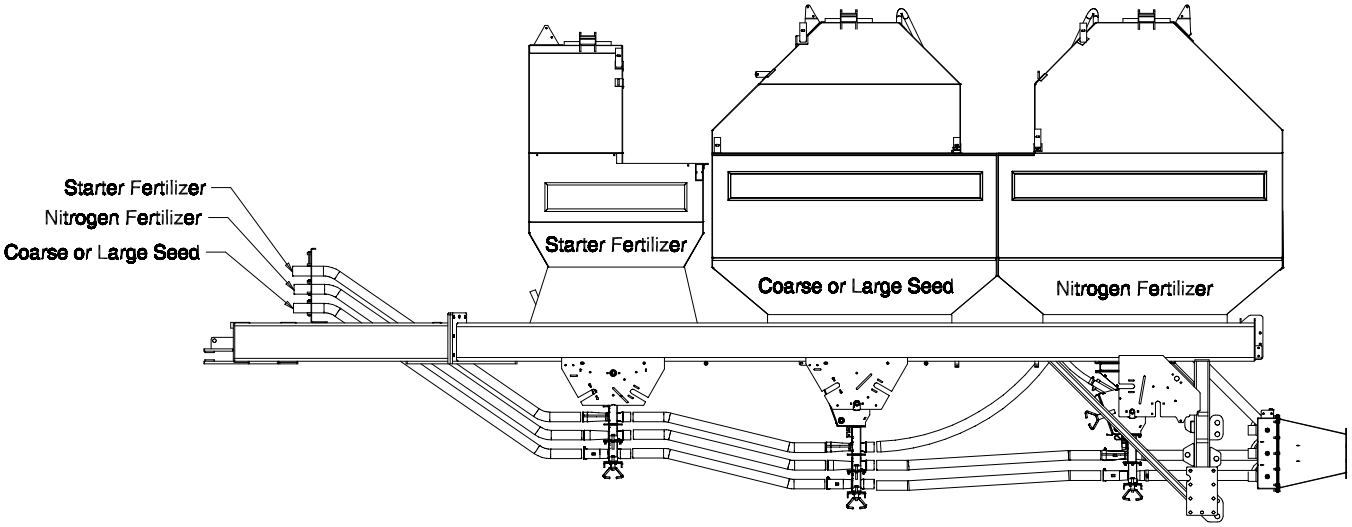
Double Shoot Distribution

This is used when fertilizer is placed at a separate depth from the seed.



Triple Shoot Distribution

This is used when placing three products separately in one operation.



Options - Continued

Hitch Stand Kit (Tow Behind)

The hitch stands make hitching and unhitching easier.

Rear Tow Hitch

The Tow Hitch is standard on tow between models and is optional on tow behind models.

The Tow Hitch enables the operator the ability to attach a packer bar or an anhydrous tank behind the Air Cart.

Note: Maximum draft load is 15,000 lbs (6,818 kg).

Dual Fan

The dual fan system allows for higher application rates on larger five frame seed units.

Options - Continued

Meter Shut-Off

The meter shut-off provides a convenient means to shut off part of the metering system from the tractor to finish narrow strips at the end of the field.

Important: It is strongly recommended to have the seeding unit equipped with a blockage monitor system to ensure product flow.

Meter Shut-Off Remote Control

Meter Shut-Off Cylinders

Seed Boots

MORRIS offers a variety of seed boots for the EIGHT Series XL Air Cart. Check with your Morris Dealer for new additions and application of the MORRIS seed boot line-up.

Note: *For guidelines* see Operation Section under *"Opener Adjustments".*

Notes

Section 5: Operation

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CAUTION

BE ALERT

SAFETY FIRST

REFER TO SECTION 1 AND REVIEW ALL SAFETY RECOMMENDATIONS.

Application

The Morris EIGHT Series XL Air Cart applies a wide range of seed and granular fertilizer products. It has the capacity to single shoot, double shoot or triple shoot. See “Double and Triple Shoot Settings” for more details.

Tractor

Tires

- Proper ballast and tire pressure are required when pulling heavy implements.
- Consult your tractor operator’s manual and follow all recommended procedures.

Hydraulics

- Wipe all hydraulic fittings and couplers with a clean cloth to avoid contaminating the system.
- Check that hydraulic reservoir is filled to the proper level.

Drawbar

- Centre and pin in a fixed position for easier hitching and greater stability.

Warning

Do not permit smoking, sparks or an open flame where combustible fuels are being used. Keep the work area well ventilated.

Warning

Do not search for high pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, that requires immediate medical attention.

Monitor Installation

1. Install A464 wire harness on tractor. Connect directly to the tractor battery. For the X20 connect A2400 Power Harness directly to the tractor battery.

Important: Battery leads from the Harness must be connected directly to the battery.

Do not connect directly to starter switch.

2. Mount monitor in tractor cab in an easily visible position.
3. For the EAGLE install A1779 Adapter Harness to monitor and attach to harness A464.

   For the X20 install A1258 Seed Rate Interface in cab in an accessable location to attach cables and harness to it. Connect cable A1734 to COMS 1 on X20 monitor and Console Connect Interface on Seed Rate Interface. Attach A2400 Power Harness to X20 monitor as shown.
4. If using a tow behind cart, route A467 extension harness over the tillage unit.

Important

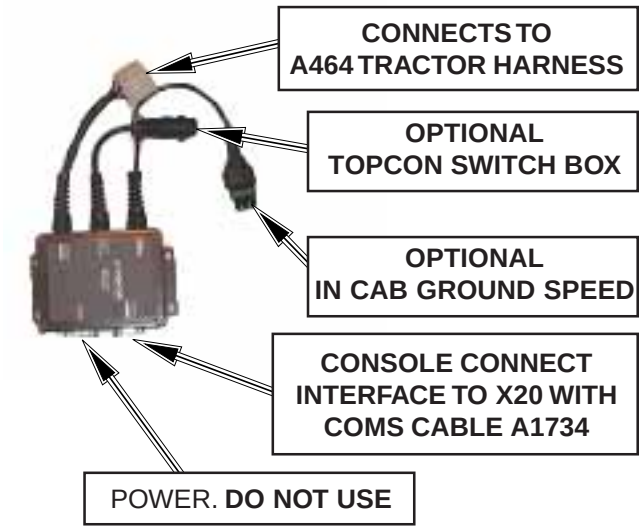
Some tractors have a 24 volt starting system. Neither the monitor nor the VRT control will operate if they are connected to a 24 volt system. If in doubt, always connect to one battery only.

X20 Monitor - Shown

Important

Ensure harness extensions, when routed over the seeding tool and air cart, are clear of moving parts and protruding objects that may cut wires.

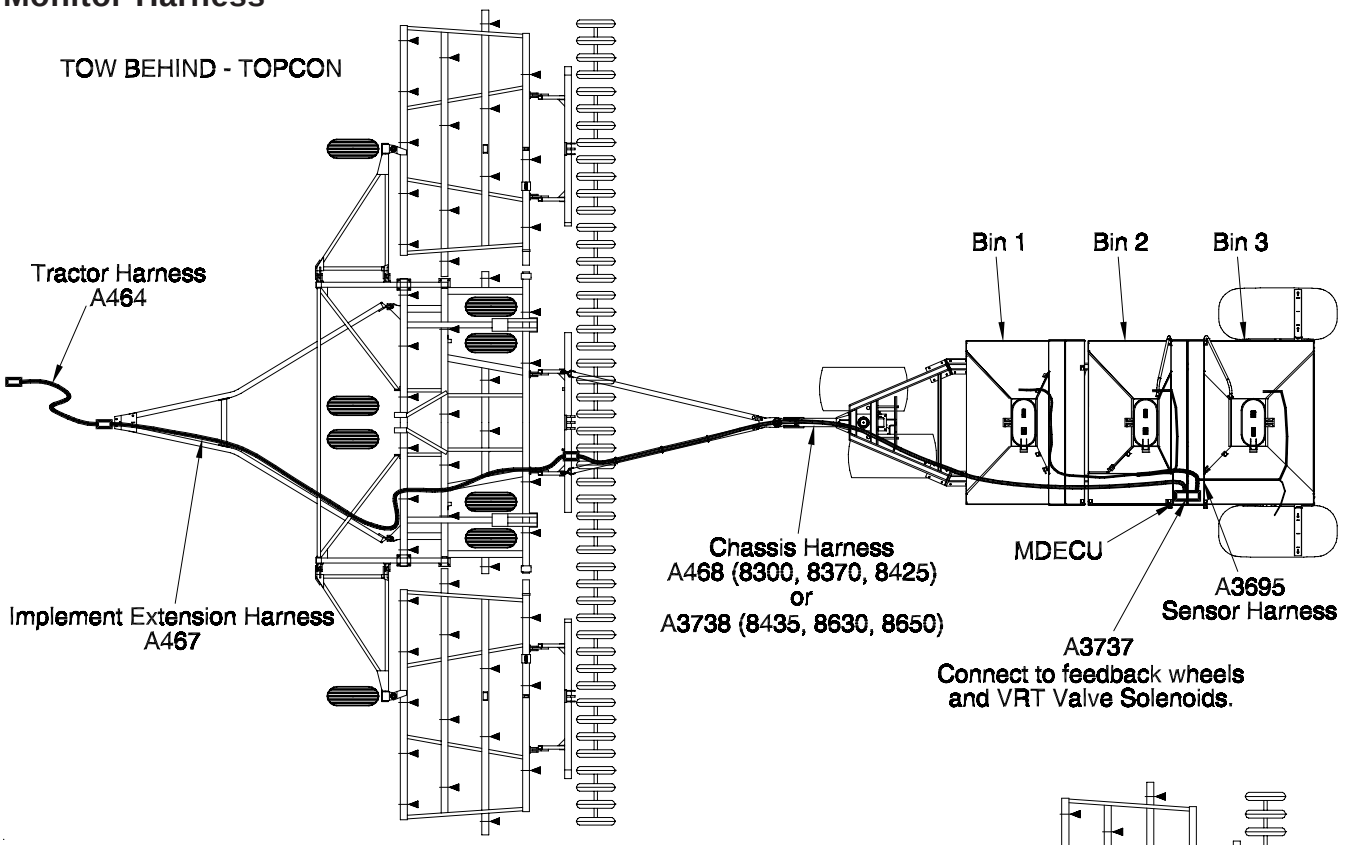
X20 Monitor

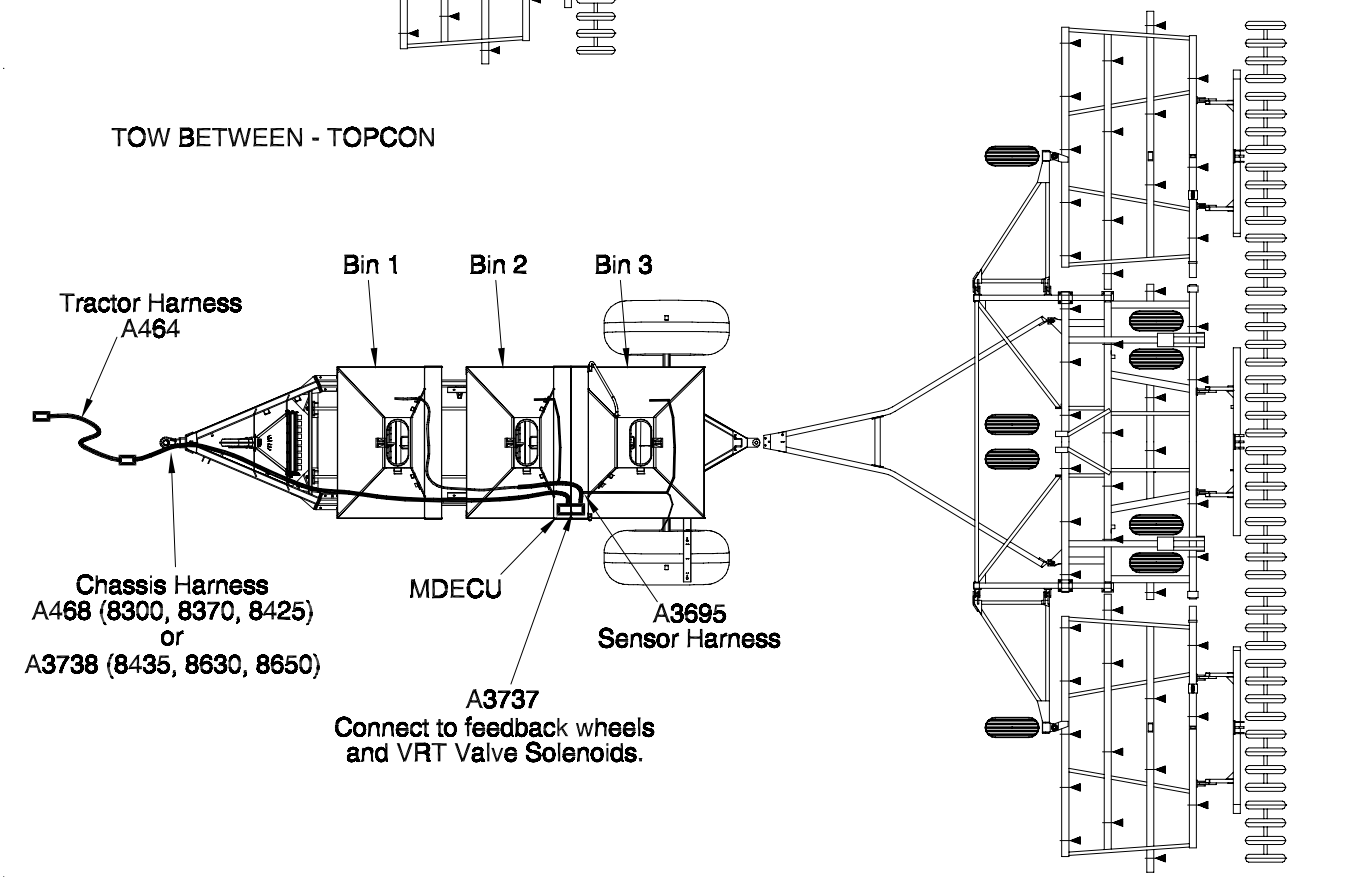


X20 Monitor - A1258 Seed Rate Interface

Monitor Installation - Continued

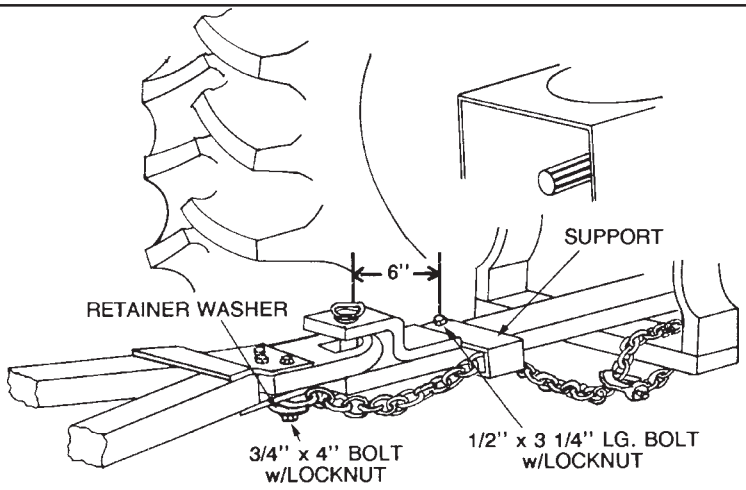
Monitor Harness





Caution

A safety chain will help control towed machines should it accidentally separate from the drawbar while transporting. A runaway machine could cause severe injury or death. Use a safety chain with a strength rating equal to or greater than the gross weight of the towed machines.



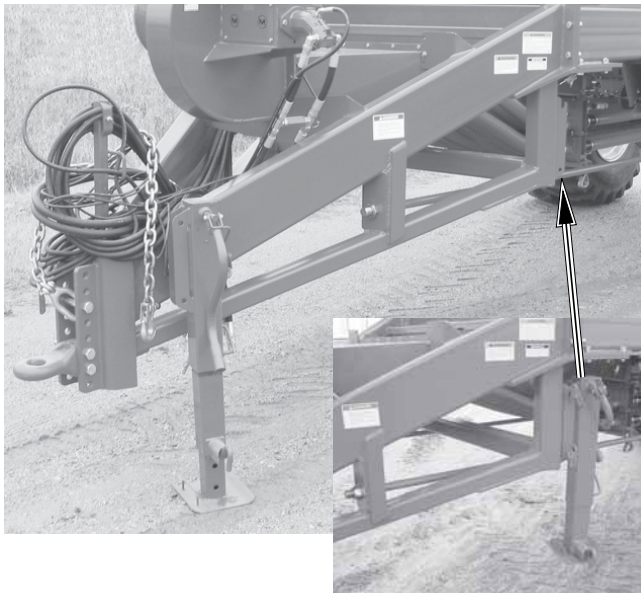
Attach safety chain to the tractor drawbar support or other specified anchor location with the appropriate parts.

Hitching to Tractor (Seeding Tool or Tow Between Cart)

- Ensure swinging drawbar is locked in the centre position.
- Ensure hitch pin is in good condition.
- Level clevis with tractor drawbar using hitch jack.
- Back tractor into position and attach hitch clevis to drawbar, using an adequate hitch pin.
- Lock hitch pin in place with a hairpin or other proper locking device.
- After tractor to implement connection is made, relieve pressure off the hitch jack.
- Place hitch jack in raised position.
- Route safety chain through chain support and drawbar support.
- Lock safety hook onto chain.

Note: Provide only enough slack in chain to permit turning.

- Ensure hydraulic hose quick couplers are dirt free.
- Inspect all fittings and hoses for leaks and kinks. Repair as necessary
- Connect the hydraulic hoses to the tractor quick couplers.



Caution

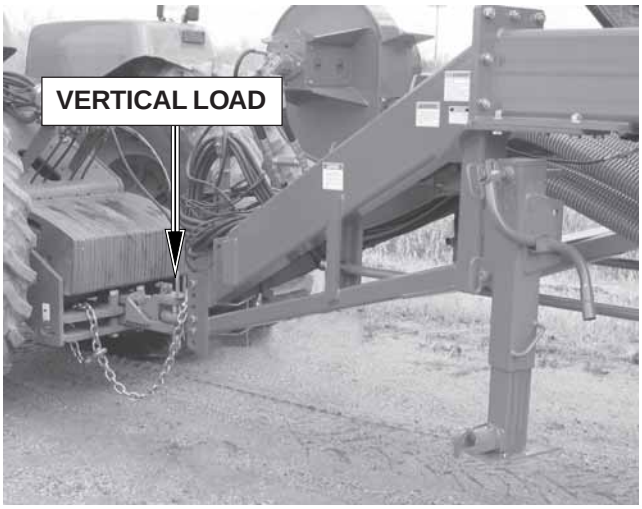
Dirt in the hydraulic system could damage O-rings, causing leakage, pressure loss and total system failure.

Hitching to Tractor (Seeding Tool or Tow Between Cart) - Continued

Tractor Drawbar Requirements

Tractor drawbar vertical load requirements for loaded tow between air carts are as follows:

8240 ..... 5,200 lbs (2,364 kg) minimum
8240/Third Tank ..... 7,500 lbs (3,410 kg) minimum
8300 ..... 6,200 lbs (2,818 kg) minimum
8300/Third Tank ..... 8,500 lbs (3,864 kg) minimum
8336 ..... 8,500 lbs (3,864 kg) minimum
8370 ..... 8,500 lbs (3,864 kg) minimum
8370/Third Tank ..... 11,000 lbs (5,000 kg) minimum
8425 ..... 11,000 lbs (5,000 kg) minimum
8435, 8630 & 8650 .. 8,900 lbs (4,050 kg) minimum

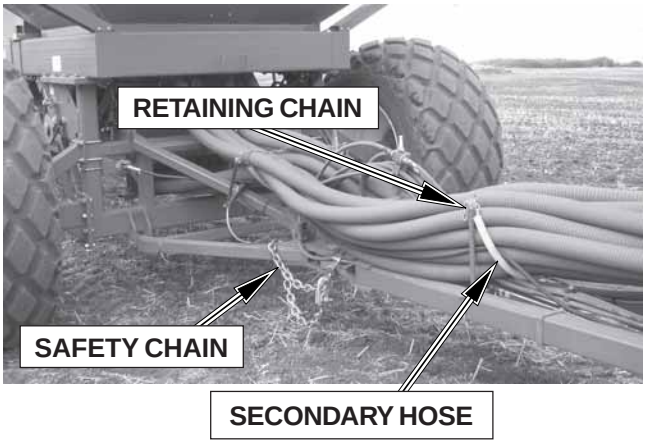


Hitching to Seeding Tool (Tow Between Cart)

- Connect air cart to tractor.
- Back air cart into position, aligning seeding tool hitch with air cart.
- Attach hitch to air cart with 1 1/2” x 6 1/2” pin and retain with a 1/4” hairpin.
- Attach safety chain to air cart.

Note: Provide only enough slack in chain to permit turning.

- Connect hydraulic hose quick couplers.
- Connect the primary hose couplers.
- Loop retaining chain around the primary hoses with the secondary hose over the bottom half of the chain.

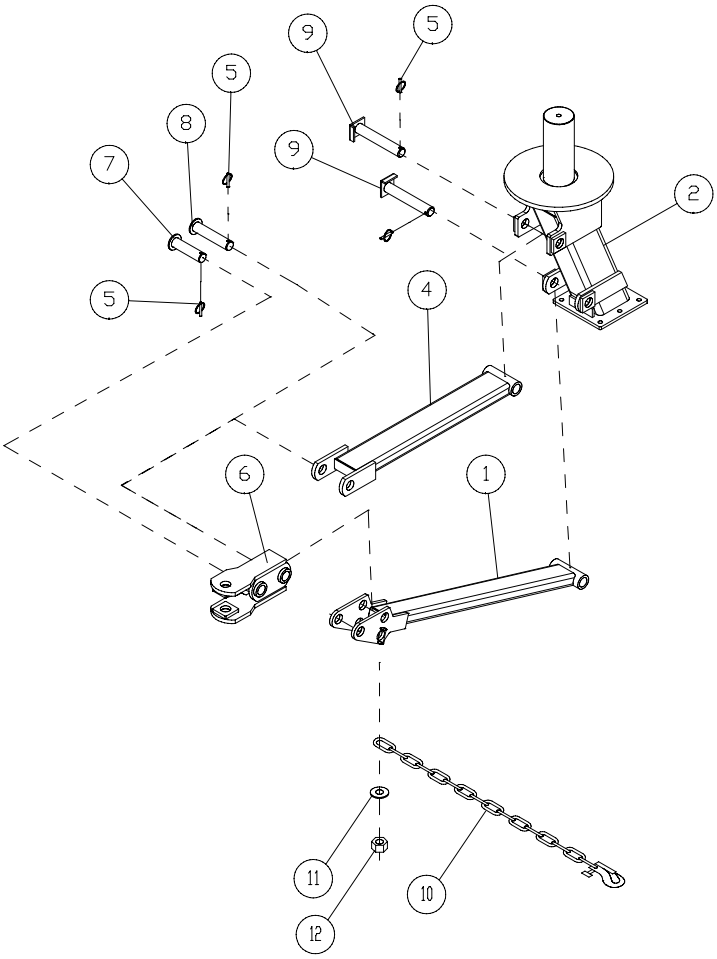


Hitching Front Castor (Tow Behind Cart)

- Assemble hitch components to the front castor axle as shown in the accompanying diagram. Item (7) is 1 1/2” x 5 1/8” lg pin. Item (8) is 1 1/2” x 6 7/16” lg pin and Item (9) is 1 1/2” x 8 3/8” lg pin.

Note: Pin item (9) holding item (4) cannot be installed or removed with the wheel assembly mounted.

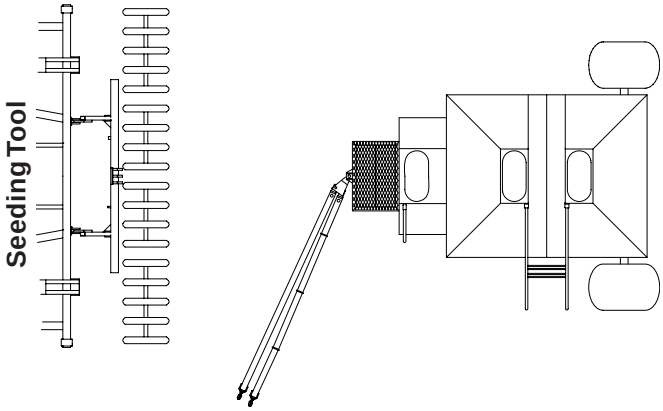
- Assemble safety chain to item (1) using 1” unitorque nut and 1 1/16” ID flatwasher.

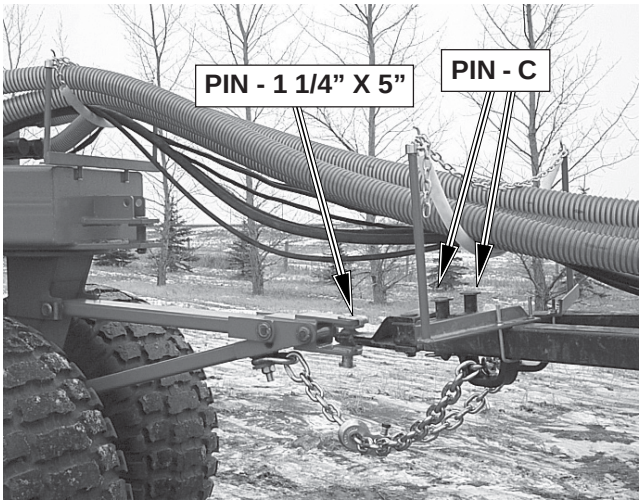


Hitching to Seeding Tool (Tow Behind Cart)

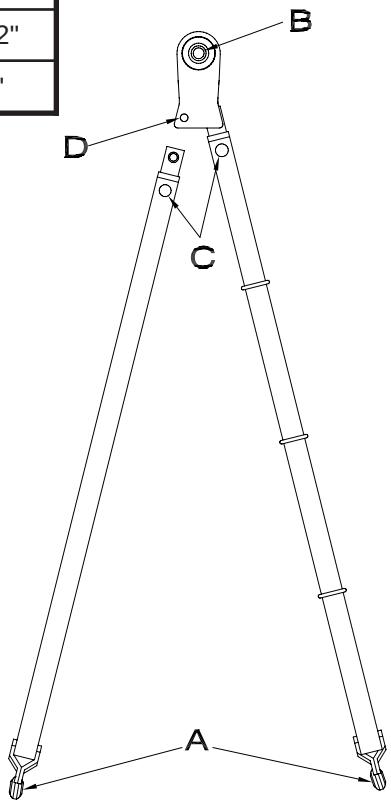
- Connect seeding tool to tractor.
- Attach hitch to air cart with 1 1/4” x 5” pin.
- Back seeding tool into position with air cart.
- Extend the telescopic hitch arms and connect the air cart to seeding tool using 1 1/8” x 3 11/16” pins.
- Block the tires of the air cart and insert the 1” x 5 13/32” pins into their bushings.
- Slowly back seeding tool toward air cart until the telescopic arms are fully retracted and the pins drop through the hitch tube locking the hitch poles.
- Retain the pins with click pins.
- Attach safety chain to air cart.

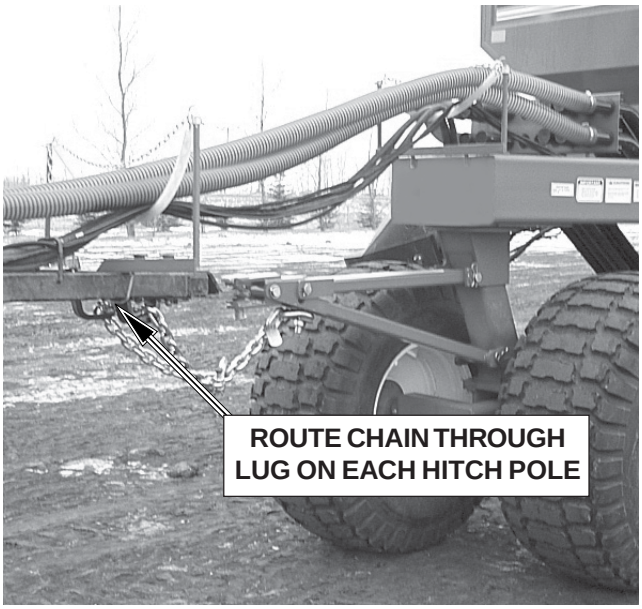
Note: Provide only enough slack in chain to permit turning.





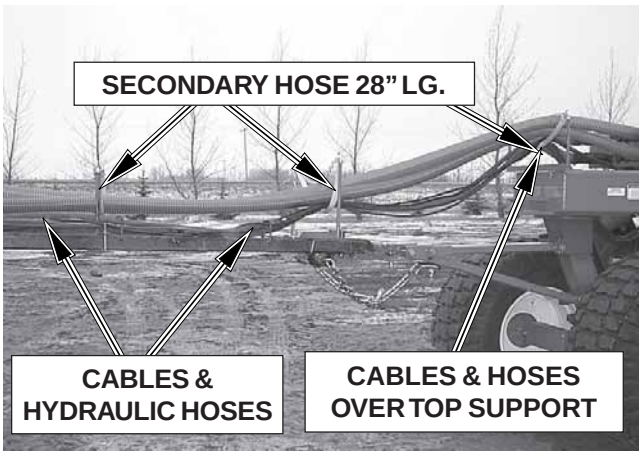
PIN SIZE	
A	1 1/8" x 3 11/16"
B	1 1/2" x 5 5/8"
C	1" x 5 13/32"
D	1" x 3 3/4"





Hitching to Seeding Tool (Tow Behind Cart) - Continued

- Route monitor wires and hydraulic lines through rear retaining chain with the secondary hose over the bottom half of the chain.
- Route monitor wires through the loops on the left hand hitch pole.
- Route the hydraulic lines (if any) through the loops on the left hand hitch pole.
- Connect the primary hose couplers.
- Loop retaining chain around the primary hoses with the secondary hose over the bottom half of the chain.
- Connect the monitor quick connectors at both the tractor/seeding tool and the seeding tool/air cart connections.

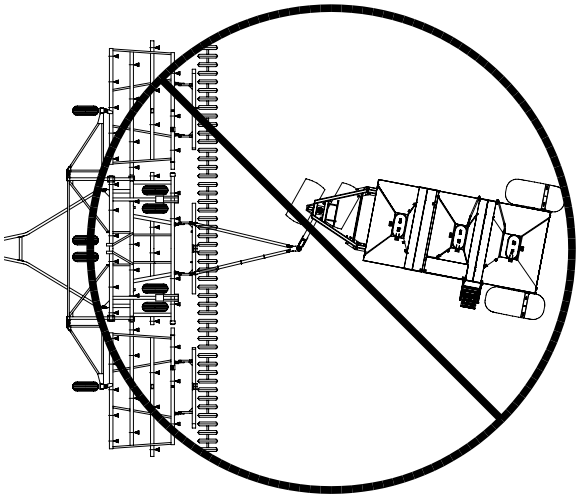


Hoses with correct amount of sag

Important

Extreme care is required when backing up unit.

Hitch damage will occur if castor jackknifes.

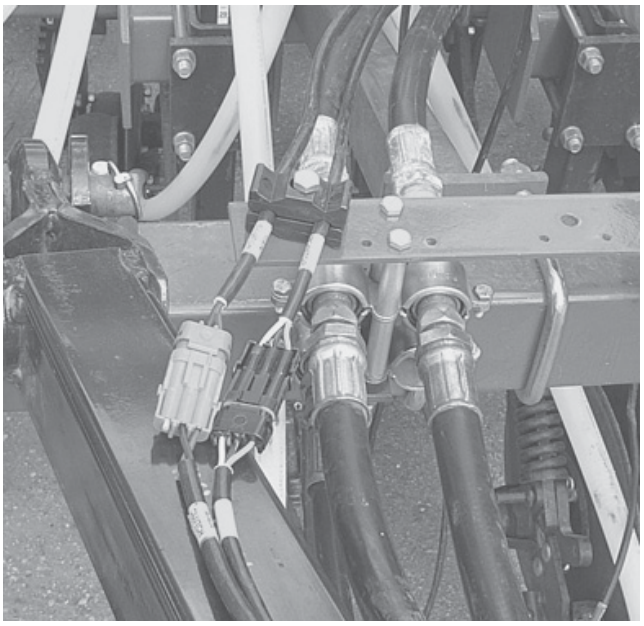


Primary Hose Coupler

Hitching to Seeding Tool (Tow Behind Cart) - Continued

Hydraulic Connections

- Connect the monitor quick connectors at both the tractor/seeding tool and the seeding tool/air cart connections.
- **Hydraulic fan drive,** connect the fan hydraulic quick couplers at both the tractor/seeding tool and the seeding tool/air cart connections. Ensure couplers are clean and dirt free.

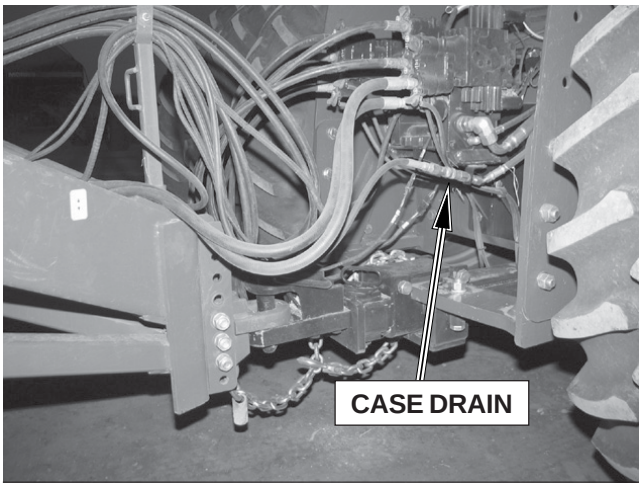


Seeding Tool Coupling

⚠ CAUTION

Hydraulic oil under pressure can penetrate the skin causing serious injury. Avoid personal injury by relieving all pressure, before disconnecting hydraulic hoses.

Note: The case drain 3/8" diameter hose must be run directly into the hydraulic tank otherwise damage will occur to the seal in the motor. If the hose is run through the filler cap then ensure the cap is *VENTED*. A quick coupler can still be used between the tractor and the seeding tool.



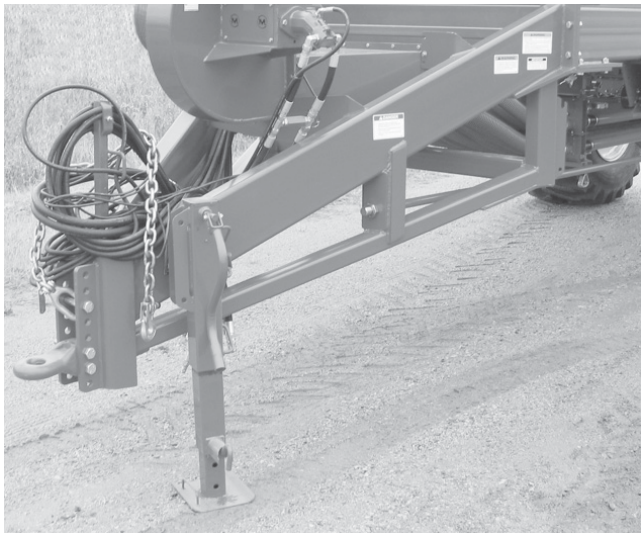
Hydraulic Coupling on Tractor

Unhitching from Tractor (Seeding Tool or Tow Between Cart)

- Pin hitch jack in working position.
- Lower hitch jack taking the weight off the air cart clevis.

Note: For added safety it is recommended to unload any material that may be in the tanks.

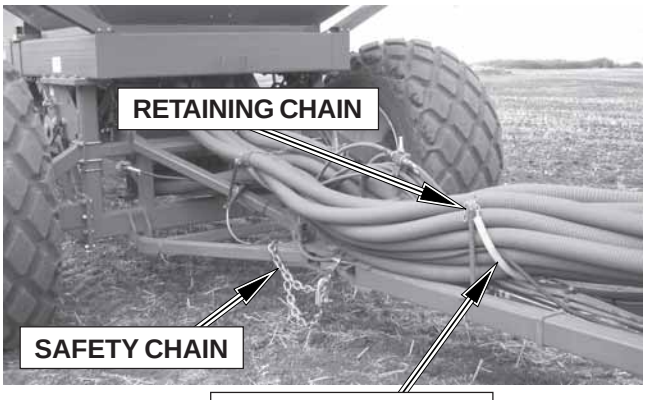
- Ensure all transport locks are properly secured. Refer to seeding tool manual for more details.
- Relieve pressure in the hydraulic hoses by positioning tractor hydraulic lever in “float” position or turn tractor engine off and cycle lever back and forth several times.
- Disconnect the hydraulic hoses.
- Disconnect the monitor cable.
- Remove the safety chain.
- Remove the drawbar pin.
- Slowly move tractor away from seeding tool or tow between cart.



Tow Between Cart

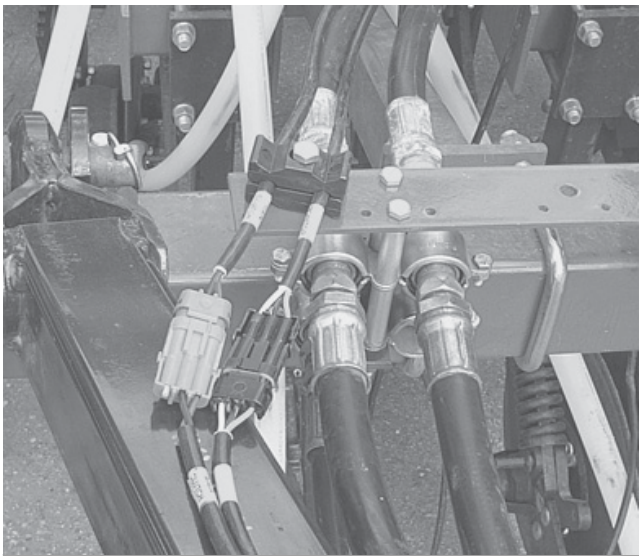
Unhitching from Seeding Tool (Tow Between Cart)

- Lower hitch jack taking the weight off the seeding tool hitch poles.
- Relieve pressure in the hydraulic hoses by positioning tractor hydraulic lever in “float” position or turn tractor engine off and cycle lever back and forth several times.
- Disconnect the primary hose couplers.
- Disconnect the hydraulic hoses.
- Remove the hitch pin.
- Slowly move cart away from seeding tool.

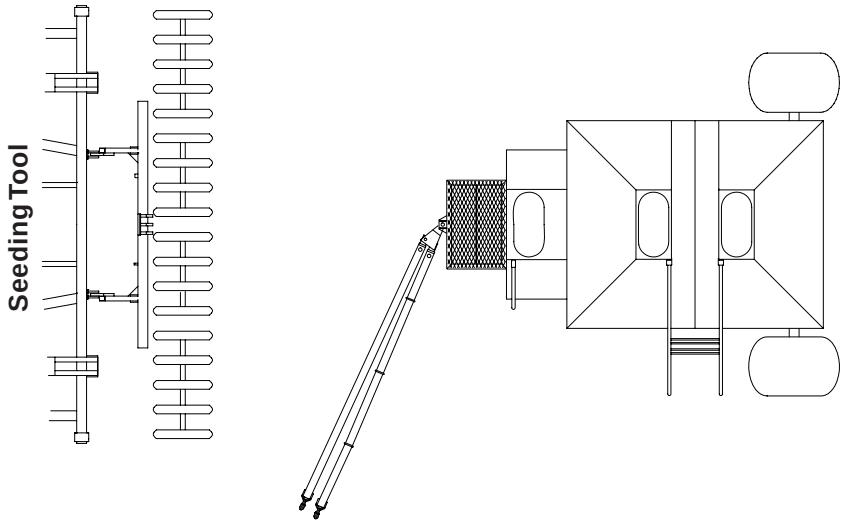


Unhitching from Seeding Tool (Tow Behind Cart)

- Lower hitch stands, if so equipped, taking the weight off the hitch poles.
- Relieve pressure in the hydraulic hoses by positioning tractor hydraulic lever in “float” position or turn tractor engine off and cycle lever back and forth several times.
- Disconnect the primary hose couplers.
- Disconnect the hydraulic hoses.
- Disconnect the monitor cable.
- Remove the hitch pins.
- Move hitch poles to the side of cart, if not equipped with hitch stands.
- Slowly move seeding tool away from air cart.



Seeding Tool Coupling



Quad Steer Operation

- Ensure safety chains are used at hitch pole connection to seeding tool.
- Retorque axle pivot bolts after first 2 hours and periodically afterwards. See “Quad Steer” in Maintenance Section for details.
- Retorque wheel nuts to 270 ft-lbs after first fifteen minutes of operation and every fifteen minutes for the next 2 hours. Check periodically afterwards.
- Avoid sharp turns which cause the steering to reach its limits and drag the front tires of the cart.
- Do not tow any implements behind cart.
- Do not tow cart in excess of 20 mph.
- Do not transport fully loaded cart on roadways.
- Use manufacturer’s rims and tires only.

Important

Extreme care is required when backing up unit.

Hitch damage will occur if axle jackknifes.

Transport

Observe all of the safety precautions under transport heading in Safety, Section 1.

- Refer to Specifications, Section 2, for weight, transport height, and width.
- Transport with tractor only!
- Use Tow Hitch when transporting without seeding tool (Tow Behind Units).
- Always connect safety chain provided to the towing vehicle and the hitch of the air cart.
- Do not transport with the fan running.
- Ensure all transport pins are secured.

Speed

- Always travel at a safe speed. Do Not Exceed 20 mph (32 kph) with an empty air cart.
- The combined weight of the implements being towed, including material in tank, ***must not exceed 1.5 times*** the weight of the towing tractor.
- Use additional caution when towing loads under adverse surface conditions, when turning, and on inclines.

Lights

- Ensure proper reflectors are in place, refer to Safety, Section 1.
- Be familiar with, and adhere to, local laws.

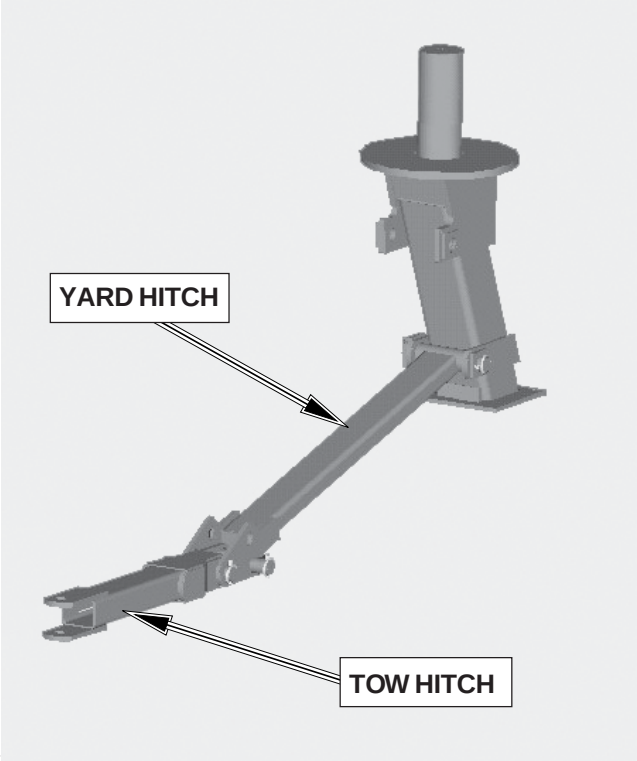
Tow Hitch (Tow Behind Units)

- Disconnect main hitch and remove the two pins connecting the hitch tube to the yard hitch tube.
- Attach hitch clevis to the yard hitch tube with two 1 1/2” x 5 1/8” and 1 1/2” x 6 7/16” pins.
- Retain the pins with klik-pins.
- Use tow hitch when towing without seeding tool.
- **Do not** use transport hitch with material in tank.

MORRIS INDUSTRIES LTD. WILL NOT BE RESPONSIBLE FOR ANY DAMAGES OR OPERATOR INJURY RESULTING FROM NON-USE OR IMPROPER USE OF TRANSPORT LOCKS.

Important

When the machines are being towed by a semi tractor or trucks of any description, the units HAVE to be towed separately from seeding tool with tow hitch provided.



Tow Hitch

Preparing VRT

Zero Shaft Hydraulic Motor Solenoids

Upon initial setup the preload of the solenoid valves must be set to match the tractor hydraulics.

Note: Tanks must be empty during this process.

Zero the shaft of the hydraulic motors by using the following procedure:

- Ensure there is no product in any tanks.
- Warm up hydraulic system by running fan system for 5-10 minutes. Hydraulic hoses at fan motor should be warm to touch.
- **Turn OFF** the Topcon Monitor.
- Start with ***all*** adjusting screws ***turned out fully***.
- Adjust each valve individually by following the procedure below:
  - Start with rear tank first adjusting screw '3' for three valve bank or screw '4' for four valve bank.
  - Remove cap nut and then loosen jam nut.
  - Turn adjusting screw IN until motor starts to turn.
  - Allow motor to turn for 1-2 minutes to allow for motor to reach optimal operating temperature.
  - Then turn adjusting screw OUT until motor stops turning.
  - Tighten jam nut to secure adjusting screw in place. Replace cap nut.
- Repeat the above procedure for the other valves.

Note: It is recommended to check the zero of the valves at the start of each season or if a different tractor is used on the system.

Note: If air cart is *NOT* equipped with a Third Tank or Granular Tank solenoid '1' must be unplugged and the adjusting knob turned out fully.

Remove Cap Nut and Loosen Jam Nut

Adjusting Screw

Preparing VRT - Continued

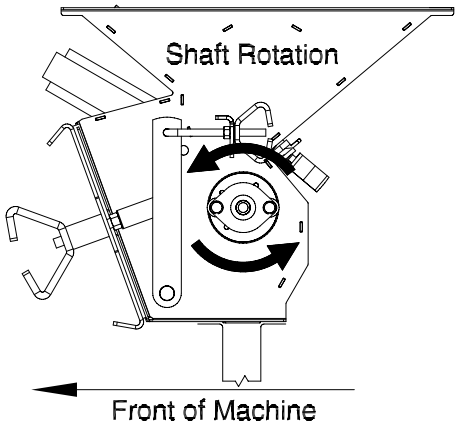
Verify VRT Hydraulic Assembly

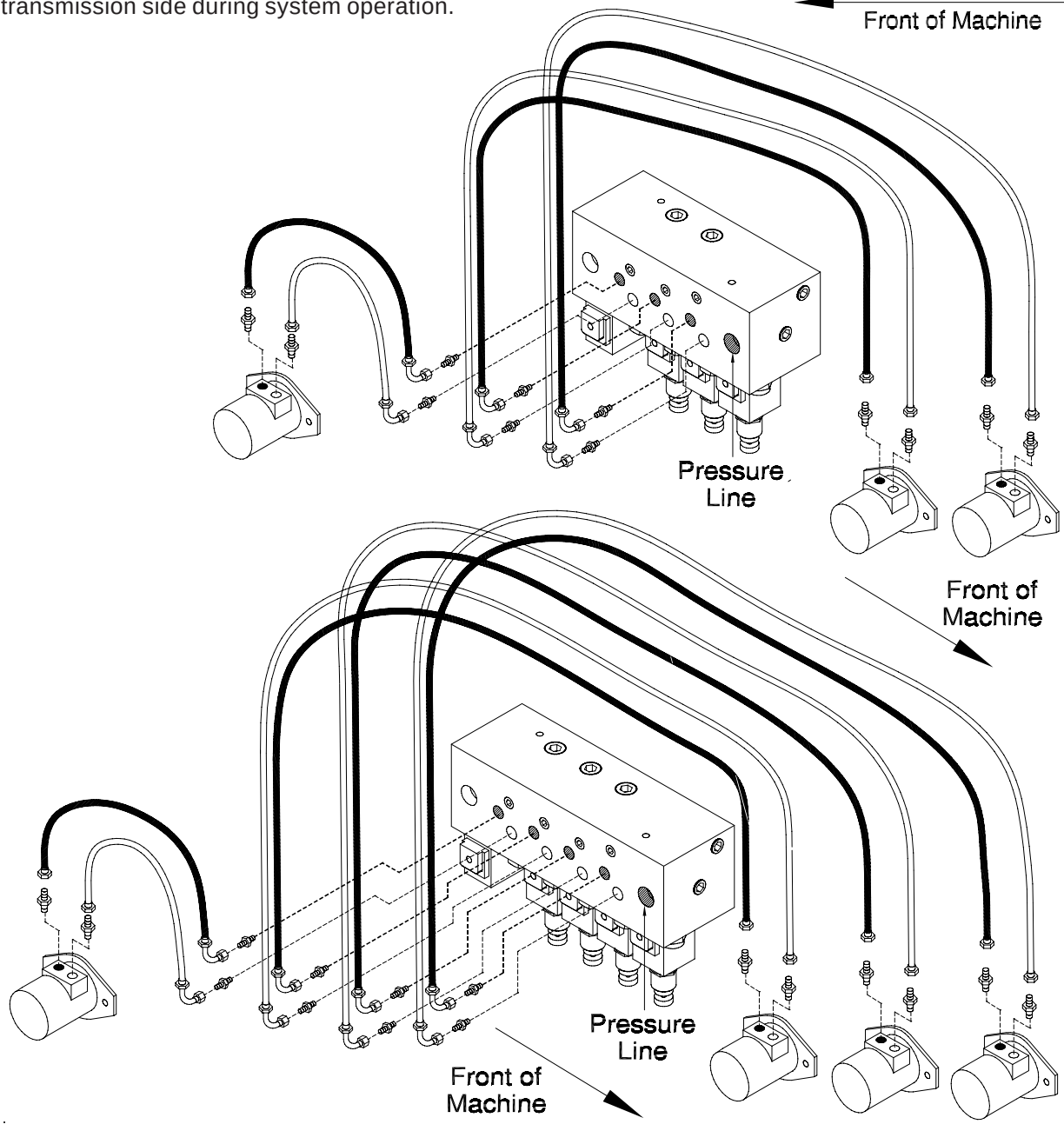
VRT system should be run to confirm correct rotation of meter shafts.

The diagram below illustrates the correct hose orientations for the VRT valve body.

Note: The pressure line from the tractor is the front port of the valve body.

To ensure correct hose installation, the meter shafts will turn counterclockwise when viewed from transmission side during system operation.





Metering System

The EIGHT Series XL Air Cart uses a combination of metering wheels and spacers shown below. The metering wheel is individually sized to correspond to the number of outlets at the connected secondary head and the spacers make up the space between the wheel and the body. Some openings may be blanked off depending on the number of secondary divider heads used on the seeding tool.

The EIGHT Series XL Air Cart can meter all types of seeds and fertilizers by simply installing the correct seed plate. See *"Seed Plate Settings"* for more details.

Different rates are easily obtained using the selection of quick change sprockets that attach to either of the two meter transmissions.

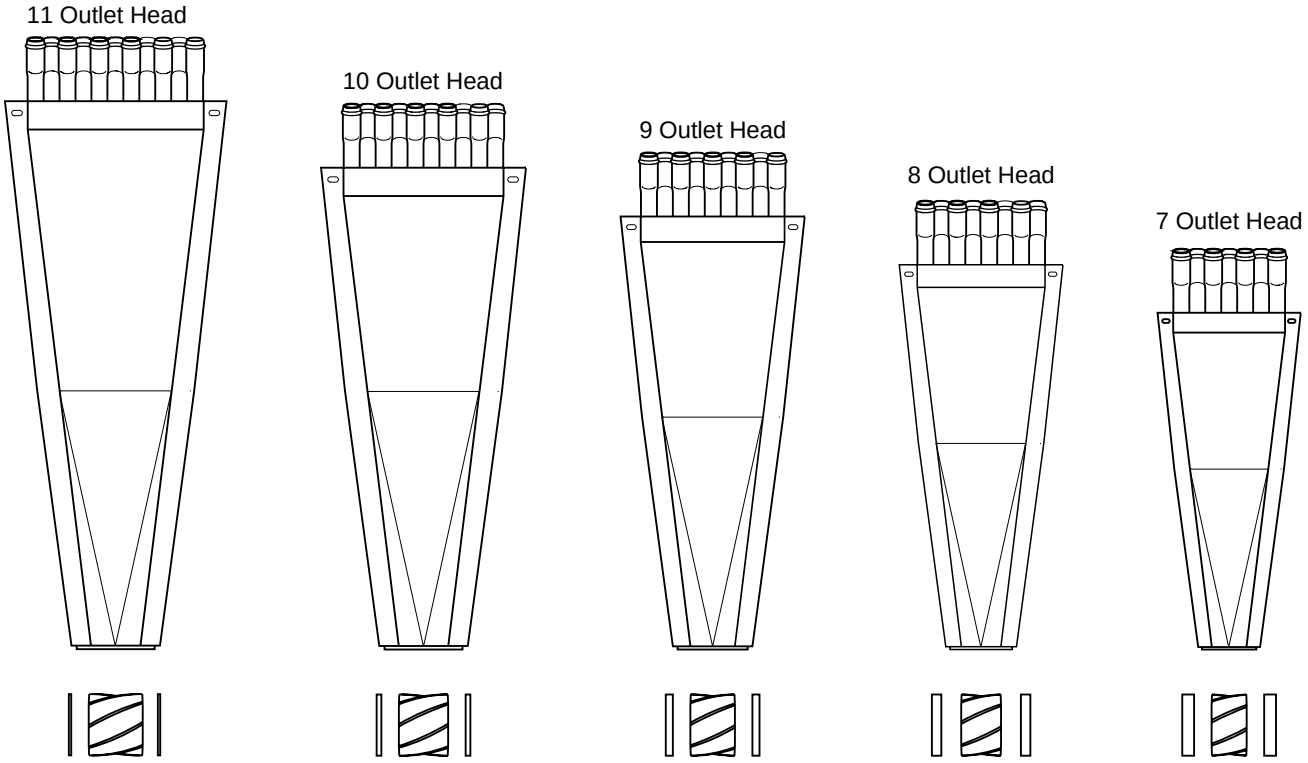
Note: Before putting product into the tanks check the following:

1. The correct Seed Plates are installed for the product being applied.
2. The clean-out doors are fully closed and sealed.
3. The plastic bag covering the fan is removed.

Important

Ensure distribution system is balanced. It is very important that head outlets only vary by one. (i.e. use only 7 and 8 together, 8 and 9 together, 9 and 10 together)

Note: The number of outlets on the divider head must match the metering wheel size.



11 Outlet Metering Wheel with 1/8" spacers.

10 Outlet Metering Wheel with 1/4" spacers.

9 Outlet Metering Wheel with 3/8" spacers.

8 Outlet Metering Wheel with 1/2" spacers.

7 Outlet Metering Wheel with 5/8" spacers.

Metering System - Continued

Secondary Hose Installation

The lengths of the 15/16” (24 mm) diameter hoses are **very important.**

For accurate distribution the secondary hoses have to be arranged by length symmetrically around the centre line.

The **longest** hoses **have to be** in the **centre** of the divider head. These hoses would normally feed the openers furthest away from the head.

- Ensure that the secondary hoses 15/16” (24 mm) diameter do not run higher than 3” (76 mm) above the height of the flat fan divider head.
- Allow an extra 3” (76 mm) of hose before cutting secondary hose for fitting in the seed boot.
- Always ensure that the secondary hoses are sufficiently long to accommodate tripping of trips.
- **Avoid sharp bends** in any of the hoses.
- Check for pinch points and clearances when folding in and out of transport.

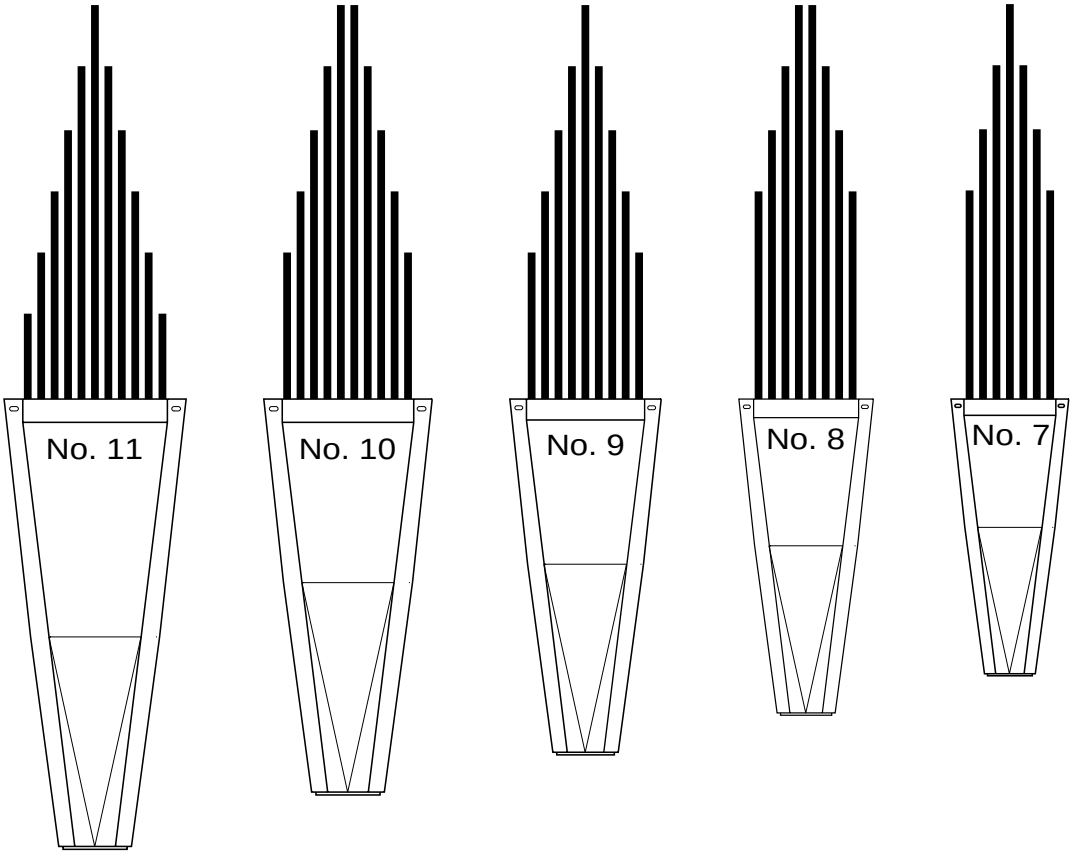
Important

Hot water is the only acceptable lubricant for the installation of the secondary hose.

The supplier advised MORRIS that WD-40 or any other lubricant (i.e. liquid detergent) will have a negative effect on the chemical stability of the hose, resulting in the degradation and failure of the hose due to Environmental Stress Cracking.

Important

Distribution uniformity will be adversely affected if hoses are incorrectly installed.



Metering System - Continued

Seed Plate Sizes

The seed plate comes in 3 different sizes, fine, medium and coarse. Each seed plate is designed for use with specific product types.

The seed plate has only one position, fully closed against the back plates assembled to the metering body.

The polyurethane seed plates are identified by a part number on the front face as indicated:

N37670 - Coarse Seed Plate (plate only) - Yellow

N40845 - Medium Seed Plate (plate only) - Orange

N40840 - Fine Seed Plate (plate only) - Blue

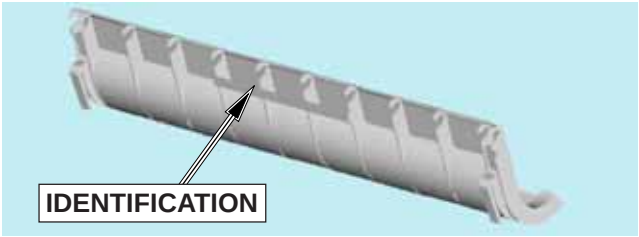
Viewed from Front

Viewed from Back

Seed Plate Assembly complete with clips:

- N37696 - Coarse Seed Plate Assembly
- N40957 - Medium Seed Plate Assembly
- N40956 - Fine Seed Plate Assembly

Seed Plate Usage	
Product	**Seed Plate**
Canola Canary Seed Clover/Alfalfa Flax Mustard Nitragin Edge Fortress Rival	Fine
Barley Lentils Milo Oats Rice Wheat Safflower Nodulator Tag Team Fine Fertilizer (no Sulphur or Potash) 28-0-0 Fertilizer 46-0-0 Fertilizer 34-17-0 Fertilizer 20.5-0-0-24 Fertilizer	Medium
Beans Peas Soybeans Sunflowers 0-0-60 Fertilizer 0-45-0 Fertilizer 10-46-0-0 Fertilizer 11-51-0 Fertilizer Fertilizers containing Sulphur and/or Potash	Coarse



Seed Plate - Stainless Steel

The stainless steel seed plates are identified by an inscription (FINE, MEDIUM, or COARSE) on the back as indicated.

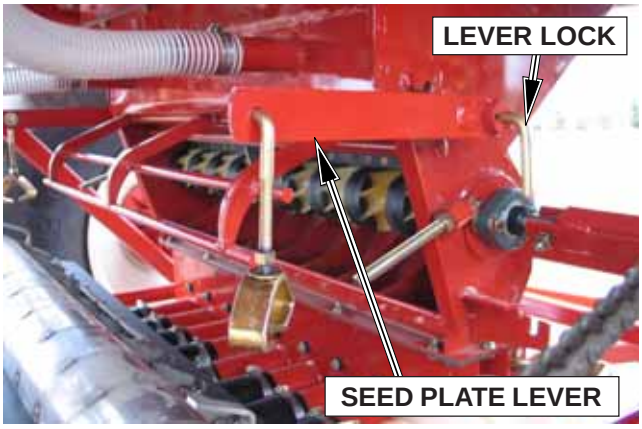
Metering System - Continued

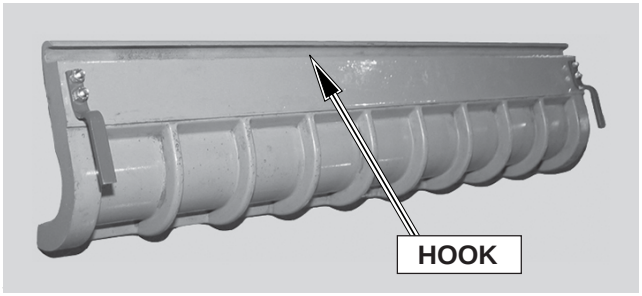
Seed Plate Installation

- Ensure Tank Shut-Offs are closed if there is product in the tanks.

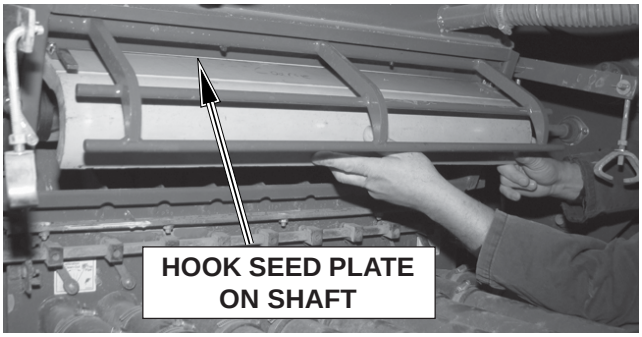
Note: Tank Shut-Offs are only for use when inspecting/servicing meter body with product in tank.

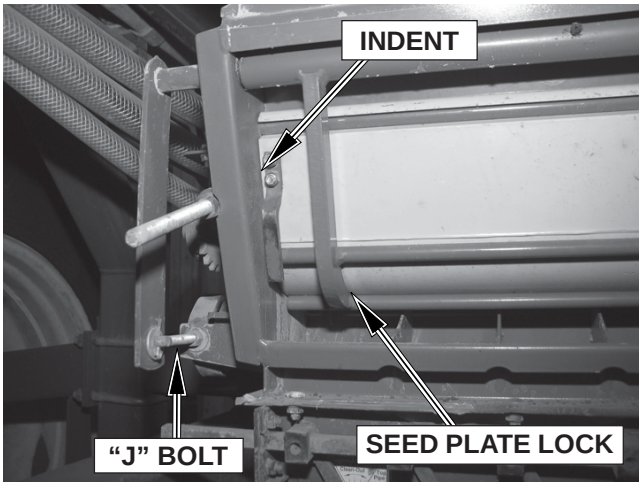
- Install seed plate with hook to the top of the metering body.
- Rotate seed plate towards the metershaft with top part of seed plate hooked to the shaft running through the top of the meter body.
- Let the seed plate hang in the metering body.
- Rotate seed plate lock down to push seed plate against the back plate.
- Install the "J" bolts into the slotted lug welded to the meter body and tighten the wing nuts. **Do not** adjust the flange nuts on the "J" bolts. These nuts are preset on assembly. Refer to Maintenance Section under "Seed Plate Adjustment" for details.
- Ensure Tank Shut-Offs are opened.





Seed Plate





Important

Seed Plate Position

Once "J" bolt wing nuts are tightened, indents in the side plates should just be visible in the slotted area of the hook.

Bin Level Adjustment

- Adjust bin level sensor to desired alarm point.
  - Top position for large seeds, high rates of fertilizer.
  - Middle postion for cereal grains.
  - Lower postion for fine seeds.

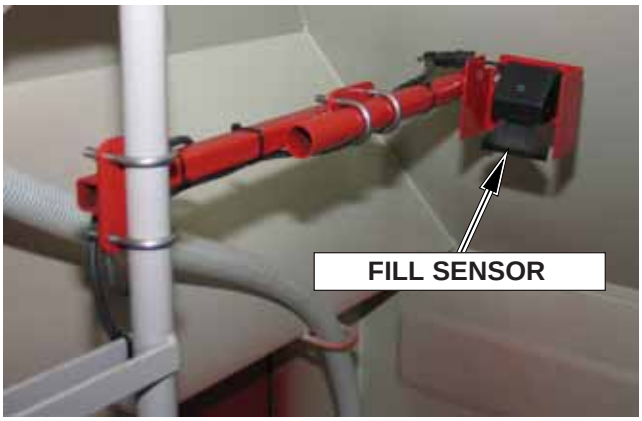
Full Bin Indicator

The Morris EIGHT Series XL Air Cart can be equipped with an optional fill indicator to alert when bins are full.

Sensor positon in tank can be adjusted by loosening U-Bolts and moving up or down on ladder.

- On some tractor models the tractor working lights need to be on in order to have power at the auger switch box - check by turning auger lights on.
- Turn fill switch to on position during filling.
- The appropriate light will illuminate when bin is full.
- Turn off while seeding.

Fill Indicator - Optional



Fill Sensor - Optional

Hydraulic Assit Conveyor/Auger

Arm Speed Control Adjustment

The operating speed of the arms will require setting to the preference of the operator. The hydraulic flow rate of the tractor directly affects the setting.

- Adjust the operating speed of the arms with the flow control valve to provide smooth controllable comfortable operation.

Note: The valve has a restrictor plate to prevent excessively quick movement of the arms. DO NOT REMOVE restrictor plate.

Flow Control Valve

Controller Storage

- Place joy stick controller in holder on outer arm.
- Slide cover over joy stick.

Note: The controller is water resistent. But should be placed inside when the air cart is not being used for extended periods or during prolonged rain.

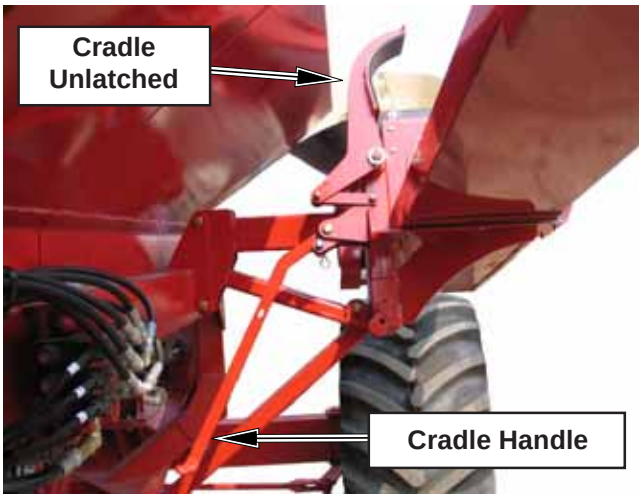
Joy Stick Holder

Joy Stick Cover

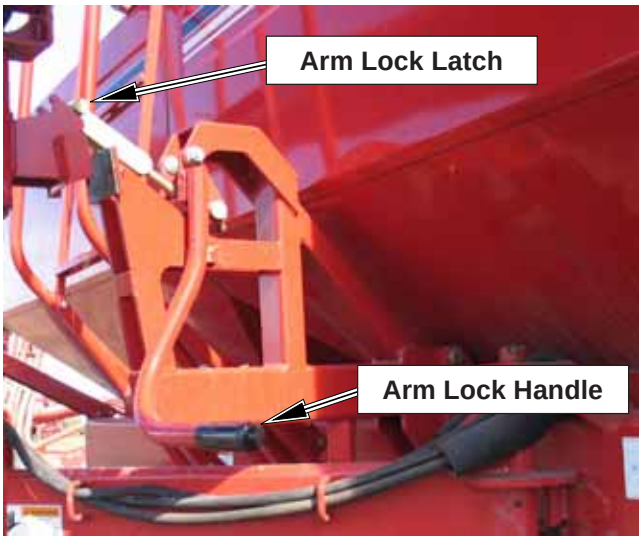
Hydraulic Assit Conveyor/Auger - Continued

Hydraulic Assist Operation

- Ensure selector valve is in correct position for conveyor operation and engage tractor hydraulics.
- Unlatch front lock and raise upper cradle pad with cradle handle.
- Keep head and upper body clear of pad and cradle handle movement.
- Unlatch central arm lock.



Front Lock



Arm Lock

Hydraulic Assit Conveyor/Auger - Continued

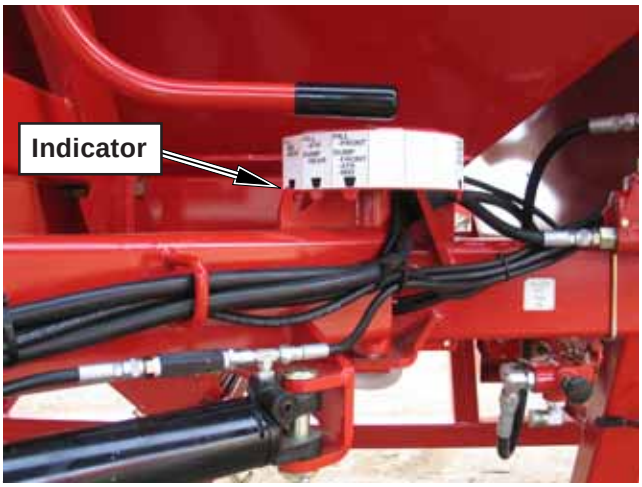
Hydraulic Assist Operation - Continued

- Refer to indicator decal for required inner arm positions.
- Swing out the conveyor using controller to extend/retract cylinders as required.
- Adjust the speed which the arms move at with the flow control valve to provide smooth operation. See “Arm Speed Control Adjustment”.

Note: The valve has a restrictor plate to prevent excessively quick movement of the arms. DO NOT REMOVE restrictor plate.

- Whether filling or dumping tanks, start by positioning inner arm as indicated. Move outer arm as required.
- All three tanks can be filled from a central hopper location as shown in diagrams on next page. Keeping hopper anchored move both arms in small increments from one tank to the next as per indicator decal.

Note: To move from dumping front and 4th tanks to middle tank or vise versa, conveyor must be completely swung out and around to the opposite side of the inner arm.



Arm Position Indicator

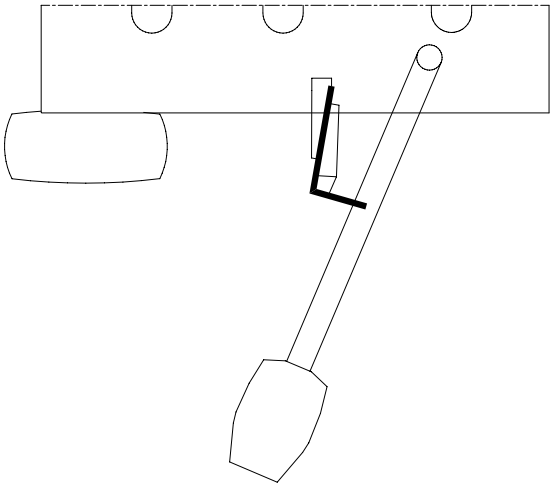
⚠ Danger

Keep all shields in place. Keep hands, feet and clothing away from auger intake, failure to do so will result in serious injury or death.

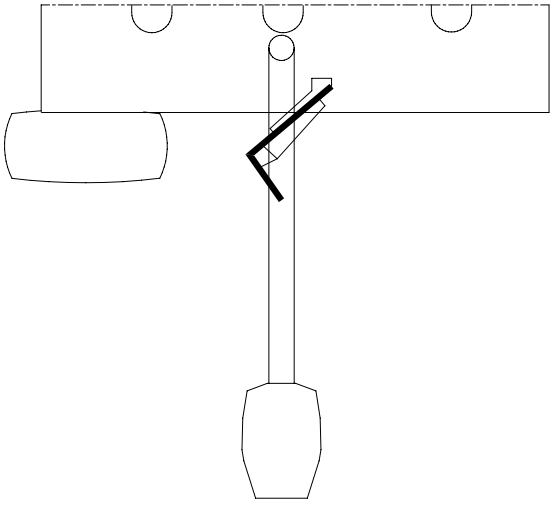
Hydraulic Assit Conveyor/Auger - Continued

Arm Positions

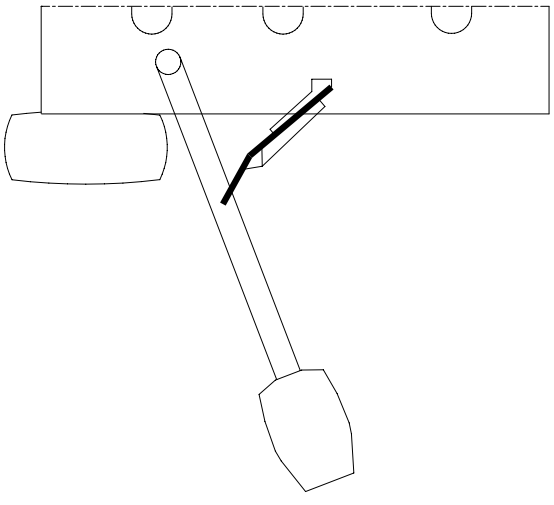
Fill Front Tank



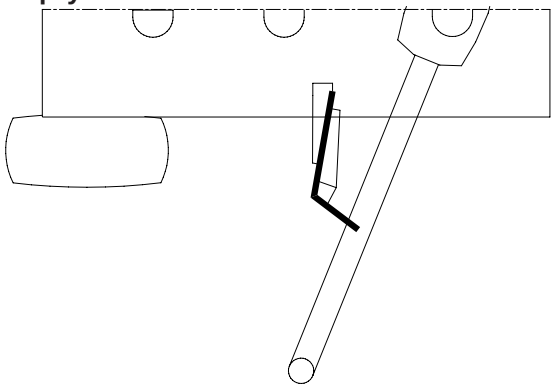
Fill Middle Tank



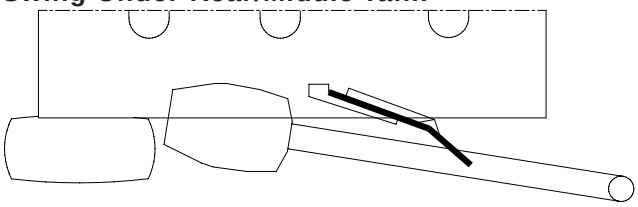
Fill Rear Tank



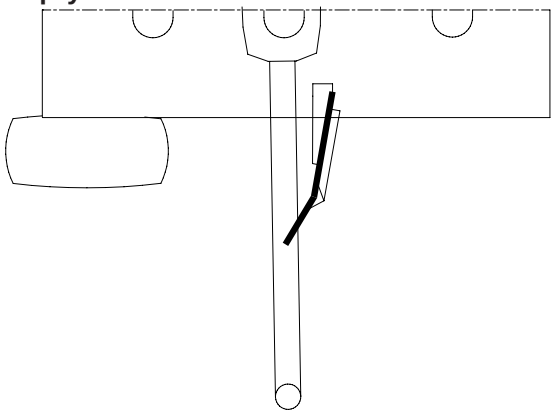
Empty Front Tank



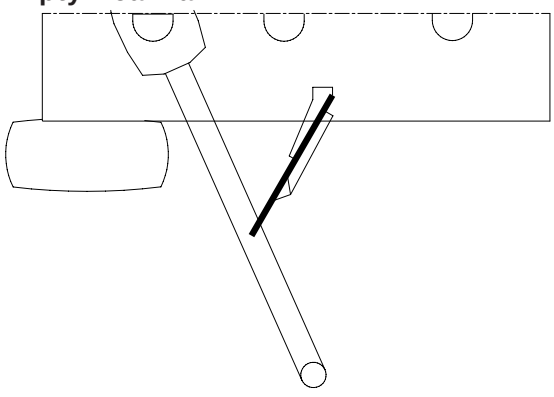
Swing Under Rear/Middle Tank



Empty Middle Tank



Empty Rear Tank



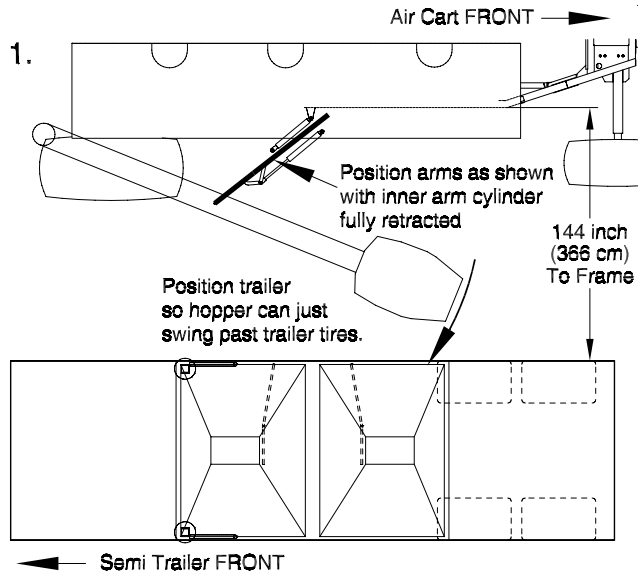
Hydraulic Assit Conveyor/Auger - Continued

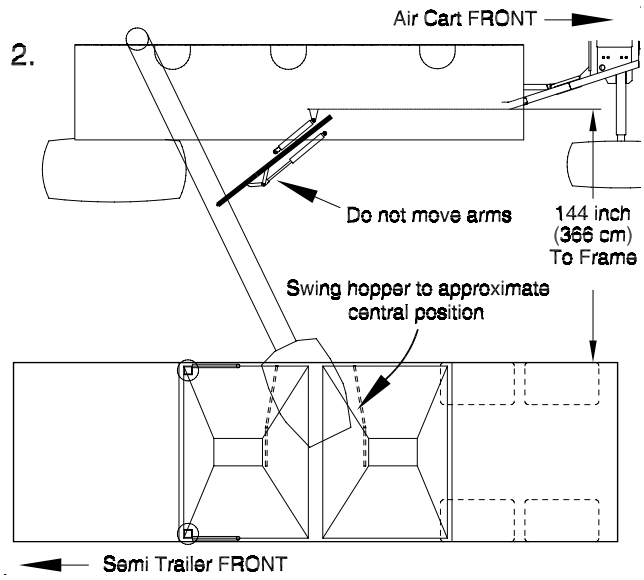
Semi Trailer Filling Positions

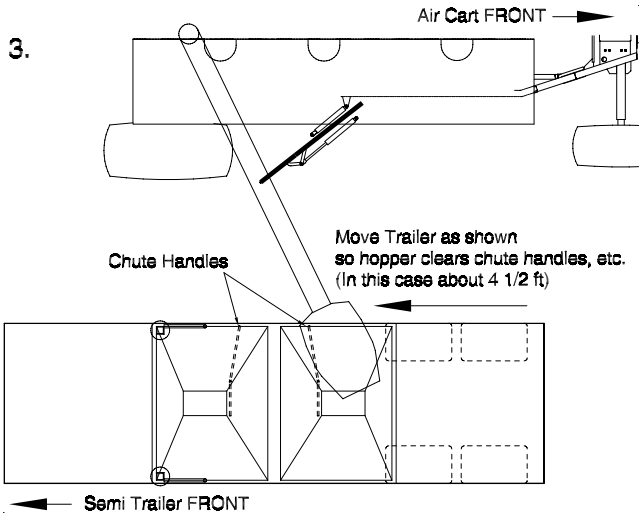
REAR chute of semi trailer

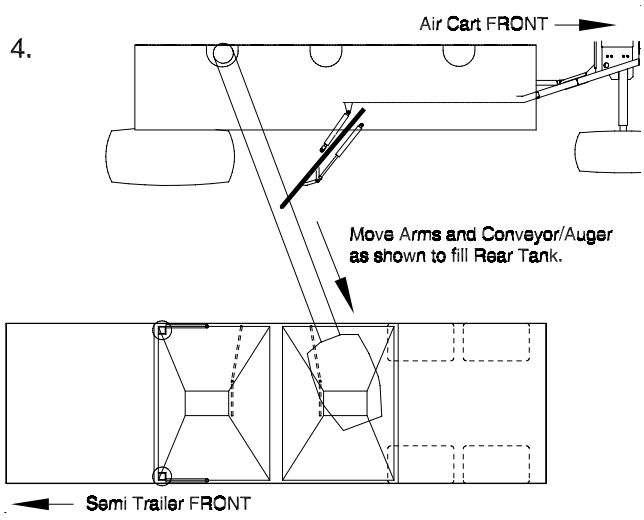
Below is a typical filling sequence from the **REAR** chute of semi trailer. Due to variations in trailers this procedure may vary.

Note: Due to the different configurations of trailers some of the positions shown may not be obtainable. This is intended as a general guide to fill Air Cart.







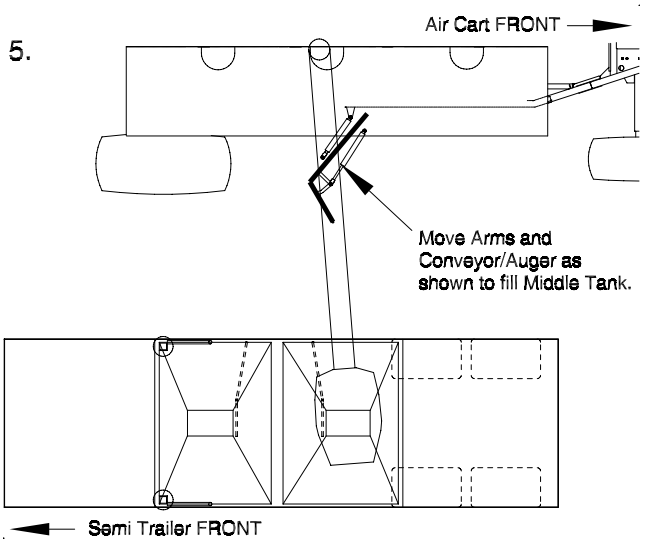


Hydraulic Assit Conveyor/Auger - Continued

Semi Trailer Filling Positions - Continued

REAR chute of semi trailer

5.



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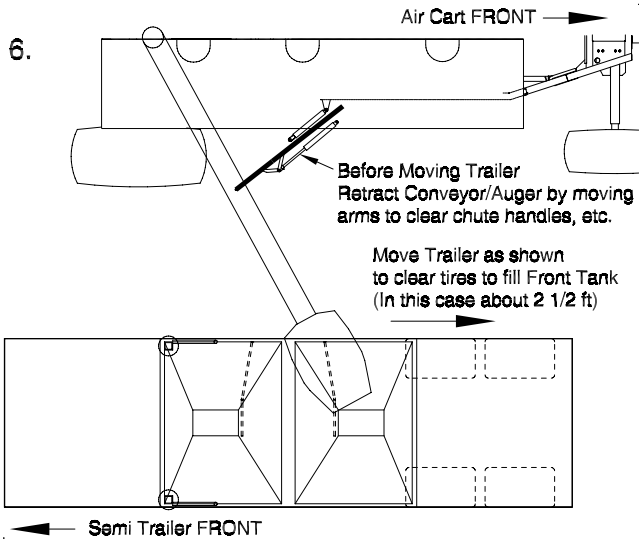

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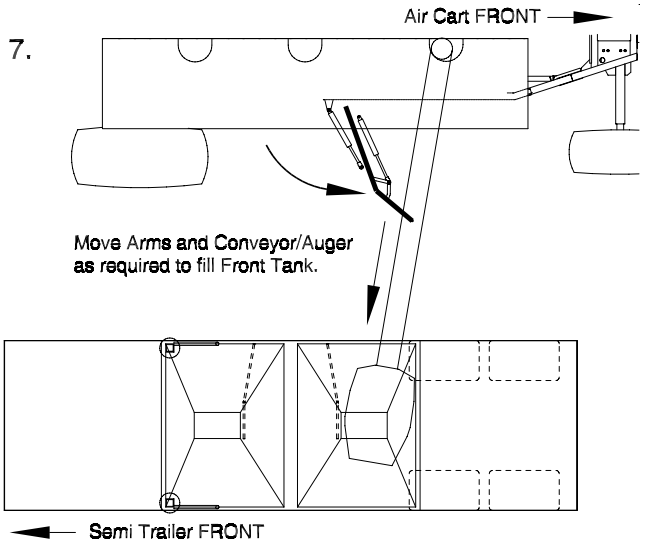


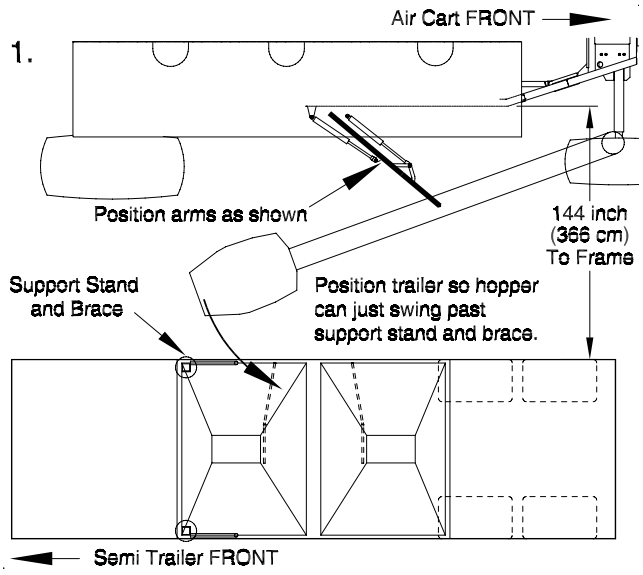
Hydraulic Assit Conveyor/Auger - Continued

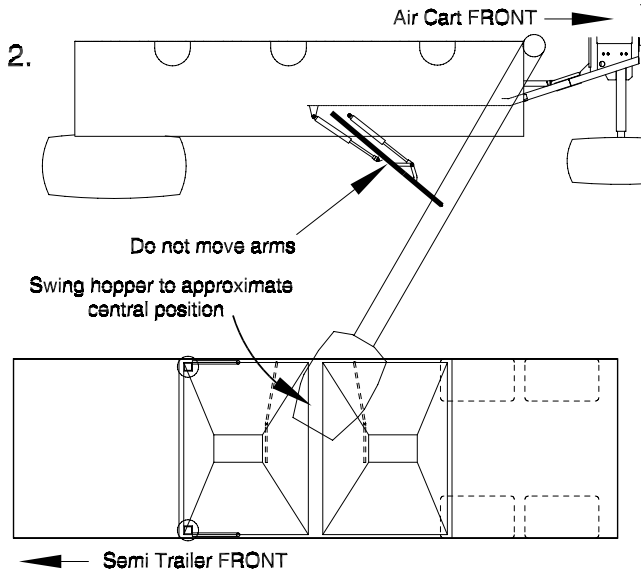
Semi Trailer Filling Positions - Continued

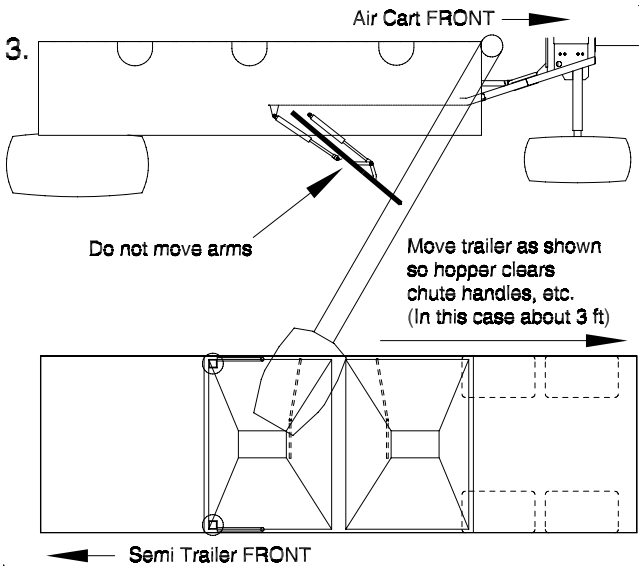
FRONT chute of semi trailer

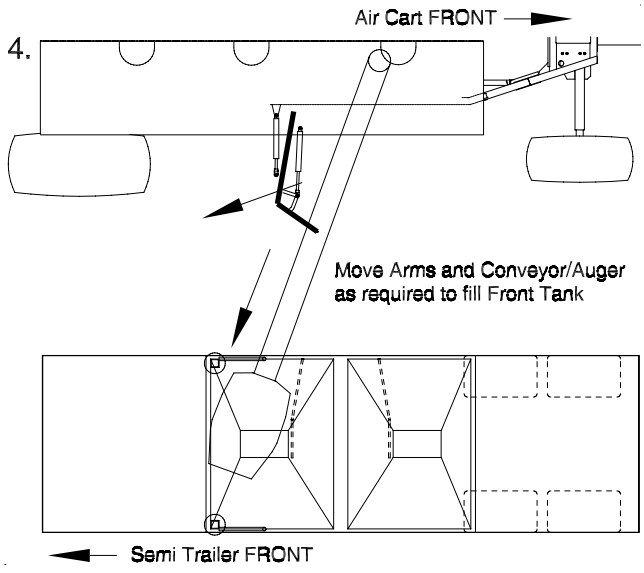
Below is a typical filling sequence from the **FRONT** chute of a semi trailer. Due to variations in trailers this procedure may vary.

Note: Due to the different configurations of trailers some of the positions shown may not be obtainable. This is intended as a general guide to fill Air Cart.





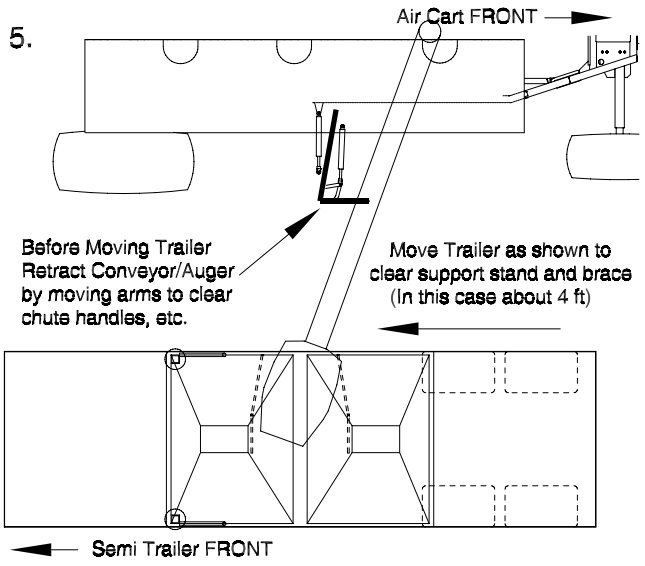


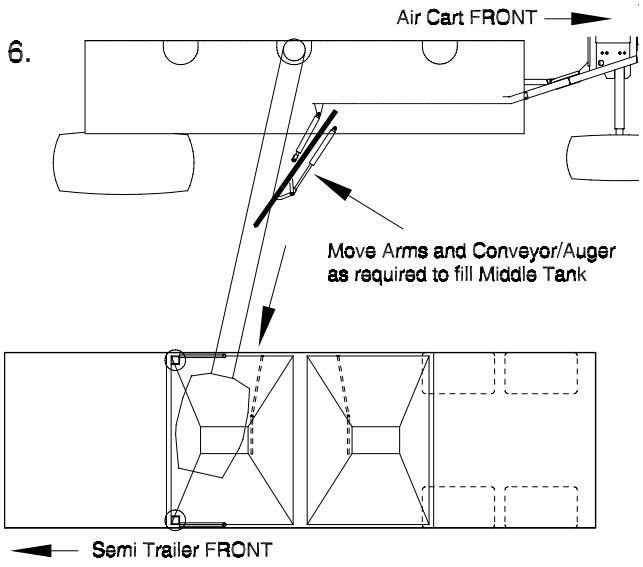


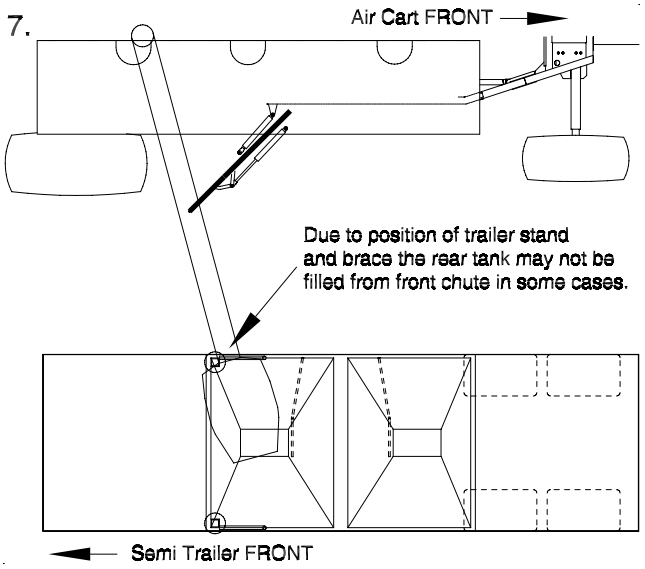
Hydraulic Assit Conveyor/Auger - Continued

Semi Trailer Filling Positions - Continued

FRONT chute of semi trailer



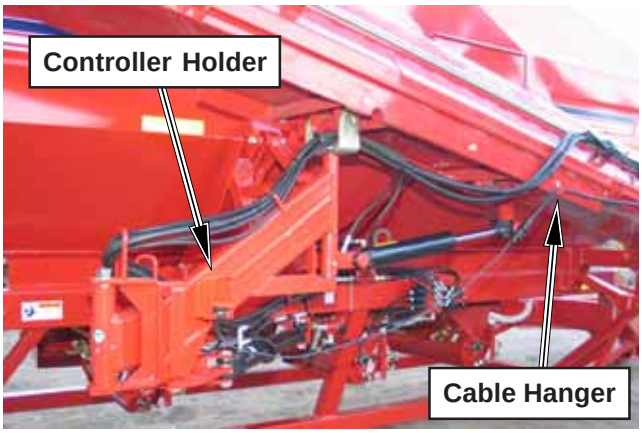


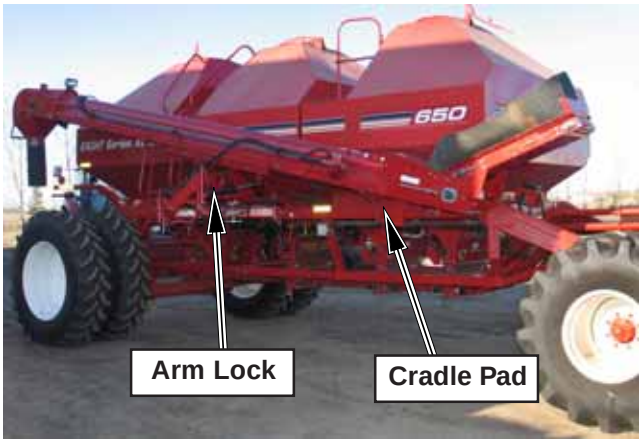


Hydraulic Assit Conveyor/Auger - Continued

Hydraulic Assist Transport

- Swing conveyor into transport position using controller to extend/retract cylinders as required.
- With lift cylinder, lower conveyor body onto lower cradle pad.
- Lock upper cradle pad in place with cradle handle.
- Secure controller in holder or remove if desired.
- Lock arm lock.





Conveyor Operation

- One person must be in a position to monitor the operation of the conveyor at ALL times. That person should visually inspect the conveyor before and during operation and be alert to any un usual vibrations, noises, and loosening of any fasteners.
- For smoother startups, keep the conveyor from starting totally full. This will also ensure efficient operation.
- In cold weather, run empty conveyor for five minutes to warm up belt. Otherwise, do not operate the conveyor empty for long periods of time.
- You must “break-in” the conveyor when it is new and at the beginning of each season. Refer to step 2 for instructions..
- Make sure the drive end is empty before shutting down the conveyor.

Be certain to close ALL clean-out and inspection doors in the main conveyor hopper before operating.

The operator should not add power before viewing the entire work area and checking that ALL personnel are clear of the designated work area.

The operator should be alert to any unusual vibrations or noises that might indicate the need for service or repair during the initial startup and break-in period.

The operator should regulate the grain flow to the main conveyor by controlling the amount of grain fed into the hopper. Avoid plugging the main conveyor by overfeeding the hopper.

Be certain that all safety shields and devices remain in place during operation.

Ensure that hands, feet, and clothing are kept away from moving parts.

Stop the engine and lockout the power source whenever the equipment must be serviced or adjusted.

Startup and Break-In

A. Any conveyor that is new or has set idle for a season needs to go through a “break-in” period.

B. Engage the Conveyor at a slow RPM to minimize shock loads.

C. Do not allow the conveyor belt to “load up” at a low speed. If this occurs, high torque must be used to turn the belt and this can damage the conveyor.

D. Run the conveyor at partial capacity until several hundred bushels of grain have been conveyed and the belt and tube are polished.

E. Retighten belt to restore original belt tension.

F. When the belt and tube are polished and smooth, slowly work up to the recommended speed and run the conveyor at full speed.

⚠ Warning

NEVER perform maintenance on the conveyor unless all safety shields are in place.

Replace any that are damaged or lost. Do not clean, adjust, or lubricate any part of the machine.

Filling Tank

The Morris EIGHT Series XL Air Cart is equipped with 2 or 3 tanks. The front tank is for seed and the middle and rear tank is for fertilizer. However, ALL tanks can be used for the same product.

The capacity of the air cart tanks are listed in the tank capacity chart.

- Open lid fully on tank being filled.
- Check and remove any debris inside tank.
- Remove clean-out door.
- Remove seed plate.
- Check for debris inside metering body.
- Ensure Tank Shut-Offs work freely.

Note: Tank Shut-Offs are only for use when inspecting/servicing meter body with product in tank.

- Check that the correct seed plate is installed for the product being applied.
- Fully close and seal the clean-out door.
- Ensure the auger screen is in place.
- Always use screen to filter debris when filling.
- Adjust bin level sensor to desired alarm point.

Note: Even small fertilizer lumps can cause problems with plugging. All possible precautions should be taken to prevent lumpy fertilizer from entering the tank.

Important

Before putting product into the tanks check the following:

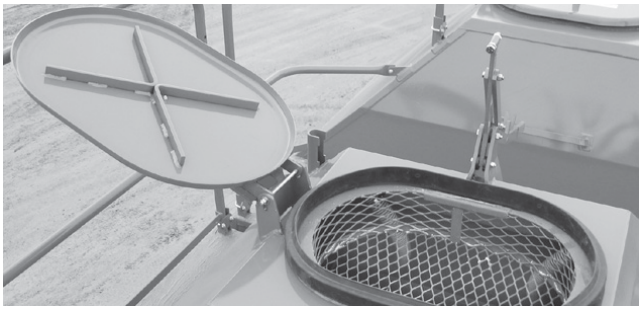
1. **The correct seed plate is installed for product being applied.**
2. **The clean-out doors are fully closed and sealed.**
3. **The plastic bag covering the fan is removed.**
4. **Inspect all augers used in handling the products for seeding. Run augers to clean out any debris inside auger so it does not get transferred to air cart tanks.**

⚠ Warning

Do not enter tank unless another person is present.

Tank Capacity

Model	Front Tank	Middle Tank	Rear Tank	Fourth Tank	Total Capacity
8240	Optional 83 bu 103 cu ft 2,938 litres	93 bu 115 cu ft 3,272 litres	150 bu 186 cu ft 5,278 litres	N/A	243bu 301 cu ft 8,550 litres
8300	Optional 83 bu 103 cu ft 2,938 litres	117 bu 145 cu ft 4,126 litres	186 bu 232 cu ft 6,564 litres	N/A	303 bu 377 cu ft 10,690 litres
8336	103 bu 129 cu ft 3,650 litres	93 bu 115 cu ft 3,272 litres	150 bu 186 cu ft 5,278 litres	N/A	346 bu 430 cu ft 12,200 litres
8370	Optional 83 bu 103 cu ft 2,938 litres	174 bu 218 cu ft 6,184 litres	186 bu 232 cu ft 6,537 litres	N/A	360 bu 450 cu ft 12,721 litres
8425	130 bu 161 cu ft 4,559 litres	117 bu 145 cu ft 4,126 litres	186 bu 232 cu ft 6,537 litres	N/A	433 bu 538 cu ft 15,222 litres
8435	N/A	203 bu 252 cu ft 7,154 litres	232 bu 288 cu ft 8,175 litres	N/A	435 bu 540 cu ft 15,329 litres
8630	190 bu 236 cu ft 6,695 litres	203 bu 252 cu ft 7,154 litres	232 bu 288 cu ft 8,175 litres	N/A	629 bu 781 cu ft 22,165 litres
8650	190 bu 236 cu ft 6,695 litres	203 bu 253 cu ft 7,154 litres	232 bu 288 cu ft 8,175 litres	28 bu 35 cu ft 987 litres	653 bu 812 cu ft 23,011 litres

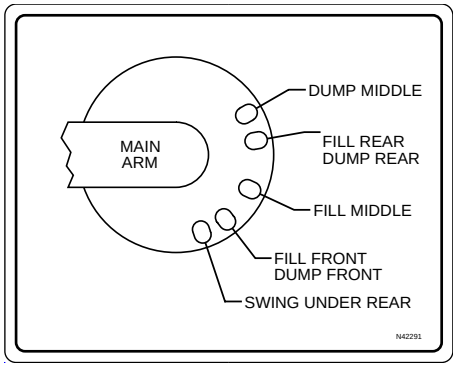


Inspect Metering Body

Filling Tank - Continued

- Unlatch front auger lock.
- Unlatch auger arm lock.
- Refer to decal on auger arm for auger arm positions.
- Ensure lock pins are unlocked to allow free movement of the arm.
- Unlatch the auger from its transport position.
- Swing out the auger. Engage auger arm lock pins into position for the tank to be loaded.

Arm Lock



Auger Arm Lock Pin - Unlocked -

Auger Arm Lock Pin - Locked -

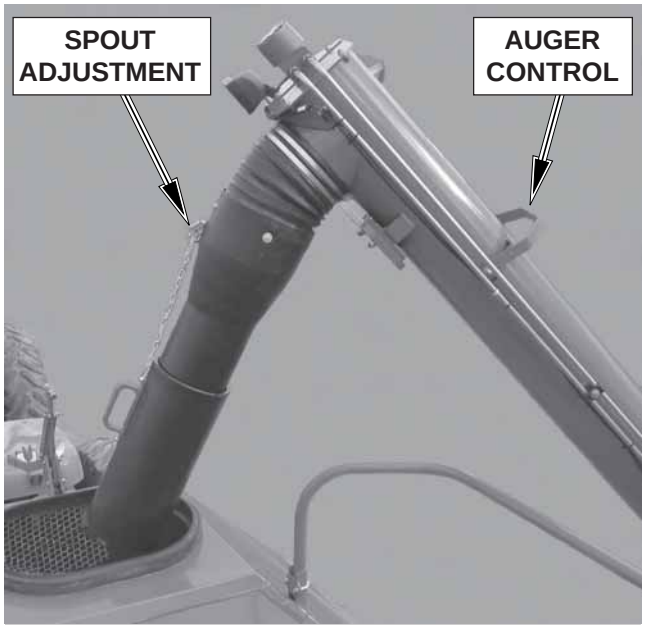
Front Lock - Standard

Front Lock - Optional

Filling Tank - Continued

- Open lid on tank to be filled and place auger spout in tank.
- Back truck to the hopper and engage the hydraulic motor on the auger.
- Ensure selector valve is in correct position for auger operation and engage tractor hydraulics.
- Auger product into tank until desired level in tank is reached. (If equipped with the optional fill indicator fill until indicator light turns on. See “Full Bin Indicator” on page 5-20.)
- Stop the flow of product into the auger and allow auger to empty.
- Auger operation can be controlled from either the top or bottom of the auger.

Auger Position

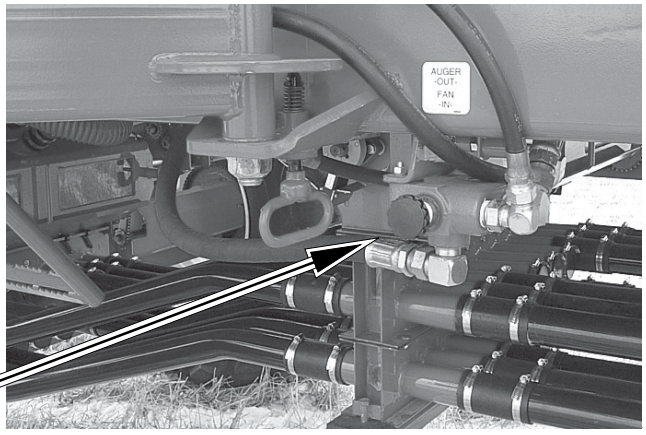


Adjustable Auger Spout

Fill Indicator - Optional

Important

Do not exceed 10 mph (16 kph) in field operation.



Selector Valve

Filling Tank - Continued

- Clean lid seal and ensure lid seal is positioned correctly before closing tank lid.
- Reverse auger flow to clean out the hopper, screen may be removed for easier clean out.

Auger screen removed

Auger screen installed

- Reinstall auger screen.
- Place ladder in transport position.
- Unlock auger arm lock pins.
- Secure auger in transport position.
- Lock auger arm lock and front auger lock.
- Remove the plastic bag covering fan.
- Check lid for air leaks with your hands once air cart fan is operational. See Maintenance Section.
- Check metering body for air leaks.

Auger locks

Note: Before seeding it is recommended that after a rain or dew that fan be run for a few minutes to eliminate moisture in the system.

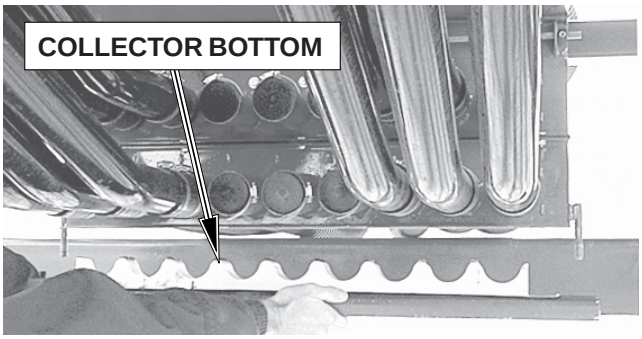
Unloading Tanks

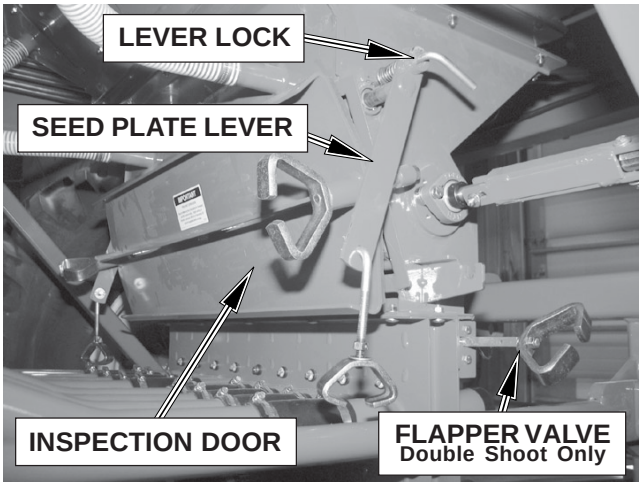
Emptying tanks is quick and easy to do.

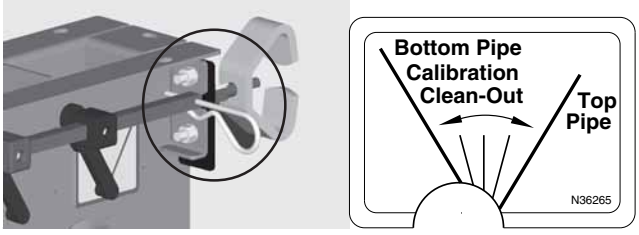
- See auger arm decal for lock pin location.
- Position auger under the tank to be emptied. **Note:** Right side ladder must be in transport position to empty rear tank.
- Remove collector bottom.
- Move flapper valves to **"Clean-Out"** position on the collector body. (**Double Shoot Only**)
- Loosen inspection door approximately 1" (25 mm). **Note:** The wing nuts will be near the end of the threaded rod.
- Start auger.
- Open seed plate to first lock point, this will allow material to flow through the metering body into the auger.
- Once all material stops flowing, move "Shut-off" levers in and out a few times to dislodge any product and ensure free movement.
- Remove meter body inspection door and seed plate completely.
- Rotate meter shaft using crank to empty meter wheel flutes.
- Brush out remaining material in the corners and on top of the back plate.
- Reset flapper valves to correct position for product delivery. Ensure that the flapper settings are correct. This can be done by visually checking that the flappers are fully over and touching the side walls, sealing off the individual airstreams. The flappers can be adjusted by loosening the individual adjusting setscrews and applying pressure to the flapper forcing it against the side wall while tightening the setscrew.
- Reinstall correct seed plate for product being metered.
- Reinstall inspection door and collector bottom ensuring that the seals are free from leaks.

⚠ Danger

Keep all shields in place. Keep hands, feet and clothing away from auger intake, failure to do so will result in serious injury or death.







Double Shoot Only

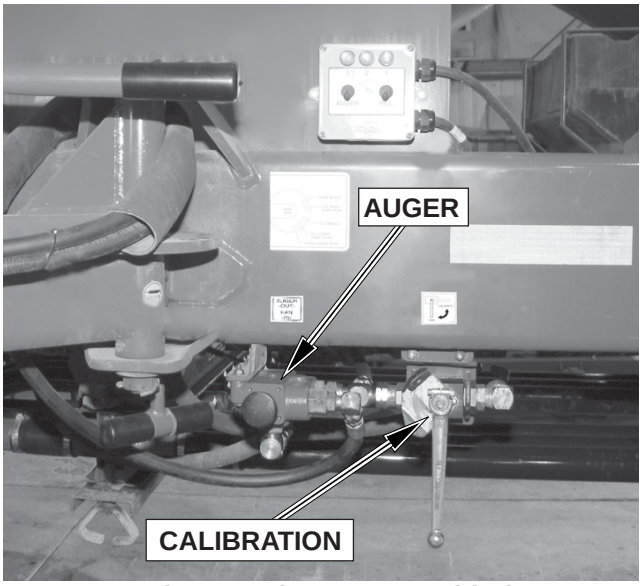
Rate Calibration

The practice of doing a rate calibration is strongly recommended, as it will confirm the **actual** amounts of product dispensed per motor revolution **(Weight/Rev)**.

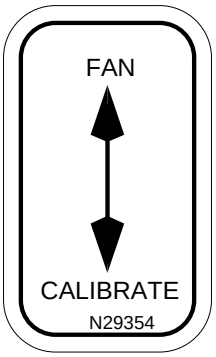
Weight/Rev (Calibration Factor) is used by the monitor to determine the shaft motor rpm required to deliver the correct application rate.

The following procedure should be followed for every change of product.

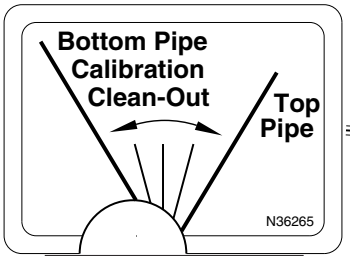
- Engage hydraulic lever to run air cart.
- **Turn off fan** by switching selector valve (located in the fan supply line) to calibration position.
- Remove the wing nuts on the collector bottom.
- Remove the bottom of the collector.
- Set Flapper Valves to **"Calibration"**as per the decal located on the front of the Collector.



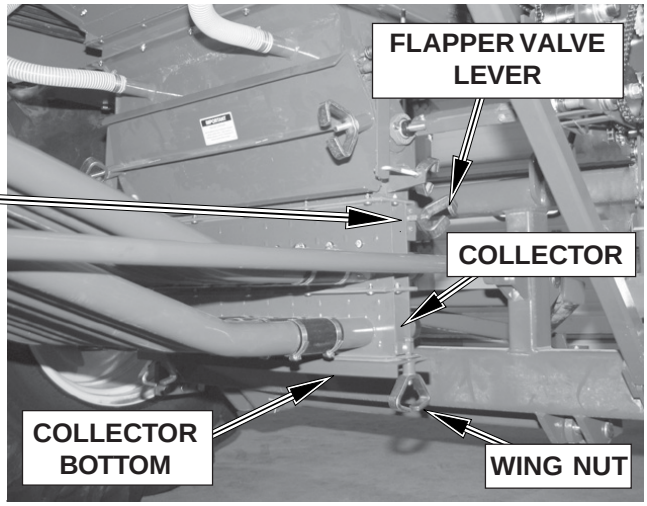
Selector Valves - Tow Behind



Selector Valves - Tow Between



Decal on Collector



Double Shoot Shown

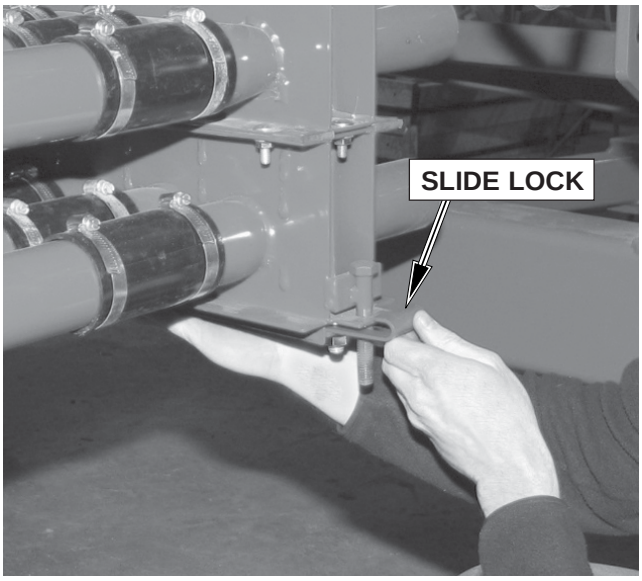
Rate Calibration - Continued

- Hook the Rate Calibration Insert on collector bottom and rotate up into postion. Secure in place with slide lock.
- Slide the rate check box onto the collector body.
- **Prime metering wheels first** by using the run switch on the Run-Reset Box to start and stop the meter drive. Allow the drive to run until material begins to fall through the collector body. Press the rest button for 5 seconds to zero monitor count before collecting sample.

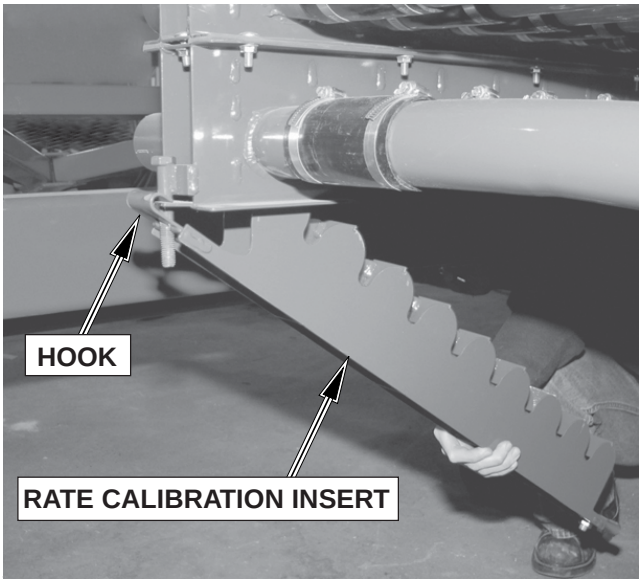
Note: The Topcon monitor must be turned ON in order for the primer switch to work.

Note: *Ensure the fan is not running.*

- Empty material from rate check box and reinstall it on the same collector.

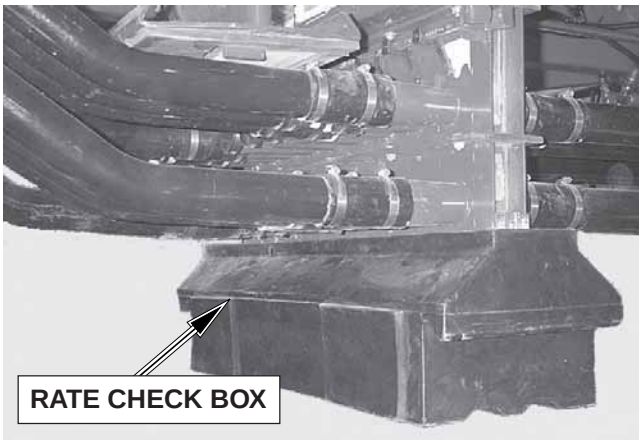


Tow Between - Calibration Insert



Tow Behind - Calibration Insert

Mount to Ladder



Rate Calibration - Continued

- Perform calibration as outlined in the Topcon manual.
- Remove the rate check box from the collector body.

  Weigh the sample by using tarp straps to hook rate check box to spring scale.

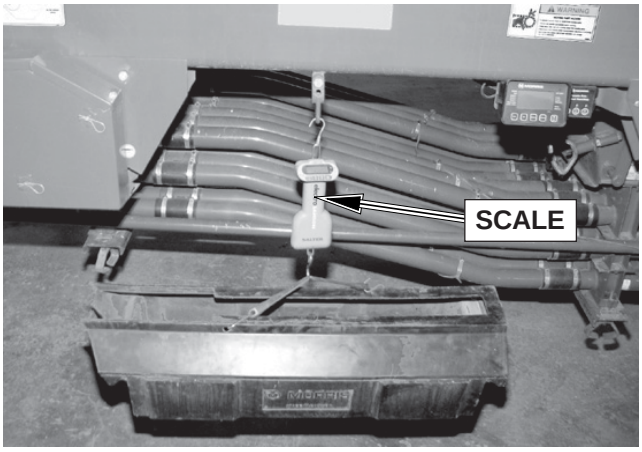
Note: Remember to subtract the weight of the rate check box from the total sample weight.

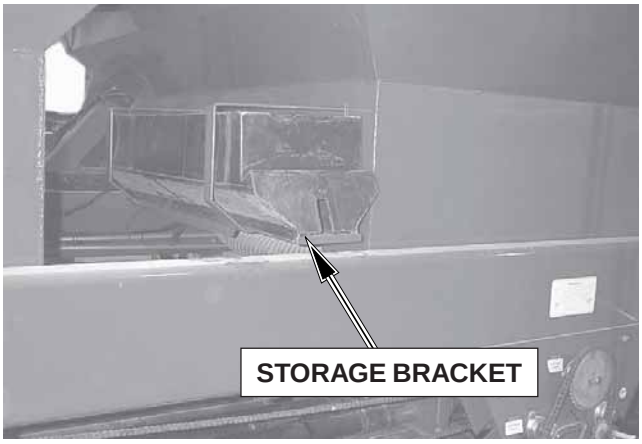
- Enter “Weight” of product collected as outlined in the Topcon manual.

Note: The Calibration Factor (Weight/Rev) is automatically calculated for the value being entered.

- Replace the bottom of the collector. Place rate check box into storage bracket.

Follow the above procedure to check the rate of the other tanks.





Important

Proper measurement of sample weight is critical for application rate accuracy.

Prime metering wheels before taking actual sample.

Remember to subtract the weight of the rate check box from the total sample weight.

Metering Rate Adjustment

The metering rate adjustment for all tanks is done in the same manner. A new rate is achieved by changing the APPLICATION RATE and or the Calibration Factor as outlined in the Topcon manual.

Note: It is recommended to set “Calibration Factor” by doing a “Rate Calibration”.

Seeding Fine Seeds (Canola, Mustard, etc.)

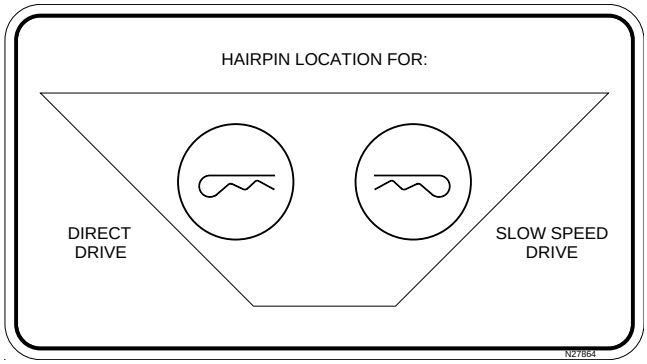
When seeding fine seeds such as canola or mustard, the slow speed transmission has to be engaged to ensure the low rates required for these products.

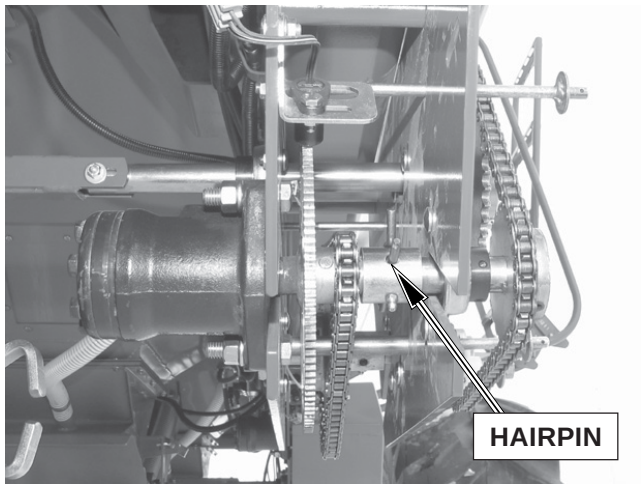
The slow speed transmission is incorporated in **All** the Posi-Drive Transmissions.

- To engage the slow speed, remove the large hairpin from the front shaft and install through the sleeve and shaft located at the rear of the transmission.

Note: Shaft will have to be rotated to align holes for pin insertion.

- To disengage the slow speed, reverse the above procedure.
- Rate checks can be performed the same way as for other seeds.
- Usually it is necessary to reduce the fan rpm when seeding fine seeds. See *"Fan Speed"* for specific fan speeds.





Applying Inoculant

When inoculant is applied at the time of seeding, once the air cart has been filled, the fill-lids should be left open and the fan run for 5-10 minutes at full rpm to dry the seed.

Calibration must be done after the seed is dried, otherwise the calibration will be incorrect.

Note: If the seed is not dried then the seed will have a tendency to bridge and not meter into the air stream.

Hydraulic Fan Drive

The piston type orbit motor on the fan requires tractor to have either a load sensing hydraulic system or a closed center hydraulic system with flow control.

The flow required is 18 U.S. gpm (68 liters) for the 12 cc motor and 21 U.S. gpm (80 liters) for the 16 cc motor at a pressure of 2,750 p.s.i. (18,960 kPa) However, smaller flows can be used depending on the product being metered.

Note: An additional 5 1/2 gpm (21 liters/min) is required for the VRT system.

For correct operation of the fan the hydraulic motor must be coupled to the priority valve (if tractor is so equipped) in the hydraulic valve bank.

Check with the tractor manual or manufacturer to determine if or which spool is a *"priority valve"*.

Speed fluctuations will result if the fan is not connected to the priority valve if hydraulic system is equipped with a priority valve.

Ensure couplers are free of dirt and are clean when connecting the fan hydraulics to the tractor.

Fan speed is adjusted by increasing the amount of oil being delivered to the motor by adjusting the respective flow control valve until the desired rpm is displayed on the monitor.

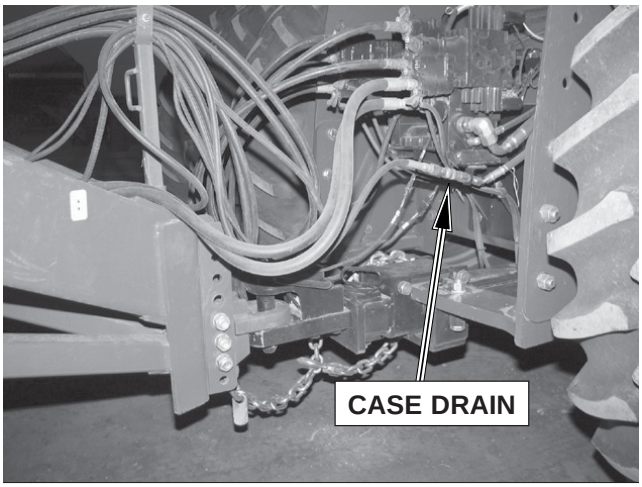
Note: There is a one-way check valve installed in the hydraulic circuit. If the fan does not rotate, then move hydraulic lever in the opposite direction; this will engage the fan. This valve prevents damage to the hydraulic systems when the fan is shut OFF, by allowing the fan to freewheel.

A piston motor creates leakage past the internal components for lubrication. This oil needs to go back to the oil reservoir at the lowest pressure possible. The motor has a 3/8" diameter case drain line. This line must be connected directly into the tractor hydraulic reservoir to ensure that there is zero back pressure in the drain line; otherwise damage will result to the motor.

Hydraulic Drive

IMPORTANT

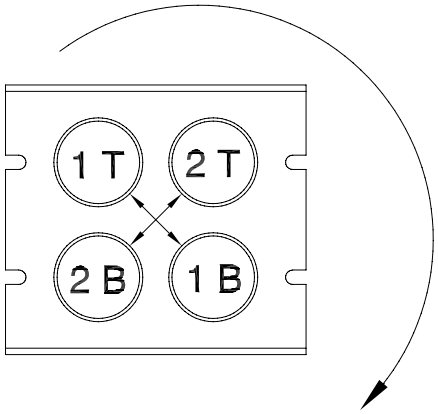
Run hydraulic fan drive at lowest rpm possible (1,000-2,000) for 5-10 minutes before operating at set rpm. This is required to warm up the hydraulic fluid. Cold hydraulic fluid will cause pressure spikes in the system that will damage the case drain seal in the orbit motor.



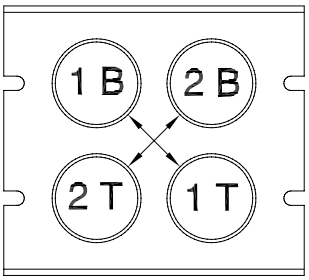
Hydraulic Coupling on Tractor

Quick Coupler

Hoses on Quick Coupler should be plumbed on a cross pattern. This orientation of the hoses allows the operator to switch which air stream is being used by simply rotating coupler top to bottom.



Rotated top to bottom



Fan Speed Recommendations

Adequate air volume is necessary at all times to carry the product in the air stream. Air volume can be controlled by adjusting hydraulic oil flow on hydraulic fan drives or adjusting engine speed on engine fan drive models.

Air volume; hence fan speed requirements will vary with:

1. Ground speed
2. Metering rate
3. Number of primary runs
4. Width of machine
5. Density and size of material

Excessive fan speed can cause seed damage, seed bouncing and premature wear of the system.

Generally fan speed is adequate if product flows through the hoses without surging and the hoses empty quickly and evenly when the system shuts down.

The charts on the next page list *suggested fan speeds* for various application rates.

Note: The charts should be used only as a guide. If plugging or surging occurs increase the fan speed to eliminate the problem.

Note: It is recommended that after a rain or dew the fan be run two to three minutes to expel any moisture in the system.

Important

Keep fan impeller blades clean at all times.

Note: Once fan speed is properly set, be sure to adjust the monitor fan alarm setting accordingly.

Fan Speed Recommendations - Continued

Charts are based on a 41 foot machine traveling at 5 mph (8 kph).

17 inch Diameter Impeller Suggested Fan RPM @ 5 mph (8 kph) on a 41 ft unit		
Combined Application Rate	**Fan Speed Setting**	
	Single Shoot	**Double Shoot**
3 - 50 lbs/acre 3 - 56 kg/ha	3000 - 3250 RPM	2900 - 3150 RPM
50 - 100 lbs/acre 56 112 kg/ha	3250 - 3500 RPM	3150 - 3400 RPM
100 - 150 lbs/acre 112 - 168 kg/ha	3500 - 3750 RPM	3400 - 3650 RPM
150 - 200 lbs/acre 168 - 224 kg/ha	3750 - 4000 RPM	3650 - 3900 RPM
200 - 250 lbs/acre 224 - 280 kg/ha	4000 - 4250 RPM	3900 - 4150 RPM
250 - 300 lbs/acre 280 - 336 kg/ha	4250 - 4500 RPM	4150 - 4400 RPM
300 - 350 lbs/acre 336 - 392 kg/ha	4500 - 4750 RPM	4400 - 4650 RPM
> 350 lbs/acre > 392 kg/ha	4750 - 5000 RPM	4650 - 4900 RPM
Note:	**Fan Speeds given are when applying product. It is normal for fan speed to drop when not applying product.**	

Fan Speed Recommendations - Continued

Charts are based on a 71 foot machine traveling at 4.5 mph (7.2 kph).

17 inch Diameter Impeller Suggested Fan RPM @4.5 mph (7.2 kph) on a 71 ft unit		
Combined Application Rate	**Fan Speed Setting**	
	Single Shoot	**Double Shoot**
3 - 50 lbs/acre 3 - 56 kg/ha	3250 - 3500 RPM	3000 - 3250 RPM
50 - 100 lbs/acre 56 112 kg/ha	3500 - 3750 RPM	3250 - 3500 RPM
100 - 150 lbs/acre 112 - 168 kg/ha	3750 - 4000 RPM	3500 - 3750 RPM
150 - 200 lbs/acre 168 - 224 kg/ha	4000 - 4250 RPM	3750 - 4000 RPM
200 - 250 lbs/acre 224 - 280 kg/ha	4250 - 4500 RPM	4000 - 4250 RPM
250 - 300 lbs/acre 280 - 336 kg/ha	4500 - 4750 RPM	4250 - 4500 RPM
300 - 350 lbs/acre 336 - 392 kg/ha	4750 - 5000 RPM	4500 - 4750 RPM
> 350 lbs/acre > 392 kg/ha	-	4750 - 5000 RPM
Note:	**Fan Speeds given are when applying product. It is normal for fan speed to drop when not applying product.**	

Double Shoot Settings

Plenum Damper Settings

18 Outlet Plenum

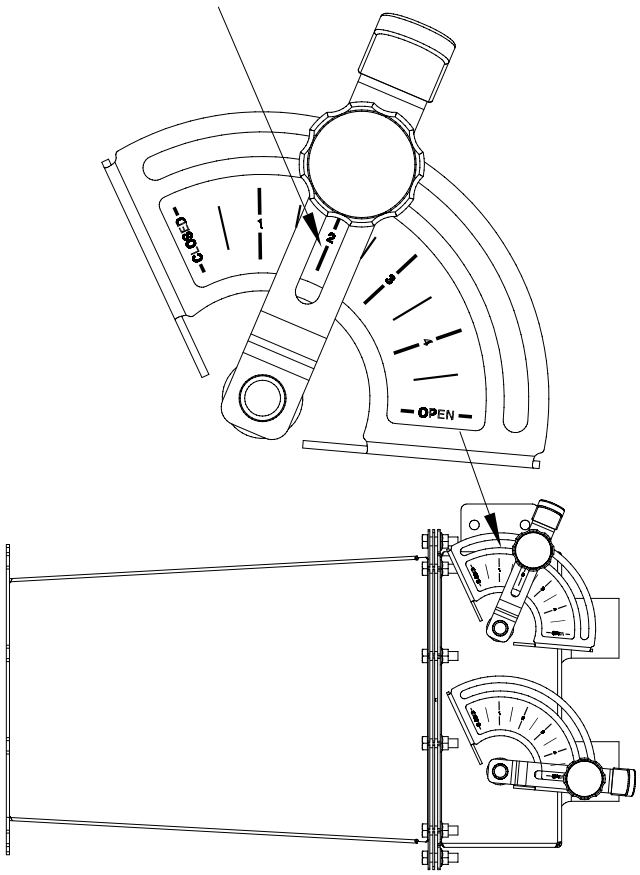
Adequate air volume is necessary at all times to carry the product in the air stream. Air volume can be controlled by adjusting the plenum damper settings.

The table below lists initial plenum damper settings for certain products.

Note: The settings in the table should be used only as a guide.

- If **fertilizer** plugging or surging occurs **decrease** the seed damper setting to eliminate the problem.
- If **seed** plugging or surging occurs **increase** the seed damper setting to eliminate the problem.

Set Plenum Damper so that setting is in the middle of slot.
This Damper is set at the 2 position.

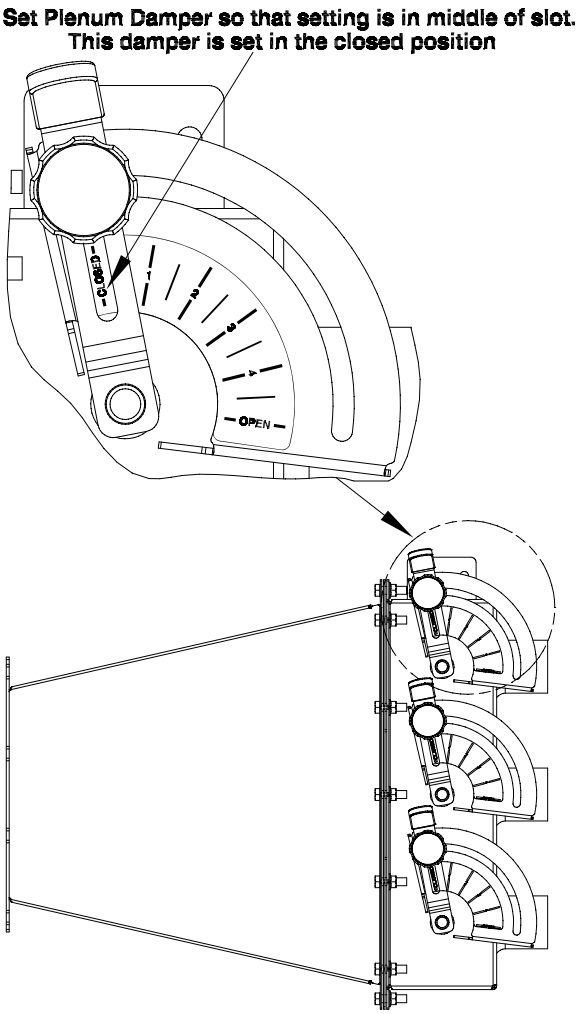


Suggested Plenum Settings				
Product	**Seed**		**Fertilizer**	
	Rate lb/acre	**Damper Setting**	**Rate lb/acre**	**Damper Setting**
Fine Seeds	All Rates	1	All Rates	Open
Coarse Grains	90 lb (100 kg/ha)	Open	50 lb (56 kg/ha)	2
	90 lb (100 kg/ha)	4	100 lb (112 kg/lb)	Open
	90 lb (100 kg/ha)	3	150 + lb (168 kg/ha	Open
Large Seeds	180 lb (200 kg/ha)	Open	40 lb (45 kg/ha)	2
Single Shoot	**Lower Pipes** - Top Damper Closed - Bottom Damper Open			
	Upper Pipes - Top Damper Open - Bottom Damper Closed			

Note: See "Fan Speeds" for Fan RPM.

Plenum Settings - Continued

Plenum Damper Settings



27 Outlet Plenum

Adequate air volume is necessary at all times to carry the product in the air stream. Air volume can be controlled by adjusting the plenum damper settings.

The table below lists initial plenum damper settings for certain products.

Note: The settings in the table should be used only as a guide.

- If **fertilizer** plugging or surging occurs **decrease** the seed damper setting to eliminate the problem.
- If **seed** plugging or surging occurs **increase** the seed damper setting to eliminate the problem.

Suggested Plenum Settings

Product	Seed		Starter Fertilizer		N based Fertilizer	
	Rate lb/acre	Damper Setting	Rate lb/acre	Damper Setting	Rate lb/acre	Damper Setting
Fine Seeds	All Rates	1	All Rates	Open	All Rates	Open
Coarse Grains	90 lb (100 kg/ha)	Open	25 lb (28 kg/ha)	3	50 lb (56 kg/ha)	3
	90 lb (100 kg/ha)	Open	50 lb (56 kg/ha)	3	100 lb (112 kg/lb)	Open
	90 lb (100 kg/ha)	4	75 lb (84 kg/ha)	3	150 + lb (168 kg/ha	Open
Large Seeds	180 lb (200 kg/ha)	Open	40 lb (45 kg/ha)	2	40 lb (45 kg/ha)	2
Double Shoot	**Top & Bottom Pipes**	- Top Damper use Double Shoot Plenum Settings - Middle Damper Closed - Bottom Damper use Double Shoot Plenum Settings				
Single Shoot	**Bottom Pipes**	- Top Damper Closed - Middle Damper Closed - Bottom Damper Open				

Note: See "Fan Speeds" for Fan RPM.

Double and Triple Shoot Settings

Collector Valve Settings

Located in each upper collector body are flapper valves for machines equipped with Double or Triple Shoot. The flapper valve must be properly set in order for product to flow correctly.

See illustrations on following pages for specific settings for various combinations for Triple, Double and Single Shoot set ups.

Flapper valves must be cycled daily to free valves of any fertilizer and grain dust accumulations.

Whenever valves are cycled or reset to a new position the position should be visually inspected as follows:

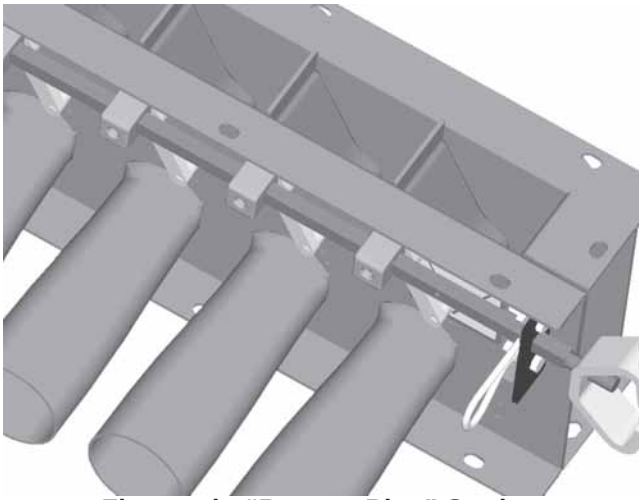
- Set flapper valves to correct position for product delivery.
- Remove the inspection door and visually check that the flappers are fully over and touching the side walls, sealing off the individual air streams.
- The flappers can be adjusted by loosening the individual adjusting setscrews and applying pressure to the flapper forcing it against the side wall while tightening the setscrew.

Note: The bottom airstream should be used to carry the higher rate of product.

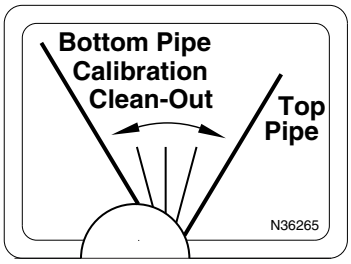
Flapper Valve Run Test

Use the following procedure to check that the flapper valves do not move when air pressure is applied to under side of flappers.

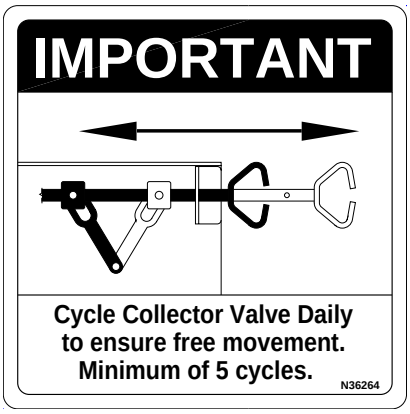
- Check flapper valves in both directions with air running.
  - If valve is set to direct product into the bottom pipe, have the plenum damper open for the top pipes and closed to the bottom pipes.
  - If valve is set to direct product into the top pipe, have the plenum damper open for the bottom pipes and closed to the top pipes.
- **Always wear** safety goggles, breathing apparatus and gloves when working with granular chemical or treated seed per the manufacture's instructions.
- With fan running check flapper valve position.
- The flappers can be adjusted by loosening the individual adjusting setscrews and applying pressure to the flapper forcing it against the side wall while tightening the setscrew.

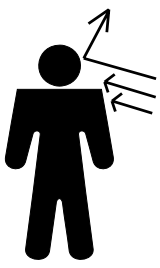


Flapper in "Bottom Pipe" Setting



Decal on Collector





Caution

Care should be taken when working near the air cart while the fan is running. Product blowing out of the system could cause personal injury.

Double Shoot Settings

Double Shoot Tow Between

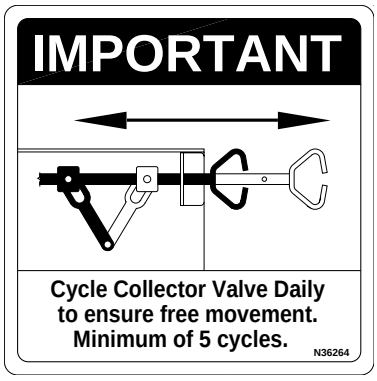
- Combining product from any combination of tanks and placed in either air stream is possible with the EIGHT Series XL distribution system. Some typical examples are shown below.

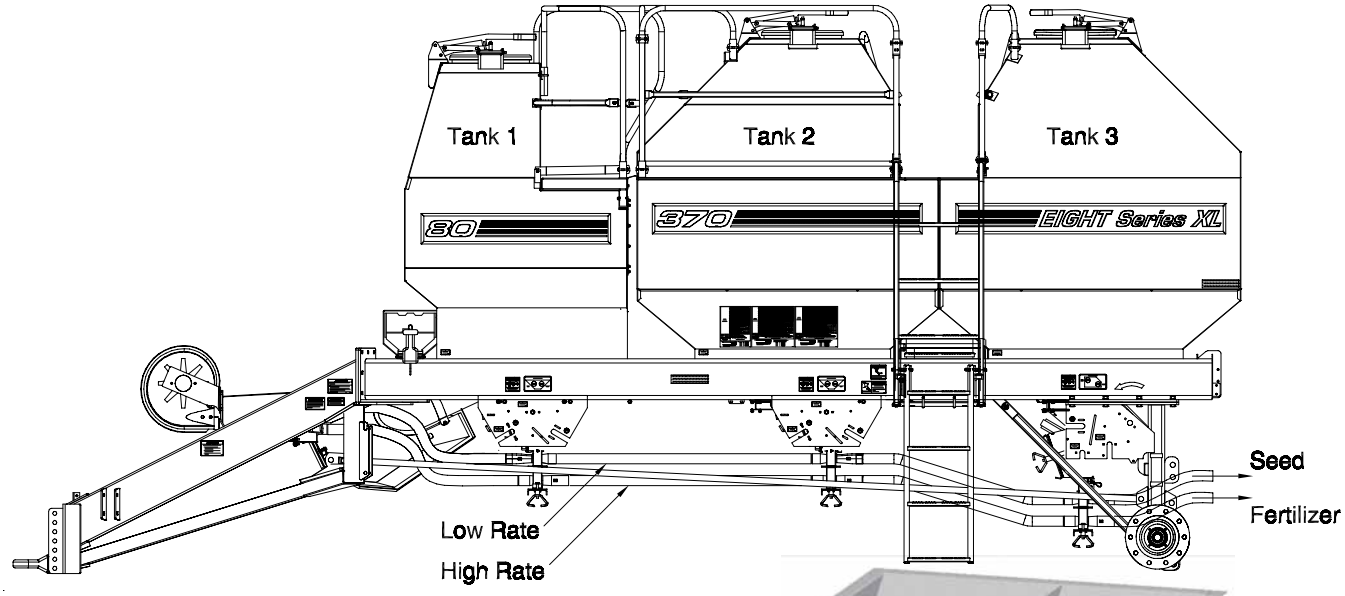
Example 1.

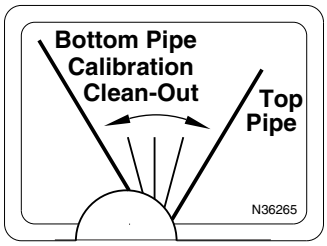
Tank 1 - Seed

Tank 2 and Tank 3 - Fertilizer

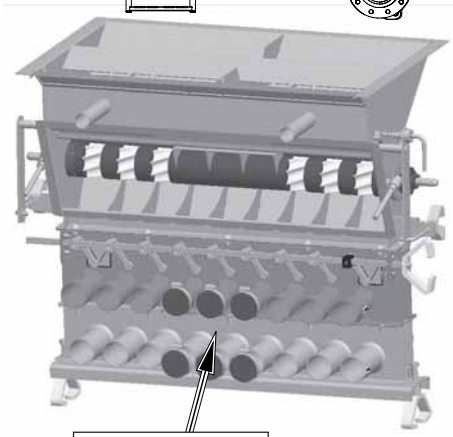
1. Collector Valve Setting: Tank 1 - Top Pipe
   Tank 2 - Bottom Pipe
   Tank 3 - Bottom Pipe
2. Plenum Setting: See table on “Plenum Settings” located in previous section “Plenum Damper Settings”.







Decal on Collector



Collector Valve Shown on “Bottom Pipe” Setting

Double Shoot Settings - Continued

Double Shoot Tow Between

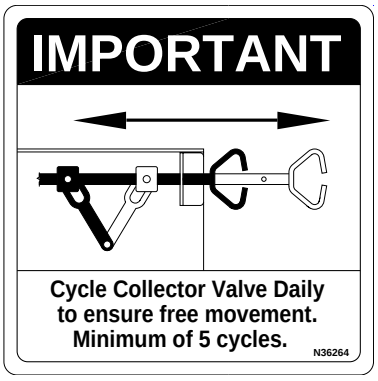
Example 2.

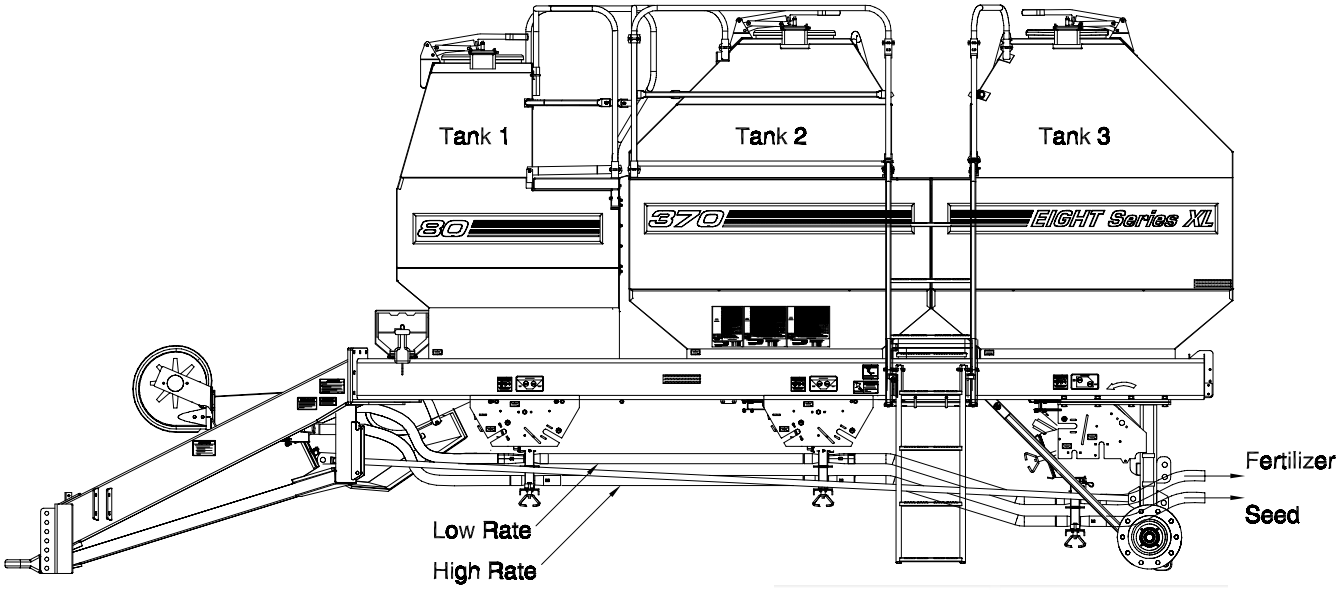
Tank 1 - Inoculant

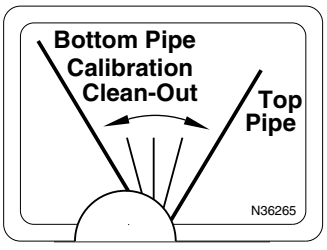
Tank 2 - Fertilizer

Tank 3 - Peas

1. Collector Valve Setting: Tank 1 - Bottom Pipe
   Tank 2 - Top Pipe
   Tank 3 - Bottom Pipe
2. Plenum Setting: See table on “Plenum Settings” located in previous section “Plenum Damper Settings”.







Decal on Collector

Collector Valve Shown on “Bottom Pipe” Setting

Double Shoot Settings - Continued

Single Shoot Tow Between

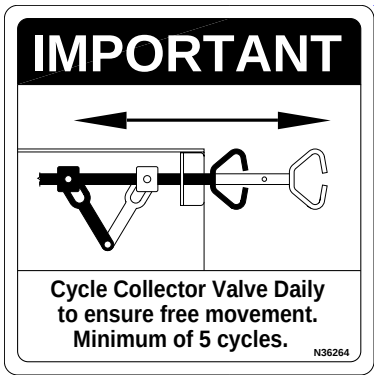
Example 3.

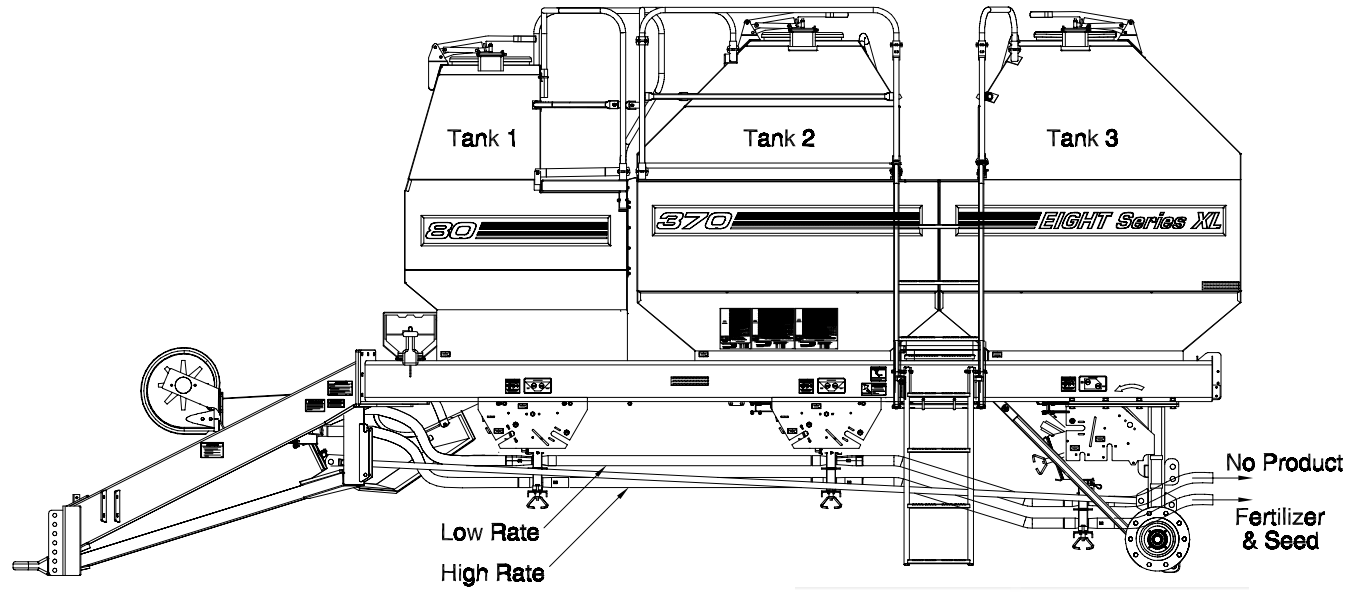
Tank 1 - Seed

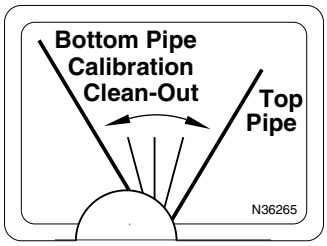
Tank 2 - Seed

Tank 3 - Fertilizer

1. Collector Valve Setting: Tank 1 - Bottom Pipe
   Tank 2 - Bottom Pipe
   Tank 3 - Bottom Pipe
2. Plenum Setting: See table on “Plenum Settings” located in previous section “Plenum Damper Settings”.







Decal on Collector

Collector Valve Shown on “Bottom Pipe” Setting

Triple Shoot Settings

Triple Shoot Tow Behind

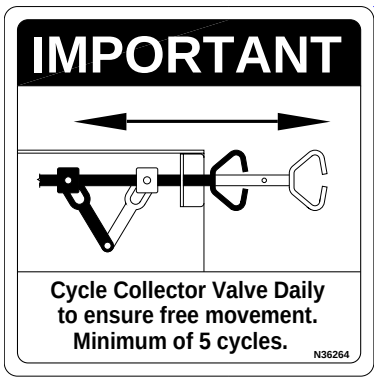
- Combining product from any combination of tanks and placed in either air stream is possible with the EIGHT Series XL distribution system. Some typical examples are shown below.

Example 1.

Tank 1 - Starter Fertilizer

Tank 2 - Coarse or Large Seed

Tank 3 - Nitrogen Fertilizer



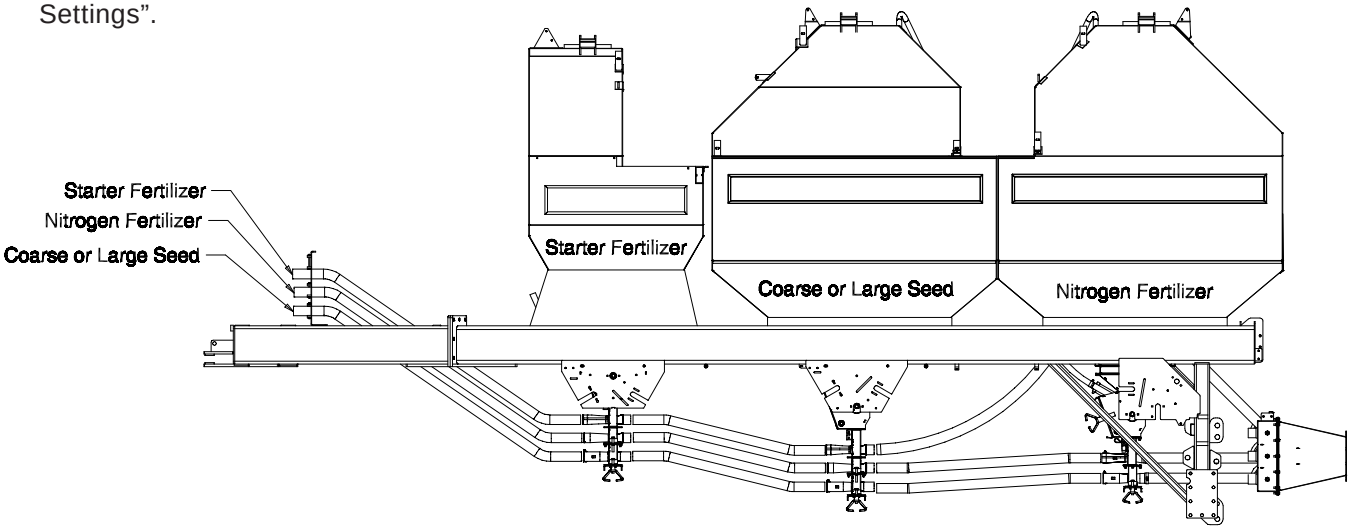
1. Collector Valve Setting:

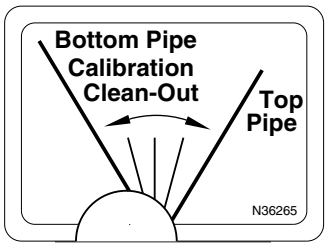
   Tank 1 (Starter Fertilizer) - **Top Pipe**

   Tank 2 (Coarse or Large Seed) - **Bottom Pipe**

   Tank 3 (Nitrogen Fertilizer) - **Middle Pipe**

2. Plenum Setting: See table on “Plenum Settings” located in previous section “Plenum Damper Settings”.





Decal on Collector

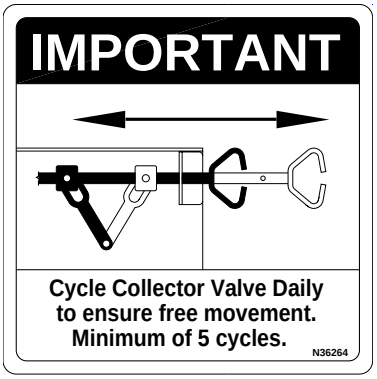
Triple Shoot Settings - Continued

Example 2.

Tank 1 - Small Seed (Canola)

Tank 2 - Starter Fertilizer

Tank 3 - Nitrogen Fertilizer



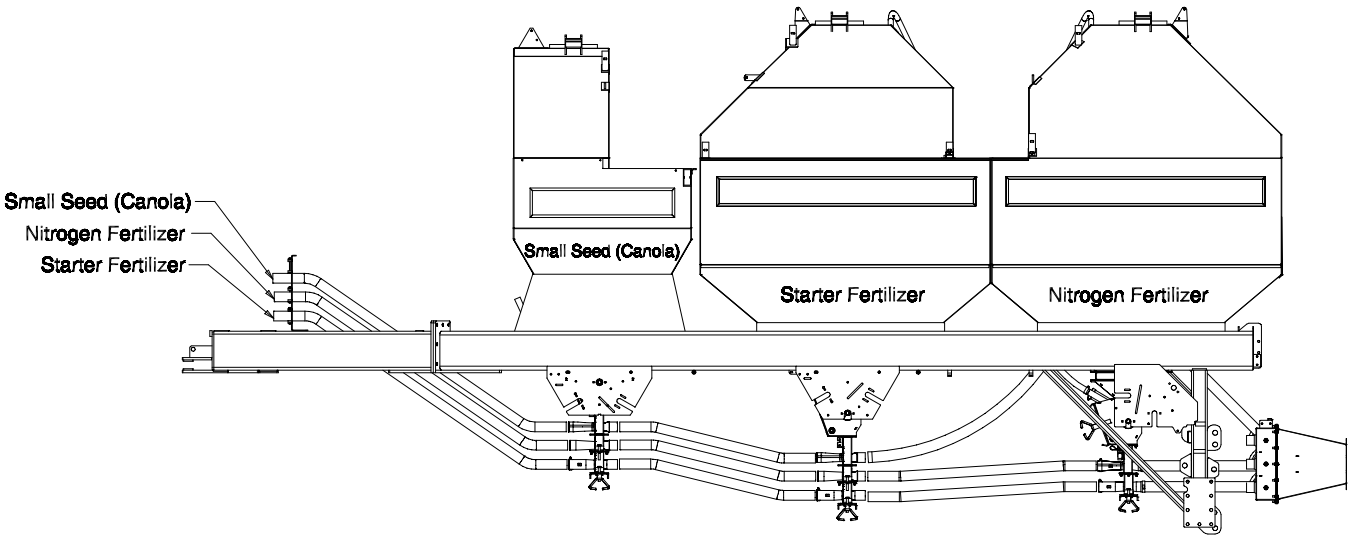
1. Collector Valve Setting:

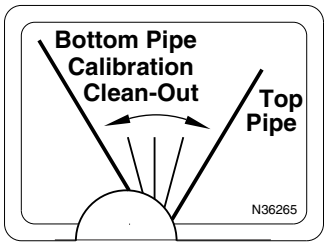
   Tank 1 (Small Seed (Canola)) - **Top Pipe**

   Tank 2 (Starter Fertilizer) - **Bottom Pipe**

   Tank 3 (Nitrogen Fertilizer) - **Middle Pipe**

2. Plenum Setting: See table on “Plenum Settings” located in previous section “Plenum Damper Settings”.





Decal on Collector

Triple Shoot Settings - Continued

Double Shoot Tow Behind

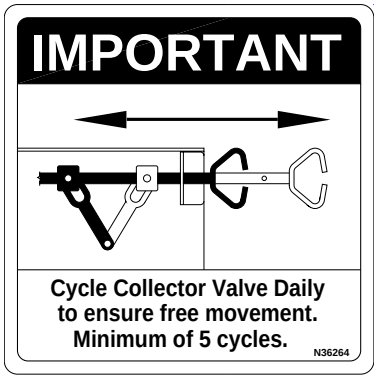
- Combining product from any combination of tanks and placed in either air stream is possible with the EIGHT Series XL distribution system. Some typical examples are shown below.

Example 1.

Tank 1 - Inoculant

Tank 2 - Coarse or Large Seed

Tank 3 - Fertilizer



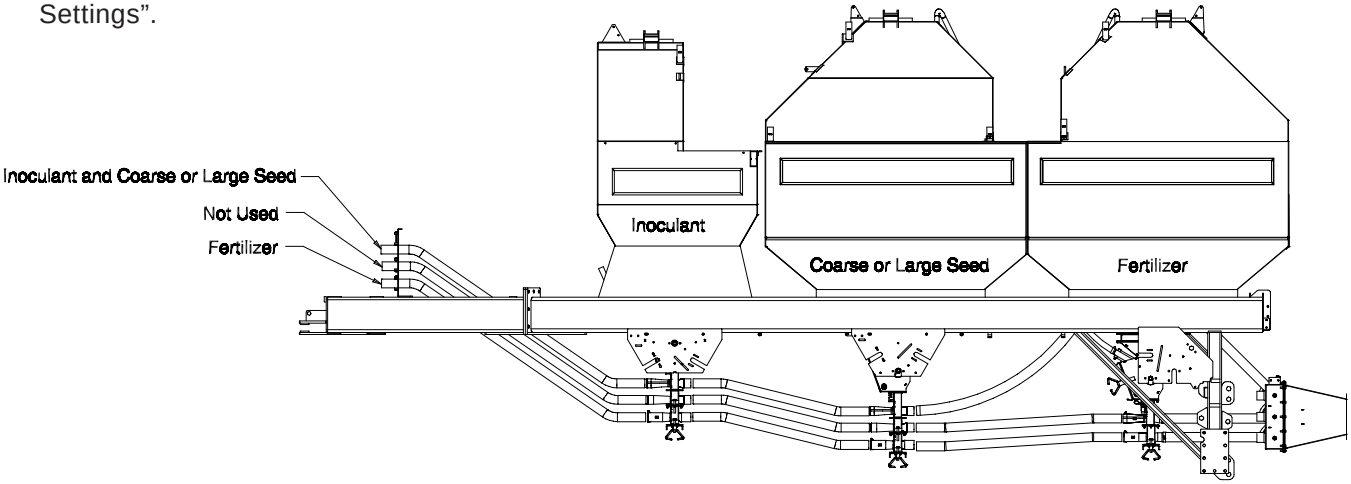
1. Collector Valve Setting:

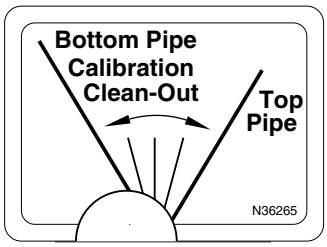
   Tank 1 (Inoculant) - **Top Pipe**

   Tank 2 (Coarse or Large Seed) - **Top Pipe**

   Tank 3 (Fertilizer) - **Bottom Pipe**

2. Plenum Setting: See table on “Plenum Settings” located in previous section “Plenum Damper Settings”.



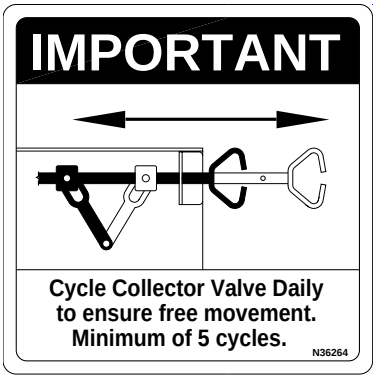


Decal on Collector

Triple Shoot Settings - Continued

Single Shoot Tow Behind

- Combining product from any combination of tanks and placed in either air stream is possible with the EIGHT Series XL distribution system. Some typical examples are shown below.



Example 1.

Tank 1 - Coarse or Large Seed

Tank 2 - Coarse or Large Seed

Tank 3 - Fertilizer

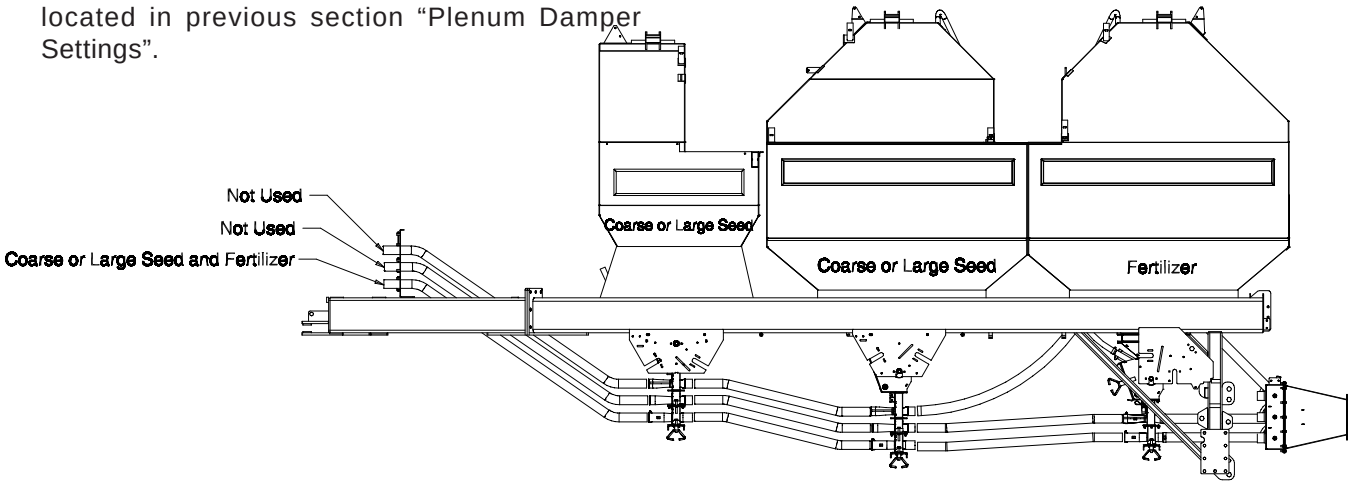
1. Collector Valve Setting:

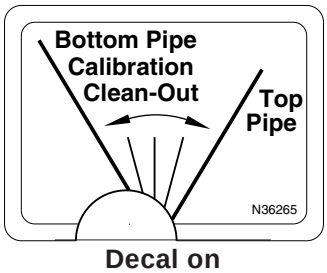
   Tank 1 (Coarse or Large Seed) - **Bottom Pipe**

   Tank 2 (Coarse or Large Seed) - **Bottom Pipe**

   Tank 3 (Fertilizer) - **Bottom Pipe**

2. Plenum Setting: See table on “Plenum Settings” located in previous section “Plenum Damper Settings”.





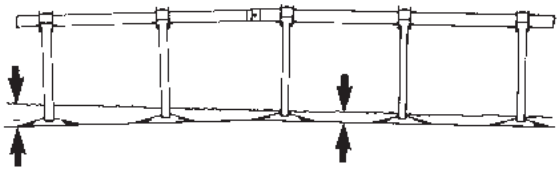
Decal on Collector

Operating Guidelines

There are a number of areas that can cause problems when seeding. Listed below are specific points that should be addressed at all times. Following these guidelines will ensure better crop emergence and consequently the potential for better yields.

An improperly leveled seeding tool cause uneven depth, which could result in poor emergence.

It is important that the seeding tool is leveled both side to side and front to back.



Side to Side Level

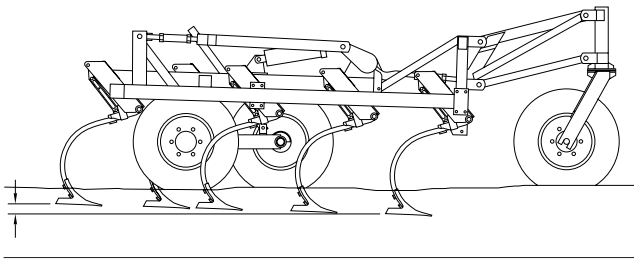
Check Tire Pressures

- Ensure all tires are inflated to their specified pressure. Incorrect tire pressure can cause depth variations.

Level Seeding Tool

Side to Side

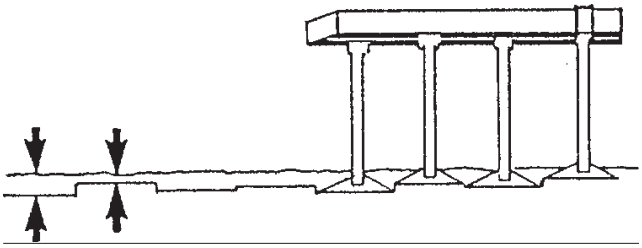
- Check the depth of each shovel on the back row.
- Adjust side to side level as necessary. See seeding tool manual for more details.



Front to Back Level

Front to Rear

- Poor front to rear leveling causes ridging as shown.
- Check the depth of two adjacent shanks, normally one on the front row and one on the rear row.
- Adjust level as necessary. See seeding tool manual for more details.



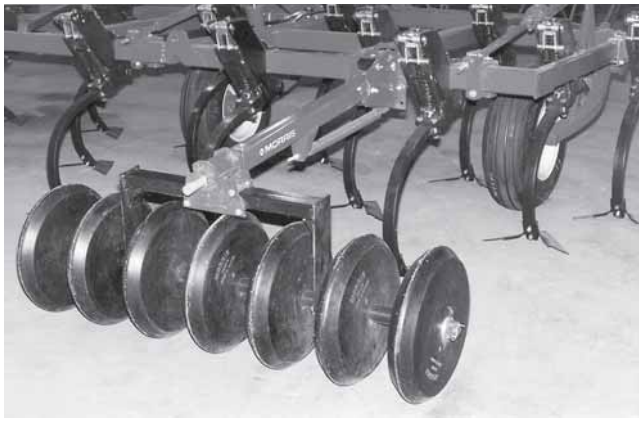
Ridging Front to Back

Worn Seeding Tool Parts

- Shanks that are bent cause uneven depth and they should be repaired or replaced.
- Trip mechanisms that are worn can also cause poor depth control and any worn parts should be repaired or replaced.

Packing

- Packing behind the seeding unit is strongly recommended. This improves germination and helps reduce moisture loss and erosion.
- In wet conditions the head land should be done last to prevent over packing.



Mounted Packers

Operating Guidelines - Continued

Turning

- Avoid sharp turns. Backing up of the outer wings with the seeding tool in the ground has a tendency to plug the seed boot with soil.
- Raise seed boots fully before making sharp turns or backing machine.

Seed Rate Settings

- Remove any caked-on material from seed plate and metering wheels.
- Ensure correct seed plate is installed and metershaft turns freely.
- Check product rates carefully by performing a calibration check.

Fertilizer Application

- Avoid using fertilizers that absorb moisture readily, especially during periods of high humidity.
- Also avoid fertilizers that contain a high percentage of fine dust, as these materials can plug metering wheels and coat the inside of seed distribution system.

Fan Setting

- Run fan at recommended speed. If plugging or surging occurs increase the fan speed to eliminate the problem. If plugging or surging continues reduce ground speed to eliminate the problem.
- Allow tractor hydraulic oil to warm-up thoroughly prior to seeding. Cold oil will cause slower fan speeds (Hydraulic driven fan).

Product Application

- Control product application with the VRT console switch in tractor.
- Have machine moving forward before lowering seed boots to avoid plugging.
- To prevent skipping, allow a minimum of 15 feet (5 m) of forward travel to ensure air system has delivered product to seed boots.

  Forward travel should be equal to half the width of the seeding tool. [i.e. for a 40 ft (14 m) wide seeding tool the forward travel should be a minimum of 20 feet (7 m).]

Note: It is strongly recommended to consult local agricultural extension offices for allowable product rates, which are dependent on soil moisture and type.

Note: Do not attempt to meter product when fan is not running. Damage to the metering wheels may occur.

Operating Guidelines - Continued

Adjustments and Operational Checks

- When changing fields and periodically throughout the day, the seeding tool should be checked for level and depth and the seed boots for blockage.

Checking Seed Flow

The following procedure should be implemented throughout the day typically at each fill of the air cart:

- Raise the seeding tool out of the ground.
- With the fan running and monitor on, engage meter drives with the run switch on the Run-Reset Box, rotating meter drives 4 to 5 times.
- Seed and/or fertilizer should appear at each outlet on the ground.
- If no seed or fertilizer appears on the ground at any of the openers check for hose blockage in both the 15/16” (24 mm) diameter secondary and the 2 1/2” (64 mm) diameter primary hose, as well as in the flat fan divider.
- See Trouble Shooting Section for possible causes of the blockage.

Moisture Alert

- Whenever air cart has been standing for an hour or more during period of high humidity or damp, rainy days, or after sitting overnight, run fan at recommended rpm, with machine stationary for 5 minutes.

Air Leaks

It is imperative that no air leaks occur in the air cart tank as even the smallest air leak from the lid will lead to material bridging in the tank thereby causing misses in the field.

Check the following areas for air leaks:

- Tank clean-out door
- Metering body assembly seals
- Collector assembly seals
- Tank lid

Tank Low in Product

- Refill tank before metering wheels are exposed.
- The metering wheels must be completely covered to avoid unseeded strips.

Important

Check Metering Wheel flutes in the event the primary lines plug.

Flutes may shear if the collector becomes plugged.

Mount to Ladder

Note : Check Seed Flow as described above, after running fan for 5 minutes.

Operating Guidelines - Continued

Meter Shut-Off

- Familiarize yourself with the remote functions.
- On initial startup of the system the remote needs to learn the transmitter signal of the solenoid by:
  1. Power up solenoid
  2. Press and hold the remote ON button for 10 seconds.

Note: The remote will need to learn the transmitter signal each season of use and when batteries are replaced.

- To close a slider section press and hold the remote CLOSE button for approximately 30 seconds. The fan rpm will drop slightly while the cylinders are closing and will resume full rpm once cylinders are closed.
- To open a slider section press and hold the remote OPEN button for approximately 30 seconds. The fan rpm will drop slightly while the cylinders are opening and will resume full rpm once cylinders are opened.
- Ensure solenoid is correctly wired to match remote. (i.e. Left buttons controlling left shut off)
- Check all wire harness connections for corrosion and use a dielectric spray to clean.
- Periodically throughout the day typically at each fill of the air cart, visually check shut-offs to ensure they are functioning correctly.

Important: It is strongly recommended to have the seeding unit equipped with a blockage monitor system to ensure product flow.

Note: Acres are tabulated using total implement width and does not account for meter shut-off usage.

Important

Metering Wheels require purging once sliders are opened. A half revolution of the metering wheel is required before product begins to meter. Coarse seeds and fertilizer will require forward travel of the seeding tool of 10 feet (3.5 m) minimum. Fine seeds require forward travel of the seeding tool of 110 feet (34 m) minimum.

Products and rates may vary forward travel distance. Operator must familiarize oneself with distance required for products being used.

Meter Shut-Off Remote Control

Meter Shut-Off Cylinders

Operating Guidelines - Continued

Monitor

- Familiarize yourself with all monitor functions as outlined in the Topcon manual.
- Ensure all monitor *"settings"* are correctly set for the air cart/seeding tool combination.
- Recognize and correct alarm conditions as indicated on the monitor.
- Check all wire harness connections for corrosion and use a dielectric spray to clean. Inspect all sensors for proper gap.

General Field Operation

- Follow guidelines outlined in *"Operating Guidelines".*
- Switch monitor on as outlined in the Topcon manual.
- Start fan.

Note: Load sensing hydraulic systems require "*warming up*" before they function smoothly. See *"Hydraulic Fan Drive" for more details.*

- Move forward with seeding tool.
- Engage metering systems as outlined in the Topcon manual.
- Lower seeding tool into ground.
- Product rates can be varied as desired by using the INCREASE and DECREASE buttons for the appropriate product as outlined in the Topcon manual.
- Turning at headland: Switch metering systems off with the Master Switch, immediately raise seeding tool, fully rephasing hydraulics (see seeding tool manual).
- Once turn is complete engage metering systems with the Master Switch and lower seeding tool into ground.

Note: Do not attempt to meter product when fan is not running. Damage to the metering wheels may occur.

Note: Engage console master switch early enough to avoid misses. Forward travel should be equal to half the width of the seeding tool. [i.e. for a 40 ft (14 m) wide seeding tool the forward travel should be a minimum of 20 feet (7 m).]

Manual Override

If the variable rate control system fails, the independent manual override system can be used to maintain seeder operation.

The manual override system provides the ability to run the hydraulic motors at a fixed rate **(not proportional to ground speed)** and to turn the manual system ON and OFF from the tractor cab.

Rate Setting

To set the manual override system use the following procedure:

- Turn Monitor OFF.
- Empty product from tanks or close tank shut-offs.
- Refer to the appropriate *"Ground Speed Chart"* on the following pages or use the calculations below to determine the meter shaft RPM for the desired product.
- Adjust meter shaft RPM using following procedure:
  - Place hand held tachometer onto meter shaft.
  - Remove cap nut and then loosen jam nut.
  - Turn adjusting screw IN (Clockwise) until meter shaft turns desired RPM.
  - Tighten jam nut to secure adjusting screw in place. Replace cap nut.
- Repeat the above procedure for the other meter shafts.

Note: Re-zero shaft hydraulic motors once normal operation of system is resumed.

Remove Cap Nut and Loosen Jam Nut

Adjusting Screw

Calculating Meter Shaft RPM

If it is desired to calculate the exact rpm for a more specific ground speed use the following:

Know parameters:

Working Width	The operating width of seeding tool. (feet)
Working Speed	Operating ground speed. (mph)
Application Rate	Weight of product. (lbs/acre)
Product WT/REV	Known from calibration mode or can determine from Calibration Chart. (lbs/rev)

Manual Override - Continued

Calculating Meter Shaft RPM

Determine in the following order:

1) Travel Distance (feet per acre) = 43560 ft^2 / Working Width (ft)
2) Travel Speed (feet per minute) = Working Speed (mph) x 5280 ft/mile / 60 min/hr
3) Travel Time (minutes per acre) = Travel Distance ft/acre / Travel Speed (ft/min)
4) Motor revs per acre = Application rate (lbs/acre) / WT/REV (lbs/rev)
5) Motor RPM = Motor Revs (revs/acre) / Travel Time (min/acre)
6) **Meter Shaft RPM**

   Direct Drive = Motor RPM / 2

   Slow Speed Drive = Motor RPM / 16

Operating in Manual Override

- Connect Manual Override switch to AUX connection on monitor harness.
- Refill tanks or open the tank shut-offs.
- Ensure Manual Override switch is in the OFF position, this will shut off the shaft motors.
- Start Fan.
- Move forward with seeding tool at desired speed.

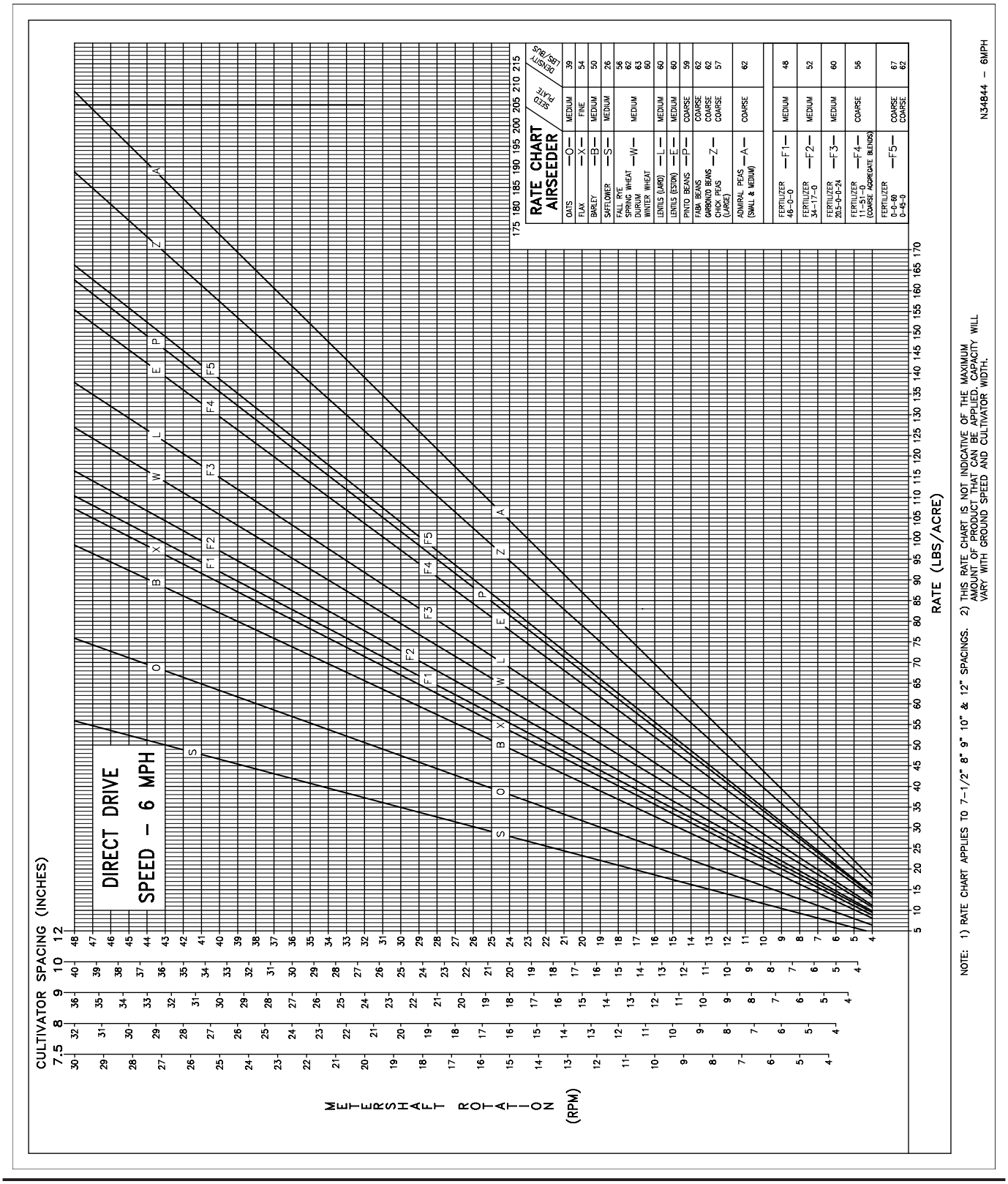
Note: It is important to maintain a constant ground speed since product application rate will not adjust to any changes in ground speed.

- Engage metering system by turning ON the Manual Override switch.
- Lower seeding tool into ground.
- Turning at headland:
  - Disengage metering system by turning OFF the Manual Override switch, immediately raise seeding tool fully rephasing hydraulics (see seeding tool manual).
  - Once turned engage metering system by turning ON the Manual Override switch, and lower seeding tool into ground.

Note: Re-zero shaft hydraulic motors once normal operation of system is resumed.

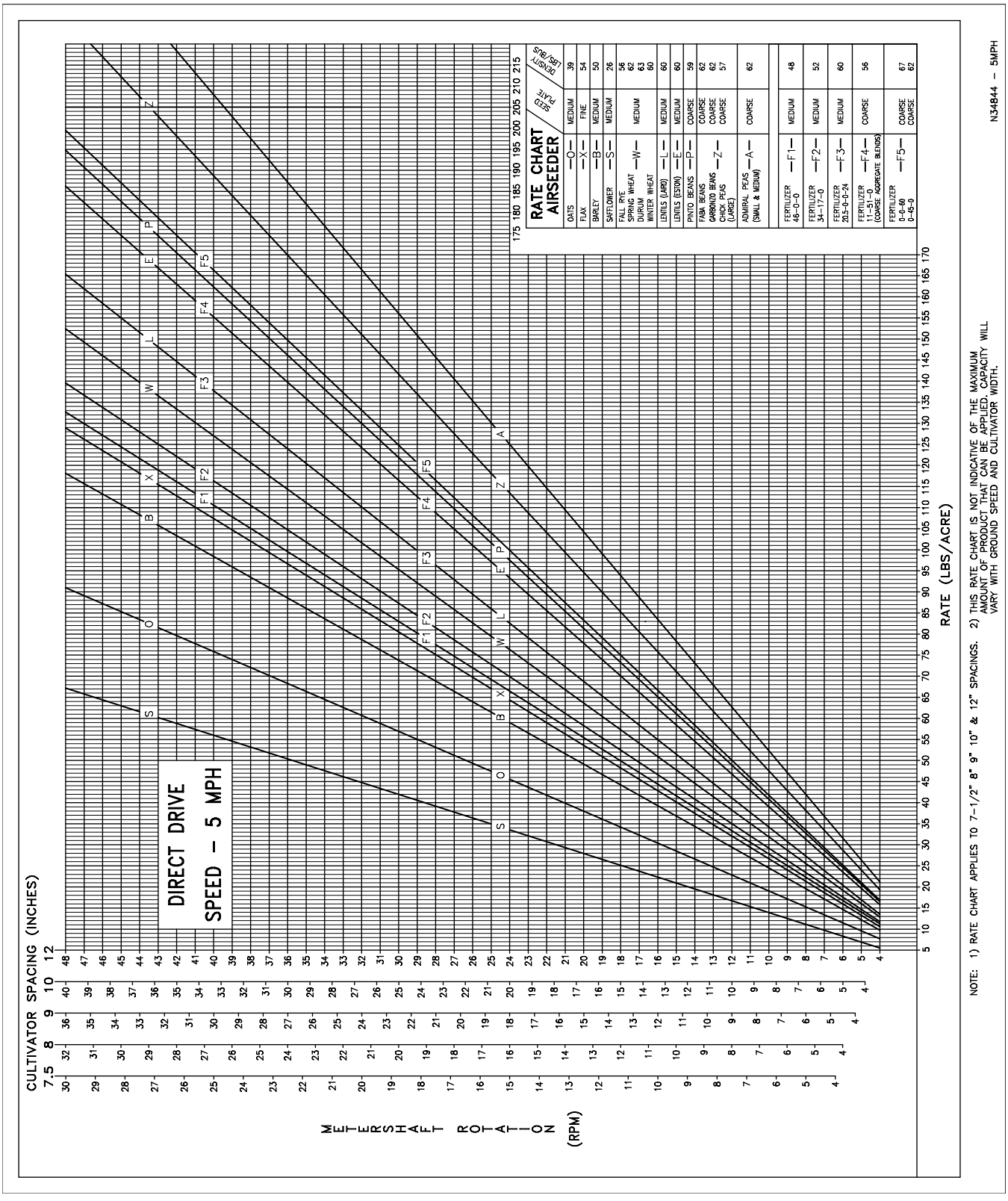
Manual Override - Continued

6 mph Ground Speed Chart - Direct Drive



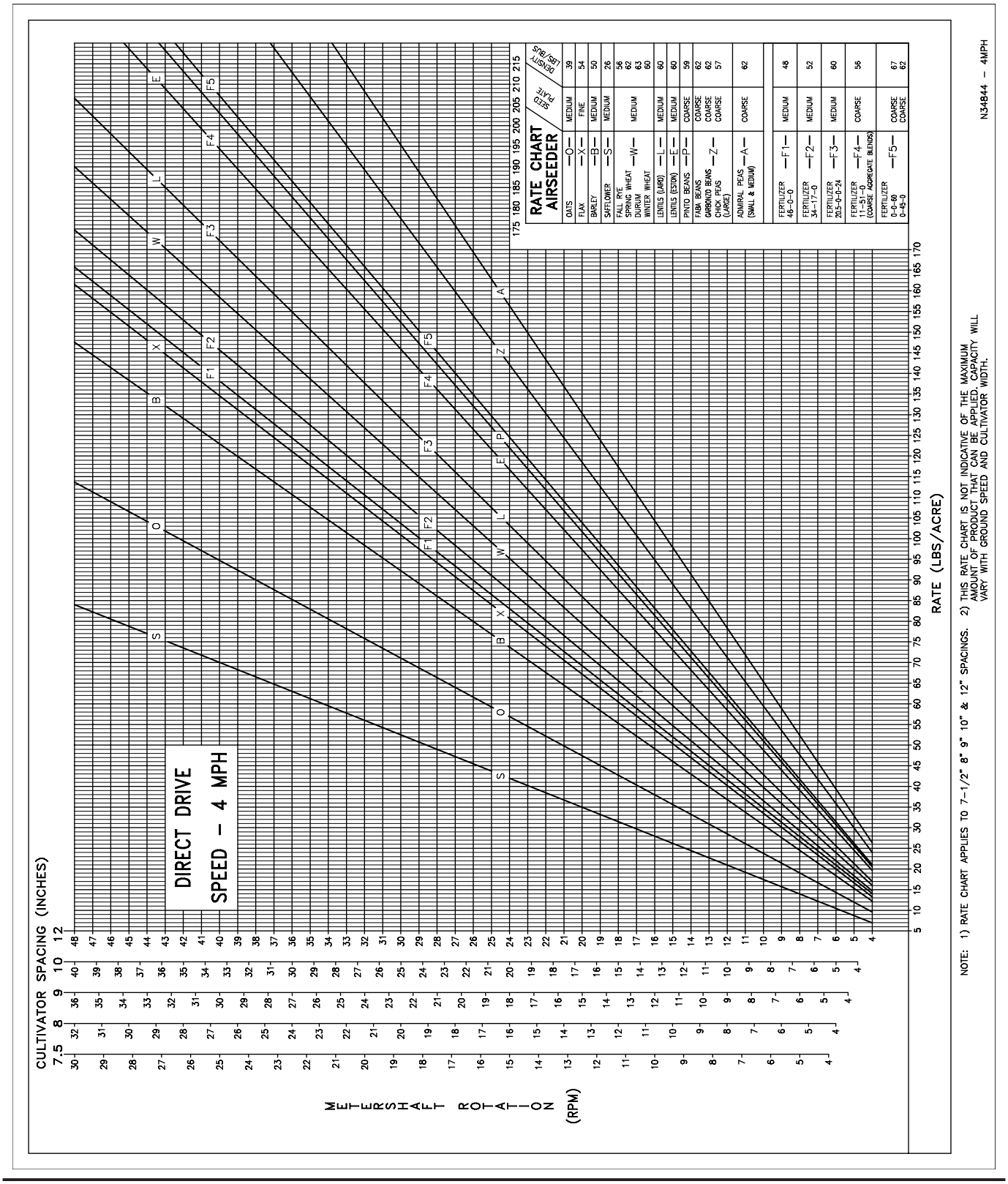
Manual Override - Continued

5 mph Ground Speed Chart - Direct Drive



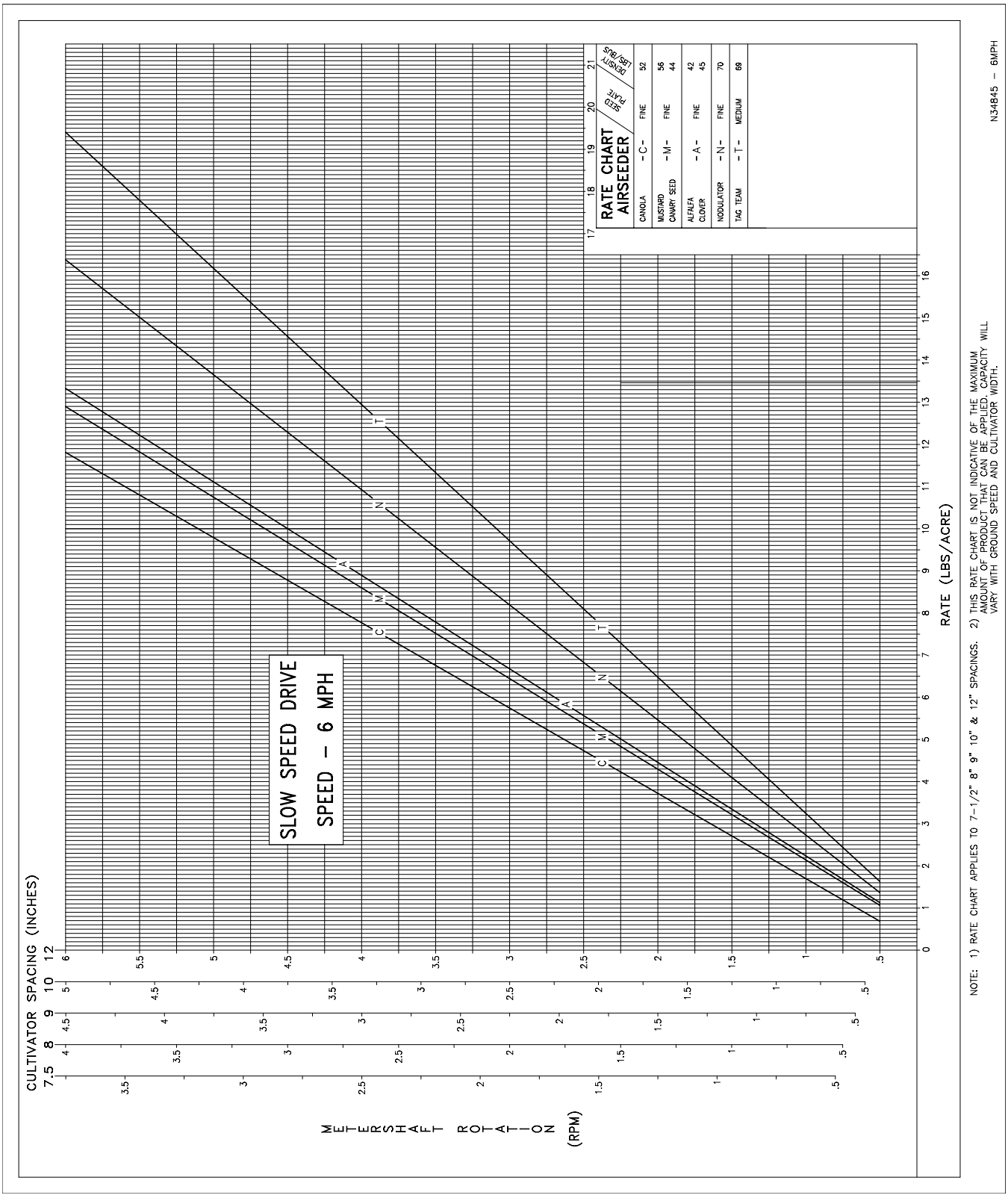
Manual Override - Continued

4 mph Ground Speed Chart - Direct Drive



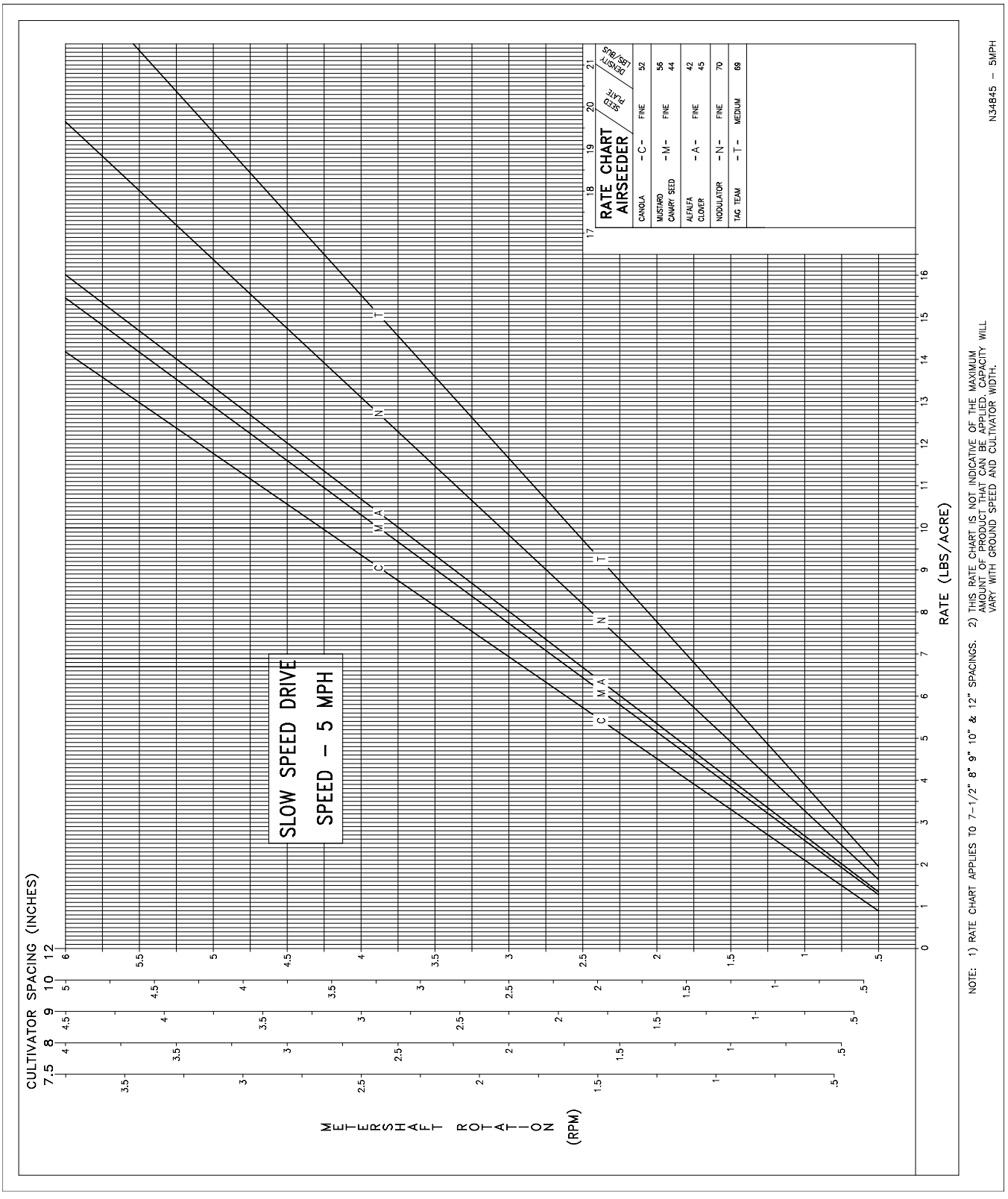
Manual Override - Continued

6 mph Ground Speed Chart - Slow Speed



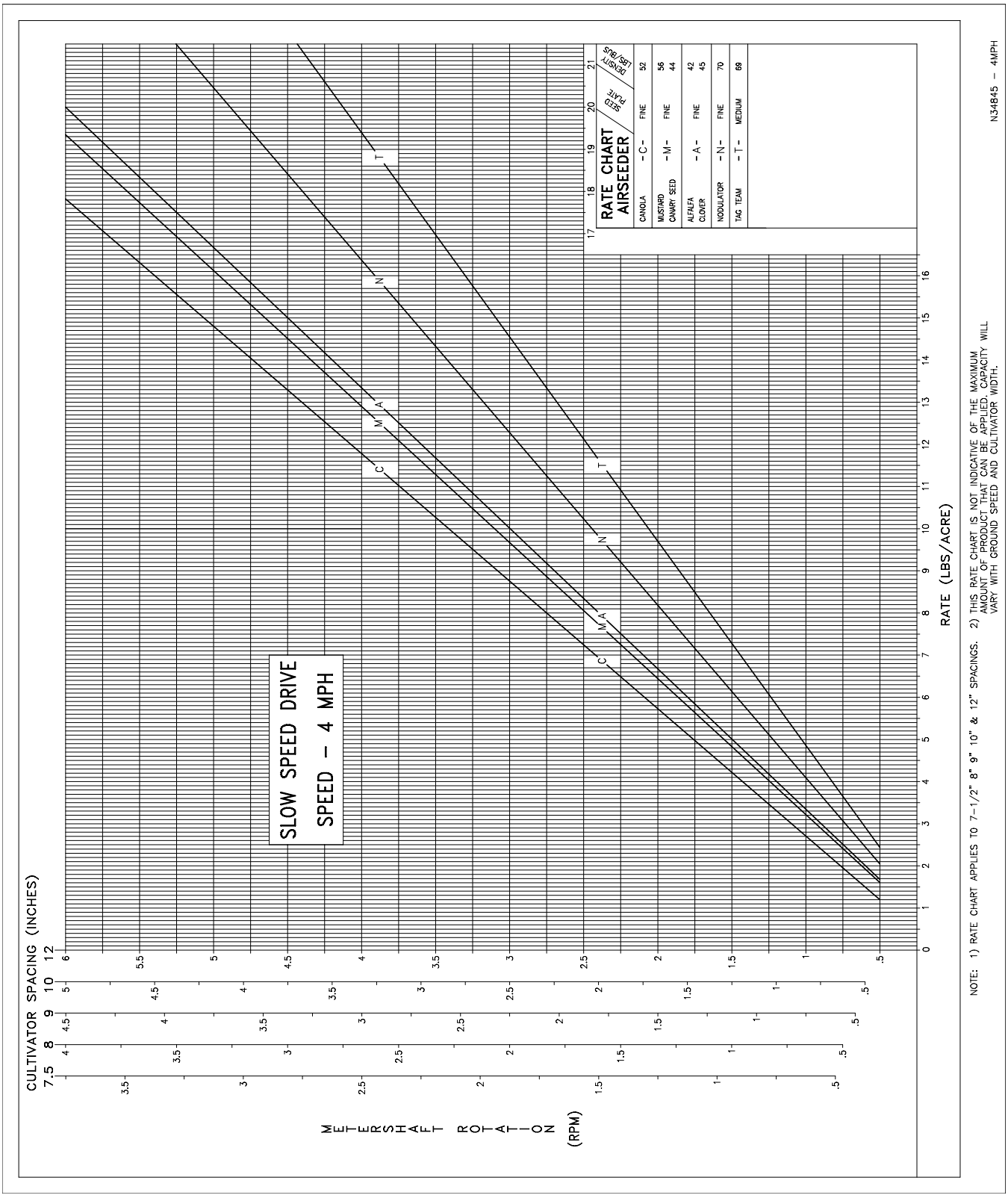
Manual Override - Continued

5 mph Ground Speed Chart - Slow Speed



Manual Override - Continued

4 mph Ground Speed Chart - Slow Speed



Section 6: Maintenance

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CAUTION

BE ALERT

SAFETY FIRST

REFER TO SECTION 1 AND REVIEW ALL SAFETY RECOMMENDATIONS.

General

This section deals with two goals, maximum life and dependable operation. Adopt a regular maintenance and lubrication program. Care and sufficient lubrication is the best insurance against delays.

Safety

- Always shut off the tractor and remove key before dismounting.
- Guard against hydraulic high pressure leaks with hand and face protection.
- Never work under the implement unless it is in the down position or transport lock pins are in place and secured with hair pins. Do not depend on the hydraulic system to support the frame.
- Always wear safety goggles, breathing apparatus and gloves when working on seeder filled with chemical. Follow manufactures recommended safety procedures when working with chemicals or treated seeds.
- Do not feed left over treated seed to livestock, treated seed is poisonous and may cause harm to persons or livestock.

Warning

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

Caution

Keep service area clean and dry. Wet or oily floors are slippery.

Tighten Bolts

- Before operating the air cart.
- After the first two hours of operation.
- Check tightness periodically thereafter.
- Use Bolt Torque Chart for correct values on various bolts.
- Note dashes on hex heads to determine correct grade.

Note: DO NOT use the values in the Bolt Torque Chart if a different torque value or tightening procedure is given for a specific application.

- Fasteners should be replaced with the same or higher grade. If higher grade is used, only tighten to the strength of the original.

Bolt Torque Chart

Grade 5 Bolt Marking		Bolt Size	Grade 8 Bolt Marking	
Nm	lb. ft.		lb. ft.	Nm
11	8	**1/4**	12	16
23	17	**5/16**	24	33
41	30	**3/8**	45	61
68	50	**7/16**	70	95
102	75	**1/2**	105	142
149	110	**9/16**	155	210
203	150	**5/8**	210	285
366	270	**3/4**	375	508
536	395	**7/8**	610	827
800	590	**1**	910	1234
1150	850	**1-1/8**	1350	1850
1650	1200	**1-1/4**	1950	2600
2150	1550	**1-3/8**	2550	3400
2850	2100	**1-1/2**	3350	4550

Tires

- Inspect tires and wheels daily for tread wear, side wall abrasions, damaged rims or missing lug bolts and nuts. Replace if necessary.
- Tighten wheel bolts - refer to Bolt Torque Chart.
- Check tire pressure daily, when tires are cold.
- Correct tire pressure is important.
- Do not inflate tire above the recommended pressure.

⚠ Caution

Tire replacement should be done by trained personnel using the proper equipment.

Tire Specifications

Tire	Style	Rating	Pressure			
			8240 8300 BH 8336 BH	8300 BT 8336 BT 8370 8425	BH 8435 8630 8650	BT 8435 8630 8650
21.5 x 16.1	Soft Trac	10 ply	28 psi	-	-	-
21.5 x 16.1	Lug	12 ply	24 psi	-	-	-
560/65 D24	Soft Trac	LI 140	19 psi	24 psi	-	-
500/70 R24	Lug	LI 157	20 psi	25 psi	-	-
23.1 x 26	AWT	12 ply	24 psi	-	-	-
23.1 x 26	Rice	10 ply	28 psi	-	-	-
28LR26	Lug	165 A8	-	-	18 psi	-
480/70R30 Quad Steer	Lug	LI 152	26 psi	26 psi	-	-
30.5 x 32	AWT	12 ply	20 psi	24 psi	-	-
800/65 R32	Lug	LI 172	15 psi	20 psi	-	-
800/65 R32 Dual Wheels	Lug	LI 172	-	-	-	20 psi
900/60 R32	Lug	176 A8	17 psi	17 psi	26 psi	-
520/85 R38 Dual Wheels	Lug	155 A8	-	-	20 psi	-

*BH - Tow Behind only *BT - Tow Between only

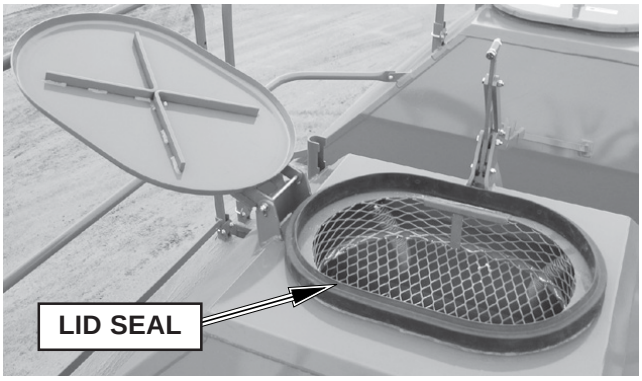
Daily Maintenance

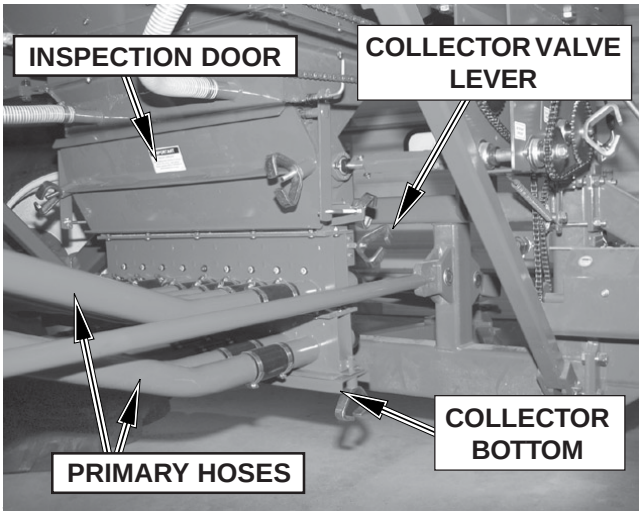
- Check for and remove any water in primary collectors and pressure lines after rainy weather. Remove all inspection doors and collector bottoms to drain water from the tanks and collectors.
- Reinstall collector bottoms and inspection doors.
- Ensure fan screen is clear of debris.

Note: Start fan and run for 3 - 5 minutes prior to loading machine to get rid of accumulated moisture.

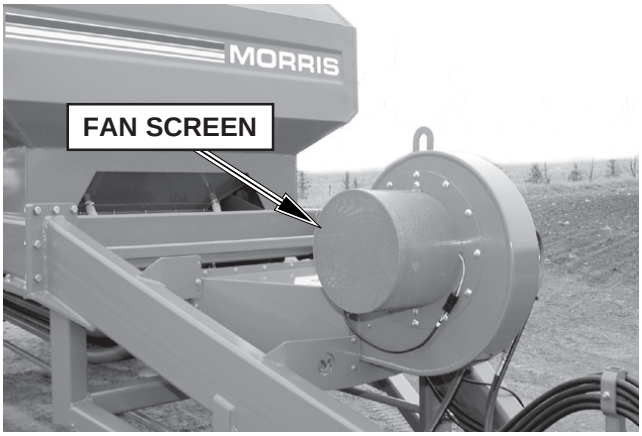
- Check lid seals for damage, and that they are sitting properly on steel ring.
- Check tank pressure hoses for leaks, cracks or plugging.
- **Check the following areas for air leaks:**
  - **Tank inspection door**
  - **Metering body assembly seals**
  - **Collector assembly seals**
  - **Tank lid**

  Refer to “Air Leak Check” under Air System Maintenance.
- Check monitor wiring that all sensor wires are properly routed and retained.
- Check for plugged hoses.
- Cycle Collector Valve five times to ensure parts are free to move.
- Ensure drive chains are cleared of debris.
- Check torque on wheel bolts.





Double Shoot Shown



Lubrication

Greasing pivot points prevents wear and helps restrict dirt from entering. However, once dirt does enter a bearing, it combines with the lubricant and becomes an abrasive grinding paste, more destructive than grit alone.

- Apply new lubricant frequently during operation to flush out old contaminated lubricant.
- Use a good grade of **lithium based grease**.
- Use a good grade of machine oil.
- Clean grease fittings and lubricator gun before applying lubricant.

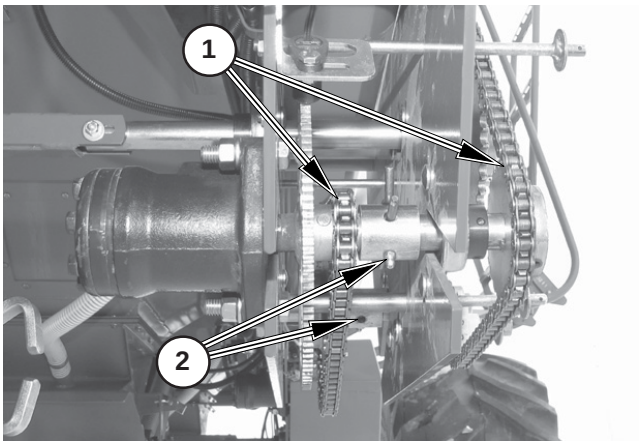
Refer to the following photos for grease fitting locations.

1. Drive Chains
- Oil every 50 hours.

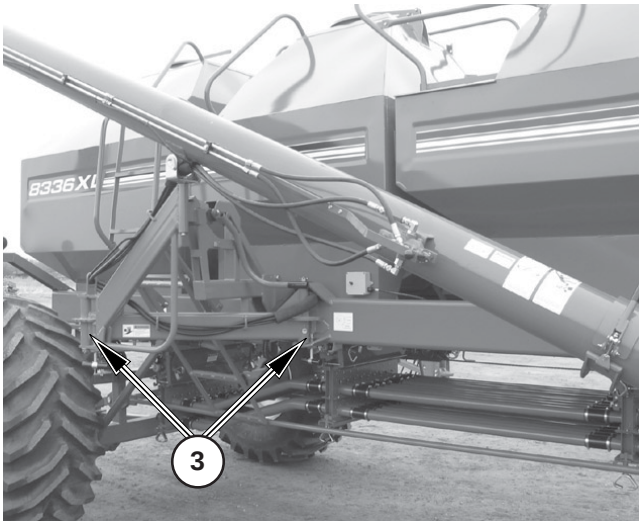
2. Slow Speed Drive
- Grease every 50 hours.

3. Auger Pivot
- Grease every 100 hours.

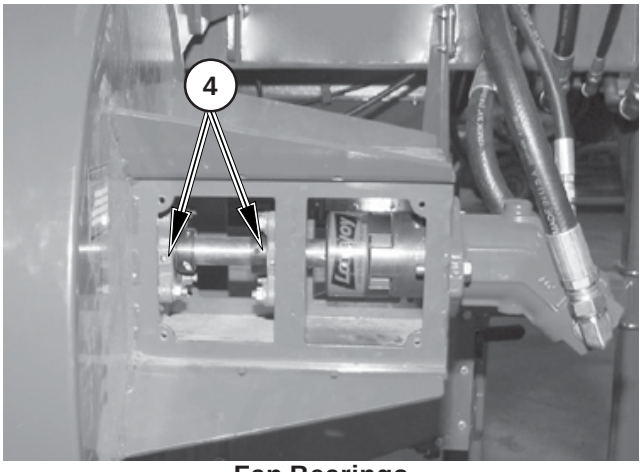
4. Fan Bearing (17" Diameter Fan only)
- Apply 2 pumps of grease every 100 hours.



Transmissions



Auger Pivots



Fan Bearings

Air Delivery System

General

The air delivery system of all air carts is extremely important for the proper metering of product to the openers. The metering system on all pressurized air carts is sensitive to air leaks. **Loss of tank air pressure could affect feed rates, which could become erratic or even stop.**

- Regularly check that all hoses are free from kinks or blockages throughout the day. To check for blockages raise seeding tool out of the ground and with the fan running engage meter drives with the primer switch, rotating meter drives 4 to 5 times. Equal amounts of material should be deposited under each boot. If not, check the following for blockage:
  1. Seed openers and secondary hoses.
  2. Divider heads by removing access doors.
  3. Primary hoses and collectors.
  4. Metering wheels for damage to the flutes of the wheel.
- Keep fan inlet screen clear and free from debris.
- Place a plastic bag over the fan when the unit is not in use. This helps prevent moisture from entering the system.
- Check periodically and at the end of each season for air leaks at hose connections.
- Check periodically and at the end of each season for air leaks in the following areas:
  1. Tank lid seals.
  2. Metering body shaft seals.
  3. Metering body to tank seals.
  4. Collector to metering body seals.
  5. Fan to plenum.
  6. Plenum to collector.
  7. Inspection doors, for leaks and loss of seal memory.
  8. Collector door seals.
  9. Couplers between air cart and seeding tool.
  10. Access doors on divider heads.

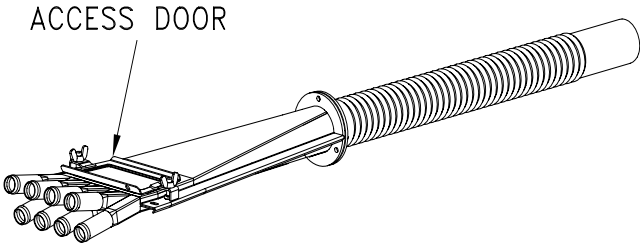
Note: There must not be any air leaks from the tank. This air leakage causes air turbulence in the tank which can result in inaccurate metering rates.

- Once a year check for wear of primary and secondary hoses.

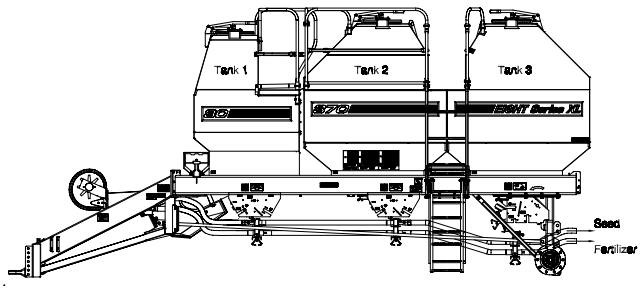
⚠ Caution

Care should be taken when working near the air cart while the fan is running. Product blowing out of the system could cause personal injury.

Run-Rest Switchs



Note: Extended life can be obtained if the hoses are rotated 1/4 turn once a year.



Air Delivery System - Continued

Tank Lids

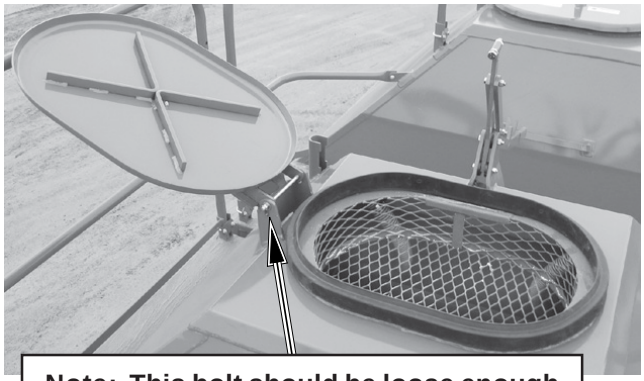
The lid seal is probably the area that sees the most abuse due to the activity associated with filling the tanks.

With each fill the lid seals should be inspected for cuts, abrasions, debris in the seal and ensure the seal is positioned properly on the steel rim around the tank opening.

Tank Lid Adjustment

Check Tank Lid tension on *all tanks* at beginning of each season and periodically during season for air leaks. The following checks and adjustments must be made to prevent air leaks from occurring:

- Check for any foreign material embedded into seal. Clean out foreign material from seal surface.
- Check seal for cuts and abrasions. If seal is cut or severely worn, then replace seal.
- Ensure seal is positioned properly on steel rim around tank opening.
- Use a 0 - 100 lb. (45 kg) spring scale to check the tank lid opening force. With the lid closed place one end of the scale 1" from the end of the tank lid lever. Pull straight up on the scale and note the maximum force it takes to open the lid. The force needed to open the lid ***must be greater than 65 lbs (29 kg).*** Adjust the lid latch adjusting bolt as necessary. The lid latch should close with a ***snap.*** This will ensure that the lid is sufficiently tight and prevent any leaks.
- Re-check for leaks. If lids still leak turn down bolt one or two more turns. Re-check for leaks.



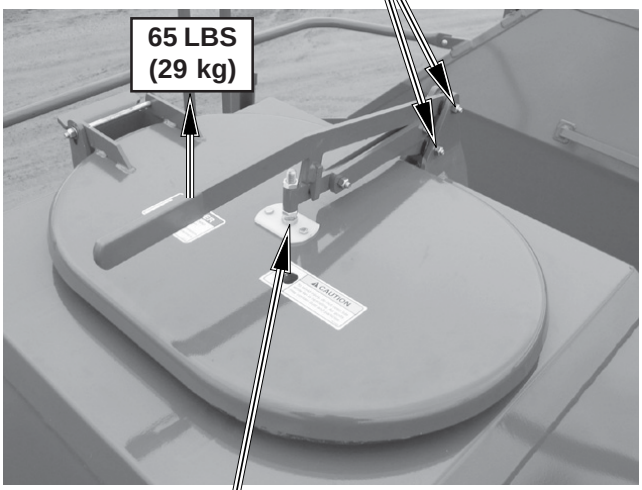
Note: This bolt should be loose enough to allow lid to float in the slot.

Important

It is imperative that no air leaks occur in the air cart tank as even the smallest air leak from the lid will lead to material bridging in the tank thereby causing misses in the field.

Note: When air cart is not in use, leave lid latches loose to help maintain resilience of the seals.

These bolts and lock nuts must be tightened to maintain a friction fit so the lid latch stays stationary when in open position.



Adjust the lid latch bolt to obtain a force *greater than 65 lbs (29 kg)* **to open the lid.**

Air Delivery System - Continued

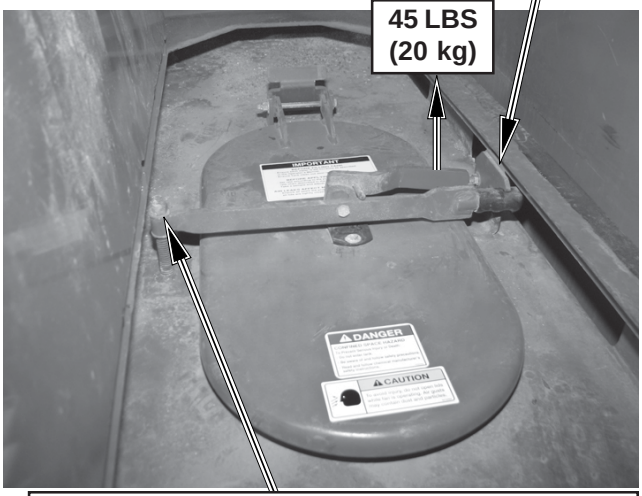
Tank Lid Adjustment - Continued

8650 Air Cart 4th Tank

- Check for any foreign material embedded into seal. Clean out foreign material from seal surface.
- Check seal for cuts and abrasions. If seal is cut or severely worn, then replace seal.
- Ensure seal is positioned properly on steel rim around tank opening.
- Use a 0 - 100 lb. (0-45 kg) spring scale to check the tank lid opening force. With the lid closed place one end of the scale *one inch* from the end of the tank lid lever. Pull straight up on the scale and note the maximum force it takes to open the lid. The force needed to open the lid ***must be greater than 45 lbs (20 kg).*** Adjust the lid latch adjusting bolt as necessary.
- Re-check for leaks. If lids still leak turn down bolt one or two more turns. Re-check for leaks.

Note: Additional lid latch adjustment can be obtained with plate adjustment.

Note: When air cart is not in use, leave lid latches loose to help maintain resilience of the seals.



Air Delivery System - Continued

Air Leak Check

It is ***imperative that no air leaks occur*** in the air cart tank. Any air leaks could cause loss of tank air pressure affecting feed rates, which could become erratic or stop.

To prevent this from occurring, it is strongly recommended that a pressure test be conducted prior to seeding time. This can be performed very easily and simply by completing the following steps:

- Clean fan impeller and adjust tank lids.
- Disconnect the 2 1/2" diameter primary hoses from the rear of the cultivator at the primary hose coupler(s) by loosening the four 3/8" bolts.
- Install the blank off plate that is supplied with the air cart at each coupler and re-tighten the 3/8" bolts. If the blank off plates are not readily at hand a piece of cardboard can be used in its place.
- Once the blank off plates have been installed, start the fan and run at 4,500 rpm.

Check the following areas for air leaks:

1. Tank lid seals.
2. Metering body shaft seals.
3. Metering body to tank seals.
4. Collector to metering body seals.
5. Fan to plenum and plenum to collector.
6. Inspection doors, for leaks and loss of seal memory.
7. Collector door seals.
8. Tanks union plate.

Air leaks can be detected by spraying a soapy water solution onto the seal area. If bubbling of soap occurs, the seal has a leak. Another method is to use your hand to feel for any air movement around the seal. This method requires a calm day, as the wind can make it difficult to detect a small leak.

- If any of the above areas leak, remove the parts and replace the seal. Ensure upon reassembly that the parts are tightened sufficiently to prevent air leakage.
- Remove the blank off plates before using the air cart.

Once the pressure test is complete, check the following areas for air leaks:

9. Couplers between air cart and seeding tool.
10. Access doors on divider heads.

Important

It is imperative that no air leaks occur in the air cart tank, as even the smallest air leak will lead to material bridging in the tank, thereby causing misses in the field.

Note: When air cart is not in use leave lid latches and inspection doors loose to help maintain resilience of the seals.

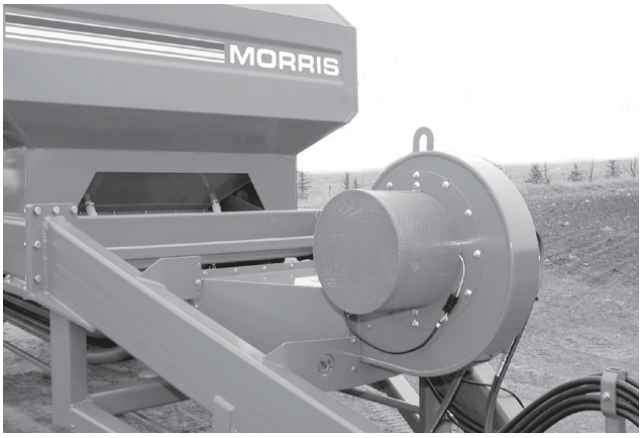
Air Delivery System - Continued

Fan

Debris can build up on the fan screen and blades causing reduced output of the fan. The lack of air flow even at higher fan speeds will cause material plugging of the air system.

The build up of material during operation can cause the following:

1. Fan rpm will increase without increasing oil flow to orbit motor.
2. Air cart distribution system plugging from a lack of air flow (Increasing fan rpm has little or no effect).



Fan Screen

- Ensure fan screen is clear of debris. Check periodically through the day.

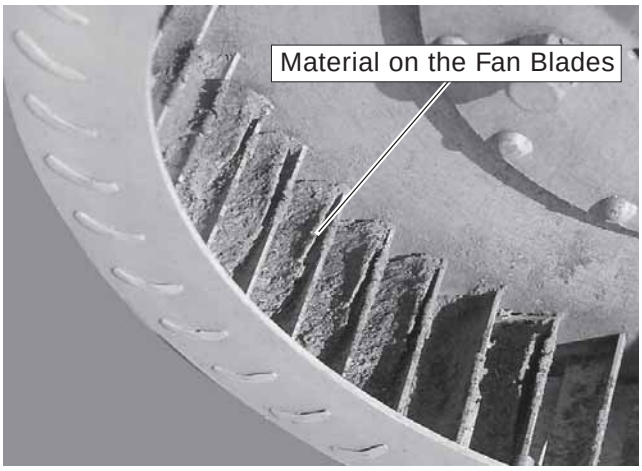
Fan Impeller

The fan blades may become plugged under high humidity/dusty conditions/high insect counts.

Under severe conditions the fan blades should be inspected daily and cleaned as required.

Under normal conditions the fan should be inspected and cleaned at least once a season.

- Care should be taken in cleaning all fan blades thoroughly to restore the fans peak performance.
- Ensure that the balance clips located on the fan blades are not removed, as this will put the fan out of balance.



Note: Material build up on the fan blades could cause the fan to be out of balance. The added vibration of the out of balance impeller will reduce the life of the fan components.

Storage

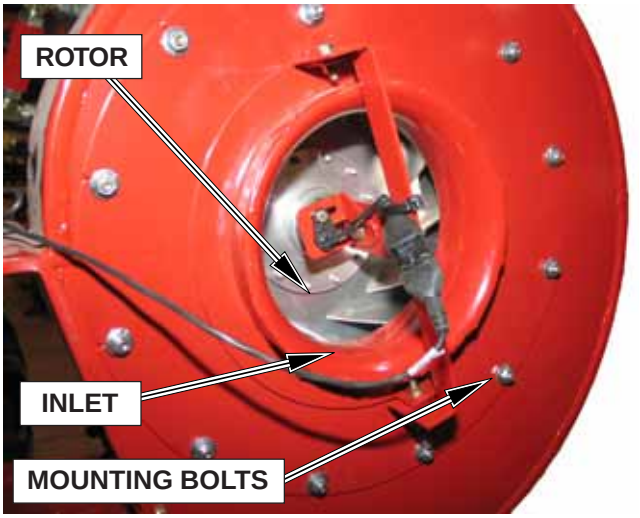
To prevent water entering the air system, cover the fan intake with a plastic bag, whenever the seeder is not in use.

Note: Be sure to remove fan cover prior to starting fan or serious damage could result to the fan.

Air Delivery System - Continued

Rotor Clearance

- Position rotor 1/8” (3 mm) from inlet.
- Check rotor alignment if tipped at an angle to the inlet adjust inner bearing on blower housing to achieve proper rotor to inlet concentricity.
- If rotor is square to inlet but not concentric to inlet, raise or lower the inlet on the mounting bolts.
- Spin rotor by hand to check for interferences, adjust as required.



Hoses

Inspect air delivery hoses for wear and replace as required. Check areas where hoses may be exposed to moving parts such as hitch hinge area.

Also, inspect hoses for blockage as rodents/birds may nest in hoses that have not been properly capped during storage.

To optimize the EIGHT Series XL Air Cart air system the pressure across the inlets of the quick couplers should be balanced. To achieve this all primary hoses **must be equal in length or use equalizers** to achieve a balanced air system.

Consult with your MORRIS Dealer for assistance on hose lengths and location of equalizers.

Important

ALL primary hoses must be the same length or use equalizers to achieve a balanced air system.

Air Delivery System - Continued

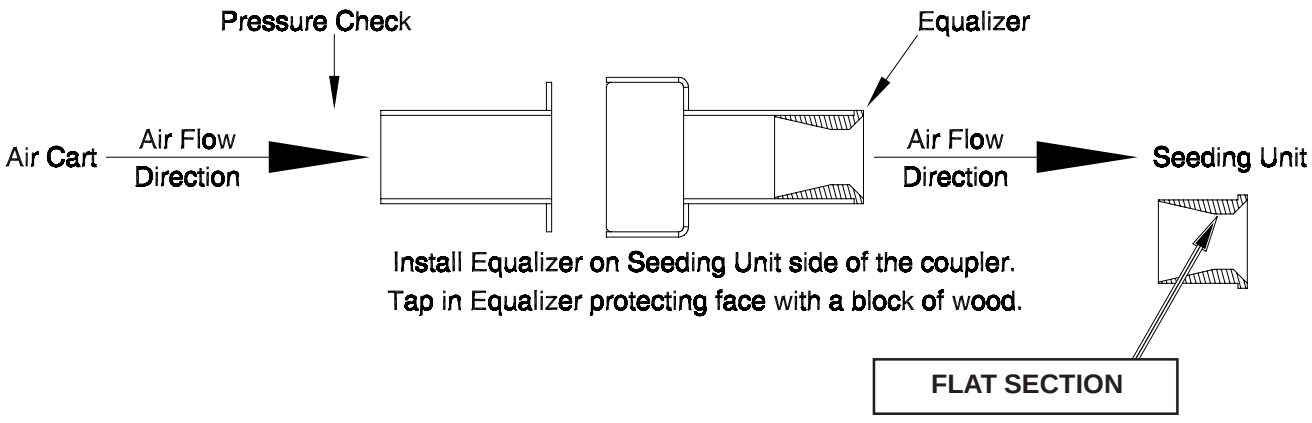
Equalizers

The equalizers reduce the amount of primary hose required to balance the air system of the air cart.

- Equalizers are installed on the shorter primary hoses of the seeding tool. Consult with your MORRIS Dealer for assistance on hose lengths and location of equalizers.
- Check equalizers seasonally for wear. If flat section is gone replace equalizer.

Coupler on Seeding Tool

Insert Equlizers on Coupler Seeding Tool side



Hydraulic Orbit Motor

The motor requires no maintenance itself.

It does, however, require clean oil so the tractor hydraulic filters must be replaced regularly.

Repair/Replacement

- Remove orbit motor from the fan.

Note: The shaft should never be hammered on or forced in as this will result in motor damage upon startup.

- Remove the snap ring.
- Clean away paint then remove front cover.
- Push out the old shaft seal and press in the new one.

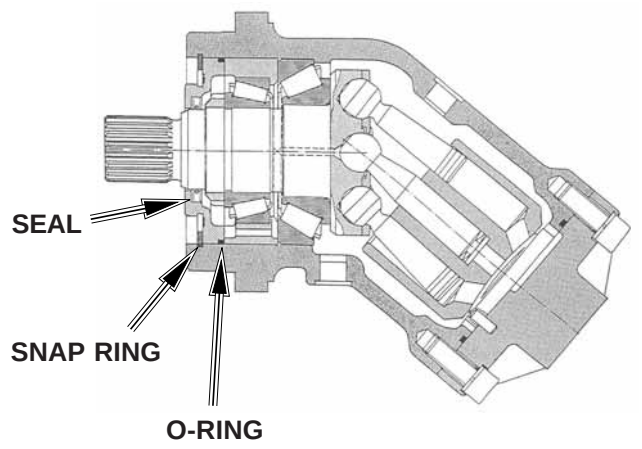
Note: The bearings should never be removed from the shaft as they are pretensioned to the shaft with the motor spinning.

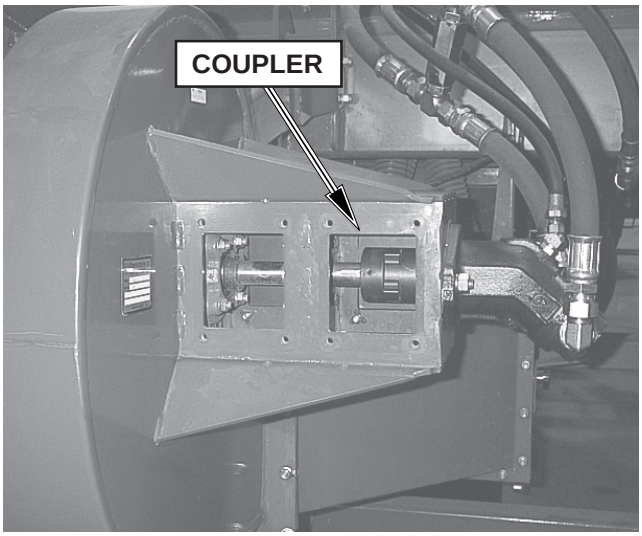
- Replace the O-ring.
- Both the O-ring and shaft seal should be greased with *"clean"* grease.
- Care must be taken when the front cover is installed so the shaft seal is not damaged.
- Reinstall the snap ring.
- Fill the motor case with *"clean"* oil before running.

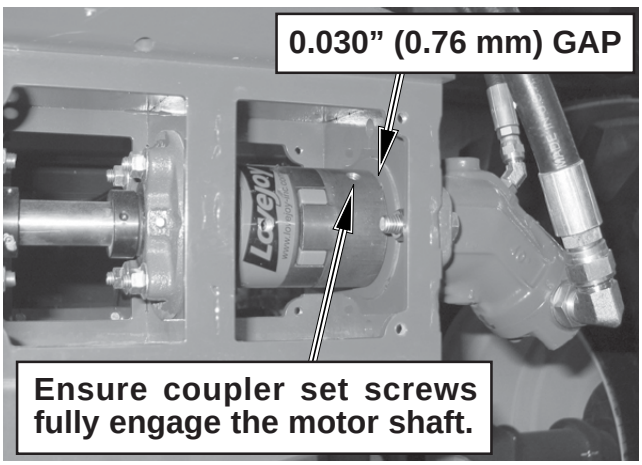
Note: Any time a motor is replaced the case must be filled with oil before it is started, if not, a bearing failure could occur.

Orbit Motor Coupler (17" Diameter Fan only)

- Urethane insert should be inspected every 100 hours or when greasing bearings.
- Inspect that there are no urethane filings or niks or cracks in urethane insert.
- Ensure set screws in each half of the coupler are tight.







Hydraulics

Refer to Section 1 regarding hydraulic safety. In addition:

- Inspect hydraulic system for leaks, damaged hoses and loose fittings.
- Damaged hoses and hydraulic tubing can only be repaired by replacement. DO NOT ATTEMPT REPAIRS WITH TAPE OR CEMENTS. High pressure will burst such repairs and cause system failure and possible injury.
- Leaking cylinders - install a new seal kit.
- Fittings - use liquid Teflon on all NPT hydraulic joints. **Do not use liquid Teflon or Teflon tape on JIC or ORB ends.**
- Hydraulic Hose Connections - when connecting the hoses to the cylinders, tubing, etc. always use one wrench to keep the hose from twisting and another wrench to tighten the union. Excessive twisting will shorten hose life.
- Keep fittings and couplers clean.
- Check the Tractor Manual for proper filter replacement schedule.

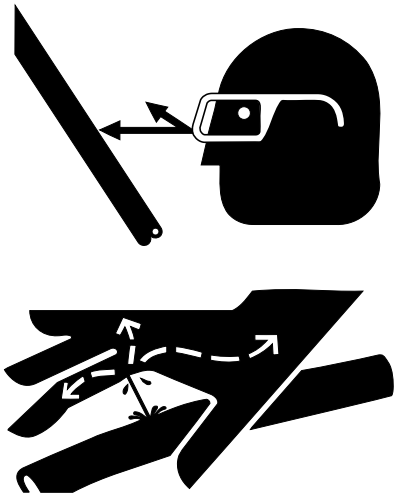
MORRIS Industries Ltd.

Contact your nearest Dealer for genuine repair parts. Dealers carry ample stock and are backed by the manufacturer and regional associations.

⚠ Caution

Dirt in the hydraulic system could damage O-rings, causing leakage, pressure loss and total system failure.

Note: Extreme care must be taken to maintain a clean hydraulic system. Use only new hydraulic fluid when filling reservoir.



⚠ Warning

HIGH-PRESSURE FLUID HAZARD

To prevent serious injury or death:

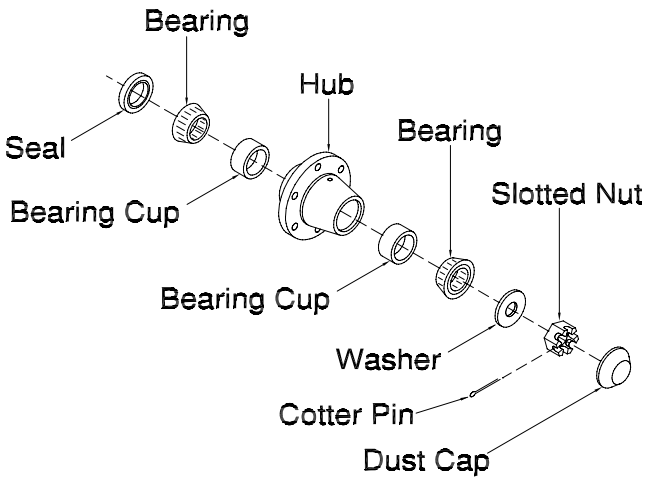
- **Relieve pressure on hydraulic system before servicing or disconnecting hoses.**
- **Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.**
- **Keep all components in good repair.**

Wheel Bearings

- Shut tractor off and remove key.
- Block wheel on tractor.
- Raise the air cart wheels enough to clear the surface.
- Securely block air cart frame.
- Remove wheel from hub.
- Remove the dust cap, cotter pin, and the slotted nut and washer.
- Be careful when pulling the hub off as not to drop the outer bearing.
- Clean spindle and bearing components with solvent.
- Inspect for wear on bearings, spindle and cups. Replace parts as required.
- Do not reuse old seals. Use only new seals when assembling.
- Pack inner hub with bearing grease.
- Be sure bearing and cup are dry and clean.
- Work grease into the bearing rollers, until each part of the bearing is completely full of grease.
- Install inner bearing and cup first, then press new seals in place.
- Place hub on spindle.
- Install outer bearing, washer and slotted nut.
- Tighten nut while turning the wheel until a slight drag is felt.
- Back nut off one slot and install a cotter pin. Bend cotter pin up around nut.
- Pack grease inside the dust cap and tap into position.

Important

Check wheel bearings for play every 5,000 acres (2,000 hectares) or yearly, which ever occurs first. Tighten as required.



Quad Steer

- Periodically check the 1 x 3 bolts, flatwashers and locknuts attaching the axle and pivot assembly. Torque **Grade 5** bolts to 590 ft-lbs.
- Periodically check the 3/4 x 3 bolts, flatwashers and locknuts attaching the axle and pivot assembly.

  Torque the 3/4 **Grade 5** bolts to 270 ft-lbs.

  Torque the 3/4 **Grade 8** bolts to 375 ft-lbs.
- Toe-in adjustment should be 1/16" to 1/8" maximum.
- Grease all fittings every 100 hours.

Important

Re-torque wheel nuts to 270 ft-lbs after first fifteen minutes of operation and every fifteen minutes for the next 2 hours. Check periodically afterwards.

Dual Wheels

- Torque the 7/8 wheel bolts to 500 ft. lbs. (678 Nm)

Important

Retorque wheel nuts to 500 ft. lbs. (678 Nm) after first fifteen minutes of operation and every fifteen minutes for the next 2 hours. Check periodically afterwards.

Dual Wheel Assembly

Metering

The metering wheels come in 4 different sizes. Each wheel matches to a specific distribution head mounted on the seeding tool.

If the metering wheel and distribution head are not matched correctly, the distribution accuracy will be adversely affected.

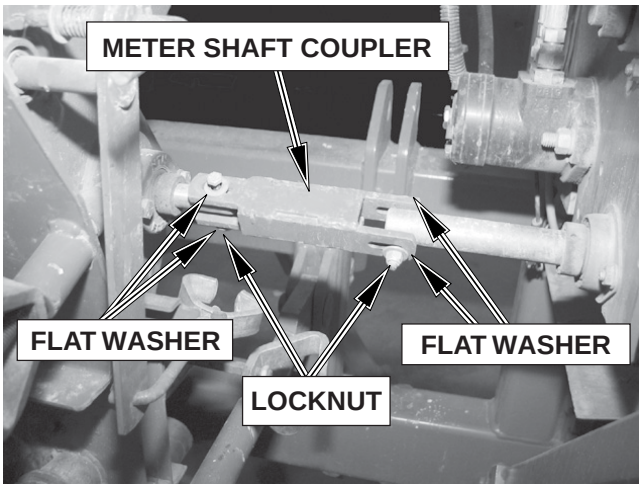
Spacer plates are used to take up the extra space in each metering cup. These spacer plates vary in size according to the size of the metering wheel.

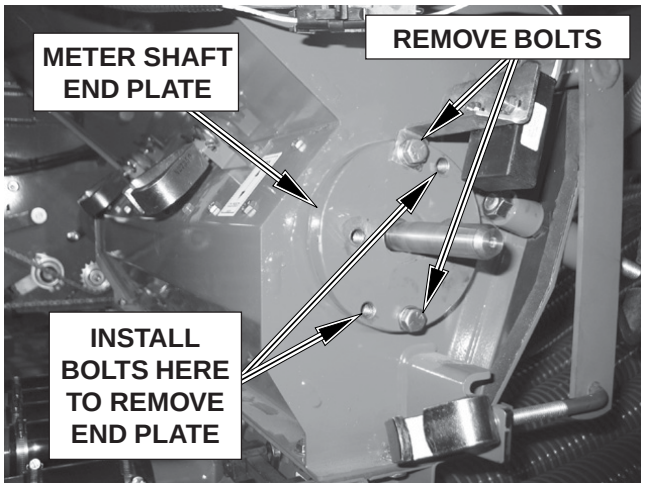
Metering Wheel Replacement

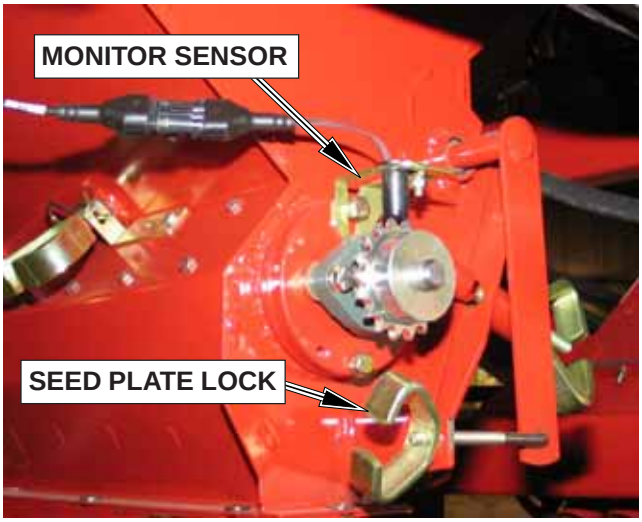
- Close tank Shut-Offs if there is product in tank.
- Remove inspection door and seed plate.
- Clean out any remaining material in the metering body and meterwheels.
- Remove all Blank Off plates.
- Remove the monitor sensor mount from the right hand side of the metering body.
- Disconnect meter shaft coupler from the meter shaft and transmission drive shaft.
- Loosen the locking collars on **both** meter shaft bearings.
- Remove monitor sensor and right hand metershaft bearing and spacers.
- Remove 3/8” bolts holding the meter shaft end plate on the right hand side and insert into threaded holes in end plate. Tighten down to pull end plate and remove.

Table 1

Divider Head	Metering Wheel		Spacer	
Outlets	**Number**	**Width**	**Qty**	**Width**
-	Blank Off	-	2	1 1/2" (38 mm)
7	7	1 3/4" (45 mm)	2	5/8" (16 mm)
8	8	2" (51 mm)	2	1/2" (13 mm)
9	9	2 1/4" (57 mm)	2	3/8" (9.5 mm)
10	10	2 1/2" (64 mm)	2	1/4" (6.4 mm)
11	11	2 3/4" (70 mm)	2	1/8" (3.2 mm)







Metering - Continued

Remove the meter shaft from the right hand side.

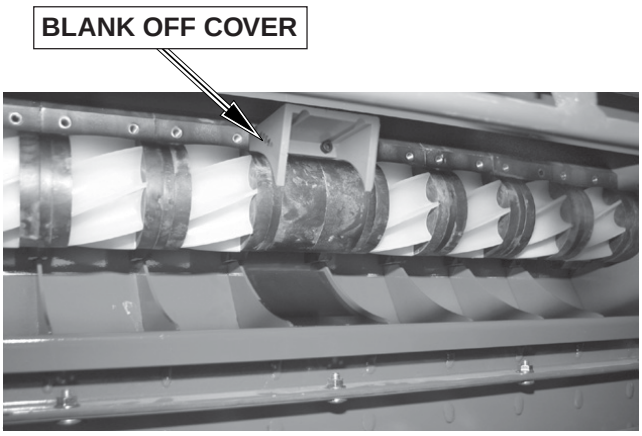
Assembly Hint: Mark metering wheel size on the metering body. This will help in ensuring the correct order of metering shaft assembly.

- Remove nut from meter shaft and disassemble wheels and spacers.
- Replace damaged wheels and reassemble shaft. Ensure correct spacers and wheels are located and assembled in the correct order. See diagram on next page. **Note:** After each meter wheel configuration, including any "Blank Offs", add one 5/16" (8 mm) spacer. The distance between the 5/16" (8 mm) spacers should be 3" (76.2 mm) if wheels are assembled correctly.
- Tighten nut on metering shaft until it bottoms out against the shoulder.
- Check if spacers and wheels are tight. If the wheels and spacers are loose, measure shim thickness required. If 1/16" (1.6 mm) shim is required remove nut on meter shaft and install shim between the 1/4" (6.4 mm) end spacer and the spacer used for the run.
- If a 1/8" (3.2 mm) shim is required then remove nut and install 1/16" (1.6 mm) shim between 1/4" (6.4 mm) end spacer and the spacer used for the run. Remove the snap ring at the opposite end of the shaft and install the other 1/16" (1.6 mm) spacer before the 1/4" (6.4 mm) end spacer.
- Reassemble shaft and tighten nut.
- Repeat last two steps above if necessary.
- Clean out any debris remaining in the meterbody.
- Check seed plate setting - **See "Seed Plate Adjustment"**
- Install 'O' Ring onto meter shaft end plate.

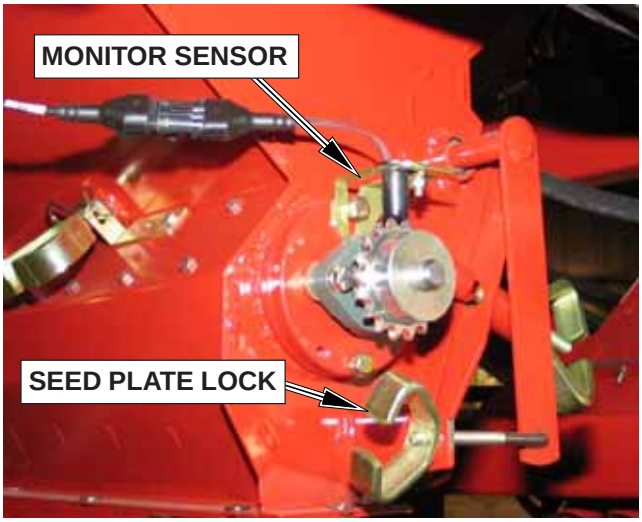
Note: Apply thin layer of lubricant on 'O' Ring.

- Reinstall meter shaft assembly, snap ring end first into meter body.
- Install meter shaft end plate and monitor sensor bracket.
- Reinstall Stainless Steel Blank Off plates. See "Blank Off Installation" for more details.
- Reinstall right hand side meter shaft bearing and spacers.
- Reinstall left hand side meter shaft bearing and spacers.

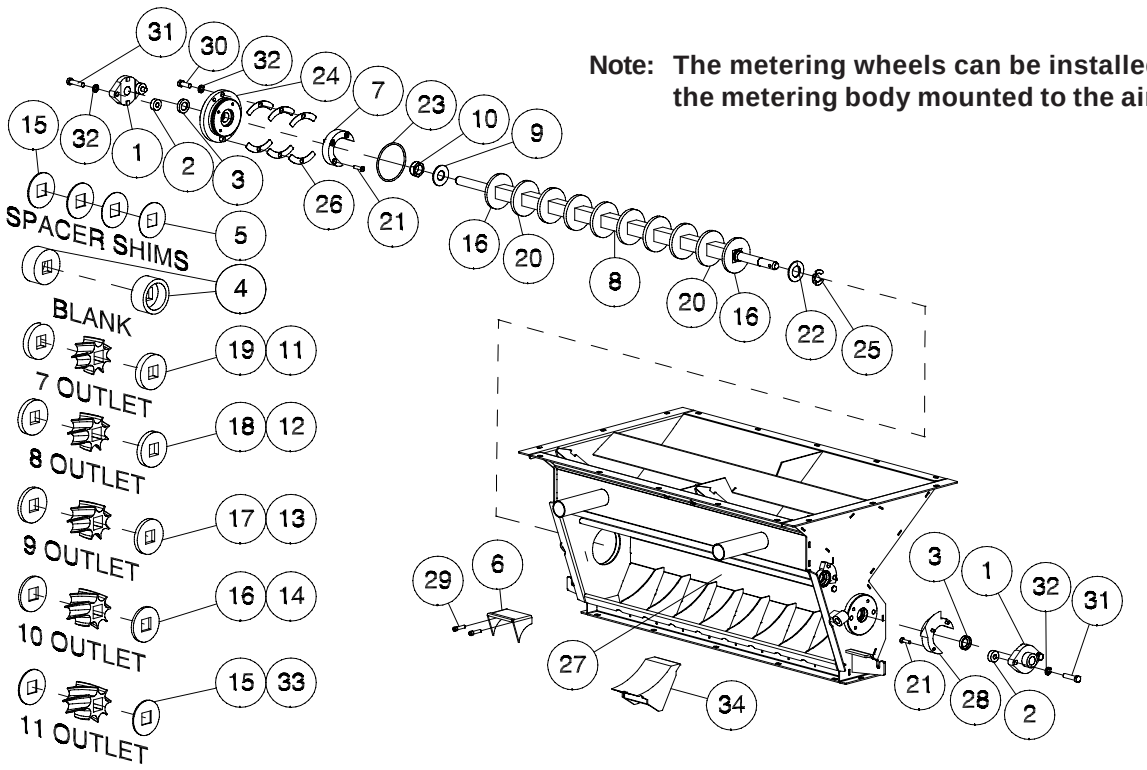
Meter shaft removed



Blank Off



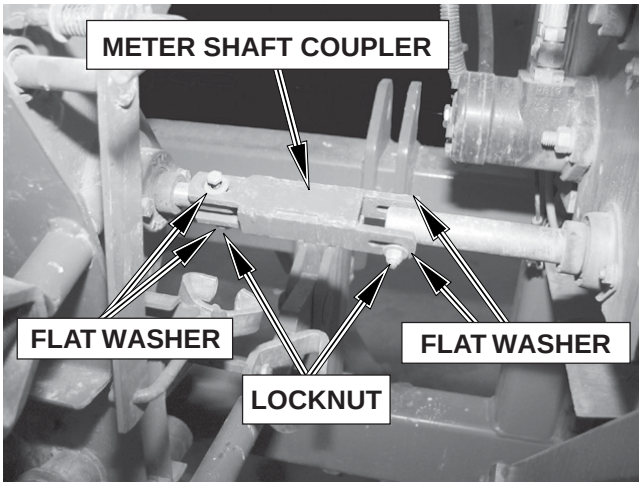
Metering - Continued



Item	Part No.	Description	Qty
1	N19269	Flange Bearing	2
2	N21602	Spacer - 13/32 ID x 1 OD x 3/8 Lg	4
3	N21659	Seal	2
4	N36106	Blank Wheel Spacer Half	2
5	N36110	Meter Wheel Spacer - 0.0625	As req
6	N42540	Blank Off - Plastic	As req
7	N36401	Spacer	1
8	N36430	Meter Shaft	1
9	N36431	Washer - 7/8 ID Stainless Steel	1
10	N36432	Locknut - 7/8 Nylon Insert	1
11	N36717	Meter Wheel - 7 Outlet	1
12	N36718	Meter Wheel - 8 Outlet	1
13	N36719	Meter Wheel - 9 Outlet	1
14	N36720	Meter Wheel - 10 Outlet	1
15	N36731	Meter Wheel Spacer - 0.125	As req
16	N36732	Meter Wheel Spacer - 0.25	4
17	N36733	Meter Wheel Spacer - 0.375	2
18	N36734	Meter Wheel Spacer - 0.5	2
19	N36735	Meter Wheel Spacer - 0.625	2
20	N36736	Meter Wheel Spacer - 0.313	8
21	N36738	Hex Socket Cap Screw - 1/4 x 1 Lg Stainless Steel	6
22	N36744	Washer - 1 ID Stainless Steel	1
23	N36748	O-Ring - 3.234 ID x 0.139 thick	1
24	N36774	End Plate	1
25	N36813	Retaining Ring - 1 Dia	1
26	N37210	Shim - Metering Body End Cap	As req
27	N40671	Metering Body	1
28	N40805	Spacer	1
29	N37339	Socket Head Capscrew - 1/4 x 1/2 Lg	2
30	W-475	Hex Bolt - 3/8 x 1 Lg	2
31	W-477	Hex Bolt - 3/8 x 1 1/2 Lg	4
32	W-523	Lockwasher - 3/8	6
33	N36721	Meter Wheel - 11 Outlet	1
34	N40980	Blank Off Plate	As.req

Metering - Continued

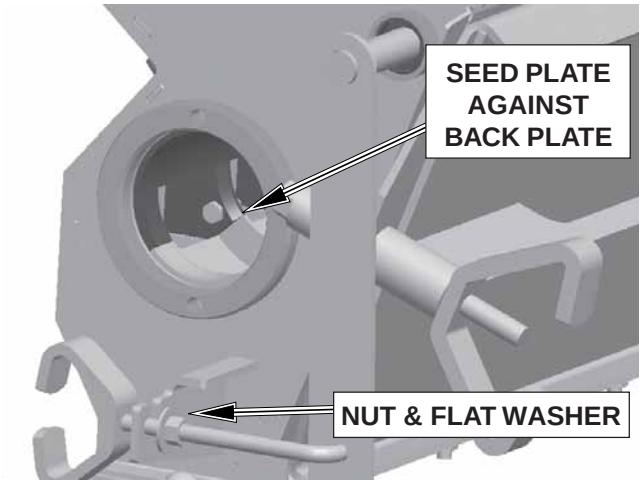
- Tighten locking collars by turning the collars in the direction of the shaft rotation. Lock the collar by tapping the collar with a punch in the direction of rotation of the shaft.
- Reinstall the monitor sensor on the shaft. Ensure sensor is centred to pick-up. Set the gap between the pick-up and the sensor at 0.030" (0.76 mm).
- Attach meter shaft coupler over the meter shaft and transmission drive shaft.
- Install the 1/4" x 2 1/4" special bolt with two flatwashers and locknuts. **Tighten locknuts to bottom of threads.**
- Install **Correct** seed plate for product being metered.



Seed Plate Adjustment

- **Remove** meter shaft from the meter body.
- Install the seed plate and adjust the seed plate locks so that the bottom of the seed plate comes against the bottom of the rear back plate. Tighten nuts so that the surface of the flatwashers are against the bracket.
- Remove the seed plate and set aside.
- Install meter shaft assembly, snap ring end first into meter body.
- Install 'O' Ring onto meter shaft end plate.

Note: Apply thin layer of lubricant on 'O' Ring.



Seed Plate Adjustment

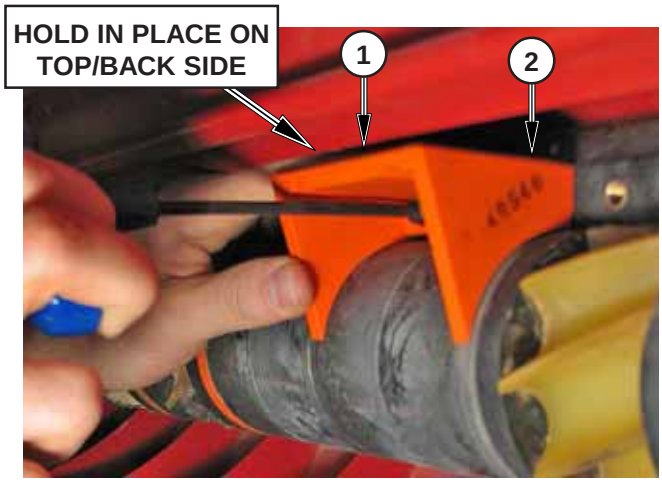
Metering - Continued

Blank Off Installation

Proper fit between the Blank Off and the spacer on the meter roller is important.

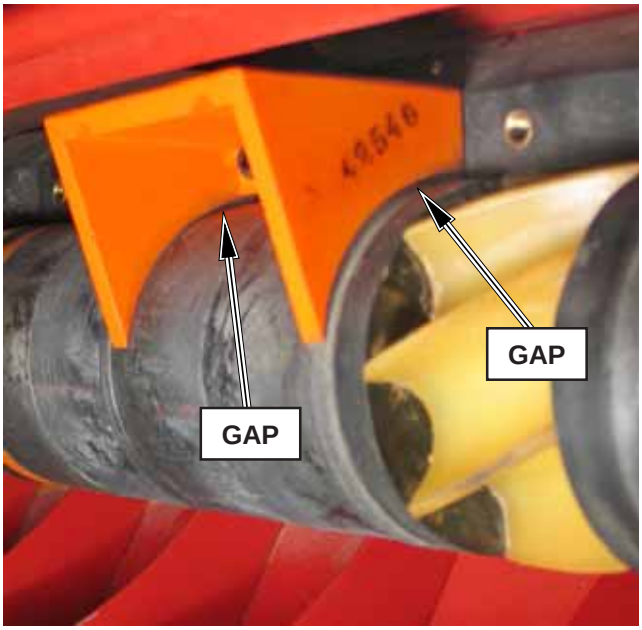
To ensure correct installation of the Blank Off follow the procedures listed below:

- Loosely install the Blank Off covers using (2) 1/4" Hex Socket bolts over the top of **all** the Blanked Off runs.
- Hold in place on top/back side of the Blank Off to align the radius with meter roller while tightening capscrews.
- Tighten capscrews starting with the left screw when facing body.



Blank Off Installation Procedure

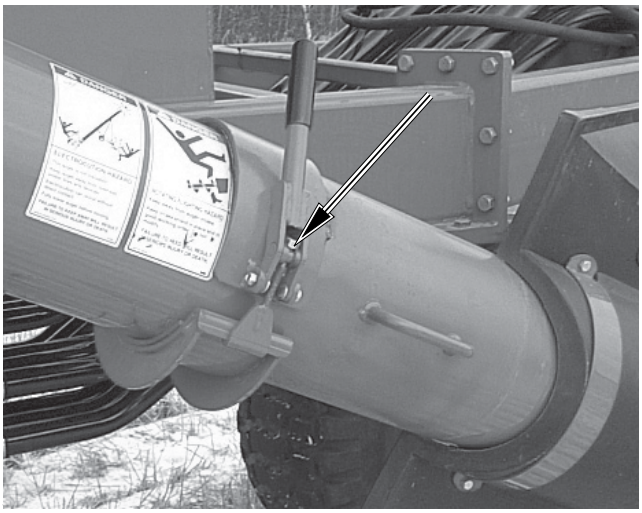
Correctly Installed Blank Off



Incorrectly Installed Blank Off

Auger Arm Locks

- Adjust the 3/8” nuts such that the lock handles snap firmly over centre when they are placed in the locked position.



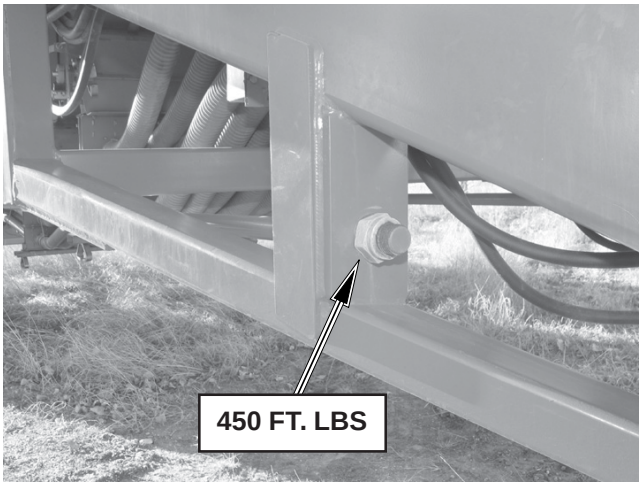
Auger Front Latch

- Adjust the 1/2” nuts such that the lock handle snaps firmly over centre when placed in the locked position.

Auger Rear Latch

Tie Rod - Tow Between

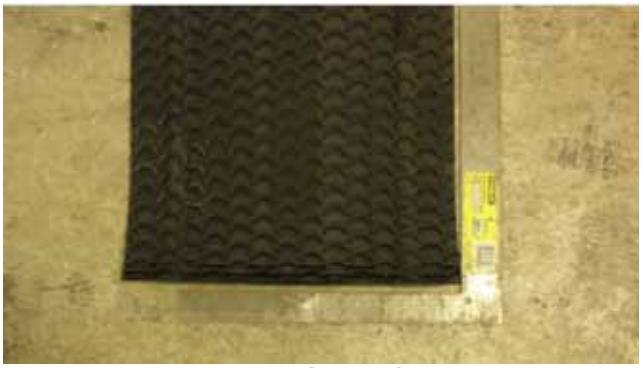
- Check at 10 and 50 hours and periodically afterwards.
- Torque to 450 ft. lbs. (610 N-m).



Conveyor

Squaring One End of Belt

Lay a framing square along a straight edge of the belt to make a cut line on the back side of the belt. Cut belt along this line using a utility knife. If the belt has uneven edges, create an average centerline, and square off of this line. **A clean, straight, square cut is required for the belt to run true on the pulleys.**



Squaring Belt

Installing Belt Splice

1. Center and press the fastener strip on the belt.
2. Press the Application Tool on the center of fastener strip with the cam lever in the “up” position.
3. Lower cam lever. Strike staple driver on each staple until staple clinches on Application Tool anvil.
4. Raise cam lever and move tool to outer edge of belt.
5. Clinch staples. Repeat until all staples are complete.

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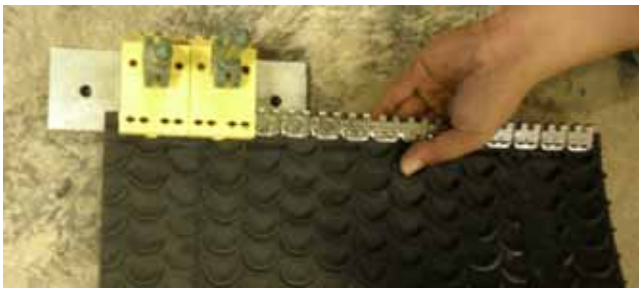
Centering strip on belt



Cam lever up

Cam lever down and strike staple

Conveyor - Continued

Installing Belt Splice - Continued

6. Place the splice over a piece of flat steel and clinch each staple with a hammer. Turn belt over and peen staple ends flush with surface of fastener strip.
7. Bend fastener strips until they break apart.
8. Follow the procedure above for installing the second belt splice.
9. Insert the hinge pin. Crimp the pin washers on the ends of the pin using pliers.
10. Tighten the belt tensioning bolts to 20-23 FT-LBS. so that each side is adjusted equally.
11. Re-assemble the tail end Door Assembly.

Clinch staples

Bend fastener strips

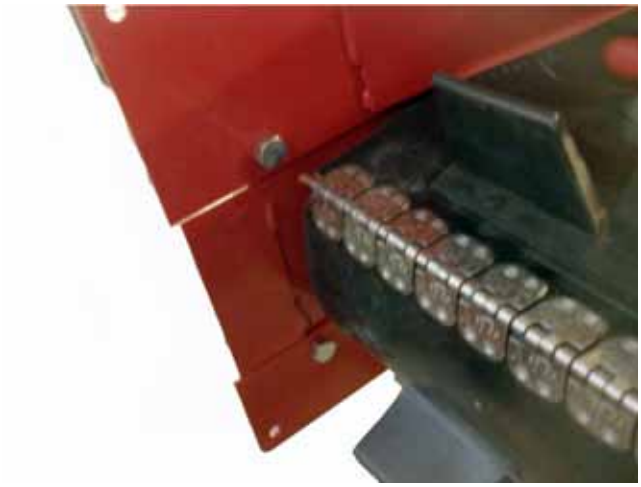
Insert hinge pin

Crimp pin washers.

Conveyor - Continued

Installing Belt into the Conveyor

1. Remove the Tail End Door Assembly.
2. Slide a fish tape from the discharge end to the tail end of the conveyor. Pull a rope with a belt splice back through the conveyor. Fasten the conveyor belt to the rope splice, and pull the belt into the top of the con-veyor with the rope.
3. Using the fish tape, pull the bottom side of the belt through the conveyor. **Make sure the belt is free of extra twists before pulling it in.**
4. Check to see that the idler is all the way forward (toward the drive end).
5. Pull the belt up tight at the discharge end and cut off the excess length so that there is 1/2” of overlap after the end is squared.



Remove tail

Idler forward

Conveyor - Continued

Tracking the Belt

1. Basic rule: ***the belt moves toward the end of the roller that it contacts first.***
2. Rollers must be square with the housing and parallel to each other.
3. Belt tension must be great enough to prevent slippage. Tension to 20-23 ft-lbs. on adjustment bolts

CAUTION: Make sure everyone is clear of machine before running.

4. Run the conveyor. Check to see that the belt runs centered on the drive roller. Turn off the machine. Adjust drive roller if necessary.

WARNING: Do not run the machine while adjusting. Failure to heed may result in personal injury or death.

5. To adjust drive roller, loosen the four nuts on the bearing holder plate, and the jam nut on the threaded adjuster. Retighten after adjusting is complete.

CAUTION: Make sure everyone is clear of machine before running.

6. Run the machine for two minutes. Make sure belt runs centered on drive pulley.
7. Open the Tail End Door to view the idler.
8. Run the machine. Check to see that the belt is running centered on the idler roller. Turn the machine off.

WARNING: Do not run the machine while adjusting. Failure to heed may result in personal injury or death.

9. If adjustment is necessary, adjust the tensioning bolts on the idler housing to 20-23 ft-lbs torque.
10. Check adjustment by running the machine. Make sure belt runs centered on idler pulley. The clearance between the belt and the housing should be the same on both sides.
11. Close the Tail End Door when complete.

Open tail and center belt on rollers

Left tensioning bolt

Right tensioning bolt

Conveyor - Continued

Conveyor Belt Adjustment

Belt tension and tracking will need periodic adjustment. Follow the guidelines under “Tracking the Belt” to make adjustments.

Important

Belt Alignment and Belt Tension shold be checked periodically.

Belt damage will occur if alignment or tension has not been maintained.

Belt tension should be 23 ft. lbs. of torque on adjustment bolts.

Belt should be tracked to be centere on the idle and drive roller.

Bearings

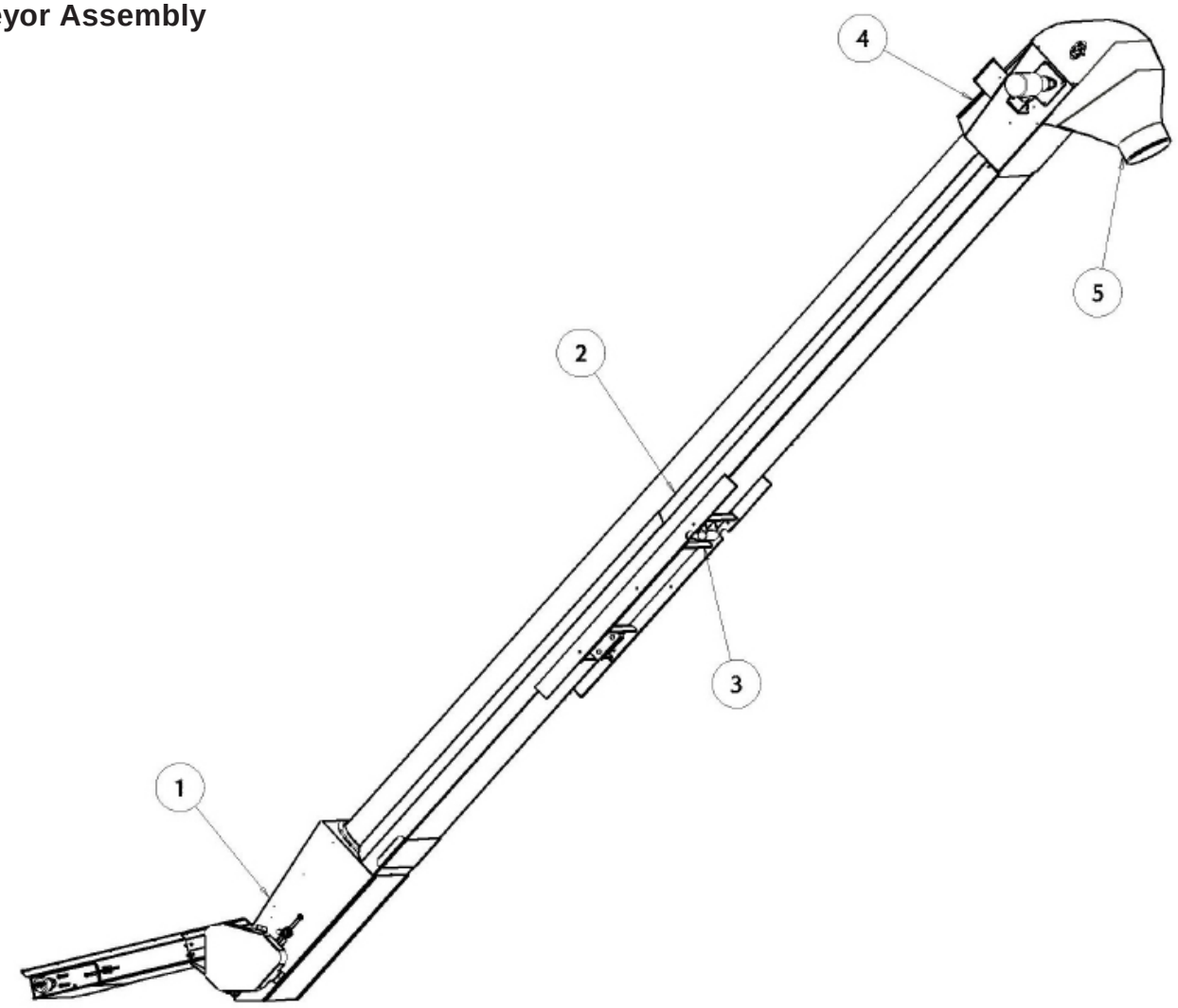
All drive shafts are supported by self-aligning, sealed ball bearings which have been packed at the factory and require no further lubrication. There is no adjustment to be made to the bearings, but check that the retainers are firmly fastened to the bearing stand. Also check that the setscrews in the lock collars are tight against the drive shaft.

Conveyor Belt Care

It is recommended that the conveyor belt be washed off and the tail end be cleaned out at the end of the season. This will help prevent material residue from building up and causing damage to the belt.

Conveyor - Continued

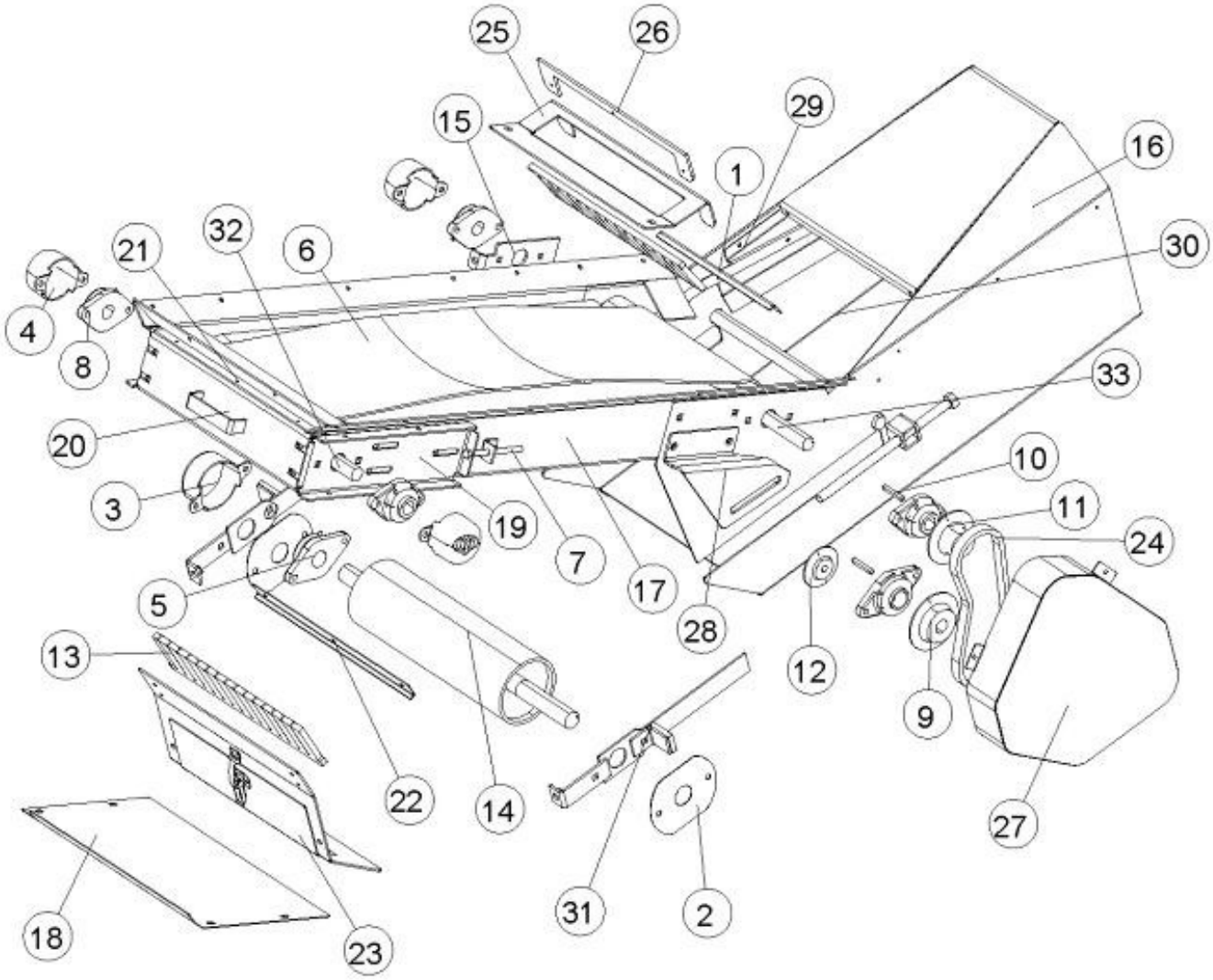
Conveyor Assembly



Item	Part No.	Description	Qty
	24111-03	Manual Holder	1
	24550-21	Belt, Rubber Cleated - for 21’ conveyor	1
	24121-75	Pin, STN STL Covered	16”
	24121-73	Retainer, Pin	2
	24121-72	Belt Lacing	32”
1	28302-00	End Group, Lower	1
2	45404-00	Tube Assembly - 21’	1
3	45422-00	Frame, Arm Mount	1
4	46110-03	End Group, Upper	1
5	85074-01	Spout, Molded (10”)	1
	45423-03	Rear Hopper	1
	45423-04	Right Side Hopper	1
	45423-05	Left Side Hopper	1

Conveyor - Continued

Lower End Group



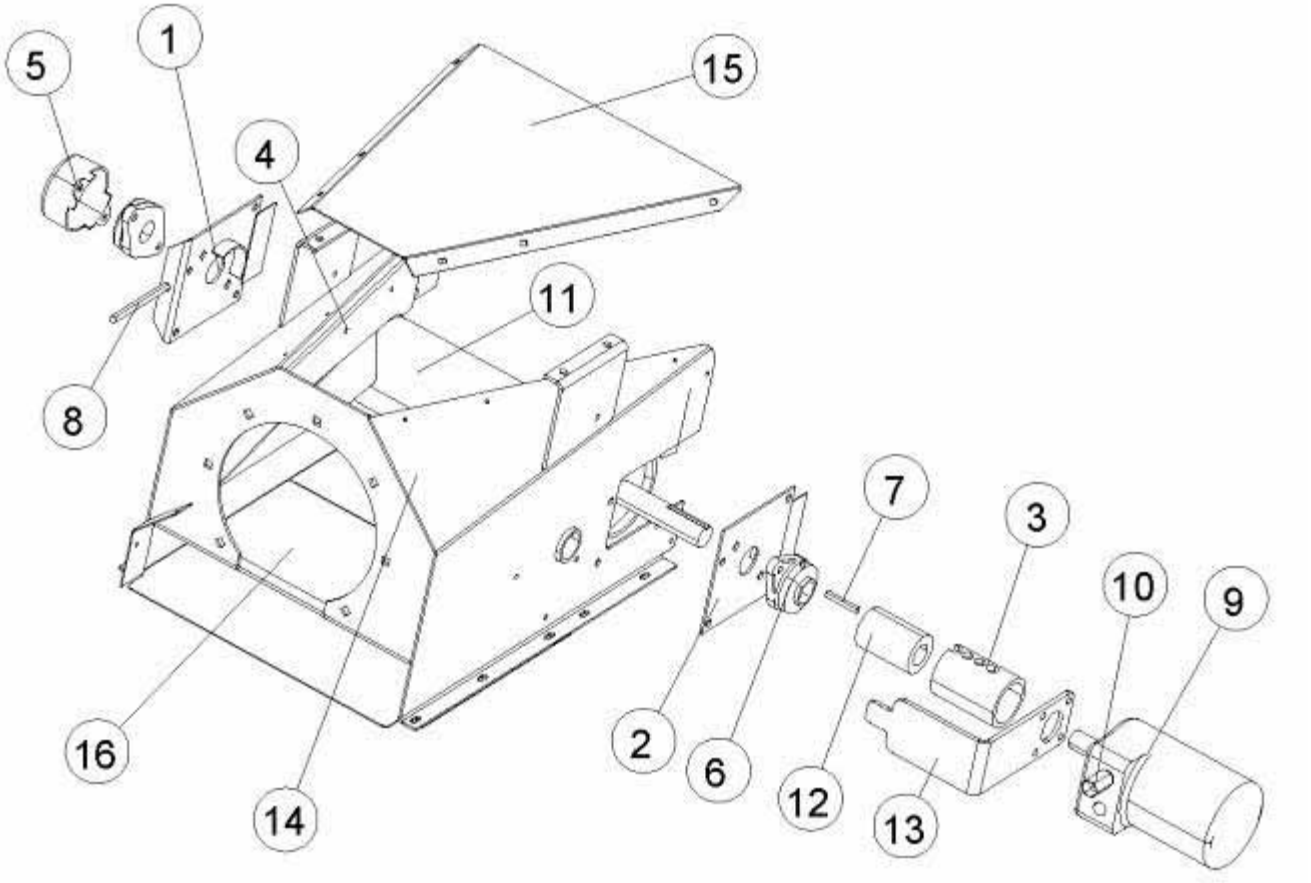
Conveyor - Continued

Lower End Group - Continued

Item	Part No.	Description	Qty
1	20038-05	Brush Holder	1
2	20048-01	Bearing Plate	2
3	23150-02	Cover - 1 1/4” Bearing	1
4	23150-04	Cover - 1” Bearing	3
5	24112-01	Bearing - Flange - 1 1/4”	2
6	24121-84	Belt, Crescent	1
7	24208-01	Tap Bolt - 3/8 x 5 Lg	3
8	24336-01	Bearing - Flange - 1”	4
9	24343-01	Sprocket - 50/20	1
10	24356-01	Key - 1” Shaft	2
11	24395-01	Sprocket, Drive - 50/16	1
12	24396-01	Sprocket, Idler - 50/15	1
13	24418-01	Brush - 16”	2
14	24440-01	Drum Assembly - 5”	1
15	28007-01	Bracket, Bearing	1
16	28303-00	Transition Assembly - Lower	1
17	28306-00	Frame Assembly	1
18	28335-01	Shield, Lower Ground	1
19	28344-00	Bracket, Lower Bearing	2
20	28345-02	Lower Bracket w/Handle	1
21	28351-01	Tail Flap, Lower	1
22	45038-05	Clamp, Brush	1
23	45414-00	Door Assembly	1
24	45416-01	Roller Chain - 50	1
25	45418-01	Flowguard	1
26	45419-01	Flap - Flowguard	1
27	45420-00	Drive Guard	1
28	45421-01	Bracket - Idler Sprocket	1
29	45425-01	Bracket - Flap	1
30	45425-02	Bracket - Flap	1
31	46007-00	Bracket Assembly - Lower Bearing	2
32	47514-00	Drum Assembly - 3” Idler	1
33	47523-00	Drum Assembly - 3” Lagged	1
	24115-01	Tensioning Screw (Not Shown)	2
	47612-81	Flap Hold Down (Not Shown)	2

Conveyor - Continued

Upper End Group



Item	Part No.	Description	Qty
1	20012-00	Plate Assembly - Bearing - Left	1
2	20013-00	Plate Assembly - Bearing - Right	1
3	20077-03	Tube - Shaft Guard	1
4	22110-01	Flap	2
5	23150-02	Bearing Cover - 1 1/4” Bearing	1
6	24112-01	Bearing - Flange - 1 1/4”	2
7	24177-01	Key - 1 1/4” Shaft	1
8	24208-01	Tap Bolt - 3/8 x 5	1
9	24349-01	Hydraulic Motor - 7.6 cu. in.	1
10	24369-01	Check Valve	1
11	24440-01	Drum Assembly - 5”	1
12	24473-03	Coupler	1
13	45076-01	Motor Mount - Hydraulic	1
14	46011-00	Upper Housing	1
15	46014-01	Cover - Top	1
16	46034-01	Cover - Lower	1

Section 7: Storage

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- Metering Body Storage 7-3

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- Auger 7-4
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Preparing for Storage

General

- To insure longer life and satisfactory operation, store the EIGHT Series XL Air Cart in a shed.
- If building storage is impossible, store away from areas of main activity on firm, dry ground.
- Clean machine thoroughly.
- Inspect all parts for wear or damage.
- Avoid delays - if parts are required, order at the end of the season.
- Lubricate grease fittings. (Refer to Lubricating Section).
- Tighten all bolts to proper specifications (Refer to Bolt Torque Chart).
- To prevent corrosion and damage by rodents, clean the hopper boxes and metering systems thoroughly and wash with mild soapy water solution. Rinse with water and dry thoroughly (Refer to Metering Body Storage).
- A light coating of silicone lubricant or WD-40 or penetrating oil should be applied to all metal metering system components before storage.
- Avoid lubricant contact with grain and fertilizer hoses and tubes.
- Relieve tension on tank lids.
- Loosen clean-out doors.
- Remove all chains and store in clean oil.
- Relieve pressure from hydraulic system.
- Raise frame, block up and relieve weight from the tires.
- Cover tires with canvass to protect them from the elements when stored outside.
- Paint any surfaces that have become worn.

Warning

Do not allow children to play on or around the machine.

MORRIS PAINT

Spray Cans:

Part Number	Description
W-4647	Red MORRIS Spray Can
W-4648	Blue MORRIS Spray Can
N31087	White MORRIS Spray Can

Litre Cans:

Part Number	Description
Z-10	Red MORRIS Paint/Litre
Z-11	Blue MORRIS Paint/Litre

Preparing for Storage - Continued

Metering Body Storage

It is extremely important that the metering system is thoroughly cleaned before storing for any length of time.

The following procedure should be followed for both tanks:

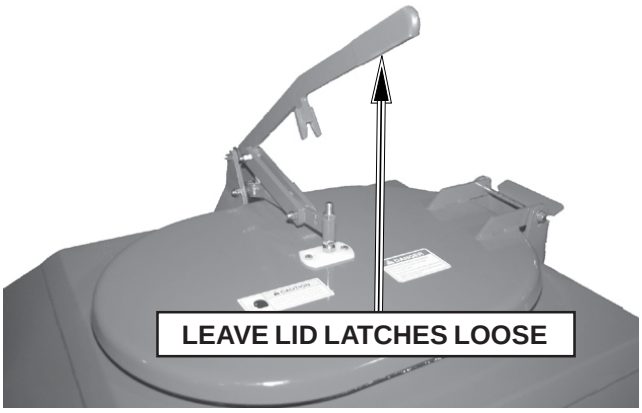
- Empty tanks (Refer to Unloading Tanks).
- Remove all seed plates.
- Remove the collector bottom.
- Remove blank off covers and the run caps on the collectors. Clean debris from chamber area.
- Run fan.
- Wash the interior of both tanks and metering system with soapy water. Wash the collector.
- Rinse with cold water and let the unit air dry.
- Coat metal parts with silicone lubricant or WD-40.

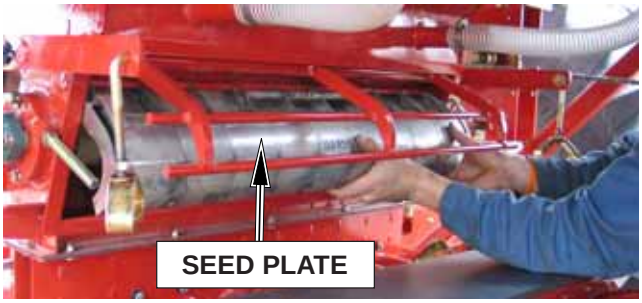
Note: Diesel fuel will harm seals.

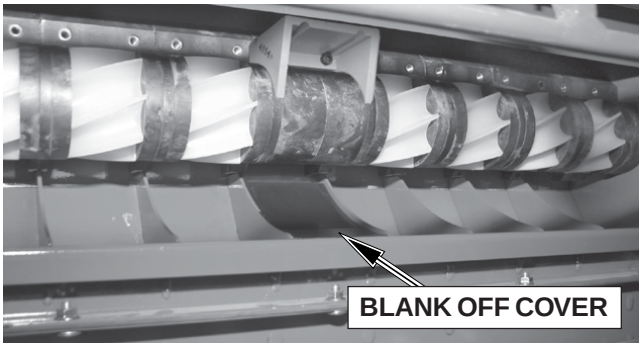
- Reinstall blank off covers and the run caps on the collectors.
- Reinstall seed plates.
- Replace the inspection door and the bottom of the collector.
- Start the fan and operate for 5 minutes to dry out any remaining moisture in the system.
- Leave inspection doors loose to help prevent condensation building up inside the tank.
- Leave lid latches loose to help maintain resilience of the seals.

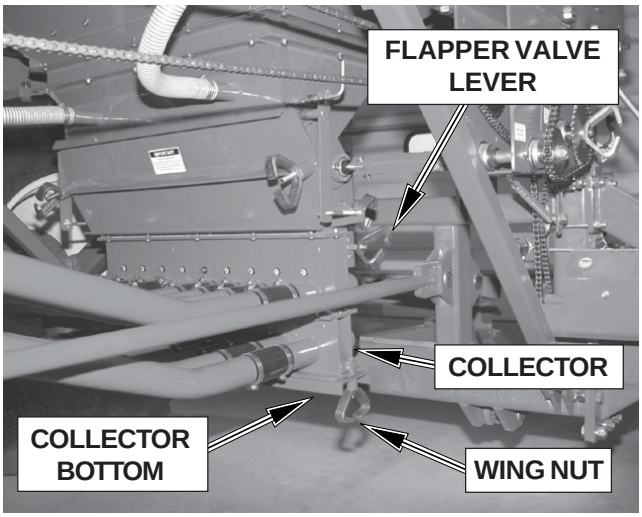
Important

At no time should corrosive fertilizer or similar materials be allowed to remain in the tank or metering body cavity.



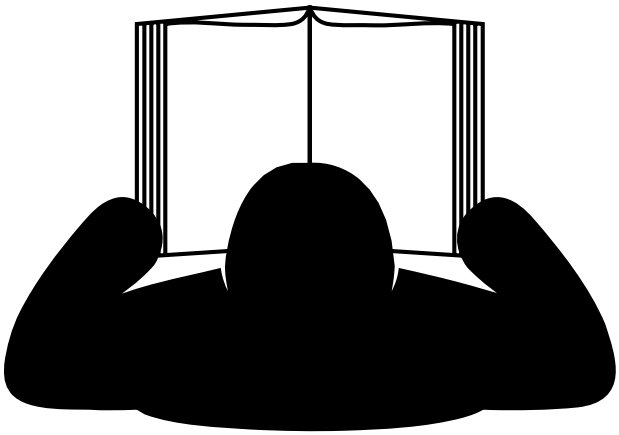






Double Shoot Shown

Removing From Storage



General

- Review Operator's Manual.
- Check tire pressure (Refer to Tire Pressure List).
- Clean machine thoroughly.
- Tighten lid latches.
- Lubricate and install chains.
- Spray internal parts of the metering body with silicone lubricant or WD-40 or penetrating oil to loosen any corrosion buildup.
- Check for leaks (Refer to Maintenance Section).
- Lubricate grease fittings (Refer to Lubricating Section).
- Tighten all bolts to proper specifications (Refer to Bolt Torque Chart).

Monitor

Familiarize yourself with all monitor functions. Ensure all monitor *"settings"* are correctly set for the air cart/ seeding tool combination. Recognize and correct alarm conditions as indicated on the machine. See the TOPCON manual for more details.

Check all wire harness connections for corrosion and use a dielectric spray to clean. Inspect all sensors for proper gap as outlined in the TOPCON manual.

Auger

Inspect all augers used in handling the products for seeding. Run augers to clean out any debris inside auger so it does not get transferred to the tank.

Conveyor

Any conveyor that has sat idle for a season needs to go through a "break-in" period. See "Startup and Break-In" under the Operation Section.

Section 8: Troubleshooting

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Troubleshooting

Problem	Cause	Correction
General		
Delivery hoses plugged	Insufficient air flow.	Clean fan impeller blades. Clean fan intake screen. Increase fan rpm.
	Hose sag.	Shorten hoses or add additional supports.
	Seed boots plugged with dirt.	Clean seed boots. See *"Seed Boot Plugging"* below.
	Hose obstruction.	Remove obstruction from hose.
	Air delivery hose partly off manifold.	Reinstall hose properly on manifold.
	Kinked hoses.	Straighten hoses and properly secure them to framework.
	Obstruction in divider head.	Remove access door and clear obstruction from appropriate outlets - be sure to use appropriate screens when filling.
	Exceeding machine's delivery capabilities.	Reduce ground speed and speed up fan.
	Poorly mounted hoses.	Reroute hoses.
Hydraulic fan will not turn	Selector valve in wrong position.	Switch the selector to fan position.
	Hydraulic hoses not connected properly to tractor.	Reverse hydraulic hoses.
	Insufficient oil flow.	Perform flow test.
Fan turning too slow	Flow to hydraulic motor.	Increase flow control setting.
	Low hydraulic pressure.	Check hydraulic pressure minimum 2100 psi.
Material flowing thru system when unit is stationary and the fan running	Damaged metering wheel.	Replace metering wheel.
	Incorrect Seed Plate installed.	Adjust as required. See *"Seed Plate Settings".*
Material not being divided in distribution head	Head partially blocked.	Remove blockage and reinstall hose.
	Kinked hose running to shank.	Straighten or replace hose.

Problem	Cause	Correction
Material not being divided in distribution head	Head partially blocked.	Remove blockage and reinstall hose.
	Kinked hose running to shank.	Straighten or replace hose.
	Damaged distribution section on head.	Replace head with new one.
	Bent or damaged diffuser pipe.	Straighten or replace diffuser pipe.
	Secondary hose length.	See “Secondary Hose” in Operation Section.
	Tanks not pressurized.	Inspect lid seals. Clean pressurization hoses.
Material not being metered out	Main drive chain not installed.	Install drive chain properly on Drive Sprocket.
	Drive chain or chains broken.	Install new chain. Ensure connecting link is installed correctly. Curved part of spring clip should face the direction of chain travel.
	Massive air leak in tank, resulting in material being blown up out of the metering cup.	Repair the air leak. See “Air Leaks” in Maintenance Section. See “Tank Lid Adjustment” in Maintenance Section.
	Material caked up in tank.	Remove material and completely clean out the tank.
	Excessively wet material in tank.	Remove wet material and use reasonably dry material.
	Coupler bolt sheared.	Replace with Grade 8 bolt.

Problem	Cause	Correction
Material not being accurately metered out of the metering body	Air delivery hoses loose, cracked or pulled off.	Tighten the hoses, replace cracked hoses or install hoses pulled off their respective locations.
	Inlet screen to fan blocked off.	Clean off material that is blocking the fan screen.
	Incorrect Seed Plate installed.	Install correct Seed Plate
	Seed Plate lock not adjusted correctly.	Adjust Seed Plate lock - See Maintenance Section.
	Material caked up above one or more of the metering cups.	Clean out caked up material.
	Excessively damp material in tank.	Use reasonably dry, fresh material only.
	Foreign obstruction in tank above metering wheels.	Remove obstruction, and always fill tanks through the screen.
	Caked up metering wheels on some or all of the metering cups.	Clean out the metering cups and wheels.
	Damaged metering wheels.	Replace broken metering wheels.
	Metering wheels mismatched to secondary outlet.	Install correct wheels to head. 1 3/4” wide wheel for 7 outlet head. 2” wide wheel for 8 outlet head. 2 1/4” wide wheel for 9 outlet head. 2 1/2” wide wheel for 10 outlet head. Be sure appropriate spacers are also used.
	Collector Valves set incorrectly on Double Shoot machines.	See Operation Section.
	Air Leak in System.	Adjust lids and doors as necessary. Replace damaged seals. See Maintenance Section.
	Meterbody pressurization hose disconnected.	Reconnect hose to meterbody/plenum.

Problem	Cause	Correction
Plugged seed boots	Backing up with openers near or in the ground.	Lift machine all the way up before backing up.
	Turning very sharp with openers near or in the ground.	Lift machine all the way up when making sharp turns.
	Lowering machine without any forward motion.	Always have forward motion when lowering machine.
	Worn openers or sweeps.	Replace openers.
	Severely bent or damaged boots.	Straighten or replace as required.
	Excessively wet conditions.	Change openers, operate when drier.
	Opener Adjustment.	See *"Opener Adjustment"* in Operation Section.

Problem	Cause	Correction
VRT System		
Motors will not turn in Manual Mode (Controller OFF)	Not equipped with a Third Tank.	Disconnect wire harness from solenoid ‘1’ and turn adjusting knob fully out.
	Selector valve (Fan/Auger).	Switch selector valve to fan position.
	Hydraulic oil flow.	Ensure hydraulic lever is properly engaged.
Motors will not turn in Operation Mode (Controller ON)	Not equipped with a Third Tank.	Disconnect wire harness from solenoid ‘1’ and turn adjusting knob fully out.
	Selector valve.	Switch selector valve to fan position.
	Hydraulic oil flow.	Ensure hydraulic lever is properly engaged.
	VRT Sensor Gap.	Gap should be 0.030” (0.76 mm).
Motors turn continuously in Operation Mode	Shaft Motor Solenoids.	Zero Shaft Motors.
	VRT Sensor Gap.	Gap should be 0.030” (0.76 mm).
Motors turn continuously in Calibration Mode	VRT Sensor Gap.	Gap should be 0.030” (0.76 mm).

Problem	Cause	Correction
Monitor		
Monitor lights up but does not seem to work	Faulty monitor.	Replace monitor.
	Completely disconnected harness.	Connect harness.
No fan display	Incorrect gap between sensor and target.	Gap should be 0.030” (0.76 mm).
	Faulty sensor.	Replace sensor.
	Broken or shorted wire.	Replace or repair harness.
No ground speed display	Sensor to magnet gap too large.	Gap should be 0.030” (0.76 mm).
	Faulty sensor.	Replace sensor.
	Broken or shorted wire.	Replace or repair harness.
No display, no back light	Switched off.	Switch unit on.
	Poor power connections at the battery.	Ensure good connections. Replace monitor.
	Battery below 10.8 volts.	Check battery voltage.
	Temperature below -10C or above +40C.	Operate between -10C and +40C.
Bin indicates always empty	Broken wire.	Repair wire.
	Faulty sensor.	Replace sensor.
	Wires not hooked to sensor.	Hook up correctly.
Bin indicates always full	Blocked light beam on photoelectric sensor.	Remove object blocking the beam.
	Wire shorted to ground.	Repair or replace wire.
	Faulty sensor.	Replace Sensor.

Problem	Cause	Correction
Conveyor		
The conveyor is vibrating	Damage can occur to the belting, causing a noise. Damage usually is causedfrom foreign material being run through the conveyor.	It may be necessary to remove the belting for inspection.
	The belt is not tracking in the center of the conveyor.	Track the belt.
Capacity is too low	There may not be enough grain reaching the conveyor.	Make sure the intake has not bridged over, restricting flow. The belt needs to be covered to achieve maximum capacity.
	Conveyor belt is moving too slow.	Check the belt speed. Low capacity will result from speeds slower than recommended.
		Belt needs tightening.
The conveyor plugs	The conveyor may be “jamming” because too much grain is reaching the conveyor.	Decrease the amount of grain the conveyor is gathering.
	The grain may be wet.	If wet grain or other hard to move materials is being conveyed, reduce the amount of grain being fed into hopper.
	The conveyor may be jammed with foreign material.	Remove any foreign material in the conveyor.
	The discharge end may be plugged.	Unplug any plugs at the discharge end of the conveyor.
	Pulley has spun out and burned the belt in two.	Cut and resplice the belt, An additional piece of belting may be required.
		Tighten and retrack the belt.
Driveline shear bolt shears frequently.	Grain may be flowing too quickly into the hopper.	Reduce the flow rate of grain into hopper.
	The discharge of grain from the conveyor may be restricted.	Inspect conveyor intake and discharge for damage.

Problem	Cause	Correction
Cleated belt is slipping or loose.	Belt tension too low.	Tension belt to 20-23 ft. lbs. on the adjustment bolts.
	Belt is extremely dirty.	Clean traction side of belt.
Cleated belt is rubbing side of housing or cleats are coming loose or wearing.	Belt misaligned.	Align belt so its tracks center of idle and drive rollers.

Notes

Section 9:
Options Assembly

Section Contents

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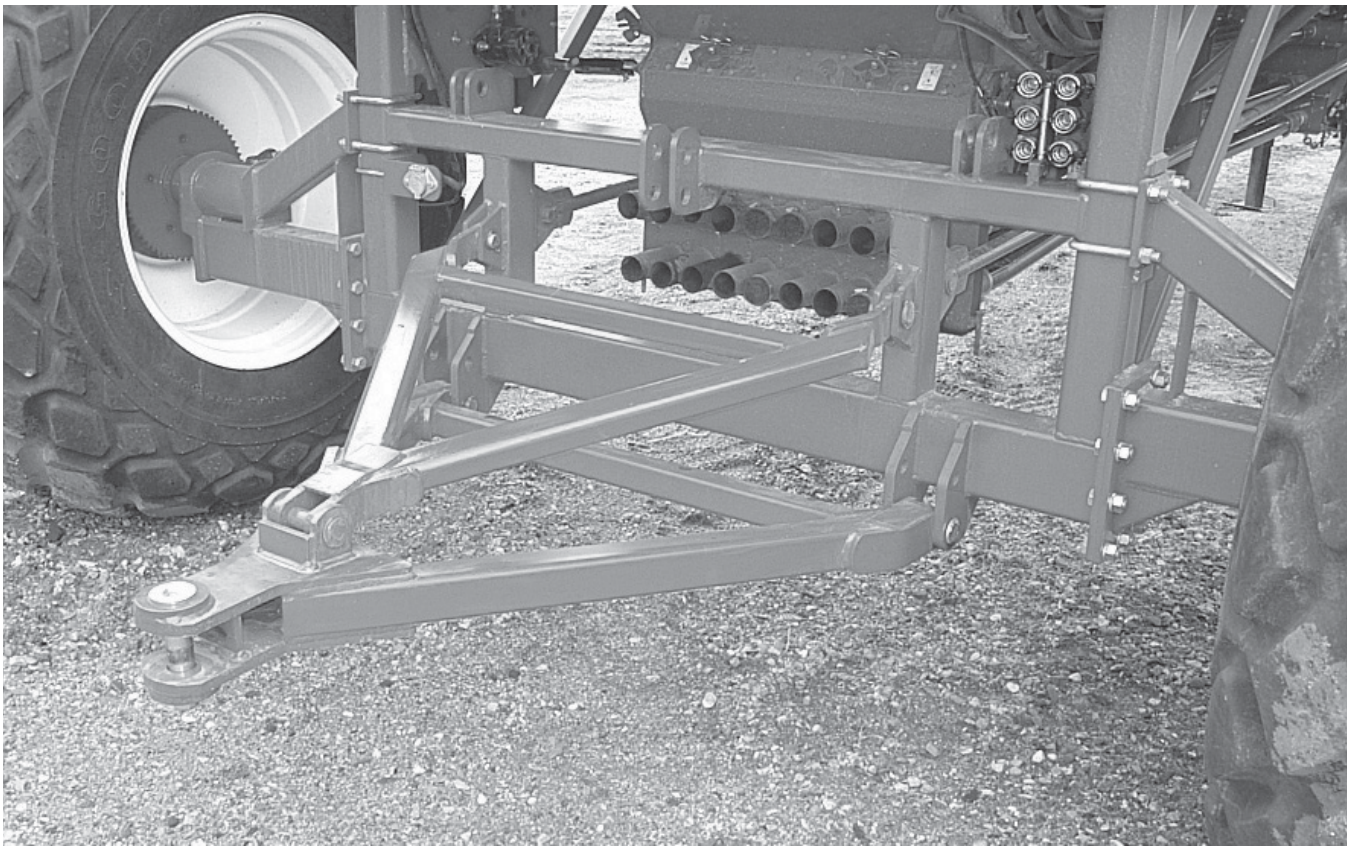
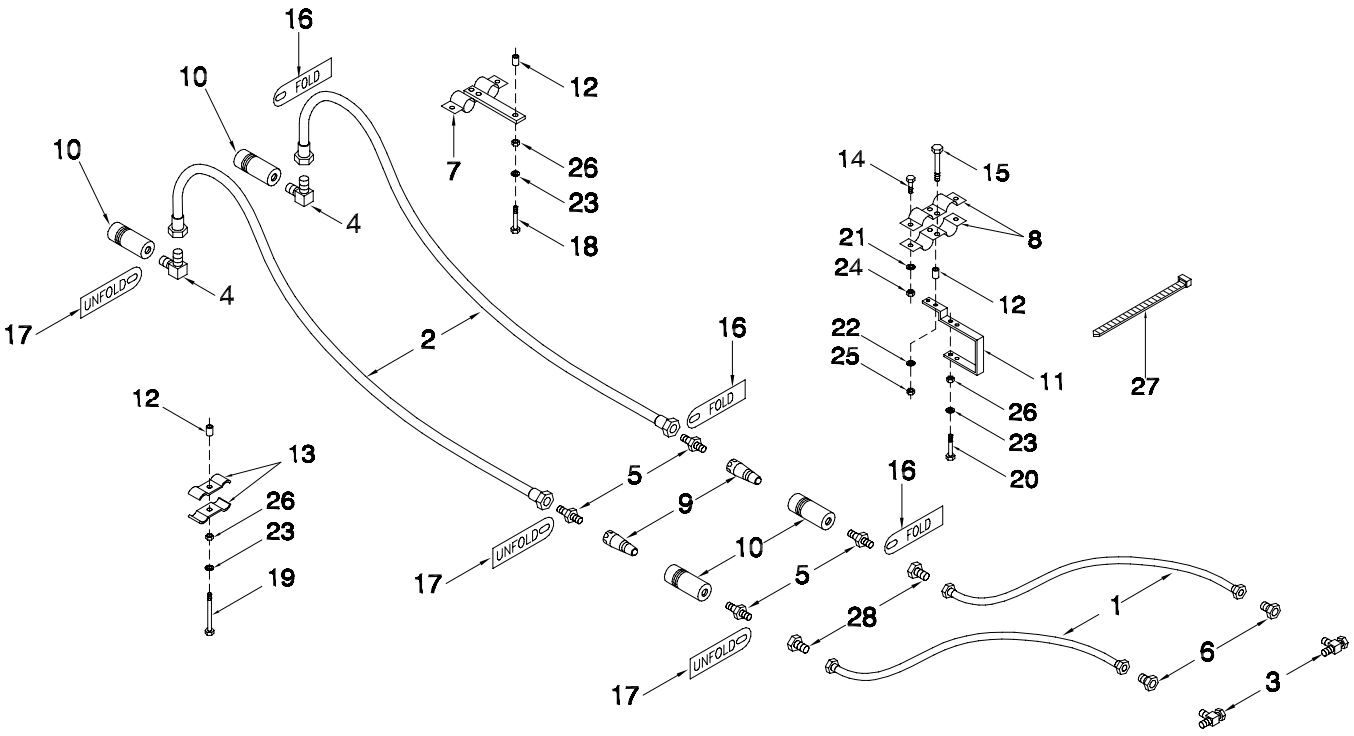
Rear Tow Hitch

- Attach the upper bracket to the air cart frame with 1 1/4” x 2 1/4” pins and 1/4” x 2 1/4” cotter pins.
- Attach the lower bracket to the air cart frame with 1 1/4” x 5 1/4” pins and 1/4” x 2 1/4” cotter pins.
- Attach the upper bracket to lower bracket with a 1 1/4” x 4 3/4” pin and 1/4” x 2 1/4” cotter pin.

Note: Maximum draft load is 15,000 lbs (6,818 kg).



Options
Tow Behind Hydraulic Extension Kit for Rear Tow Hitch



Item	Part No.	Description	Qty
1	S39503	Hyd Hose - 1/4 x 132 Lg W/9/16-18 FJIC	2
2	C31369	Hyd Hose - 1/2 x 468 W7/8 - 14 FJIC	2
3	C-4403	Tee - (2) 9/16-18 MJIC x (1) 9/16-18 FJIC	2
4	C15318	90 Elbow - 7/8-14 MJIC x 7/8-14 MORB	2
5	N34620	Connector - Swivel - 7/8-14 MORB x 7/8-14 FJIC	4
6	N37876	Reducer - 3/4-16 MJIC x 9/16-18 FJIC	2
7	S-1379	Pioneer Coupler Assembly	1
8	N16608	Coupler Clamp - Female Pioneer	2
9	N34498	Male Pioneer Tip - 7/8-14 FORB	2
10	N34488	Pioneer Coupler - 7/8-14 FORB	4
11	N21691	Mounting Bracket	1
12	N16257	Spacer	3
13	D-4808	Oil Line Clamp	2
14	W-469	Hex Bolt - 1/4 x 3/4	2
15	W-473	Hex Bolt - 5/16 x 1 1/2	2
16	S29960	Tag - Hose ID - Wing Lift - FOLD	3
17	S29961	Tag - Hose ID - Wing Lift - UNFOLD	3
18	D-5249	Hex Bolt - 3/8 x 3 1/4	1
19	S-1299	Hex Bolt - 3/8 x 4 1/2	1
20	C-3918	Hex Bolt - 3/8 x 5	1
21	W-521	Lockwasher - 1/4	2
22	W-522	Lockwasher - 5/16	2
23	W-523	Lockwasher - 3/8	3
24	W-512	Hex Nut - 1/4	2
25	W-513	Hex Nut - 5/16	2
26	W-514	Hex Nut - 3/8	3
27	D-4838	Tie Strap	10
28	C-4392	Reducer - 7/8-14 FJIC x 9/16-18 MJIC	1
	H38276	Kit - Hydraulic Extension (Includes All Items above) (ORDER THROUGH WHOLEGOODS)	

Full Bin Indicator

Remove bolt and washer from tank.

Install wire harness #27 through hole and place groument #28 in the hole around the harness.

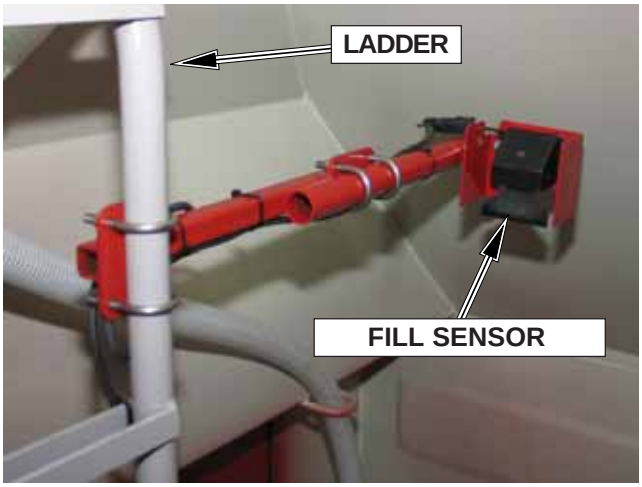
Attach Fill Sensor Bracket to ladder inside of tank.

Position Fill Sensor approximately 16” (40 cm) from the top of the tank.

Adjust bracket length to locate sensor 1” (2.5 cm) from tank wall.

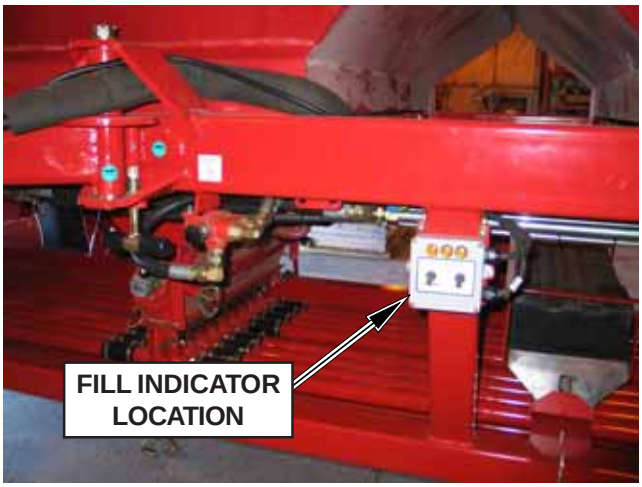
Final positioning of sensor is the responsibility of the operator.

Remove washer and bolt



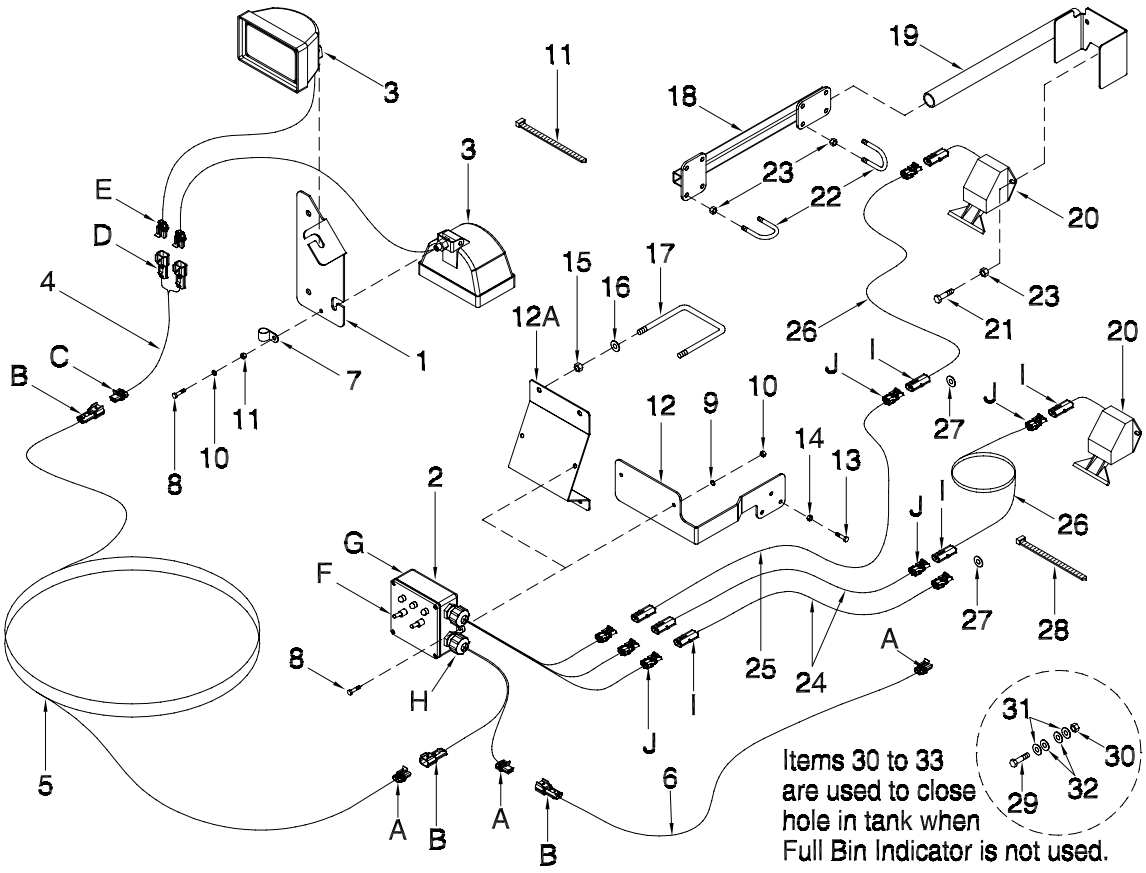
Fill Sensor - Optional

Fill Indicator



8435 and 8630 Fill Indicator Location

Lighting
Full Bin Indicator & Work Lights



Item	Part No.	Description	Qty
1	N34675	Bracket - Auger Light	1
2	N40540	Switch Box	1
3	N34683	Work Light Assembly	2
4	N34682	Cable - Two Light Adapter	1
5	N34681	Cable - Auger Light	1
6	N34678	Cable - Power Supply	1
7	N34713	Clamp	1
8	W-1552	Hex Bolt - 1/4 X 1	3
9	W-521	Lockwasher - 1/4	3
10	W-512	Hex Nut - 1/4	3
11	N34715	Tie Strap - 5.6 Lg	17
11A	D-4838	Tie Strap - 14 1/2 Lg	5
12	N37562	Switchbox Mounting Bracket (8370XL ONLY)	1
12A	N45055	Switchbox Mounting Bracket (8435XL & 8630XL ONLY)	1
13	W-469	Hex Bolt - 1/4 x 3/4 (8370XL ONLY)	3
14	D-5277	Locknut - 1/4 Flange (8370XL ONLY)	3
15	M-3388	Locknut - 3/8 (8435XL & 8630XL ONLY)	4
16	D-5489	Flatwasher - 3/8 (8435XL & 8630XL ONLY)	4
17	N15098	U-Bolt - 3/8 (8435XL & 8630XL ONLY)	2
		Following Item Quantities are listed per Tank	
18	N42143	Bracket - Ladder Mount	1
19	N42145	Switch Bracket	1
20	N42090	Level Sensor	1
21	N15112	Hex Bolt - 5/16 x 3/4	2
22	N42091	U-Bolt - 5/16 x 2 1/4	4
23	N42098	Locknut - 5/16 stainless	10
24	N37014	Cable - 5 ft (Used in Tank 1 and Tank 2) (Front and Middle Tank)	1
25	N37016	Cable - 10 ft (Used in Tank 3) (Rear Tank)	1
26	N42089	Cable - 11 ft (Used in each Tank)	1
27	N42092	Grommet	1
28	N34715	Tie Strap - 5.6 Lg	10
29	N36597	Hex Bolt -1/4 X 3/4 HEX UNC SS304	1
30	N36143	Nut - Nylon - 1/4 Flange	1
31	S-4747	Washer - 0.281 ID x 1.75OD x 14GA)	2
32	N42198	Seal - Full Bin Hole Washer	2

Notes

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