



## Operation and Maintenance Manual

### Mobile Integrated Indirect Construction Heater Model No: SFT800



#### **⚠ WARNING**

This User's Manual contains safety information and user instructions. You must read this manual before towing the trailer.

#### **Retain these instructions for future reference**

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## **GENERAL HAZARD WARNING**

Failure to comply with the precautions and instructions provided with this trailer can result in death, serious bodily injury, and property loss or damage from hazards of fire, explosion, burn, asphyxiation, carbon monoxide poisoning, and/or electric shock.

If you need assistance or further information such as an instruction manual, labels, etc., contact the manufacturer.



## **WARNING**

Fire, burn, inhalation, and explosion hazard. Keep solid combustibles, such as building materials, paper or cardboard, a safe distance away from the heater as recommended by the instructions. Never use the heater in spaces which do or may contain volatile or airborne combustibles, or products such as gasoline, solvents, paint thinner, dust particles or unknown chemicals.



## **WARNING**

Not for home or recreational vehicle use.

# The Manual

For your safety, study this manual carefully before towing the trailer.

This heater trailer is built with components which have separate instruction manuals. If this manual refers to another manual that you do not have, please contact your dealer for assistance.

Ensure that personnel who tow or work on the equipment have access to all manuals and any additional documentation supplied with it.

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## TRAILER SPECIFICATIONS

Overall Length:	163.5" (415 cm)
Overall Width:	100" (254 cm)
Height:	95.1" (242 cm)
Additional Height:	8" (20 cm)
Hitch Weight:	950 Lb (431 kg)
Hitch Height:	15-3/8" to 20"
Coupler:	3" Pintle Eye
UVW:	6,500 lb (2,950 kg)
GVWR	10,000 lb (4,536 kg)
Tires:	ST235/80R16
Tire Pressure:	80 psi
Wheels:	16 X 6 - 8 Bolts 6.5"
Brakes:	Electric
Emergency Brake:	Internal 12V Battery
Axles Lubrication:	EZ Lube
Fuel Tank Capacity:	250 Gal (1137 L)
Heater Run Time:	48 hours

# General Safety Information

## Major hazards

Loss of control of the Trailer or trailer/tow vehicle combination can result in serious injury or death. The most common causes are:

- Improper sizing of the trailer for the tow vehicle or vice versa
- Excessive speed (driving too fast for safe conditions)
- Failure to adjust driving behavior with the trailer
- Improper trailer coupling to vehicle hitch
- Improper braking and steering under sway conditions
- Improper tire pressure

### **Improper sizing of the trailer for the tow vehicle**

If the towing vehicle is too small for the trailer, it can cause stability problems that can lead to serious injury or death. The additional strain on the engine and drive-train can also lead to serious tow vehicle maintenance problems. Ensure that the maximum towing capacity of the towing vehicle is not exceeded. Check the appropriate values in vehicle owner manuals or on the VIN label.

### **Excessive speed (driving too fast for safe conditions)**

The maximum recommended speed for safely towing a trailer is 95km/h with ideal road conditions. If you drive too fast, the trailer is more likely to sway, potentially causing loss of control. Also, tires may overheat with excessive speed, thus increasing the possibility of a blowout.

### **Failure to adjust driving behavior with the trailer**

When towing a trailer, you will have decreased acceleration, increased stopping distance, and increased turning radius. Furthermore the trailer will change the handling characteristics of your towing vehicle, making it more sensitive to steering inputs and more likely to be pushed around in windy conditions or when being passed by large vehicles. In addition, you will need a longer distance to pass, due to slower acceleration and increased length. With this in mind:

- Be alert for slippery conditions. You are more likely to be affected by slippery road surfaces when driving a tow vehicle with a trailer than driving a tow vehicle without a trailer.
- Anticipate the trailer “swaying.” Swaying can be caused by excessive steering, wind gusts, roadway edges, or by the trailer’s reaction to the pressure wave created by passing vehicles.
- When encountering trailer swaying, take your foot off the accelerator and steer as little as possible in order to stay on the road. Use small “trim-like” steering adjustments and do not attempt to steer out of the sway or you may make it worse.

- Also avoid applying the tow vehicle brakes to correct trailer swaying. However, application of the trailer brakes alone will tend to straighten out the swaying, especially when travelling downhill.
- Use lower gear when driving down steep or long grades.
- Be aware of your trailer height, especially when approaching bridges, roofed areas and around trees.
- Cross chain underneath hitch and coupler with enough slack to permit turning and to hold tongue up if the trailer comes loose.

### **Improper trailer coupling to vehicle hitch**

It is critical that the trailer be securely coupled to the hitch, and that the safety chains and emergency breakaway brake lanyard are correctly attached.

Uncoupling may result in death or serious injury to you and to others.

- Be sure the hitch load rating is equal to or greater than the load rating of the coupler.
- Be sure the hitch size matches the coupler size.
- Observe the hitch for wear, corrosion and cracks before coupling. Replace if necessary before coupling the trailer to the tow vehicle.
- Be sure the hitch components are tight before coupling the trailer to the towing vehicle.

### **Proper use of safety chains**

If your trailer comes loose from the hitch for any reason, we have provided safety chains so that control of the trailer can still be maintained.

- Fasten chains to frame of the vehicle. Do not fasten chains to any part of the hitch unless the hitch has holes or loops specifically for that purpose.
- Cross chain underneath hitch and coupler with enough slack to permit turning and to hold tongue up, if the trailer comes loose.

### **Proper connection of breakaway brake**

The trailer is equipped with electric brakes and a breakaway brake system that can apply the brakes on your trailer if it comes loose from the hitch for any reason. You will have a separate set of instructions for the breakaway brake if your trailer is so equipped. The breakaway brake system, including battery, must be in good condition and properly rigged to be effective.

- The breakaway lanyard must be connected to the tow vehicle and NOT to any part of the hitch.
- Before towing the trailer, test the function of the breakaway brake system. If the breakaway brake system is not working, do not tow the trailer. Have it serviced or repaired.

## **Worn tires, loose wheels and lug nuts**

If a tire has a bald spot, bulge, cut, cracks, or is showing any cords, replace the tire before towing. If a tire has uneven tread wear, take the trailer to a dealer service center for diagnosis. Uneven tread wear can be caused by tire imbalance, axle misalignment or incorrect inflation.

Tires with too little tread will not provide adequate frictional forces on wet roadways and can result in loss of control, leading to death or serious injury.

Improper tire pressure causes increased tire wear and may reduce trailer stability, which can result in a tire blowout or possible loss of control. Therefore, before each tow you must also check the tire pressure. Remember, the proper tire pressure is listed on the Certification / VIN label, normally mounted on the front left side of the trailer, and should be checked when tires are cold. Allow 3 hours cool-down after driving before checking tire pressure.

The tightness of the lug nuts is very important in keeping the wheels properly seated to the hub. Before each tow, check to make sure they are tight.

The proper tightness (torque) for lug nuts and tightening sequence is listed in the Inspection, Service and Maintenance section of this manual. Use a torque wrench to tighten the lug nuts and use the crisscross star pattern sequence. Improper tightening of the lug nuts voids the axle warranty.

Lug nuts are also prone to loosen after first being assembled. When driving a new trailer (or after wheels have been remounted), check to make sure they are tight after the first 10, 25 and 50 miles of driving and before each tow thereafter.

## **Checking brakes or lights**

Be sure that the electric brakes and all of the lights on your trailer are functioning properly before towing your trailer. Electric brakes and lights on a trailer are controlled via a connection to the tow vehicle, generally a multi-pin electrical connector. Check the trailer tail lights by turning on your tow vehicle headlights. Check the trailer brake lights by having someone step on the tow vehicle brake pedal while you look at trailer lights. Do the same thing to check the turn signal lights.

## **Tow vehicle mirrors**

Standard mirrors usually do not provide adequate visibility for viewing traffic to the sides and rear of the towed vehicle. Use mirrors that allow you to safely observe approaching traffic.

## Testing electric brakes

Your trailer has electric brakes, and your tow vehicle will have an electric brake controller that sends power to the trailer brakes. Before towing the trailer on a road, confirm that the electric brakes are working by operating the brake controller.

The breakaway brake system battery will trickle charge from the tow vehicle. The “Charging” lamp (1) will be illuminated when the battery is receiving a charge from the tow vehicle. Press the “Test” button (2) to test the battery level of charge. Do not tow the trailer if the battery requires recharging. A discharged breakaway brake battery will not activate the brakes if the trailer uncouples from the tow vehicle. The battery must be fully charged before towing the trailer.

## Testing electric breakaway brakes

The breakaway brake system includes a battery, a switch with a pullpin and lanyard, and a breakaway brake controller. Read and follow the instructions here as well as the instructions that have been prepared by the breakaway brake manufacturer. If you do not have these instructions, contact your dealer for assistance.

The breakaway brake system battery will trickle charge from the tow vehicle. The “Charging” lamp (1) will be illuminated when the battery is receiving a charge from the tow vehicle. Press the “Test” button (2) to test the battery level of charge. Do not tow trailer if the battery requires recharging. A discharged breakaway brake battery will not activate the brakes if the trailer uncouples from the tow vehicle. The battery must be fully charged before towing trailer.



*Breakaway brake battery charger*

- To test the breakaway brake battery, remove the pullpin from the switch and attempt to pull the trailer forward. You should here the click sound from brakes and feel the trailer resisting being towed, but the wheels will not necessarily be locked. If the brakes not function, do not tow the trailer until brakes, or battery, are repaired.
- Immediately replace the pullpin. The breakaway brake system will discharge the battery rapidly when the pullpin is removed.

Do not tow the trailer with the breakaway brake system ON because the brakes will overheat, which can result in permanent brake failure.

If you do not use your trailer for three or more months, or during winter months, store the battery indoors and charge the battery every three months.

Replace the breakaway brake battery according to the intervals specified by battery manufacturer.

### **Couple the trailer to the tow vehicle**

Rotate the jack handle counter-clockwise. This will retract the jack causing the receiver to drop down so it can fully engage the ball and transfer the weight of the trailer tongue to the towing vehicle hitch. If the receiver does not line up with the ball, raise the receiver again and adjust the position of the tow vehicle. Then lower the receiver over the ball. When the drop leg base is no longer resting on the ground, the towing vehicle hitch is holding all of the weight of the trailer tongue. Continue retracting the drop leg to their upper positions by rotating the jack handle. Remove the plunger pin and rotate the drop leg to a horizontal position. Insert the plunger pin to lock the drop leg in this position.

### **Connect the safety chains**

- Visually inspect the safety chains and hooks for wear or damage. Replace worn or damaged safety chains and hooks before towing.
- Rig the safety chains so they have sufficient slack to permit turning, but not too much slack (so it is not touching the road). The safety chains must keep the tongue on the tow vehicle bed if the trailer uncouples.
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### Attach breakaway brake lanyard

If the coupler or hitch fails, a properly connected and working breakaway brake system will apply the brakes on the trailer. The safety chains will keep the tow vehicle attached and as the brakes are applied at the trailer's axles, the trailer/tow vehicle combination will come to a controlled stop.

- Connect the lanyard to the tow vehicle so that the electric brake pullpin will be pulled out before all of the slack in the safety chains is taken up. Do not connect the lanyard to a safety chain, hitch ball or hitch ball assembly. This would keep the breakaway brake system from operating when it is needed.

### Adjust trailer hitch height

The height of the hitch on the trailer must be adjusted so that the trailer is level while connected to the tow vehicle.

- Connect trailer to tow vehicle.
- Park the tow vehicle and trailer on a firm, level surface.
- Stand away from the trailer and visually verify if the trailer is level front-to-rear. If the front of the trailer is higher than the rear, the hitch must be raised. If the front of the trailer is lower than the rear, the hitch must be lowered.
- Uncouple trailer from tow vehicle.
- Remove the lock nuts and bolts (1) on hitch. Discard lock nuts. Inspect bolts for damage and replace if necessary. Contact your dealer for the correct size and grade of bolts.



*Adjust hitch height*

- Raise or lower the hitch as necessary.
- Install bolts (1) and NEW lock nuts.
- Tighten lock nuts to 100 lb/ft of torque.
- Couple the trailer to the tow vehicle and verify that the trailer is level front to rear. Adjust if necessary.

## Do not move the trailer until:

- The coupler is secured and locked to hitch
- The safety chain is secured to the tow vehicle
- The trailer jack is fully retracted
- Tires and wheels are checked
- The breakaway switch is connected to the tow vehicle and checked
- The trailer plug is securely connected and lights are checked
- The trailer brakes are checked
- Always secure the door latches after closing, place a linchpin in the catch
- Check if tow vehicle is equipped with fire extinguisher, flares and reflectors
- Tow vehicle mirrors are adjusted

## Safe trailer towing guidelines

- Check coupler tightness, electrical connector, and tires after towing 100 km.
- Adjust the brake controller to engage the trailer brakes before the tow vehicle brakes. Follow the brake controller manufacturer's literature.
- Use mirrors to verify that there is room to change lanes or merge into traffic. Use your turn signals well in advance.
- Allow plenty of stopping space for your trailer and tow vehicle.
- Do not drive so fast that the trailer begins to sway due to speed. Generally never drive faster than 95 km/h.
- Allow plenty of room for passing. A rule of thumb is that the passing distance with a trailer is 4 times the passing distance without a trailer.
- Use lower gears for climbing and descending grades.
- Do not brake while in curve unless absolutely necessary. Instead, slow down before you enter the curve.
- Do not apply the tow vehicle brakes to correct extreme trailer swaying. Instead, lightly apply the trailer brakes with the hand controller.

## Installation

This trailer has a built-in Sure Flame ID800 heater (3 phase version). This indirect-fired heater is intended to be used primarily for heating areas in buildings that are under construction. Since the products of combustion are released, it is imperative that the trailer is located outside of the enclosed area. The flow of supply air and exhaust gasses must not be obstructed in any manner. The output hot air from the heater trailer is supplied to the building heating area using one 20" or two 16" ducts (depending on the duct adapter).

The equipment should be installed in accordance with applicable local regulations, which should be carefully followed in all cases. In Canada, installation must comply with CSA B139 Installation Code for Oil Burning Equipment. In the USA, installation must comply with NFPA 31 Standard for the Installation of Oil Burning Equipment. Authorities having jurisdiction should be consulted before installations are made.

For maximum run time, position trailer properly on a horizontal surface with fuel tank level.

The electrical grounding of the appliance must be in compliance with the National Electrical Code, ANSI/NFPA 70, or the CSA C22.1, Canadian Electrical Code, Part I.

**Warning:** Heater trailer shall be used in accordance with local and national installation codes and shall be installed and maintained by a qualified service person. The Heater Trailer should be inspected before each use and at least annually.

**Warning:** Do not use this heater trailer in a space where gasoline or other liquids with flammable vapors are stored or used.

## Electrical supply

This heater trailer can be powered from an internal diesel generator or from an external shore power 208/230VAC, 3Ø, 27/24A.

## Fuel supply

Internal fuel tank capacity is 250 Gal (1137 L) which will allow running the heater via generator for apr. 48 hours. The trailer fuel tank has two refuelling caps: one on the side, accessed from generator door, and the second one is on the front, accessed from front heater door. The fuel tank has a mechanical fuel gauge which is located on the side of the fuel tank. The electrical fuel level sending unit, which is located in center of the fuel tank, activates the red flashing light signal tower when the fuel level is low (8 hours before heater runs out of fuel). The red solid light on the signal tower indicates that there is no fuel in the tank and the heater will shut down.

## Generator

The generator unit supplies electrical power to the heater and its accessories. The minimum fuel level for the generator is lower than the heater itself, so when the fuel level is critical, the heater will turn off first before the generator.

For more generator instructions, refer to Generator Owner Manual.

## Heater operating instruction

**Read first, understand and follow the instructions from the Generator and Heater Operating Manuals.**

**To turn on the heater**, the generator needs to be running (or the shore power needs to be plugged into the heater receptacle). To properly turn the heater on, follow the operating instruction label on the heater or refer to the Heater Operation and Maintenance Manual.

**Before turning on the generator**, be sure the E-stop button is not depressed and the Positive Air Cut Off lever is not pulled out. Check the engine oil level, check the condition of fuel supply and return lines, and check the battery clamps and battery state of charge. The generator battery is charged only by running the generator. If the generator is not running for long period of time, recharge the battery every three months.

**To start the generator**, toggle the *run* switch up on the generator panel, press and hold the red *fuse* button and black *glow* button, then wait for 5 to 20 sec (depending on the ambient temperature), then press the *start* button. After the generator turns on, release the *start* button. Then, after 10 seconds, release the *glow* and *fuse* button.

**To shut off the generator**, be sure the heater is off and the main heater blower turns off. Turn down the *run* toggle switch or press the E-stop button. If the generator is still running irregularly and hesitates to stop, pull the *Positive Air Shut Down* lever.

If using shore power supply, after turning the heater off, also turn off the heater's main power switch.

# Maintenance

## Monthly:

Cords and Connectors	Check for cracks, exposed wires, and dirt in electrical connectors.
Physical Integrity	Check for damage to body, louvers, and inlet screens that may obstruct air flow and impact combustion quality.
Bearings	Lubricate axle bearings.
Wheels	Check the tire wear and tire pressure (adjust to pressure stated on the Certification/VIN label). Tighten lug nuts (bolts) before each tow. Lug nuts are prone to loosen after being first assembled or after remounting a wheel. Ensure all panels, doors, and shields are in place, fasteners are tight, and that door latches are working securely
Brakes	Be sure that electric brakes are functioning. Adjust brake shoes.

## End of Season:

Electrical components*	Check all wiring for loose, cracked, or overheated wires and connectors. Replace if necessary. Ensure ground wires are properly connected. Ensure control box seal is in place and not damaged. Check trailer tail, brake, signal and tower lights.
Bearings	Lubricate axle bearings
Brakes	Be sure that electric brakes are functioning. Adjust brake shoes. Check wear and current draw.
Body	Ensure all panels, doors and shields are in place, fasteners are tight and that door latches are working securely.
Wheels	Inspect tread and sidewalls thoroughly. Rotate every 8,000 km. Tighten lug nuts (bolts). Disassemble/inspect/assemble and repack. Replace promptly if immersed in water. Inspect for cracks & dents. Replace as needed.
Frame	Inspect frame for cracks and loose bolts. Wash the trailer as needed.



