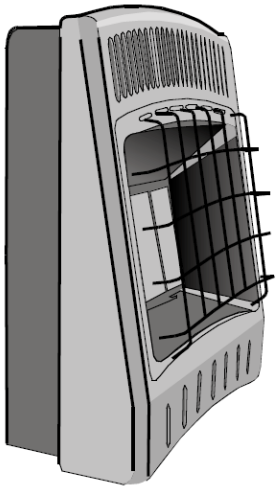
INSTALLATION AND OWNER'S GUIDE

SunStar
VENT-FREE
ROOM HEATER
Models: SC18T-1–NG/LP
SC30T-1–NG/LP

Effective Date: July 2009

INSTALLER: Leave this manual with the appliance.
CONSUMER: Retain this manual for future reference.

IMPORTANT: Owner please fill out and mail warranty card supplied with heater.



GENERAL INFORMATION

This series is design certified by the CSA Laboratories as an Unvented Heater, and must be installed according to these instructions.

This appliance is intended for supplemental heating.

This appliance may be installed in an aftermarket permanently located, manufactured (mobile) home, where not prohibited by local codes.

This appliance is only for use with the type of gas indicated on the rating plate. This appliance is not convertible for use with other gases.

This is an unvented gas fired heater. It uses air (oxygen) from the room in which it is installed. Provisions for adequate combustion and ventilation air must be provided. Refer to the section titled "Combustion and ventilation air requirement".

- Due to high temperatures, the appliance should be located out of traffic and away from furniture and draperies.
- Children and adults should be alerted to the hazard of high surface temperature and should be kept away to avoid burns or clothing ignition.
- Young children should be carefully supervised when they are in the same room with the appliance.
- Do not place clothing or other flammable material on or near the appliance.
- Installation and repair should be done by a qualified service person.
- The appliance should be inspected before use and at least annually by a qualified service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc. It is imperative that control compartments, burners, and circulating air passageways of the appliance be kept clean.

⚠WARNING: If the information in this manual is not followed exactly a fire or explosion may result causing property damage, personal injury or loss of life.

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WHAT TO DO IF YOU SMELL GAS

- **Do not try to light any appliance.**
- **Do not touch any electrical switch; do not use any telephone in your building.**
- **Immediately call your gas supplier from a neighbor's telephone. Follow the gas supplier's instructions.**
- **If you cannot reach your gas supplier, call the fire department.**

Installation and service must be performed by a qualified installer, service agency or the gas supplier.

⚠ WARNING

Any change to this heater or its controls can be dangerous.

For proper ventilation, provide a minimum fresh air opening of one square inch for every 1,000 BTU's of gas burner capacity.

⚠WARNINGS

ANY ALTERATION TO THE ORIGINAL DESIGN, INSTALLED OTHER THAN AS SHOWN IN THESE INSTRUCTIONS, OR USED WITH A TYPE OF GAS NOT SHOWN ON THE RATING PLATE IS PROHIBITED AND VOIDS THE WARRANTY.

The installation must conform to local codes. In the absence of local codes, the installation must conform to the National Fuel Gas Code, also known as NFPA 54 and ANSI Z223.1 - latest edition. Installation and service must be performed by a qualified installer (i.e., a licensed heating contractor or gas company personnel).

Read this Installation and Owners Guide carefully and completely before attempting to install, operate or service this heater. Improper use of this heater can result in serious bodily injury or death due to hazards of fire, explosion, electrical shock or carbon monoxide poisoning. When used without fresh air, this heater may give off **CARBON MONOXIDE,** an odorless, poisonous gas. **CARBON MONOXIDE POISONING MAY LEAD TO DEATH!** Early signs of carbon monoxide poisoning resemble the flue with headache, dizziness and/or nausea. If you have these signs, the heater may not be working properly. **Get fresh air at once, and have the heater serviced.** Some people such as pregnant women, persons with heart or lung disease, anemia, those under the influence of alcohol, and those at higher altitudes are more affected by carbon monoxide than others. Retain this manual for future reference. It is your guide to many years of a proper and safer operation of the heater.

1. This is a heating appliance any safety screen or guard removed for servicing an appliance must be replaced prior to operating the appliance.
2. Children and adults should be alerted to the hazard of high surface temperatures and should stay away to avoid burns or clothing ignition.
3. Young children should be carefully supervised when they are in the room with the heater.
4. Do not install this heater at altitudes above 5000 ft. because shutdown of the heater by the ODS system may occur due to reduced oxygen levels at these altitudes.
5. This appliance is **only** for use with the type of gas indicated on the nameplate. **THIS APPLIANCE IS NOT CONVERTIBLE FOR USE WITH OTHER GASES**. Please check the gas type shown on the heater nameplate prior to hooking the heater to the gas supply.
6. **DO NOT** install this heater in bedrooms or bathrooms. The maximum input for use in bathrooms in 6,000 Btu/hr and 10,000 Btu/hr in bedrooms where not prohibited by local codes.
7. LPG containers (Propane cylinders) **must not** be used or stored indoors.
8. **DO NOT** install this heater directly onto an LPG container or propane cylinder without directions from your propane company because high gas pressure can damage this heater.
9. Always operate the heater at the OFF, P or one of the three locked positions. Never operate the heater at any setting between these locked positions, as this may result in improper combustion.
10. DO NOT locate this heater in high traffic areas or in windy or drafty locations.
11. Keep the area near the heater free from combustible materials, gasoline, and other flammable vapors and liquids.
12. **DO NOT** use this heater if any part has been under water. Immediately call a qualified service person to inspect the room heater and to replace any part of the control system and any gas control that has been under water.
13. This heater has a pilot light safety system that turns off the heater if enough fresh air is not available. The pilot light safety section on this unit does not sense the presence of carbon monoxide. It senses the depletion of the oxygen supply used in the combustion process. Combustion of gas with a depleted

oxygen supply is one source of carbon monoxide.

14. If this heater is installed in a room having a high vertical dimension, a fan to circulate the air is recommended to improve the comfort level in the room. When a fan is used to circulate air, it should be located so that the airflow is not directed at the burner.
15. If installed in a garage, this heater must be wall mounted only. The bottom of the heater must be a minimum of 18" above the finished floor.
16. A vent-free gas heater will increase the amount of humidity in the room in which it is installed.
17. A fresh air opening for combustion and ventilation air must be provided in the room where the heater is installed. The opening must have at least one square inch of free air opening per 1,000 Btu/hr of gas consumption for the total input rating of all gas equipment in the space.
18. This heater shall not be installed in a room or space unless the required volume of indoor combustion air is provided by the method described in the *National Fuel Gas Code, ANSI Z223.1/NFPA 54*, the *International Fuel Gas Code*, or applicable codes.
19. The National Fuel Gas Code defines a confined space as a space whose volume is less than 50 ft^3 per 1,000 Btu/hr (4.8 m^3/kw) of the aggregate input rating of all appliances installed in that space and an unconfined space as a space whose volume is not less than 50 ft^3 per 1,000 BTU/Hr (4.8 m^3/kw) of the aggregate input rating of all appliances installed in that space. Rooms communicating directly with the space in which the appliances are installed, through openings not furnished with doors, are considered a part of the space.
20. ⚠**WARNING:** If the area in which the heater may be operated is smaller than that defined as an unconfined space, provide adequate combustion and ventilation air by one of the methods described in the National Fuel Gas Code, ANSI Z223.1/NFPA54, Air for Combustion and Ventilation, or applicable codes.
21. ⚠**WARNING:** If the area in which the heater may be operated does not meet the required volume for indoor combustion air, combustion and ventilation air shall be provided by one of the methods described in the *National Fuel Gas Code*, ANSI Z223.1 / NFPA 54, the *International Fuel Gas Code*, or applicable local codes.
22. Unusually tight construction is defined as construction where:

    a) Walls and ceilings exposed to the outside atmosphere have a continuous water vapor retarder with a rating of 1 perm (6x10-11 kg per pa-sec-m2)or less with opeings gasketed or sealed;

    b) Weather stripping has been added on openable windows and doors; and

    c) Caulking or sealants are applied to areas such as joints around window and door frames, between sole plates and floors, between wall-ceiling joints, between wall panels, at penetrations for plumbing, electrical, and gas lines, and other openings.

COMBUSTION AND VENTILATION AIR REQUIREMENT WORKSHEET

The purpose of this worksheet is to help you determine if you are planning to install this heater in an "unconfined" or a "confined" space. An "unconfined" space is one that is large enough to meet all the combustion and ventilation air requirements of all the fuel burning appliances to be in operation in this space. No additional air requirements are needed. A "confined" space is one that **is not** large enough to meet the combustion and ventilation air requirements for all the fuel burning appliances in that space. As a result, additional air is required in this space to meet the appliance needs. Check with your installer on ways to accomplish this, or use a smaller Btu/hr input heater.

STEP 1: Determine the volume of the space in which the heater is to be installed. Include adjoining rooms with doorless passageways. Example: 24' (long) x 16' (wide) x 8' (high) = 3072 ft^3.

LENGTH x WIDTH x HEIGHT = _____ Ft^3

STEP 2: Multiply the volume of the space (calculated in Step 1) by 20 Btu/hr to determine the maximum Btu/hr that the space can support without additional combustion and ventilation air provided.

Result from Step 1 _____ x 20 Btu/hr = _____ Btu/hr

STEP 3: Add the Btu/hr inputs of all **fuel burning** appliances in this space. **NOTE: DO NOT include Direct-Vent gas appliances because these have sealed combustion systems that draw combustion air from outdoors.** Examples of appliances to consider include: gas ranges, gas water heaters, gas logs, kerosene heaters, etc.

Proposed Vent-Free Heater	_____ Btu/hr
Fuel Burning Appliance #1	_____ Btu/hr
Fuel Burning Appliance #2	_____ Btu/hr
TOTAL	_____ Btu/hr

STEP 4: Compare the results from Step 2 and Step 3.

If the result from Step 2 is **greater** then the result from Step 3, the area where the heater is to be installed can be classified as an "unconfined space." This means that the space is capable of handling the combustion and ventilation air requirements of the existing fuel burning appliance(s) and the proposed heater.

If the result from Step 2 is **less** than the result from Step 3, the area where the heater is to be installed is classified as a "confined space." **This means that either additional combustion and ventilation air must be provided into this space (use one of the methods described in the National Fuel Gas Code, ANSI Z223.1 - latest edition) or the size of the proposed heater must be reduced so that the above calculations show the space to be an "unconfined space."**

SAFETY INFORMATION FOR USERS OF LP-GAS

Propane (LP-Gas) is a flammable gas that can cause fires and explosions. In its natural state, propane is odorless and colorless. You may not know all the following safety precautions, which can protect both you and your family from an accident. Read them carefully now, then review them point by point with the members of your household. Someday when there may not be a minute to lose, everyone's safety will depend on knowing exactly what to do. If, after reading the following information, you feel you still need more information, please contact your gas supplier.

LP-GAS WARNING ODOR

If a gas leak happens, you should be able to smell the gas because of the odorant put in the LP-Gas. That's your signal to go into immediate action!

- Do not operate electric switches, light matches, or use your telephone. Do not do anything that could ignite the gas.
- Get everyone out of the building, vehicle, trailer or area. Do that **IMMEDIATELY.**
- Close all gas tank or cylinder supply valves.
- LP-Gas is heavier than air and may settle in low areas such as basements. When you have reason to suspect a gas leak, keep out of basements and other low areas. Stay out until firefighters declare them safe.
- Use your neighbor's telephone and call a trained LP-Gas service person and the fire department. Even though you may not continue to smell gas, do not turn on the gas again. Do not re-enter the building, vehicle, trailer or area.
- Finally, let the service man and firefighters check for escaped gas. Have them air out the area before you return. Properly trained LP-Gas service people should repair the leak, then check and relight the gas appliance for you.

NO ODOR DETECTED - ODOR FADE

Some people cannot smell well. Some people cannot smell the odor of the chemical stench put into the gas. You must find out if you can smell the odorant in propane. Smoking can decrease your ability to smell. Being around an odor for a time can affect your sensitivity or ability to detect that odor. Sometimes other odors in the area mask the gas odor. People may not smell the gas odor or their minds are on something else. Thinking about smelling a gas odor can make it easier to smell.

The odorant in LP-Gas is colorless, and it can fade under some circumstances. For example, if there is an underground leak, the movement of the gas through soil can filter the odorant.

Odorants in LP-Gas also are subject to oxidation. Odor fading can occur if there is rust inside the storage tank or in iron gas pipes.

The odorant in escaped gas can adsorb or absorb onto or into walls, masonry and other materials and fabrics in a room. That will take some of the odorant out of the gas, reducing its odor intensity.

LP-Gas may stratify in a closed area, and the odor intensity could vary at different levels. Since it is heavier than air, there may be more odor at lower levels. Always be sensitive to the slightest gas odor. If you detect any odor, treat it as a serious leak. Immediately go into action as instructed above.

SOME POINTS TO REMEMBER

- Learn to recognize the odor of LP-Gas. Your local LP-Gas Dealer can give you a "Scratch and Sniff" pamphlet. Use it to find out what the propane odor smells like. If you suspect that your LP-Gas has a weak or abnormal odor, call your LP-Gas Dealer.
- If you are not qualified, do not light pilot lights, perform service, or make adjustments to appliances on the LP-Gas system. If you are qualified, consciously think about the odor of LP-Gas prior to and while lighting pilot lights or performing service of making adjustments.
- Sometimes a basement or a closed-up house has a musty smell that can cover up the LP-Gas odor. Do not try to light pilot lights in the area where the conditions are such that you may not detect the odor if there has been a leak of LP-Gas.
- Odor fade, due to oxidation by rust or absorption on walls of new cylinders and tanks, is possible. Therefore, people should be particularly alert and careful when new tanks or cylinders are placed in service. Odor fade can occur in new tanks, or reinstalled old tanks, if they are filled and allowed to sit too long before refilling. Cylinders and tanks that have been out of service for a time may develop internal rust, which will cause odor fade. If such conditions are suspected to exist, a periodic sniff test of the gas is advisable. If you have any question about the gas odor, call your LP-Gas dealer. A periodic sniff test of the LP-Gas is a good safety measure under any condition.
- If, at any time, you do not smell the LP-Gas odorant and you think you should, assume you have a leak. Then take the same immediate action recommended above for the occasion when you do detect the odorized LP-Gas.
- If you experience a complete "gas out" (the container is under no vapor pressure), turn the tank valve off immediately. If the container valve is left on, the container may draw in some air through openings such as pilot light orifices. If this occurs, some new internal rusting could occur. If the valve is left open, then treat the container as a new tank. Always be sure your container is under vapor pressure by turning it off at the container before it goes completely empty or having it refilled before it is completely empty.

SPECIFICATIONS

	Model SC18T-1-NG	Model SC18T-1-LP	Model SC30T-1-NG	Model SC30T-1-LP
BTU/HR Input	18,000	16,500	30,000	27,000
Type Gas	Natural Gas	LP Gas	Natural Gas	LP Gas
Ignition Type	Piezo Ignitor	Piezo Ignitor	Piezo Ignitor	Piezo Ignitor
Temp. Control	Manual	Manual	Manual	Manual
Weight				
Heater	20 lb.	20 lb.	27 lb.	27 lb.
Shipping	24 lb.	24 lb.	32 lb.	32 lb.
Inlet Gas Pressure				
Maximum	14.0" W.C.	14.0" W.C.	14.0" W.C.	14.0" W.C.
Minimum	7.0" W.C.	11.0" W.C.	7.0" W.C.	11.0" W.C.
Regulator Setting	6.0" W.C.	10.0" W.C.	6.0" W.C.	10.0" W.C.
Dimensions (inches)				
Heater (W x D x H)				
Carton	19-3/4 x 9-1/2 x 25 21-1/2 x 10 x 25 1/2	19-3/4 x 9-1/2 x 25 21-1/2 x 10 x 25 1/2	27 1/2 x 9-1/2 x 25 29 x 10 x 25 1/2	27 1/2 x 9-1/2 x 25 29 x 10 x 25 1/2

CLEARANCES

You must provide adequate clearance around air openings to the heater. You also must provide for an adequate combustion and ventilation air supply to the space to be heated. The heater must be easily accessible for servicing. The opening for combustion air located at the bottom of the heater must not be obstructed.

The heater must be installed no less than 2" above the top surface of carpeting, tile or other floor covering. When facing the front of the heater, the clearance from any combustible materials must be a minimum of 13" from the left, 13" from the right, 36" from the top, and 2" from the bottom.

Never install the heater in front of any flammable object, especially do not place curtains, furniture, clothing or other flammable objects less than 36" from the front of the heater.

FLOOR MOUNT INSTALLATION (When using the optional legs for Models SC18T and SC30T)

This heater is designed to be installed on the floor with the leg set that is included with each heater.

Locate the leg set and attach the legs to the heater as noted on Page 10. Screw in elbow A and B with sealing tape as shown in Figure 1 below.

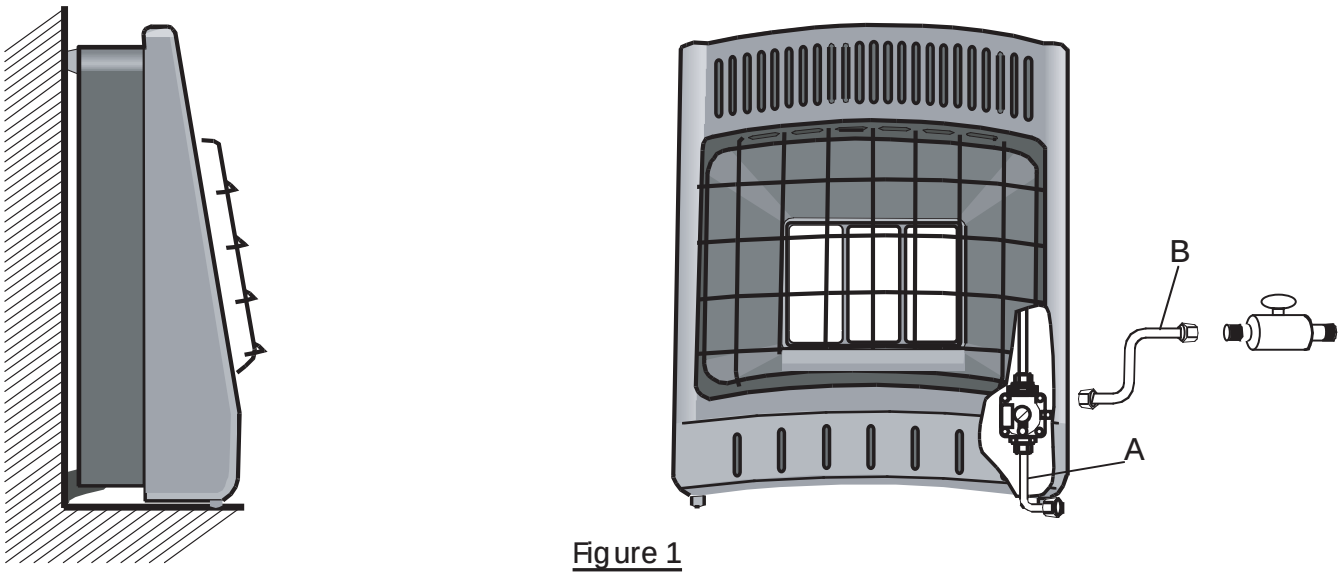


Figure 1

If this heater is to be installed directly on carpeting, tile or other combustible material other than wood flooring, the heater shall be installed on a metal or wood panel extending the full width and depth of the heater. All other clearances to combustible materials stated above must be maintained. Floor protection panels (PN 44058010) are available as an accessory.

The panel referred to above does not mean the fireproof base as used on wood stoves. The protection is for rugs that are extremely thick and light-colored tile that may discolor and to make sure the heater is level.

WALL MOUNT INSTALLATION

IMPORTANT: Before installing this heater, make sure that a wall stud is located in the center of the unit. This wall stud will give better support to the unit. See the following instructions to place the "C" angle to the wall stud:

1. Select the elbow position as indicated in Figure 2-1.
2. Drill two (2) 5/16" holes according to the dimensions shown on the upper corner of Figure 2-1.
3. Drill another 5/16" hole on the wall stud for the "U" hook as shown in Figure 2-2.
4. Screw in the three (3) plastic expansion anchors furnished with the unit, as shown in Figure 2-1.
5. Screw in the furnished screws through the anchors as shown in Figure 2-1.
6. Connect the gas line.

Dimension A	
model SC18T = (13 6/32")	334 mm
model SC30T = (20 45/64")	526 mm

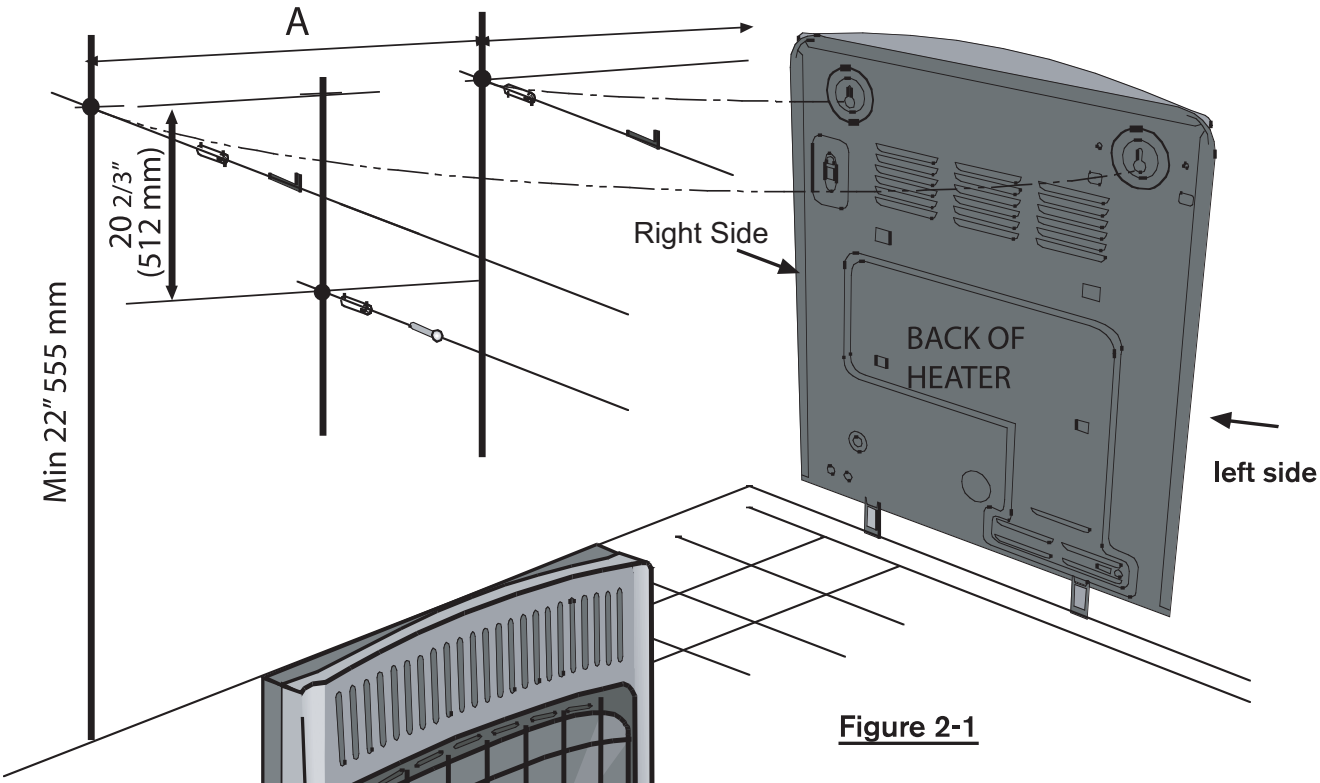


Figure 2-1

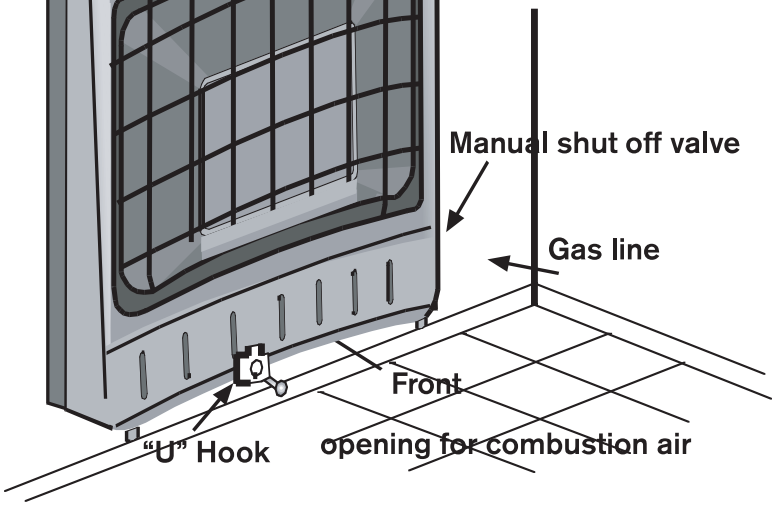


Figure 2-2

THERMOSTAT OPERATION

After the pilot is lit, rotate the gas control knob counterclockwise toward the "HI" setting. The "LO" and "HI" settings represent a temperature range of approximately 55° F to 90°F, respectively. This is the temperature at the hydraulic thermostat bulb (which is located on the back casing, adjacent to the casing bottom). The owner is advised to determine the particular heat setting that is desired for comfort, as heating requirements are different for every owner. When the hydraulic thermostat bulb senses the need for heat, the unit cycles "ON" at a full input. The unit remains at this full input until the hydraulic thermostat bulb is "satisfied". Then the burner shuts off. **NOTE 1:** The burner does not modulate at any time during the operation process and all three ceramic plaques (CK18T Models) or five ceramic plaques (CK30T Modules) should be glowing whenever the heater is "ON." **NOTE 2:** If the owner does not want the burner to operate, the control knob must be turned to the "Pilot" or "OFF" position. If the knob is turned to the "LO" setting, the burner will operate if the temperature drops to approximately 50°F.

INSTALLATION TO GAS SUPPLY

1. The gas supply must comply with local codes, or in their absence, the installation must be in accordance with the American National Standard (National Fuel Gas Code) NFPA 54, also known as ANSI Z223.1 - latest edition, available from the ANSI, Inc., 1434 Broadway, New York, New York 10018, or the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.
2. **⚠WARNING:** When using LP gas, this heater requires an external regulator (not supplied) located between the heater and LP Supply Tank. This regulator must be supplied by the installer to reduce incoming LP Gas pressure to a maximum of 14 inches of water column. Under no circumstances should this heater ever be hooked directly to an LP supply tank. **IMPORTANT:** The Pressure Regulator must be held with a wrench when connecting gas piping and/or fittings to the Pressure Regulator.
3. Use only new, black iron or rust resistant steel pipe. Copper tubing may be acceptable in certain areas. **CHECK LOCAL CODES TO DETERMINE ACCEPTABLE TYPES OF GAS PIPING.**
4. The gas supply line shall be sized and installed to provide a sufficient supply of gas to meet the minimum demand of the heater without undue loss of pressure.

Typical Installation	Supply Line
Up to 20,000 Btu/hr	3/8" or greater
Up to 30,000 Btu/hr	1/2" or greater

5. The sealant used on the threaded pipe joints of the gas pipe must be the specific type resistant to the action of Liquid Petroleum Gas. Apply sealant lightly to male threads to ensure excess sealant does not enter lines. Any excess sealant could be forced into the pipe and result in clogged gas valves.
6. The supply system must include a manual shut-off valve, a union in the line, and a plugged 1/8" NPT tap. The tap should be accessible for test gauge connections upstream of the gas supply connection to heater.
7. Include a drip leg (trap) in the supply line. The purpose of the drip leg is to prevent moisture and contaminants in the gas supply from entering the heater controls. The drip leg should be readily accessible to permit cleaning or emptying. A drip leg should not be located where the condensate is likely to freeze. Failure to use a drip leg can result in operational difficulties in the heater.

GAS SUPPLY CHECK

A union must be provided directly at the gas inlet to the heater. A manual gas valve must be provided upstream of the union. This will allow you to shut off the gas supply to the heater if it is necessary to remove it for service purposes.

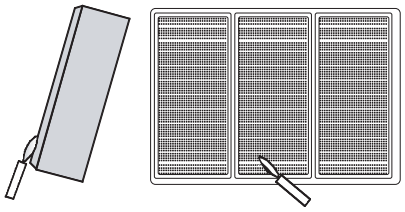
The appliance and its appliance main shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig. (3.45kPa).

The appliance must be isolated from the gas supply piping system by closing its equipment shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig. (3.45kPa).

The connectors must be checked and cleaned before assembling and then wrenched up tight for a gas tight connection. Apply a soap and water solution to all joints and watch for bubbles to check for gas leaks. **NEVER USE ANY OPEN FLAME TO CHECK FOR GAS LEAKS.**

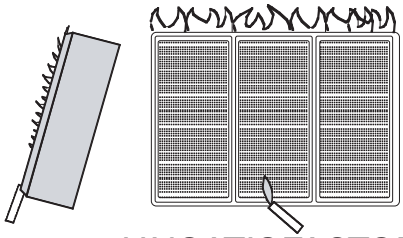
HEATER MAINTENANCE - PERIODIC VISUAL CHECK

The burner must glow evenly over the entire surface when operating correctly. The pilot flame must burn with a clear blue flame. See Figures 3 and 4. *(18,000 Btu/hr input model shown)*



SATISFACTORY
Proper Burning

Figure 3



UNSATISFACTORY

Satisfactory Proper Burning

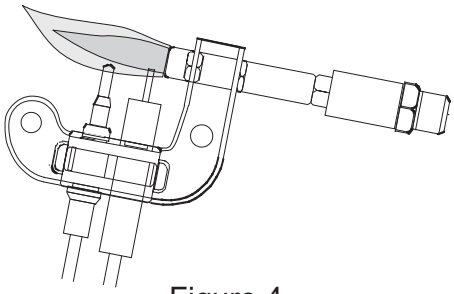
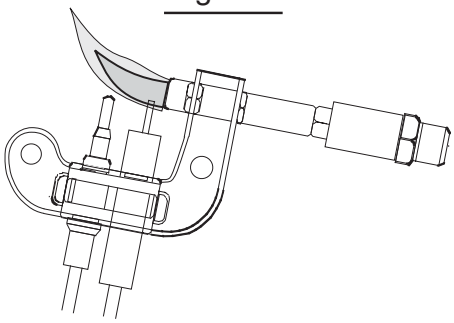


Figure 4



Unsatisfactory

HEATER SERVICE

To service the heater, turn off the gas supply and disconnect the gas piping at the union. Unscrew the two screws located in the lower front part of the unit. By sliding the panels upwards and toward the front, the functional elements of the unit are uncovered.

Periodic cleaning of the unit is required. Dust the surface of the unit and vacuum clean burner surfaces and the control compartment.

BURNER

If this heater has an optional blower, disconnect the electrical connection before servicing the heater (e.g., unplug the blower).

Keep the heater area clear and free from combustible materials, gasoline and other flammable vapors and liquids.

If you need to replace the burner assembly, loosen screws A and B, unscrew the tubing fittings C, and disconnect the assembly, see Figure 5 *(18,000 Btu/hr input model shown).*

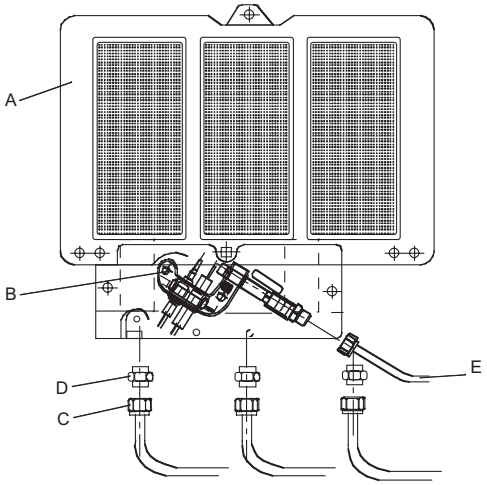


Figure 5

⚠ **WARNING:** FAILURE TO KEEP THE PRIMARY AIR OPENING(S) OF THE BURNER(S) CLEAN MAY RESULT IN SOOTING AND PROPERTY DAMAGE.

⚠ **WARNING:** DO NOT ALLOW FANS TO BLOW DIRECTLY INTO THE FIREPLACE. AVOID DRAFTS THAT ALTER BURNER FLAME PATTERNS.

OXYGEN DEPLETION SENSOR (ODS) SERVICING

Dust and dirt may effect heater performance.

This heater draws air into the bottom of it during normal operation. In the process, dust and dirt will also be drawn into the heater. The frequency of cleaning will depend on how and where the heater is used. At a minimum, you should clean the heater at least once a year, at the beginning of the heating season.

If your pilot will not stay lit, try cleaning it. Use a can of compressed air, such as is used to clean a computer, to blow dust out of the pilot assembly. Sometimes just blowing air back through the pilot will get rid of the dirt.

If that fails to solve the problem, remove the wire clip that holds the metal strip onto the pilot assembly. Remove the cover and blow any dust out. Reassemble and check for proper operation.

If that fails, the pilot assembly should be removed and air blown through the assembly and gas line as shown in Figure 6. To prevent damage to this assembly, follow the instructions below for disassembly and assembly of the ODS for cleaning. ⚠**WARNING:** Never use needles, wires, or similar cylindrical objects to clean the pilot orifice. This will only damage the calibrated ruby orifice (about the size of the head of a pin) which controls the pilot gas flow.

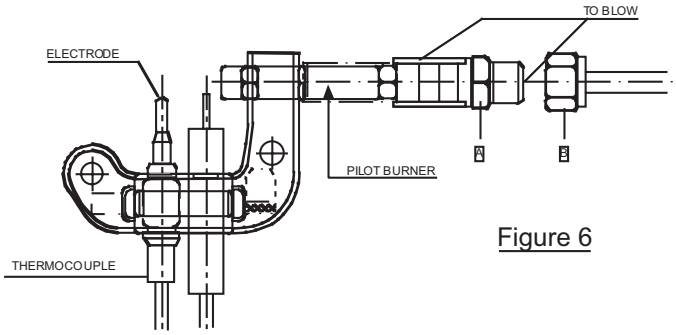


Figure 6

Grab Nut A with an open-end wrench and loosen Nut B from the pilot tubing. Blow air pressure through the holes as indicated in Figure 6. This should blow out any foreign materials. To reassemble, tighten Nut B by grabbing Nut A with the open-end wrench. **NOTE:** When the heater is reassembled, always check for gas leaks as outlined in the Gas Supply section of these instructions.

⚠ **WARNING:** DO NOT USE A BLOWER INSERT, HEAT EXCHANGER INSERT OR OTHER ACCESSORY NOT APPROVED FOR USE WITH THIS HEATER.

⚠WARNING: This vent-free heater is approved for use only with the type of gas indicated on the heater nameplate. Field conversion is not permitted. Contact our Technical Service Department at (704) 372-3486 if you have any problems.

FOR YOUR SAFETY READ BEFORE LIGHTING

⚠ WARNING: If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

A. This appliance has a pilot that must be normally lighted by using the piezo igniter. When lighting the pilot, follow these instructions exactly.

B. BEFORE LIGHTING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

WHAT TO DO IF YOU SMELL GAS

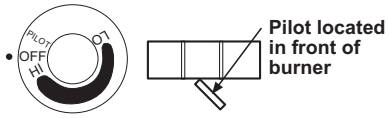
- Do not try to light any appliance.
- Do not touch any electric switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

C. Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the applance and to replace any part of the control system and any gas control which has been under water.

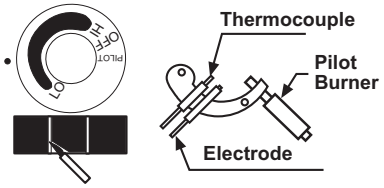
LIGHTING INSTRUCTIONS

1. STOP! Read the safety information above on this label.
2. Be sure gas supply to heater is on. The control knob and piezo igniter button are located on top of the heater.
3. Make sure manual shutoff valve is fully open.
4. If the optional blower is installed turn off all electric power to the appliance.
5. Turn thermostat control knob clockwise ↷ to "OFF" position. Do not force.



6. Wait (10) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Follow "B" in the safety information above. If you don't smell gas, go to the next step.
6. To light pilot, depress control knob slightly and rotate counterclockwise ↶ to "P" position.

7. Depress control knob completely and, without releasing knob, press piezo igniter button repeatedly until pilot is lit.
8. Continue depressing control knob for 30 seconds after pilot is lit before releasing.
   - If knob does not pop up when released, stop and immediately call your service technician or gas supplier.
9. Pilot should remain lit.
   - If the pilot will not stay lit after several tries, turn the gas control knob to "OFF" and call your service technician or gas supplier.
10. Various heat settings can be selected by slightly depressing the control knob and rotating knob counterclockwise to positions 1, 2 or 3.
11. Attention! Gas control has an INTERLOCK device. When the pilot is initialy lit and the safety magnet is energized (pilot stays "ON") the INTERLOCK latching device becomes operative. If the gas control is turned to the "OFF" position or gas flow to the appliance is shut off, the pilot cannot be relighted until the safety magnet is de-energized (approximately 60 seconds). There will be an audible "click" when the safety magnet in the gas control is de-energized. Pilot can now be re-lighted. Repeat steps 3 through 8.
12. Turn gas control knob counterclockwise ↶ to the desired heating level from "LO" to "HIGH".



13. If an optional blower is installed turn on all electric power to the appliance.

TO TURN OFF GAS TO APPLIANCE

SHUTTING OFF HEATER

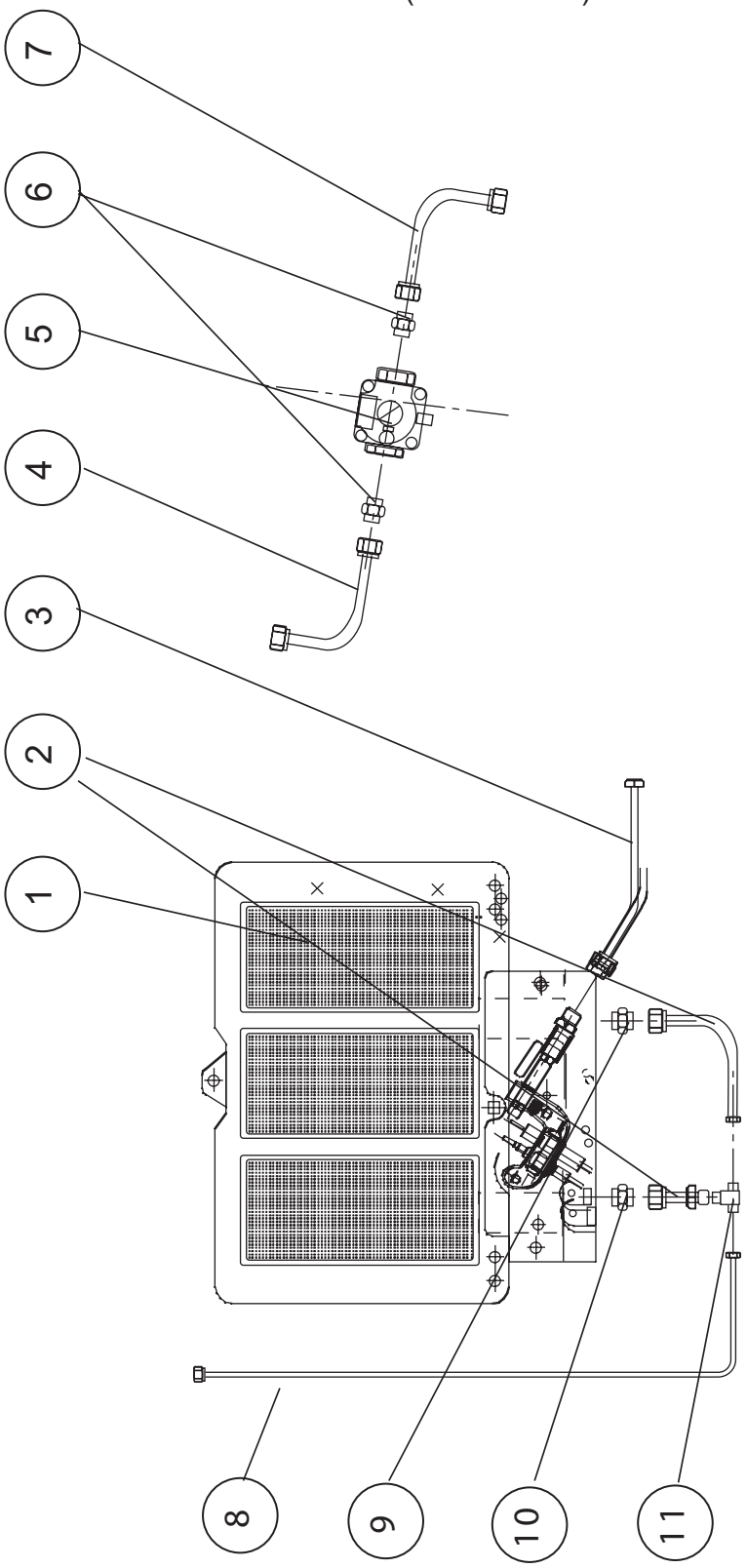
1. Depress control knob slightly and rotate clockwise ↷ to "OFF" position.
2. If an optional blower is installed turn off all electric power to the appliance.

TROUBLESHOOTING

TROUBLE	CAUSE	SOLUTION
PILOT TROUBLE		
No spark.	◆ Not pushing piezo all the way down until "click" ◆ Lead wire loose at piezo igniter ◆ Lead wire loose at electrode ◆ Lead wire broken ◆ Piezo ignitor not properly grounded ◆ Electrode gap to ODS pilot not correct ◆ Piezo ignitor is defective	◆ Review Lighting Instructions ◆ Tighten connection ◆ Tighten connection ◆ Replace lead wire ◆ Tighten lock nut ◆ Adjust gap to 3 mm (0.118") ◆ Replace piezo ignitor
Spark, but no pilot ignition.	◆ Pilot (ODS) clogged ◆ Main gas supply not on ◆ Knob not in "PILOT" position ◆ Knob not depressed enough when turning from "OFF" to "PILOT" ◆ Air in gas line when installed ◆ Defective pilot regulator (NG only)	◆ Clean pilot assembly and replace if necessary ◆ Turn on gas ◆ Make sure knob is in correct position ◆ Retry pressing knob all the way down ◆ Repeat ignition operation until air is eliminated ◆ Replace regulator
Pilot goes out when knob is released.	◆ Knob is not depressed long enough ◆ Pilot flame does not touch thermocouple ◆ Thermocouple connection at valve may be loose ◆ Thermocouple is damaged ◆ Gas valve is damaged	◆ After pilot is lit, hold down for 30 sec. ◆ Replace pilot if manifold gas pressure checks OK ◆ Tighten connection firmly ◆ Replace thermocouple ◆ Replace gas valve
BURNER DOES NOT LIGHT		
Pilot stays lit.	◆ Burner orifice clogged ◆ Burner orifices not correct size ◆ Extremely low inlet gas pressure ◆ Gas valve is defective	◆ Clean or replace orifices ◆ Replace with correct size ◆ Contact gas supplier ◆ Replace gas valve
IMPROPER BURNER PATTERN		
Slight smoke or odor during initial operation.	◆ Residues from manufacturing process or dust	◆ Problem will be eliminated after a few hours of operation
Whistling noise during ignition or operation and backfiring	◆ Burner orifice(s) restricted/damaged orifices ◆ Burner damaged or cracked ◆ Gas regulator malfunction	◆ Clean/replace burner ◆ Replace burner ◆ Replace regulator
Not all burners lighting or burning properly.	◆ Burner orifices are dirty ◆ Low gas pressure ◆ Knob adjusted between settings	◆ Clean or replace orifices ◆ Contact gas supplier ◆ Turn knob until it locks at desired setting
Heater produces unwanted odors.	◆ Odors can be caused by odors in room such as paint, hair spray, new carpet, etc. ◆ Low fuel supply in LP tanks	◆ Ventilate room and discontinue use of odor producing products while heater is operating. If problem persists, contact gas supplier ◆ Refill supply tank
HEATER SHUTS OFF IN USE		
ODS operates properly.	◆ Enough fresh air is not available	◆ Open window for ventilation
Even if well ventilated, ODS operates	◆ ODS malfunction	◆ Replace ODS assembly
HEATER HAS BEEN UNDER WATER	◆ Water in control section of heater	◆ **DO NOT USE**. Consult your gas supplier

REPAIR PARTS LIST

Models: SC18T-1-LP (Propane Gas)
SC18T-1-NG (Natural Gas)

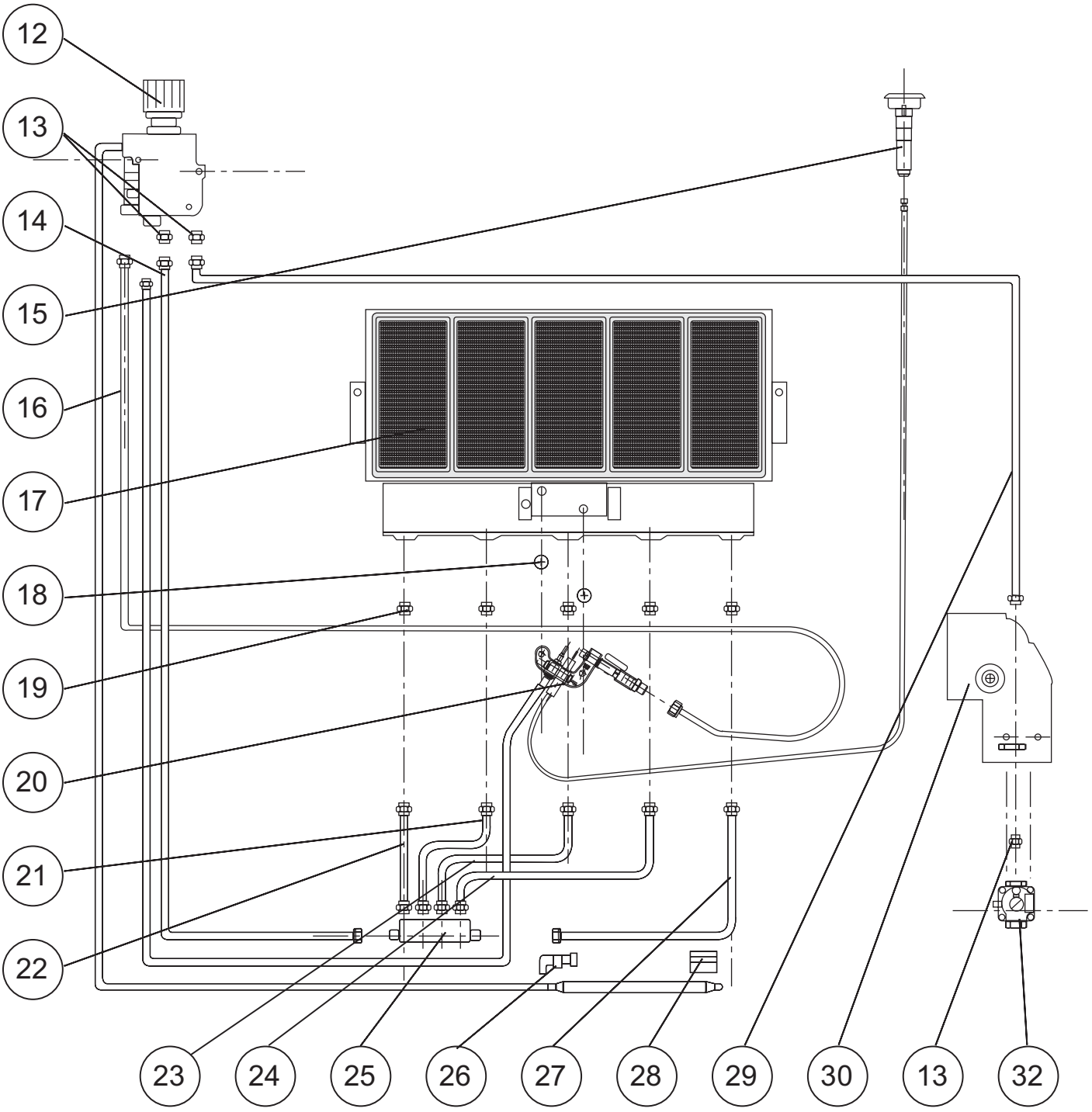


WARNING: Failure to position the parts in accordance with these diagrams or failure to use only parts specifically approved with this heater may result in property damage or personal injury.

REPAIR PARTS LIST

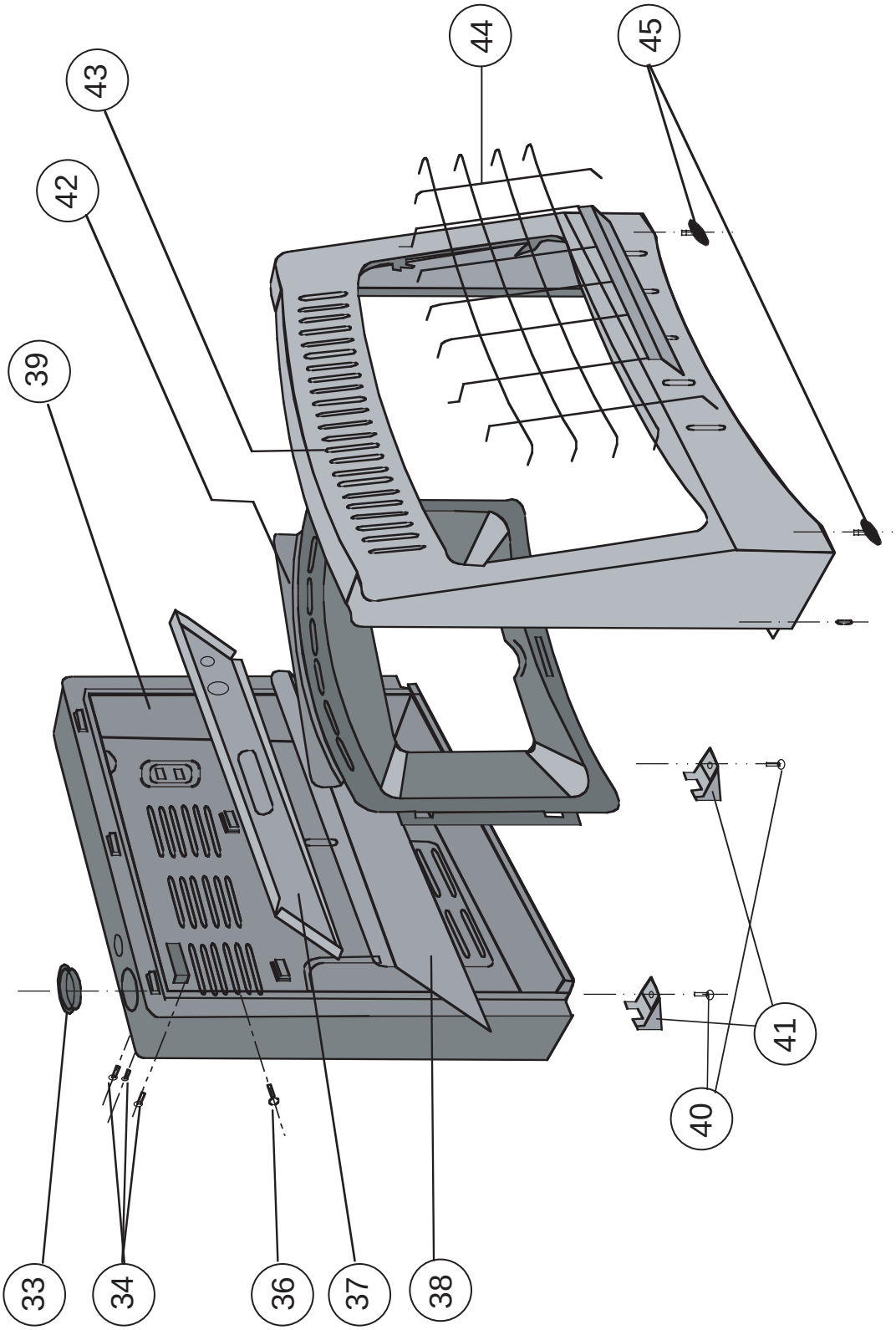
Models: SC30T-1-LP (Propane Gas)
SC30T-1-NG (Natural Gas)

WARNING: Failure to position the parts in accordance with these diagrams or failure to use only parts specifically approved with this heater may result in property damage or personal injury.



REPAIR PARTS LIST (continued)

MODELS: SC18T-1-LP and SC30T-1-LP (Propane Gas)
SC18T-1-NG and SC30T-1-NG (Natural Gas)



HOW TO ORDER REPAIR PARTS ...

All parts listed in the Parts List have a Part Number. When ordering parts, first obtain the Model Number from the nameplate on your equipment. Next, determine the Part Number **(not the Index Number)** and the Description of each part from the following appropriate illustration and list. Be sure to give all this information.

Heater Model Number: _____ **Part Description:** _____

Heater Serial Number: _____ **Kind of Gas:** _____
(Propane or Natural)

Part Number: _____

Do not order bolts, screws, washers or nuts. They are standard hardware items and can be purchased at any local hardware store. Order parts from your local dealer or through **Gas-Fired Products, Inc.** Shipments of parts are contingent upon strikes, fires, and all other causes beyond our control.

REPAIR PARTS

Index Number	MODEL SC18T-1–LP Propane Gas	MODEL SC30T-1–LP Propane Gas	MODEL SC18T-1–NG Natural Gas	MODEL SC30T-1–NG Natural Gas	DESCRIPTION
	Part Number				
1	43574080		43574080		Burner – Three Plates
2	43585720		43585720		Tubing T to First and Second Plate
2a	43585410			43585410	Tubing T to Third Plate
3	43585660			43585670	Tubing Valve to ODS
4	43585071		43585071	43585110	Tubing Valve to Pilot Regulator
5	43576090		43576010	43576010	Pilot Regulator
6			43590050	43590050	Regulator Inlet Adapter
7			43585380	43585670	Pilot Tubing Regulator to Pilot
8	43585690		43585690		Tubing Valve to T Connector
9	43575150		43575160		Double Plate Orifice
10	43575140		43575030		Single Plate Orifice
11	43591030		43591030		T Connector
12	43596000	43596000	43596000	43596000	Thermostatic Valve
13	43590020	43590020	43590020	43590020	Adaptor
14	43585700	43585700	43585700	43585700	Tubing Valve To T Connector
15	43573050	43573050	43573050	43573050	Piezo Ignitor
16		43585700			Tubing Valve to ODS
17		43574050		43574050	Burner – Five Plates
18	43597170	43597170	43597170	43597170	ODS Screw
19		43575140		43575030	Single Plate Orifice
20	43584040	43584040	43584110	43584030	ODS Assembly
21	43585710	43585710	43585710	43585710	Tubing Second Plate
22	43585720	43585720	43585720	43585720	Tubing First Plate
23		43585180		43585180	Tubing Third Plate
24		43585730		43585730	Tubing Fourth Plate
25		43591020		43591020	T Connector
26	43601070	43601070	43601070	43601070	Thermostatic Bulb Rear Support
27		43585740		43585740	Tubing Fifth Plate
28	43601090	43601090	43601090	43601090	Thermostatic Bulb First Support
29	43585071	43585760	43585071	43585760	Tubing Input Regulator to Valve
30	43600010	43600010	43600010	43600010	Regulator Support
31	43601100	43601100	43601100	43601100	Gas Valve Support (not shown)
32	43576090	43576090	43576120	43576120	Input Regulator
33	43602040	43602040	43602040	43602040	Trim Slide
33a	43602030	43602030	43602030	43602030	Switch Cover
34	43597160	43597160	43597160	43597160	Screw
35	43126220	43126220	43126220	43126220	Installation & Operation Manual
36	43597120	43597120	43597120	43597120	Screw
37	43578210	43578230	43578210	43578230	Heat Shield - Top
38	43578240	43578220	43578240	43578220	Heat Shield - Bottom
39	43580400	43580410	43580400	43580410	Casing, Rear
40	43597120	43597120	43597120	43597120	Screw
41	43800050	43800050	43800050	43800050	Rear Leg
42	43579280	43579290	43579280	43579290	Screen
43	43580360	43580370	43580360	43580370	Front Frame
44	43581130	43581140	43581130	43581140	Safety Guard
45	43800030	43800030	43800030	43800030	Front Leg

Manufactured for: **SUNSTAR HEATING PRODUCTS, INC.**
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Charlotte, NC 28203-4946
(704)372-3486