

**INSTALLATION OPERATING, AND SERVICE INSTRUCTIONS  
FOR  
SUBURBAN DIRECT VENT SEALED COMBUSTION GAS HEATER**

**MODEL GT-10D**

**FOR YOUR SAFETY**

**IF YOU SMELL GAS:**

- 1. OPEN ALL WINDOWS.**
- 2. DON'T TOUCH ANY ELECTRICAL SWITCHES.**
- 3. EXTINGUISH ANY OPEN FLAMES.**
- 4. IMMEDIATELY CALL YOUR GAS SUPPLIER.**

**FOR YOUR SAFETY**

**DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.**

**GENERAL INFORMATION**

The Suburban GT-10D Gravity Heater incorporates a sealed combustion system. Air for combustion is drawn from outside and combustion products are expelled outdoors. Your heater was thoroughly inspected before it left the factory. If any parts are found to be damaged, do not install the heater. Notify the transportation company immediately and file a claim.

Your heater is equipped with a Robertshaw 7000 SRI\_C-LP combination control, which contains a Class 11 gas pressure regulator.

The automatic section contains the thermostat and controls the temperature only. The manual section controls the flow of gas to the pilot and main burner. It is also equipped with a safety shutoff to stop the flow of gas in the event of a pilot failure.

Read the instructions contained in this manual carefully and do not deviate from them or modify the heater in **any way**.

The manufacturer does not guarantee proper operation and performance of this heater unless it is installed and operated in accordance with the Installation and operating Instructions contained in this manual.

Keep this book in a safe place because it is an important collection of facts and figures. This book is intended to be a permanent part of your heater installation and should be preserved in a convenient location for ready reference.

**INSTALLATION**

**NOTES TO INSTALLER**

A-in the U.S.A., the installation must conform with local building codes. In the absence of local building codes, refer to: 1-Standard for Recreational Vehicles, ANSI A-119.2-1982. 2-National Fuel Gas Code, ANSI Z223.1-1984.

B-In Canada, the appliance must be installed in accordance with, I-Standard CSAZ240.4 Gas Equipped Recreational Vehicles and Mobile Housing. 2-Any applicable local codes and regulations.

C-The efficiency rating of this heater is a product thermal efficiency rating determined under continuous operating conditions and was determined independent of any installed system.

D-The installation of this heater must comply with the following minimum clearances to combustible construction:

Bottom of Front Grille to Floor - 1"

NOTE: This is to the top surface of the finished floor such as carpeting, tile, etc.

Top of Front Grille to Ceiling- 30"

Sides of Front Grille to Wall - 3"

Center of Outside Vent to Nearest Corner or Obstruction - 6"

Outside Vent to Any Top Overhang - 30"

Minimum Clearance From Vent Tube - 4"

You must adhere to these clearances to provide adequate accessibility for servicing and proper operation.

E-This heater is designed to operate at the following gas inlet supply pressures:

<b>Gas</b>	<b>Minimum</b>	<b>Maximum</b>
LP	11" W.C. *	13" W.C.

\* Water Column

F-This heater is designed for installation in a recreational vehicle only and is tested and certified for use with liquefied petroleum (LP) gas. Do not attempt to convert this heater to natural gas.

## **CUTTING THE OPENING AND INSTALLING THE HEATER**

A-After selecting the desired location, check for wires, pipes, etc., which could interfere with the installation.

B\_ Cut a 15 5/8" x 15 1/4" opening through the interior cabinet wall. (See Figure 1.) NOTE I If the installation depth represented by "X" in Figure 1 A is less than 17 5/16", then the 15 5/8" x 15 1/4" opening must also be cut through the outside wall of the trailer up to the outside skin. Do not cut through the trailer skin.

C-Cut an 8 3/4" x 9 1/4" opening through the trailer skin. (See Figure 1.)

D-Due to the telescoping vent assembly, this heater will accommodate installation depths ranging from 21" to 27" from the outside trailer skin to the exterior side of the interior cabinet wall.

This heater is designed for installations through an exterior wall with a minimum thickness of 1/8" and a maximum thickness of 9 1/4".

E-Remove cabinet front and secure heater to coach cabinet at four locations as illustrated in Figure 1.

## INSTALLING VENT ASSEMBLY

A-Caulk along each side of the cutout and across the top. (See Figure 2.)

1 WARNING! Do not caulk along the bottom edge - this is for drainage.

B-Insert the vent box assembly (be sure "top" is up) through the 8 3/4" x 9 1/4" cutout in the trailer skin. Engage the air inlet extension tube over the air inlet tube on the heater. The flue outlet extension tube fits over the flue outlet tube on the heater. (See Figure 2.)

WARNING! Vent assembly must never slope down from rear of heater. If it does, the heater will not vent properly.

C-Push vent box assembly forward until the flanges are firmly against the outside trailer skin. NOTE: Minimum overlap of vent tubes must be 1 1/2" at maximum installation depth of 27".

D-Place vent frame and grille assembly on vent box as shown.

E-Secure vent assembly to trailer skin using the #10 x 3/4" screws provided. (See Figure 2.)

### **CONNECTION OF GAS SUPPLY TO HEATER**

A-Turn gas supply off at storage tank.

B-All male pipe joints should be treated with a sealing compound resistant to the action of liquefied petroleum gas.

C-Connect the gas supply line to the heater controls.

D-Turn on gas supply to heater and check all connections for leaks: 1-Apply a soapy water solution to each joint, 2-If there is a leak, bubbles will form and burst. 3-Correct all leaks immediately.

**WARNING! Do not use an open flame to check for leaks.**

NOTE: The heater and its individual shut off valve must be disconnected from the gas supply piping system during any pressure testing of the gas system at test pressures in excess of 1/2 PSI&

The heater must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply system at test pressures equal to or less than 1/2 PSIG.

E-In order to maintain a check on gas supply pressure to the heater, Suburban advises the installer to provide a 1/8" NPT plug tap for test gauge connection immediately upstream of the gas supply connection to the heater.

### **Minimum and Maximum Pressure**

Line Pressure - Min. 11 " W.C.; Max. 13" W.C.

Operating Pressure - Min. 10.5" W.C.; Max. 12.5" W.C.

F-After connecting gas and checking connections for leaks, reinstall cabinet front.

### **PRIMARY AIR ADJUSTMENT**

**With** the observation hole cover in place, observe the main burner flame. If a yellow flame exists, sooting can form due to improper burning; therefore, adjustment of the air screw is necessary. It is located behind the air screw cover plate on the combustion chamber door. Remove the plate and turn air screw until the burner flame is a series of sharp blue cones. (See Figure 3.) After completing the adjustment, replace cover plate and tighten securely.

**WARNING! If the burner flame cannot be adjusted, discontinue using the heater and contact your dealer or a service agency. Cleaning of the burner and venting system may be required.**

### **WARNINGS**

Periodic examination of the venting system should be maintained.

Periodic visual checks of the burner in operation should be maintained. If the primary air should need adjustment, follow the procedure outlined under "Primary Air Adjustment".

It is important that the flow of combustion and ventilation air not be obstructed.

Circulating air openings in the front grille area must not be blocked to permit adequate ventilation. Also, combustion air entering from the rear of the heater must not be obstructed.

Clothing or other flammable material should not be placed on or near the heater.

After servicing, be sure to reinstall cabinet front prior to operating heater.

Never attempt to install or repair the heater yourself. The installation of the heater and all repairs should be done by a qualified service agency.

Due to high temperatures, the heater should be located out of traffic and away from furniture and draperies.

Children and adults should be alerted to the hazards of high surface temperatures and should stay away to avoid burns or clothing ignition.

Young children should be carefully supervised when they are in the same room as the heater.

**Any safety screens or guards removed for servicing an appliance must be replaced prior to operating the appliance.**

## **MAINTENANCE AND CLEANING**

Your heater should be inspected before use at least annually by a professional service person.

A careful inspection of all gaskets should be made and if any gaskets show signs of leakage or deterioration, they should be replaced.

It is imperative that the control compartment, burner and circulating air passageways of the heater be kept clean. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc.

Periodic examination of the venting system should be made. It is important that the flow of combustion and ventilation air not be obstructed. Circulating air openings in the louvers of the front grille area must not be blocked to prevent adequate ventilation. Also, combustion air entering from the rear of the heater must not be obstructed.

Periodic visual checks of the burner in operation should be made. If the burner flame should need adjustments, follow the procedure outlined under "Primary Air Adjustment".

Cleaning of the chamber and main burner will be required if the heater has been allowed to operate with a yellow flame. The yellow flame is due to incomplete combustion (lack of air) and will deposit a soot formation inside the chamber and on the main burner. (See Primary Air Adjustment.)

To clean the chamber and main burner, follow these instructions:

- 1-Disconnect gas supply.
- 2-Remove vent grille and frame and pull vent box assembly. (See Figure 2.)
- 3-Remove cabinet front.
- 4-Remove 4 mounting screws that secure chamber assembly to heater cabinet assembly.
- 5-Remove combustion chamber door.
- 6-Remove two burner mounting screws located on the bottom of the combustion chamber and remove burner.
- 7-To reinstall, reverse above procedure.

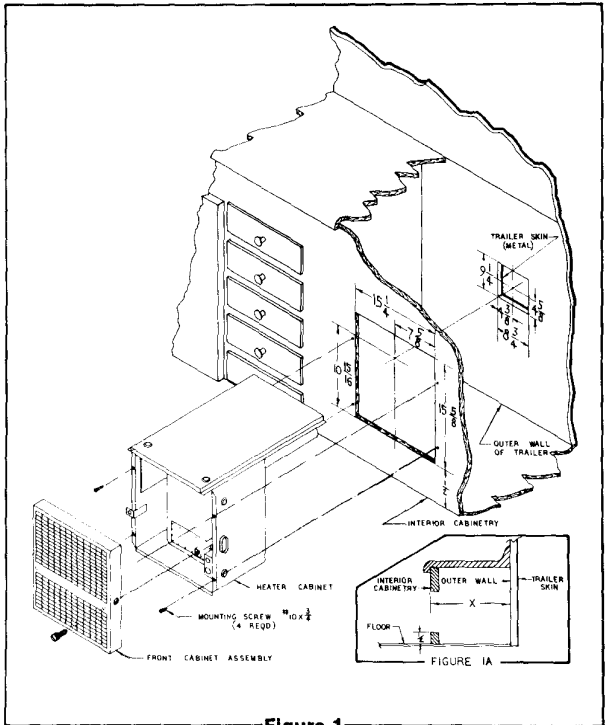


Figure 1

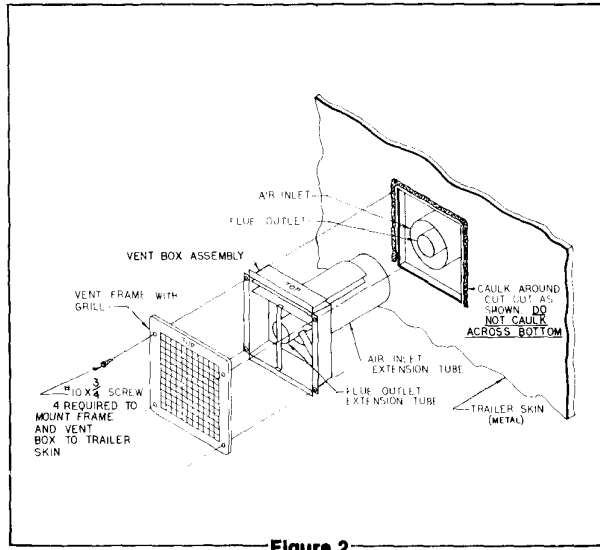


Figure 2

## **OPERATION**

### **PILOT ADJUSTMENT**

The pilot should be a sharp blue flame and be adjusted so it just engulfs the tip of the thermocouple. (See Figure 4.) The pilot adjustment screw is located under a cover screw on the valve. The valve is clearly marked "Pilot Adjustment". (See Figure 5.)

### **OPERATING INSTRUCTIONS**

A-To light the heater pilot:

- 1-Push in on the green knob (A, Figure 5) of the automatic safety valve, turn to "Off" and wait 5 minutes. Be sure this step is not omitted.
- 2-Depress the green knob (A, Figure 5) and turn to "Pilot" position. Release knob.
- 3-Remove observation hole cover and hold lighted match to pilot burner tip while, at the same time, pushing in on the green knob (A, Figure 5) of the automatic safety valve. An open flame must be at pilot burner as long as the knob is depressed.
- 4-After pilot is lit, keep the knob depressed for approximately 45 seconds and then release. Pilot should remain lit.
- 5-Replace observation hole cover.
- 6-If pilot goes out prematurely, do not insert a burning match. Repeat Steps 1-5.

B-To operate heater:

- 1-Be sure pilot is burning properly. Adjust if necessary. (See section on pilot adjustment.)
- 2-Let pilot burn for five (5) minutes to allow warm-up.
- 3-Turn thermostat (B, Figure 5) to "Low" setting.
- 4-Turn green knob (A, Figure 5) to "On".
- 5-Set thermostat on desired temperature.

C-To shut down:

- 1-Turn thermostat to "Low".
- 2-Turn knob (A, Figure 5) to "Pilot" position, push in and turn to "Off" position.

### **SERVICE HINTS**

A-insufficient Heat

- 1-incorrect gas input - check main burner orifice to be sure it is not obstructed. Do not ream or distort orifice in any way. Replace if found to be obstructed or defective.
- 2-Incorrect gas pressure-check pressure at valve. (See Connection of Gas Supply to Heater.)
- 3-incorrect gas mixture - recheck air adjustment screw to assure proper flame on burner. (See Primary Air Adjustment.)
- 4-Check for obstructions in vent assembly.
- 5-Dirty burner - clean if necessary.

B-Pilot Outage

- 1-Improperly adjusted flame –check to be sure pilot flame is a sharp blue color and of proper size. Flame should just engulf the tip of the thermocouple. (See Figure 4 and instructions under Pilot Adjustment.)
- 2-Insufficient air- check air adjustment screw; also, check vent assembly and burner for obstructions.
- 3-Loose or corroded terminals - check terminals at limit switch to be sure they are tight and not corroded.
- 4-Open circuit - check for continuity across limit switch. The switch should be closed. Replace if found to be defective. (See Figure 6 for millivolt circuit.)
- 5-Check thermocouple to be sure it is not burnt and that it is properly connected at valve.
- 6-Air leaks - check all gaskets to be sure they are tight and forming a good seal.
- 7-Defective thermocouple - check for proper millivolt output of thermocouple (minimum - 10 millivolts). If less than 10 millivolts, check pilot flame for proper size. If pilot flame is OK, and thermocouple connections are tight, replace thermocouple.
- 8-Defective valve - replace if thermocouple checks OK. Do not attempt to repair valve.

#### C-Main Burner Lift Off

- 1-Excessive gas pressure - check for proper pressure at valve.
- 2-Improper air/gas mixture - see "Primary Air Adjustment".
- 3-Obstruction in vent or vent not properly installed. The vents should overlap a minimum of 1 1/2" at maximum extension and have a snug fit. Be sure vent assembly is level. It should never slope down from rear of heater.

#### D-Soot Deposit on Burner and Exterior Vent

Soot is caused by incomplete combustion (lack of air). Check vent assembly and main burner for obstructions. Whenever soot has formed, the chamber, the main burner, and the vent assembly must be removed and cleaned.

WARNING! Do not operate heater until sooting problem has been corrected by a service agency.

#### ORDERING REPLACEMENT PARTS

When ordering repair parts from your dealer or a Suburban Service Center, all of the following must be given: Model and Serial Number of the Heater, Part Name, Part Number (Not Item No.), and Quantity.

WARNING! Do not attempt to repair damaged or defective parts. Replace them using only factory-authorized parts.



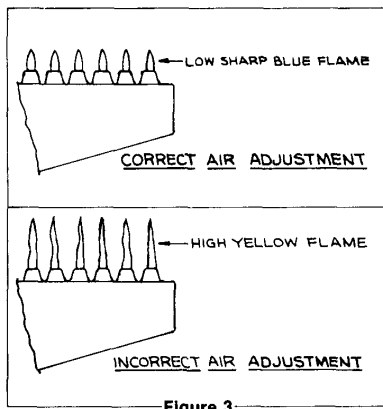


Figure 3

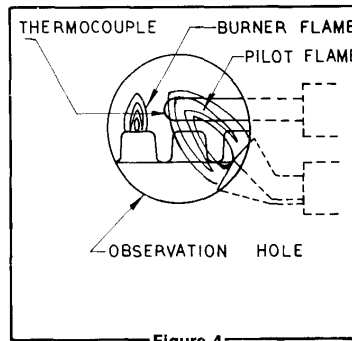


Figure 4

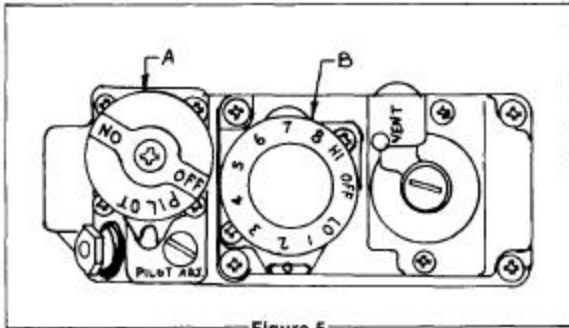


Figure 5

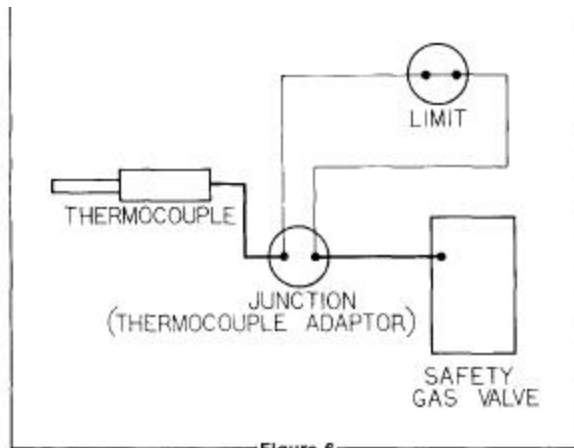


Figure 6