

# MERIDIAN<sup>®</sup>

## OPERATOR'S MANUAL



**BULK SEED TENDER<sup>®</sup>**  
240 FF BASIC SEED EXPRESS<sup>™</sup>



# PRODUCT REGISTRATION FORM



**Attention Dealers:**

You can register products online through the Dealer Login: <http://dealers.meridianmfg.com/login/>

It is mandatory to register your product in order to qualify for future warranty claims that may arise. Knowingly falsifying information on this form will result in the voiding of the product warranty.

You may scan/photograph this completed form (must be legible), email it to: [register@meridianmfg.com](mailto:register@meridianmfg.com)  
A copy of this form may be mailed to Meridian Manufacturing Inc. 2902 Expansion Blvd. Storm Lake, IA 50588

|                        |                        |
|------------------------|------------------------|
| Buyer's Name _____     | Dealer's Name _____    |
| Address _____          | Address _____          |
| City, State/Prov _____ | City, State/Prov _____ |
| Zip/Postal Code _____  | Zip/Postal Code _____  |
| Phone Number _____     | Phone Number _____     |

**Note:** Registering a product in multiple entry format is only allowed when the product has the same model number and the same dealer, however each serial number must be legibly listed for each unit. Delivery dates for a multiple entry must be within a one month time frame.

Product Information \_\_\_\_\_

Model # \_\_\_\_\_ Serial # \_\_\_\_\_

Invoice Date \_\_\_\_\_

**Important:** Please send this form to the Meridian Manufacturing Inc. location which built this product being registered. If you require further assistance call you're dealer or the Meridian outlet nearest to your location.

We want to thank you for purchasing a Meridian manufactured product. Whether this is your first Meridian purchase or you have been a customer for years, you are now part of the Meridian community of customers and we appreciate your business.

It is important that you now complete the product registration information and this form indicating you have received delivery. This registration and information is necessary to ensure you have access to warranty and product updates in the event it be required in the future.

Registration can be completed by using this form or visiting your dealer who will complete the form online. You will be given access to the Meridian Community and become eligible for updates, special offers and prizes.

Again, thank you for choosing Meridian.

I have thoroughly instructed the buyer on the above described equipment. The review included the content of this manual, equipment care, adjustments, safe operation and warranty policy.

Date \_\_\_\_\_ Dealer's Signature \_\_\_\_\_

The above equipment and this manual have been received by me. I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date \_\_\_\_\_ Buyer's Signature \_\_\_\_\_

# DEALER INSPECTION REPORT



MERIDIAN MANUFACTURING INC.  
2902 EXPANSION BLVD. STORM LAKE, IA 50588  
T: (800) 437-2334 P: (712) 732-1780 F: (712) 732-1028  
www.meridianmfg.com iowa\_warranty@meridianmfg.com

Unit's Model Number \_\_\_\_\_ Unit's Serial Number \_\_\_\_\_

- Review safety and operating instructions with owner
- Verify receipt of all options ordered
- Verify that tow vehicle is large enough to safely tow seed tender
- Check engine fuel level. Add as needed
- Check engine oil level. Add as needed
- Start engine and make sure it operates properly
- Check oil level in hydraulic tank. Add as needed
- Check air pressure in tires. Add as needed
- Wheel nuts/bolts are tightened to proper torque on all wheels
- Hitch-to-tongue and hitch-to-frame bolts are tightened to proper torque
- Conveyor tube rotates 180 degrees and locks into towing position
- Weighing system is working properly
- Remote control system is working properly
- All guards/shields are installed correctly
- All safety decals are installed and legible
- Wiring harness plug is in working condition and fit into tow vehicle's receptacle
- Reflectors, plate light, signal lights, and brake lights must be clean and working properly
- Tender's battery is fully charged and in good working order
- Break-away brake system battery is fully charged and in good working order
- Break-away brake cable and pin is supplied with trailer
- Electric brakes are in working condition
- Inspect customer's hitch for 2-5/16" ball or fifth wheel
- Safety chains are properly attached and are in good working condition
- Owner is instructed to check wheel bolt/nut torque at 5, 10, 25, and 50 miles; then check annually

# CERTIFICATE OF ORIGIN



MERIDIAN MANUFACTURING INC.  
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|                           |                            |
|---------------------------|----------------------------|
| LICENSING INFORMATION     | Delivery Date _____        |
| DEALER _____              | SOLD TO _____              |
| Address _____             | Address _____              |
| City _____                | City _____                 |
| State _____               | State _____                |
| Zip Code _____            | Zip Code _____             |
| Phone Number _____        | Phone Number _____         |
| Unit's Model Number _____ | Unit's Serial Number _____ |

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## Section 1: INTRODUCTION

Thank you for choosing a Meridian® Bulk Seed Tender®. The equipment we design and manufacture to meet the exacting standards of the agricultural industry.

Keep this manual for future reference. Call your dealer, distributor or Meridian if you need assistance, information, additional/replacement copies or a digital copy of this document.

The information provided herein is of a descriptive nature. Meridian Manufacturing Inc. reserves the right to modify the machinery design and specifications provided herein without and preliminary notice.

Performance quality may depend on the material being handled, weather conditions and other factors.

### 1.1 OPERATOR ORIENTATION

The directions left, right, front, and rear, as mentioned throughout this manual, are as seen from the tow vehicle driver's seat, facing in the direction of travel.

### 1.2 SERIAL NUMBER

Always give your dealer the serial number when ordering parts, requesting service or asking for other information.

Use the space provided for easy reference.

Tender Model No: \_\_\_\_\_

Tender Serial No: \_\_\_\_\_

Engine Model No: \_\_\_\_\_

Engine Serial No: \_\_\_\_\_



Fig 1 - Serial number located driver-side rear leg

### 1.3 PATENT INFORMATION



Meridian® continuously enhances its product offering through product improvements and new product innovations. Marketplace feedback, technological innovation, new materials and manufacturing methods, and a philosophy of continuous improvement constantly challenge the company to develop new and better ways of addressing market needs. Meridian® is committed to innovation and reinvestment and as a result, the company maintains a portfolio of patents and intellectual property. For more information on our patents please see our website:

[www.meridianmfg.com/patents](http://www.meridianmfg.com/patents)

## Section 2: SAFETY

3 Big Reasons why safety is important to you:

- Accidents Disable and Kill
- Accidents Cost
- Accidents Can Be Avoided

The Safety Alert Symbol means:



The Safety Alert Symbol identifies important safety messages on the seed tender and in this manual.

The following signal words are used in this manual to express the degree of hazard for areas of personal safety.

When you see the symbol and/or the signal words described below, obey the accompanying message to avoid possible injury or death.



Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations. Typically for machine components which, for functional purposes, cannot be guarded.



Indicates a hazardous situation, if not avoided, could result in death or serious injury. This word identifies hazards that are exposed when guards are removed. It may be used to alert against unsafe practices.



Indicates a hazardous situation, if not avoided, could result in minor or moderate injury. It may be used to alert against unsafe practices.



Indicates practices or situations which may result in the malfunction of, or damage to equipment.



Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.

## 2.1 SAFETY ORIENTATION

YOU are responsible for the SAFE operation and maintenance of your Meridian® Seed Tender. Be sure that everyone who will operate, maintain or work around it, is familiar with the safety, operating and maintenance procedures.

This manual will take you step-by-step through your working day. It will alert you to all the safe practices that should be adhered to while operating the tender.

Remember, you are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a regular part of your safety program. Be certain that everyone who will work with this equipment follows these procedures.

Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Tender owners must give operating instructions to operators or employees before allowing them to operate the machine.

Procedures must be reviewed annually thereafter, as per OSHA (Occupational Safety and Health Administration) regulation 1928.57.

- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to understand all safety and operating instructions in this document, and to follow them.
- An untrained operator exposes himself and bystanders to possible serious injury or death.
- Think SAFETY! Work SAFELY!

## 2.2 GENERAL SAFETY

- Read and understand the Operator's Manual and all safety decals before operating, maintaining, adjusting or unplugging the auger. 

- Only trained competent persons shall operate the tender. An untrained operator is not qualified to operate the machine.

- Have a first-aid kit available for use should the need arise. 

- Provide a fire extinguisher for use in case of an accident. Store in a highly visible place. 

- Do not allow riders.

- Do not allow children, spectators or bystanders within hazard area around the machine.

- Wear personal protective equipment (PPE). This list may include but is not limited to:

- Hard hat
- Protective shoes with slip resistant soles
- Eye protection
- Work gloves
- Hearing protection
- Respirator or filter mask
- Hi-Visibility safety vest



- Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment.

Consult your doctor about operating this machine while taking prescription medications.

- If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.
- Do not allow long hair, loose fitting clothing or jewelry to be around equipment.

## 2.3 EQUIPMENT SAFETY GUIDELINES

- Safety of the operator and bystanders is one of the main concerns when designing and developing this tender. However, every year many accidents occur which could have been avoided by a few seconds of thought, and a more careful approach to handling equipment.
- Do not allow personnel to operate this unit until they have read this manual. They should have a thorough understanding of the safety precautions.
- In order to provide a better view, some images in this manual may show an assembly with safety guards removed.

Equipment should never be operated in this condition. All guards must be in place. If removal becomes necessary for repairs, replace the guard prior to use.



- This equipment is dangerous to children and persons unfamiliar with its operation.

The operator must be responsible, properly trained and physically able. You should be familiar with farm machinery in general.

- Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - DO NOT TRY IT.
- Do not modify the equipment in any way. Unauthorized modification result in serious injury or death and may impair the function and life of the equipment.
- The design and configuration of this tender includes safety decals and equipment. They need to be clean, readable and in good condition.

## 2.4 SAFETY DECALS

- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible.
- Replaced parts must display the same decal(s) as the original parts.
- All safety decals have a part number in the lower right hand corner. Use this part number when ordering replacements.
- Safety decals are available from your authorized distributor, dealer's parts department or from Meridian Manufacturing Inc.

### 2.4.1 Applying Decals:

1. Be sure the application area is clean and dry. Ensure the surrounding temperature is above 50°F (10°C).
  - a. Remove all dirt, grease, wax from surface.
  - b. Clean the area with a non-ammonia based cleaner.
  - c. Wipe the clean surface with isopropyl alcohol on paper towel, and allow to dry.
2. Determine the exact position before you remove the backing paper.
3. Peel a small portion of the split backing paper.
4. Align the decal over the specified area. Use a squeegee to carefully press the small portion, with the exposed adhesive backing, into place.
5. Slowly peel back the remaining paper and carefully smooth the rest of the decal into place.
6. Small air pockets can be pierced with a pin and smoothed out using the squeegee, or a piece of sign backing paper.

## 2.5 DECAL LOCATION

The following illustrations show the general location of decals on this tender. The position of decals may vary depending on the machine's options. Decals are not shown at actual size.



## 2.6 WORK PREPARATION

- Never operate the tender and its engine until you have read this manual, and understand the information.

Also, read the engine operator's manual.

- Be familiar with the safety messages found on the decals around this unit.

- Personal protective equipment (PPE) include:
  - Hard hat
  - Eye protection
  - Protective shoes
  - Work gloves



They are recommended during installation, placement, operation, maintenance and removal of the equipment.

- Do not allow long hair, loose fitting clothing or jewelry to be around equipment.
- **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**

Agricultural equipment can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80 db.



Noise over 85 db on a long-term basis can cause severe hearing loss.

Noise over 90 db adjacent to the operator over a long-term basis may cause permanent, total hearing loss.

### Note:

Hearing loss from loud noise (tractors, chain saws, radios, etc.) is cumulative over a lifetime without hope of natural recovery.

- Clear working area of stones, branches or hidden obstacles that might be hooked or snagged, causing injury or damage.
- Operate only in daylight or good artificial light.
- Be sure machine is in a stable position, is adjusted and in good operating condition.
- Ensure that all safety guards and safety decals are properly installed and in good condition.
- Before starting, inspect the unit for any loose bolts, worn parts, cracks, leaks or frayed belts. Make the necessary repairs.

Always follow the maintenance instructions.

## 2.7 PLACEMENT SAFETY

- Stay away from overhead obstructions and power lines. Electrocutation can occur without direct contact. 
- Locate the tender providing enough space to load or unload.
- Position tender on level ground, free of debris.

## 2.8 LOCK-OUT TAG-OUT SAFETY

- Establish a formal Lock-Out Tag-Out program for your operation.
- Train all operators and service personnel before allowing them to work around the area.
- Provide tags on the machine and a sign-up sheet to record tag out details.

## 2.9 MAINTENANCE SAFETY

- Review Section 4: Service and Maintenance, before maintaining or operating the tender.
- Follow good shop practices:
  - Keep service area clean and dry.
  - Be sure electrical outlets and tools are properly grounded.
  - Use adequate light for the job.
- Place all controls in neutral or off. Stop engine, and remove ignition key. Wait for all moving parts to stop before servicing, adjusting, repairing.
- Keep hands, feet, hair, and clothing away from all moving/rotating parts.
- Replace parts with genuine factory replacements parts to restore your equipment to original specifications.



Meridian Manufacturing Inc. will not be responsible for injuries or damages caused by using unapproved parts and/or accessories.

- Make sure there is plenty of ventilation. Never operate the engine in a closed building. The exhaust fumes may cause asphyxiation.
- Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
- Place stands or blocks under the frame before working beneath the machine.
- Before resuming work, install and secure all guards when maintenance work is completed.
- Replace damaged or not clearly visible decals.

## 2.10 TIRE SAFETY

- Failure to follow procedure when mounting a tire on a wheel or rim can produce an explosion and may result in serious injury or death.
- Do not attempt to mount a tire unless you have proper equipment and training to do the job.
- Have a qualified tire dealer or repair service perform required tire maintenance.
- When replacing worn tires, make sure they meet original tire specifications. Never undersize.
- Reference the tire side wall for information on the maximum cold tire pressure (PSI). Keep the tires inflated to this setting.



## 2.11 BATTERY SAFETY

- Keep all sparks and flames away from battery, as the gas given off by electrolyte is explosive.
- Avoid contact with battery electrolyte. Wash off any spilled electrolyte immediately.
- Wear safety glasses when working near batteries.
- Do not tip batteries more than 45 degrees, to avoid electrolyte loss.
- To avoid injury from spark or short circuit, disconnect battery ground cable before servicing any part of electrical system.
- When storing tender for an extended period:
  - Remove the battery.
  - Be sure it is fully charged.
  - Store it inside.
  - Do not sit battery on a cold, concrete floor.
- Before using battery, after storage, check charge.
- Never attempt to jump start a frozen battery.



## 2.12 ENGINE SAFETY

- Read and understand the operating manual provided with the engine. 
- Use proper tools to service engine.
- Do not run engine in an enclosed area. Exhaust gases contain carbon monoxide, an odorless and deadly poison.
- Store fuel in approved safety containers.
- Do not store fuel near open flame. 

Appliances such as a stove, furnace, or water heater use a pilot light which can create a spark. 
- No smoking when filling fuel tank.
- Do not remove fuel cap while engine is running.
- Do not refuel indoors where area is not well ventilated. Outdoor refueling is preferred.
- Do not refuel while engine is running. Allow engine to cool for 5 minutes before proceeding.
- Use fresh fuel. Stale fuel can gum carburetor and cause leakage.
- Check fuel lines and fittings frequently for cracks or leaks. Replace if necessary.
- Do not operate engine if fuel has spilled. Move machine away. Avoid creating any ignition until the fuel has evaporated.
- Do not run engine above rated speeds. This may result in damage and injury.
- Do not tamper with the engine speed selected by the original equipment manufacturer.
- Do not operate engine with grass, leaves, dirt or other combustible materials in muffler area.
- Do not operate engine without muffler.

- Do not tamper with governor springs, governor links or other parts which may increase the governed engine speed.
- Do not strike flywheel with hard object or metal tool. This may cause it to shatter in operation.
- Keep cylinder fins/governor parts free of grass and other debris which can affect engine speed.

### **WARNING**

#### HOT EQUIPMENT HAZARD

Do not touch muffler, cylinder or fins while engine is running. Contact will cause burns.

- Do not use this engine on any forest covered, brush covered, or grass covered unimproved land, unless a spark arrester is installed on muffler. The arrester must be maintained in effective working order by operator.

In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands.

- Inspect the muffler periodically. Replace it when necessary.

If engine is equipped with a muffler deflector, inspect periodically. Replace with correct part.

- Do not check for spark, or crank engine with spark plug or spark plug wire removed.
- Do not run engine with air filter or its cover removed.

### **NOTICE**

#### POSSIBLE ENGINE DAMAGE

Decelerate engine slowly to stop. Avoid choking the carburetor to stop engine. Choke only for an emergency stop.

## 2.13 OPERATING SAFETY

- Anyone who will be operating this tender, or working around it, must read this manual. They must know operating, maintenance, safety info.



Review the manual annually.

- Clean or replace all safety decals if they cannot be clearly read and understood.
- Place all controls in neutral, and stop the engine. Remove the ignition key. Wait for all moving parts to stop before adjusting, repairing or unplugging.
- Keep all bystanders, especially children, away from the machine when running.

Also, when authorized personnel are carrying out maintenance work.

- Establish a Lock-Out, Tag-Out policy for the work site. Be sure all personnel are trained in and follow all procedures.

Lock-Out, Tag Out all power sources before servicing the unit or working around equipment.

- Be familiar with machine hazard area. If anyone enters hazard areas, shut down machine immediately. Clear the area before restarting.

- Keep hands, feet, hair and clothing away from all moving/rotating parts.



- Do not allow riders on the tender when moving or transporting it.

- Keep working area clean and free of debris to prevent slipping/tripping.



- Stay away from overhead obstructions and power lines during operation and transporting. Electrocutation can occur without direct contact.

- Do not operate the tender when any guards are removed.

## 2.14 REFUELLING SAFETY

- Handle fuel with care. It is highly flammable.
- Allow engine to cool for five minutes before refuelling. Clean up spilled fuel before restarting engine.

- Do not refuel the machine while smoking or when near open flame or sparks.



- Fill fuel tank outdoors.

- Prevent fires by keeping machine clean of accumulated trash, straw, grease, and debris.



## 2.15 HYDRAULIC SAFETY

- Always place hydraulic controls in neutral. Then relieve pressure in hydraulic system before maintaining or working on machine.

- Be sure that all components in the hydraulic system are kept in good condition and are clean.

- Replace any worn, cut, abraded, flattened or crimped hoses.

- Do not attempt any makeshift repairs to the hydraulic fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.

- Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as backstop instead of hand to isolate/identify a leak.

- If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.

## 2.16 TRANSPORT SAFETY

- Lock the conveyor tube in transport position. Secure delivery spout before transport.
- Ensure that the trailer brakes are in good working order. Be familiar with their operation.
- Check that all the lights, reflectors and other lighting requirements are installed and in good working condition. 
- Never allow riders on the tender.
- Be sure the trailer is securely hitched to the towing vehicle and a retainer is used through the hitch jaws. Always attach a safety chain between the hitch and the towing vehicle.
- Stay away from overhead power lines. Electrocutation can occur without direct contact. 
- Comply with all local laws governing safety and transporting of equipment on public roads.
- Do not exceed a safe travel speed. Slow down for rough terrain and when cornering.
- Plan your route to avoid heavy traffic.
- Do not drink and drive.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Watch for traffic when operating near or crossing roadways.

## 2.17 STORAGE SAFETY

- Store in an area away from human activity.
- If required, make sure the unit is solidly blocked up.
- Remove the battery and store it in a dry location. Do not sit it on a cold concrete floor.
- Make certain all mechanical locks are safely and positively connected before storing.
- Do not permit children to play on or around the stored machine.



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## Section 3: OPERATION

### **WARNING**

- Read and understand the Operator's Manual.
- Before servicing, repairing or unplugging; stop engine, remove ignition key and wait for moving parts to stop.
- Clear the area of bystanders, especially children, before starting.
- Do not allow riders on the tender.
- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
- Be familiar with the hazard area. If anyone unauthorized enters, shut down the machine immediately. Clear area before restarting.
- Do not operate machine with guards removed.
- Keep working area clean and free of debris to prevent slipping or tripping.
- Establish Lock-Out, Tag Out policy for work site. Ensure personnel follow all these procedures. Lock-out tag-out all power sources before servicing or working around equipment.

The Meridian® 240 FF Basic Seed Express™ Bulk Seed Tender® have many features incorporated into them as a result of suggestions made by customers like you.

Hazard controls and accident prevention are dependent upon the personnel operating and maintaining it. Their awareness, concern, prudence and proper training are crucial.

It is the responsibility of the owner and operators to read this manual and to train all personnel before they start working with the machine. By following recommended procedure, a safe working environment is provided for the operator, co-workers and bystanders in the area around the work site.

By following the operating instructions, in conjunction with a good maintenance program, your tender will provide many years of trouble free service.

### 3.1 MACHINE COMPONENTS

A gas engine, mounted on the frame, powers the hydraulic pump. The pump operates the hydraulic motor for the conveyor belt and the cylinder to raise and lower the conveyor tube.

The conveyor can swing 180° to transfer seed from the compartments into a planter or drill. Slide gates on the compartments control the flow of product into the conveyor.

The main components are:

- a. Compartment 1 (front of tender)
- b. Compartment 2 (rear of tender)
- c. Roll Tarp and Crank Handle
- d. Tube Raise/Lower Lever
- e. Belt On/Off Switch (end of spout)
- f. Hydraulic Oil Flow Control Valve
- g. Conveyor Tube (8 inch belt inside)
- h. Discharge
- i. Telescoping Delivery Spout
- j. Gas Engine and Hydraulic Pump
- k. Hydraulic Reservoir
- l. Pivot Platform and Conveyor Hopper
- m. Transport Lock and Damper Mechanism
- n. Compartment Slide Gate Levers
- o. Break-Away Trailer Brake System
- p. Document Holder (inside frame)

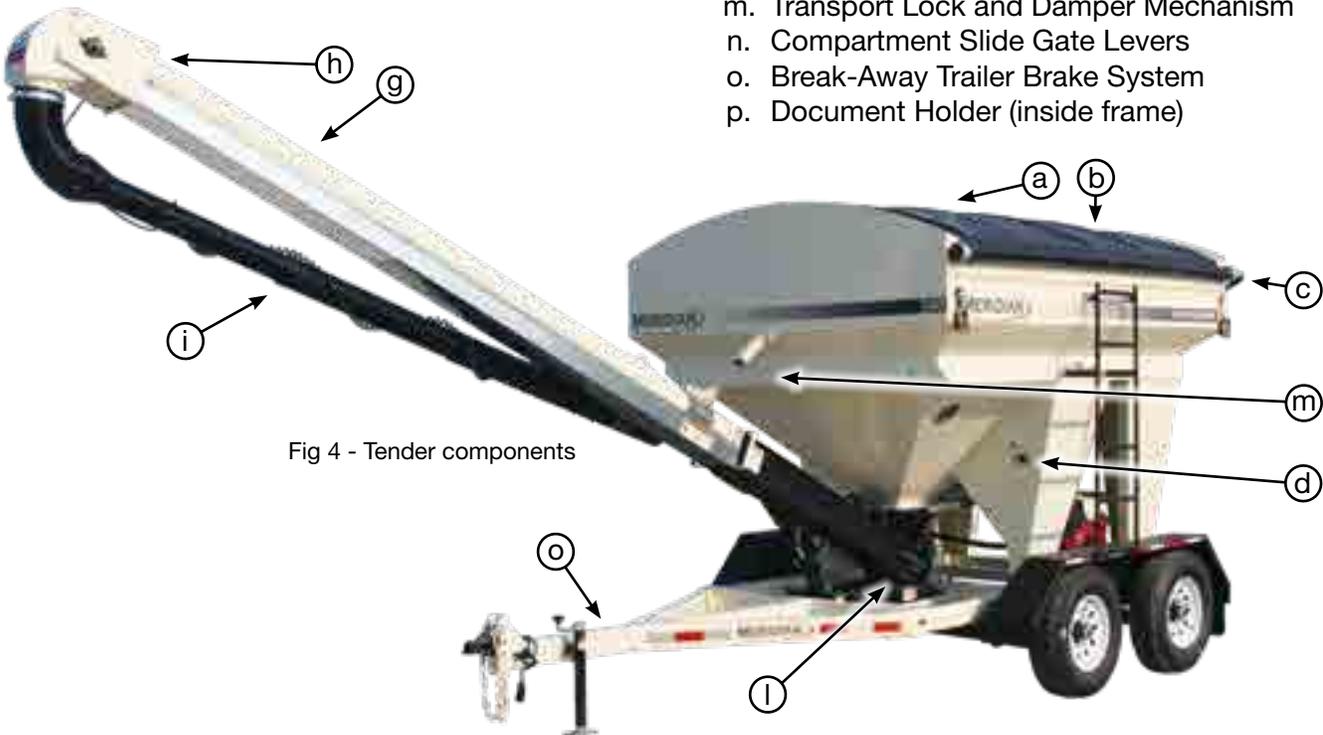


Fig 4 - Tender components



Fig 5 - Tender components

## 3.2 COMPONENTS AND CONTROLS

Before starting to work, all operators should familiarize themselves with the location and function of the components and controls.

Options and their locations may vary.

### Gas Engine:

Read the engine manufacturer's manual for more detailed instructions.

- a. Engine Ignition Key Switch:  
Insert the key to operate.
- b. Throttle Lever:  
Move the lever laterally to increase or decrease the RPM.
- c. Choke Lever:  
Choke the valve for starting when the engine is cold. Open the choke as the engine warms.

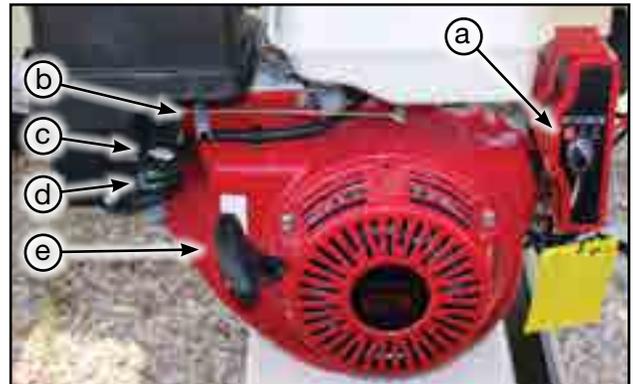


Fig 6 - Gas engine

### IMPORTANT:

Always run at maximum engine speed.

- d. Fuel Shut-Off Valve:  
Slide the lever toward engine to open.  
- ALWAYS close the valve when not in use or before transporting.
- e. Starting Rope:  
Grasp the T-handle firmly and pull the rope sharply to start the engine.  
- The ignition key on must be ON to pull-start.



Fig 7 - Hydraulic reservoir and filter

### Battery (12 Volt):

A 12 Volt battery supplies the power to start the engine. When the engine is operating a trickle charge is sent to the battery to keep it fully charged.

### Hydraulic Oil Reservoir and Filter:

The oil reservoir and filter are positioned on the right-side of the hopper. Use ISO grade 32 fluid (AW HVI or comparable).

- Oil Reservoir holds 10 US Gallon (37.8 Liters)

**Hydraulic Valve Lever:**

Use this lever to raise/lower the conveyor tube.

- The conveyor tube can raise or lower between 18° to 32°. The hydraulic cylinder has a built-in check valve to prevent it from lowering if the hydraulic line breaks.

### NOTICE

**EQUIPMENT DAMAGE HAZARD**

An anti-rotation chain and plunger pin prevent the turret from moving side-to-side when being transported. Detach both before rotating the conveyor to prevent damage.

**Conveyor Tube Turret on the Pivot Platform:**

The conveyor tube sits on a turret assembly which can be manually swung to either side.

- Hook the chain in place before transportation.
- Unhook the anti-rotation chain before swinging the conveyor tube.
- Insert the locking plunger pin into one of the slots around the pivot base to secure the tube and turret in position.

**Transport Lock/Damper Mechanism:**

The conveyor tube should be locked when not in use.

- The damper mechanism eases the shocks created by bouncing during road transport.

**IMPORTANT:**

Always lock the conveyor tube in transport position when not in use.



Fig 8 - Hydraulic valve lever



Fig 9 - Conveyor turret assembly on the pivot platform



Fig 10 - Tube transport Lock and damper mechanism

**Hydraulic Oil Flow Control Valve:**

This valve regulates the flow of hydraulic oil to conveyor belt motor.

To adjust the speed, loosen the knob, then move the lever in the desired direction.

- Move lever toward zero (0) for a slower speed.
  - Move toward ten (10) for a higher speed.
- Tighten the knob to hold the lever in place.



Fig 11 - Hydraulic oil flow control valve

**Conveyor Tube Discharge:**

The hydraulic motor for the 8 inch conveyor belt is located at the discharge.

- A telescoping delivery spout is connected to the discharge.



Fig 12 - Conveyor discharge

**Conveyor Belt On/Off Switch:**

This toggle switch is located on the telescoping delivery spout. It controls the hydraulic motor to the conveyor belt.

**Note:**

The switch and wiring harness can be moved to a more convenient location.

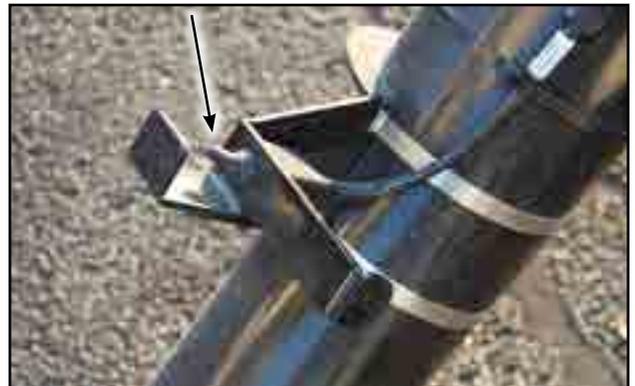


Fig 13 - Switch on telescoping delivery spout

**Compartment Slide Gates:**

Use the push/pull levers, at the rear, to open and close the compartment gates.

- Adjustable slide gate stops must be moved out of the way to operate the levers.
- Return the stops to their original location to keep slide gates closed.

**Compartment Ladder:**

The ladder is located on the right-side of the tender. Keep the ladder rungs clean to prevent a slipping hazard.



Fig 14 - Compartment slide gate levers

**Roll Tarp:**

Always keep the compartments covered when not being filled. Store the crank handle in the bracket at the front of the tender.

**Tender Trailer:**

The bumper hitch trailer is equipped with a jack at the nose. It is important to lower the jack when using the tender to give stability.

All trailers are equipped with a Break-Away brake system. It is located near the nose.

**Break-Away System:**

A Break-Away System is installed on all trailers.

The control box contains LEDs to show the condition of enclosed battery. There is a Test button to check the battery level.

**IMPORTANT:**

Test the Break-Away Switch periodically.  
Removing the pin, then pull the trailer to feel if the brakes have engaged.

The cable attached to the Break-Away Switch pin, must go around the ball before coupling the trailer to the tow vehicle.

During transportation, if the trailer should detach from the transport vehicle, the pin will be pulled out engaging the trailer's brakes.



Fig 15 - Roll tarp and crank handle



Fig 16 - Break-Away system control box



Fig 17 - Break-Away cable on hitch tongue

**NOTICE****TRANSPORT HAZARD**

Always secure the safety chains to the tow vehicle, in addition to the Break-Away Switch.

### 3.3 MACHINE BREAK-IN

A special break-in procedure has been developed to ensure the integrity of the seed tender when first put into service. Follow the Before Starting instructions and then follow the Inspections for 1/2, 5, and 10 hour instructions at the appropriate interval.

After completing these instructions, follow the normal service schedule in the Maintenance and Service sections and the engine manual.

#### **Before Starting Work:**

1. Read and follow the instructions in this manual, and the engine manual.
  - Read the Pre-Operation Checklist.
2. Check wheel bolt torque and then again at 10, 25, and 50 miles.
  - Refer to Section 6.2 Bolt Torque.
3. Start the engine and check the controls. Be sure that they function properly.

#### **After Operating for 1/2, 5, and 10 Hours:**

4. Check the machine fluid levels.
  - Refill as necessary.
5. Check the tension and alignment of the conveyor belt.
6. Check hardware and fasteners; frame to trailer tie-downs, all fasteners, and wheel bolts. Tighten to their specified torque.
7. At 10 hours, change the engine oil.
  - Check engine manual for the specified oil.

### 3.4 PRE-OPERATION CHECKLIST

Efficient and safe operation of this Meridian® Bulk Seed Tender® requires that each operator reads and follows the operating instructions and all related safety precautions identified in this manual.

This pre-operational checklist is provided for both personal safety and to maintain the efficient operation of the tender. Check the following areas, each time, before you operate this tender:

1. Lubricate the machine.
  - Refer to Service and Maintenance section.
2. Check the engine oil and fuel levels.
  - Add, if required.

**IMPORTANT:**

The engine warranty is void if the engine is run without oil.

3. Check hardware and fasteners; seed tender frame to trailer tie-downs, hitch bolts, trailer hitch to trailer bolts, and all other fasteners. Tighten to their specified torque.
4. Make sure the wheel bolt lug nuts are tight.
5. Check the tires to be sure that they are inflated to their specified pressure.

6. Remove all entangled material.
7. Visually inspect the conveyor tube, conveyor belt, and delivery spout for damage.
8. Test the Break-Away brake unit and the trailer brakes.
  - a. Make sure the trailer brakes are operating properly.
  - b. Be sure the trip wire to the break-away switch is connected to the tow vehicle.
  - c. Make sure the pin is correctly installed in the break-away switch.
  - d. Press the Test button to see if the indicator illuminates green.
    - If the red light illuminates, the battery charge is low.
    - Recharge the battery.
9. Check the fluid level in the hydraulic reservoir.
  - Add fluid as needed.
10. Check the tension of the conveyor belt.
  - Follow the instructions in the manual to adjust the tension.
11. When the conveyor belt is rotating, check its alignment.
  - Adjust as necessary.

### 3.5 ATTACHING TO TOW VEHICLE

**⚠ WARNING**

**PENDING HAZARD**

Do not stand over hitch when unhooking the trailer from the tow vehicle. Load compartment 1 (closest to hitch) first to keep weight on the hitch. Unload compartment 2 first to keep weight on the hitch.

**⚠ WARNING**

**CRUSHING HAZARD**

Ensure that all bystanders, especially small children, are clear of work area. Ensure there is enough room and clearance to safely back up to the machine.

**IMPORTANT:**

- Locking plunger pin
- Anti-rotation chain
- Conveyor tube

must be locked in transport position at all times while towing.

1. Complete the Pre-Operation Checklist.
2. Use the trailer jack to lift the hitch above the height of the receiver on the tow vehicle.

**Note:**

The hitch height can be adjusted to ensure the trailer is level when attached.

3. Slowly back the tow vehicle until the hitch and ball are aligned.
4. Lower the hitch onto the ball.

Compartment 1 (closest to hitch)      Compartment 2 (rear of tender)



Fig 18 - Compartment position identification



Fig 19 - Conveyor tube transport lock w/ damper mechanism



Fig 20 - Trailer hitch with safety chains

5. Release the latch to lock the hitch around the ball
  - Insert a retainer clip, or pad lock to ensure the handle stays in the locked position.
6. Raise the jack and place it in its stowed position.
7. Attach the safety chain securely to the tow vehicle to prevent unexpected separation.
  - Cross the chains when attaching.
8. Connect the wiring harness for the lights and brakes.
9. Connect the break-away system cable to the tow vehicle.
  - Plug the key on the end of the cable into the receiving unit.
10. Route all the cables in a manner that will prevent snagging.
  - Be sure to provide slack for turning.

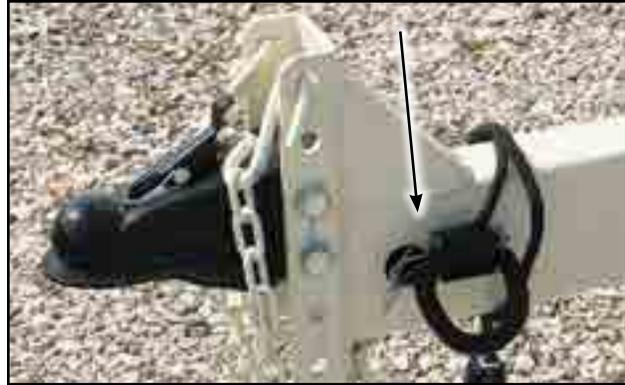


Fig 21 - Break-Away cable

### 3.6 ROLL-UP TARP

1. Using both hands, carefully unclip the holder and remove the crank handle.
2. Extend the crank rod to a comfortable operating position.



Fig 22 - Remove tarp crank handle

3. Roll the tarp to the fully opened position.



Fig 23 - Open tarp

4. Return the crank handle back into the holder and close to secure.

**IMPORTANT:**

Always keep the compartments covered when not being filled.



Fig 24 - Store tarp crank handle

**Note:**

Use the ratchet straps and cables to tension the roll tarp.  
Tighten both ends equally.



Fig 25 - Tarp tension ratchet straps

### 3.7 LOADING THE TENDER

#### NOTICE

##### UPENDING HAZARD

Tender must be connected to tow vehicle at all times during operation to avoid tipping backwards.

#### ⚠ WARNING

##### UPENDING HAZARD

Load compartment 1 (closest to hitch) first to keep weight on the hitch.  
Unload compartment 2 first to keep weight on the hitch.

1. Connect the seed tender to a tow vehicle of sufficient size to safely transport it.
2. Before loading the seed tender:
  - Make sure the two slide gates are fully closed. Gate stops must be in locked position.
  - Be sure the sample slide gate are closed.
3. Open the roll tarp.
4. Fill the front compartment first to maintain a positive tongue weight.
5. Fill the rear compartment.
6. Close the roll-up tarp and store the crank handle in the holder.

#### Note:

There are sample slide gates, in each compartment, to retrieve samples.



Fig 26 - Compartment slide gates

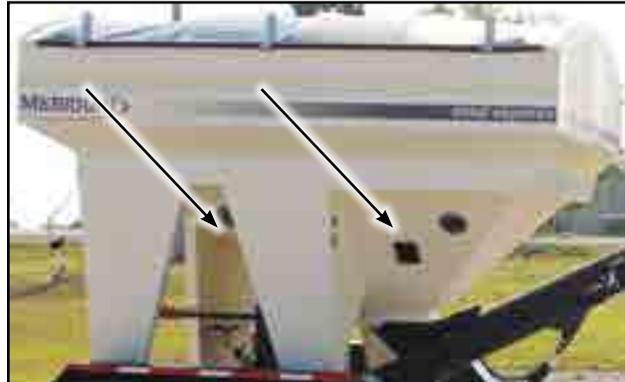


Fig 27 - Sample slide gates



Fig 28 - Close tarp, store handle

### 3.8 DELIVERING SEED TO PLANTER

#### DANGER

##### ELECTROCUTION HAZARD

Keep away from power lines.

- Be aware of your surroundings when raising or lowering the conveyor tube.
- Maintain at least 20 feet between the equipment and any electrical hazard.
- Contact with electricity can result in serious personal injury or death.

#### WARNING

##### UPENDING HAZARD

Always unload compartment 2 first to maintain a positive tongue weight. Negative tongue weight can cause the hitch to rapidly swing upward if not securely fastened to the tow vehicle, which can result in personal injury.

1. Before unloading, shut off engine on the tow vehicle, set the parking brake, and remove the ignition key.

#### NOTICE

##### EQUIPMENT DAMAGE HAZARD

An anti-rotation chain and plunger pin prevent the turret from moving side-to-side when being transported.

Detach both before rotating the conveyor to prevent damage.

2. Start the engine:
  - a. Open the Fuel Shut-Off valve.
  - b. To start a cold engine, CLOSE the choke.
  - c. Press the Engine Start button on the control panel, or the remote control.
3. Allow the engine to warm up for two to three minutes.
  - Gradually open the choke as engine warms.



Fig 29 - Engine



Fig 30 - Conveyor tube transport lock and damper mechanism



Fig 31 - Conveyor turret assembly and pivot platform

4. Move the Throttle lever to run the engine at full speed.
5. Release the conveyor tube:
  - Disconnect the damper mechanism and transport lock.
  - Unhook the anti-rotation chain.
  - Lift the locking plunger pin to move the turret assembly.
6. Swing the conveyor tube around.
  - Insert the locking pin into one of the slots in the pivot base to secure the tube and turret.
7. Lift or lower the conveyor tube into position.
8. Before operating the conveyor belt, adjust the speed using the flow control valve. Refer to page 3-5.
9. Position the discharge.
  - Extend the delivery spout to reach the planter's seed box.
10. Turn on the conveyor belt. Use the switch located at the end of the spout.
11. Open the slide gate on either compartment to fill the seeder.
12. **IMPORTANT:** Close the slide gate, before the planter box is full, to prevent spillage.
13. Run the belt to empty it, and to finish filling the seed box.
  - Turn off the conveyor belt before it overfills.
14. Turn OFF the engine.
  - Close the Fuel Shut-Off valve.
15. Retract and store the delivery spout.
16. Return the conveyor tube to the transport position and secure.
  - Insert the turret's lock pin.
  - Attach the anti-rotation chain.
  - Lock the damper mechanism to the conveyor tube.



Fig 32 - Anti-rotation chain



Fig 33 - Turret assembly locking plunger pin



Fig 34 - Open/close gates



Fig 35 - Secure conveyor tube for transport

### 3.9 UNPLUGGING

#### **WARNING**

##### ENTANGLEMENT HAZARD

- Do not operate with access door open.
- Do not place hands or fingers near rotating or moving parts.
- Do not operate without guard.
- Stop engine and remove key, before working on the machine.

#### **NOTICE**

Do not operate the conveyor when:

- It is plugged with excess seed
  - Hindered from moving by a foreign object.
- Continued operation can cause damage to conveyor or result in a broken conveyor belt.

If the conveyor tube becomes plugged:

1. Position the conveyor for easy access to both ends.
2. Stop the engine.
3. Remove the ignition key for safety.
4. Open the lower access door at the base of the conveyor.
5. Remove the spout to gain access if needed.
6. Clean out product and remove any obstruction.
7. Close and secure the access door.
  - Reattach the spout.

#### **Note:**

In some extreme case it may be necessary to remove the galvanized belt guards and/or the belt itself.



Fig 36 - Conveyor tube access door

### 3.10 STORAGE

#### SAFETY INSTRUCTIONS

##### PERSONAL INJURY HAZARD

- Store the tender in an area away from human activity.
- Do not permit children to play on or around the stored machine.
- Store the unit in a dry, level area. Support the frame with planks, if required.

After the season's use or when it will not be used for an extended period of time, the tender should be inspected and prepared for storage.

Repair or replace any worn or damaged components to prevent unnecessary downtime at the beginning of the next season.

1. Remove all product from the compartments and inside the conveyor tube.
2. Inspect all moving or rotating parts and remove any entangled material.
3. Check the condition of the conveyor belt.
4. Check hyd pump, engine shaft and spider.
5. Inspect and clean the turret and its wheels on pivot platform.
6. Close the engine Fuel Shut-Off valve.
7. Remove the ignition key and store securely.
8. Remove the battery.
  - Be sure it is fully charge, check monthly.
  - Store it inside.
  - Do not sit battery on a cold, concrete floor.
9. Thoroughly wash the tender to remove all dirt, mud, debris and residue.
  - Wash around the tender and inside the compartments.
  - Clean inside the conveyor tube, and belt.

10. Lubricate fittings and conveyor belt roller bearings.

Make sure that all grease cavities have been filled with grease to remove any water residue from the washing. This also protects the bearing seals.

11. Touch up paint nicks and scratches to prevent rusting.
12. Close the roll tarp to protect the compartments.
13. Store the tender inside if possible.
  - If it must be outside, cover with a waterproof tarp and tie down securely.
14. If the tender is not attached to a trailer, support the frame with planks to raise the unit off the ground.

#### Removing From Storage:

When removing the tender from storage, in preparation for work:

15. Remove the tarp, if covered.
16. Review and follow the Pre-Operation Checklist.
17. Review and follow the Service Intervals in the Maintenance section.

#### IMPORTANT:

If the machine has been stored for more than twelve months, warm the engine by running it for two to three minutes. Then drain the oil.

Change the oil while the oil is warm to remove any condensation.

## Section 4: SERVICE AND MAINTENANCE

### WARNING

- Review the Operator's Manual and all safety items before maintaining the tender.
- Follow good shop practices:
  - Keep service area clean and dry.
  - Be sure electrical outlets and tools are properly grounded.
  - Use adequate light for the job at hand.
- Lock-Out, Tag-Out tender operation.
- Clear the area of bystanders, especially children, before repairing or adjusting.
- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
- Before servicing, repairing or unplugging; stop engine, remove ignition key and wait for moving parts to stop.
- Ensure there is plenty of ventilation. Never operate the engine in a closed building. The exhaust fumes may cause asphyxiation.
- Place stands or blocks under frame before working beneath the unit.
- When maintenance is complete, before resuming work, install and secure all guards.
- Keep safety decals clean. Replace any decal that is damaged or not readable.

By following the operating instructions, in conjunction with a good maintenance program, your tender will provide many years of trouble free service.

Original Equipment Manufacturer (OEM) literature, for components of this tender, are stored in the document holder, attached to the tender frame. For more specific information contact the manufacturer directly.

### 4.1 FLUIDS AND LUBRICANTS

#### **Fuel and Engine Oil:**

Refer to the engine manual for specific information:

- Fuel tank capacity: 6.4 US quarts (6.1 liters)
- Crankcase: 1.16 US quarts (1.1 liters)

#### **Grease:**

Use an SAE multipurpose high temperature grease with extreme pressure (EP) performance. Also acceptable, SAE multipurpose lithium based grease.

#### **Hydraulic Oil:**

Use ISO grade 32 fluid (AW HVI or comparable).

- Oil Reservoir holds 10 US Gallon (37.8 Liters)

**Storing Lubricants:**

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants.

Store them in an area protected from dust, moisture and other contaminants.

**4.1.1 Greasing:**

**NOTICE**

**GREASING HAZARD**

Too much grease causes excessive overheating. Under-greasing accelerates equipment wear.

No grease should be seen around bearings. If there is, too much grease was applied and the seal has ruptured!

**IMPORTANT:**

Grease bearings only one pump per month under normal usage conditions.

Bearing greasing frequency should be determined by usage and conditions.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. All bearings are greasable, but require only minimal grease.
  - Recommended greasing is one small stroke every month. Be careful not to over-grease as this may push the seal out.
4. Replace and repair broken fittings immediately.
5. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

## 4.2 SERVICING INTERVALS

The following recommended periods are based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication and oil changes.

Schedules may vary depending on options and engine model contained in your equipment.

### **WARNING**

#### FIRE HAZARD

Gasoline is a highly combustible fuel. Improper use, handling, or storage of gasoline can be dangerous. Never touch or fill a hot engine.

- DO NOT fill fuel tank near an open flame, while smoking or while engine is running.
- DO NOT fill tank in an enclosed area with poor ventilation.
- Wipe up spills immediately.

#### **IMPORTANT:**

Refer to the engine manual for complete servicing and maintenance details.

The axle is built by Dexter Axle Company. Refer to their online maintenance information.



Fig 37 - Engine air filter

#### **4.2.1 Every 10 Hours or Daily:**

1. Check engine oil level.
  - Fill as needed.
2. Check engine fuel level.
  - Add as needed.
3. Check hydraulic oil level and filter.
  - Add as needed.
4. Test trailer break-away system.
5. Inspect tires.
6. Check wheel bolt torque at 10, 25, and 50 miles.
7. Check conveyor belt tension and alignment.
8. Inspect all conveyor belt rollers and bearings for play and wear.

#### **4.2.2 Every 50 Hours or Weekly:**

9. Clean or replace the engine air filter element.
  - Clean or replace the foam filter.
  - Replace the paper air filter, as required.
10. Change engine oil.
11. Inspect the hydraulic pump-to-engine shaft coupling and spider.
12. Check the tire pressure. Inflate tires to the recommended pressure stated on the tire.

**4.2.3 Every 100 Hours or Monthly:**

13. Grease conveyor belt roller bearings.
14. Grease the hydraulic cylinder.
15. Check wheel nuts.
  - Torque to 90-120 ft-lb
16. Adjust the trailer brakes.
17. Inspect tires for wear.
18. Grease the axles.
19. Inspect brake magnets for wear.
20. Inspect suspension parts for wear.
21. Check battery electrolyte levels, and clean terminals to remove dirt and corrosion.

**4.2.4 Every 200 Hours or Annually:**

22. Change the engine oil.
23. Check hydraulic oil for contaminants.
24. Check hydraulic hoses and fittings for wear.
25. Check that battery retains maximum charge.
26. Inspect brake lining wear:
  - Check brake cylinder for leaks.
  - Inspect brake wiring for damage.
27. Repack the wheel bearings:
  - Check for excessive play in the bearings.
  - Grease the wheel bearings.
28. Check the wheel hub for wear.
29. Inspect axle grease seal for leakage.
30. Inspect springs for any wear or loss of arch.

31. Inspect all electrical wiring connections for looseness or corrosion.
  - Tighten and/or seal, as necessary.
32. Check trailer axle, frame, hitch and tender hold-down bolts.
  - Refer to Section 6.2 Bolt Torque.
33. Thoroughly clean the tender.
  - Wash to remove all dirt, mud, debris and residue.
  - Wash around and inside the intake hopper and chutes.
  - Clean inside the conveyor tube, and belt.



Fig 38 - Trailer wheels



Fig 39 - Discharge roller bearing

## 4.3 MAINTENANCE PROCEDURES

### 4.3.1 Engine Maintenance:

Refer to the engine manual for complete details.

#### SAFETY INSTRUCTIONS

##### REFUELLING HAZARD

- Handle fuel with care. It is highly flammable.
- Allow engine to cool for five minutes before refuelling. Clean up spilled fuel before restarting engine.
- Do not refuel the machine while smoking or when near open flame or sparks.
- Fill fuel tank outdoors.
- Prevent fires by keeping machine clean of accumulated trash, straw, grease, and debris.

#### Approved Fuel:

Use unleaded automotive gasoline for all operating conditions. The fuel tank capacity is 6.4 US quarts (6.1 liters).

#### Engine Oil:

Use a typical SAE 10W-30 or 10W-40 multiviscosity motor oil for normal operating conditions. Consult your engine manual for the recommended oil in cold temperatures. The crankcase capacity is 1.16 US quarts (1.1 liters).

#### Change Engine Oil:

#### ⚠ CAUTION

BURN HAZARD  
Hot engine oil can burn skin.

1. Review the engine manual.
2. Allow the engine to cool before changing oil. Draining works best when the oil is warm.
3. Be sure the engine key switch is in the OFF position and the fuel valve is turned OFF.
4. Place a pan under the drain plug. Remove the drain plug and allow the oil to drain for ten minutes.
5. Reinstall the drain plug and tighten.
6. Dispose of the oil in an approved container.  
- Follow industrial disposal regulations.
7. Fill the engine with SAE 10W-30 oil for general usage. If the engine is operated in more extreme conditions, refer to the engine manual for oil recommendations.
8. Run the engine for one minute and recheck the oil level. Add oil, as needed.

#### Air Cleaner and Filter:

Check and remove any debris from the foam cover of the air cleaner daily before each use. Thoroughly wash or replace the foam cover every three months or 50 hours of operation (clean it more frequently when used in dusty conditions).

### 4.3.2 Hydraulic System:

Hydraulic oil and filter change is recommended annually or every 400 hours of operation using an AW HVI Hydraulic ISO 32 oil.

#### **IMPORTANT:**

Never run the hydraulic pump unless the hydraulic oil reservoir is full.

1. Place a large waste oil container under the hydraulic reservoir drain port.
2. Remove the drain plug from the reservoir.
  - Allow it to drain completely.
3. Remove and replace the oil filter.
  - Apply a thin coat of oil to the rubber seal of the new oil filter. Hand-tighten only.
4. Re-install the drain plug.
5. Fill the tank to the fill line at the top of the gauge with AW HVI Hydraulic ISO 32 oil.
  - Oil Reservoir holds 10 US Gallon (37.8 L)
6. Replace the cap.
7. Start the engine and cycle all the cylinders several times.
8. Recheck the oil level in the reservoir and add as needed.



Fig 40 - Hydraulic oil reservoir and filter



Fig 41 - Hydraulic monoblock valve and solenoid

### Hydraulic Monoblock Valve and Solenoid:

#### **IMPORTANT:**

The monoblock valve contains pressure relief valves and solenoids which have been factory installed and set up for the most efficient operation. DO NOT adjust relief valves or replace solenoids. If the unit is not operating properly, refer to the Troubleshooting section, call an authorized dealer, or call the factory.

**Hydraulic Pump Coupling:**

Changing the pump coupling does not require the hydraulic tank to be drained. If the pump must be disconnected, be prepared to catch any oil that remains in the two hydraulic hoses.

1. Remove the orange protective cover from the pump assembly.
2. Remove the two pump mounting bolts.
3. Pull the pump away from the adapter to separate the coupling halves.
4. Loosen the setscrews in each coupling half and remove the old couplings.
5. Install new couplings on the engine shaft and the pump shaft. When completely assembled, the shaft length in each coupling half should be the same. Tighten the pump end setscrews to 78 to 87 lb-in. Do not tighten the engine shaft coupling at this time.
6. Place the urethane spider in the pump coupling. Align and install the pump and pump coupling.
7. Tighten the pump bolts to a “Grade 5” bolt torque for that size of bolt. Refer to Section 6.2 Bolt Torque.
8. Slide the engine coupling against the other coupling half and tighten the setscrew.
9. Replace the orange protective cover.

**Note:**

If the adapter plate was removed, tighten the four retaining bolts to “Grade 5” bolt torque for that size bolt.



Fig 42 - Engine and hydraulic pump



Fig 43 - Hydraulic coupler

#### 4.3.3 Conveyor Belt Tension:

1. Loosen the locknut on each side of the hopper roller.
2. Tighten the two tension bolts equally.
  - While holding the tension bolt in place, retighten both locking nuts.
3. Start the conveyor and make sure the belt is tracking in the center of the hopper roller.
  - If the belt is not tracking properly, use the Belt Tracking alignment procedure to correct the problem.



Fig 44 - Hopper roller tension bolt

#### 4.3.4 Conveyor Belt Alignment:

##### **IMPORTANT:**

The hopper roller at the bottom of the conveyor must be square (roller shaft must be equal distance from end of unit) for the belt to track properly.

##### **Note:**

If belt is not tracking correctly, it will move to the loose side. Tighten loose side or loosen tight side.

1. Adjust one side at a time.
  - Loosen the locking nuts on the adjusting bolt.
2. Tighten or loosen the bolt on one side, to correct the tracking.
3. Using a wrench, hold the adjusting bolt in place while tightening the locking nut against the housing.
4. Slowly, test run the conveyor belt.
  - Check if the belt is tracking centered.
  - Re-adjust, if needed.



Fig 45 - Discharge roller adjustment bolt, one on each side

#### 4.3.5 Conveyor Belt Replacement:

1. Position tube for easy access to both ends.
2. Open the access door.
3. Loosen the hopper roller adjusting bolts.
4. If the old belt can be used to thread the new belt, continue with this step; if not, continue to Step 5.
  - a. Remove belt guard to access belt lacing.
  - b. Disconnect the lacing.
  - c. Attach the replacement belt to the end of the old conveyor belt.
  - d. Slowly pull the old belt out of the spout, threading the new one into position.
  - e. Disconnect the old belt and connect the lacing of the new belt together.
5. If the old belt cannot be used:
  - a. Remove the discharge spout.
  - b. Remove the galvanized belt guards.
  - c. Thread the new belt through the tube.
  - d. Connect the two ends of the belt lacing.
6. Push the lacing cable through the lacing.
  - a. Cut off excess cable.
  - b. Crimp the lacing at one end to lock cable in place.
  - c. Cut and taper the corners, of the trailing end of the belt, so they don't catch.
7. Tighten the two hopper roller tension bolts.
  - Refer to Section 4.3.3
8. Start the engine. Slowly run the conveyor to make sure the belt tracks properly.
  - If the belt does not track properly, refer to Section 4.3.4.
9. Recheck the tension and alignment of the belt frequently during the first ten hours of operation and adjust, as needed.

**Note:**

The belt normally seats itself during the first 10 hours of operation and can be checked weekly



Fig 46 - Access door



Fig 47 - Thread lacing cable



Fig 48 - Crimp lacing and taper belt corner



Fig 49 - Conveyor belt lacing

### 4.3.6 Trailer Break-Away System:

#### Testing the Battery:

1. Disconnect the trailer plug from the tow vehicle; otherwise, you are testing the tow vehicle's battery.
2. Press the green TEST button on the control box located inside the frame of the trailer.
  - The green indicator light will illuminate if the battery is fully charged.
  - If the yellow or red indicator lights illuminate, the unit's battery should be charged before towing the trailer.

#### **IMPORTANT:**

If the battery is weak or dead (red indicator, even after charging), as indicated by the indicator light, the battery must be replaced.

3. Plug the trailer into the tow vehicle. The yellow "Charging" light should be ON.
4. Test the system by pulling the pin out of the break-away switch. The battery will activate the brakes. (**Note:** Do not use this kit as a parking brake). The battery should be charged and tested prior to each trailer outing.

#### Charging Battery:

The battery in the break-away system is rechargeable. If the battery will not hold a charge, replace the battery.

#### Replacing Battery:

The battery in the break-away system is replaceable. If the battery will not hold a charge, replace the battery. Contact the OEM supplier for a replacement battery.



Fig 50 - Break-Away system control box



Fig 51 - Break-Away cable on hitch tongue

**4.3.7 Axle, Trailer, Frame Bolts:**

Check the axle, frame, trailer and tender hold-down bolt torque at least once per year.

**4.3.8 Wheel Bolt Torque Requirements:**
 **WARNING**
**EXPLOSIVE FORCE HAZARD**

To prevent injury due to possible dangerous separation of wheels from the axle, the wheel nuts must be maintained at the proper torque levels. Properly tightened wheel nuts prevent loose wheels and broken studs.

Initially check the wheel bolt torque at 10, 25, and 50 miles, as well as after each wheel removal.

**Note:**

Torque wrenches are the best method to ensure the proper amount of torque is being applied to a wheel nut.

1. Tighten the wheel nuts in three stages:
  - First stage: 20 to 25 foot pounds.
  - Second stage: 50 to 60 foot pounds.
  - Third stage: 90 to 120 foot pounds.
2. Tighten the wheel nuts in a clockwise, cross-axle alternating pattern.

Also, check conveyor tube and bearing bolts.

**4.3.9 Tires:**

Check the tires for normal and/or abnormal tire wear. Replace tires that are damaged or worn beyond normal tread life.

Replace the tires with Meridian® part number 18131 or an equivalent tire:

3T235/80R16

TR643

Load Range E

For Trailer Service Only

**4.3.10 Wheel Bearings:**

Each axle is equipped with a grease zerker under the center dust cap of the wheel. Add grease sparingly to the wheel bearings, using only wheel bearing grease. The wheel bearings should be repacked annually. Check for excessive end play and tighten, if necessary.

**IMPORTANT:**

Over greasing wheel bearings can cause them to overheat, resulting in damage and/or failure.

**4.3.11 Welding Repairs:**

Repair welding must be done with care and with procedures that may be beyond the capabilities of the ordinary welder.

Before performing any type of welding repair to the seed tender, contact Meridian® for approval.

**IMPORTANT:**

Anyone performing a welding repair should be certified in accordance to the American Welding Society (AWS) standards.



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### 4.4 SERVICE RECORD

See Section 4.1 for service intervals. This section is only a general guide under good conditions. Under extreme, or unusual circumstances adjust service timing accordingly.

For more detailed schedule pertaining to the specific engine model, consult its manual.  
Copy this page to continue record.

| Maintenance                             | Hours       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|   | Serviced By |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>10 Hours or Daily</b>                |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Check Engine Fluid Levels               |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Check Hydraulic Oil Level. Check Filter |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Test Break-Away System                  |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Check Tires and Wheel Bolt Torque       |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Check Belt Tension and Alignment        |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Inspect Rollers and Bearings            |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>50 Hours or Weekly</b>               |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Clean/Replace Engine Air Filter         |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Change Engine Oil                       |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Inspect Hydraulic Pump Coupling         |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Check Tire Pressure                     |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>100 Hours or Monthly</b>             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Grease Bearings and Cylinders           |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Torque Wheel Nuts                       |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Adjust the Trailer Brakes               |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Inspect Tires for Wear                  |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Grease Axles                            |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Inspect Brake Magnets and Suspension    |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Check Battery Electrolyte Levels        |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>200 Hours or Annually</b>            |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Change Engine Oil                       |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Check Hydraulic Oil for Contaminants    |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Inspect Hydraulic Hoses and Fittings    |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Inspect Tires and Brake Lining          |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Repack Wheel Bearings                   |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Inspect Wheel Hubs                      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Inspect Axle Grease Seals and Springs   |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Inspect Electrical Wiring               |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Check Trailer Axle, Frame, Hitch Bolts  |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Thoroughly Clean Tender                 |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## 4.5 ORDERING PARTS

Always give the Model Number and Serial Number when ordering parts.

To get your parts promptly the following information will be required:

- The part name and number
- Your Name, Address, Town, State/Province, Country
- Complete information for shipping

Confirm all phoned in orders in writing. If Purchase Orders are required please note the number on the written order.

Unless claims for shortages or errors are made immediately upon receipt of goods, they will not be considered.

Inspect all goods received immediately upon receipt. When damaged goods are received, insist that a full description of the damage is made with the carrier against the freight bill. If this is insisted upon, full damage can be collected from the transport company.

No responsibility is assumed for delay or damage to merchandise while in transit. Dealers responsibility ceases upon delivery or pickup of shipment from or to the transportation company. Any freight damage claims must be made with the transportation company, not with the dealer.

## Section 5: TROUBLESHOOTING

In the following trouble shooting section, we have listed many of the problems, causes and solutions to the problems which you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this trouble shooting section, please contact your authorized dealer, distributor or the factory. Before you call, please have this Operator's Manual and the serial number from your machine ready.

### ***Problem***

| <b>Possible Cause</b> | <b>Possible Solution</b> |
|-----------------------|--------------------------|
|-----------------------|--------------------------|

### *Engine will not start*

|                         |                             |
|-------------------------|-----------------------------|
| No fuel                 | Fill the fuel tank          |
| Low engine oil          | Fill the crankcase with oil |
| Cold engine             | Open choke                  |
| Ignition key switch off | Turn ignition key switch on |
| Battery dead            | Recharge or replace battery |
| Engine problem          | Refer to engine manual      |

### *Conveyor will not start*

|                                |  |
|--------------------------------|--|
| No power and belt not rotating | Start engine and increase speed above 1400 RPM |
| Engine to pump coupler         | Repair or replace                              |
| Belt tension                   | Increase belt tension                          |
| No hydraulic oil in reservoir  | Check oil level                                |

### *Hydraulic are not working properly*

|   |   |
|---|---|
| Hydraulic valve or pump is malfunctioning | Ensure hydraulic pump is working properly and hydraulic tank is filled with oil |
|---|---|

### *Electrical switch not working*

|                          |  |
|--------------------------|--|
| Battery or battery cable | Check battery cable and make sure battery is fully charged |
| Intermittent function    | Loose connection at the valve coil.                        |
| Improper ground          | Check for proper grounding electrical circuit              |



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## Section 6: REFERENCE

For information not included here, or for a digital copy of this manual, please call your dealer, or Meridian Manufacturing Inc. directly for assistance. Visit our website at: [www.meridianmfg.com](http://www.meridianmfg.com).

**Note:**

The drawings and schematics are contained in a separate parts book.

### 6.1 SPECIFICATIONS

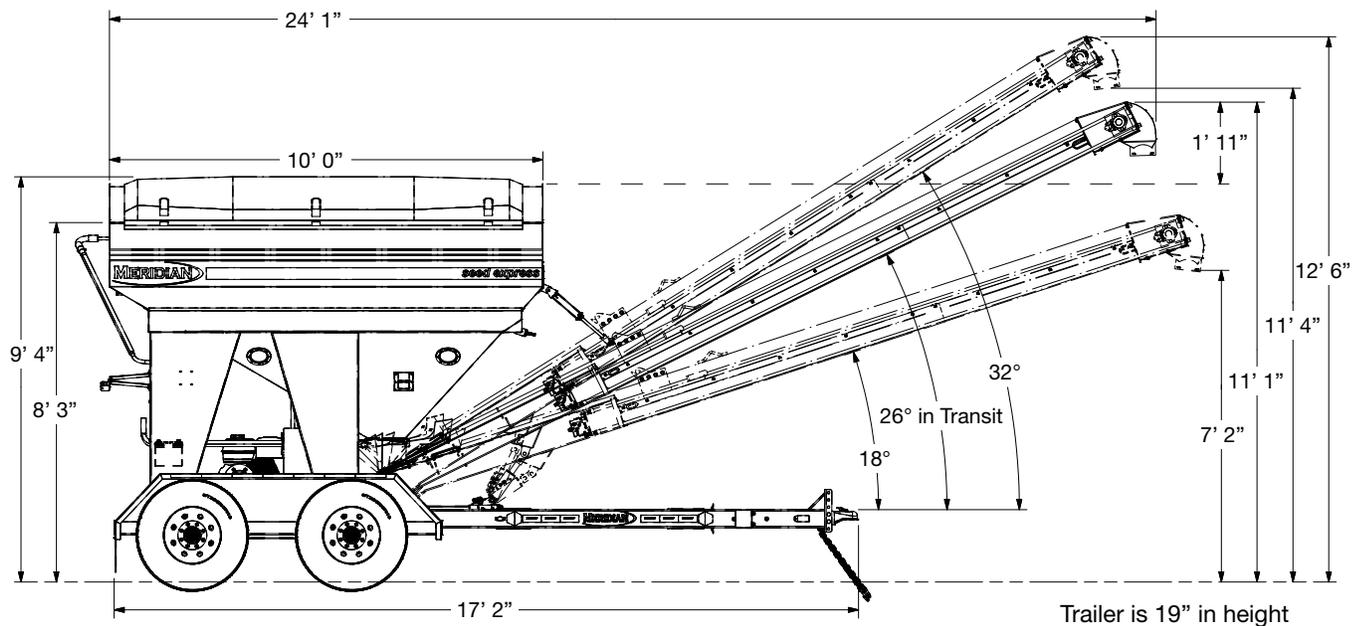


Fig 52 - Measurements of 240 FF tender

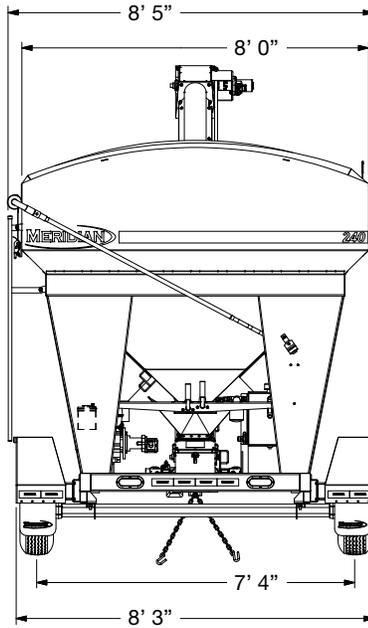


Fig 53 - Measurements of 240 FF tender

## 6.2 BOLT TORQUE

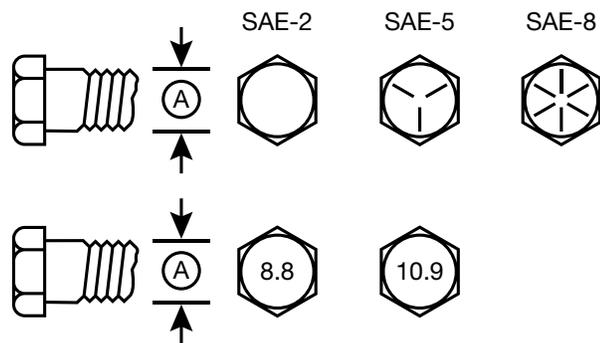
The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

Table 1 - English Torque Specifications

| BOLT DIA. "A" | BOLT TORQUE*       |     |                    |     |                    |     |
|---------------|--------------------|-----|--------------------|-----|--------------------|-----|
|               | SAE 2 (Nm) (ft-lb) |     | SAE 5 (Nm) (ft-lb) |     | SAE 8 (Nm) (ft-lb) |     |
| 1/4"          | 8                  | 6   | 12                 | 9   | 17                 | 12  |
| 5/16"         | 13                 | 10  | 25                 | 19  | 36                 | 27  |
| 3/8"          | 27                 | 20  | 45                 | 33  | 63                 | 45  |
| 7/16"         | 41                 | 30  | 72                 | 53  | 100                | 75  |
| 1/2"          | 61                 | 45  | 110                | 80  | 155                | 115 |
| 9/16"         | 95                 | 60  | 155                | 115 | 220                | 165 |
| 5/8"          | 128                | 95  | 215                | 160 | 305                | 220 |
| 3/4"          | 225                | 165 | 390                | 290 | 540                | 400 |
| 7/8"          | 230                | 170 | 570                | 420 | 880                | 650 |
| 1"            | 345                | 225 | 850                | 630 | 1320               | 970 |

Table 2 - Metric Torque Specifications

| BOLT DIA. "A" | BOLT TORQUE*     |      |                   |      |
|---------------|------------------|------|-------------------|------|
|               | 8.8 (Nm) (ft-lb) |      | 10.9 (Nm) (ft-lb) |      |
| M3            | 0.5              | 0.4  | 1.8               | 1.3  |
| M4            | 3                | 2.2  | 4.5               | 3.3  |
| M5            | 6                | 4    | 9                 | 7    |
| M6            | 10               | 7    | 15                | 11   |
| M8            | 25               | 18   | 35                | 26   |
| M10           | 50               | 37   | 70                | 52   |
| M12           | 90               | 66   | 125               | 92   |
| M14           | 140              | 103  | 200               | 148  |
| M16           | 225              | 166  | 310               | 229  |
| M20           | 435              | 321  | 610               | 450  |
| M24           | 750              | 553  | 1050              | 774  |
| M30           | 1495             | 1103 | 2100              | 1550 |
| M36           | 2600             | 1917 | 3675              | 2710 |



Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

\* Torque value for bolts and capscrews are identified by their head markings.

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# LIMITED WARRANTY STATEMENT

Meridian Manufacturing Inc. (hereinafter referred to as Meridian) warrants all products sold hereunder to be free from defects in manufacturing and workmanship, under normal and proper storage, service, and use, for a period of 2 (TWO) years: the first year - full warranty on Parts and Labor, the second year - Parts Only; when used in accordance with the manufacturer's guidelines, from the first date of use. Our liability extends only to the repair or replacement of the defective parts. No labor charge for the correction of the defect, by repair or replacement, will be paid by Meridian, unless prior written authorization has been granted by Meridian. Units that have been in service, then sold will carry the remainder of the 2 year warranty from Meridian.

This warranty is not applicable to, and Meridian makes no warranty with respect to, any parts not installed by Meridian or its representatives.

No implied warranty shall apply beyond the aforementioned warranty period. The foregoing warranty is exclusive of all other statutory, written or oral warranties, and no other warranties of any kind, statutory or otherwise, are given or herein expressed.

Meridian will not, under any circumstance; whether as a result of breach of contract, breach of warranty, tort, strict liability or otherwise; be liable for consequential, incidental, special or exemplary damages. This includes, but not limited to: loss of profits, loss of use or damage to any property or equipment, cost of capital, cost of substitute product, facilities or services, down time costs or claim of claimant's customers. Meridian liability for all claims of any kind or for any loss or damage arising out of, resulting from or concerning any aspect of this warranty, or from the products or services furnished hereunder; shall not exceed the purchase price allocable to the specific product which gives rise to the claim. Any or all such liability shall terminate upon the expiration of the warranty set forth above.

Certain chemicals may exist in the end user's locations, which may release airborne contaminants that can directly impact the integrity of essential paint and components. Exposure of these chemicals, to components with different chemical combinations may result in significant damage to paint, decals and mechanical failure. Meridian warranty does not cover these conditions unless otherwise noted.

All Meridian products that fall under warranty and needs service must be brought back to the dealer or point of purchase, unless otherwise agreed upon by the Meridian Warranty Department.

Register your product at: [www.meridianmfg.com](http://www.meridianmfg.com)  
For warranty information, email: [warrantyusa@meridianmfg.com](mailto:warrantyusa@meridianmfg.com) | phone: (800) 437-2334

## WARRANTY REQUEST PROCEDURE

1. The product must be registered with Meridian Manufacturing Inc.
2. The purchaser must contact the dealer, from where the unit was purchased, immediately upon discovery of any defects.
3. A completed Warranty Request (Claim) Form must be submitted by the dealer to the Meridian's warranty representative for review and any subsequent course of action.
  - Warranty requests must be completed with ALL required information in order it to be considered for approval.
  - Send photographs of the entire piece of equipment, and of the specific area of concern.
4. Warranty repair work will only be performed by Meridian or an approved representative of Meridian. Warranty work completed prior to Meridian's approval will NOT be honoured. Failure to follow this procedure may affect any or all of this warranty.
5. All warranty requests will be adjudicated at the sole discretion of Meridian and in accordance with the terms and conditions of the warranty.



(800) 437-2334 | [www.meridianmfg.com](http://www.meridianmfg.com) | [tenders@meridianmfg.com](mailto:tenders@meridianmfg.com)