

# MERIDIAN<sup>®</sup>

## 990 BASIC • 990 MAX FUEL TRAILER



[meridianmfg.com/fuel-trailers](http://meridianmfg.com/fuel-trailers)



## OPERATOR'S MANUAL



## SIGN-OFF FORM

Meridian Manufacturing Inc. follows the general Safety Standards specified by the American Society of Agricultural Engineers (ASAE), and the Occupational Safety and Health Administration (OSHA). Anyone who will be using or maintaining this fuel trailer must read and clearly understand ALL Safety, Operating and Maintenance information presented in this manual.

Review this information annually, before the season start-up.

Make these periodic reviews of SAFETY and USAGE a standard practice for all of your equipment.

This form is provided for your record keeping to show that all personnel who will be working with the equipment have read and understand this manual. Copy this page to continue record.

[illegible]

## 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 \_\_\_\_\_ General Purpose: ☐ Private ☐ Commercial

**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](http://www.meridianmfg.com) [iowa\\_warranty@meridianmfg.com](mailto:iowa_warranty@meridianmfg.com)

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

- ☐ If equipped, check gasoline engine fuel level
- ☐ If equipped, check gasoline engine oil level
- ☐ If equipped, start gasoline engine
- ☐ Inspect brake and lighting wiring harness connection
- ☐ Check air pressure in tires
- ☐ Make sure electric brakes are in working condition
- ☐ Make sure all guards/shields are installed correctly
- ☐ Make sure all safety signs are installed and legible
- ☐ Make sure all four 1993 Diesel Fuel Placards are installed
- ☐ Reectors and lights must be clean and working
- ☐ Inspect customer's hitch for 2 -5/16" ball
- ☐ Verify receipt of all options ordered
- ☐ Make sure hitch-to-tongue bolts are tight
- ☐ Make sure safety chains are properly attached and are in good working condition
- ☐ Wheel nuts/bolts must be tightened to proper torque on all wheels
- ☐ Wiring harness plug must be in working condition and fits into tow vehicle's receptacle
- ☐ Make sure breakaway cable and pin is supplied with trailer
- ☐ Make sure battery is fully charged and in good working order
- ☐ Make sure license plate light is operating
- ☐ Make sure turn signal lights are operating
- ☐ Make sure brake lights are operating
- ☐ Verify that tow vehicle is large enough to safely tow the trailer
- ☐ Make sure owner is instructed to check wheel bolt/nut torque at 5, 10, 25, and 50 miles; then check annually
- ☐ Review safety and operating instructions with owner

**CERTIFICATE OF ORIGIN**



MERIDIAN MANUFACTURING INC.  
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[www.meridianmfg.com](http://www.meridianmfg.com) [iowa\\_warranty@meridianmfg.com](mailto:iowa_warranty@meridianmfg.com)

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® Fuel Trailer. This equipment has been designed and manufactured to meet the exacting standards of the agricultural industry. This fuel trailer is designed to transport diesel fuel and diesel exhaust fluid (DEF) to your machinery.

Safe, efficient, and trouble-free operation of your Fuel Trailer requires that you, and anyone else who will be operating or maintaining the equipment, read and understand the Safety, Operation, Maintenance, and Troubleshooting information contained within this Operator's Manual.

Keep this manual for future reference. Call your dealer, distributor or Meridian if you need assistance, information or 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 equipment design and specifications provided herein without any preliminary notice.

### OPERATOR ORIENTATION

The directions; left, right, front, and rear, as mentioned throughout this manual, are as seen from the truck drivers' seat and facing in the direction of travel.

### SERIAL NUMBERS

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

Use the space provided for easy reference:

Trailer VIN Plate No: \_\_\_\_\_

Product Serial No: \_\_\_\_\_

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

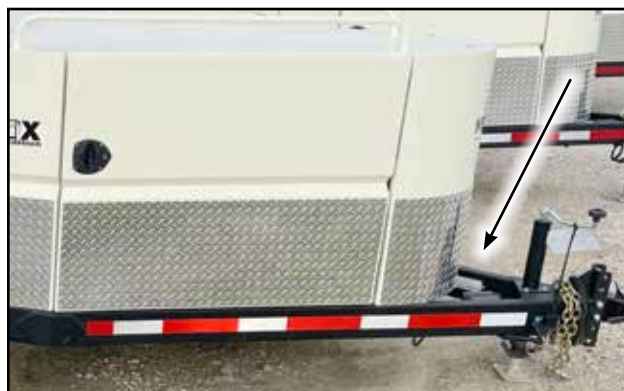


Fig 1 - Trailer VIN Plate location



Fig 2 - Engine serial number located behind key switch

## PATENT INFORMATION

Meridian Manufacturing Inc. 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 see our website:

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



Fig 3 - Meridian patent logo

## DISPOSAL OF EQUIPMENT AT END OF USEFUL LIFE

This fuel trailer has been designed for the specific purpose of transporting diesel fuel and diesel exhaust fluid (DEF) to your machinery using country roads, local highways, and on agricultural farm land. When this unit is no longer capable of performing its designed purpose, it should be dismantled and scrapped. Do not use any materials or components from this unit for any other purpose.

## BEFORE STARTING GAS ENGINE

Before starting the gasoline engine for the first time, check the engine oil level. Add oil as necessary. Operating the engine without oil will damage the engine and void the warranty.

### NOTICE

Check the engine oil level and add as needed.



Fig 4 - Engine Oil Caution card

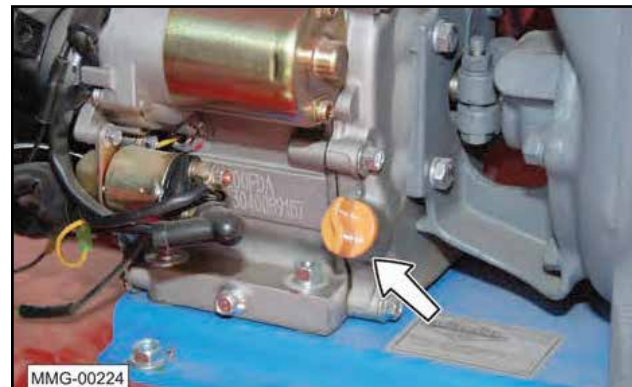


Fig 5 - Check engine oil

## 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:

**ATTENTION!  
BECOME ALERT!  
YOUR SAFETY IS INVOLVED!**

The Safety Alert Symbol identifies important safety messages on the fuel trailer 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® Fuel Trailer. 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 using the trailer.

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.

- Trailer owners must give instructions to operators or employees before allowing them to use the machine.
  - Procedures must be reviewed annually thereafter, as per OSHA (Occupational Safety and Health Administration) regulation 1928.57.
  - The operator must be responsible, properly trained and physically able. They should be familiar with farm machinery in general.
- Think SAFETY! Work SAFELY!

## 2.2 GENERAL SAFETY

- Read and understand the Operator's Manual and all safety decals before operating, filling, towing or maintaining this fuel trailer.



This fuel trailer was designed for a specific application; transporting diesel fuel and diesel exhaust fluid (DEF). DO NOT modify or use this trailer for any application other than which it was designed.

Trailers that are filled or operated improperly or by untrained personnel can be dangerous, exposing themselves and/or bystanders to possible serious injury or death.

- Clear the area of children, specators or bystanders, before refueling.

- 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.



- Wear appropriate 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 trailer.
  - Consult your doctor about operating machine while taking prescription medications.
- Review safety related items annually with all personnel who will be using or maintaining the trailer.

## 2.3 EQUIPMENT SAFETY GUIDELINES

- Safety of the workers and bystanders is one of the main concerns when designing and developing this trailer. 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.
- In order to provide a better view, certain 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 usage.
- 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 fuel trailer includes safety decals and equipment.



## 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.
- 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 10°C (50°F).
  - 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 fuel trailer. The position of decals may vary depending on the machine's options.

- Decals are not shown at actual size.



**REMEMBER** - If safety decals have been damaged, removed, become illegible, or parts were replaced without signage, new ones must be applied. New decals are available from your authorized dealer.

## 2.6 WORK PREPARATION

- Never use the trailer and its engine until you have read all equipment manuals, and understand the information.

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



They are recommended during installation, placement, operation, maintenance and removal of all 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 all machinery are 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 all equipment for any loose bolts, worn parts, cracks, leaks or frayed belts. Make the necessary repairs.
  - Always follow the maintenance instructions.

## 2.7 INSTALLING 1993 DIESEL FUEL PLACARDS

### WARNING

#### FUEL PLACARD INSTALLATION

Before transporting fuel, diesel fuel placards must be displayed on all four sides of trailer.

Fuel trailers are shipped with four diesel fuel placards which are not installed.

- Federal regulations require that the placards be installed before filling tank with diesel fuel.
- Install one placard on each of the four sides.

### SAFETY INSTRUCTIONS

- Install placards prior to filling the fuel tank with diesel fuel.
- Trailers that have never been filled with fuel do not require the placards in order to be towed.

## 2.8 OPERATING SAFETY

- Make sure that anyone who will be using the trailer or working on or around it reads and understands all the operating, maintenance and safety information in the operator's manual.



- Keep all bystanders, especially children, away from the trailer when filling or refueling is being done, or when authorized personnel are carrying out maintenance work.
- Keep working area clean and free of debris to prevent slipping or tripping.
- Keep hands, feet, hair, and clothing away from rotating parts on the machinery being refueled.
- Do not place hands, fingers, or arms between moving parts.
- Stay away from overhead power lines. Electrocution can occur without direct contact.
- Use care when climbing on machinery to prevent slipping or falling.
- Know and follow applicable national, state, and local safety codes concerning safe handling of petroleum fuels.



- Gasoline is a highly flammable fuel. The improper use, handling, or storage of gasoline can be dangerous.
  - Never fill a hot engine.
  - DO NOT fill the engine's fuel tank near an open flame while smoking or while engine is running.
  - DO NOT fill tank in an enclosed area with poor ventilation.
  - Clean up any gasoline spills immediately.




- Before filling the trailer, make sure the engine of the tow vehicle is stopped, the transmission is placed in park, the key is removed, and the parking brake is set.
- Only store gasoline in containers with approved labels, as required by federal or state authorities.
  - Never store gasoline in the front compartment of the trailer.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine.
  - Be careful not to touch the muffler while it is hot.
  - Let the engine cool before storing it indoors.
- Exhaust gas contains poisonous carbon monoxide. Avoid inhalation of exhaust gas.
  - Never run the engine in a closed garage or confined area.
- Manually control the nozzle valve throughout the filling process.
  - Keep your face away from the nozzle or fuel tank opening.
- Keep fuel away from your eyes and skin, it may cause irritation.
- Use fuel only in open areas that get plenty of fresh air.
- Never use fuel to wash your hands.
- Remove fuel-soaked clothing immediately.
- Fill fuel tanks no more than 95 percent full to allow for expansion.
- Replace and tighten the machine's fuel cap.




## 2.9 MAINTENANCE SAFETY




- Review Section 4: Service and Maintenance, before maintaining or operating the trailer.
- 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.
- Make sure there is plenty of ventilation. Never operate the engine in a closed building. The exhaust fumes may cause asphyxiation.
- Before working on this equipment, shut off the engine and remove the ignition keys.
- Never work under equipment unless it is securely blocked.
- 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.
- A fire extinguisher and first aid kit should be readily accessible while performing maintenance on this equipment.
- Periodically tighten all bolts, nuts, and screws and ensure all cotter pins are properly installed to ensure the unit is in safe condition.
- Never dispose of fuel by pouring it onto the ground or into a sewer, street drain, stream or other body of water, or putting it into the trash.
  - These actions are environmentally harmful and may result in a fire, explosion, or soil, surface or groundwater contamination.
  - Fines and criminal penalties may be associated with improper disposal.

- DO NOT operate the engine with the fuel tank cap loose or missing.
- DO NOT clean engine air filter with gasoline or other types of low flash point solvents.
- Keep area around exhaust free of debris to reduce the chance of an accidental fire.
- Do not operate the gas engine if any of the following conditions exist during operation:
  - Noticeable change in engine speed.
  - Sparking occurs.
  - Engine misfires or there is excessive engine vibration.
- 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 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 sparks.
- 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 land.

- 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 cover removed.

### **NOTICE**

#### POSSIBLE ENGINE DAMAGE

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

## 2.12 DIESEL FUEL SAFETY

### 2.12.1 Inhalation Hazard:

 **WARNING****INHALATION HAZARD**

Always avoid breathing fuel vapors or mists.

- Fuel vapors or mist may cause dizziness, drowsiness, moderate eye irritation, and/or skin irritation (rash).
  - Excessive exposure may cause irritations to the nose, throat, lungs, and respiratory tract.
  - Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.
  - In case of inhalation, remove the person to fresh air. If the person is not breathing, provide artificial respiration.
- If necessary, provide additional oxygen once breathing is restored if trained to do so.
- Seek medical attention immediately.

### 2.12.2 Ingestion Hazard:

 **WARNING****INGESTION HAZARD**

Always avoid ingesting fuel vapors or mists.

- The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting.
  - Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure, and even death.
  - Ingestion will cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication.
  - In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

**IMPORTANT:**

In case of ingestion  
DO NOT INDUCE VOMITING.

- Do not give liquids.
- Obtain immediate medical attention.
- If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration.
- Monitor for breathing difficulties.
- Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

### 2.12.3 Fire and Explosion Hazard:

- Diesel fuel presents a moderate fire hazard.
  - Vapors may be ignited rapidly when exposed to heat, spark, open flame, or other source of ignition.
  - When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces.
  - Being heavier than air, vapors may travel long distances to an ignition source and flash back.
  - Runoff to sewer may cause fire or explosion hazard.



### 2.12.4 Eye Protection:

- Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.
  - Contact with liquid or vapor may cause mild irritation.
  - In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 minutes.
  - Hold eyelids open to ensure adequate flushing.
  - Seek medical attention.



**2.12.5 Skin Protection:****⚠ CAUTION****CONTACT HAZARD**

Always avoid any direct contact with skin.

- Contact with diesel fuel may cause skin irritation with prolonged or repeated contact.
- Wearing gloves constructed of nitrile, neoprene, or PVC are recommended when in close contact with diesel fuel.
- Chemical protective clothing should also be worn.
- Longterm, repeated exposure to diesel fuel may cause skin cancer.
- In case of contact with skin, remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser.
- Obtain medical attention if irritation or redness develops.

**2.12.6 Storage Precautions:****⚠ CAUTION****STORAGE HAZARD**

Keep away from flame, sparks, excessive temperatures, and open flame.

- Keep trailer fill port closed because an empty tank may contain explosive vapors.
- Do not pressurize, cut, heat, weld, or expose tanks to sources of ignition.
- Store the trailer in a well-ventilated area.
- Avoid storage near incompatible materials.

**2.12.7 U.S. Federal, State, and Local  
Regulatory Information:**

- Diesel fuel is on the EPA TSCA Inventory.
- Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements.
- This product may also be subject to other regulations at the state and/or local level.
- Always consult the regulations applicable to your area prior to operation.

## 2.13 BATTERY SAFETY

### 2.13.1 General Hazards:

- Wear safety glasses and gloves when working near batteries.
- Avoid contact with battery electrolyte. Wash off any spilled electrolyte immediately.
- DO NOT attempt to recharge a frozen battery.
  - Remove the battery from the vehicle/equipment, bring it into a warm room, and let it thaw before charging or testing.
- Inspect the battery cables to make sure they are free of rust and corrosion and have no exposed wires.
  - Never use electrical tape to cover exposed wires.
- Automotive lead-acid batteries contain sulfuric acid in the electrolyte. The acid inside the battery is highly corrosive and can burn your skin if it leaks out of the battery and gets on your skin.
  - Acid may leak out of the battery if the case is cracked or damaged.
- Maintenance-free batteries should always remain in an upright position.
  - Do not turn it sideways or upside down.
- On equipment with a battery designed into the fuel trailer, it is usually a good idea to disconnect the battery before doing electrical repairs.
  - Disconnect the negative battery cable from the battery to prevent accidental damage to onboard electronics or wiring to prevent a short circuit.
- When storing trailer 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.
- Whenever servicing a battery, work in a well ventilated area to prevent gas buildup.



### 2.13.2 Shock Hazards:

Batteries only produce 12 Volts so there is NO danger of being shocked. However, 12 Volt batteries can generate several hundred amps of current, which is roughly the amount of current used by a welding arc.



- Do not short battery by touching the positive or negative terminals with a metal tool.
  - This current is capable of damaging tools, equipment, and causing personal injury.
  - It can also cause the battery to explode.
- Before working around a battery, remove all jewelry, particularly rings and necklaces.
  - The electrical charge from a battery can be transmitted through a metal tool and into a metal ring or watch.
- NEVER disconnect a battery when the ignition is ON in the tow vehicle, or while the engine is idling or running. This can damage electrical and/or electronic components in tow vehicle.


### 2.13.3 Explosion Hazards:

Always remove the battery's ground cable (black) before removing the positive (red). If the negative cable is removed first, it will not be possible to inadvertently complete a circuit, thus causing electrical shock.

- A short circuit can occur if the positive terminal is connected to the battery and the person working with the battery comes into contact with a grounded object.
  - Always remove the ground cable first.
- Do not smoke around a battery, or use anything that produces an open flame or spark.
- Keep all sparks and flames away from battery, as the gas given off by electrolyte is explosive.
- Batteries give off hydrogen gas, which is flammable and can explode if a spark occurs near the battery (as when connecting a jumper cable).

## 2.14 TRANSPORT SAFETY

- Comply with local, state, and federal laws governing safety and conveyance of farm related equipment on public roads
  - Ensure the trailer is equipped with brakes that are in good working order.
  - Make sure the diesel fuel tank is securely fastened to the trailer before transporting.
- 
- 
- Ensure all lights, reflectors, other lighting requirements are installed and in good condition.
  - Be sure the trailer is securely hitched to the tow vehicle and a retainer clip is inserted through the hitch. Always attach safety chains between the hitch and the tow vehicle.
  - Never allow riders on this fuel trailer.

- Do not exceed a safe travel speed. Slow down for rough terrain and when cornering.
  - Stay away from overhead power lines. Electrocutation can occur without direct contact.
  - Be sure the trailer is securely hitched to the tow vehicle and a retainer clip is inserted through the hitch. Always attach safety chains between the hitch and the tow vehicle.
- 

- Connect and crisscross the chains under the hitch to support the hitch should an unplanned separation occur.
- If equipped, attach the breakaway cable to the rear of the towing vehicle. Do not attach the cable to the trailer hitch.
- 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 driving near or crossing roadways.

## 2.15 STORAGE SAFETY

- Store the trailer on a firm, level surface.
- Store in an area away from human activity.
- If required, make sure the unit is solidly blocked up.
- Remove the battery and store in dry location. Do not sit battery 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 machinery.

## Section 3: OPERATION

### WARNING

- Read and understand the Operator's Manual.
- Before filling, refueling or servicing, place controls in neutral, stop engine, remove ignition key and wait for moving parts to stop.
- Clear the area of bystanders, especially children, before starting.
- Be familiar with the hazard area. If anyone unauthorized enters, shut down the machine immediately. Clear area before restarting.
- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
- Do not allow riders on the trailer when transporting.
- Stay away from overhead obstructions and power lines during operation. Electrocution can occur without direct contact.
- Do not operate machine when any guards are removed.
- Keep working area clean and free of debris to prevent slipping or tripping.
- Manually control the nozzle valve throughout the filling process. Keep your face away from the nozzle or fuel tank opening.
- Keep fuel away from your eyes and skin.
- Use fuel only in open areas that get plenty of fresh air. Never use fuel to wash your hands.

The Meridian® Fuel Trailer is designed to transport diesel fuel and diesel exhaust fluid (DEF) to your machinery. An optional gas engine or electric motor can provide power to the diesel fuel pump. Be familiar with the trailer and engine before starting.

Many features incorporated into this machine are as a result of suggestions made by customers like you.

Hazard controls and accident prevention are dependent upon the personnel operating and maintaining the equipment. 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 fuel trailer will provide many years of trouble free service.

### 3.1 MACHINE COMPONENTS

The main components are listed below. Their positions may vary depending on the options contained on the fuel trailer.

- a. Adjustable height hitch for 2-5/16" ball
- b. Safety towing chains
- c. Jack
- d. Breakaway Brake System
- e. 990 Basic - Self-contained DEF tote:
  - 55 gal tank
  - Hose and nozzle
  - Pump
  - Power cables
- f. 990 Max - Front Compartment:
  - Gas engine
  - Fuel pump (for gasoline or diesel)
  - DEF solution pump
- g. 7000 lb axles with standard or aluminium wheels
- h. DOT compatible tail lights and turn signals
- i. License plate holder and light
- j. Fuel tank fill opening with a vented, lockable cap
- k. Fill level indicator
- l. Tank vent



Fig 7 - Basic Fuel trailer components

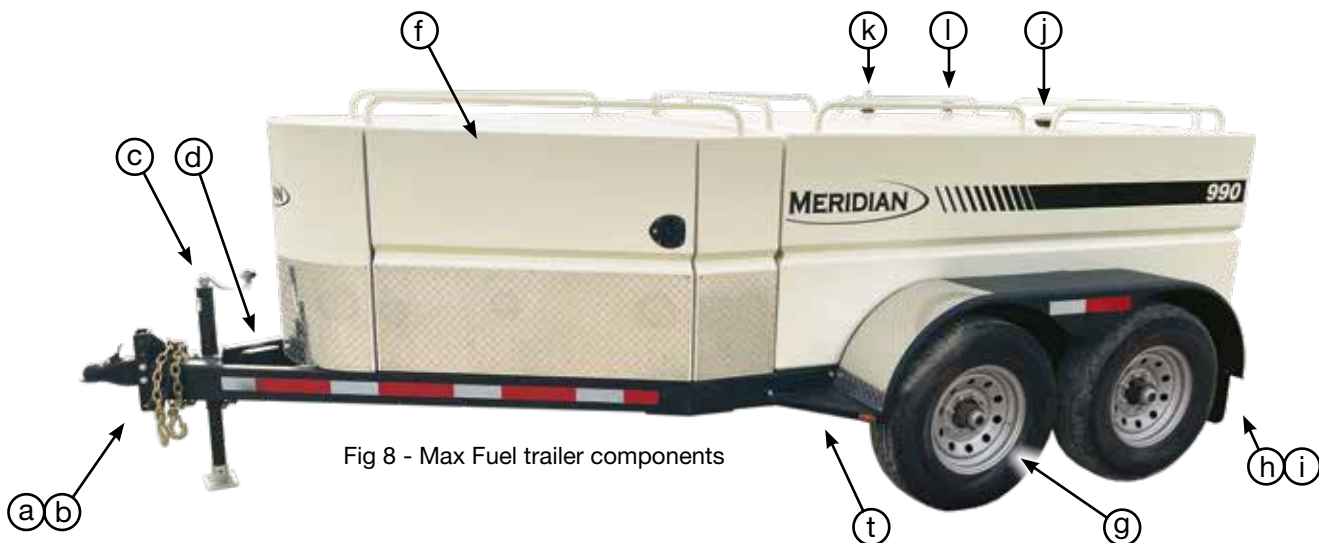


Fig 8 - Max Fuel trailer components

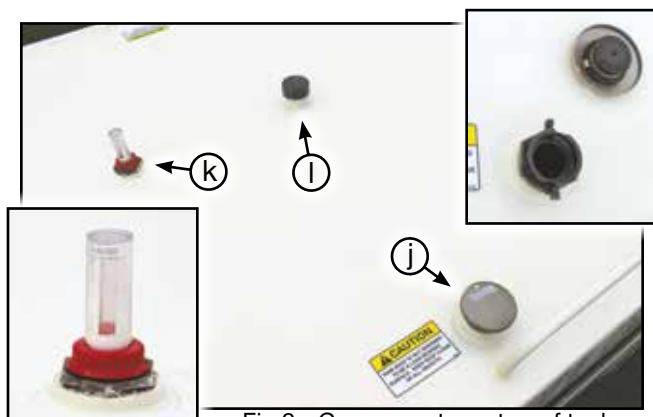


Fig 9 - Components on top of tank

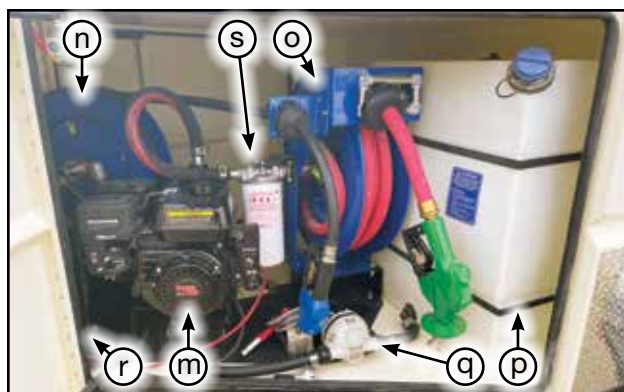


Fig 10 - Inside the front compartment

- m. Gasoline engine and fuel pump (electric pump is optional)
- n. Diesel Exhaust Fluid (DEF) solution hose and retractable reel with auto shut-off nozzle.
- o. Diesel fuel hose and retractable reel with auto shut-off nozzle
- p. DEF solution tank  
- 990 Max: 55 or 110 gallon tank
- q. DEF solution pump
- r. 12 Volt battery and battery box
- s. Diesel fuel filter
- t. Fuel tank shut-off valve

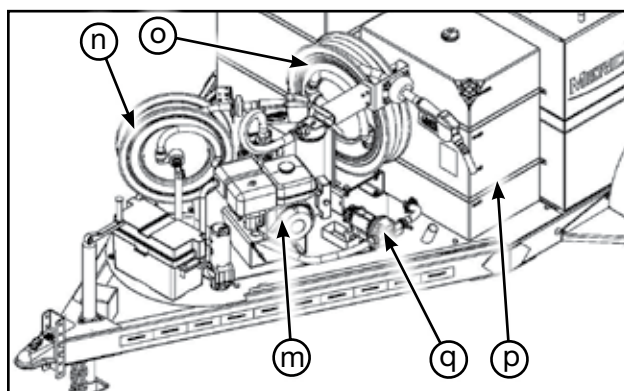


Fig 11 - Front compartment detail

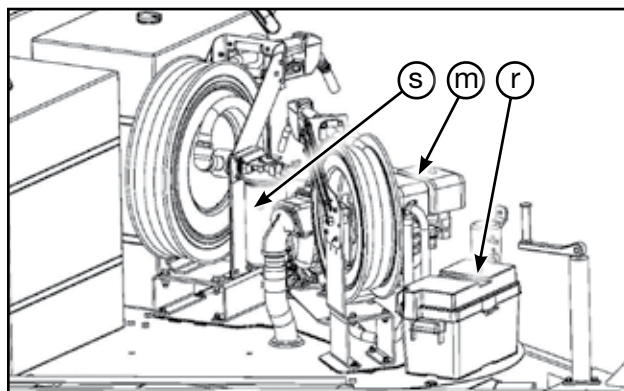


Fig 12 - Engine detail



Fig 14 - 990 Basic DEF tote

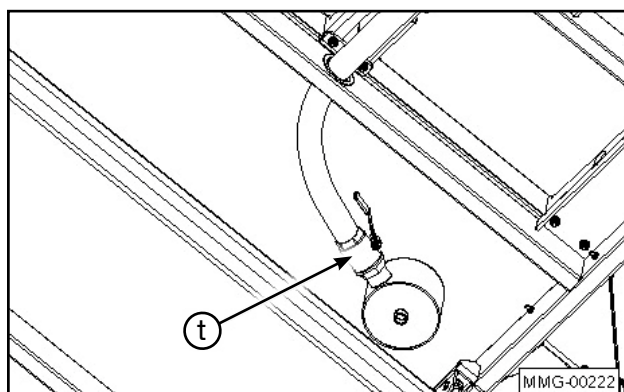


Fig 13 - Below tank

## 3.2 COMPONENTS AND CONTROLS

Standard fuel trailers are not equipped, options are chosen at the time of ordering.

- Options and locations may change without notice.

Engine controls may vary depending on model.

- Refer to the engine manufacturer's manual for more detailed information.

Before starting to work, all operators must familiarize themselves with the location and function of the components and controls of their specific unit.

### 12 volt Electric Pump:

The standard fuel trailer is equipped with a 12 Volt electric fuel pump. The fuel pump is powered by a 12 Volt battery located in the front compartment of the fuel trailer.

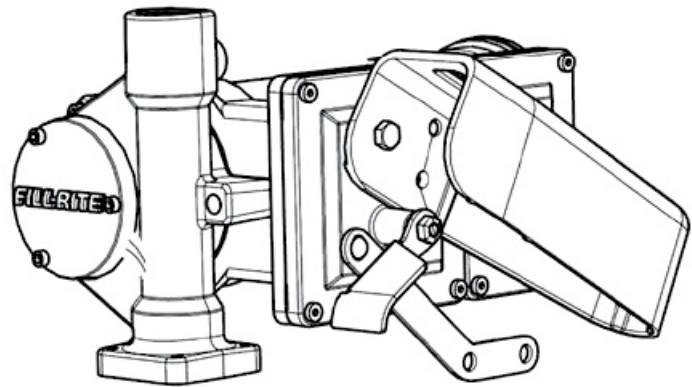


Fig 15 - Electric pump (12 volt)

### Gas Engine:

An optional gasoline engine may be used with this unit. Always read the OEM engine Operator's Manual supplied with the fuel trailer for the detailed engine operating procedures.

#### 1. Engine Key Switch:

Turn the key switch to the START position to start the engine. When the engine starts, then release the key and allow it to return to the ON position.



Fig 16 - Gas engine

#### 2. Starting Rope:

This retracting rope and T-bar is an optional method used to start the engine. Grasp the T-bar firmly and pull the rope sharply to start the engine.

- The key on the master control must be ON for the engine to start.

#### 3. Fuel Shut-Off Lever:

Each engine is equipped with a fuel valve between the fuel tank and the carburetor.

- The fuel valve lever must be in the ON position (to the right) for the engine to run.
- Slide the fuel valve toward the engine to turn ON and away for OFF (to the left).
- Before transporting or when engine is not in use, move fuel valve lever to OFF position to prevent carburetor flooding and to reduce the possibility of fuel leakage.

4. **Choke Lever:**  
The choke lever controls the fuel/air mixture to the engine.
  - Close choke when starting a cold engine.
  - Open the choke as the engine warms.
  - Always open choke fully during operation.
5. **Throttle Lever:**  
This lever controls the engine RPM. Move the lever to increase or decrease the RPM.
  - Always run at maximum throttle while operating the fuel trailer.
6. **Engine Circuit Protection:**  
The circuit protector protects the battery charging circuit. A short circuit, or a battery connected with reverse polarity, will trip the circuit breaker. The green indicator inside the circuit protector will pop out to show that the circuit protector has switched off.
7. **Battery (12 Volt):**  
A 12 Volt battery supplies the power to start the gasoline engine or operate the 12 Volt electric diesel pump.
  - If the tow vehicle is properly wired, the battery will receive a trickle charge whenever the vehicle is running.
  - Depending on the amount of use, the battery may still need to be periodically recharged from an external source to keep it fully charged.
8. **Diode:**  
A Diode is built into the trailer wire harness. It protects the electrical system of the tow vehicle and acts like an electrical one-way valve, allowing current to flow in a single direction while blocking it from flowing in the opposite direction.

#### Breakaway Brake System:

A Break-Away Switch is installed on all trailers.

- See Section 4.2.10 to maintain the system.

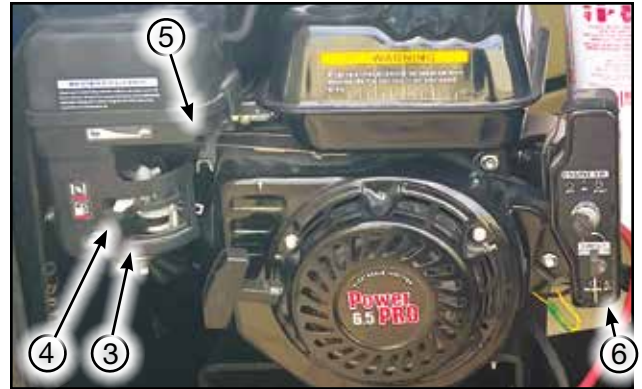


Fig 17 - Gas engine detail

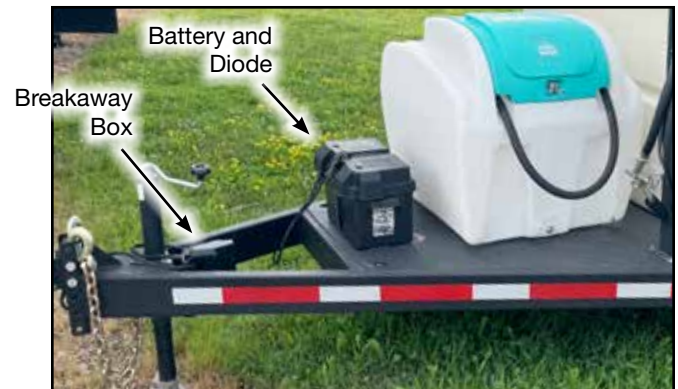


Fig 18 - Battery holder and Breakaway box

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

#### IMPORTANT:

Test the Break-Away Switch periodically. Remove 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.

### NOTICE

#### TRANSPORT HAZARD

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

### Gasoline Engine Safety Signs:

Maintain Air Cleaner:

Contact OEM manufacturer for replacement of this decal

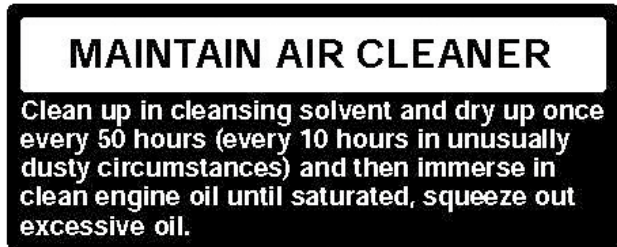


Fig 20 - Air cleaner notice



Fig 21 - Front compartment

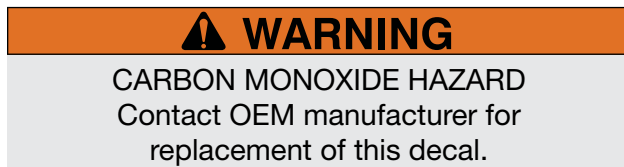


Fig 22 - Engine exhaust warning

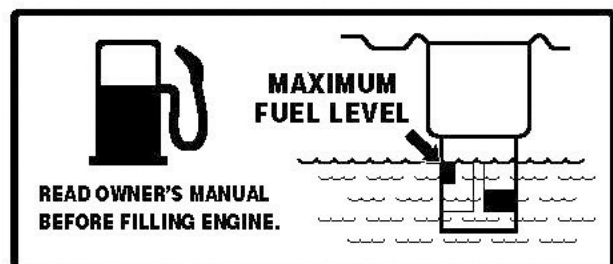
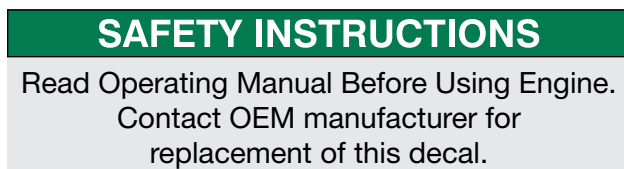


Fig 23 - Fuel level notice

### 3.3 NEW MACHINE BREAK-IN

A special break-in procedure has been developed to ensure the integrity of this fuel trailer when first put into service. Follow the 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 engine manual.

#### Before Starting Work:

1. Read and follow the instructions in the OEM engine, DEF pump, and the Meridian Operator's Manuals.
2. Before starting the gasoline engine for the first time, check the engine oil level.
  - Add oil as necessary.

#### IMPORTANT:

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

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

1. On gasoline engine/pump combinations, recheck engine to pump shaft connection after 1/2 hour and again after 4 hours.
2. Recheck all hardware and fasteners after 4 hours of operation.
  - Tighten to specified torque.
3. At 10 hours, change the engine oil with the specified oil.
  - a. Remove plug (1) to drain the oil.
  - b. After the oil is refilled, check the level with fill cap/gauge (2).

### SAFETY INSTRUCTIONS

Check engine oil level and add as needed.

3. Make sure the fuel pump is primed.
4. Start the engine and check the controls. Be sure that they function properly.
5. Review and follow the Daily Pre-Operation Checklist before starting the equipment.
6. Initially, check the wheel bolt torque and then again at 10, 25, and 50 miles. Refer to the Wheel Bolt Torque Requirements section in this manual for tightening instructions.



Fig 24 - Hardware detail

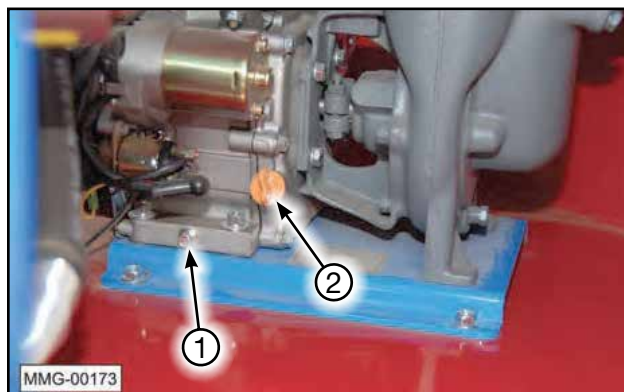


Fig 25 - Engine oil detail

### 3.4 PRE-OPERATION CHECKLIST

Efficient and safe operation of this fuel trailer requires that each operator knows the operating procedures.

It is important for both personal safety and maintaining the good mechanical condition of this machine that this checklist be followed.

Before operating and each time thereafter, the following areas should be checked:

1. Check the engine oil and fuel levels.
  - Add, as required.

**IMPORTANT:**

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

2. Make sure the fuel level in the tank is sufficient enough to prime the fuel pump and provide a steady flow of fuel.
  - Do not run the pump dry.
3. Prime the diesel fuel pump is properly primed before attempting to refuel machinery.
4. Check all hardware and fasteners for missing parts.
  - Make sure the fasteners are properly tightened.
5. Make sure the wheel bolt lug nuts are properly tightened.
6. Check the tires and ensure they are inflated to their specified pressure.

7. Remove any entangled crop material from under the trailer.

8. Test the breakaway brake unit and the trailer brakes:
  - a. Make sure the trailer brakes are operating properly.
  - b. Make sure the trip wire to the breakaway switch is connected to the tow vehicle.
  - c. Make sure the key is correctly installed in the breakaway switch.
  - d. Press the Test button.
    - The indicator should illuminate green.
    - If the red light illuminates, the battery charge is low.

Refer to the Trailer Breakaway System in the Maintenance Section for instructions on charging the battery.

9. Make sure lights, reflectors, Diesel Fuel Placards, and SMV/SIS emblem required by local highway authorities are installed.
10. Clean and make sure taillights, signal lights, and side running lights are working properly.

### 3.5 ATTACHING TO TOW VEHICLE

#### IMPORTANT:

Use a truck or tractor of adequate power and weight to pull the trailer full of fuel.

#### 3.5.1 Automotive Wiring Harness:

1. When towing the trailer with a truck, the 12 Volt electrical system is designed so the vehicle's charging system will charge the trailer's battery.
  - Charging will only occur when the tow vehicle's engine/alternator is running and the wiring harness is properly configured.
  - This system will not recharge a depleted or dead battery; only help to maintain its current charge state.
  - Use the following to make sure the tow vehicle is compatible with the fuel trailer:
    - a. Be sure the tow vehicle is equipped with a standard 7-way automotive wiring harness socket.
      - If the tow vehicle is not equipped with a 7-way connector, which is properly configured, the trailer battery will not be charged without custom wiring from the tow vehicle's alternator/charging system.
    - b. If equipped, check the 7-way socket on the tow vehicle, using a volt meter, to make sure Pin 4 and 7 are supplying 12 Volts of power.
      - If any other pin has the 12 Volt supply, the battery will not be recharged.
  - **Note:** To properly charge the battery, the tow vehicle's socket must be configured with Pin 4 (black) along with center Pin 7 (red/orange) connected to 12 Volt supply.
  - c. If there is no voltage on any of the pins, check the fuse in the truck's fuse panel.
    - The fuse for the charge line may not be installed or is blown.

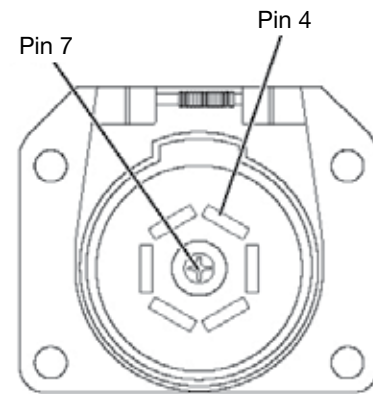


Fig 26 - Tow vehicle's socket

- **Note:** In the trailer wiring harness, a diode is connected to the positive side of the battery.
  - o It acts as a one-way gate, allowing current to flow from the vehicle's charging system to the trailer's battery, but prevents the trailer's battery from backfeeding power and draining the vehicle's electrical system when the truck is off.
  - o The diode is essential for protecting the vehicle's alternator and factory wiring from damage caused by power flowing in the wrong direction, especially when combining a vehicle's power with a trailer's battery.

#### Note:

If the tow vehicle's wiring connections do not correspond to the fuel trailers wiring harness, the breakaway brake system battery will also not be charged during normal operation.

2. The fuel trailer can be towed with a tractor, however it is electrically wired for a 7-way automotive wiring harness application.
  - An ag tractor will not properly operate the trailer's brake, battery charging system, or lights without special wiring modification.
  - Do not tow the fuel trailer on public roads without proper brakes and lighting.

### 3.5.2 Attach to the Vehicle:

1. On a flat surface, use the trailer jack to level the trailer.

#### **⚠ WARNING**

##### UPENDING HAZARD

Towing this fuel trailer with diesel fuel, when it is not in a level position, could cause an upward force on the tongue, separating the trailer from the tow vehicle.

Make sure the trailer is set up with downward pressure on the tongue assembly.

2. Adjust the height of the receiver to align with the tow ball or be lower than the tow ball.
  - Once aligned, tighten both bolts to 70 ft-lb (95 N·m).

#### **⚠ WARNING**

##### SEPARATION HAZARD

The receiver must be bolted to the frame with two bolts. The use of only one bolt could cause the receiver assembly to separate from the trailer, resulting in injury or death to bystanders. Do not use the trailer if only one bolt is installed.

3. Remove retainer clip (1).
  - Release or open the receiver by lifting locking lever (2) into the open position.
  - See Figure 27.
4. Using the jack, raise the hitch above the ball on the tow vehicle.
5. Slowly back the tow vehicle until the hitch and ball are aligned.



Fig 27 - Front of trailer

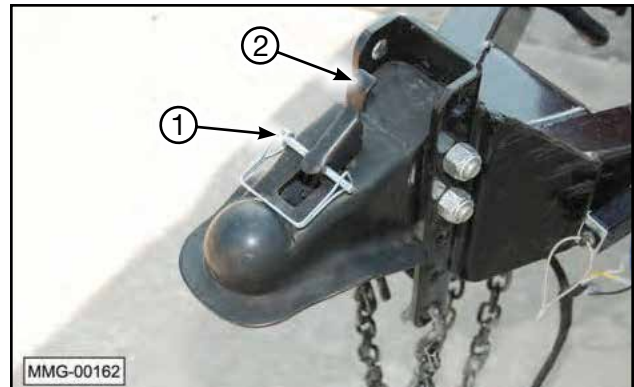


Fig 28 - Ball hitch receiver assembly



Fig 29 - Ball hitch receiver

6. Lower the hitch onto the ball.
7. Raise the jack and place it in its stowed position.
8. Close the receiver lock lever and install the retainer clip to prevent unwanted opening of the receiver.

### **WARNING**

**SAFETY CHAIN DAMAGE**  
If safety chains are damaged in any way, do not use the trailer until proper chains are installed.

9. Attach safety chains (1) securely to the tow vehicle to prevent unexpected separation. Cross the chains when attaching.  
- See Figure 31.
10. Connect wiring harness (2) with the seven-pin connector for the lights and brakes.
11. Connect breakaway system cable (3) to the tow vehicle. Make sure key (4) on the end of the cable is properly plugged into the receiving unit.

### **IMPORTANT:**

The Break-Away key must be completely plugged into the socket for the system to operate properly.

12. Route the wiring harness and breakaway brake cable in a manner that will prevent them from dragging.  
- Be sure to provide enough slack for turning.



Fig 30 - Trailer

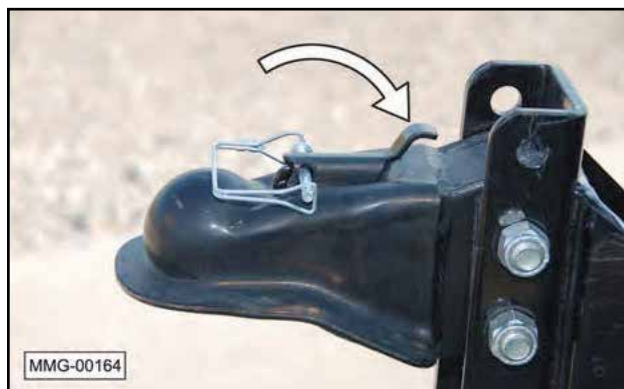


Fig 31 - Trailer

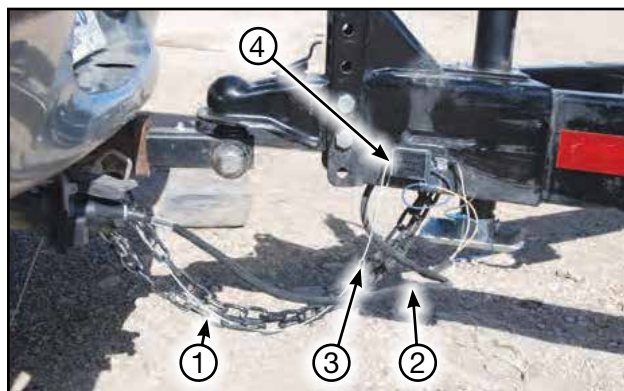


Fig 32 - Image reflects a different trailer model



Fig 33 - Break-away system

### 3.6 DIESEL EXHAUST FLUID (DEF) AND DIESEL FUEL TANKS

#### **⚠ WARNING**

##### TRAILER USE HAZARD

DO NOT use fuel tank as work platform.  
DO NOT stand on fenders.  
DO NOT ride on trailer.

#### 3.6.1 Filling Fuel Trailer with Diesel Fuel:

1. Before filling the fuel tank, follow all the safety recommendation, such as attaching the fuel trailer to the tow vehicle, placing the fuel trailer on a level surface, blocking both sides of the wheels to prevent unexpected movement, etc.
2. If not already closed, close the fuel valve located under the front of the trailer.
3. Fill the trailer with diesel fuel, using a fill spout, into the vented, lockable cap (1).
  - Use sight gauge (2) on top of the tank to prevent overfilling.
  - Never obstruct breather (3) at any time.

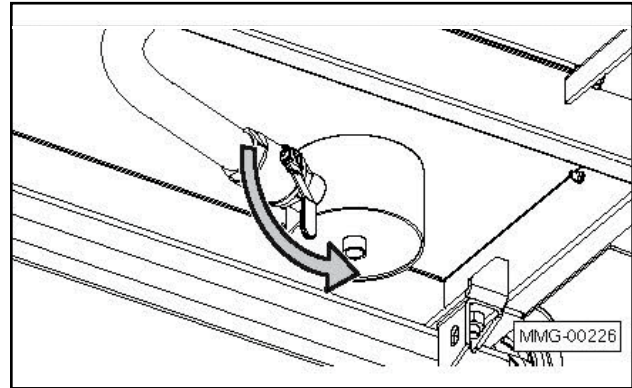


Fig 34 - Fuel valve under front of trailer

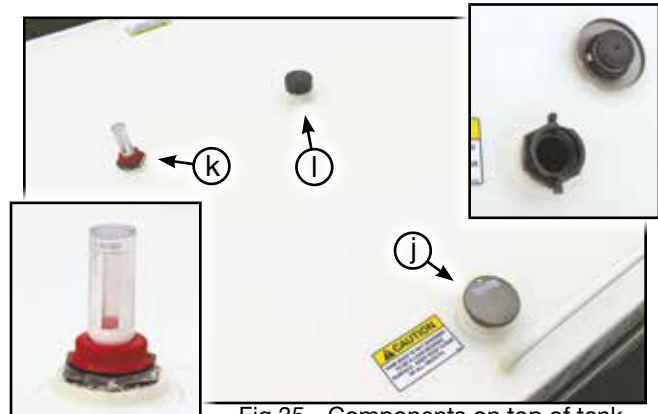


Fig 35 - Components on top of tank

### 3.6.2 Filling Machinery Using 12 Volt Electric Diesel Fuel Pump:

1. Position this fuel trailer near the machinery being refueled.
2. Open the shutoff valve on the underside of the fuel tank.
3. Extend the hose, with the green nozzle, to easily reach the machinery being refueled.

#### **CAUTION**

##### FUEL PRESSURE HAZARD

Once the pump is turned ON, the fuel hose is pressurized and will pump fuel. Do not squeeze the handle on the fuel nozzle until it is inside the fuel tank of the machinery being refueled.

4. Move the ON/OFF lever upward to the "ON" position to apply power to the pump.
5. Refuel the machinery. Release the nozzle when the desired amount of fuel has been dispensed.
6. Move the ON/OFF lever downward to the "OFF" position to turn off the pump.
7. Remove the dispensing nozzle from the machinery being refueled and retract the hose onto the hose reel.

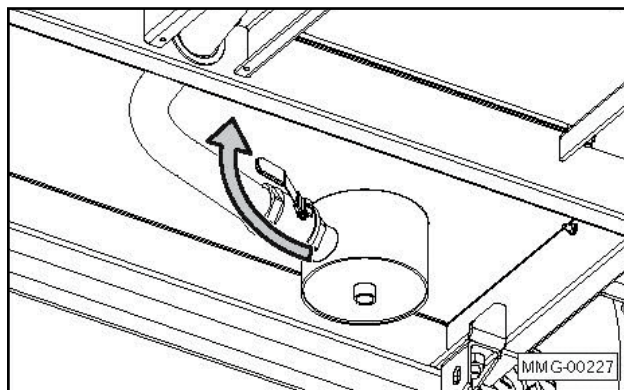


Fig 36 - Fuel valve under front of trailer



Fig 37 - Hose with green nozzle is for diesel fuel

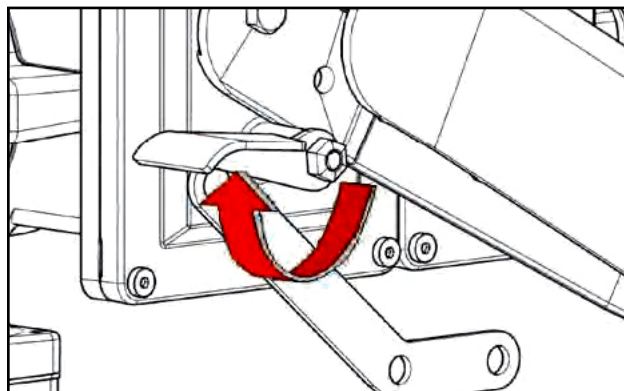


Fig 38 - Fuel pump lever in "ON" position

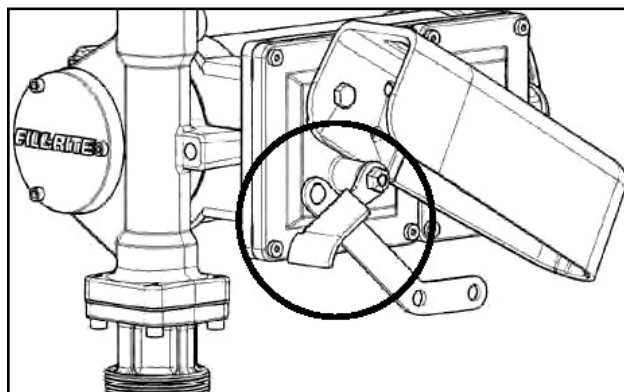


Fig 39 - Fuel pump lever in "OFF" position

### 3.6.3 Filling Machinery Using Gasoline/Diesel Fuel Pump:

This petroleum pump is a self-priming centrifugal pump and only requires priming prior to its initial start.

- The pump will retain sufficient liquid for selfpriming thereafter.

#### To Prime the Pump:

1. Remove the fill plug on top of the pump housing.
2. Fill the pump housing with the fluid to be pumped.
3. Replace the plug.

#### To Fill the Machinery:

4. Position this fuel trailer near the machinery being refueled.
5. Open the shutoff valve on the underside of the fuel tank, as shown.
6. Extend the hose to easily reach the machinery being refueled.

If using the optional gasoline engine, start the engine.

- (1) Fuel Lever
- (2) Choke Lever
- (3) Throttle Lever

- a. Turn engine fuel lever to the ON position.

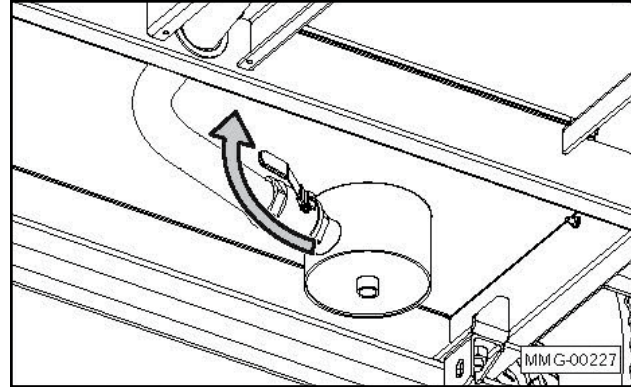


Fig 39 - Fuel valve under front of trailer



Fig 40 - Gas engine

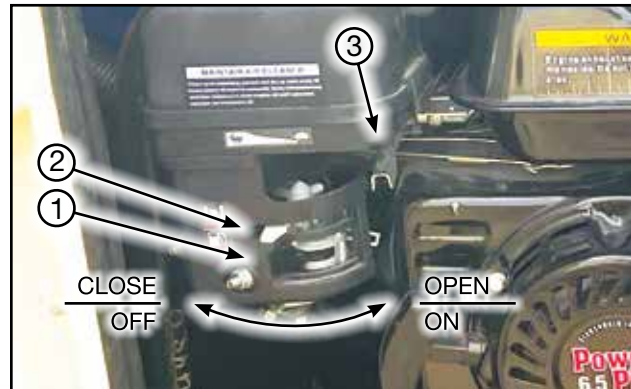


Fig 41 - Engine controls



Fig 42 - Engine fuel lever

- b. To start a cold engine, move choke lever to the left (closed).
  - In warm weather, start the engine with the choke in the middle position.
  - To restart a hot engine, move the choke lever to the closed position.



Fig 43 - Chock lever

- c. Move throttle lever (5) away from the SLOW position to the FAST position.



Fig 44 - Throttle lever

- d. Start the engine:
  - Use engine pull cord (4)
  - or electric start (5).



Fig 45 - Engine start

- e. If the choke lever is in the CHOKE position, gradually move it to the right (OPEN) position as the engine starts to run.

**CAUTION****Pressure Hazard**

Once the pump is started, the fuel hose is pressurized and will pump fuel. Do not squeeze the handle on the fuel nozzle until it is inside the fuel tank of the machinery being refueled.



Fig 46 - Chock lever

7. Place the fuel nozzle into the receiving tank and squeeze the handle to start fuel flow.
  - When the tank is full, the nozzle will automatically shut off the flow.

**Note:**

If an electronic fuel meter is attached to the hose, a specific amount of fuel can be added.

**NOTICE**

- When filling machinery from this fuel trailer, never allow the pump to run dry.
- Operating pump without fuel can cause damage to pump and/or engine.

8. When fueling is complete, turn engine off.
9. Rewind the fuel hose onto the fuel reel and place the nozzle back into the nozzle holder.

**IMPORTANT:**

Shut off fuel when not in use.

10. Place the engine's fuel lever in OFF position before towing this fuel trailer on open road.

11. Allow the engine to cool for at least 15 minutes, with both compartment doors open, before towing.

**WARNING****FIRE HAZARD**

- To prevent fire, allow engine to cool before closing front compartment.
- A hot engine and exhaust system could ignite various materials within the compartment.

12. Before towing, close the shutoff valve on the fuel tank.



Fig 47 - Engine fuel lever

**3.6.4 Filling Trailer's DEF Tank:**

Review the section on Diesel Exhaust Fluid (DEF) Solution in this manual (Section 3.8) before filling the DEF tank or servicing the machinery.

- Because of our continuous improvement process, some images may be different than the actual product.

1. Make sure the DEF tank shutoff nozzle is closed.
2. Fill the DEF tank using filler spout (1).
  - Use the fluid level indicator markings (2) to determine when the tank is full.

**Note:**

To prevent contamination of the DEF fluid, keep the DEF nozzle and the fill port on the tank clean and free of dust and dirt.



Fig 49 - DEF tank

**NOTICE****OVERFILL HAZARD**

Use the fluid level indicator markings located on the sides of the tank.

Do not overfill the tank.

### 3.6.5 Filling DEF Tank on Machinery:

The DEF transfer pump is a 12 Volt DC, self-priming, positive-displacement diaphragm pump.

**Note:**

If the pump does not operate, make sure the in-line fuse is working.

## SAFETY INSTRUCTIONS

This pump should only be used to pump DEF solution from this fuel trailer to the machinery being serviced.

Do not pump any other type of fluid.

1. Ensure the power switch on the DEF pump is in the OFF position.

## ⚠ WARNING

### BATTERY HAZARD

12 Volt batteries can present a hazardous, explosive environment. Before making any battery connections, ensure the pump's ON/OFF switch is in the OFF position.

Also be sure the pump battery connections are tight before operating the pump.

2. Connect the clamps of the electrical cables for the DEF pump to a 12 Volt power source; either this fuel trailer battery or the tow vehicle.
  - a. Connect the end of the RED jumper cable to the POSITIVE (+) post on the battery (power source).
  - b. Make sure the NEGATIVE (-) cable is not touching a grounded surface.

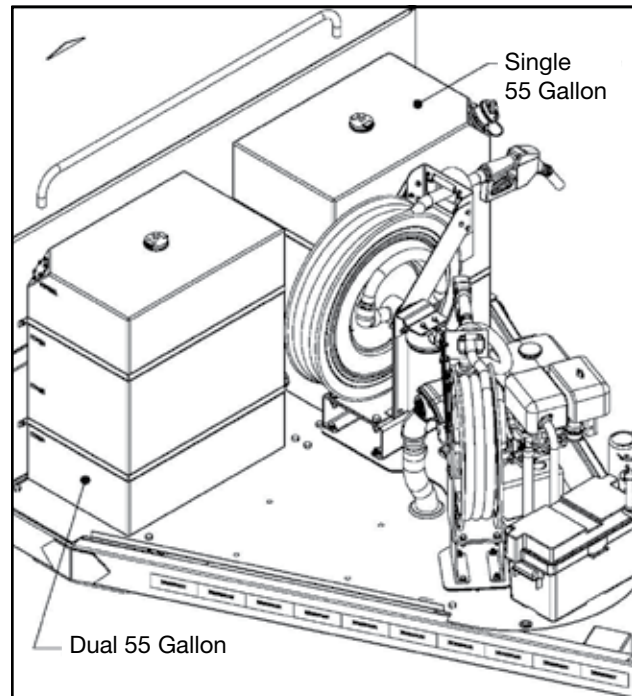


Fig 50 - 110 G option shown here. 55 G uses only left side



Fig 51 - DEF pump power switch

**Note:**

- In many cases the POSITIVE battery post is slightly larger than the NEGATIVE post and will be marked with a PLUS (+) sign.
  - There may also be a RED plastic protective cover over the positive battery post.
- c. Connect the end of the BLACK jumper cable NEGATIVE (-) to a heavy metal ground on frame of trailer or tow vehicle.

**SAFETY INSTRUCTIONS**

If the cable must be connected to the NEGATIVE (-) post on the battery itself, be extremely careful to prevent any sparks that can ignite hydrogen fumes around or on top of the dead battery, causing it to explode.

**NOTICE****CONTAMINATION HAZARD**

- To avoid contaminating the DEF solution and possible nozzle malfunction, keep the nozzle clean.
  - Always store the nozzle in the nozzle holder when not in use.
3. Extend the DEF hose, with blue nozzle, to easily reach the fill opening of the machinery being serviced.
4. Open the DEF tank shut-off nozzle by depressing the nozzle lever.

**CAUTION****PRESSURE HAZARD**

- Once pump is turned ON, the DEF hose is pressurized and will pump DEF solution.
- Do not squeeze the handle on the nozzle until it is inside the DEF tank of the machinery being serviced.



Fig 52 - Hose with blue nozzle DEF fluid

5. Turn the power switch to the ON position to start the DEF pump.
6. Fill the DEF tank on the machine.

## SAFETY INSTRUCTIONS

Even though the nozzle is equipped with an automatic shutoff, do not leave the nozzle unattended during filling. Be prepared to manually shut off flow at the nozzle, if necessary.

7. Fill the machine's DEF tank.
8. Once the DEF tank is filled, turn the pump OFF.
  - Do not run the pump any longer than necessary.
9. Replace the nozzle in its holder.
10. Place the shut off valve for the DEF tank in the closed position.
11. Remove the battery cables.
  - a. Remove the BLACK cable NEGATIVE (-) from the metal ground on the frame of the tow vehicle.
  - b. Remove the RED jumper cable from the POSITIVE (+) post on the battery (power source).
  - c. Make sure the NEGATIVE (-) cable is not touching a grounded surface.



Fig 53 - DEF pump

### 3.7 DIESEL EXHAUST FLUID (DEF) SOLUTION

The information concerning DEF provided in this manual has been obtained from sources considered technically accurate and reliable.

Review the safety information concerning potential product hazards. Since the actual product use is beyond our control, it is assumed that the user has been fully trained to meet any local, state, or federal regulations.

#### SAFETY INSTRUCTIONS

- Respiratory protection is not usually required. If significant spray or mist occurs, wear a NIOSH approved or equivalent dust respirator.
- The use of gloves, impermeable to the specific material handled, is advised to prevent skin contact, possible irritation, or absorption.
- Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on the conditions of use, a face shield may be necessary.
- A source of clean water should be available in the work area for flushing eyes and skin.
  - Impervious clothing should be worn, as needed.
- DO NOT operate pump at voltages which exceed the 12 Volt rating indicated on the name plate. Operating the pump with more than 12 Volts will cause the motor to overheat.

#### 3.7.1 First Aid Measures:

##### Eye:

If irritation or redness develops, move away from exposure and into fresh air. Flush eyes with clean water immediately for at least 15 minutes. If symptoms persist, seek medical attention.

##### Skin:

Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops and persists, seek medical attention.

##### Inhalation (Breathing):

If respiratory conditions develop, move away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

##### Ingestion (Swallowing):

First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

#### 3.7.2 General Information:

1. DEF has not been shown to be harmful to humans or animals.
2. DEF is not explosive, does not burn, and will not aid in combustion.
3. DEF is non-toxic. If you get it on your skin or clothes, rinse with plenty of water.
4. DEF is a colorless liquid. However, it is best to avoid spilling on clothing or vehicle upholstery as it may leave a stain.

#### NOTICE

DEF is very corrosive to certain types of material. Care should be taken when filling the trailer or the machinery.

### 3.7.3 DEF Storage:

1. Keep DEF containers tightly closed.
2. To avoid solidification, do not store DEF at temperatures below 23°F (-5°C).
  - Solidified DEF, which has been warmed up carefully at temperatures not exceeding 86°F (30°C), will not be impaired in quality and can be used as soon as the warmed up solution is free from solids.
  - Frozen DEF can be thawed and used without concerns of product degradation; however, damage to the container or equipment will likely occur.
3. Store only in approved containers.
4. Protect containers against physical damage.
5. In order to prevent decomposition of the area, as well as the evaporation of water in the case of vented containers, prolonged transportation or storing above 77°F should be avoided. (See Table Below).

Table 1 - DEF storage

CONSTANT AMBIENT STORAGE TEMPERATURE (°F)	MINIMUM SHELF LIFE (MONTHS)
≤50°F	36
≤77°F*	18
≤86°F	12
≤95°F	6
>95°F	**

\* To prevent decomposition of the DEF solution, prolonged transportation or storage above 77°F should be avoided.

\*\* Significant loss of shelf life. Check every batch before use.

Source: ISO 22241-3:2008(E)

### 3.7.4 Using DEF:

1. Only fill the DEF tank with ISO certified DEF that has been delivered in dedicated, sealed DEF packages.
2. Wear appropriate protective clothing and equipment, such as safety glasses, gloves, etc. while pumping DEF.
3. Wash thoroughly after handling DEF.
4. Never add DEF into the diesel fuel tank.
5. Never add diesel fuel into the DEF tank.
6. Avoid contact with DEF on eyes, skin, and clothing.
7. If spilled, rinse the area with water.
8. Do not use DEF that has been diluted with water or other substances.

### 3.7.5 DEF Disposal:

For proper disposal of waste DEF, as a nonhazardous liquid waste, it should be solidified with stabilizing agents such as sand, fly ash, or clay absorbent, so that no free liquid remains before disposal in an industrial waste landfill.

## 3.8 STORAGE

When the fuel trailer will not be used for an extended period of time, perform a complete inspection.

- Replace or repair any worn or damaged components to prevent unnecessary downtime at the beginning of the next season.

### 3.8.1 Placing in Storage:

#### CAUTION

Store the trailer in an area away from human activity. To prevent the possibility of serious injury, do not permit children to play on or around the stored equipment.

1. Remove all fuel from the fuel trailer.
2. Place the gasoline engine fuel valve in the OFF position.
3. Drain the gasoline engine fuel tank and carburetor for seasonal or long term storage.
  - If this is not possible, add a fuel additive to the gas tank.
4. Thoroughly wash the equipment with a pressure washer or water hose to remove all dirt, mud, or debris.
5. Remove any entangled material from the underside of the trailer.
6. Check the condition of the fuel pump and DEF pump.
  - Replace or adjust, as required.
7. Touch up paint nicks and scratches to prevent rusting.
8. If the engine has been running, allow it to cool for at least half an hour before closing the compartment doors.
9. Remove the engine's ignition key and store in a secure place.
10. Remove the battery and store it in a cool, dry area on wooden blocks or a wooden pallet.
  - Charge it monthly to maintain an adequate charge. This will help to extend the service life of the battery.
11. It is best to store the equipment inside.
  - If possible, avoid any area with high humidity.
  - Humidity promotes rust and corrosion.

### 3.8.2 Removing from Storage:

When removing the equipment from storage, follow this procedure:

1. Install and connect the battery.
2. Add new fuel to the gasoline engine's fuel tank.
3. Review and follow the Daily Pre-Operation Checklist.
4. Review and follow the service checks in the Services section.

#### **IMPORTANT:**

- If equipment has been stored for more than 12 months, warm engine by running it for two to three minutes and then drain the oil.
- Change oil while it is warm to remove any condensation.
- Refer to the Change Engine Oil section in the Maintenance section.

### 3.8.3 Winterizing DEF System:

Since the majority of the Diesel Exhaust Fluid (DEF) solution is water, freezing of this solution can cause damage to the components of the DEF system. It is recommended that the solution be removed from the DEF tank and stored in a DEF compatible container.

#### **NOTICE**

- Failure to adequately prepare the diesel exhaust fluid system for freezing temps may result in damage to the system.
- Do not allow DEF fluid to freeze in the tank. Since DEF solution is mostly water, freezing and expansion of the solution will cause damage to the tank and the pump.
- The warranty is void if freezing occurs.

To prepare DEF system:

1. Cut off DEF flow to tank.
2. Disconnect DEF suction hose at the pump.
  - Do not remove the hose from the fitting.
3. Drain all DEF, including tank, only into DEF approved container.
4. Connect compressed air to the DEF pump on the suction side.
  - Air pressure shall not be more than 20 psi (138 kPa).
5. Turn on air, then turn on DEF pump.
6. Engage DEF Nozzle, draining DEF only into DEF approved container.
7. When finished draining, turn off pump and reconnect DEF pump suction hose.

## Section 4: SERVICE AND MAINTENANCE

### WARNING

- Review the Operator's Manual and all safety items before maintaining the trailer.
- Clear the area of bystanders, especially children, before repairing or adjusting.
- 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.
- Before working on equipment, shut off engine and remove ignition keys.
- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
- Keep area around exhaust free of debris to reduce the chance of an accidental fire.
- Place stands or blocks under frame before working beneath the unit.
- Keep decals clean, replace if not readable.
- Make sure there is plenty of ventilation. Never operate engine in a closed building. Exhaust fumes may cause asphyxiation.
- DO NOT operate the engine with the fuel tank cap loose or missing.
- DO NOT clean engine air filter with gasoline or other types of low flash point solvents.
- DO NOT operate gas engine if any of the following conditions exist during operation:
  1. Noticeable change in engine speed.
  2. Sparking occurs.
  3. Engine misfires or there is excessive engine vibration.
- When maintenance is complete, before resuming work, install and secure all guards.
- Always use genuine factory replacement parts. The manufacturer will not be responsible for injury or damage caused by the use of unapproved parts and/or accessories.

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

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

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

Refer to engine manual for specific information:

- Fuel tank capacity: Approximately 1 gallon
- 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.

## 4.1 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.

#### **4.1.1 Every 8 Hours or Daily:**

1. Check engine oil and fuel levels.
  - Fill as needed.
2. Test the trailer breakaway brake system.
3. Inspect the tires for wear or damage.
  - Check wheel bolt torque.
4. Inspect the taillights and running lights to make sure they are working properly.
5. Inspect the 7-pin wiring harness connector for damage.

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

6. Clean or replace the foam filter element.
  - Replace the paper air filter, as required.
7. Check the tire pressure. Inflate as needed.
8. Check and/or replace diesel fuel filter.

#### **4.1.3 Every 200 Hours or Semiannually:**

9. Torque the wheel nuts.
10. Inspect the tires for wear.
11. Adjust the trailer brakes.
  - Inspect brake magnets and suspension.
  - Grease axles.
12. Make sure the battery box is securely holding battery onto frame.
13. Check battery electrolyte levels in the cells.
  - Clean terminals to remove dirt or corrosion.
14. Check and/or replace the diesel fuel filter.

#### **4.1.4 Every 400 Hours or Annually:**

15. Change engine oil.
16. Test the battery charge.
17. Inspect the tires and brake lining.
18. Repack the wheel bearings.
  - Inspect for excessive play in the bearings.
19. Inspect the axle grease seals and springs.
20. Inspect the electrical wiring.
21. Inspect the diesel fuel pump.
  - Inspect the DEF Solution pump.
22. Check the trailer axle, frame, hitch and tank hold-down bolts.
23. Thoroughly clean the fuel trailer.

## 4.2 MAINTENANCE PROCEDURES

### 4.2.1 Axle Maintenance:

#### First 200 Miles:

1. Adjust brakes.
  - Refer to OEM manual for procedure.

#### 3,000 Miles or 3 Months:

2. Adjust brakes.
  - Refer to OEM manual for procedure.
3. Check torque on wheel nuts.
  - Refer to the section in this manual.
4. Inspect tires for wear.
  - Refer to OEM manual for procedure.

#### 6,000 Miles or 6 Months:

5. Inspect brake magnets for wear.
  - Refer to OEM manual for procedure.
6. Inspect suspension parts for wear.
  - Refer to OEM manual for procedure.

#### 12,000 Miles or 12 Months:

7. Inspect brake lining wear, check brake cylinder for leaks, and inspect brake wiring for damage.
  - Refer to OEM manual for procedure.
8. Grease the wheel bearings and check the hub for wear.
  - Refer to OEM manual for procedure.
9. Inspect grease seal for leakage.
  - Refer to OEM manual for procedure.

### 4.2.2 Tires:

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

- Refer to the axle OEM manual for a Tire Wear Diagnostic Chart.
- Replace the tires with Meridian part #18131 or an equivalent tire:

3T235/80R16, TR643

Load Range E

For Trailer Service Only

### 4.2.3 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 fuel trailer, contact Meridian for approval.
- **IMPORTANT:** Anyone performing a welding repair should be certified in accordance to the American Welding Society (AWS) standards.

### WARNING

#### PERSONAL INJURY HAZARD

Repairs or modifications to the trailer, it's tongue, or trailer hitch can result in serious injury or death should these repairs fail.

### 4.2.4 Wheel Bearings:

Each axle is equipped with a grease zerk under the center dust cap of the wheel.

- Add grease sparingly to the wheel bearings, using only wheel bearing grease.
  - **IMPORTANT:** Over-greasing wheel bearings can cause them to overheat, resulting in damage and/or failure.

Wheel bearings should be repacked annually.

Check for excessive end play and tighten, if necessary.

#### 4.2.5 Battery:

Inspect the battery at least once every six months and before using this fuel trailer at the beginning of the season. Always follow the safety instructions when servicing a battery.

##### **Battery Safety:**

- Keep all sparks and flames away from batteries, as gas given off by electrolyte is explosive.
- Avoid contact with battery electrolyte: wash off any spilled electrolyte immediately because battery acid can cause severe chemical burns.
- 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 the battery ground cable before servicing any part of the electrical system. Never short circuit the battery; it may explode.
- Protect battery terminals, battery charger terminals, and cables against accidental contact which can cause sparks, explosions, or component damage.
- Never attempt to jump-start a frozen battery.

##### **Battery Maintenance and Replacement Tips:**

- Check the batteries at least every six months for low Voltage, leakage, etc.
- Always use the correct size and type of battery.
  - Replace old batteries with a new 12 Volt automotive type battery.
- Do not install the battery cable to the wrong terminal.
  - Make sure the RED cable is connected to the + (plus) terminal and the BLACK cable is connected to the – (minus) terminal.
- Remove the batteries from this fuel trailer if not expected to be in use for several months.
- Use recommended practices when recharging a dead battery.
- Remove any corrosion from the battery post using a wire brush terminal cleaner.
  - Corrosion can also be removed using a baking soda paste and water to neutralize and remove the acid from the battery terminals.
- Dispose of old batteries properly.
- Make sure the top of the battery box is installed and in good condition (not cracked, cut, or damaged).
- If the battery is not charging while using an external charger, check the fuse.
  - Replace the fuse if necessary.

#### 4.2.6 Gasoline Engine (if equipped):

Gasoline engines are not typically shipped with oil. Check and add oil to engine prior to operating, as needed.

- For any questions concerning the gasoline engine not provided in this manual, refer to the OEM manual that was provided with this fuel trailer.

#### Approved Fuel:

Use a regular unleaded automotive gasoline for all operating conditions.

- Fuel tank capacity: approximately 1.0 gallon.

This fuel trailer's engine is designed for good performance and efficient operation using gasoline containing from 0 to 10% ethanol.

### NOTICE

E85 is an alternative fuel and Meridian's equipment is not designed for this type of fuel. E85 is not gasoline. It is made by combining 85% ethanol with 15% gasoline. The fuel trailer engine is not currently certified or designed to run on E85 or any other alternative fuel.

- Always refer to the OEM Owner's manual for a list of recommended fuel and the current approved additives.

#### 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.
  - Crankcase capacity: 1.16 US qt. (1.1 liter).

#### Change Engine Oil:

1. Review the Operator's Manual for the engine.
2. Allow the engine to cool before changing the oil.
  - Draining works best when the oil is warm.

### CAUTION

BURN HAZARD  
Hot engine oil can burn skin.

3. Be sure the engine key switch is in the OFF position.
  - The fuel valve must be turned OFF also.
4. 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 case (less than 1 quart) with SAE 10W-30 oil for general usage.
  - If the engine is operated in more extreme conditions, refer to the OEM manual for oil recommendations.
8. Run the engine for one minute and recheck both oil levels.
  - Add oil, as needed.

#### 4.2.7 Engine Air Filter:

A dirty air filter will restrict air flow to the carburetor, reducing engine performance.

- If you operate the engine in very dusty areas, clean the air filter more often than specified in the maintenance schedule.

1. Remove the air cleaner cover and inspect the filter and foam cover weekly.
2. Remove any debris from the foam cover.
  - Thoroughly clean or replace foam cover every 3 months or 50 hours of operation.
  - Clean it more frequently when used in dusty conditions.
3. Clean or replace dirty filter elements.
  - Always replace damaged filter elements.
4. Replace the cover.

### NOTICE

- Operating engine without an air filter, or with a damaged air filter, will allow dirt to enter engine, causing rapid engine wear.
- This type of damage is not covered warranty.

#### 4.2.8 Engine Circuit Protection:

The circuit protector protects the battery charging circuit. A short circuit, or a battery connected with reverse polarity, will trip the circuit breaker.

- The green indicator inside the circuit protector will pop out to show that it has switched off.
  - If this occurs, determine the cause of the problem and correct it before resetting the circuit protector.
- Push the circuit protector button to reset.

#### 4.2.9 Engine To Pump Connection (Gasoline Engine Option Only):

Check the coupling between the pump and engine annually.

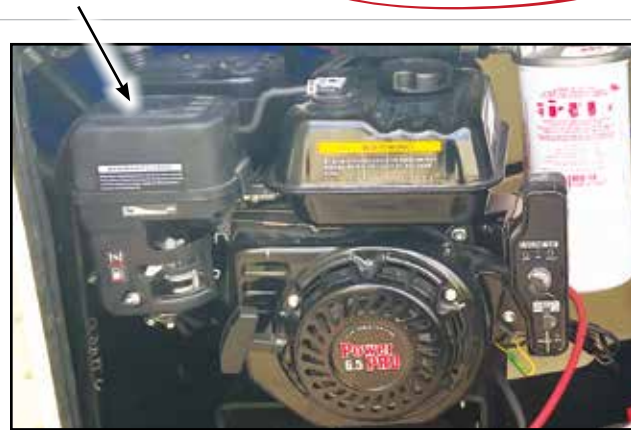


Fig 53 - Air filter cover



Fig 54 - Air filter



Fig 55 - Engine circuit protector



Fig 56 - Engine to Pump coupling

#### 4.2.10 Trailer Breakaway 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 should 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 breakaway 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.

##### Changing Battery:

The battery in the breakaway system is rechargeable.

- The Break-Away key must be completely plugged into the socket for the system to operate properly.
- If the battery will not hold a charge, replace it.



Fig 58 - Trailer Break-Away System



Fig 59 - Break-Away switch and pin



Fig 60 - Break-Away Battery

##### Replacing Battery:

The battery in the breakaway system is replaceable.

- If the battery will not hold a charge, replace the battery. Contact the OEM supplier for a replacement battery.

**4.2.11 Wheel Bolt Torque Requirements:**

1. Initially check the wheel bolt torque at 10, 25, and 50 miles and 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.

**⚠ CAUTION****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 maintained wheel nuts prevent loose wheels and broken studs.
2. 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.
  3. Tighten the wheel nuts in a clockwise, cross-axle alternating pattern.

**4.2.12 Axle Bolts, Trailer Hitch Bolts, and Tank Hold-Down Bolts:**

Check the torque on the axle to frame bolts, tank hold-down bolts, and trailer hitch bolts at least once per year.



Fig 61 - Trailer wheels

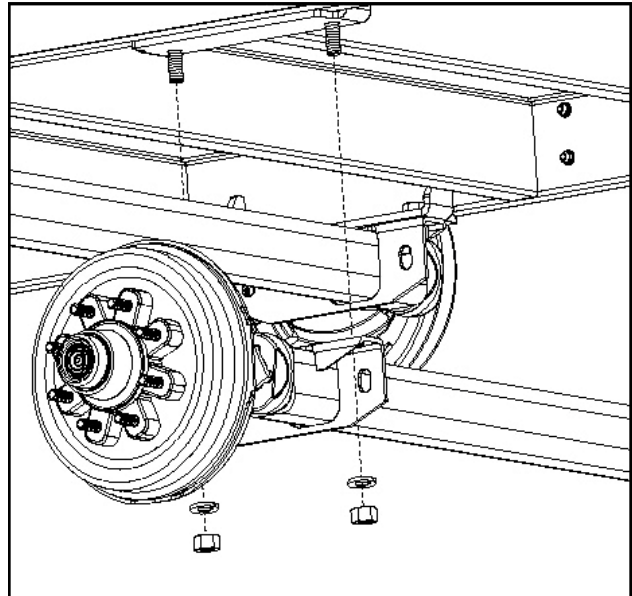


Fig 62 - Check all trailer bolts

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.

- [illegible]

## **4.4 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, Province/State, 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

This section contains a list of common problems, causes and offers quick solutions to those issues.

If problems are confronted which are difficult to solve, even after having read through this section, please contact your authorized dealer, distributor or Meridian Manufacturing Inc. Before you call, please have this Operator's Manual and the unit's serial number ready.

### ***Problem***

Possible Cause	Possible Solution
----------------	-------------------

#### *Gasoline 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
Wrong fuel type	Do not use gasoline containing more than 10% ethanol
Poor fuel quality	<ul style="list-style-type: none"> <li>• Store gasoline in a clean, plastic, sealed container approved for fuel storage.</li> <li>• Close vent cap (if equipped) when not in use and store container away from direct sunlight.</li> <li>• If fuel is stored longer than three months, adding a fuel stabilizer is recommended.</li> </ul>
Dirty air filter	Clean or replace the filter

#### *Electrical functions are not working properly*

Battery cable or battery	Check battery cable and make sure battery is fully charged
Improper ground	Check for proper grounding of electrical circuit

continued on next page

**Problem**

Possible Cause	Possible Solution
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*DEF pump is not working properly*

Pump is not working	The DEF pump is for intermittent duty only. Once the maximum thermal limit is reached, the motor must be allowed to return to ambient temperature before resuming operation.
Pump will not start	Check in-line fuse
	Check for correct Voltage ( $\pm 10\%$ ) and electrical connections
	Check motor for open or grounded circuit
	Check for locked drive assembly
Pump will not prime (no discharge but motor runs)	DEF tank is empty
	Inlet or outlet pipes and/or hose are blocked with debris.
	Check for severe vacuum leak
	Check for proper Voltage with the pump operating ( $\pm 10\%$ )
	Check pump for damage
Pump leaks	<ul style="list-style-type: none"> <li>• Diaphragm may be ruptured, pinched, or punctured</li> <li>• Contact OEM for repair options</li> </ul>
	Check for loose pump head or drive screws.

*Electric diesel fuel pump will not prime*

Suction line is damaged	Check for leaks in suction line
Fuel level in tank is below the pump inlet	Maintain the fuel level above the height of the fuel pump inlet
Bypass valve open	<ul style="list-style-type: none"> <li>• Valve problems; must move freely and be free of debris</li> <li>• Contact OEM for cleaning and/or repair options</li> </ul>
Vanes sticking	<ul style="list-style-type: none"> <li>• Vanes and slots may have nicks, burrs or wear</li> <li>• Contact OEM for repair options</li> </ul>
Excessive rotor or vane wear	<ul style="list-style-type: none"> <li>• Rotor and vane wear or damage</li> <li>• Contact OEM for repair options</li> </ul>
Outlet blocked	Check pump outlet, hose, nozzle, and filter for blockage
Vapor lock	Check breather on top of tank for obstruction

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**Problem**

Possible Cause	Possible Solution
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*Electric diesel fuel pump low capacity*

Excessive dirt in screen	Remove and clean screen
Suction line problem	Check suction line for leaks or restrictions or air leaks (not airtight)
Bypass valve sticking	<ul style="list-style-type: none"> <li>• Valve problems; must move freely and be free of debris</li> <li>• Contact OEM for cleaning and/or repair options</li> </ul>
Vanes sticking	<ul style="list-style-type: none"> <li>• Vanes and slots may have nicks, burrs or wear</li> <li>• Contact OEM for repair options</li> </ul>
Excessive rotor or vane wear	<ul style="list-style-type: none"> <li>• Rotor and vane wear or damage</li> <li>• Contact OEM for repair options</li> </ul>
Hose or nozzle damage	Replace hose or nozzle
Plugged filter	Replace filter
Low fluid level	Fill tank

*Electric diesel fuel pump runs slowly*

Incorrect voltage	Check incoming line voltage while pump is running. Must be 12 Volts
Vanes sticking	<ul style="list-style-type: none"> <li>• Vanes and slots may have nicks, burrs or wear.</li> <li>• Contact OEM for repair options.</li> </ul>
Wiring problem	Check for loose connections
Motor problem	Contact OEM for replacement options

*Electric diesel fuel pump stalls, fuse blows, or circuit breaker trips repeatedly*

Bypass valve sticking	<ul style="list-style-type: none"> <li>• Valve problems; must move freely and be free of debris</li> <li>• Contact OEM for cleaning and/or repair options</li> </ul>
Low voltage	Check incoming line voltage while pump is running. Must be 12 Volts.
Excessive rotor or vane wear	<ul style="list-style-type: none"> <li>• Rotor and vane wear or damage</li> <li>• Contact OEM for repair options</li> </ul>
Debris in pump cavity	Clean debris from pump cavity

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**Problem**

Possible Cause	Possible Solution
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*Electric diesel fuel pump overheats*

Diesel fuel may be too viscose (too thick)	Viscous fluids can only be pumped for short periods of time (less than 30 minutes).
Clogged screen	Remove and clean screen
Restricted suction pipe	Remove restriction
Motor failure	Contact OEM for replacement options
Pump rotor lock-up	Contact OEM for cleaning and/or repair options

*Electric diesel fuel pump does not operate*

No power	Check incoming 12 Volt power source
Switch failure	Replace switch with OEM parts
Motor failure	Contact OEM for replacement options
Thermal protector failure	Contact OEM for replacement options
Incorrect or loose wiring	Repair wiring

*Electric diesel fuel pump leaks*

Bad O-ring gasket	Replace all O-ring gaskets
Dirty shaft seal	Clean seal and seal cavity
Bad shaft seal	Replace seal
Incompatible fluid	Do not pump any fluid other than diesel fuel
Loose fasteners	Tighten fasteners

*Electric diesel fuel pump hums but will not operate*

Motor failure	Contact OEM for replacement options
Broken key	Remove all debris and replace key

## 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 (1-800-830-2467).

- Visit our website at: [www.meridianmfg.com](http://www.meridianmfg.com)
- Specifications and measurements are subject to change without notice.

### Note:

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

Table 2 - Specifications

DESCRIPTION	SPECIFICATION
Dimensions	<ul style="list-style-type: none"> <li>- 16 ft long (from hitch to rear bumper)</li> <li>- 5 ft high (ground to top of tank, railing not included)</li> <li>- 8' 3" witch (outside of fenders)</li> <li>- 5' 11" tank width</li> </ul>
Gasoline Engine	990 Basic: No gas engine option 990 Max: 6.5 hp, electric start
Diesel Fuel Pump	990 Basic: Rated for diesel fuel only Flow - 15 GPM standard Flow, 25 GPM optional 990 Max: Rated for diesel fuel only Flow - 25 GPM standard Flow, 40 GPM optional
Diesel Fuel Hose Length	990 Basic: 12' on 15 GPM or 25' on 25 GPM, depending on pump pkg 990 Max: 35' long hose on retracting reel, 50' optional
Filter (diesel fuel)	10 Micron
Diesel Fuel Tank Capacity	990 gallons
Fill Opening	990 Basic: Two 2" fill ports with vented and lockable fill cap 990 Max: One 2" fill port with vented and lockable fill cap
Electric (12 Volt) Pump Option	Power - DC 12 volt, Size - 1/2 horsepower, duty cycle - 30 minutes, thermal protection switch, circuit protection fuse, flow - 25 GPM
DEF Solution Pump	990 Basic: Power - 12 Volt, flow rate - 8 GPM on self-contained tote 990 Max: Power - 12 Volt, flow rate - 9.5 GPM
DEF Hose Length	990 Basic: 20' long hose on self-contained tote 990 Max: 25' long hose
DEF Solution Tank Capacity	990 Basic: 55 gal self-contained tote 990 Max: 55 or 110 gallons
Electrical System	990 Basic: Battery (12 Volt) for DEF pump 990 Max: Battery (12 Volt) for engine's electric start and DEF pump
Shut-Off Valve	990 Basic: None 990 Max: 2" ball type (located under tank)
Breakaway Brake System	Standard
Wiring Harness	Standard, 7-pin automotive connector
Axles and Tires	7000 lb axle with electric drum brakes (each axle), 16" x 10-ply tires

## 6.1 BOLT TORQUE

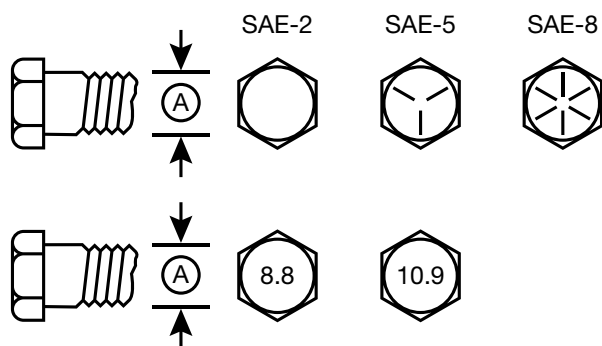
The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

Table 3 - 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 4 - 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.

# **LIMITED MATERIALS AND WORKMANSHIP WARRANTY**

## **for Fuel Trailers**

Meridian Manufacturing Inc. (hereinafter referred to as the Manufacturer) hereby warrants the Fuel Trailer(s) sold by it to be free from any defect in material or workmanship under normal use and service for a period of one (1) year from the date of shipment. The Manufacturer's obligation under this warranty shall be limited to the repair or replacement only, FOB the original point of shipment, of any defective parts or portions of the fuel trailer or accessories manufactured by Meridian. Any warranty claim must be reported to the Manufacturer within one (1) year from the date of shipment.

### **THIS WARRANTY IS SUBJECT TO THE FOLLOWING LIMITATIONS, PROVISIONS AND CONDITIONS:**

1. This warranty does not apply:
  - a. To any product sold by the Manufacturer where it is used in areas exposed to corrosive or aggressive conditions including salt water, acids, alkaloid, ash, cement dust, animal waste or other corrosive chemicals from either inside or outside the bin.
  - b. For failures or defects arising out of damage during shipment or during storage on site.
  - c. To materials replaced or repaired under this warranty except to the extent of the remainder of the applicable warranty.
  - d. To damage resulting from misuse, negligence, accident or improper site preparation by others.
  - e. If the product has been altered or modified by others.
  - f. If in the case of coating failures the failure is the result of damage, lack of proper maintenance or failure to remove road salt or other contaminants that may have come in contact with the bin surface.
  - g. To loss of time, inconvenience, loss of material, down time or any other consequential damage.
  - h. For a function that is different than original designed intent.
2. The obligation of the Manufacturer under this warranty shall not arise unless the Manufacturer is notified and this warranty is presented together with a written statement specifying the claim or defect within thirty (30) days after the failure is first detected or made known to the owner and within one (1) year from the shipment date. The Manufacturer in its sole discretion shall determine if the claim is valid and whether correction of the defect or failure shall be made by repair or replacement of the materials.
3. The coating warranty is based on the manufacturer's performance specification for Polyester Powder finishes and does not include repair of minor blemishes or rusting that is normally part of the general maintenance of the fuel trailer. This warranty does not cover excessive wear on interior coatings. See attachment for full Performance Specification details on Polyester Powder Finishes.
4. The obligation of the Manufacturer hereunder extends only to the original owner and to the Meridian dealer to whom the materials may have been initially sold. This warranty shall not be subject to any assignment or transfer without the written consent of the Manufacturer.
5. The customer shall acknowledge that it has made its own independent decision to approve the use of the supplied materials and also the specific fabrication and construction procedures utilized to complete the fuel trailer, and has satisfied itself as to the suitability of these products for this particular application.
6. The foregoing sets forth the only warranties applicable to said materials and said warranties are given expressly and in lieu of all other warranties, expressed or implied, statutory or otherwise, of merchantability or fitness for a particular purpose and all warranties which exceed or differ from said warranties herein are disclaimed by the Manufacturer.
7. The owners sole and exclusive remedy against the Manufacturer shall be limited to the applicable warranty set forth herein and the endorsements, if any, issued together with this document and no other remedy (including but not limited to the recovery of assembly or disassembly costs, shipping costs, direct, incidental, special, indirect or consequential damages for lost profits, lost sales, injury to person or property or any other loss, whether arising from breach of contract, breach of warranty, tort, including negligence, strict liability or otherwise) shall be available to the owner or Meridian Dealer or any other person or entitles whether by direct action or for contribution or indemnity or otherwise.
8. The financial obligation of the Manufacturer under this warranty shall be limited to the repair or replacement of the product as originally supplied and in no event shall exceed the original cost of the product supplied.
9. The Manufacturer shall not have any obligation under any warranty herein until all accounts for materials, installation and erection of the said product thereof and for labor and other work performed by the Manufacturer or its dealers have been paid in full by the owner.

### **WARRANTY REQUEST PROCEDURE**

- Registering product with Meridian Manufacturing.
- Contact the dealer unit was purchased from upon discovery of any defects.
- A completed warranty claim form submitted by dealer to Meridian warranty representative for review and course of action.
- Warranty repair work will only be performed by Meridian, the dealer or an approved representative. No warranty work completed prior to approval. Failure to follow procedure may affect any or all reimbursement.
- Claims will be adjudicated at the sole discretion of the manufacturer and in accordance with the terms and conditions of the applicable limited warranty.
- A complete list of warranty procedures can be procured from the Warranty Department or found in your operator's manual.



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