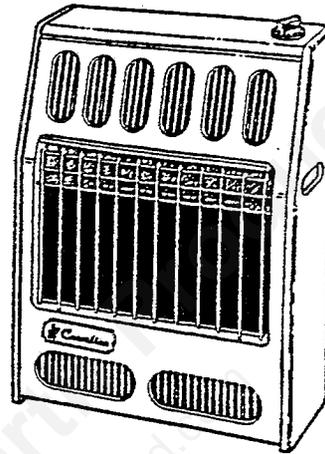
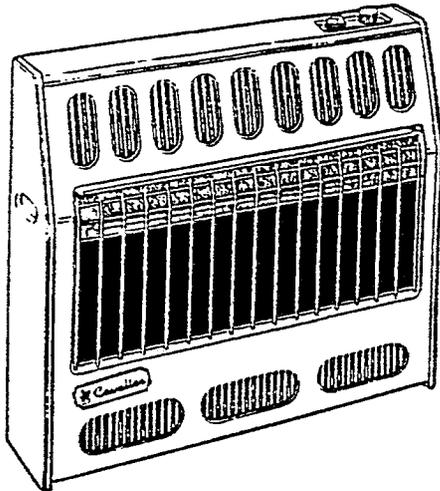


# CAVALIER BLUE FLAME UNVENTED NATURAL /PROPANE GAS HEATER OWNER'S OPERATION AND INSTALLATION MANUAL



- CAREFULLY READ THIS MANUAL TO UNDERSTAND ALL INSTRUCTIONS ABOUT HOW TO INSTALL AND OPERATE THIS GAS HEATER.
- NEVER USE THIS HEATER IN BEDROOMS, AUTOMOBILES, TRAILERS, RECREATIONAL VEHICLES OR MOBILE HOMES (SEE EXCEPTIONS BELOW).
- ALWAYS KEEP THIS MANUAL FOR REFERENCE.

**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 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.

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

#### IMPORTANT FOR YOUR SAFETY

- Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage. Refer to this manual for correct installation and operation procedures.
- For assistance or additional information, consult a qualified installer, service agency, or the gas supplier.

#### EXCEPTIONS

CBF6N, CBF6L may be used in a bathroom, bedroom or mobile home (check local codes prior to installation).

CBF10N, CBF10L, CBF10NT, CBF10LT may be used in a bedroom or mobile home (check local codes prior to installation).



**United States Stove Company**  
227 Industrial Park Road  
South Pittsburg, TN 37380  
Tel: (800)750-2723

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	<b>*** WARNING ***</b>	
<b>IMPORTANT</b>	<p>Before installing this heater, read all instructions in this manual carefully. Check all local codes.</p> <p>The oxygen depletion safety system allows safe vent-free operation. When the normal oxygen content (20.9%) is reduced to 18%, the pilot and main burner will turn off and cannot be relit.</p> <p>When the pilot flame is extinguished by wind or interruption of gas supply, it will also turn off. Relighting is possible in this condition.</p>	
<b>WARRANTY</b>	<b>VENT-FREE GAS HEATER LIMITED WARRANTY</b>	
	<p>The warranty is limited to two years from the date of purchase, to the original owner of this vent free gas heater, if installed and operated according to our printed instructions. This product will perform under normal conditions, the function for which it was designed and manufactured. For the warranty period, if this product should fail to perform its function because of any defect in materials or workmanship, we will correct such defect by replacement, or other means considered appropriate, as indicated in this warranty.</p> <p>Cost involved in removing or replacing and returning parts for examination are not covered by this warranty. The installer is responsible for proper installation of the vent-free heater. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. No one is authorized to make any representations as to this product except as contained herein.</p>	
<b>BASIC TOOLS &amp; MATERIALS NEEDED</b>	<b>TOOLS</b>	<b>MATERIALS</b>
<b>2</b>	Pipe wrenches Screwdriver	6 ft. folding rule or tape Pipe cutting and threading Black iron gas pipe and fittings 1/2".

## IMPORTANT SAFETY RULES

1. It is **IMPORTANT** to follow these rules to avoid fire hazard, property damage, bodily injury or death from malfunction of the heater. For **SAFETY, READ** all rules carefully and check local codes.
2. It is **PROHIBITED** to install the heater in a bedroom, trailer or recreational vehicles/mobile homes, etc. If installed in a garage or basement, heater must be 24" above the floor (SEE EXCEPTIONS ON PAGE 1).
3. Due to high temperatures, place the heater out of traffic and keep it away from clothing, curtains, draperies and furniture.
4. Children should be carefully supervised when they are in the same room with the heater. Adults and children should stay away from the appliance to avoid burns and clothing ignition from high surface temperature.
5. Do not place clothing or other flammable material on or near appliances.
6. Installation and repair should be done by a qualified service person. This heater should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive dust lint from carpeting, bedding materials, etc. It is imperative that control compartments, burners and circulating air passageways of this heater be kept clean.
7. For long term use and smooth operation of the heater, annual maintenance and/or frequent **CLEANING** is required to remove accumulated dust, lint, etc. from carpeting or other sources.
8. **"WARNING:** Any changes to this heater or its controls can be dangerous."
9. The heater is equipped with the specific orifice to fit the type of gas listed on the name plate. Only use the type of gas approved for this heater. Do not convert this heater to use a different type fuel.
10. Be sure to provide fresh air to the room with the heater for complete combustion. The opening should have at least one square inch of **FREE AIR** opening per 1000 BTU/hour output of heater. Never operate this heater in a small, closed room. Open a door to the next room to help with ventilation.
11. Any safety screen or guard removed for servicing this heater must be replaced prior to operation of the heater.
12. **CHECK** all joints or connections. You may use soap suds. Never check gas leakage with an open flame to avoid the danger of fire, accident or explosion.
13. Turn off heater and let cool before servicing. Only a qualified service

**IMPORTANT  
SAFETY RULES  
(CONTINUED)**

**PRODUCT  
IDENTIFICATION**

**LOCAL CODES**

**PRODUCT  
FEATURES**

person should service and repair heater.

14. **CLEAN** the area where the heater is placed and **KEEP AWAY FROM** flammable materials, gasoline and other combustible liquids and vapors.
15. Since the vent-free gas heaters may easily increase the amount of humidity in the room, the larger the burner size, the more humidity present. This can cause excessive moisture accumulation on windows and other surfaces.
16. If L.P. gas is required, the L.P. supply tank must be placed outside the house. It must be installed in a well ventilated area away from the house. The distances must be placed as prescribed by the law. Check local and state codes and laws in order to comply with proper safety requirements.

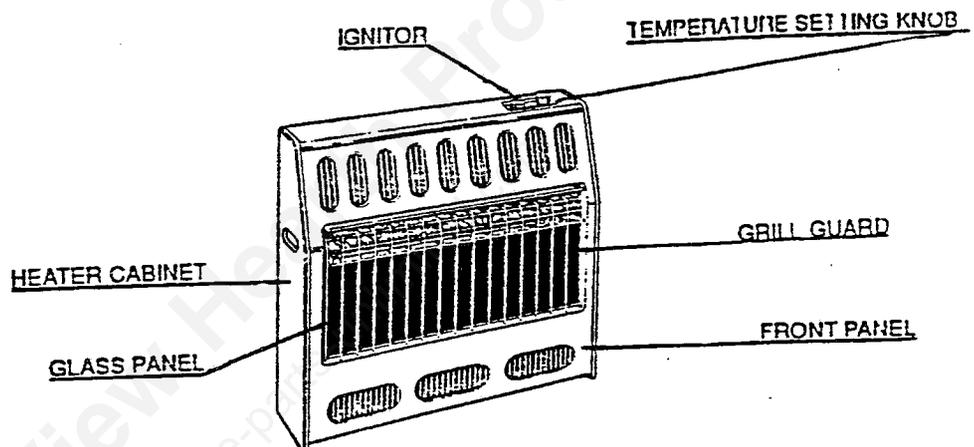


Figure 1

Install and use heater with care. Follow all local codes. In the absence of local codes, use the latest edition of the National Fuel Gas Code ANSI Z223, also known as NFPA 54\*.

\*Available from:

American National Standards Institute, Inc.  
1430 Broadway  
New York, NY 10018

National Fire Protection Association, Inc.  
Batterymarch Park  
Quincy, MA 02269

**SAFETY DEVICE**

This unit has a pilot with an Oxygen Depletion Sensor shutoff system(ODS). The ODS/pilot is a required feature for vent-free room heaters. The ODS/pilot shuts off the heater if there is not enough fresh air.

**PRODUCT FEATURES (CONTINUED)**

**PIEZO IGNITION SYSTEM**

This unit has a piezo ignitor. This system requires no matches, batteries, or other sources to light the heater.

**THERMOSTATIC HEAT CONTROL**

Thermostat models have a thermostat sensing bulb and a control valve. This results in the greatest heat comfort. This can also result in lower gas bills.

**SPECIFICATIONS**

Model Nos:	BTU	Max gas Inlet press	Min gas Inlet Pres.	Pressure regulator setting	Dimensions(in.)	Weight (lbs)
CBF10N	10,000	10.5" W.C.	4"W.C.	3"W.C.	5 1/2X13 3/4X19 1/8	14
CBF10L	10,000	14"W.C.	11"W.C.	8"W.C.	5 1/2X13 3/4X19 1/8	14
CBF20N	20,000	10.5"W.C.	4"W.C.	3"W.C.	7 1/8X18 1/8X24 1/16	25
CBF20L	20,000	14"W.C.	11"W.C.	8"W.C.	7 1/8X18 1/8X24 1/16	25
CBF30N	30,000	10.5"W.C.	4"W.C.	3"W.C.	7 1/8X26 3/16X24 1/16	31
CBF30L	30,000	14"W.C.	11"W.C.	8"W.C.	7 1/8X26 3/16X24 1/16	31
CBF20NT	20,000	10.5"W.C.	4"W.C.	3"W.C.	7 1/8X18 1/8X24 1/16	25
CBF20LT	20,000	14"W.C.	11"W.C.	8"W.C.	7 1/8X18 1/8X24 1/16	25
CBF30NT	30,000	10.5"W.C.	4"W.C.	3"W.C.	7 1/8X26 3/16X24 1/16	32
CBF30LT	30,000	14"W.C.	11"W.C.	8"W.C.	7 1/8X26 3/16X24 1/16	32
CGH30N	30,000	10.5"W.C.	4"W.C.	3"W.C.	7 1/8X26 3/16X24 1/16	30
CGH30L	30,000	14"W.C.	11"W.C.	8"W.C.	7 1/8X26 3/16X24 1/16	30
CBF6N	6,000	10.5"W.C.	4"W.C.	3"W.C.	5 1/2X13 3/4X19 1/8	15
CBF6L	6,000	14"W.C.	11"W.C.	8"W.C.	5 1/2X13 3/4X19 1/8	15
CBF10NT	10,000	10.5"W.C.	4"W.C.	3"W.C.	5 1/2X13 3/4X19 1/8	15
CBF10LT	10,000	14"W.C.	11"W.C.	8"W.C.	5 1/2X13 3/4X19 1/8	15

**REMARK:** Reduce rating 4% for each 1000 feet exceeding sea level, if elevation is above 2000 feet. This heater has a 100% safety pilot shutoff.

**BTUH** means heater rating in "British Thermal units Per Hour"

**LP** means "Liquified petroleum"

**WARNING**

This heater must have fresh air for proper operation. If not, poor fuel combustion could result. Read the following instructions to insure proper fresh air for this and other fuel-burning appliances in your home.

**DANGER**

**CARBON MONOXIDE POISONING MAY LEAD TO DEATH!!!**

**NOTICE**

A qualified service person must install the heater. Follow all local codes.

**SPECIFICATION****INSTALLATION****INSTALLATION  
(CONTINUED)****CHECK GAS TYPE**

Use only the type of gas indicated on the rating plate.

**INSTALLATION ITEMS**

Before installing heater, make sure you have the items listed below.

- \* Piping(check local codes)
- \* Sealant(resistant to propane gas)
- \* Manual shutoff valve
- \* Ground joint union
- \* Test gauge connection
- \* Sediment trap
- \* Tee joint
- \* Pipe wrench

**INSTALLATION OF HEATER**

This heater is designed to be mounted on a wall. Also you can install this heater on the floor, away from a wall. If so, an optional floor mounting stand is needed.

You can purchase the floor mounting stand from your dealer. See accessories page.

**WARNING****NEVER INSTALL THE HEATER**

- \* In a bedroom or a bathroom (See exceptions on page 1).
- \* In a mobile home or a recreational vehicle.
- \* Where curtains, furniture, clothing, or other flammable objects are less than 36 inches from the front, top, or sides of the heater.
- \* As a fireplace insert.
- \* In high traffic areas.
- \* In windy or drafty areas.

**CAUTION**

This heater creates warm air currents. These currents move heat to wall surfaces next to heater. Installing heater next to vinyl or cloth wall coverings, or operating heater where impurities in the air (such as tobacco smoke) exist, may discolor walls.

1. Be sure that room has fresh air suitable for proper combustion.
2. Houses with loose structures, such as houses made of wood, easily get enough air through the wall spaces and door or window frames.
3. With houses of tight structure with storm windows and doors, supply outside air into the room where the heater is installed or use an exhaust fan.
4. For proper combustion in the heater, provide fresh air opening(s) to the room. The opening(s) must have one square inch of free opening for each 1000 BTUH of output (heater to room).
5. Adequate clearances must be provided for accessibility for purposes of servicing and proper operation.
6. This heater shall not be installed in a confined space unless provisions

are provided for adequate combustion and ventilation air.

7. The National Fuel Gas Code defines a confined space as a space whose volume is less than 50 cubic feet per 1,000 Btu per hour (4.8 cu.m per 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 cubic feet per 1,000 Btu per hour (4.8 cu.m per kw) of the aggregate input rating of all appliances installed in that space. Rooms communicating directly with the space in which the appliance are installed, through openings not furnished with doors, are considered a part of the unconfined space.
8. **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, 1992 Section 5.3.

### PREPARING FOR INSTALLATION

Select a location for the heater that will provide exposure of the radiant surface to the room, but will not be subjected to accidental contact. Adequate clearance must be available around the air opening. See figures 2, 3 and 4 for clearances that must be maintained to the side walls, floor and horizontal surface above the heater.

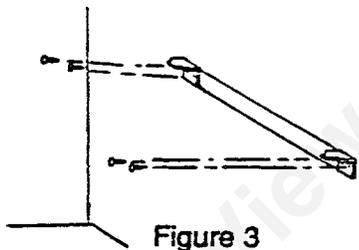


Figure 3

MINIMUM FROM SIDES OF HEATER

MINIMUM TO TOP SURFACE OF CARPETING, TILE OR OTHER COMBUSTIBLE MATERIAL

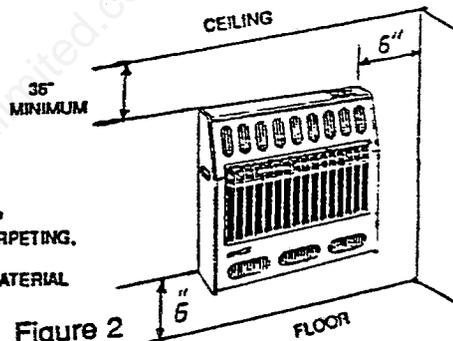
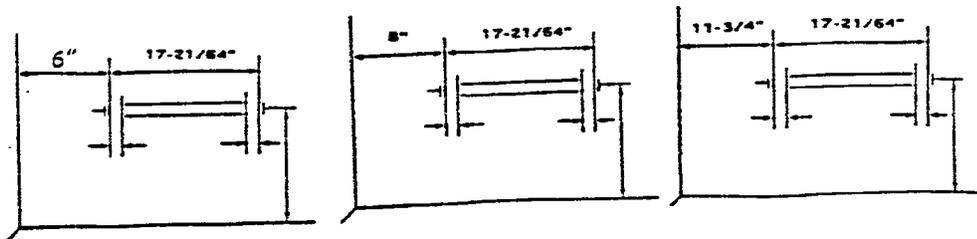


Figure 2

### INSTALLING

1. Install mounting brackets on wall as shown in Figure 3 use enclosed "paper template" for proper location of hole. See Figure 4. (It may be necessary to use plastic or lead anchors for plaster walls).



For Model CBF6N CBF10NT  
CBF6L CBF10LT  
CBF10L  
CBF10N

For Model CBF20N CBF20NT  
CBF20L CBF20LT

For Model CBF30N CBF30LT  
CBF30L CGH30N  
CBF30NT CGH30L

Figure 4

**INSTALLATION  
(CONTINUED)**

2. After mounting brackets are installed, hang heater on mounting brackets in holes provided at the rear of heater. (see Figure 5)

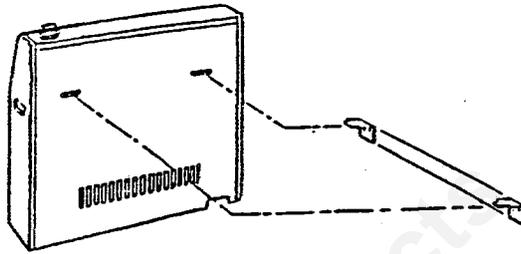


Figure 5

3. In unconfined spaces in buildings, infiltration normally is adequate to provide air for combustion and ventilation. In confined spaces, the confined space shall be provided with two permanent openings adjoining directly with an additional room(s) of sufficient volume so that the combined volume of all spaces meets the criteria for unconfined space. Each opening shall have no less than 100 square inches of free area.
4. Clearance from combustible construction. See Figure 2.

**WALL MOUNTED**

Rear .....	0 Inches
Sides .....	6 Inches
Top .....	36 Inches
Floor .....	6 Inches

**FLOOR MOUNTED WITH THE BASE PROVIDED (OPTIONAL)**

Rear .....	0 Inches
Sides .....	6 Inches
Top .....	36 Inches
Floor .....	0 Inches

From top surface of carpeting, tile or other combustible material.

**NOTICE**

Maintain the minimum clearances shown in Figure 2 (page 7). If you can, provide greater clearances from floor, ceiling, and joining wall.

5. Installation and repair should be done by a qualified service person. The room heater should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive lint from carpeting & other material. It is imperative that heat control compartments, burners and circulating air passageways of the room heater be kept clean.

**\*\*\* WARNING \*\*\***

**IF YOU DO NOT FOLLOW THESE INSTRUCTIONS EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.**

6. If the heater is installed in a residential garage, the following precautions must be taken:

- \* The heater pilot and burner must be at least 24 inches above the floor.
- \* The heater must be located and protected, so as not to be subjected to damage by a moving vehicle.
- \* All flammable fuels must be removed.

**\*\*\*CAUTION\*\*\***

**DUE TO HIGH TEMPERATURE, THE APPLIANCE SHOULD BE LOCATED OUT OF TRAFFIC, AND AWAY FROM FURNITURE, DRAPERIES, ETC.**

**GAS PIPING**

**GAS CONNECTION**

1. We recommend using only new black iron or steel pipe. Copper tubing may be acceptable. **CHECK LOCAL CODES**
2. The gas supply line shall be sized and installed to provide a sufficient supply of gas to meet the maximum demand of the heater without undue loss of pressure.
3. The sealant used on the threaded joints of the gas pipe must be a type resistant to the action of L.P. gas. (This sealant should be applied lightly to main threads to ensure excess sealant does not enter lines.)
4. The supply system must include a manual shut off valve and connection in the line, so the heater can be disconnected for servicing.
5. Include a drip leg (trap) and a plugged 1/8" N.P.T. tapping in the line. The tapping should be accessible for test gauge connections upstream of the gas supply connection to the heater.

**WARNING:** Please use **PRESSURE** regulated gas supply. Do not directly connect LP supply tank to the pressure regulator on the heater. The LP supply tank must have its own separate pressure regulator, that can reduce the supply tank gas pressure down to a maximum of 14 inches of water column pressure.

## INSTALLATION (CONTINUED)

**IMPORTANT:** Hold pressure regulator with wrench when connecting it to gas piping and/or fittings.

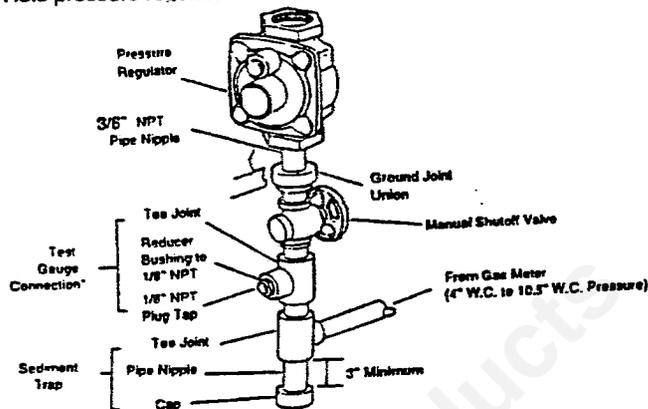


Figure 6-Gas Connection

\*an A.G.A. design-certified manual shutoff valve with 1/8" NPT tap is an acceptable alternative to test gauge connection. Purchase the optional A.G.A. design-certified manual shutoff valve from your dealer.

## CHECK AFTER GAS CONNECTION

**WARNING:** All gas piping and connections must be tested for leaks after installation or servicing. All leaks must be corrected immediately.

1. Make sure the control of the heater is in the "OFF" position
2. Open the manual shut off valve. Test for leaks by applying liquid detergent to all joints. Check all joints from gas meter to thermostat gas valve. (Bubbles forming indicate a gas leak)
3. Correct any leak defect at once.

**\*\*\* CAUTION \*\*\***

**NEVER USE AN OPEN FLAME TO CHECK FOR LEAKS**

## PRESSURE TESTING SUPPLY LINE

1. The heater and its individual manual shutoff valve must be disconnected from the gas supply piping during any pressure testing of that system at pressures in excess of 1/2 P.S.I.G. (3.5Kpa)
2. 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 piping system at pressures equal to or less than 1/2 P.S.I.G. (3.5Kpa)

## INSTALLATION (CONTINUED)

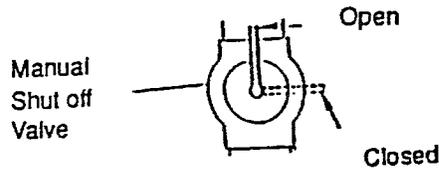


Figure 7 - Manual shut off valve

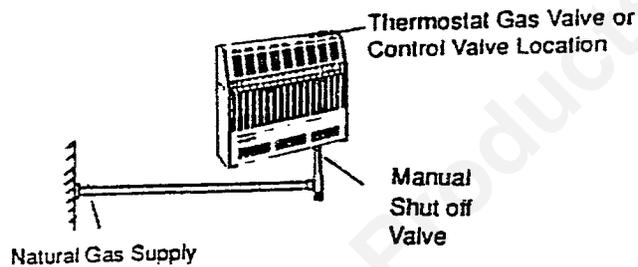


Figure 8 - Checking gas joints

## OPERATION

**\*\*\* 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.

1. This heater is equipped with an ignition device which manually lights the pilot. When lighting the pilot, follow lighting instruction on the heater.
2. 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**

- A. Do not try to light any appliance.
  - B. Do not touch any electric switch; do not use any phone in your building.
  - C. Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - D. If you cannot reach your gas supplier, call the fire department.
3. 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 or your gas supplier. Force or attempted repair may result in a fire or an explosion.
  4. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

**OPERATION  
(CONTINUED)**

**LIGHTING INSTRUCTIONS FOR S.I.T. THERMOSTAT CONTROL  
FOR MODEL NO: CBF10NT CBF20NT CBF30NT  
CBF10LT CBF20LT CBF30LT**

1. **STOP!** Read the safety information on page 11.
2. Make sure manual shutoff valve is fully open.
3. Turn control knob clockwise ↻ to the OFF position.

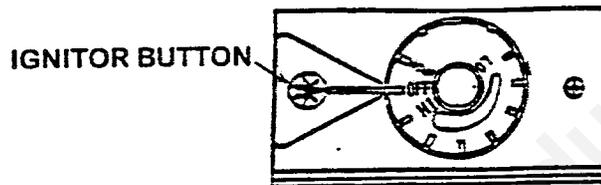


Figure 9

4. Wait five minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, **STOP!** Follow "A-D" in the operating procedure on page 11. If you do not smell gas, go to the next step.
5. Turn control knob counterclockwise ↺ to the PILOT position. Press in control knob for five (5) seconds. This will allow air to bleed from the system (See Figure).

**NOTE:** It may be necessary to press for thirty (30) seconds if this is first time heater is connected to the gas supply. If the control knob does not pop up when released, contact a qualified service person or gas supplier for repairs.

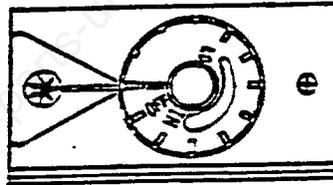


Figure 10

6. With control knob pressed in, push down and release ignitor button. This will light pilot. The pilot is attached to the front of the burner and can be seen through the glass panel. If needed, continue to press ignitor button until the pilot lights.

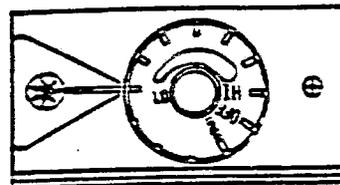


Figure 11

**NOTE:** If pilot does not stay lit, refer to troubleshooting, pages 18 through 21. Also contact a qualified service person or gas supplier for repairs. Until repairs are made, use a match to light pilot. To light pilot with match, see manual lighting procedure, page 16.

7. Keep control knob pressed in for thirty (30) seconds after lighting the pilot. After thirty (30) seconds, release control knob. **NOTE:** If pilot goes out, repeat steps 3 through 7.
8. Turn control knob counterclockwise ↺ to desired heating level. The main burner should light. Set control knob to desired heat level between HI and LO.

OPERATION  
(CONTINUED)

LIGHTING INSTRUCTIONS FOR MAXITROL THERMOSTAT  
CONTROL

FOR MODEL NO: CBF10NT CBF20NT CBF30NT  
CBF10LT CBF20LT CBF30LT

1. STOP! Read the safety information on page 11.
2. Make sure manual shutoff valve is fully open.
3. Push in gas control knob slightly and turn clockwise to the OFF position. NOTE: Knob cannot be turned from "PILOT" to "OFF" unless pushed in slightly. Do not force.
4. Be sure that the temperature setting knob is set at the line between level 1 and level 7.

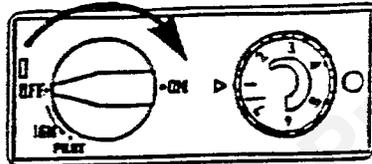


Figure 12

5. Wait five minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Follow "A-D" in the operating procedure on page 11. If you do not smell gas, go to the next step.
6. Push in gas control knob slightly and turn counterclockwise to the PILOT position. Press in control knob for five (5) seconds. This will allow air to bleed from the system. (See Figure ?) NOTE: It may be necessary to press for thirty (30) seconds if this is first time heater is connected to the gas supply.

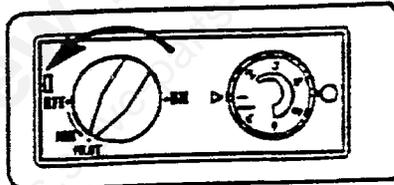


Figure 12

7. Release control knob pressure and turn clockwise to "OFF."
8. Depress control knob while OFF, then turn counterclockwise back past IGN to PILOT. This should cause the spark from the piezo ignitor to light the pilot gas. The pilot is attached to the front of the burner and can be seen through the glass panel. Keep control knob depressed for ten (10) seconds before releasing. If the pilot does not light, repeat steps 6, 7, and 8, or use a match.

NOTE: If pilot does not stay lit, refer to troubleshooting, pages 18 through 21. Also contact a qualified service person or gas supplier for repairs. Until repairs are made, use a match to light pilot. To light pilot with match, see manual lighting procedure, page 16.

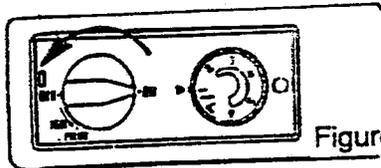


Figure 13

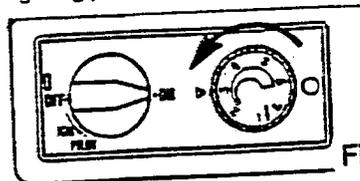


Figure 14

9. When the pilot is lit, turn the ignition knob to "ON."
10. To select desired heating level, turn the temperature setting knob counterclockwise between 1 and 7.

**OPERATION  
CONTINUED**

**LIGHTING INSTRUCTIONS**

1. STOP! Read the safety information above.
2. Make sure manual shutoff valve is fully open.
3. Turn control knob clockwise to the OFF position.

Gas control knob  
shown in "OFF"  
position

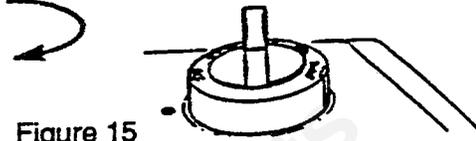


Figure 15

**NOTE:** knob cannot be turned from "PILOT" to "OFF" unless knob is pushed in slightly. Do not force.

4. Wait five minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, **STOP!** Follow "A-D" in the safety information on page 11. If you don't smell gas, go to the next step.
5. Push in gas control knob slightly and turn counterclockwise to "PILOT/IGN" and depress for five seconds.

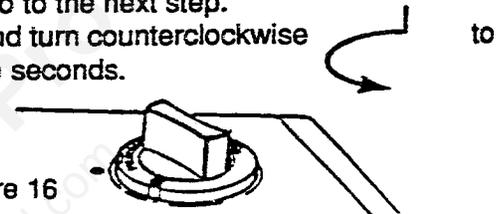


Figure 16

**NOTE:** The first time that the heater is operated after connecting the gas supply, the control knob should be depressed for about thirty seconds. This will allow air to bleed from the gas system.

6. Release control knob pressure and turn clockwise to OFF.

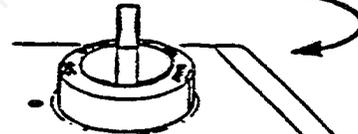


Figure 17

7. Depress control knob while OFF, then turn back to PILOT/IGN. This should cause the spark from the piezo ignitor to light the pilot gas. Keep control knob depressed for ten seconds before releasing. If Pilot does not stay lit, repeat steps 5, 6, and 7.

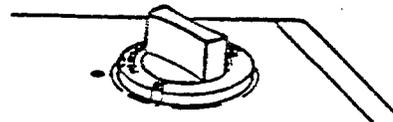


Figure 18

8. To light the burner, partially press down the control knob slightly and rotate counter clockwise. Release the downward pressure on the knob while continuing to turn until the knob is at desired position as follows:

MODEL	POSITION
CBF10N, CBF10L	LOW OR HIGH
CBF20N, CBF20L	LOW, MED OR HIGH
CBF30N, CBF30L	LOW, MED OR HIGH

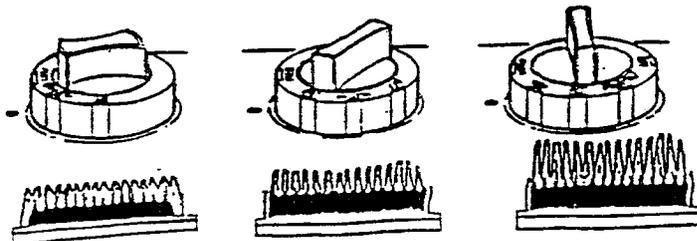


Figure 19

**OPERATION  
(CONTINUED)**

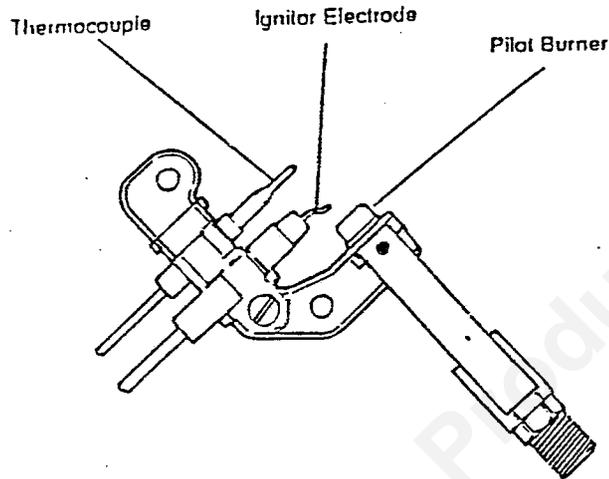


Figure 20

**TO TURN OFF GAS TO HEATER**

**Shutting Off Heater**

1. Turn control knob clockwise  to the OFF position.

**Shutting Off Burner Only (pilot stays lit)**

1. Turn control knob clockwise  to the PILOT position.

**CAUTION**

Do not try to adjust heating levels by using the manual shutoff valve.

**THERMOSTAT CONTROL OPERATION**

The thermostatic control used on these models differs from a standard thermostat. Standard thermostats simply turn the burner on and off. The thermostat used on this unit senses the room temperature thereby adjusting the amount of gas flow to the burner. This increases or decrease the burner flame height. At times the room may exceed the set temperature. If so, the burner will shut off. The burner will cycle back on when room temperature drops below the set temperature. The control knob can be set to any heat level between HI and LO.

**OPERATION  
(CONTINUED)**

**MANUAL LIGHTING PROCEDURE**

1. Follow steps 1 through 5 under lighting instructions, page 12, 13 and 14.
2. With control knob pressed in, strike match. Hold match to pilot until pilot lights.
3. Keep control knob pressed in for 30 seconds after lighting pilot. After 30 seconds, release control knob.
4. Keep control knob pressed in for 30 seconds after lighting pilot. After 30 seconds, release control knob.
5. Replace front panel.

**INSPECTING  
BURNER**

**PILOT FLAME PATTERN**

Figure 21 shows a correct pilot flame pattern. Figure 22 shows an incorrect pilot flame pattern. The incorrect pilot flame is not touching the thermocouple. This will cause the thermocouple to cool. When the thermocouple cools, the heater will shut off.

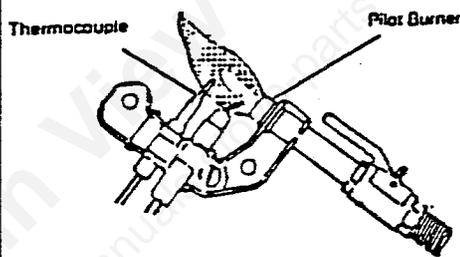


Figure 21

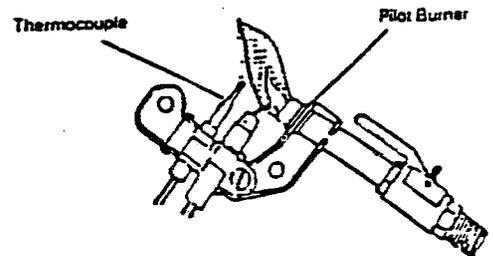


Figure 22

If pilot flame pattern is incorrect, as shown in Figure 22

\*turn heater off(see to Turn Off Gas to Appliance, page 15)

\*see TROUBLESHOOTING, PAGES 18 through 21

**BURNER FLAME PATTERN**

Figure 13 shows a correct burner flame pattern. Figure 14 shows an incorrect burner flame pattern. The incorrect burner flame pattern shows yellow tipping of the flame. It also shows the flame higher than 1/2 the glass panel height.

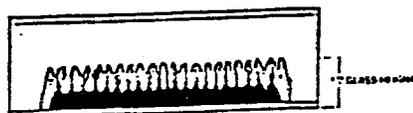


Figure 23 - Correct Burner Flame Pattern



Figure 24 - Incorrect Burner Flame Pattern

**INSPECTING  
BURNER  
(CONTINUED)**

**WARNING**

IF YELLOW TIPPING OCCURS, YOUR HEATER COULD PRODUCE INCREASED LEVELS OF CARBON MONOXIDE. IF BURNER FLAME PATTERN SHOWS YELLOW TIPPING, FOLLOW INSTRUCTIONS IN TROUBLE SHOOTING SECTION.

**NOTICE**

Do not mistake orange flames with yellow tipping. Dirt or other fine particles enter the heater and burn, causing brief patches of orange flame.

**CLEANING  
AND  
MAINTENANCE**

**WARNING**

Turn off heater and let cool before cleaning.

**CAUTION**

You must keep control areas, burner, and circulating air passageways of heater clean. Inspect these areas of heater before each use. Have heater inspected yearly by a qualified service person. Heater may need more frequent cleaning due to excessive lint from carpeting, bedding material, etc.

**ODS/PILOT AND BURNER**

\*Use a vacuum cleaner, pressurized air, or small, soft bristled brush to clean.

**CABINET**

**Exterior**

\*Use a soft cloth dampened with a mild soap and water mixture. Wipe the cabinet to remove dust.

**Air Passageways**

\*Use a vacuum cleaner or pressurized air to clean.

**TROUBLE-  
SHOOTING**

**CAUTION**

Never use a wire, needle, or similar object to clean ODS/pilot. This can damage ODS/pilot unit.

**WARNING**

Turn off and unplug heater and let cool before servicing. Only a qualified service person should service and repair heater.

<b>TROUBLE-SHOOTING (CONTINUED)</b>	<b>OBSERVED PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>REMEDY</b>
	When ignitor button is pressed, there is no spark at ODS/pilot	<ol style="list-style-type: none"> <li>1. Ignitor electrode positioned wrong</li> <li>2. Ignitor electrode broken.</li> <li>3. Ignitor electrode not connected to ignitor cable</li> <li>4. Ignitor cable pinched or wet</li> <li>5. Piezo ignitor nut is loose</li> <li>6. Broken ignitor cable</li> <li>7. Bad piezo ignitor</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace ignitor</li> <li>2. Replace ignitor</li> <li>3. Reconnect ignitor cable</li> <li>4. Free ignitor cable if pinched by any metal or tubing. Keep ignitor cable dry</li> <li>5. Tighten nut holding piezo ignitor to heater cabinet. Nut is located inside heater cabinet at top</li> <li>6. Replace ignitor cable</li> <li>7. Replace piezo ignitor</li> </ol>
	When ignitor button is pressed, there is spark at ODS/pilot but no ignition	<ol style="list-style-type: none"> <li>1. Gas supply is turned off or manual shutoff valve closed</li> <li>2. Control knob not in PILOT position</li> <li>3. Control knob not pressed in while in pilot position</li> <li>4. Air in gas lines when installed</li> <li>5. ODS/pilot is clogged</li> <li>6. Gas regulator setting not correct</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn on gas supply or open manual shut off valve</li> <li>2. Turn control knob to PILOT position</li> <li>3. Press in control knob while in PILOT position</li> <li>4. Continue holding down control knob Repeat igniting operation until air is removed</li> <li>5. Clean ODS/pilot (see Cleaning and maintenance, page 17) or replace ODS/pilot assembly</li> <li>6. Replace gas regulator</li> </ol>
	ODS/pilot lights but flame goes out when control knob is released	<ol style="list-style-type: none"> <li>1. Control knob not fully pressed in</li> </ol>	<ol style="list-style-type: none"> <li>1. Press in control knob fully</li> </ol>

TROUBLE-SHOOTING	OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
		<ul style="list-style-type: none"> <li>2. Control knob not depressed long enough</li> <li>3. Safety interlock system has been triggered</li> <li>4. Manual shut off valve not fully open</li> <li>5. Thermocouple connection loose at control valve</li> <li>6. Pilot flame not touching thermocouple, which allows - couple to cool, causing pilot flame to go out. This problem could be caused by one or both of the following:               <ul style="list-style-type: none"> <li>a. Low gas pressure</li> <li>b. Dirty or partially clogged ODS/pilot</li> </ul> </li> <li>7. Thermocouple damaged</li> <li>8. Control valve damaged</li> </ul>	<ul style="list-style-type: none"> <li>2. After ODS/pilot lights, keep control knob pressed in 30 seconds</li> <li>3. Wait one (1) minute for safety interlock system to reset. Repeat ignition operation</li> <li>4. Fully open manual shut-off valve</li> <li>5. Hand tighten until snug, then tighten 1/4 turn more</li> <li>6.               <ul style="list-style-type: none"> <li>a. Contact local gas company.</li> <li>b. Clean ODS/pilot (see Cleaning and Maintenance, page 17) or replace ODS/pilot assembly</li> </ul> </li> <li>7. Replace thermocouple</li> <li>8. Replace control valve</li> </ul>
	<p>Burner does not light after ODS/pilot is lit</p>	<ul style="list-style-type: none"> <li>1. Burner orifice is clogged</li> <li>2. Burner orifice diameter is too small</li> <li>3. Inlet gas pressure is too low</li> </ul>	<ul style="list-style-type: none"> <li>1. Clean burner (see Cleaning and Maintenance, page 17) or replace burner orifice</li> <li>2. Replace burner orifice</li> <li>3. Contact local gas company</li> </ul>
	<p>Delayed ignition of burner</p>	<ul style="list-style-type: none"> <li>1. Manifold pressure is too low</li> </ul>	<ul style="list-style-type: none"> <li>1. Contact local gas company</li> </ul>

TROUBLE-SHOOTING (CONTINUED)	OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
		2. Burner orifice is clogged	2. Clean burner (see Cleaning and maintenance, page 17) or replace burner orifice
	Burner backfiring during combustion	1. Burner orifice is clogged or damaged	1. Clean burner (see Cleaning and Maintenance, page 17) or replace burner orifice
		2. Burner damaged 3. Gas regulator defective	2. Replace burner 3. Replace gas regulator
	Yellow flame during burner combustion	1. Not enough air	1. Check burner for dirt and debris. If found, clean burner (see Cleaning and Maintenance, page 17)
		2. Gas regulator defective	2. Replace gas regulator
	Slight smoke or odor during initial operation	1. Residues from manufacturing processes	1. Problem will stop after a while of operation
	Heater produces a whistling noise when burner is lit	1. Turning control knob to HI position when burner is cold 2. Air in gas line	1. Turn control knob to LO position and let warm up for a minute 2. Operate burner until air is removed from line. Have gas line checked by local gas company
		3. Air passageways on heater blocked	3. Observe minimum installation clearance (see Figure 2, page 7)
		4. Dirty or partially clogged burner orifice	4. Clean burner (see Cleaning and Maintenance, page 17) or replace burner orifice

TROUBLE-SHOOTING (CONTINUED)	OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
	Heater produces a clicking/ticking noise just after burner is lit or shut off	1. Metal expanding while heating or contracting while cooling	1. This is common with most heaters. If noise is excessive, contact qualified service person
	Heater produces unwanted odors	1. Heater is burning vapors from paint, hair spray, glues, etc. See IMPORTANT statement on page 20 2. Gas leak. (See WARNING statement below)	1. Ventilate room. Stop using odor causing products while heater is running 2. Locate and correct all leaks (see Checking Gas Connections, page 10)
	Heater shuts off in use (ODS operates)	1. Not enough fresh air is available 2. Low line pressure 3. ODS/pilot is partially clogged	1. Open window and/or door for ventilation 2. Contact local gas company 3. Clean ODS/pilot (see Cleaning and maintenance, page 17)
	Gas odor even when control knob is in OFF position	1. Gas leak. See WARNING statement below 2. Control valve defective	1. Locate and correct all leaks (see Checking Gas Connections, Page 10) 2. Replace control valve
<p><b>WARNING</b></p> <p><b>IF YOU SMELL GAS</b></p> <ul style="list-style-type: none"> <li>* Shut off gas supply.</li> <li>* Do not try to light any appliance.</li> <li>* Do not touch any electrical switch; do not use any phone in your building.</li> <li>* Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.</li> <li>* If you cannot reach your gas supplier, call the fire department.</li> </ul>			

**TROUBLE-  
SHOOTING  
(CONTINUED)**

**SERVICE  
AND  
MAINTENANCE**

**ACCESSORIES**

**IMPORTANT:** Operating heater where impurities in air exist may create odors. Cleaning supplies, paint, paint remover, cigarette smoke, cement and glues, new carpet or textiles, etc., create fumes. These fumes may mix with combustion air and create odors.

**WARNING**

Turn off heater and let cool before cleaning.

**REPLACEMENT PARTS**

**NOTE:** In order for you to receive credit for parts replaced under warranty, only original replacement parts must be used and defective parts must be returned to **United States Stove Company** or the authorized distributor.

**A. UNDER WARRANTY:**

Contact authorized dealers of this product. If they are unable to supply original replacement part(s), call **United States Stove Company**. Be prepared to indicate name, address, model number, and how heater was malfunctioning, type of gas used and purchase date. In most cases, the defective part will be requested to be returned to the authorized distributor of **United States Stove Company**.

**B. NOT UNDER WARRANTY:**

Contact authorized dealers of this product. If they are unable to supply original replacement part(s), call **United States Stove Company**. Be prepared to indicate model number and replacement part(s) number.

When calling **United States Stove Company** have ready

- \* model number of your heater.
- \* the replacement part number.

Purchase these heater accessories from your local dealer. If they can not supply these accessories, call the Customer Service Department at (800)750-2723 for information.

**BASE** UH3000B  
UH5000B

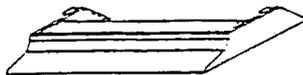


Figure 25

**FAN KIT** UH1000F  
UHS1000F

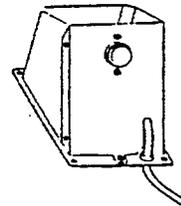


Figure 26

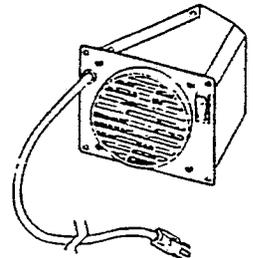
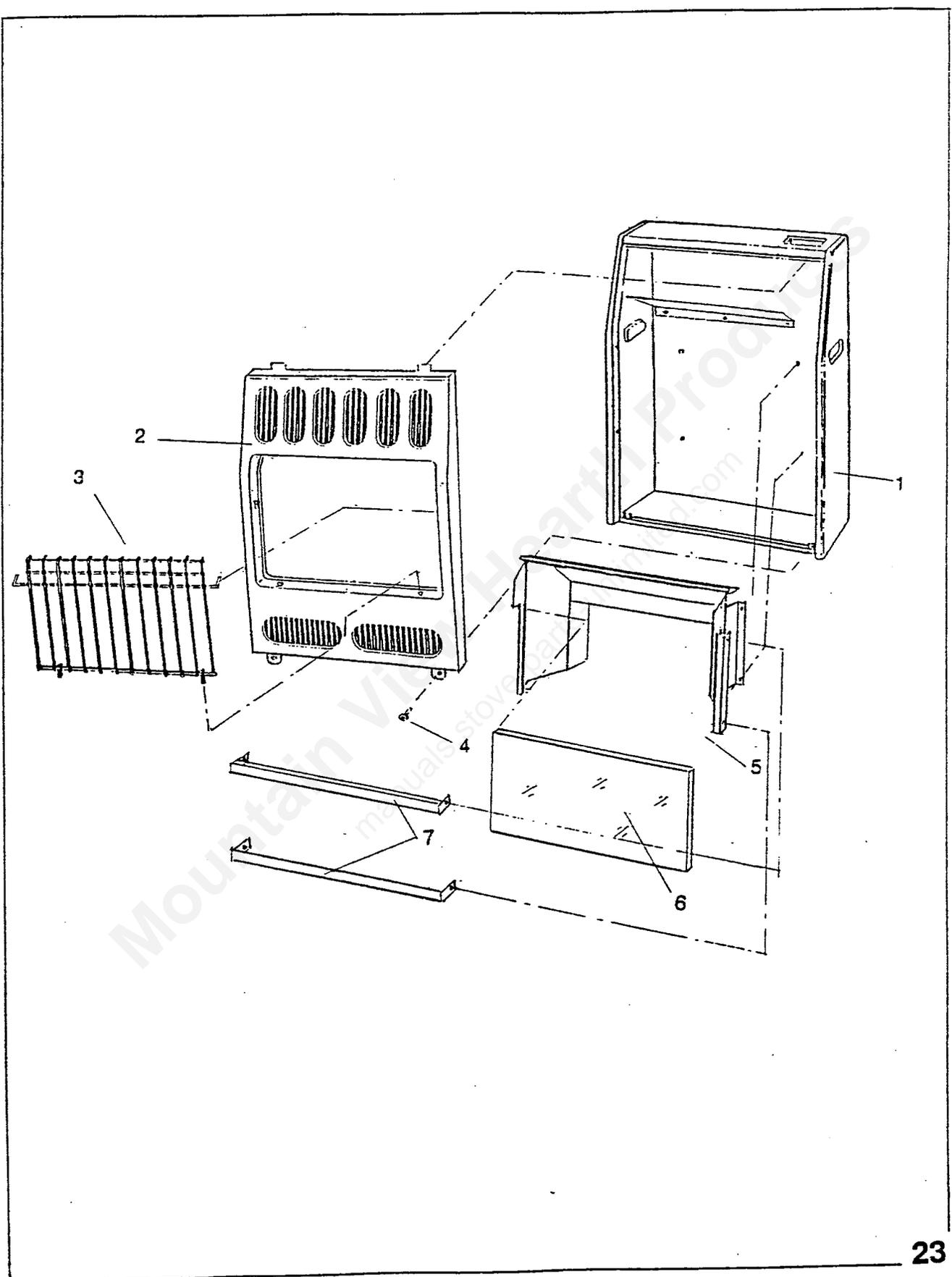
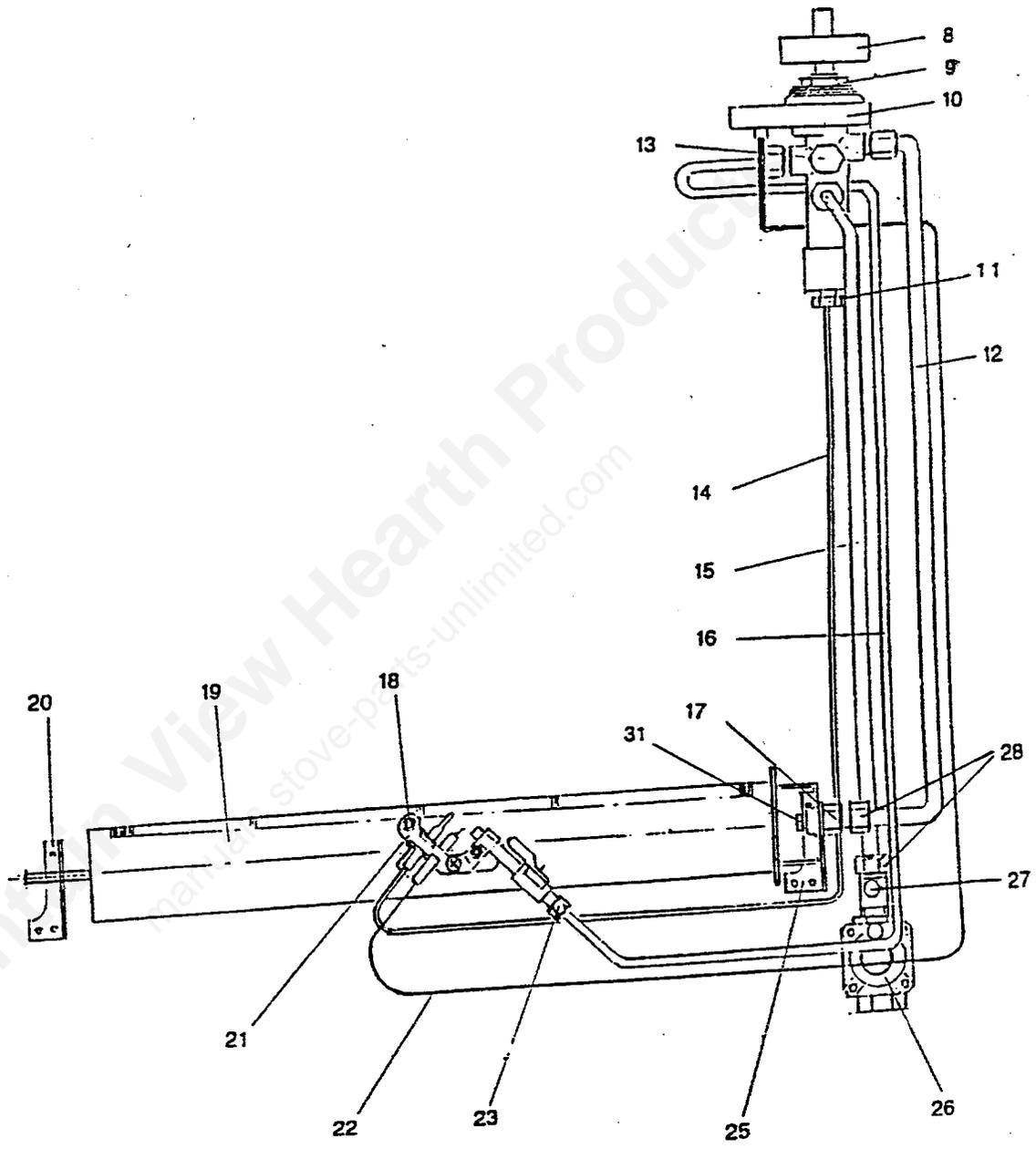


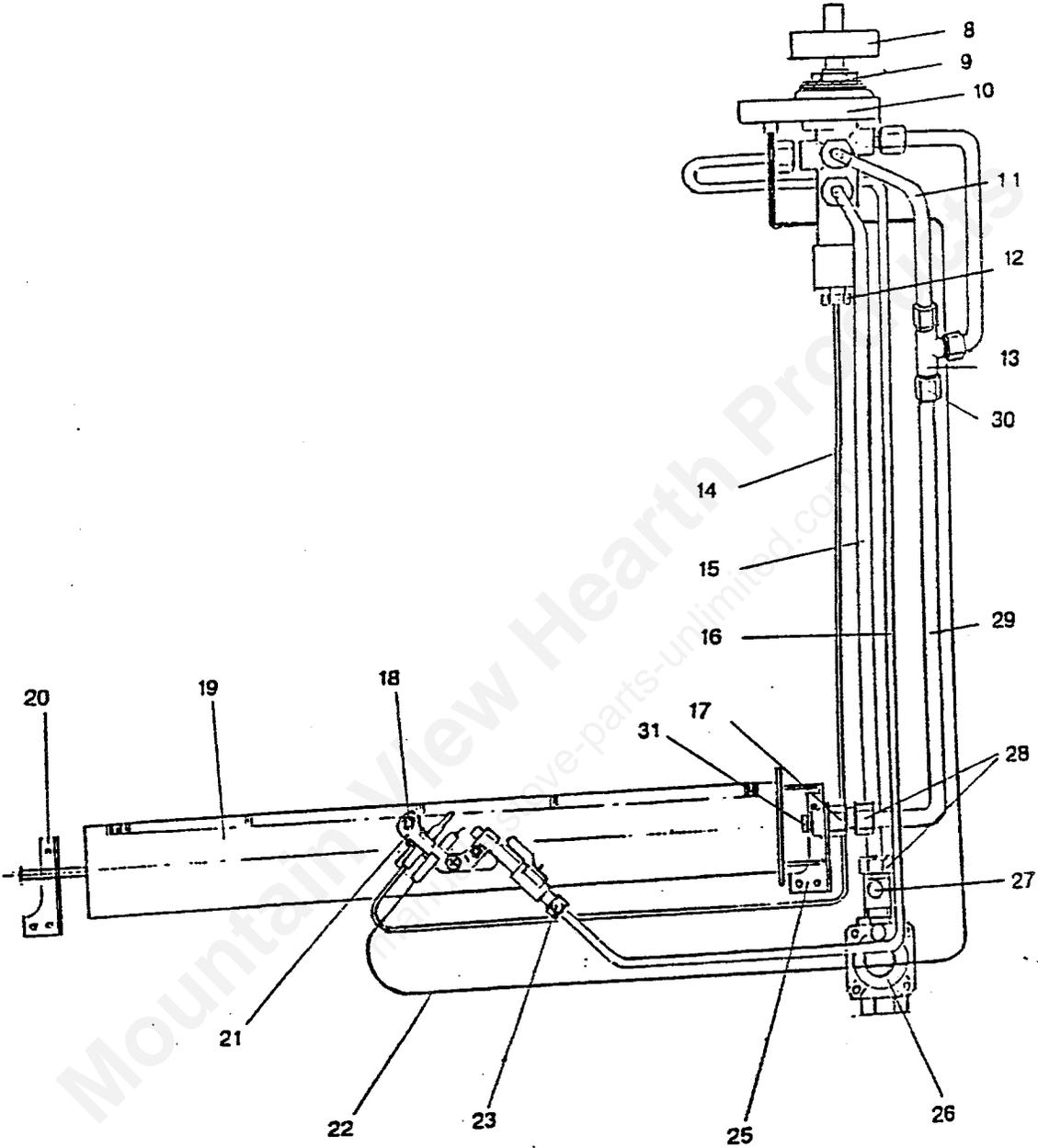
Figure 27



Model No. CBF6N  
CBF6L

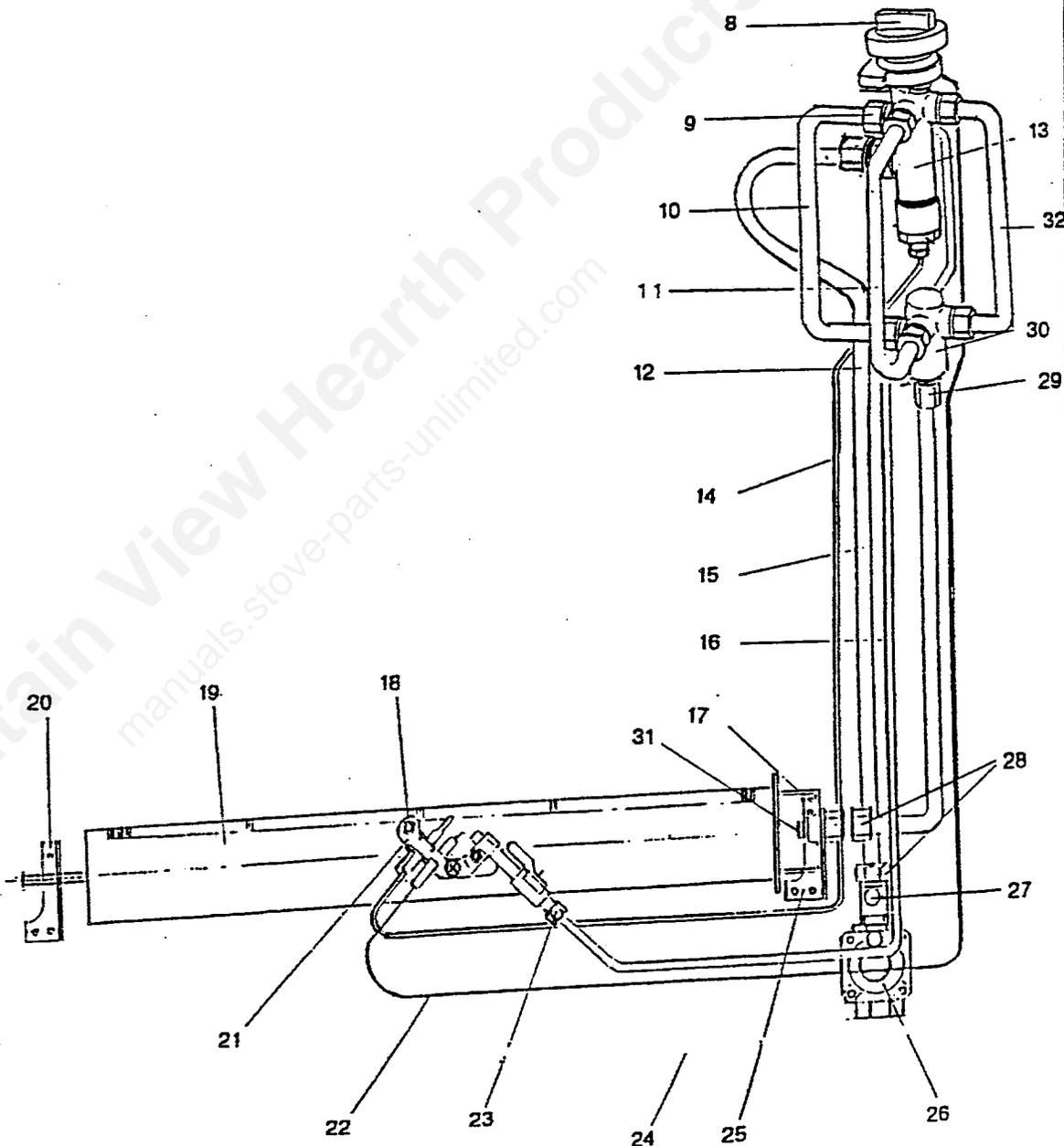


Model No. CBF10NT  
CBF10LT

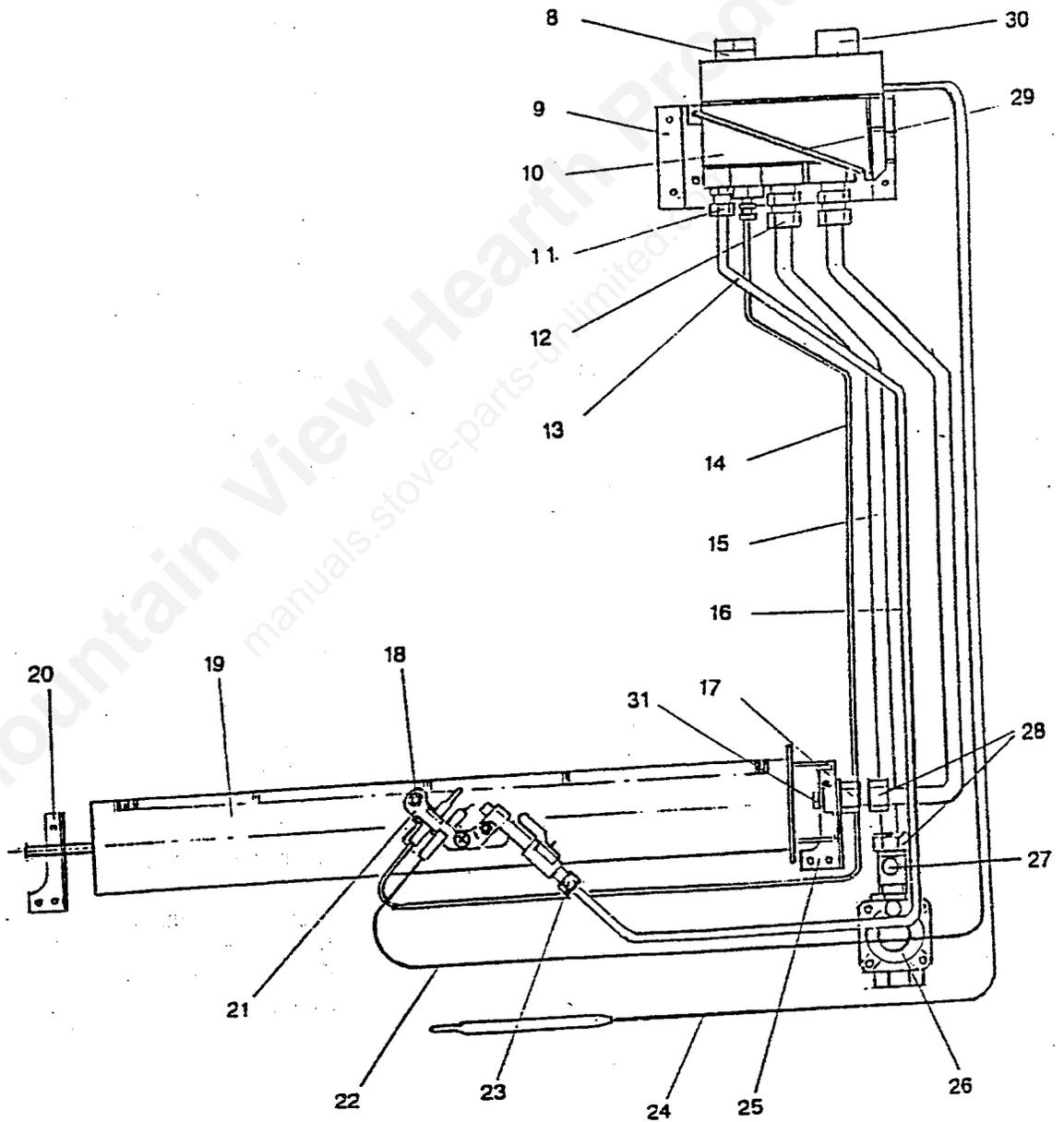


Model No. CBF20N  
CBF20L

CBF30N  
CBF30L



Model No.    CBF10NT    CBF20NT    CBF30NT  
                   CBF10LT    CBF20LT    CBF30LT



## PARTS LIST

ITEM NO.	PARTS NO.	DESCRIPTION
1.	98007	Cabinet
2.	98006	Front panel
3.	98010	Safety guard unit
4.	98075	Screw
5.	98012	Reflector unit
6.	98501	Glass panel
7.	98502	Glass retainer
8.	98061	Control knob
9.	98037	7/16" Locknut
9a.	98054	M15 Locknut
9b.	98066	Thermostat mounting bracket
10.	98034	Gas control valve
10a.	98512	Two tubes
10b.	98065	Thermostat gas valve
11.	98071	Safety switch and fitting
11a.	98511	One tube
11b.	98512	Two tubes
12.	98569	Outlet(burner) tubing
12a.	98071	Safety switch and fitting
12b.	98060	Gas main inlet tube
12c.	98033	M14 Locknut
13.	98035	7/16 Locknut
13a.	98514	Tee connection
13b.	98034	Gas control valve
13c.	98051	Pilot tubing
14.	98071	Thermocouple wire
15.	98060	Gas main inlet tube
16.	98051	Pilot tubing
17.	98507	Injector holder
18.	98514	MS locknut
19.	98506	Burner
20.	98504	Left mounting bracket
21.	98071	Pilot and ignition unit
22.	98071	Ignite pizeo wire
23.	98039	3/8" Locknut
24.	98071	Thermostat sensor wire
25.	98505	Right mounting bracket
26.	98029	Pressure regulator
27.	98030	Pressure tap fitting
28.	98033	M14 Locknut
29a.	98509	Outlet(Burner) tubing
29b.	98030	M14 Locknut
29c.	98067	Screw
30.	98055	Connector
30a.	98048	7/16" Locknut
30b.	98513	Temperature setting knob
31.	98508	Injector
32.	98513	Three tubes