OPERATION (excessive noise)

BURNER OPERATES WITH EXCESSIVE AIR FLOW NOISE.

- ***Air shutters improperly adjusted.*** Air shutters are opened too wide allowing excessive air into burner venturi.
  FIX: Air shutters should not be altered from factory settings.
  COMMENTS: A hard, completely blue flame is indicative of excessive combustion air.
- ***Venturi light-off.*** Operating set with **front burner venturi light-off** will cause a loud roaring air flow noise.
  FIX: See ***"BURNER OPERATION (burner(s) light at orifice face "Venturi Ignition"*** page 9.
- ***Firebox is amplifying normal flow noise.*** Metal firebox is amplifying the normal air flow noise.
  COMMENTS: Most fireboxes, including metal inserts, tend to form natural band shells which act as sound amplifiers.
- ***Using flex tube to connect gas source.*** Unit has been connected to gas source with a "flex tube" .
  FIX: Replace flex tube with smooth aluminum connector

OPERATION (scorching/discoloration)

WALLS, MANTELS OR SURROUNDS ARE SCORCHED OR DISCOLORED.

- ***Exceeding minimum clearance requirements.*** Failing to adhere to required minimum clearances.
  FIX: Observe mantel and minimum clearances to combustibles (see Installation instructions). Install hood.
  COMMENTS: Failure to observe minimum clearances to combustibles can result in scorching, odors, smoke and fire.
- ***Fireplace Mantel is heat warped or scorched.*** Mantel clearances exceeded or no fireplace hood installed.
  FIX: Observe mantel and minimum clearances to combustibles (see Installation instructions). Install hood.
  COMMENTS: Failure to observe minimum clearances to combustibles can result in scorching, odors, smoke and fire.
- ***Drafting, use with non-certified blowers or air currents.*** Accessory firebox blowers, **ceiling fans or other fan devices** can **alter the burner flame pattern** causing local concentrations of extreme heat.
  FIX: Avoid drafts which alter the burner flame pattern. Do not allow fans to blow directly into fireplace. If not specifically certified for use with CHILLBUSTER™, do not install blower insert. If already installed, discontinue use and remove from firebox.
  COMMENTS: Install only in certified fireboxes. Avoid drafting or direct air currents on burner(s) or pilot.
- ***Other impurities in air.*** Pre-existing air impurities (cigarette smoke or the fumes from cleaning supplies, paint or paint remover, new carpet or textiles, pet hair, candles, potpourri. etc.) are mixing with the combustion air and creating airborne combustion residue which can then adhere to room surfaces.
  FIX: Stop using odor causing products while heater is running. See ***"Other Impurities in air"*** (page 14).
- ***Excessive flame. (Natural gas set operated on LP).*** **WARNING! A Natural Gas set being operated on LP/Propane gas will produce dangerously high flame heights, temperatures, and elevated CO levels.**
  FIX: See ***"Natural gas set operated on LP"*** (page 9).

OPERATION (gas odor)

GAS ODOR DURING COMBUSTION OR WHEN SET IS IN "OFF" POSITION.

- **GAS LEAK! Shut off main gas supply. Open windows. Ventilate with fresh air.**
  FIX •Shut off gas supply.
  •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 neighbors phone. Follow the gas supplier's instructions.
  •If you can not reach your gas supplier, call the fire department.
  COMMENTS: Although each Chillbuster is tested for leaks prior to shipping, gas leaks can occur due to improper installation (gas supply connections; use of pipe compound on flared input fittings) or from overheating the valve body .

- ***Ember Material not placed on front burner (C3 models only).*** To ensure all front burner ports ignite, prior to lighting and testing ensure that Ember Material is completely covering the Front Burner.
  FIX: Place ember material on and completely covering front burner.
  COMMENTS: **WARNING: Failure to completely cover front burner with embers can result in un-ignited gas venting from burner.** See ***"Ember Material not placed on front burner (C3 models only)"*** (page 5).

OPERATION (normal by-products of combustion)

SLIGHT SMOKE OR ODOR DURING INITIAL OPERATION.

- ***Initial operation-normal burn-in time.*** Burn residues left from burner tube oil coating.
  FIX: Allow set to "Burn-in" from 2 to 4 hours. To vent initial odors, burn with **fireplace damper (if available) open** and/or with an open window.
  COMMENTS: There are no materials used in the construction or use of CHILLBUSTER™ which produce odor.

NORMAL BY-PRODUCTS OF COMBUSTION (combustion odor, water vapor and CO)

- ***Normal Combustion Odor.*** All vent free gas appliances will have an associated normal combustion odor. This heater may create warm air currents, which, depending upon the specific location of your installation (upstairs, downstairs, adjoining rooms, etc.,) may cause higher concentrations of normal combustion odors.
  FIX: If normal combustion odor is objectionable, operate with **damper (if available) partly open**. Open (or close) doors to adjoining rooms. Crack open a window in the room where the set is operating. See **"Dilution is the Solution"** (page 12) Each installation presents a unique set of circumstances regarding combustion air supply and currents which contribute to both the creation and/or elimination of normal combustion odors.

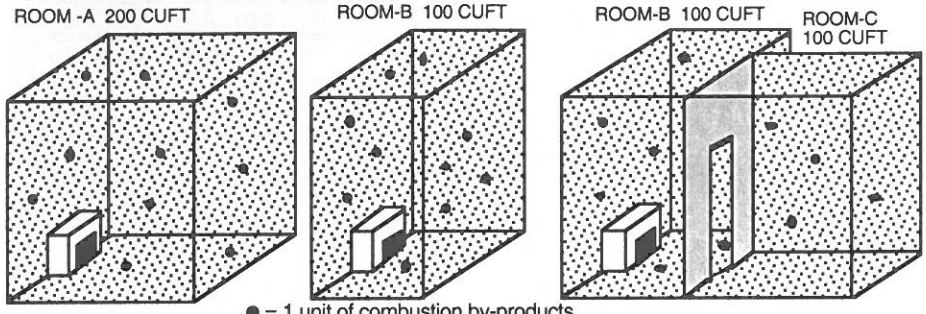
OPERATION (normal by-products of combustion-continued)

- ***Normal Water Vapor as a by-product of combustion.*** Water vapor is a normal by-product of combustion. Operating a vent free heater will increase indoor humidity (which may be beneficial during the dry heating season.
  COMMENTS: Normal water vapor production from combustion will normally manifest itself as moisture on windows similar to that which occurs when using a gas range.
- ***Normal Levels of Carbon Monoxide as a by-product of combustion.*** Carbon Monoxide is a normal by-product of combustion. Vent-Free heaters are certified for use based upon their low CO out put and by the inclusion of an Oxygen Depletion Sensor (ODS) safety pilot which will shut down unit if higher than normal CO levels are reached.
  COMMENTS: The pilot light ODS system is designed to shut burner off if insufficient fresh air is available to operate safely.
- ***Customer expectation.*** Customer's odor threshold is so low as to preclude satisfaction regarding any vent free product.
  FIX: Have customer operate as a minimum vented product or discontinue use.
  COMMENTS: Product may not be able to meet customer expectations.

OPERATION (higher than normal by-products of combustion)

HIGHER THAN NORMAL COMBUSTION BY-PRODUCTS (odor, water vapor and CO)

- ***Operating with glass doors closed.*** Heater is being used with glass doors closed.
  FIX: Never operate CHILLBUSTER™ with glass doors closed.
  COMMENTS: Closed glass doors will cause over heating damaging appliance and create abnormal combustion by products.
- ***Excessive use.*** Heater is being **used excessively** beyond the spaces air exchange rate capacity.
  FIX: Operate as an attended appliance to provide supplemental heat only. Avoid prolonged or continuous use.
  COMMENTS: CHILLBUSTER™ is not designed nor intended for use as a whole house heater. In some instances, prolonged use of a ventfree heater (particularly a 40,000 BTU model) inside a certified box can cause over heating of surrounding structures creating odor, excessive moisture and/or elevated CO levels.
- ***Incorrect Room Sizing resulting in Inadequate Combustion and Ventilation Air.*** Heater has been installed in too small a space or in a "tightly constructed" room (low air exchange rate) allowing concentrations of combustion by-products to become excessive.
  FIX: Ensure that requirements for combustion ventilation air are met.
  COMMENTS: See **"PROVISIONS FOR ADEQUATE COMBUSTION AND VENTILATION AIR"** in instructions.



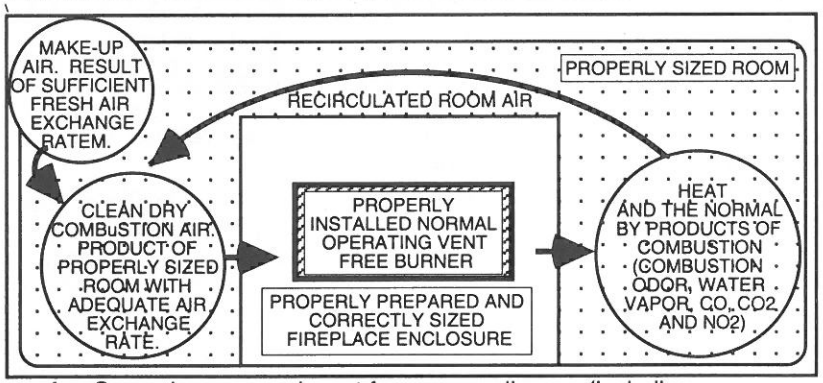
Rooms A and B: Assuming identical air exchange rates, these two rooms, each with identical vent-free appliances, will have greatly different relative output (heat and by-products including CO, moisture, etc.) Being 1/2 the size as Room A, the appliance's relative out put in Room B will be twice as great as Room A.

Rooms B and C: By permanently opening the door (physically removing or by installing louvers) between Room B and Room C, the effective available Combustion and Ventilation Air has been doubled, decreasing the relative output by half.

'DILUTION IS THE SOLUTION'

Decreasing the proportion of combustion by-products within any volume of space can be accomplished via the following:
Method 1: Increase the volume of the space the appliance is installed.
Method 2: Decrease the output of the appliance(s) being used in the space (lower BTU output, less operational time or no simulteneous burning.
Method 3: Increase the air exchange rate with make up air devices, one of the methods described in the National Fuel Gas Code, or by operating with the chimney damper partialy open (if available.)
Method 4: A combination of 1, 2 and 3.

- ***Insufficient air exchange.*** House is of **unusually tight construction** or lacks adequate exchange of fresh air.
  FIX: Open window and/or door(s) to adjoining room(s) to increase supply of available combustion air or slightly open damper (if available). Install make up air devices.
  COMMENTS: See **"Provisions for Adequate Combustion and Ventilation Air"** in instructions.



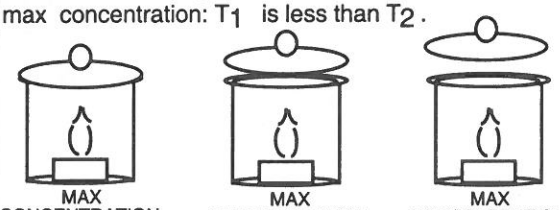
- ***Operating Multiple Appliances Simultaneously.*** Operating several vent free gas appliances (including oven/range) simultaneously can elevate the level of combustion by-products beyond a spaces air exchange rate.
  FIX: Reducing the concentration of combustion by products can be accomplished by either not operating ranges or other vent free gas appliances at the same time.
  COMMENTS: See **"DILUTION IS THE SOLUTION"** above and **"CHIMNEY DAMPERS"** (page 12)

OPERATION (higher than normal by-products of combustion)

- ***Embers packed to tight.*** C2, C3, C5 or C7 **burner embers** are packed too tightly on burner.
  FIX: Loosen the embers in the ember tray. See **"Ember Material Preparation and Placement"** in instructions and ***"Ember Material not placed on front burner (C3 models only)"*** (page 5).
- ***Air shutters improperly adjusted or obstructed.*** Air shutters have been closed or are obstructed with debris.
  FIX: **Air shutters should not be altered from factory settings**. Air shutters should be periodically cleaned of debris.
  COMMENTS: Normal flame color should be yellow body **surrounded by a hard blue haze.**
- ***Venturi Light-off.*** Operating set with venturi lit off.
  FIX: See *"VENTURI LIGHT-OFF CAUSING BURNER TO OPERATE WITH A LOUD AIR FLOW NOISE."* page 4.
  COMMENTS: Venturi light-off can occur during initial lighting; due to improperly placed embers; incorrect air shutter settings; local installation conditions including drafts, blowers, air ducts etc.
- ***Natural gas set operated on LP.*** **WARNING! A Natural Gas set being operated on LP/Propane gas will produce dangerously high flame heights, temperatures, and elevated CO levels.**

CHIMNEY DAMPERS
The single greatest effect you can have on vent-free combustion by-products output is to vent them out of the room. Even a slight opening of the damper (using supplied damper clamp) will either greatly reduce or even eliminate the amount of combustion by-products entering a space. With the damper slightly open, the minimum amount of heat loss incurred from an average 40,000 BTU ventfree heater is more than compensated by the elimination of a host of vent-free air quality related issues including odor, moisture and CO alarms. If available, **opening a chimney damper is highly recommended.**

Max Concentration (appliance output:available air volume:air exchange rate). Time required to reach max concentration: T_1 is less than T_2.

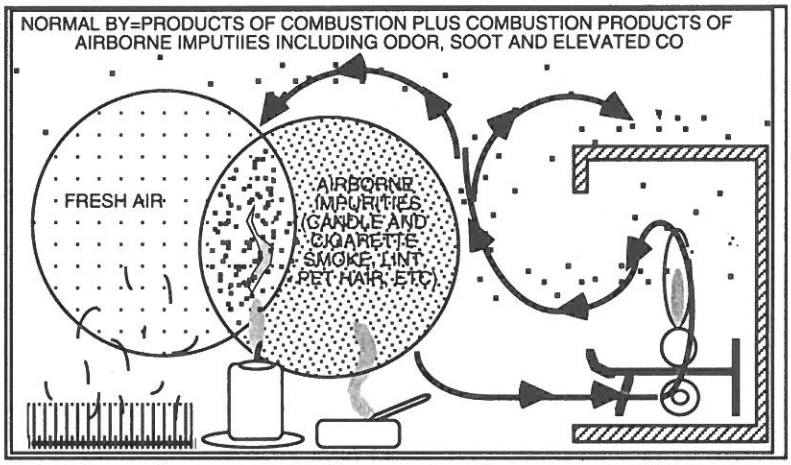


OPERATION (abnormal by-products of combustion-odor)

ABNORMAL ODOR (undefined odor other than normal combustion odor-environment related).

Other than the thin coating of machine oil on the burner(s) which will create a "burnt toast" smell for 10 to 15 minutes after the first lighting of the appliance, there are no materials used in the construction or use of CHILLBUSTER™, including paint, logs or embers, which will produce an odor during operation. The only odor produced by the set is the natural "heat" odor of combustion. If any odor other than normal combustion odor is present, investigate the following:

- ***Other impurities in air.*** Heater is being operated in an environment where impurities in the air exist (cigarette smoke or the fumes from cleaning supplies, paint or paint remover, new carpet or textiles, pet hair. etc.) These fumes mix with the combustion air passing through the burner and create odor, airborne combustion residue and/or elevated levels of CO.
  FIX: Open window and ventilate room. Stop using odor causing products while heater is running. If it is impractical to remove the odor causing material , e.g., new carpet or drapes, **burn with fireplace damper (if available) open** or open window until odors disappear.
  COMMENTS: **Heater must have clean, fresh air. Any other impurities in the combustion air will pass through the burner(s) resulting in abnormal odor, elevated CO and/or soot. If the combustion output of the burner(s) exceeds the air exchange rate, this problem will become progressive and become more severe with prolonged burn times.**



ABNORMAL ODOR (undefined odor other than normal combustion odor-operation related).

- ***Excessive use.*** Heater is being **used excessively** beyond the spaces air exchange rate capacity.
  FIX: Operate as an attended appliance to provide supplemental heat only. Avoid prolonged or continuous use.
  COMMENTS: CHILLBUSTER™ is not designed nor intended for use as a whole house heater. In some instances, prolonged use of a ventfree heater (particularly a 40,000 BTU model) inside a certified box can cause over heating of surrounding structures creating odor, excessive moisture and/or elevated CO levels. Review **HIGHER THAN NORMAL COMBUSTION BY-PRODUCTS (odor, water vapor and CO)** (page 11).

ABNORMAL ODOR (undefined odor other than normal combustion odor-installation related).

- ***Firebox minimum clearances exceeded.*** **Fire box is too small** for installed set causing flame impingement on sides or top of the box. Condition will elevate CO and produce soot, odors, smoke and possible fire if highly heated.
  FIX: Install set in accordance with required clearances contained in Installation and Operating instructions.
  COMMENTS: Install only in properly sized (see installation instructions) and certified fireboxes.

OPERATION (abnormal by-products of combustion-odor)

ABNORMAL ODOR (undefined odor other than normal combustion odor-installation related).

- ***Dirty firebox.*** Heater is being operated in a **previously used wood burning fireplace** which has not had the firebox and flue cleaned of soot and creosote.
  - *FIX*: Clean chimney flue and firebox before installing and operating heater.
  - *COMMENTS*: Operating this appliance in a dirty firebox can produce odors, smoke, soot, elevated CO levels and possible fire when previous **combustion residues become highly heated.**
- ***Operating with glass doors closed.*** Heater is being used with glass doors closed.
  - *FIX*: Never operate CHILLBUSTER™ with glass doors closed.
  - *COMMENTS*: Closed glass doors will cause over heating damaging appliance and create abnormal combustion by products.
- ***Insufficient clearance to combustibles.*** Fire box **clearances are too small** for installed set overheating firebox paint, surrounding construction or previous wood burning residues in fireplace (creosote.)
  - *FIX*: Install set in accordance with required clearances contained in Installation and Operating instructions.
  - *COMMENTS*: Insufficient firebox clearances can cause flame impingement on sides or top of box, producing odors, smoke and possible fire. See **"Minimum Clearances to Combustibles"** in installation instructions.
- ***Using with non-certified fire box.*** Uncertified firebox is allowing concentrations of extreme heat to effect firebox paint, surrounding construction or previous wood burning residues in fireplace (creosote.)
  - *FIX*: Do not operate CHILLBUSTER™ in an uncertified firebox. Use with an uncertified firebox can cause flame impingement or high heat concentrations on sides or top of box, producing odors, smoke and possible fire.
  - *COMMENTS*: Install only in certified fireboxes.
- ***Improper additions to logstack or burning other combustibles.*** Additional items (ornamental, vermiculite, etc.) have been added to log stack or burner is being used to burn other combustibles (cigarettes, paper, etc.)
  - *FIX*: The only items placed on the burner should be those provided by the manufacturer. They must be placed on the burner in accordance with the installation instructions and as shown on attached rating plates.
  - *COMMENTS*: Never add decorative items, e.g., pinecones, or other ornamentation, e.g., vermiculite, unless provided by and incorporated in manufacturer's design. **Never burn other combustibles on this appliance!**

OPERATION (abnormal by-products of combustion-moisture)

ABNORMAL MOISTURE (creating damp, soot like film, on windows and/or walls).

- ***Existing dirt.*** Normal combustion is combining with an existing soil or film (for example, tobacco smoke residue).
  - *FIX*: Thoroughly clean walls and windows and, if applicable, reduce number of gas burning appliances at use at one time as described above. **Slightly open damper (if available).**
  - *COMMENTS*: Refer to "Provisions for Adequate Combustion and ventilation Air" in instruction sheet. See
- ***Other impurities in air.*** Heater is being operated in an environment where impurities in the air exist (cigarette smoke or the fumes from cleaning supplies, paint or paint remover, new carpet or textiles, pet hair. etc.) These fumes mix with the combustion air passing through the burner and create odor, airborne combustion residue and/or elevated levels of CO.
  - *COMMENTS*: See ***"Other impurities in air"*** (page 12).

OPERATION (abnormal by-products of combustion-soot)

SOOT (firebox installation related).

- ***Dirty firebox.*** Heater is being operated in a previously used wood burning fireplace which has not been properly cleaned.
  - *FIX*: Clean chimney flue and firebox before installing/operating heater. Wash with TSP, rinse with clean water.
  - *COMMENTS*: A dirty firebox and/or chimney flue can produce soot, odors, smoke, elevated CO and possible fire if heated.
- ***Low LP fuel supply or pressure.*** LP tank is empty or approaching empty decreasing Water Column pressure.
  - *FIX*: Ensure tank has an adequate fuel supply.
  - *COMMENTS*: As the LP supply tank approaches empty there is also a decrease in gas pressure. This causes the velocity of the gas entering the burner to decrease degrading the air-fuel mixing effect of the venturi. This causes the **flame to become more yellow** in appearance and create a potential sooting or **elevated CO** condition.
- ***Natural gas set operated on LP.*** **WARNING! A Natural Gas set being operated on LP/Propane gas will produce dangerously high flame heights, temperatures, and elevated CO levels.**
  - *FIX*: Check and verify rating plate to ensure correct set is being operated with correct fuel source. If set is determined not to be an natural gas set, remove existing set and replace with an LP set.
  - *COMMENTS*: See ***"Natural gas set operated on LP"*** on page 10.
- ***Outside ducting.*** Outside ducting to fireplace, e.g., direct venting, has not been permanently closed prior to installation.
  - *FIX*: Close all outside air ducts to fireplace.
  - *COMMENTS*: Fireplace direct venting/ducting can create drafts which can alter the burner flame pattern.
- ***Improperly painted firebox.*** Heater is being operated in a fire box which has had its interior improperly painted.
  - *FIX*: Remove CHILLBUSTER™ and scrape away paint. Thoroughly clean firebox before installing and operating heater. NOTE: Previously used fireboxes/fireplaces must have all soot/dirt removed prior to painting.
  - *COMMENTS*: See ***"Improperly painted firebox"*** page 12.
- ***Firebox minimum clearances exceeded.*** **Fire box is too small** for installed set causing flame impingement on sides or top of the box. Condition will elevate CO and produce soot, odors, smoke and possible fire if highly heated.
  - *FIX*: Install set in accordance with required clearances contained in Installation and Operating instructions.
  - *COMMENTS*: Install only in properly sized (see installation instructions) and certified fireboxes.
- ***Air shutters improperly adjusted or obstructed.*** Air shutters have been closed or are obstructed with debris.
  - *FIX*: **Air shutters should not be altered from factory settings**. Air shutters should be periodically cleaned of debris.
  - *COMMENTS*: Normal flame color should be yellow body **surrounded by a hard blue haze.**

OPERATION (abnormal by-products of combustion-soot)

SOOT (firebox installation related) (continued).

- ***Used with unauthorized blower or firebox.*** Heater is being used with unauthorized blower or heat exchangers.
  - *FIX*: If not specifically certified for use with CHILLBUSTER™, do not install a blower insert. If already installed, discontinue use and remove from firebox.
  - *COMMENTS*: Install only in certified fireboxes. Avoid drafts. See ***"Influence of blowers or drafts"*** (page 5).
- ***Influence of blowers or drafts.*** Local installation conditions causing burner(s) flame to become unstable.
  - *FIX*: See "***Influence of blowers or drafts.***" (page 5).
- ***Incorrect ember placement.*** Ember placement is not in accordance with Installation and Operating instructions.
  - *FIX*: Place embers on burner(s) in accordance with diagram shown in Installation and Operating instructions.
  - *COMMENTS*: Correct ember placement is essential for **proper combustion**.
- ***Incorrect ember placement (C5 pilot).*** Ember material **has not** been placed over pilot in accordance with Installation and Operating instructions.
  - *FIX*: Place embers on burner(s), **including pilot,** in accordance with diagram shown in Installation and Operating instructions.
  - *COMMENTS*: Failure to place ember material over pilot (C5) models may result in a small line of soot on center top log.
- ***Incorrect log placement.*** Log placement is not in accordance with Installation and Operating instructions.
  - *FIX*: Place logs on grate in accordance with diagram shown in Installation and Operating instructions.
  - *COMMENTS*: Correct log placement is essential for **proper combustion**. Log placement diagram included on rating plate.
- ***Altered log stack.*** Additional items (ornamental, vermiculite, etc.) have been added to log stack and or grate/burner.
  - *FIX*: The only items placed on the burner should be those provided by the manufacturer. They must be placed on the burner in accordance with the installation instructions and as shown on attached rating plates.
  - *COMMENTS*: Never add decorative items, e.g., pinecones, or other ornamentation, e.g., vermiculite, unless provided by and incorporated in manufacturer's design.

SOOT (use or service related).

- ***Other impurities in air.*** Heater is being operated in an environment where impurities in the air exist (cigarette smoke or the fumes from cleaning supplies, paint or paint remover, new carpet or textiles, pet hair. etc.) These fumes mix with the combustion air passing thru the burner and create odor, airborne combustion residue and/or elevated levels of CO.
  - *FIX*: Open window and ventilate room. Stop using odor causing products while heater is running. If it is impractical to remove the odor causing material , e.g., new carpet or drapes, **burn with fireplace damper (if available) open** or open window until odors disappear.
  - *COMMENTS*: See ***"Other impurities in air "*** (page 12).
  - *FIX*: Inspect venturi(s) frequently, remove accumulated dust and debris as needed.
  - *COMMENTS*: Indicated by extreme "yellow" flame (poor combustion). See "maintenance" section of operation instructions.
- ***Glass doors closed.*** Heater is being operated in an enclosure with glass doors closed.
  - *FIX*: Do not operate heater with glass doors closed.
  - *COMMENTS*: Heater requires unimpeded air flow for proper cooling and combustion. See ***"Operating with glass doors closed."*** (page 9)
- ***Venturi Light-off.*** Operating set with venturi lit off.
  - *FIX*: See "*VENTURI LIGHT-OFF CAUSING BURNER TO OPERATE WITH A LOUD AIR FLOW NOISE.*" page 4.
  - *COMMENTS*: Venturi light-off is indicated by a loud, rushing air noise. It is normally only associated with the front burner.

OPERATION (abnormal by-products of combustion-high CO)

CO (detector alarm).

- ***Investigate reading.*** Have alarm investigated by appropriate agency. May be an erroneous reading. CO detectors can reach their alarm threshold through many different ways including, age, outdoor thermal inversions (smog), local concentrations of CO, excessive cigarette smoke, or high indoor humidity.
  - *FIX*: Have detector inspected for proper operation. Replace CO detector or remove to different location.
  - *COMMENTS*: The accuracy of most home use CO detectors is calibrated within + or - 50% for readings below 200 PPM (level at which the effects of CO can be felt -headache, nausea and fatigue). The standard under which CHILLBUSTER™ is certified allows approximately 25 PPM.

- ***Impurities in air.*** Heater is being operated where there are already pre existing air impurities (cigarette smoke or the fumes from cleaning supplies, paint or paint remover, new carpet or textiles.)
  - *FIX*: see ***"Other impurities in air"*** page 12.

- ***Insufficient air exchange.*** House is of **unusually tight construction** or lacks adequate exchange of fresh air.
  - *FIX*: Open window and/or door(s) to adjoining room(s) to increase supply of available combustion air or slightly open damper (if available). Install make up air devices.
  - *COMMENTS*: See ***"Insufficient air exchange"*** (page 11).
- ***Excessive use.*** Heater is being **used excessively** beyond the spaces air exchange rate capacity.
  - *FIX*: Review section **"OPERATION (higher than normal by-products of combustion)"**
- ***Air shutters improperly adjusted or obstructed.*** Air shutters have been closed or are obstructed with debris.
  - *FIX*: **Air shutters should not be altered from factory settings**. Air shutters should be periodically cleaned of debris.
  - *COMMENTS*: Normal flame color should be yellow body **surrounded by a hard blue haze.**
- ***Clogged air venturi.*** Venturi has become clogged with dust or lint and is restricting amount of air allowed into burner.
  - *FIX*: See ***"Clogged air venturi"*** page 14.

OPERATION (abnormal by-products of combustion-high CO)

CO (detector alarm).

- ***Method of Field Testing or Monitoring.*** Field testing for CO is not standardized.
  FIX: CO testing for all certified ventfree heaters are conducted at the factory using approved standardized test methods. Uncontrollable factors which effect any field CO test (duration and type of monitoring, existing air quality in the home, accuracy of the home monitoring device or accuracy of the field testing device) can and do influence on-site CO monitoring resulting in CO measurements which may or may not reflect the burners actual CO emissions.
  COMMENTS: Units suspected of producing higher than normal levels of CO can be sent back to the factory for a precise CO emission testing of the burner.
- ***Influence of blowers or drafts.*** Local installation conditions causing burner(s) flame to become unstable.
  FIX: See "***Influence of blowers or drafts.***" (page 5).
- ***Dirty firebox.*** Heater is being operated in a previously used wood burning fireplace which has not had existing soot removed from the firebox and the flue cleaned of creosote.
  FIX: See ***"Dirty firebox"*** page 14.
- ***Low LP fuel supply or pressure.*** LP tank is empty or approaching empty decreasing Water Column pressure.
  FIX: See ***"Low LP fuel supply or pressure"*** page 14.
- ***Improper Log placement.*** Log placement is not in accordance with Installation and Operating instructions.
  FIX: See ***"Improper Log placement"*** page 14.
- ***Ember material packed too tight.*** C2-A/B-M, T, R/S **front burner ember material** is packed too tightly.
  FIX: Loosen ember material as shown in installation instructions.
  COMMENTS: See "Ember Material preparation and placement" in C2-A/B-M, T, R and S installation instructions.
- ***Glass doors closed.*** Heater is being operated in an enclosure with glass doors closed.
  FIX: See ***"Glass doors closed"*** page 14.
- ***Minimum clearances exceeded.*** Firebox is too small for installed set causing flame impingement on sides or top of box.
  FIX: See ***"Minimum clearances exceeded"*** page 14.
- ***Venturi Light-off.*** Operating set with venturi light off.
  FIX: See "*VENTURI LIGHT-OFF CAUSING BURNER TO OPERATE WITH A LOUD AIR FLOW NOISE.*" (pages 7-8).
  COMMENTS: Venturi light-off is indicated by a loud, rushing air noise. It is normally only associated with the front burner.
- ***Improper additions to logstack.*** Additional items (ornamental, vermiculite, etc.) have been added to log stack.
  FIX: See ***"Altered log stack"*** page 14.
- ***Outside ducting.*** Outside ducting to fireplace, e.g., direct venting, has not been permanently closed prior to installation.
  FIX: See ***"Outside ducting"*** page 14.
- ***Natural gas set operated on LP.*** **WARNING! A Natural Gas set being operated on LP/Propane gas will produce dangerously high flame heights, temperatures, and elevated CO levels.**
  FIX: Check and verify rating plate to ensure correct set is being operated with correct fuel source. If set is determined not to be an natural gas set, remove existing set and replace with an LP set.
  COMMENTS: See ***"Natural gas set operated on LP"*** on page 10.