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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.
Safety

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.
Safety

**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.
Safety

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 manufacturer’s instructions.
- Do not modify the machine.

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

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.

DANGER

GUARD MISSING
When this is visible
DO NOT OPERATE

CAUTION

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

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.

WARNING

CRUSHING HAZARD
To prevent serious injury:
- Keep hands clear of auger arm top when moving auger.
- Use handle.

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.

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.

CAUTION

Secure Auger in storage position before transporting by:
1. Locking auger cradle latch.
2. Locking auger arm latch.

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.

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

**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.

**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.

**IMPORTANT**

**TANK BOLTS MUST BE A LOOSE FIT.**
**DO NOT REPLACE WITH SHORTER BOLTS.**

**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

**IMPORTANT**

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

**IMPORTANT**

Ensure Tank clean out door is fully closed.

**IMPORTANT**

Ensure each meter is set correctly as described in the Operator’s Manual.

**IMPORTANT**

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.

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**IMPORTANT**

Ensure each meter is set correctly as described in the Operator’s Manual.

**IMPORTANT**

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.
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

Right Side - 8240XL to 8425XL
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.
Seeding Unit - Tow Between with Packer Bar

Seeding Unit - Tow Behind with Packer Bar

Lighting and Marking - Continued
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.
Safety

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

**DANGER**

**FALLING CONVEYOR CAN CRUSH OR KILL!**

- ALWAYS SECURE INTAKE END SO THAT THE CONVEYOR CANNOT FALL.
- EMPTY THE CONVEYOR BEFORE ATTEMPTING TO TRANSPORT IT.
- NEVER PUSH THE UNDERCARRIAGE. ALWAYS USE PROPER TRANSPORTING METHODS.
- USE CAUTION WHEN LIFTING THE INTAKE END. NEVER LIFT HIGHER THAN THE VEHICLE TOW BAR. DO NOT RELEASE UNTIL CONVEYOR IS SECURELY ATTACHED TO THE TOW BAR OR ON THE GROUND.
- LOWER THE CONVEYOR FOR TRANSPORTING IMMEDIATELY AFTER MOVING IT AWAY FROM THE STORAGE BIN.

FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!

**CAUTION**

1. READ AND UNDERSTAND THE INSTALLATION & OPERATION MANUAL AND ALL SAFETY INSTRUCTIONS BEFORE OPERATING EQUIPMENT.
2. DO NOT OPERATE WHILE UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.
3. DO NOT OPERATE UNLESS ALL SAFETY EQUIPMENT, SWITCHES, GUARDS AND SHIELDS ARE SECURELY IN PLACE AND OPERATIONAL.
4. BE SURE EVERYONE IS CLEAR OF THE EQUIPMENT BEFORE ATTEMPTING TO OPERATE OR MOVING THE MACHINE.
5. ALLOW ONLY TRAINED PERSONNEL IN THE OPERATING AREA.
6. KEEP HANDS, FEET, HAIR AND CLOTHING AWAY FROM MOVING PARTS.
7. DISCONNECT AND LOCKOUT POWER BEFORE ADJUSTING OR SERVICING.
8. ELECTRICAL WIRING OR SERVICE WORK MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN. IT MUST MEET ALL STATE AND LOCAL ELECTRICAL CODES.
9. EMPTY CONVEYOR AND LOWER TO TRANSPORT POSITION BEFORE TRANSPORTING.
10. MAKE CERTAIN ALL ELECTRIC MOTORS ARE GROUNDED.
11. NEVER MOVE MACHINE MANUALLY. ALWAYS USE A TOWING VEHICLE.
12. KEEP CHILDREN AWAY FROM THE WORK AREA AT ALL TIMES.
Conveyor Safety - Continued

Safety Signs - Continued

**WARNING**
HYDRAULIC FLUID LEAKING UNDER PRESSURE CAN PENETRATE SKIN. IF THIS HAPPENS, SEEK MEDICAL ATTENTION IMMEDIATELY. ALWAYS RELEASE PRESSURE FROM HYDRAULIC LINES BEFORE DISCONNECTING. ALWAYS INSPECT THE HYDRAULIC LINES BEFORE AND AFTER USING THIS EQUIPMENT AND PERFORM ANY NECESSARY MAINTENANCE ON THE HYDRAULIC SYSTEM BEFORE OPERATING.
FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!

**KS-1419**

**WARNING**
SHEAR POINT
KEEP FINGERS, HANDS, HAIR AND LOOSE CLOTHING AWAY FROM MOVING PARTS.
FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!

**KS-0015**

**WARNING**
Moving belt can cut or entangle.
Stay Away
Disconnect & lockout power source before adjusting or servicing.
Failure to heed will result in personal injury or death!

**KS-0017**
Conveyor Safety - Continued

Safety Signs - Continued

**DANGER**

DO NOT OPERATE WITH DOOR OPEN!

- STOP MACHINE AND LOCKOUT POWER TO ADJUST, SERVICE OR CLEAN.
- KEEP HANDS, FEET, HAIR AND CLOTHING AWAY FROM MOVING PARTS.

FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!

KS-0006

**WARNING**

Moving parts can crush or dismember.

Do not operate without guards in place. Stay clear of moving parts.

Disconnect & lockout power source before adjusting or servicing.

Failure to heed may result in death or personal injury!

KS-0016
Section 2: Specifications

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## Specifications

### 8240XL

#### Specifications and Options

<table>
<thead>
<tr>
<th>Model</th>
<th>8240XL</th>
<th>8240XL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration</strong></td>
<td><strong>Tow Between</strong></td>
<td><strong>Tow Behind</strong></td>
</tr>
<tr>
<td>Length without auger (with auger)</td>
<td>23’ 4” (7.14m) (24’ 7” (7.49m))</td>
<td>23’ 4” (7.14m) (24’ 7” (7.49m))</td>
</tr>
<tr>
<td>Height</td>
<td>14’ (4.27m)</td>
<td>14’ (4.27m)</td>
</tr>
<tr>
<td>Width</td>
<td>12’ 9” (3.87m)</td>
<td>12’ 9” (3.87m)</td>
</tr>
<tr>
<td>Weight (Hydraulic Drive)</td>
<td>11,766 lbs. (5,348 kg)</td>
<td>9,595 lbs. (4,361 kg)</td>
</tr>
<tr>
<td>Safety Lights</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Safety Chain</td>
<td>Standard</td>
<td>Standard</td>
</tr>
</tbody>
</table>

**Tank Capacity**
- Front Tank: Optional 83 bu (2,938 l)
- Middle Tank: 93 bu (3,272 l)
- Rear Tank: 150 bu (5,278 l)
- Total: 243 bu (8,550 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**
- 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.
  - 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
- Optional (Front) N/A (2) 21.5 x 16.1 - 12 ply rating Lug
- Standard (Rear) N/A (2) 21.5 x 16.1 - 12 ply rating Lug
- Optional (Rear) N/A (2) 21.5 x 16.1 - 10 ply rating Lug

**Metering**
- Ground Driven Standard
- Variable Rate (VRT) Optional
- GPS Compatible VRT Optional

**Meter Shut Off**
- 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

**Easy Clean Out System**
- Standard

**Meter Drive Options**
- Second Clutch (For spot fertilizing on the go) 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)

**Rear Tow Hitch**
- Standard (Max 26,000 lb Draft Load)
- (Max 11,819 kg Draft Load)
- Optional (Max 15,000 lb Draft Load)
- (Max 6,818 kg Draft Load)

**Mechanical Acre Meter**
- Optional (Ground Drive Only)

**Hit Stand**
- N/A
- Optional

---

2-2 November 2011 EIGHT Series XL VRT Air Cart
## Specifications

### 8300XL Specifications and Options

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

#### 8336XL

<table>
<thead>
<tr>
<th>Specifications and Options</th>
<th>8336XL</th>
<th>8336XL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length without auger (with auger)</td>
<td>23' 4&quot; (7.14m) (24' 7&quot; (7.49m))</td>
<td>23' 4&quot; (7.14m) (24' 7&quot; (7.49m))</td>
</tr>
<tr>
<td>Height</td>
<td>13' 4&quot; (4.06)</td>
<td>13' 4&quot; (4.06)</td>
</tr>
<tr>
<td>Width</td>
<td>13' 4&quot; (4.06)</td>
<td>12' 5&quot; (3.78)</td>
</tr>
<tr>
<td><strong>Weight (Hydraulic Drive)</strong></td>
<td>12,611 lbs. (5.732 kg)</td>
<td>10,440 lbs. (4.745 kg)</td>
</tr>
<tr>
<td><strong>Safety Lights</strong></td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td><strong>Safety Chain</strong></td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td><strong>Tank Capacity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front Tank</td>
<td>103 bu (3,650 l)</td>
<td>103 bu (3,650 l)</td>
</tr>
<tr>
<td>Middle Tank</td>
<td>93 bu (3,272 l)</td>
<td>93 bu (3,272 l)</td>
</tr>
<tr>
<td>Rear Tank</td>
<td>150 bu (5,278 l)</td>
<td>150 bu (5,278 l)</td>
</tr>
<tr>
<td>Total</td>
<td>346 bu (12,200 l)</td>
<td>346 bu (12,200 l)</td>
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<tr>
<td><strong>Screen Dimensions</strong></td>
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<td></td>
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<tr>
<td>Tank Screen</td>
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</tr>
<tr>
<td>Tank Access Ladder R.H.S.</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td><strong>Fan Impeller Diameter</strong></td>
<td>17&quot; (43 cm)</td>
<td>17&quot; (43 cm)</td>
</tr>
<tr>
<td><strong>Hydraulic Drive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piston Type Orbit Motor</td>
<td>16cc</td>
<td>16cc</td>
</tr>
<tr>
<td>(Closed Centre or Closed Centre Load)</td>
<td>21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa)</td>
<td>21 U.S. gal./min. (80 l/min) at 2,750 p.s.i. (18,960 kpa)</td>
</tr>
<tr>
<td>Sensing systems required</td>
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<tr>
<td><strong>Hydraulic requirements for Air Cart only at Rated Fan Speed.</strong></td>
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<td></td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
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</tr>
<tr>
<td>N/A</td>
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</tr>
<tr>
<td><strong>Loading Auger</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard (10&quot; Dia x 21&quot; Lg.)</td>
<td>Standard (10&quot; Dia x 21&quot; Lg.) (0.25m Dia x 6.4m Lg.)</td>
<td></td>
</tr>
<tr>
<td><strong>Quad Steer</strong></td>
<td>N/A</td>
<td>Optional</td>
</tr>
<tr>
<td><strong>Tires</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard (Front)</td>
<td>N/A</td>
<td>(2) 21.5 x 16.1 - 10 ply rating Soft Trac</td>
</tr>
<tr>
<td>Optional (Front)</td>
<td>N/A</td>
<td>(2) 21.5 x 16.1 - 12 ply rating Lug</td>
</tr>
<tr>
<td>Quad Steer (Front)</td>
<td>N/A</td>
<td>(2) 560/65 D24 LI 140 Soft Trac</td>
</tr>
<tr>
<td>Standard (Rear)</td>
<td>(2) 30.5 x 32 - 12 ply rating AWT</td>
<td></td>
</tr>
<tr>
<td>Optional (Rear)</td>
<td>(2) 800/65 R32 - LI 172 Lug</td>
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</tr>
<tr>
<td>(2) 900/65 R32 - LI 172 Lug</td>
<td>(2) 23.1 x 26 - 10 ply rating Rice</td>
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<tr>
<td>(2) 30.5 x 32 - 12 ply rating AWT</td>
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<td>(2) 800/65 R32 - LI 172 Lug</td>
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<tr>
<td>(2) 900/65 R32 - LI 172 Lug</td>
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<tr>
<td><strong>Metering</strong></td>
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</tr>
<tr>
<td>Ground Driven</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Variable Rate (VRT)</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>GPS Compatible VRT</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td><strong>Meter Shut Off</strong></td>
<td>Electric</td>
<td>Electric</td>
</tr>
<tr>
<td><strong>Number Secondary Runs - Single Shoot</strong></td>
<td>21 to 99</td>
<td>21 to 99</td>
</tr>
<tr>
<td><strong>Number Secondary Runs - Double Shoot</strong></td>
<td>42 to 198</td>
<td>42 to 198</td>
</tr>
<tr>
<td><strong>Number Secondary Runs - Triple Shoot</strong></td>
<td>63 to 297</td>
<td>63 to 297</td>
</tr>
<tr>
<td><strong>Primary Hose - Diameter</strong></td>
<td>2 1/2&quot; (6.4 cm)</td>
<td>2 1/2&quot; (6.4 cm)</td>
</tr>
<tr>
<td><strong>Secondary Hose - Diameter</strong></td>
<td>15/16&quot; (2.4 cm)</td>
<td>15/16&quot; (2.4 cm)</td>
</tr>
<tr>
<td>Optional - 1 1/4&quot; (3.2 cm)</td>
<td>Optional - 1 1/4&quot; (3.2 cm)</td>
<td></td>
</tr>
<tr>
<td><strong>Frame</strong></td>
<td>Formed heavy wall 4&quot; x 10&quot; (10 cm x 25.4 cm) tubing</td>
<td>Formed heavy wall 4&quot; x 10&quot; (10 cm x 25.4 cm) tubing</td>
</tr>
<tr>
<td><strong>Walk Through Tank</strong></td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td><strong>Easy Clean Out System</strong></td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td><strong>Meter Drive Options</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Clutch (For spot fertilizing on the go)</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td><strong>Monitor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaft Motion (3), Bin Level (3), Fan Speed, Acre Tally, Ground Speed</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Optional Seed Flow</td>
<td>Optional Seed Flow</td>
<td></td>
</tr>
<tr>
<td><strong>Work Switch (Mounted to Seeding Machine)</strong></td>
<td>Optional (Ground Drive Only)</td>
<td>Optional (Ground Drive Only)</td>
</tr>
<tr>
<td><strong>Rear Tow Hitch</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard (Max 26,000 lb Draft Load)</td>
<td>Optional (Max 15,000 lb Draft Load)</td>
<td></td>
</tr>
<tr>
<td>(Max 11,819 kg Draft Load)</td>
<td>(Max 6,819 kg Draft Load)</td>
<td></td>
</tr>
<tr>
<td><strong>Mechanical Acre Meter</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional (Ground Drive Only)</td>
<td>Optional (Ground Drive Only)</td>
<td></td>
</tr>
<tr>
<td><strong>Hitch Stand</strong></td>
<td>N/A</td>
<td>Optional</td>
</tr>
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## Specifications

### 8370XL Specifications and Options

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

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<th>8425XL Specifications and Options</th>
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<tbody>
<tr>
<td><strong>Model</strong></td>
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<tr>
<td>Configuration</td>
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<tr>
<td>Length without auger (with auger)</td>
</tr>
<tr>
<td>Height</td>
</tr>
<tr>
<td>Width</td>
</tr>
<tr>
<td>Weight (Hydraulic Drive)</td>
</tr>
<tr>
<td>Safety Lights</td>
</tr>
<tr>
<td>Safety Chain</td>
</tr>
<tr>
<td>Tank Capacity - Front Tank</td>
</tr>
<tr>
<td>Tank Capacity - Middle Tank</td>
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<tr>
<td>Tank Capacity - Rear Tank</td>
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<tr>
<td>Tank Capacity - Total</td>
</tr>
<tr>
<td>Tank Screens</td>
</tr>
<tr>
<td>Tank Access Ladder R.H.S.</td>
</tr>
<tr>
<td>Rated Fan Speed</td>
</tr>
<tr>
<td>Fan Impeller Diameter</td>
</tr>
<tr>
<td>Hydraulic Drive - piston type orbit motor (Closed Centre or Closed Centre Load Sensing systems required)</td>
</tr>
<tr>
<td>Hydraulic requirements for Air Cart only at Rated Fan Speed.</td>
</tr>
<tr>
<td>Loading Auger</td>
</tr>
<tr>
<td>Quad Steer</td>
</tr>
<tr>
<td>Tires - Standard (Front)</td>
</tr>
<tr>
<td>Tires - Optional (Front)</td>
</tr>
<tr>
<td>Tires - Quad Steer (Front)</td>
</tr>
<tr>
<td>Tires - Standard (Rear)</td>
</tr>
<tr>
<td>Tires - Optional (Rear)</td>
</tr>
<tr>
<td>Metering - Ground Driven</td>
</tr>
<tr>
<td>Metering - Variable Rate (VRT)</td>
</tr>
<tr>
<td>Metering - GPS Compatible VRT</td>
</tr>
<tr>
<td>Meter Shut Off</td>
</tr>
<tr>
<td>Number Secondary Runs - Single Shoot</td>
</tr>
<tr>
<td>Number Secondary Runs - Double Shoot</td>
</tr>
<tr>
<td>Number Secondary Runs - Triple Shoot</td>
</tr>
<tr>
<td>Primary Hose - Diameter</td>
</tr>
<tr>
<td>Secondary Hose - Diameter</td>
</tr>
<tr>
<td>Frame</td>
</tr>
<tr>
<td>Walk Through Tank</td>
</tr>
<tr>
<td>Easy Clean Out System</td>
</tr>
<tr>
<td><strong>Meter Drive Options</strong></td>
</tr>
<tr>
<td><strong>Monitor</strong></td>
</tr>
<tr>
<td><strong>Work Switch (Mounted to Seeding Machine)</strong></td>
</tr>
<tr>
<td><strong>Rear Tow Hitch</strong></td>
</tr>
<tr>
<td><strong>Mechanical Acre Meter</strong></td>
</tr>
<tr>
<td><strong>Hitch Stand</strong></td>
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### Specifications

#### Tow Behind Specifications and Options

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

### 8435XL, 8630XL and 8650XL - Tow Between

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

Specifications are estimates and subject to change.
Section 3: Checklist

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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
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!!
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.
Introduction

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.

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.
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.
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.

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”.
Section 5: Operation

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CAUTION

SAFETY FIRST
REFER TO SECTION 1 AND REVIEW ALL SAFETY RECOMMENDATIONS.

BE ALERT

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.
Operation

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 accessible 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.

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.
Monitor Installation - Continued

Monitor Harness

TOW BEHIND - TOPCON

Tractor Harness A464

Implement Extension Harness A467

Chassis Harness A468 (8300, 8370, 8425) or A3738 (8435, 8630, 8650)

MDECU

A3695 Sensor Harness

A3737 Connect to feedback wheels and VRT Valve Solenoids.

TOW BETWEEN - TOPCON

Tractor Harness A464

Chassis Harness A468 (8300, 8370, 8425) or A3738 (8435, 8630, 8650)

MDECU

A3695 Sensor Harness

A3737 Connect to feedback wheels and VRT Valve Solenoids.
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.

<table>
<thead>
<tr>
<th>PIN SIZE</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1 1/8” x 3 11/16”</td>
</tr>
<tr>
<td>B</td>
<td>1 1/2” x 5 5/8”</td>
</tr>
<tr>
<td>C</td>
<td>1” x 5 13/32”</td>
</tr>
<tr>
<td>D</td>
<td>1” x 3 3/4”</td>
</tr>
</tbody>
</table>

ROUTE CHAIN THROUGH LUG ON EACH HITCH POLE
**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.

**Important**

Extreme care is required when backing up unit.

Hitch damage will occur if castor jackknifes.
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.

⚠️ **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.
## Operation

### 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.

### 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.
Operation

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.

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.
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.
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.
**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.
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.
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

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

Seed Plate Assembly complete with clips:
N37696 - Coarse Seed Plate Assembly
N40957 - Medium Seed Plate Assembly
N40956 - Fine Seed Plate Assembly

Seed Plate - Stainless Steel

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

---

**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 position for cereal grains.
  - Lower position 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 position 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.
Hydraulic Assist 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.

Controller Storage

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

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

**WARNING**

OVERHEAD HAZARD

To prevent serious injury or death:

- Ensure lift cylinder is fully extended before unlatching Auger/Conveyor.
- Stay clear of cradle pad when locking and unlocking.
- Keep others away.
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.

⚠️ 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 Assist Conveyor/Auger - Continued

Arm Positions

Fill Front Tank

Empty Front Tank

Fill Middle Tank

Swing Under Rear/Middle Tank

Fill Rear Tank

Empty Middle Tank

Empty Rear Tank


**Hydraulic Assist 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.

1. **Position arms as shown with inner arm cylinder fully retracted.**

2. **Do not move arms.**

3. **Move Trailer as shown so hopper clears chute handles, etc. (In this case about 4 1/2 ft)**

4. **Move Arms and Conveyor/Auger as shown to fill Rear Tank.**
Operation

Hydraulic Assist Conveyor/Auger - Continued

Semi Trailer Filling Positions - Continued

REAR chute of semi trailer

5. Move Arms and Conveyor/Auger as shown to fill Middle Tank.

6. Before Moving Trailer
   Retract Conveyor/Auger by moving arms to clear chute handles, etc.
   Move Trailer as shown to clear tires to fill Front Tank
   (In this case about 2 1/2 ft)

7. Move Arms and Conveyor/Auger as required to fill Front Tank.
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 Assist Conveyor/Auger - Continued

Semi Trailer Filling Positions - Continued

FRONT chute of semi trailer

5. Before Moving Trailer
   Retract Conveyor/Auger
   by moving arms to clear
   chute handles, etc.

6. Move Trailer as shown to
   clear support stand and brace
   (In this case about 4 ft)

7. Due to position of trailer stand
   and brace the rear tank may not be
   filled from front chute in some cases.
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.
**Operation**

**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 unusual 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 EIIGHT 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.

---

### Tank Capacity

<table>
<thead>
<tr>
<th>Model</th>
<th>Front Tank</th>
<th>Middle Tank</th>
<th>Rear Tank</th>
<th>Fourth Tank</th>
<th>Total Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>8240</td>
<td>Optional 83 bu 103 cu ft 2,938 litres</td>
<td>93 bu 115 cu ft 3,272 litres</td>
<td>150 bu 186 cu ft 5,278 litres</td>
<td>N/A</td>
<td>243 bu 301 cu ft 8,550 litres</td>
</tr>
<tr>
<td>8300</td>
<td>Optional 83 bu 103 cu ft 2,938 litres</td>
<td>117 bu 145 cu ft 4,126 litres</td>
<td>186 bu 232 cu ft 6,564 litres</td>
<td>N/A</td>
<td>303 bu 377 cu ft 10,690 litres</td>
</tr>
<tr>
<td>8336</td>
<td>103 bu 129 cu ft 3,650 litres</td>
<td>93 bu 115 cu ft 3,272 litres</td>
<td>150 bu 186 cu ft 5,278 litres</td>
<td>N/A</td>
<td>346 bu 430 cu ft 12,200 litres</td>
</tr>
<tr>
<td>8370</td>
<td>Optional 83 bu 103 cu ft 2,938 litres</td>
<td>174 bu 216 cu ft 6,164 litres</td>
<td>186 bu 232 cu ft 6,537 litres</td>
<td>N/A</td>
<td>360 bu 450 cu ft 12,721 litres</td>
</tr>
<tr>
<td>8425</td>
<td>130 bu 161 cu ft 4,559 litres</td>
<td>117 bu 145 cu ft 4,126 litres</td>
<td>186 bu 232 cu ft 6,537 litres</td>
<td>N/A</td>
<td>433 bu 538 cu ft 15,222 litres</td>
</tr>
<tr>
<td>8435</td>
<td>N/A</td>
<td>203 bu 252 cu ft 7,154 litres</td>
<td>232 bu 288 cu ft 8,175 litres</td>
<td>N/A</td>
<td>435 bu 540 cu ft 15,329 litres</td>
</tr>
<tr>
<td>8630</td>
<td>190 bu 236 cu ft 6,695 litres</td>
<td>203 bu 252 cu ft 7,154 litres</td>
<td>232 bu 288 cu ft 8,175 litres</td>
<td>N/A</td>
<td>629 bu 781 cu ft 22,165 litres</td>
</tr>
<tr>
<td>8650</td>
<td>190 bu 236 cu ft 6,695 litres</td>
<td>203 bu 253 cu ft 7,154 litres</td>
<td>232 bu 288 cu ft 8,175 litres</td>
<td>28 bu 35 cu ft 987 litres</td>
<td>653 bu 812 cu ft 23,011 litres</td>
</tr>
</tbody>
</table>

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### 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.
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.
**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.

---

**Important**

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

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.
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.
Rate Calibration - Continued

- Hook the Rate Calibration Insert on collector bottom and rotate up into position. 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.
Operation

**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.

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.
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.

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: 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.

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

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

<table>
<thead>
<tr>
<th>Combined Application Rate</th>
<th>Fan Speed Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single Shoot</td>
</tr>
<tr>
<td>3 - 50 lbs/acre 3 - 56 kg/ha</td>
<td>3000 - 3250 RPM</td>
</tr>
<tr>
<td>50 - 100 lbs/acre 56.112 kg/ha</td>
<td>3250 - 3500 RPM</td>
</tr>
<tr>
<td>100 - 150 lbs/acre 112 - 168 kg/ha</td>
<td>3500 - 3750 RPM</td>
</tr>
<tr>
<td>150 - 200 lbs/acre 168 - 224 kg/ha</td>
<td>3750 - 4000 RPM</td>
</tr>
<tr>
<td>200 - 250 lbs/acre 224 - 280 kg/ha</td>
<td>4000 - 4250 RPM</td>
</tr>
<tr>
<td>250 - 300 lbs/acre 280 - 336 kg/ha</td>
<td>4250 - 4500 RPM</td>
</tr>
<tr>
<td>300 - 350 lbs/acre 336 - 392 kg/ha</td>
<td>4500 - 4750 RPM</td>
</tr>
<tr>
<td>&gt; 350 lbs/acre &gt; 392 kg/ha</td>
<td>4750 - 5000 RPM</td>
</tr>
</tbody>
</table>

**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).

<table>
<thead>
<tr>
<th>Combined Application Rate</th>
<th>Fan Speed Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single Shoot</td>
</tr>
<tr>
<td>3 - 50 lbs/acre 3 - 56 kg/ha</td>
<td>3250 - 3500 RPM</td>
</tr>
<tr>
<td>50 - 100 lbs/acre 56 112 kg/ha</td>
<td>3500 - 3750 RPM</td>
</tr>
<tr>
<td>100 - 150 lbs/acre 112 - 168 kg/ha</td>
<td>3750 - 4000 RPM</td>
</tr>
<tr>
<td>150 - 200 lbs/acre 168 - 224 kg/ha</td>
<td>4000 - 4250 RPM</td>
</tr>
<tr>
<td>200 - 250 lbs/acre 224 - 280 kg/ha</td>
<td>4250 - 4500 RPM</td>
</tr>
<tr>
<td>250 - 300 lbs/acre 280 - 336 kg/ha</td>
<td>4500 - 4750 RPM</td>
</tr>
<tr>
<td>300 - 350 lbs/acre 336 - 392 kg/ha</td>
<td>4750 - 5000 RPM</td>
</tr>
<tr>
<td>&gt; 350 lbs/acre &gt; 392 kg/ha</td>
<td>-</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Suggested Plenum Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Fine Seeds</td>
</tr>
<tr>
<td>Coarse Grains</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Large Seeds</td>
</tr>
<tr>
<td>Single Shoot</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

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

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

**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.

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”.

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

Collector Valve Shown on “Bottom Pipe” Setting

Decal on Collector
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”.

IMPORTANT
Minimum of 5 cycles.

Cycle Collector Valve Daily to ensure free movement.

Collector Valve Shown on “Bottom Pipe” Setting

Decal on Collector

Bottom Pipe Calibration Clean-Out

Top Pipe

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”.

IMPORTANT
Minimum of 5 cycles.

Cycle Collector Valve Daily to ensure free movement.

Collector Valve Shown on “Bottom Pipe” Setting

Decal on Collector

Bottom Pipe Calibration Clean-Out
Top Pipe

Fertilizer & Seed
No Product

Low Rate
High Rate
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”.

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

Decal on Collector

Bottom Pipe Calibration Clean-Out
Top Pipe

Starter Fertilizer
Nitrogen Fertilizer
Coarse or Large Seed

Starter Fertilizer
Coarse or Large Seed
Nitrogen Fertilizer
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”.

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

---

**Decal on Collector**

**Bottom Pipe Calibration Clean-Out**

**Top Pipe**

---

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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”.

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

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”.

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

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.

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 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.

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

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

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.

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)
Operation

Manual Override - Continued

Calculating Meter Shaft RPM

Determine in the following order:
1) Travel Distance (feet per acre) = 43560 ft² / 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.
DIRECT DRIVE
SPEED - 5 MPH

CULTIVATOR SPACING (INCHES)

5 mph Ground Speed Chart - Direct Drive

NOTE: 1) RATE CHART APPLIES TO 7-1/2" 8" 9" 10" & 12" SPACINGS. 2) THIS RATE CHART IS NOT INDICATIVE OF THE MAXIMUM AMOUNT OF PRODUCT THAT CAN BE APPLIED. CAPACITY WILL VARY WITH GROUND SPEED AND CULTIVATOR WIDTH.
4 mph Ground Speed Chart - Direct Drive

**4 mph Ground Speed Chart - Direct Drive**

**CULTIVATOR SPACING (INCHES)**

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<thead>
<tr>
<th>7.5</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>12</th>
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<tr>
<td>30</td>
<td>32</td>
<td>36</td>
<td>40</td>
<td>48</td>
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**DIRECT DRIVE**

**SPEED - 4 MPH**

**RATE CHART AIRSEEDER**

<table>
<thead>
<tr>
<th>RATE (LBS/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
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<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
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<tr>
<td>11</td>
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<tr>
<td>12</td>
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<tr>
<td>13</td>
</tr>
</tbody>
</table>

**NOTE:**
1) RATE CHART APPLIES TO 7-1/2" 8" 9" 10" & 12" SPACINGS.
2) THIS RATE CHART IS NOT INDICATIVE OF THE MAXIMUM AMOUNT OF PRODUCT THAT CAN BE APPLIED. CAPACITY WILL VARY WITH GROUND SPEED AND CULTIVATOR WIDTH.

**OPERATION**
Manual Override - Continued

6 mph Ground Speed Chart - Slow Speed
SLOW SPEED DRIVE
SPEED - 5 MPH
Manual Override - Continued

4 mph Ground Speed Chart - Slow Speed
Section 6: Maintenance

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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.

<table>
<thead>
<tr>
<th>Grade 5 Bolt Marking</th>
<th>Bolt Size</th>
<th>Grade 8 Bolt Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nm</td>
<td>lb. ft.</td>
<td>Nm</td>
</tr>
<tr>
<td>11</td>
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<tr>
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</tr>
<tr>
<td>2850</td>
<td>2100</td>
<td>3350</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Tire</th>
<th>Style</th>
<th>Rating</th>
<th>Pressure</th>
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<td>8300 BH</td>
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<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

- 21.5 x 16.1 Soft Trac 10 ply 28 psi - - -
- 21.5 x 16.1 Lug 12 ply 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.
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.
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.

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**Run-Rest Switches**

**ACCESS DOOR**

**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.

**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.

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

**Important**

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

**Note:** This bolt should be loose enough to allow lid to float in the slot.
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: When air cart is not in use, leave lid latches loose to help maintain resilience of the seals.

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

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.
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.

Ensure coupler set screws fully engage the motor shaft.
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.

Caution

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

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.
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>
<thead>
<tr>
<th>Dividers Head</th>
<th>Metering Wheel</th>
<th>Spacer</th>
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<tbody>
<tr>
<td></td>
<td>Width</td>
<td>Qty</td>
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<tr>
<td>-</td>
<td>Blank Off</td>
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<tr>
<td>7</td>
<td>1 3/4&quot; (45 mm)</td>
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<tr>
<td>8</td>
<td>2&quot; (51 mm)</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>2 1/4&quot; (57 mm)</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>2 1/2&quot; (64 mm)</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>2 3/4&quot; (70 mm)</td>
<td>2</td>
</tr>
</tbody>
</table>
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.
Note: The metering wheels can be installed with the metering body mounted to the air cart.

<table>
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<th>Description</th>
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<td>Seal</td>
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<td>N36106</td>
<td>Blank Wheel Spacer Half</td>
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<td>Meter Wheel Spacer - 0.0625</td>
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<td>Locknut - 7/8 Nylon Insert</td>
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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.**

---

**Maintenance**

EIGHT Series XL VRT Air Cart  November 2011  6-21
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.
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.

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

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.

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.

Continued on next page . . .
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.
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 conveyor 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.
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.
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 should 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 centered 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**

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<tr>
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<td>Manual Holder</td>
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<td>24550-21</td>
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<td>24121-75</td>
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Maintenance

Conveyor - Continued

Lower End Group
## Conveyor - Continued

### Lower End Group - Continued

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Section 7: Storage

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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:

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<td>Blue MORRIS Spray Can</td>
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<td>N31087</td>
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Litre Cans:

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<tr>
<td>Z-11</td>
<td>Blue MORRIS Paint/Litre</td>
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</table>
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.
Removing From Storage

General
- 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.
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No ground speed display ................................................................................ 8-7
No display, no back light ................................................................................ 8-7
Bin indicates always empty ............................................................................ 8-7
Bin indicates always full .................................................................................. 8-7
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The conveyor plugs ........................................................................................... 8-8
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Cleated belt is rubbing side of housing or cleats are coming loose or wearing. 8-9
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 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. |
| Kinked hose running to shank. | 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. |
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material not being divided in distribution head</td>
<td>Head partially blocked.</td>
<td>Remove blockage and reinstall hose.</td>
</tr>
<tr>
<td></td>
<td>Kinked hose running to shank.</td>
<td>Straighten or replace hose.</td>
</tr>
<tr>
<td></td>
<td>Damaged distribution section on head.</td>
<td>Replace head with new one.</td>
</tr>
<tr>
<td></td>
<td>Bent or damaged diffuser pipe.</td>
<td>Straighten or replace diffuser pipe.</td>
</tr>
<tr>
<td></td>
<td>Secondary hose length.</td>
<td>See “Secondary Hose” in Operation Section.</td>
</tr>
</tbody>
</table>
| | 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. |
<p>| | 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. |</p>
<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material not being accurately metered out of the metering body</td>
<td>Air delivery hoses loose, cracked or pulled off. Inlet screen to fan blocked off. Incorrect Seed Plate installed. Seed Plate lock not adjusted correctly. Material caked up above one or more of the metering cups. Excessively damp material in tank. Foreign obstruction in tank above metering wheels. Caked up metering wheels on some or all of the metering cups. Damaged metering wheels. Metering wheels mismatched to secondary outlet. Collector Valves set incorrectly on Double Shoot machines. Air Leak in System. Meterbody pressurization hose disconnected.</td>
<td>Tighten the hoses, replace cracked hoses or install hoses pulled off their respective locations. Clean off material that is blocking the fan screen. Install correct Seed Plate Adjust Seed Plate lock - See Maintenance Section. Clean out caked up material. Use reasonably dry, fresh material only. Remove obstruction, and always fill tanks through the screen. Clean out the metering cups and wheels. Replace broken metering wheels. 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. See Operation Section. Adjust lids and doors as necessary. Replace damaged seals. See Maintenance Section. Reconnect hose to meterbody/plenum.</td>
</tr>
</tbody>
</table>
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plugged seed boots</td>
<td>Backing up with openers near or in the ground.</td>
<td>Lift machine all the way up before backing up.</td>
</tr>
<tr>
<td></td>
<td>Turning very sharp with openers near or in the</td>
<td>Lift machine all the way up when making sharp turns.</td>
</tr>
<tr>
<td></td>
<td>ground.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lowering machine without any forward motion.</td>
<td>Always have forward motion when lowering machine.</td>
</tr>
<tr>
<td>Worn openers or sweeps.</td>
<td></td>
<td>Replace openers.</td>
</tr>
<tr>
<td>Severely bent or damaged</td>
<td></td>
<td>Straighten or replace as required.</td>
</tr>
<tr>
<td>boots.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excessively wet conditions.</td>
<td></td>
<td>Change openers, operate when drier.</td>
</tr>
<tr>
<td>Opener Adjustment.</td>
<td></td>
<td>See “Opener Adjustment” in Operation Section.</td>
</tr>
</tbody>
</table>
# Troubleshooting

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

### Monitor

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor lights up but does not seem to work</td>
<td>Faulty monitor.</td>
<td>Replace monitor.</td>
</tr>
<tr>
<td></td>
<td>Completely disconnected harness.</td>
<td>Connect harness.</td>
</tr>
<tr>
<td>No fan display</td>
<td>Incorrect gap between sensor and target.</td>
<td>Gap should be 0.030” (0.76 mm).</td>
</tr>
<tr>
<td></td>
<td>Faulty sensor.</td>
<td>Replace sensor.</td>
</tr>
<tr>
<td></td>
<td>Broken or shorted wire.</td>
<td>Replace or repair harness.</td>
</tr>
<tr>
<td>No ground speed display</td>
<td>Sensor to magnet gap too large.</td>
<td>Gap should be 0.030” (0.76 mm).</td>
</tr>
<tr>
<td></td>
<td>Faulty sensor.</td>
<td>Replace sensor.</td>
</tr>
<tr>
<td></td>
<td>Broken or shorted wire.</td>
<td>Replace or repair harness.</td>
</tr>
<tr>
<td>No display, no back light</td>
<td>Switched off.</td>
<td>Switch unit on.</td>
</tr>
<tr>
<td></td>
<td>Poor power connections at the battery.</td>
<td>Ensure good connections. Replace monitor.</td>
</tr>
<tr>
<td></td>
<td>Battery below 10.8 volts.</td>
<td>Check battery voltage.</td>
</tr>
<tr>
<td></td>
<td>Temperature below -10C or above +40C.</td>
<td>Operate between -10C and +40C.</td>
</tr>
<tr>
<td>Bin indicates always empty</td>
<td>Broken wire.</td>
<td>Repair wire.</td>
</tr>
<tr>
<td></td>
<td>Faulty sensor.</td>
<td>Replace sensor.</td>
</tr>
<tr>
<td></td>
<td>Wires not hooked to sensor.</td>
<td>Hook up correctly.</td>
</tr>
<tr>
<td>Bin indicates always full</td>
<td>Blocked light beam on photoelectric sensor.</td>
<td>Remove object blocking the beam.</td>
</tr>
<tr>
<td></td>
<td>Wire shorted to ground.</td>
<td>Repair or replace wire.</td>
</tr>
<tr>
<td></td>
<td>Faulty sensor.</td>
<td>Replace Sensor.</td>
</tr>
<tr>
<td>Problem</td>
<td>Cause</td>
<td>Correction</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Conveyor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The conveyor is vibrating</td>
<td>Damage can occur to the belting, causing a noise. Damage usually is caused from foreign material being run through the conveyor.</td>
<td>It may be necessary to remove the belting for inspection.</td>
</tr>
<tr>
<td></td>
<td>The belt is not tracking in the center of the conveyor.</td>
<td>Track the belt.</td>
</tr>
<tr>
<td>Capacity is too low</td>
<td>There may not be enough grain reaching the conveyor.</td>
<td>Make sure the intake has not bridged over, restricting flow. The belt needs to be covered to achieve maximum capacity.</td>
</tr>
<tr>
<td></td>
<td>Conveyor belt is moving too slow.</td>
<td>Check the belt speed. Low capacity will result from speeds slower than recommended.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Belt needs tightening.</td>
</tr>
<tr>
<td>The conveyor plugs</td>
<td>The conveyor may be “jamming” because too much grain is reaching the conveyor.</td>
<td>Decrease the amount of grain the conveyor is gathering.</td>
</tr>
<tr>
<td></td>
<td>The grain may be wet.</td>
<td>If wet grain or other hard to move materials is being conveyed, reduce the amount of grain being fed into hopper.</td>
</tr>
<tr>
<td></td>
<td>The conveyor may be jammed with foreign material.</td>
<td>Remove any foreign material in the conveyor.</td>
</tr>
<tr>
<td></td>
<td>The discharge end may be plugged.</td>
<td>Unplug any plugs at the discharge end of the conveyor.</td>
</tr>
<tr>
<td></td>
<td>Pulley has spun out and burned the belt in two.</td>
<td>Cut and resplice the belt. An additional piece of belting may be required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tighten and retrack the belt.</td>
</tr>
<tr>
<td>Driveline shear bolt shears frequently.</td>
<td>Grain may be flowing too quickly into the hopper.</td>
<td>Reduce the flow rate of grain into hopper.</td>
</tr>
<tr>
<td></td>
<td>The discharge of grain from the conveyor may be restricted.</td>
<td>Inspect conveyor intake and discharge for damage.</td>
</tr>
</tbody>
</table>
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleated belt is slipping or loose.</td>
<td>Belt tension too low.</td>
<td>Tension belt to 20-23 ft. lbs. on the adjustment bolts.</td>
</tr>
<tr>
<td></td>
<td>Belt is extremely dirty.</td>
<td>Clean traction side of belt.</td>
</tr>
<tr>
<td>Cleated belt is rubbing side of housing or cleats are coming loose or wearing.</td>
<td>Belt misaligned.</td>
<td>Align belt so its tracks center of idle and drive rollers.</td>
</tr>
</tbody>
</table>
Section 9: Options Assembly

Section Contents

Rear Tow Hitch ................................................................. 9-2
Tow Behind Hydraulic Extension Kit for Rear Tow Hitch ...................... 9-3
Full Bin Indicator ....................................................................................... 9-4
Options Assembly

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**

<table>
<thead>
<tr>
<th>Item</th>
<th>Part No.</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>H38276</td>
<td></td>
<td>Kit - Hydraulic Extension (Includes All Items above)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ORDER THROUGH WHOLEGOODS)</td>
<td></td>
</tr>
</tbody>
</table>

---

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

---

**Notes**

- **Part No.**
- **Description**
- **Qty**

**EIGHT XL Series VRT Air Cart**

**November 2011**

**9-3**
Options Assembly

Full Bin Indicator

Remove bolt and washer from tank.
Install wire harness #27 through hole and place grommet #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.

Fill Indicator

Fill Sensor - Optional

8435 and 8630 Fill Indicator Location
## Lighting

### Full Bin Indicator & Work Lights

<table>
<thead>
<tr>
<th>Item</th>
<th>Part No.</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N34675</td>
<td>Bracket - Auger Light</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>N40540</td>
<td>Switch Box</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>N34683</td>
<td>Work Light Assembly</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>N34682</td>
<td>Cable - Two Light Adapter</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>N34681</td>
<td>Cable - Auger Light</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>N34678</td>
<td>Cable - Power Supply</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>N34713</td>
<td>Clamp</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>W-1552</td>
<td>Hex Bolt - 1/4 X 1</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>W-521</td>
<td>Lockwasher - 1/4</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>W-512</td>
<td>Hex Nut - 1/4</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>N34715</td>
<td>Tie Strap - 5.6 Lg</td>
<td>17</td>
</tr>
<tr>
<td>11A</td>
<td>D-4838</td>
<td>Tie Strap - 14 1/2 Lg</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>N37562</td>
<td>Switchbox Mounting Bracket (8370XL ONLY)</td>
<td>1</td>
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<tr>
<td>12A</td>
<td>N45055</td>
<td>Switchbox Mounting Bracket (8435XL &amp; 8630XL ONLY)</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>W-469</td>
<td>Hex Bolt - 1/4 x 3/4 (8370XL ONLY)</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>D-5277</td>
<td>Locknut - 1/4 Flange (8370XL ONLY)</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>M-3388</td>
<td>Locknut - 3/8 (8435XL &amp; 8630XL ONLY)</td>
<td>4</td>
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<tr>
<td>16</td>
<td>D-5489</td>
<td>Flatwasher - 3/8 (8435XL &amp; 8630XL ONLY)</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>N15098</td>
<td>U-Bolt - 3/8 (8435XL &amp; 8630XL ONLY)</td>
<td>2</td>
</tr>
</tbody>
</table>

*Following Item Quantities are listed per Tank*

<table>
<thead>
<tr>
<th>Item</th>
<th>Part No.</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>N42143</td>
<td>Bracket - Ladder Mount</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>N42145</td>
<td>Switch Bracket</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>N42090</td>
<td>Level Sensor</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>N15112</td>
<td>Hex Bolt - 5/16 x 3/4</td>
<td>2</td>
</tr>
<tr>
<td>22</td>
<td>N42091</td>
<td>U-Bolt - 5/16 x 2 1/4</td>
<td>4</td>
</tr>
<tr>
<td>23</td>
<td>N42098</td>
<td>Locknut - 5/16 stainless</td>
<td>10</td>
</tr>
<tr>
<td>24</td>
<td>N37014</td>
<td>Cable - 5 ft (Used in Tank 1 and Tank 2) (Front and Middle Tank)</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>N37016</td>
<td>Cable - 10 ft (Used in Tank 3) (Rear Tank)</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>N42089</td>
<td>Cable - 1 ft (Used in each Tank)</td>
<td>1</td>
</tr>
<tr>
<td>27</td>
<td>N42092</td>
<td>Grommet</td>
<td>1</td>
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<tr>
<td>28</td>
<td>N34715</td>
<td>Tie Strap - 5.6 Lg</td>
<td>10</td>
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<tr>
<td>29</td>
<td>N38597</td>
<td>Hex Bolt - 1/4 X 3/4 HEX UNC SS304</td>
<td>1</td>
</tr>
<tr>
<td>30</td>
<td>N36143</td>
<td>Nut - Nylon - 1/4 Flange</td>
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</tr>
<tr>
<td>31</td>
<td>S-4747</td>
<td>Washer - 0.281 ID x 1.750D x 14GA</td>
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<tr>
<td>32</td>
<td>N42198</td>
<td>Seal - Full Bin Hole Washer</td>
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</tr>
</tbody>
</table>

Items 30 to 33 are used to close hole in tank when Full Bin Indicator is not used.
It is the policy of Morris Industries Ltd. to improve its products whenever it is possible to do so. Morris Industries reserves the right to make changes or add improvements at any time without incurring any obligation to make such changes on machines sold previously.