



## Tucson DX & ST

(Model 8702)


GAS-FIRED DIRECT-VENT HEATER

### Owner's Manual Installation & Operating Instructions

**Read This Manual in Its Entirety**  
Operate And Maintain This Gas Heater  
According To This Instruction Manual.





**SAVE THESE INSTRUCTIONS!**




 **WARNING: FOLLOW THE INFORMATION IN THESE INSTRUCTIONS EXACTLY, IF NOT, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.**


 **WARNING: DO NOT STORE OR USE GASOLINE OR ANY OTHER FLAMMABLE VAPORS AND LIQUIDS NEAR THIS OR ANY OTHER GAS APPLIANCE.**

#### WHAT TO DO IF YOU SMELL GAS:





-  Do not try to light any appliance.
-  Do not touch electrical switches; do not use the phone in your building.
-  Immediately call your gas supplier from a phone outside the structure. Follow your gas supplier's instructions.
-  If you cannot reach your gas supplier, call the fire department or 911.

A qualified installer, service agency, or gas supplier must perform installation and service of this appliance. In the Commonwealth of Massachusetts, all installation of gas lines and gas fittings must be performed by a licensed gas fitter or licensed plumber.

 **AVERTISSEMENT: ASSUREZ-VOUS DE BIEN SUIVRE LES INSTRUCTIONS DONNÉ DANS CETTE NOTICE POUR RÉDUIRE AU MINIMUM LE RISQUE D'INCENDIE OU POUR ÉVITER TOUT DOMMAGE MATÉRIEL, TOUTE BLESSURE OU LA MORT.**

 **AVERTISSEMENT: NE PAS ENTRESPOSER NI UTILISER D'ESSENCE NI D'AUTRE VAPERURS OU LIQUIDES INFLAMMABLES DANS LE VOISINAGE DE CET APPAREIL OU DE TOUT AUTRE APPAREIL.**

#### QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ:

-  Ne pas tenter d'allumer d'appareil.
-  Ne touchez à aucun interrupteur. Ne pas vous servir des téléphones se trouvant dans le bâtiment où vous trouvez.
-  Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
-  Si vous ne pouvez rejoindre le fournisseur de gaz, appelez le service des incendies.

L'installation et service doit être exécuté par un qualifié installer, agence de service ou le fournisseur de gaz.



# Information Sheet

Use this page to record all relevant information concerning the purchase, installation, and maintenance of your Tucson Model 8702 Direct -Vent heater. This information will facilitate servicing, purchase of replacement parts, and warranty claims (if necessary). Keep your original receipt in a safe place as proof of purchase.

<b>Serial Number:</b>		
<b>Fuel type:</b>	Natural Gas	Liquid Propane
<b>Sold by:</b>		Date of Purchase:
Address:		
Phone:		
E-mail		Website:
<b>Installed by:</b>		Date of Installation:
Address:		
Phone:		
E-mail		Website:
<b>Gas Supplier:</b>		
Address:		
Phone:		
E-mail		Website:

**Read this Owner's Manual** before installing, or operating your TUCSON. Retain this manual for future reference.

## SERVICE RECORD

[illegible]

## WHAT

Firebox Cleaning.....  
Glass Cleaning.....  
Door Gasket.....

## WHEN

annually  
as needed  
Replacement as needed

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## Introduction

Congratulations on your purchase of the Tucson Model 8702, Gas-Fired Direct-Vent heater. The Tucson, by Hearthstone, incorporates the latest in direct vent gas technology, which will provide you with clean, efficient heat for years to come. The combination of natural stones and enameled or painted cast iron gives the Tucson a pleasing look that is maintained with minimum care.

The Tucson will provide you with years of practical and convenient service. However, as with any gas appliance, the unit must be properly and safely installed and maintained by qualified service personnel to ensure safe and trouble-free operation.

### ***Tucson Model 8702 features:***

1. Proflame Control System
2. 5-piece log set
3. Heat Wave Baffle for maximum radiant heat output.
4. Platinum Bright Embers
5. The option to toggle back and forth between an Intermittent (IPI) or Continuous (CPI) pilot mode.
  - a. The IPI mode allows the most efficient use of gas, burning the pilot only when the thermostat calls for the burner to ignite.
  - b. The CPI mode runs the pilot continuously keeping the firebox warmer thus promoting better draft in colder climates.
6. Battery backup for functionality during power outages.

### ***The ST (Standard) version features:***

1. Manual Hi/Lo Flame control
2. Manual On/Off/Thermostat Mode switch
3. Remote Control - optional
4. Thermostat - optional

### ***The DX (Deluxe) version features:***

1. Proflame GTMF System
  - a. Thermostatic Remote Control
    - i. Six (6) flame levels, adjustable via the remote
    - ii. Six (6) blower speeds, adjustable via the remote

- b. Thermostatic mode to turn on/off based upon room temperature.
  - c. "Smart" thermostatic mode to modulate flame levels automatically as the unit approaches the set point temperature.
  - d. Additional outlet controlled by the remote.
2. "Child-safe" lock-out on remote control.
3. "Low Battery" indicator for Transmitter on remote control
4. Blower Assembly

Part #	Description
<b>ST Version</b>	
8702-0010ST	Standard Matte Black w/o Stone
8702-0020ST	Standard Brown Enamel w/o Stone
97-68000	ST to DX Conversion Kit (optional)
<b>DX Version</b>	
8702-0010DX	Deluxe Matte Black w/o Stone
8702-0020DX	Deluxe Brown Enamel w/o Stone
<b>Stone Sets:</b>	
9702-41	Soapstone Kit – Tucson 8702
9702-53	Autumn Brown Granite Kit – 8702

### **Read this Owner's Manual**

Operate and maintain this gas heater according to the instructions in this manual. For your safety, and years of trouble free operation, read this manual in its entirety.

### **Heater Must Be Installed and Maintained By Qualified Service Personnel**

Verify the gas connections and venting systems meet the requirements of local, regional or national installation codes. Qualified service personnel must inspect the gas heater before use, and at least annually.


### **Manufactured & warranted by:**

Hearthstone Quality Home heating Products, Inc.  
317 Stafford Ave.  
Morrisville, VT 05661  
[www.hearthstonestoves.com](http://www.hearthstonestoves.com)

# Safety Information

Your Tucson is a very attractive and extremely efficient heater, utilizing today's best technologies. By following a few simple safety precautions and by performing minimal maintenance, the unit will remain appealing while providing years of quality performance.

The installation must conform to local codes or, in the absence of local codes, the current National Fuel Gas Code, ANSI Z223.1 (NFPA 54) or CAN/CGA B149 Installation Code. *(Installer l'appareil selon les codes ou règlements locaux, ou, en l'absence de tels règlements, selon les Codes d'installation CAN/CGA B149.)*

 **CAUTION: DO NOT USE THIS APPLIANCE IF ANY PART WAS UNDER WATER. IMMEDIATELY CALL A QUALIFIED SERVICE TECHNICIAN TO INSPECT THE HEATER AND TO REPLACE ANY PART OF THE CONTROL SYSTEM AND GAS CONTROL THAT HAS BEEN UNDER WATER. (NE PAS SE SERVIR DE CET APPAREIL S'IL A ÉTÉ PLONGÉ DANS L'EAU, COMPLÈTEMENT OU EN PARTIE. APPELER UN TECHNICIEN QUALIFIÉ POUR INSPECTER L'APPAREIL ET REMPLACER TOUTE PARTIE DU SYSTÈME DE CONTRÔLE ET TOUTE COMMANDE QUI ONT ÉTÉ PLONGES DANS L'EAU.)**

During the first few hours of operation the appliance may produce smoke and/or odor. This is normal during the first several burns and also after long periods when the stove is not burned. During these initial burns, open a window(s) to assist in the removal of the smoke/odor.

The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of ½ psig. (3.5k Pa). The appliance 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 test pressures equal to or less than ½ psig (3.5k Pa).

## Fire Hazard

Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this appliance. Locate the Tucson out of traffic areas and away from furniture, draperies, clothing, and flammable material.

## Vent Only to the Outside

Never vent the gas heater to other rooms or buildings.


## Service Caution

If you believe your Tucson is not, in any way, performing properly, immediately discontinue operation until the unit is inspected and approved by qualified service personnel. Prior to servicing the unit, turn the gas to the valve off, and disconnect any electrical source. Ensure the unit is cool prior to servicing and cleaning. Replace any safety screen, guard, or component removed during servicing prior to operation. Use of any components not supplied by Hearthstone on the stove voids all warranties. **Do not substitute components.**


## Hot Surfaces


Certain exposed surfaces of the Tucson will reach high temperatures during normal operation. Clearances to combustibles must be maintained, as specified in the "Clearances To Combustibles" section of this manual.

 **DUE TO HIGH TEMPERATURES THE APPLIANCE SHOULD BE LOCATED OUT OF TRAFFIC AND AWAY FROM FURNITURE, DRAPERIES, CLOTHING AND FLAMMABLE MATERIALS.**

 **CHILDREN AND ADULTS SHOULD BE ALERTED TO THE HAZARDS OF HIGH SURFACE TEMPERATURES AND SHOULD STAY AWAY TO AVOID BURNS TO SKIN OR CLOTHING IGNITION. YOUNG CHILDREN SHOULD BE CAREFULLY SUPERVISED WHEN IN THE SAME ROOM AS THE APPLIANCE.**

 **CLOTHING OR OTHER FLAMMABLE MATERIAL SHOULD NOT BE PLACED ON OR NEAR THE APPLIANCE.**

 **(SURVEILLE LES ENFANTS. GARDER LES VÊTEMENTS, LES MEUBLES, L'ESSENCE OU AUTRES LIQUIDES À VAPEUR INFLAMMABLES LIN DE L'APPAREIL.)**


 **CLEAN THE AREA AROUND, UNDER, AND BEHIND THE UNIT ON A REGULAR BASIS TO PREVENT THE ACCUMULATION OF DUST AND LINT.**


## Proper Fuel


This gas heater is designed to burn natural gas (NG) or with conversion, liquid propane (LP). Never burn any fuel gas not intended for use with this unit. Never burn paper, wood, or other materials in this appliance.

This heater is factory equipped to burn natural gas (NG). To burn propane (LP), you must purchase an LP conversion kit (97-56100 {ST}, 97-56104 {DX}).

This appliance is only for use with the type(s) of gas indicated on the rating plate. This appliance is not convertible for use with other gases, unless a certified kit is used. *Cet appareil doit être utilisé uniquement avec les types de gaz indiqués sur la plaque signalétique. Ne pas l'utiliser avec d'autres gaz sauf si un kit de conversion certifié est installé. )*

 **WARNING: THIS GAS APPLIANCE MUST NOT BE CONNECTED TO A CHIMNEY FLUE SERVING A SEPARATE GAS OR SOLID-FUEL BURNING APPLIANCE**

 **WARNING: DO NOT OPERATE THE APPLIANCE WITH THE FRONT GLASS REMOVED, CRACKED, OR BROKEN. REPLACEMENT OF GLASS SHOULD BE DONE BY A LICENSED OR QUALIFIED SERVICE PERSON. ONLY OPEN FRONT FOR ROUTINE SERVICE. DO NOT SLAM FRONT OR STRIKE GLASS.**

 **WARNING: HEARTHSTONE RECOMMENDS THAT ONLY AN NFI CERTIFIED SERVICE TECHNICIAN INSTALLS, AND REPAIRS THIS APPLIANCE. A QUALIFIED SERVICE TECHNICIAN MUST INSPECT THE APPLIANCE BEFORE USE, AND AT LEAST ANNUALLY. MORE FREQUENT CLEANING MAY BE REQUIRED DUE TO EXCESSIVE LINT FROM CARPETING, BEDDING MATERIAL, PETS, ETC. IT IS IMPERATIVE THAT THE CONTROL COMPARTMENTS, BURNERS, AND CIRCULATING AIR PASSAGES OF THE APPLIANCE ARE KEPT CLEAN AND FREE OF OBSTRUCTIONS. (S'ASSURER QUE LE BRÛLEUR ET LE COMPARTIMENT DES COMMANDES SONT PROPRES. VOIR LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION QUI ACCOMPAGNENT L'APPAREIL.)**

## Ceramic Logs, Burner, & Baffle

If the decorative ceramic log, burner, or baffle material supplied with the Tucson is damaged or parts are missing, they must be replaced with the same, or approved Hearthstone replacement parts. These components affect the combustion quality and safety of the heater. Do not replace ceramic logs, the burner, or baffle with unapproved ceramic components or any other material.

We recommend you always wear gloves and safety goggles while handling the ceramic log set, Heat Wave baffle, and burner materials.

## Electrical Hazard

If present, any three-prong grounded plug must be plugged directly into a properly grounded three-prong receptacle. Do not cut or remove the grounding prong from any plug or otherwise attempt to circumvent the grounding protection provided with the unit. The Tucson must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70 in the U.S. or CSA C22.1 Canadian Electrical Code in Canada.

## Do Not Light Pilot or Burner by Hand

The pilot light on this gas heater is lit by using an electronic ignition module as described elsewhere in this manual. Never attempt to light the pilot or main burner by hand with a match or lighter.

## Mobile Home Installations

This appliance may be installed as an aftermarket appliance in a permanently located, manufactured (mobile) home, where not prohibited by local codes. *(Cet appareil peut être installé dans un maison préfabriquée (mobile) déjà installée à demeure si les règlements locaux le permettent.*



# Proflame Control System & Features

 **NOTE: OPEN DOOR UNDER THE ASH LIP AND REMOVE MODESTY PANEL FOR ACCESS TO ELECTRICAL AND GAS CONNECTIONS.**

## Tucson 8702 ST Model Overview

### **Power Supply**

**For the Tucson ST** the power supply is the AC/DC Power Adapter. This is packaged inside the accessory box. To connect the adapter, simply connect the output lead to the wire under the stove marked "DC-SUPPLY". Plug the input end into the nearest 120V standard outlet.

### **Thermostat (sold separately)**

You can connect to and control the Tucson ST with a wall thermostat. The ON/OFF/T'stat switch or wall mounted thermostat controls the Tucson. We recommend installation of a thermostat for more comfortable performance, however you may still override the thermostat by setting the switch to "ON". The thermostat controls the unit by "calling for heat." The thermostat turns the unit on when the room is cold, and turns the unit off once the room is warmed sufficiently. The thermostat is controlled by a 750 millivolt DC two-wire circuit.

### **Thermostat Placement**

Place the thermostat in the same room or living space as the unit. Typically 5' (1.5m) off the floor and away from any influences that may cause the temperature in the vicinity of the thermostat to be unrepresentative of the room temperature in general. Such influences might include strong lighting, a heater vent from the central heating system, or a nearby drafty window.

Placement of the thermostat on an inside wall rather than an outside wall is preferable. Do not place the thermostat directly behind or too close to the unit, otherwise, heat from the unit will immediately satisfy the thermostat and turn the unit off.

### **Thermostat Wiring (sold separately)**

Connect the thermostat to the Tucson ST using no more than 40' (12 m) of insulated thermostat wire. The thermostat wire can be surface mounted or routed under the floor, through walls, etc. Ensure you leave a small coil of additional thermostat wire behind the Tucson so that the unit is easily moved out of position for servicing and cleaning.

Connect the thermostat wires to the wire harness with the provided connection kit as per the instructions on *page 26*. At the thermostat, connect the wires to the thermostat per the instructions received with the thermostat. Take care not to over-tighten the connection screws and not to damage the internal parts of the thermostat.

### **Proflame DFC Ignition Module**

This is the command center for the appliance. The DFC Module allows the pilot to run in the IPI mode or the CPI mode. It signals the burner to light or shut down and provides the ignitor with the electricity needed for sparking. The DFC Module is powered by the DC adaptor when 120V power is available or by the backup batteries during a power outage.

### **SIT Manual Gas Valve**

The valve has a manual flame turndown knob. This control manually adjusts the flame height at the desired level. All the gas flows through the valve and is regulated by the built in regulator.

### **Pilot Assembly**

The pilot assembly consists of a pilot hood, sensor rod, and ignitor. The ignitor sends a spark to the pilot hood which ignites the gas and lights the pilot. With the pilot lit the sensor rod is engulfed by the flame, flame rectification occurs and the appliance remains lit. If the sensor does not stay engulfed by the flame the main burner will not light and the pilot will shut down.

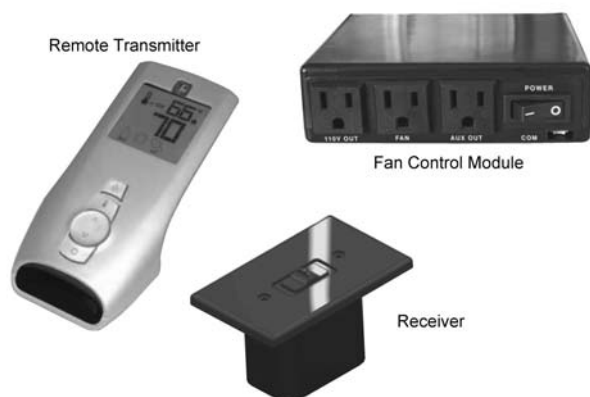
### **Optional Remote Control (for ST model)**

The Tucson ST does not come equipped with a remote control. However there are two different optional remote controls available. Both of the remote controls are capable of turning the unit on and off. One of the optional remotes also allows you to control the temperature of the stove, (in the same way the thermostat controls the heater), from anywhere in the vicinity of the unit. If "ON" & "OFF" are the only controls required, use Kit #90-56912. If you would like to control the temperature via the remote control thermostat, use Kit #90-56914. Installation instructions are provided with the kits.



## Tucson 8702 DX Model Overview

### Proflame GTMF System



**Photo 1 – Proflame GTMF System**

The Proflame GTMF is a modular remote control system that directs the functions of Tucson DX. The Proflame GTMF System is configured to control the on/off main burner operation, its flame levels, and provides Manual and Smart thermostatic control of the hearth appliance. The system controls two remotely actuated 120V/60Hz power outlets. The Fan outlet controls the fan speed through six levels, and the Auxiliary outlet either on or off. There is also an additional constantly powered 120V/60Hz outlet. The system has battery backup power for burner operation and control during power outages (see page 25 for specifications).

#### Remote Transmitter

The Tucson DX comes equipped with a thermostatic remote control transmitter. The easy to read LCD display shows all functional abilities as well as a childproof lockout and low battery indicator. It displays room temperature readout, set temperature readout and function status. The remote transmitter is powered by three 1.5 volt AAA batteries. A Mode Key is provided to index between the features and a Thermostat Key is used to turn on/off or index through thermostat functions.

#### Receiver

The Receiver accepts commands via radio frequency from the Remote to operate the appliance. The Receiver is powered (6V DC) by the Fan Control Module and uses four 1.5 volt AA type batteries for backup during power outages. The Receiver's slider switch is set to one of three positions: ON (Manual Override), REMOTE (Remote Control) or OFF. The

ON selection turns the valve on (to high) if the Remote becomes inoperative.

#### Fan Control Module

The Fan Control Module (FCM) is the main power supply for the entire system when 120v AC is available. The FCM is part of the blower assembly (packaged separately). The FCM provides two 120V remotely controlled outlets, and one constantly powered outlet. The FCM allows the remote to control the fan unit through 6 speeds and turns the auxiliary outlet on and off. This module also powers the Receiver and Ignition Module with 6v DC, making the batteries in the Receiver a backup power source expanding the life of the batteries. When 120V power is not available the FCM will not operate.

The FCM is equipped with a three-prong (grounding) plug for protection against shock hazard and should be plugged directly into a properly grounded three-prong receptacle. Do not cut or remove the grounding prong from the plug.

#### Proflame DFC Ignition Module

This is the command center for the appliance. The DFC Module allows the pilot to run in the Intermittent (IPI) mode or the Constant (CPI) mode. It signals the burner to light or shut down and provides the ignitor with the electricity needed for sparking. The DFC Module is powered by the FCM when 120V power is available or by the batteries in the Receiver during a power outage.

#### SIT Modulating Gas Valve

The remote transmitter can modulate the valve and the flame to 6 different settings between high and low. You can modulate the flame via the remote yourself or by setting the remote control to the Smart Thermostat modulation mode. Smart mode means that as the room temperature approaches the limit set for shut down the valve will automatically gradually step down the flame height. The reverse happens when the room cools - the valve will automatically gradually increase the flame height.

#### Pilot Assembly

The pilot assembly consists of a pilot hood, sensor rod, and ignitor. The ignitor sends a spark to the pilot hood which ignites the gas and lights the pilot. With the pilot lit the sensor rod is engulfed by the flame, flame rectification occurs and the appliance remains lit. If the sensor does not stay engulfed by the flame the main burner will not light and the pilot will shut down.

## Control Functions

### **Pilot Mode**

**Continuous Pilot (CPI):** Running the Tucson 8702 in CPI mode will keep your pilot running even when the thermostat does not call for heat and when the burner is not lit. This is an advantage in cold climates or under windy conditions. The “standing pilot” helps to keep the venting warm and generate some draft within the system. The standing pilot also keeps the firebox warm – greatly minimizing, or eliminating condensation formation on the glass during startup. The ignitor will automatically spark whenever the pilot mode is switched to CPI, regardless of the position of the receiver switch.

**Intermittent Pilot (IPI):** Using the IPI mode is a more efficient use of fuel as the pilot only ignites when the thermostat calls for heat.



**Photo 2 – Pilot Mode Switch**

### **Remote Receiver (DX Only)**

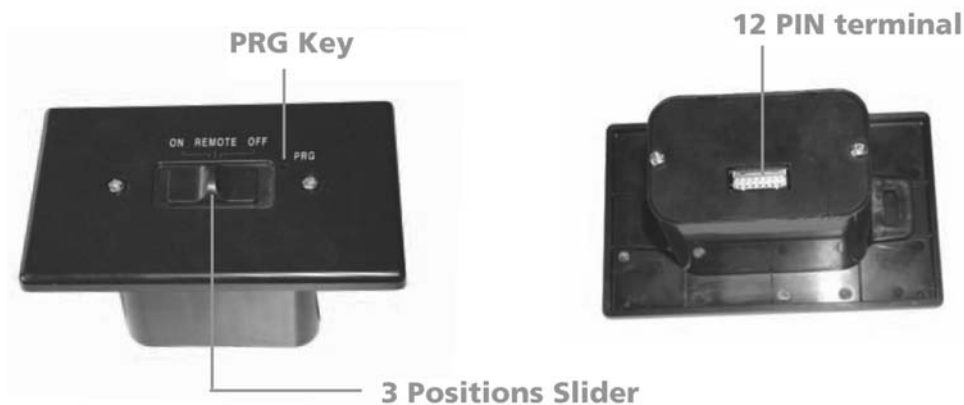
The Receiver is normally powered by the Fan Control Module or by four 1.5V AA batteries during a power outage. The Receiver switch can be set to three different positions:

**On:** Manual override allowing the valve to function and ignite the burner without the remote transmitter. The ignitor will spark automatically.

**Remote:** Remote Transmitter controls all functions of components.

**Off:** Turns off the stove. If CPI mode is selected, pilot will remain lit.

**PRG:** Used to synchronize the Transmitter and Receiver initially, and after each battery change (see page 39).



**Photo 3 – Receiver Detail**

## Remote Transmitter (DX Model)



**Photo 4 – Remote Transmitter Function Keys** (remote color may differ from shown)

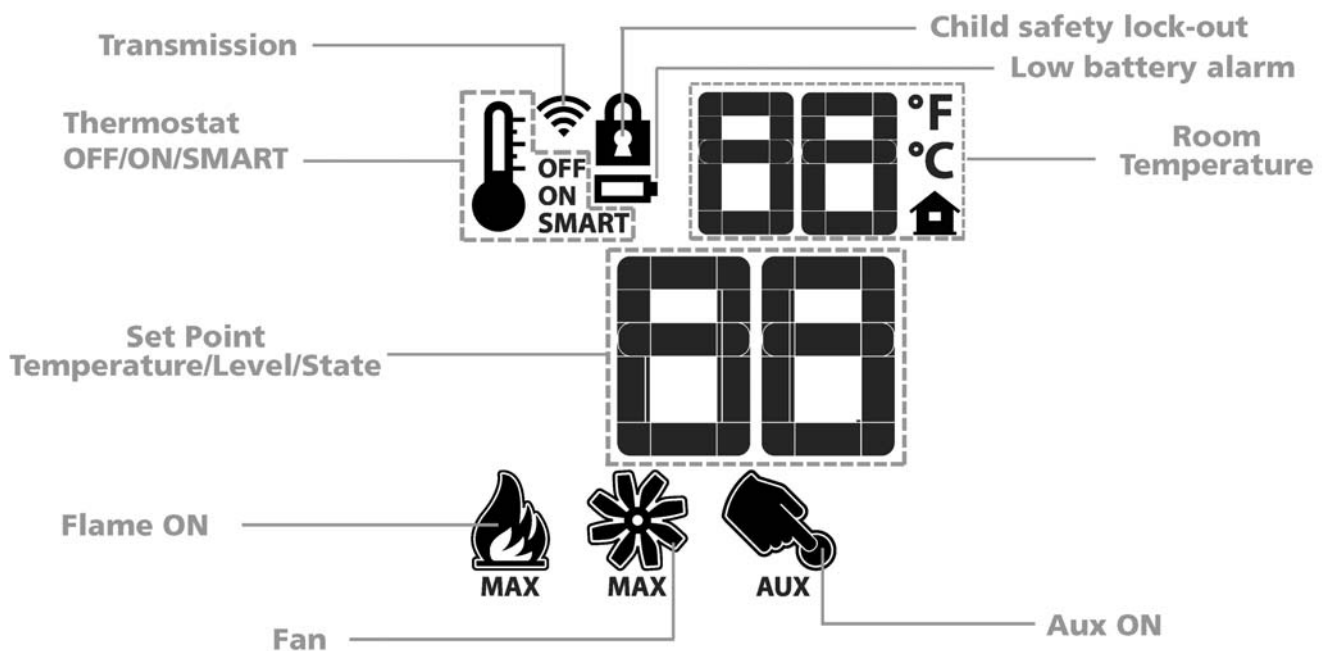
**ON/OFF Key:** Controls the main burner, blower, and the modulation of both.

**Thermostat Key:** This is the function that sets either the Manual or Smart thermostatic control.

**UP/Down Arrow Key:** Adjusts the thermostat temperature range, flame settings, and fan speed.

**Mode Key:** Toggles through the component to be controlled (burner, blower or auxiliary outlet)

The transmitter features a user-friendly layout with a Blue LCD Screen for easier viewing.



**Figure 1: Remote Transmitter Display Data**

## Specifications

**LISTED:** Gas-Fired Direct-Vent Fireplace Heater

**Model:** Tucson Direct-Vent Gas Fireplace Heater (8702)

**Testing Agency:** Intertek Testing Services NA, Inc. (ITS)

**Tested to:** ANSI Z21.88-2005, CSA 2.33b 2005, CAN/CGA2.17-M91

Certified for Canada, CSA P.4.1

Approved for Mobile Home Installation (see page 7)

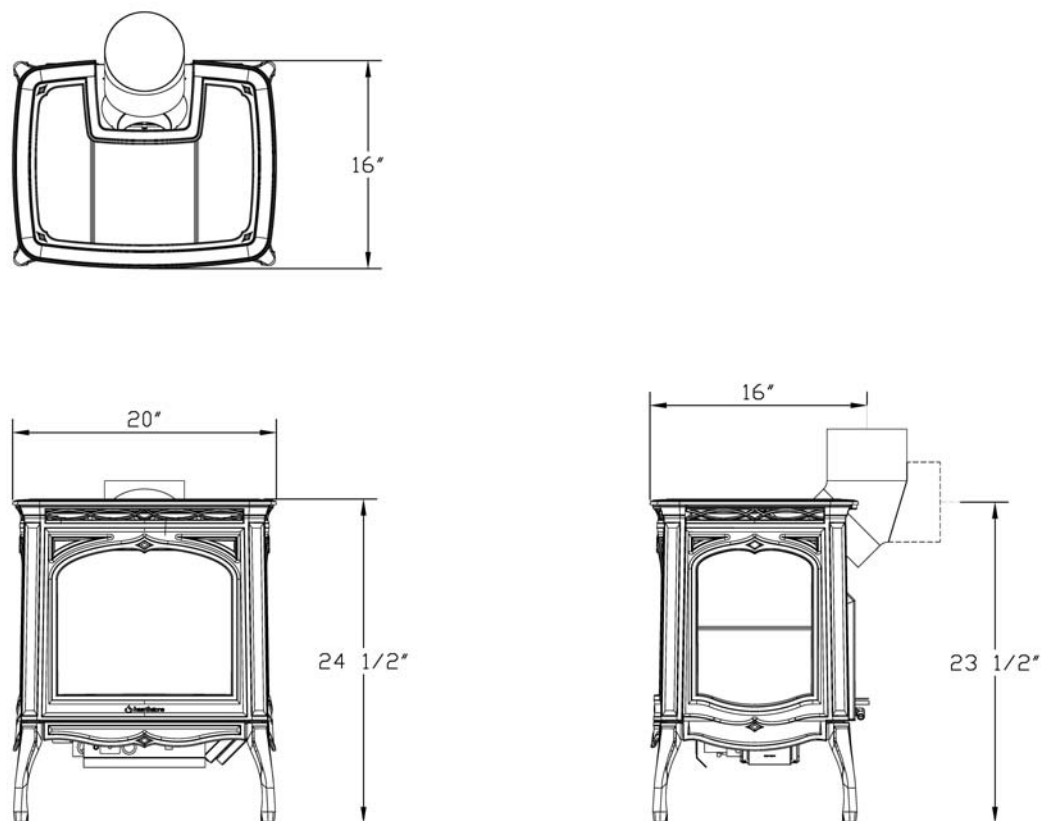
**Certified for use by:**

Board of State Examiners of Plumbers & Gasfitters

100 Cambridge Street, Room 1511

Boston, MA 02202

[www.mass.gov](http://www.mass.gov)



**Figure 2: Model 8702 Dimensions**

Specification	NG	LP
INPUT RATING (Btu/hr) 0-2000 ft	25,000	25,000
INPUT RATING (Btu/hr) 2000-4500 ft	24,200	24,800
ORIFICE SIZE (DMS) 0-2000 ft	41	53
ORIFICE SIZE (DMS) 2000-4500 ft	42	54
MANIFOLD PRESSURE - LO SETTING (in. W.c./kpa)	1.6/0.4	6.4/1.59
MANIFOLD PRESSURE - HI SETTING (in. W.c./kpa)	3.5/0.87	10.0/2.48
INLET PRESSURE - MINIMUM (in. w.c./kpa)	5.0/1.24	12.0/2.99
INLET PRESSURE - MAXIMUM (in. w.c./kpa)	7.0/1.74	13/3.22
MINIMUM INPUT RATING LO SETTING (btu/hr)	18,000	21,600
MAXIMUM OUTPUT (btu/hr) 0-2000 ft	17,350	19,100

# Installation Preparation

## Codes

Adhere to all **local codes** or, in their absence, the latest edition of THE NATIONAL FUEL GAS CODE ANSI Z223.1 (NFPA 54) or CAN/CGA B149 (*Installer l'appareil selon les codes ou règlements locaux, ou, en l'absence de tels règlements, selon les Codes d'installation CAN/CGA-B149.*)

Installation Codes can be obtained from:

**AMERICAN NATIONAL STANDARDS INSTITUTE, INC.**

1430 BROADWAY  
NEW YORK, NY 10018  
www.ansi.org


**NATIONAL FIRE PROTECTION ASSOCIATION, INC.**

BATTERY MARCH PARK  
QUINCY, MA 02269  
www.nfpa.org
















The appliance when installed must be electrically connected and grounded in accordance with local codes or, in the absence of local codes, with the current NFPA 70-National Electrical Code or CSA C22.1-Canadian Electric Code.

A manufactured home (mobile) OEM installation must conform to the Manufactured Home Construction and Safety Standard, Title 24 CFR, Part 3280 (U.S.) or Standard for Manufactured Home Installation, ANSI/NCBCS A225.1 or Standard for Gas Equipped Recreational Vehicles and mobile Housing, CSA Z240.4.CAN/SCA Z240 MH (Canada). (*Installer l'appareil selon les codes ou règlements locaux, ou, en l'absence de tels règlements, selon les Codes d'installation CAN/CGA-B149.*)

This appliance is equipped for use at 0 to 2000 feet (0-610 meters) altitude. (*Cet appareil est équipé pour des altitudes comprises entre 0 et 2000 pieds (0-610 m) seulement.*)


 **WARNING: DO NOT INSTALL OR USE THIS APPLIANCE IF ANY PART WAS SUBMERGED UNDER WATER. IMMEDIATELY CALL A QUALIFIED SERVICE TECHNICIAN TO INSPECT THE HEATER AND TO REPLACE ANY PART OF THE CONTROL SYSTEM AND GAS CONTROL THAT WAS UNDER WATER. (NE PAS SE SERVIR DE CET APPAREIL S'IL A ÉTÉ PLONGÉ DANS L'EAU, COMPLÈTEMENT OU EN PARTIE. APPELER UN TECHNICIEN QUALIFIÉ POUR INSPECTER L'APPAREIL ET REMPLACER TOUTE PARTIE DU SYSTÈME DE CONTRÔLE ET TOUTE COMMANDE QUI ONT ÉTÉ PLONGÉS DANS L'EAU)**

## Items Required for Installation

-  Accessory stone set
-  External regulator (for propane (LP) only)
-  LP conversion kit (not included, for propane only))
-  Piping which complies with local codes
-  Pipe sealant approved for use with propane (LP) (resistant to sulfur compounds).
-  Manual shutoff valve
-  Sediment trap (*see page 27*)
-  120 volt electrical service (Required for DX model, optional for ST model)
-  Pipe wrench
-  Phillips head screwdriver
-  7/16-inch wrench
-  3/16" hex wrench
-  Other parts as required by local code
-  Safety Glasses
-  Gloves

## Packing List

- 1- Tucson 8702 Gas-Fired Heater
- 1- Owner's Packet Envelope (manual, warranty card)
- 1- Heat Wave Baffle (box on pallet)
- 1- Optional Screen Kit (in box with baffle)
- 5- Decorative Ceramic Logs (in firebox)
- 1- Enamel Touch-up Paint (in firebox)
- 1- Blower Assembly Box (DX Model) (on pallet)
- 1- Accessory Box (on pallet) containing:
  - 1- Remote Control w/batteries (DX Model)
  - 1- AC/DC Adaptor (ST Model)
  - 1- 1" Valve Ctrl Extension Knob (ST Only)
  - 1- Thermostat wire kit (ST Only)
  - 1- 1 Package of four AA Batteries
  - 1- Bag of Platinum Bright Embers
  - 2- Side Stone Shields
  - 2- Top Stone Clips
  - 1- Bag of Screws
    - 6- ¼ x 20 x 3/8" Pan Head
    - 4- ¼ x 20 x 1" Leg leveling screws
    - 1- 5/16 x 1" Flat Head hex drive

 **Note: Vent kits and components are supplied separately. Failure to use the venting components approved by Hearthstone for this appliance will void your warranty.**

## Unpacking and Inspection

Hearthstone packages your Tucson to withstand normal shipment without damage. However, damage can still occur during transit. Take care to inspect for damage when unpacking and installing the unit.

🔥 **DO NOT INSTALL, OR PUT INTO SERVICE, A DAMAGED OR INCOMPLETE HEATER.**

🔥 **Note:** We recommend you position your Tucson, attach the venting, make the gas, electrical and thermostat (if applicable) connections, and attach any accessories before installing the stone set.

Remove the shrink-wrap and other packaging materials taking care not to damage the stove's finish. Inspect the Tucson for visible or concealed damage. The unit should be square and true. The stone set should be complete and without damage. The sheet metal parts should be smooth and free of bends and dents. Any enameled cast iron should be free of chips or cracks. If visible or concealed damage is found or suspected, contact your dealer for instructions.

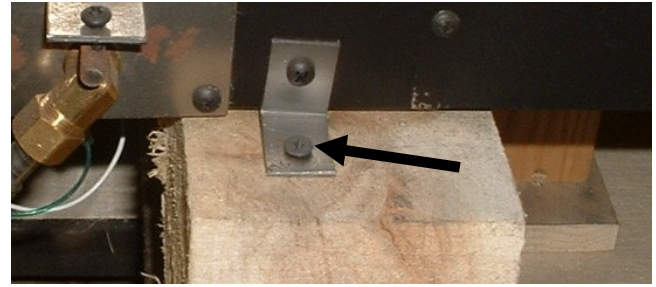
Always use gloves and eye protection when handling the decorative ceramic fire logs, burner, and Heat Wave baffle. Use care when handling these parts as they are fragile and subject to damage and breakage if handled roughly.

See the firebox access instructions on page 15 and remove the log set. Unpack and inspect the logs for damage. Inspect the ceramic burner. Open the other boxes and inspect the components. If log, burner, baffle, or any other component damage is encountered, contact your dealer for a replacement. Otherwise, set the logs and other components aside until called for during the installation.

### ***Dismounting from Pallet***

With the accessory boxes removed and set aside, remove the three screws that fasten the unit to the shipping stands on the pallet (see photos 5 & 6). Take care not to mar or chip the stove's finish. Have someone help lift the stove forward and off the pallet,

taking care to avoid damaging components mounted under the stove.



**Photo 5 – Rear Shipping Clip Detail**



**Photo 6 – Front Shipping Clip Detail (right side shown)**

### ***Installing Leg Levelers***

If your hearth surface is uneven, or is not level, you can install the four provided leveling screws. The ¼ x 20 x 1" oval tip set screws are installed down through the threaded hole in the inner flange on the bottom of the stove's feet. **Adjust the screws only enough to keep the stove from rocking, or wobbling.** On thinner hearths, or hearth pads, adjusting the screws so the entire stove's weight is solely supported on them can cause damage to your hearth.



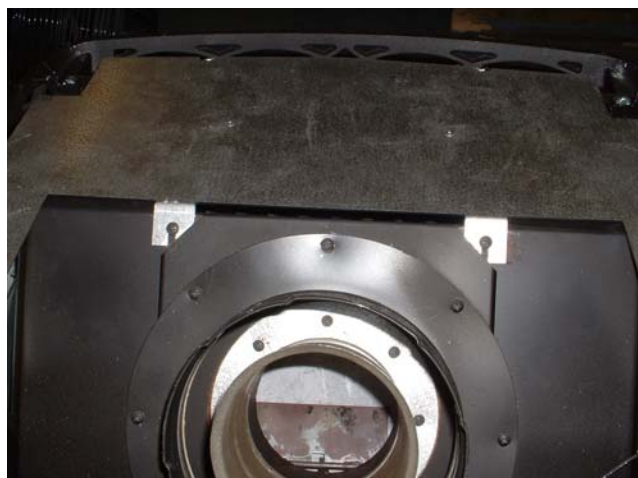
## Firebox Access

1. First, remove the top of the stove (lift off). Set carefully aside on a soft surface.



**Photo 7 – Removing Top**

1. Leave the top heat shield in place – no need to remove for firebox access.

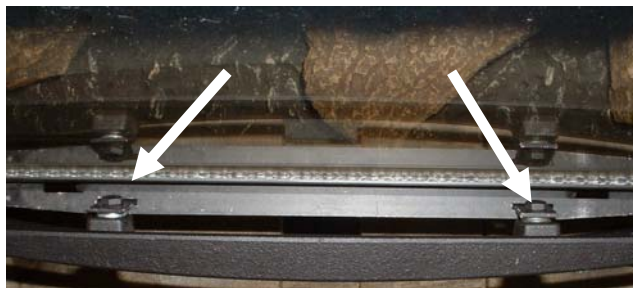


**Photo 8 - Top Heat Shield**

2. Lift the front panel slightly to disengage the tangs at its top – tilt the front toward you slightly and lift it up out of the bottom slots and set aside on a soft surface.

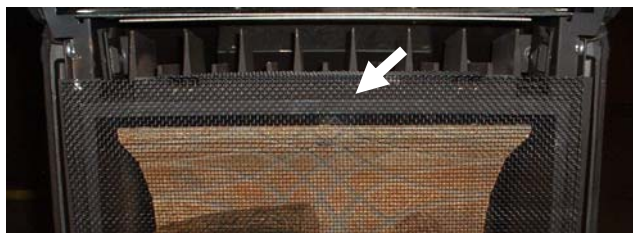


**Photo 9 – Front Panel Mounting Tang Detail**



**Photo 10 – Front Panel Retaining Slots**

3. If installed, remove screen by lifting off glass frame.



**Photo 11 – Screen Detail**

4. Pull forward and disengage the spring clips securing the top of the glass frame. *See Photo 12.* Tilt the top of the glass frame outward and lift it out of the slots on the bottom – set carefully aside.



**Photo 12 – Glass Spring Clip Detail**

5. Reinstall by reversing the previous steps. If desired, you do not need to reinstall the screen.



## Clearances to Combustibles

**Note:** Ensure clearances are in accordance with local installation codes and the requirements of the gas supplier.

### Clearance to Combustibles

Due to high surface temperatures, locate the unit out of traffic areas and away from furniture and draperies. Do not place clothing and other flammable material on or near the heater. When positioning the unit always maintain adequate clearances around air openings into the combustion chamber and allow for adequate ventilation. Minimum clearances to combustibles must be maintained as shown in Figures 3 - 6.

**Note:** The rear clearance to combustibles is determined by either the unit's or the vent pipe's minimum clearance, depending on whether the installation calls for vertical rise within the room or a rear exit, through-the-wall vent pipe.

Ensure you consider the need for access to the gas control valve access door on the front of the unit as well as full access for periodic cleaning and servicing. Also consider clearance for the blower assembly if present, or planned in the future.

**CAUTION:** THESE CLEARANCES REPRESENT **MINIMUM** DISTANCES IN ALL CASES, WHICH, THROUGH TESTING IN AN INDEPENDENT LABORATORY TO ANSI AND CSA STANDARDS, WILL PREVENT FIRE OR SPONTANEOUS COMBUSTION. WE DO NOT CONTROL THE COMBUSTIBLE MATERIALS EXPOSED TO HEAT BY THIS PRODUCT; THEREFORE, AN ASSESSMENT MUST BE MADE BY THE INSTALLER TO PREVENT CONSEQUENTIAL DAMAGE OF WALLS AND FLOORING.

### Hearth Requirement/Floor Protection

You can place the Tucson directly on any non-combustible surface or on a wood floor. When placing the Tucson on any other type of combustible surface you must install a panel made of metal, wood, stone, or glass under the appliance. The panel must extend the full width and depth of the appliance. Installations must meet all local codes.

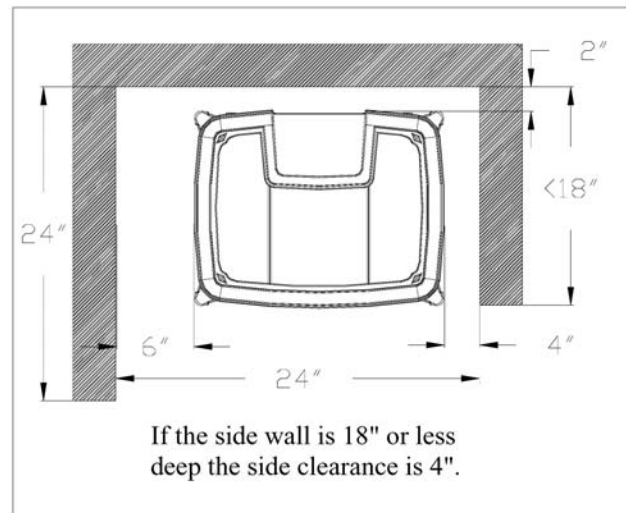


Figure 3: Minimum Wall Clearances

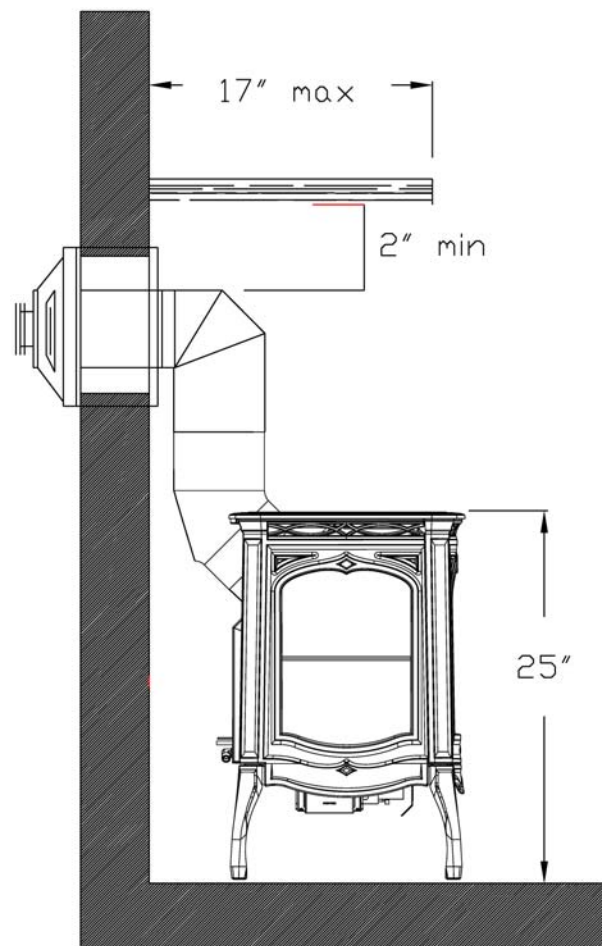


Figure 4: Horizontal Vent Mantle Clearance

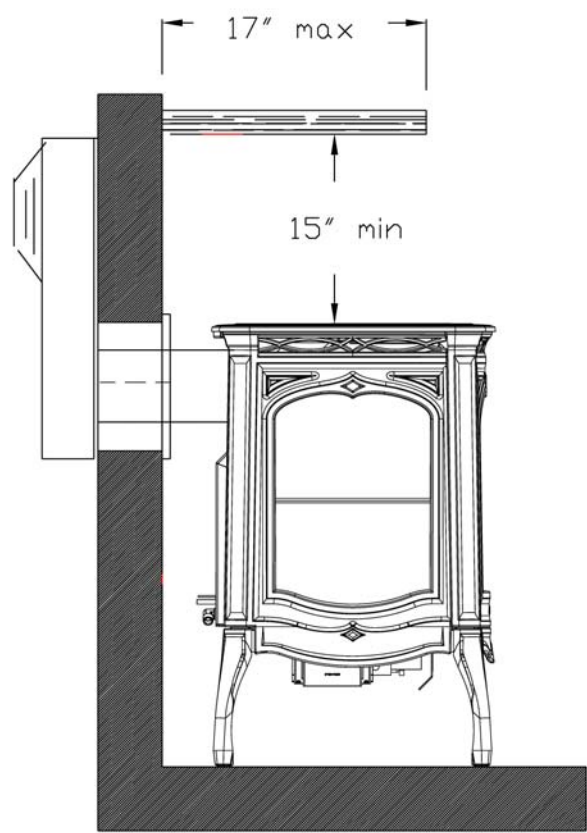


Figure 5: Snorkel Termination Mantle Clearance

The corner clearance for the Tucson 8702 is 4", measured from the edge of the top castings, to the adjacent wall.

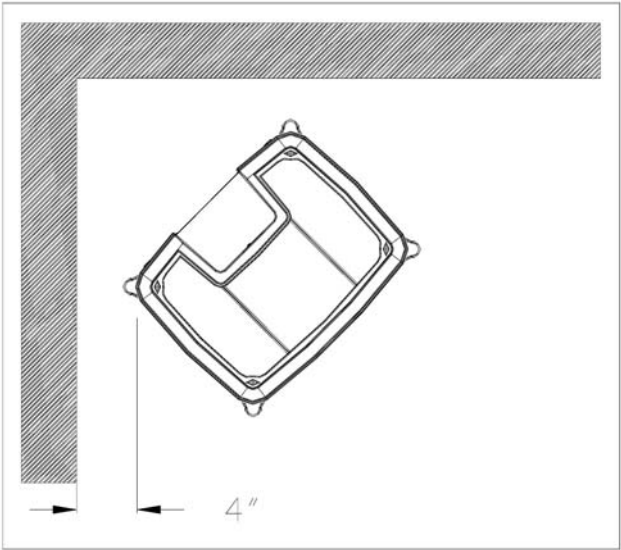


Figure 6: Corner Clearance

# Venting Information

## Venting Components

Starter collar is installed by Hearthstone.

Use the following instructions along with the pipe manufacturer's instructions to complete the installation. Do not mix vent components from different manufacturers within the same venting system.

### Approved Venting Manufacturers

The Tucson Direct Vent (8702) is approved for installation only with the venting components provided by manufacturers listed on this page.

Simpson Dura-Vent, Inc.  
P.O. Box 1510  
Vacaville, CA 95696-1510 800-835-4429

American Metal Products (AmeriVent)  
8601 Hacks Cross Rd.  
Olive Branch, MS 38654 800-423-4270

Selkirk Corporation  
1301 W. President George Bush Hwy, Suite 330  
Richardson, TX 75080-1139 800-992-8368

Security Chimneys International Ltd (Secure Vent)  
2125 Monterey, Laval, Quebec  
Canada, H7L 3T6 450-973-9999

ICC, Inc.  
400 J-F Kennedy, St. Jerome, Quebec  
Canada, J7Y 4B7 450-565-6336

Metal-Fab, Inc.  
P.O. Box 1138  
Wichita, Kansas 67201 316-943-2351

### Venting Terminations


The Tucson cannot be vented jointly with any other solid fuel or gas appliance. It must be vented directly to the outside of the building using a proper termination as listed in this manual. After determining the venting configuration for your stove, select the vent system that will best accommodate your installation.

 **CAUTION: ENSURE ALL STOVE AND TERMINATION CAP CLEARANCES ARE OBSERVED PER THIS OWNER'S MANUAL.**




 **CAUTION: ENSURE THERE IS NO WIRING OR PLUMBING IN THE CHOSEN LOCATION.**

 **CAUTION: DO NOT RECESS VENTING TERMINALS INTO A WALL OR SIDING.**




### Approved Venting Configurations

 **WARNING: IN HIGH WIND AREAS AND PARTICULARLY COLD CLIMATES IT MAY BE NECESSARY TO HEAT YOUR VENT SYSTEM WITH THE PILOT PRIOR TO IGNITION OF THE MAIN BURNER. IN THESE INSTANCES IT IS RECOMMENDED THAT YOU LEAVE THE PILOT RUNNING FOR 5 MINUTES PRIOR TO IGNITING THE MAIN BURNER. THIS WILL ALLOW FOR PROPER START UP AND IGNITION OF ALL PORTS ON THE BURNER.**

***There are three types of venting configurations approved for use with this appliance:***







-  Vertical Venting/Vertical Termination
-  Vertical Venting/Horizontal Termination
-  Horizontal Venting/ Snorkel Termination

### Pipe Clearances to combustibles:

-  1" to vertical runs
-  1" below and to the side of horizontal runs
-  2" from the top of horizontal runs

### Vertical Venting and Termination

The Tucson 8702 is approved for venting vertically through a roof or ceiling. When installing a vertical vent and/or vertical terminations you must adhere to the following requirements:

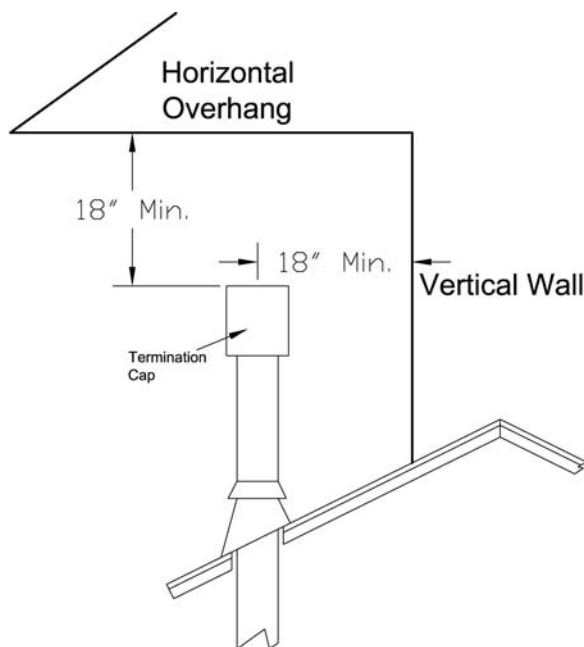
-  When terminating vertically you must have at least 10' of vertical pipe.
-  Always maintain a minimum of 1" clearance from all sides of the vent system to any combustible material.
-  A listed fire stop is required at any floor penetration. The opening must be framed in according to the venting manufacturer's instructions.
-  Steep roofs, nearby trees, or predominantly strong windy conditions can promote poor draft or down draft conditions. In this event, an increase to the height of the vent may improve performance.
-  A maximum of two 90° or four 45° elbows may be used in vertical terminations. (This includes the one 45° elbow off the stove outlet) Whenever possible use 45° elbows instead of 90° elbows as they offer less restriction to the flue gases.
-  Vertical terminations may require additional restriction in order to perform as intended.

Please refer to Figure 10 and Photos 13 & 14 to adjust your vent restrictor accordingly

- 🔥 All termination caps must be no less than 18" (457mm) horizontally from any roof or vertical surface. See Figure 6.
- 🔥 The termination must fall within the chart in Figure 10.
- 🔥 The maximum vertical run is 35'

The vent/air intake termination clearances above the high side of an angled roof are as follows:

Roof Pitch	Feet	Meters
Flat to 6/12	1	0.3
7/12 to 9/12	2	0.6
10/12 to 12/12	4	1.2
13/12 to 16/12	6	1.8
17/12 to 21/12	8	2.4



**Figure 6: Termination Cap clearances**

### **Prefabricated & Fireplace Chimney Installations**

The Tucson 8702 is approved for use with direct vent chimney conversion kits in masonry or prefabricated solid fuel listed chimneys. The following installation requirements must be followed:

- 🔥 The termination must fall within the chart shown in Figure 10.
- 🔥 In a masonry chimney, a fireclay liner or listed steel liner, must be present the entire length of the chimney.
- 🔥 The maximum length of vent is 35'.

- 🔥 The liner must have an inside dimension or diameter 6" or greater.
- 🔥 Prefabricated chimneys must be UL103 or ULC S-629 listed and have a minimum INSIDE diameter of 6". Prefabricated chimneys must be listed for the specific manufacturer's conversion kit.

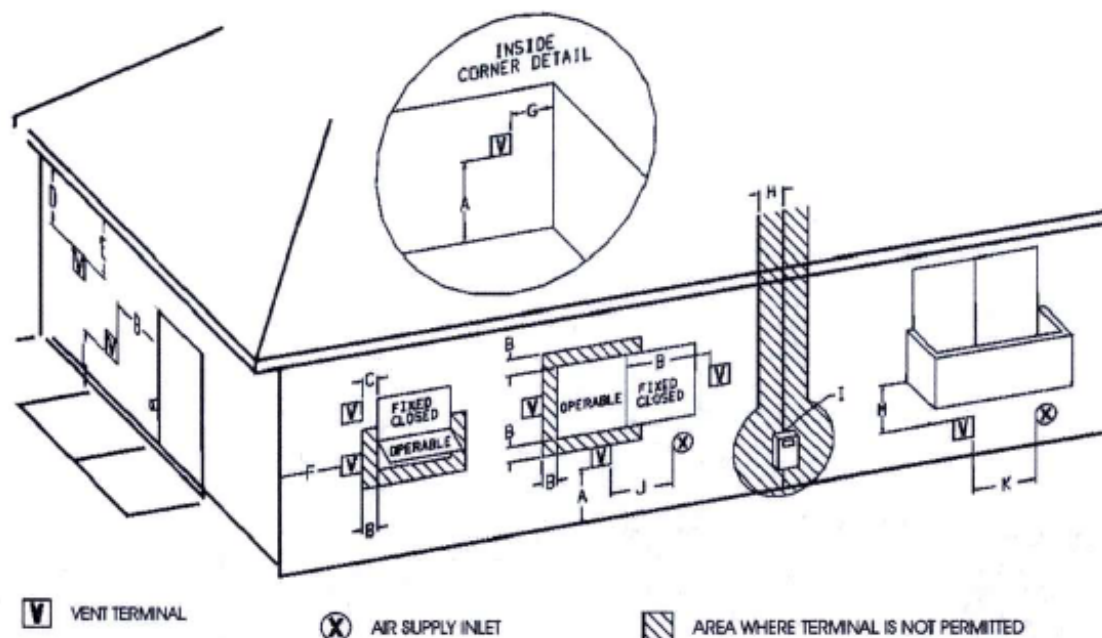
The use of an existing chimney as an air intake is not listed under the ANSI Z21.88-1999-CSA 2.33-M99 test methods; this installation has been tested and approved by Intertek Testing Services with an appropriate test. The code authority having jurisdiction must be consulted prior to proceeding with this installation method.

### **Horizontal Termination**

- 🔥 The termination must fall within the area shown in Figures 6 & 7.
- 🔥 A minimum of 9" rise is required either directly off the heater or with the use of a minimum of a 14" snorkel.
- 🔥 Use a vinyl siding Stand-Off when installing against vinyl siding. The termination cap must not be recessed into the wall or siding. Do not fill air spaces with any type of insulation material.
- 🔥 A minimum 10" X10" square hole is necessary for proper pipe clearance through a wall, provided the vent is positioned to maintain 2" minimum clearance at the top. A 1" minimum clearance must be maintained to combustible materials around the other sides.
- 🔥 All horizontal terminations must also comply with the clearance specifications to adjacent structures outlined in Figure 6.
- 🔥 Horizontal sections require a 1/4" rise every 12" of horizontal run.
- 🔥 **NOTE: For each 90° elbow after 2, remove 5' from the allowable horizontal run. For Canadian installations: remove 4' from the allowable horizontal run.**

- 🔥 At minimum vertical rise, maximum horizontal run is 10'. (If a 14" snorkel termination is used a maximum horizontal run of 10' is also applicable.)

- 🔥 **WARNING: FAILURE TO USE ONLY PARTS SPECIFICALLY APPROVED FOR USE WITH THIS APPLIANCE MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY.**



**Figure 7: Acceptable Direct Vent Terminal Vent Cap Locations**

A = Clearance above grade, veranda, porch, deck, or balcony: 12 inches (30cm) minimum.

B = Clearance to window or door that may be opened: \*\*Min. 9 inches U.S./12 inches (30cm) CAN. We recommend 12 in. minimum to prevent condensation on the window.

C = Clearance to permanently closed window: \*\*Min. 9 inches, U.S./12 inches (30cm) CAN. We recommend 12 in. minimum to prevent condensation on the window.

D = Vertical clearance to ventilated soffit located above the termination within a horizontal distance of 2 feet (60cm) from the center line of the termination: 18 inches (46cm) minimum.

E = Clearances to unventilated soffit: 12 inches (30cm) minimum.

F = Clearance to outside corner: \*\*Min. 9 inches, U.S./12 inches (30cm) CAN. We strongly recommend 12 inches, particularly where windy conditions prevail.

G = Clearance to inside corner: \*\*Min. 6 inches, U.S./12 inches (30cm) CAN. We strongly recommend 12 inches, particularly where strong winds prevail.

H = \*Not to be installed within 15 feet (4.5m) above a meter/regulator assembly within 3 feet (91cm) horizontally from the center line of the regulator.

I = Clearance to service regulator vent: 3 feet (91cm)

J = Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance: 12 inches (30cm) minimum.

K = Clearance to a mechanical air supply inlet: \*\*Min. 3 feet (91cm) above if within 10 feet horizontally, U.S./6 feet (1.83m) CAN minimum.

L = <sup>1</sup>Clearance above paved sidewalk or a paved driveway located on public property: 7 feet (2.1m) minimum.

M = <sup>2</sup>Clearance under veranda, porch, deck, or balcony: 12 inches (30cm) minimum.

*\*In accordance with CSA B149 Installation codes.*

*\*\*In accordance with the current ANSI Z223.1/NFPA 54, National Fuel Gas Code. Note: Local Codes and Regulations may require different clearances.*

*<sup>1</sup>A vent shall not terminate directly above a sidewalk or driveway which is located between two single family dwellings and serves both dwellings*

*<sup>2</sup>Only permitted if veranda, porch, deck or balcony, is fully open on a minimum of two sides beneath the floor.\**

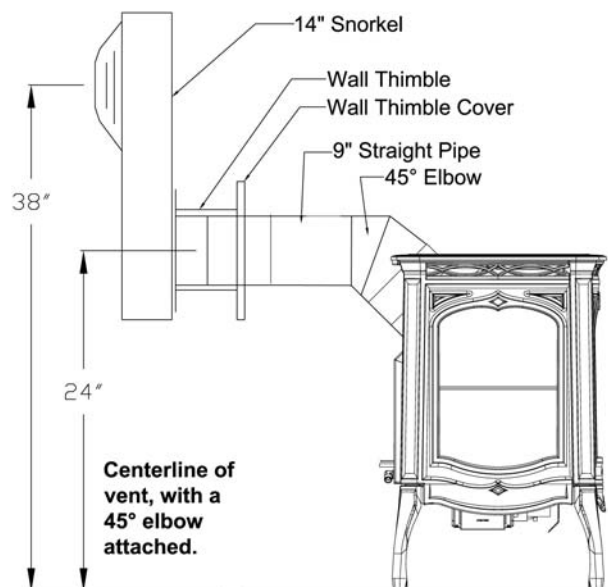


## Minimum Venting Installation Instructions

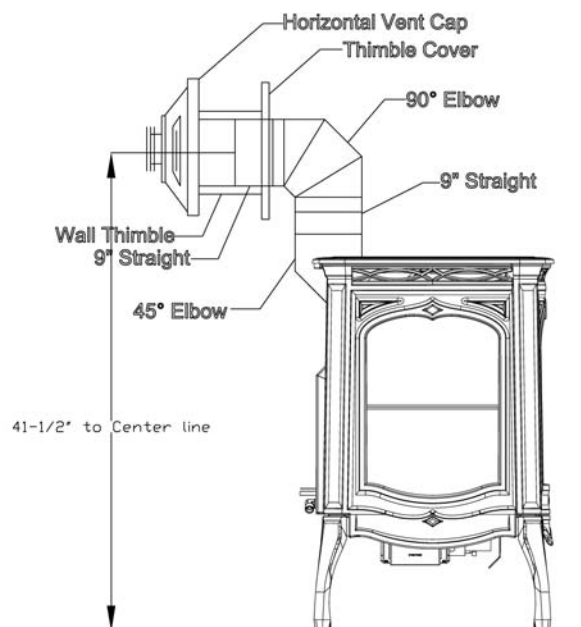
1. Install the 45° elbow over the outer collar. Place the elbow so that the twist lock end is pointing up.
2. Install one of the 9" pipe sections into the elbow by fully inserting it and turning approximately ¼ turn clockwise, until the 2 sections are fully locked. Install the 90° elbow in similar fashion.
3. Move the stove and pipe assembly back until the 90° elbow is flush to the wall. The 9" vertical pipe should be parallel to the wall. Draw a circle around the pipe. Use the center of this circle as the center point of the 10" x 10" square wall pass through. Cut and frame the wall pass through.
4. Place the interior wall thimble into the 10" x 10" wall pass through. Secure it with 4 screws (not provided). Install the exterior portion of the thimble in similar fashion, overlapping the 2 sections.

 **CAUTION: FOR BUILDINGS WITH VINYL SIDING, INSTALL A VINYL SIDING STANDOFF BETWEEN THE VENT CAP AND THE EXTERIOR WALL.**

5. Install the horizontal vent termination on the outside of the wall. Ensure both of the retaining straps extend through interior wall thimble. Before attaching the vent termination to the outside of the house, run a bead of non-hardening mastic around its' outside edges, so as to make a seal between it and the wall. The arrow on the end cap should point up. Secure the cap to the wall with the appropriate screws.
6. Place the thimble cover onto the 90° elbow. Put the 9" pipe into the horizontal vent cap, (the vent pipe must extend into the horizontal vent cap a minimum of 1-1/4"). Move the stove and vent pipe into position, insert the 9" pipe into the 90° elbow and twist to lock it. Secure the straps from the horizontal vent termination to the interior pipe with 2 sheet metal screws, keeping the screws as close to wall thimble as possible. Bend or cut the excess strapping so that the thimble cover will fit properly. Screw the thimble cover to the wall.



**Figure 8: Components for a Typical Snorkel Installation**



**Figure 9: Components for a Typical Minimum Horizontal Venting Installation**

Centerlines shown are approximate. Ensure you dry fit your venting and take a measurement. Pipe dimensions will vary by manufacturer and supplier. These dimensions are using typical Simpson Dura-Vent GS components. See installation instructions on this page (21).

## Restrictor Plate

The restrictor plate is used to control excess draft if necessary. Controlling the draft also changes the aesthetics of the flame. The restrictor plate has a small range of unlimited settings (see *Photos 13 & 14*). The adjustment point is on the left side of the firebox, accessible with the stones removed.

### ***Restrictor Plate Position***

The restrictor plate is factory set in the fully closed position for shipping. Leave in the closed position until you install the Heat Wave baffle – then set to the fully opened position. This ensures proper

flames for a wide variety of vent configurations and efficiency. The restrictor plate consists of a rotating flap in front of the firebox exhaust port behind the ceramic Heat Wave baffle plate. Depending on your vent configuration, you may need to adjust the restrictor plate position to reduce draft.

### ***Restrictor Plate Adjustment***

Loosen the screw and position the restrictor plate in the desired location. Tighten the screw to lock in place.



**Photo 13: Restrictor Fully Closed**



**Photo 14: Restrictor Fully Opened (no restriction)**



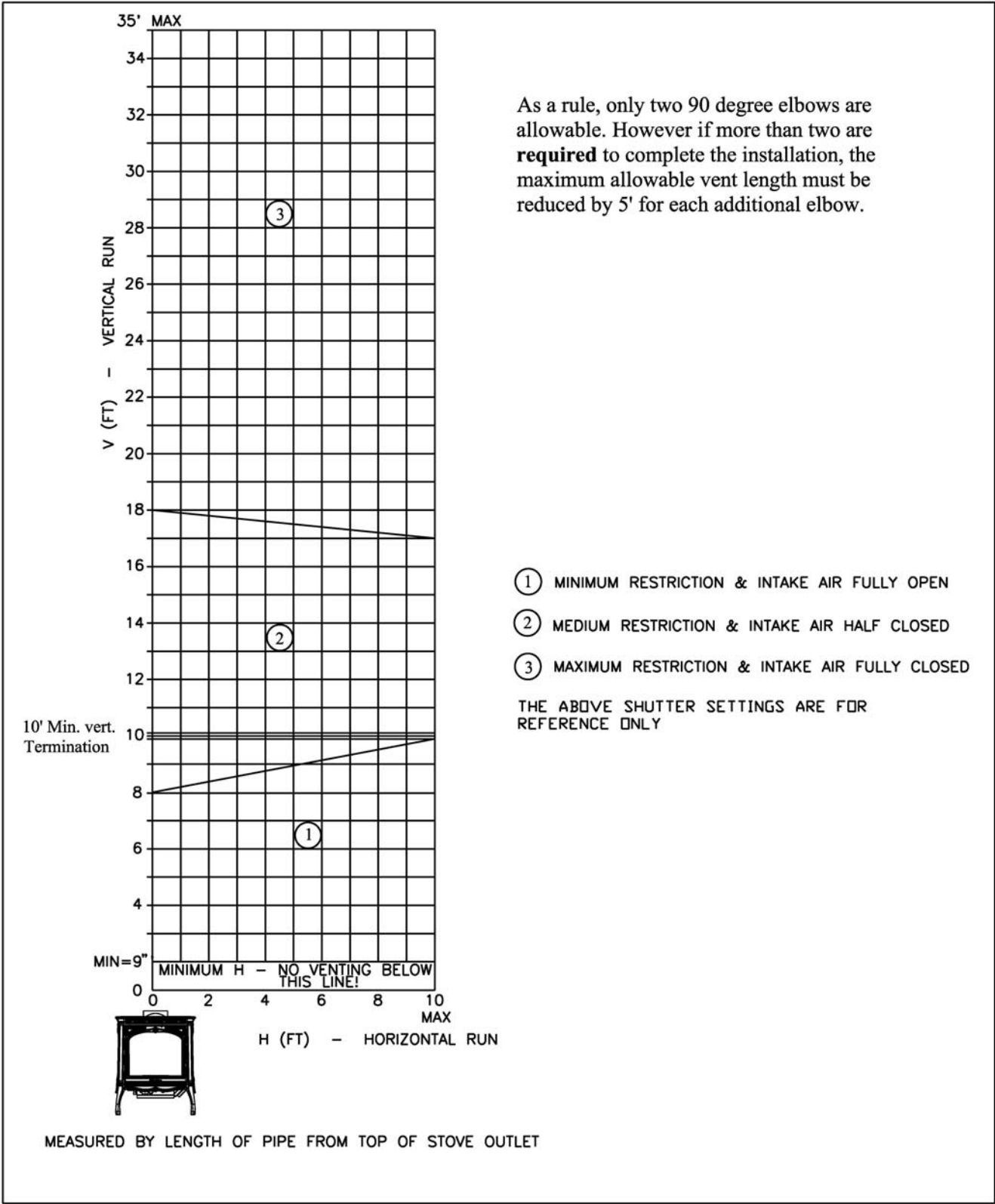


Figure 10: Venting Termination Diagram

## Electrical System Information

**CAUTION: LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION. VERIFY PROPER OPERATION AFTER SERVICING. (ATTENTION: AU MOMENT DE L'ENTRETIEN DES COMMANDES, ÉTIQUETEZ TOUS LES FILS AVANT LE DÉBRANCHEMENT. DES ERREURS DE CÂBLAGE PEUVENT ENTRAÎNER UN FONCTIONNEMENT INADEQUATE ET DANGEREUX.)**

The proper location of wire connections is shown in the following figures.

### ST Model:

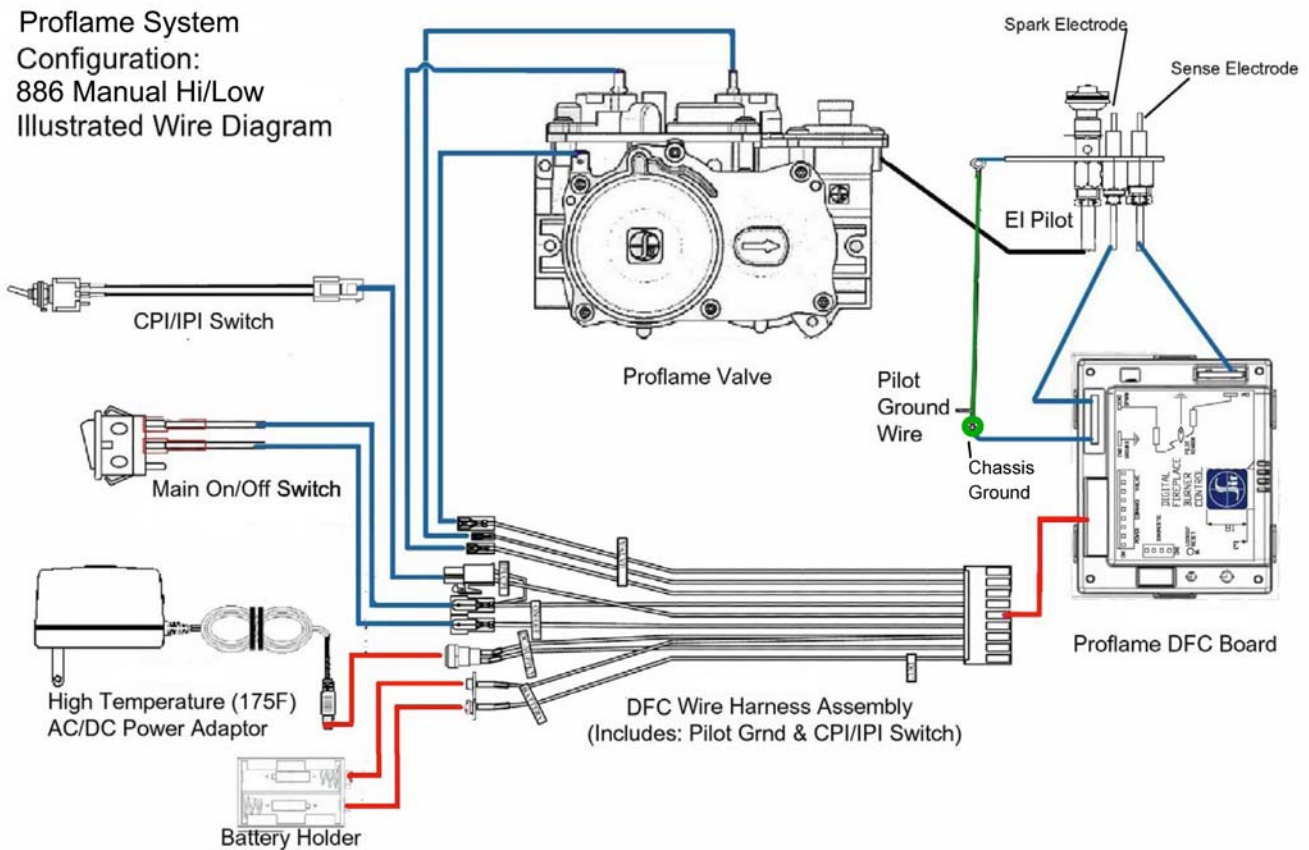


Figure 11: Tucson ST Wiring Diagram

DX Model:

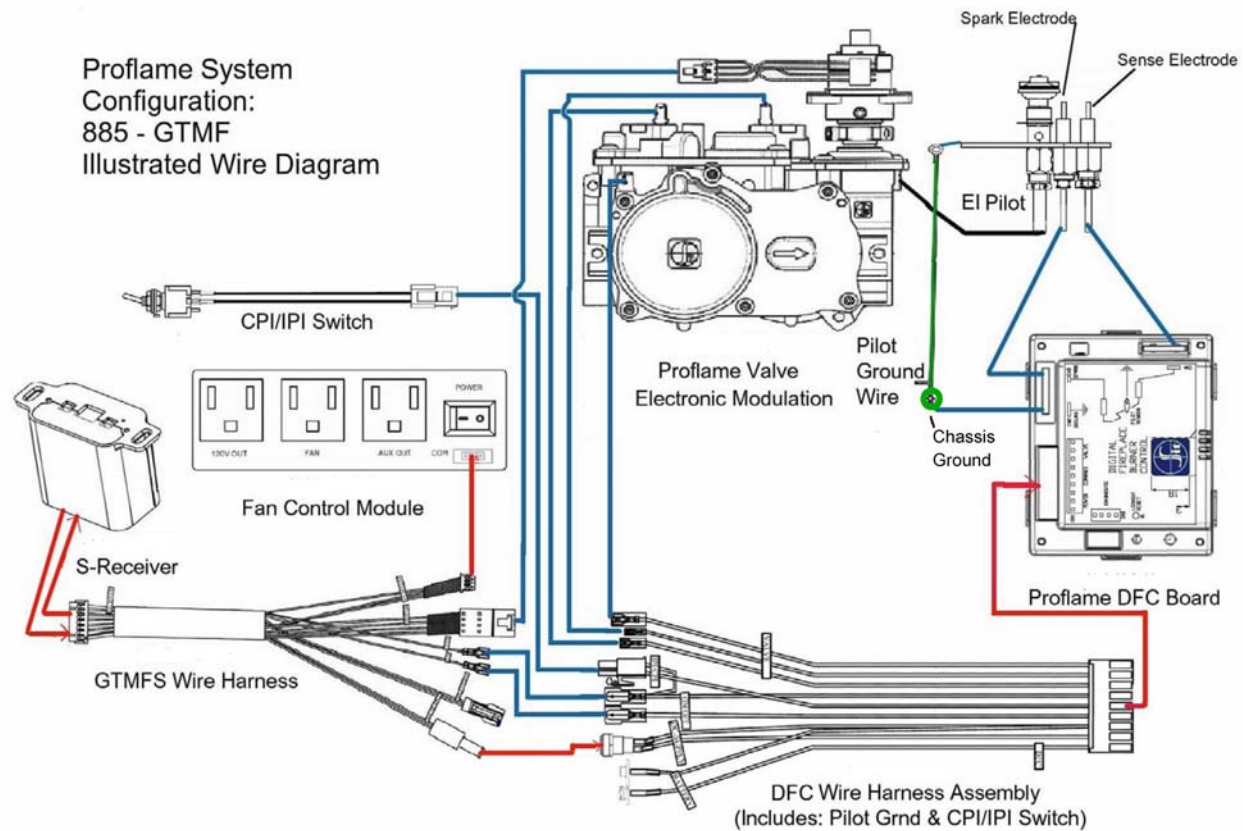


Figure 12: Tucson DX Wiring Diagram

<b>Remote Control</b>	
Supply voltage	4.5 V (three 1.5 V AAA batteries)
Ambient temperature ratings	0 - 50 °C (32 - 122 °F)
Radio frequency	315 MHz
<b>Receiver</b>	
Supply voltage	6.0 V (four 1.5 V AA batteries)
Ambient temperature ratings	0 - 60 °C (32 - 140 °F)
Radio frequency	315 MHz
<b>Fan Control Module</b>	
Supply voltage/frequency:	120 V / 60 Hz
Ambient temperature ratings:	0 to 60 °C (32 to 140 °F)
Three wires bus:	two wires to provide DC voltage to the receiver; one wire gives uni-directionally signal from the receiver
Output voltage/frequency/current:	120 V / 60 Hz / 15 A
Aux switched output:	120 V / 60 Hz / 2 A
Fan speed output:	120 V / 60 Hz / 1.5 A

Figure 13: Proflame GTMF Component Specifications

### ST Model Optional Thermostat Connection Installation

Optional thermostat is installed and the thermostat wires are run to the Tucson 8702 ST properly. Remove the Modesty Panel for proper access to the wire connections.

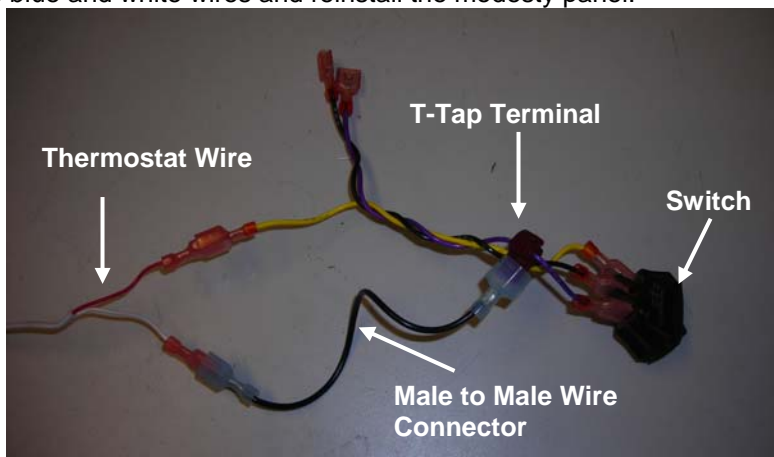
1. Remove the Modesty Panel using a Phillips screwdriver to remove the 2 screws that mount the panel to the stove. Retain the screws for reinstallation.
2. Using a 5/16" wrench, remove the nut on the IPI/CPI switch and pull the switch through the hole in the panel.
3. Follow the wires from the ON/OFF/T-STAT switch back to their connections. Mark and disconnect the wires where they connect to the blue and white wires on the wire harness. The yellow, purple and black wires stay connected to the switch.
4. The panel is now free to pull away from the stove.



**Photo 15 – Modesty Panel Removal**

Use the photo below for reference when making the following connections. (The thermostat wire should already have female connectors attached to the two wires.)

1. Locate the black wire that shipped in the accessory box with your Tucson. Attach one Male end on the black wire to one female connector on the thermostat wire.
2. Find the yellow wire that is unconnected coming from the ON/OFF/T-stat switch. Connect the Male terminal on the yellow wire to the Female connector on the second thermostat wire.
3. Slide the T-tap terminal over the purple wire. Use a pair of pliers to crimp it in place on the purple wire. (When crimping the T-tap down ensure it cuts through the purple wire's insulation and into the wire creating a connection)
4. Connect the Male terminal from the black wire (connected to the thermostat) wire to the end of the T-tap terminal, as shown in photo below.
5. Reconnect the blue and white wires and reinstall the modesty panel.



**Photo 16 – Optional Thermostat Connection Detail (switch removed for clarity)**

## Gas Supply & Connections

**NOTE:** Ensure the gas line is installed as close to the floor as possible to avoid interference or conflict with a blower assembly installation.

- |   |                                    |       |                   |
|---|------------------------------------|-------|-------------------|
| 1 | ON-OFF solenoid EV1 terminals      | 7     | Pilot outlet      |
| 2 | ON-OFF solenoid EV2 terminals      | 8     | Main gas inlet    |
| 3 | Inlet pressure test point          | 9     | Main gas outlet   |
| 4 | Outlet pressure test point         | 10-11 | Ground connection |
| 5 | Pressure regulator adjusting screw | 12    | Mounting holes    |
| 6 | Pilot adjusting screw              |       |                   |

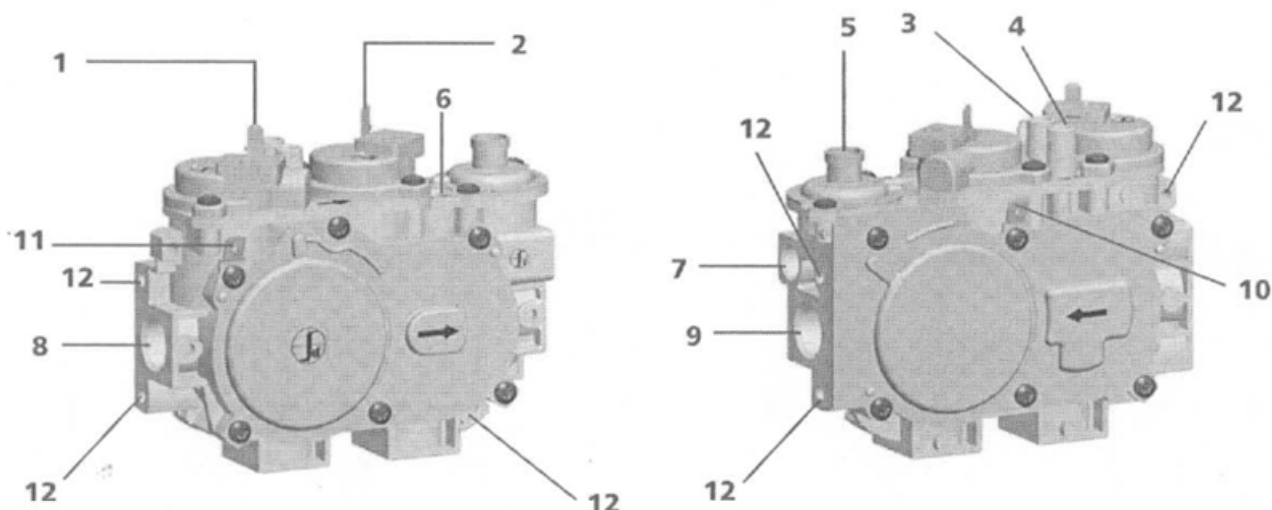


Figure 14: Gas Control Valve

**NOTICE:** A QUALIFIED TECHNICIAN MUST CONNECT THE HEATER TO THE GAS SUPPLY AND LEAK TEST THE UNIT BEFORE IT IS APPROVED FOR USE. CONSULT ALL CODES.

**WARNING:** THE UNIT MUST BE INSTALLED AND CONNECTED IN ACCORDANCE WITH LOCAL CODES, OR IN THE ABSENCE OF LOCAL CODES, WITH THE MOST CURRENT EDITION OF THE NATIONAL FUEL GAS CODE ANSI Z223.1 (NFPA 54) OR CAN/CGA B149 INSTALLATION CODE.

**NFPA Code and Hearthstone require the use of a dedicated sediment trap just upstream of the unit. Damage to the valve, or other components due to the lack of a sediment trap are not covered by warranty (see figure 15).**

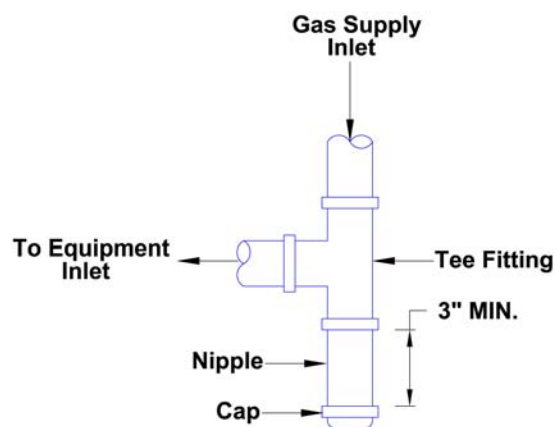


Figure 15: Sediment Trap (Typical)



## Gas Connections

The gas supply connection is made to the Tucson's gas control valve under the bottom left center of the unit using a 3/8" male NPT fitting. The supply line should be 1/2" diameter, or appropriately sized to provide a sufficient gas supply to meet the maximum demand of the unit without undue loss of pressure. We recommend a flexible line to avoid undue mechanical load on the valve and to ease thread alignment, but refer to local codes.

### CAUTION: CHECK FUEL GAS TYPE!

The Tucson is factory equipped to use natural gas (NG) and requires conversion for use with propane (LP). You must purchase and install a propane (LP) fuel conversion kit if required for your installation. Use kit 97-56100 (ST) or 97-56104 (DX). Contact your Hearthstone dealer.

## Gas Supply

This appliance and its individual 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. The Tucson 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 test pressures equal to or greater than 1/2 psig.

## Gas Pressure Adjustment

### NOTE: A QUALIFIED TECHNICIAN MUST PERFORM THIS PROCEDURE!

Once connected to the gas supply, the supply line and manifold gas pressures must be tested. The supply line pressure is tested to ensure it meets the minimum gas supply pressure as listed in the specifications for the type of fuel in use (NG or LP). Test by connecting a manometer to the supply line and adjusting the incoming pressure if necessary to meet the required supply line pressure as listed in specifications. The manifold pressure tap on the gas control valve, refer to *Figure 14* for location.

## High Altitude Installations

For high altitude installations consult the local gas distributor or the authority having jurisdiction for proper rating methods.

The decreased atmospheric pressure at higher altitudes affects the heat value of fuel gases. Gas suppliers typically derate the gas intended for use at elevations above 2000 feet (610 meters). Check with your gas supplier before derating this appliance.

If the installer must convert the unit to adjust for varying altitudes, the information sticker (*similar to the one shown in Figure 16*) must be filled out by the installer and adhered to the appliance at the time of conversion. **For installations from 2000 – 4500 feet (610-1370 meters) use the orifice sizes (DMS) 42 for NG and 54 for LP. See the rating label for more information.**

This appliance is factory equipped for use at 0-2000 feet (0-610 meters) altitude. (*Cet appareil est équipé pour des altitudes comprises entre 0 et 2000 pieds (0-610m) seulement*).

This appliance is factory set for use between 0-2000 ft. A conversion kit for the Tucson (8702) is available through HearthStone and shall be used to convert this appliance to the appropriate altitude. Instructions are included with the kit. Ask for Kit #97-56106 for altitude 2000-4500 ft. The conversion should be carried out in accordance with the requirements of the Authority Having Jurisdiction.		
The normal input rating		
	NG	LP
Input rating (0-2000 ft)	25,000	25,000
Input rating (2000-4500 ft)	24,200	24,800
This appliance has been converted for use at an altitude of _____ Orifice _____		
Manifold pressure _____		
Input (btu/hr) _____	Fuel Type _____	
Day _____	Month _____	Year _____
With kit number _____		
Conversion performed by:		
Name: _____		
Company: _____		
Address: _____		

**Figure 16: Sample Information Sticker**

## Heat Wave Baffle, Log Set, & Screen Placement

**CAUTION: FRAGILE! HANDLE LOG SET WITH CARE. ALWAYS WEAR GLOVES AND SAFETY GOGGLES WHILE HANDLING THE LOG SET.**

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

Place only the ceramic log set supplied with the unit in the firebox. Do not place any other ceramic logs, wood logs, or other materials in the firebox. If the log set is damaged or broken contact your dealer for replacement. The ceramic logs will last a long time; however, they will break if subjected to rough or improper handling. Exact positioning of the log set is required in order to obtain a pleasing flame pattern and efficient combustion. Incorrect log placement may cause carbon build-up; excess thermal stress on the log set and stove parts, reduced efficiency, and high levels of carbon monoxide. If the log set does not fit into the firebox exactly as outlined, contact your dealer for assistance.

### Installation of the Heat Wave Baffle

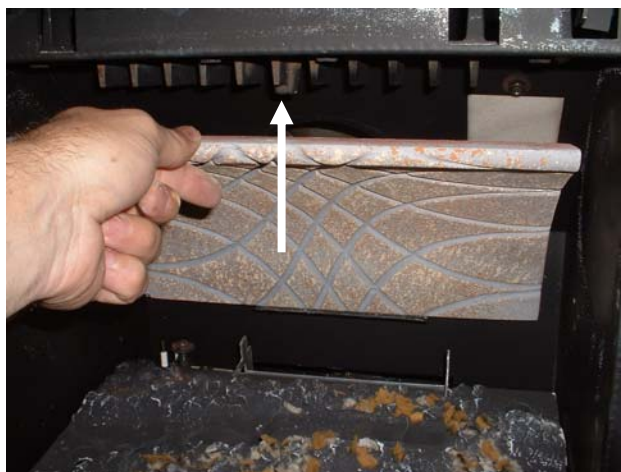
To install the heat wave baffle and log set, you must have access to the firebox (for access instructions see page 15).

1. Remove the Heat Wave baffle from the packaging.
2. Set the base of the baffle centered on the shelf in the rear of the firebox.



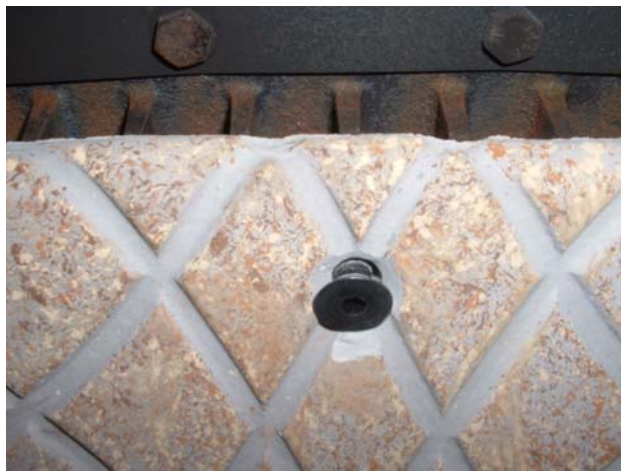
**Photo 17 – Baffle Shelf**

3. Lift the front edge of the baffle up to align with the hole in the bottom of the cast iron heat exchanger.



**Photo 18 – Baffle Mounting Boss**

4. Locate the mounting bolt and install it through the baffle and into the boss on the heat exchanger.



**Photo 19 – Baffle Mounting Bolt**

5. Do not over tighten the bolt as it may damage or break the baffle. When installed properly, it should look like the baffle in the following photos. The bottom edge of the baffle must rest on the shelf. If the baffle lifts off the shelf, the mounting bolt is too tight.
6. You are now ready to open the restrictor plate and install the log set.



## Installation of the Log Set

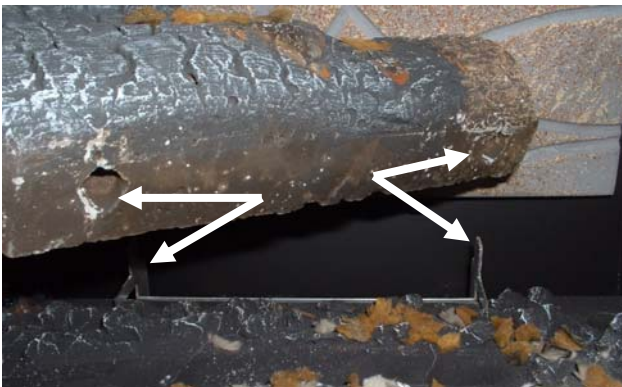
(Refer to the following images in this section for log set assembly)

1. Remove the packaging material around the log set assembly. Be careful not to damage the log set when unpacking.



**Photo 20 – Log Set Numbering**

2. Place log 1 on support bracket as shown.



**Photo 21 – Log 1 Mounting Detail**



**Photo 22 – Log 1 in Position**

3. Place Log 2 into the channel in the burner in front of log 1 as shown.



**Photo 23 – Log 2 Position**

4. Place log 3 onto the end of log 1 as shown.



**Photo 24 – Log 3 Position**

5. Place log 4 on top of logs 1 and 2 as shown.



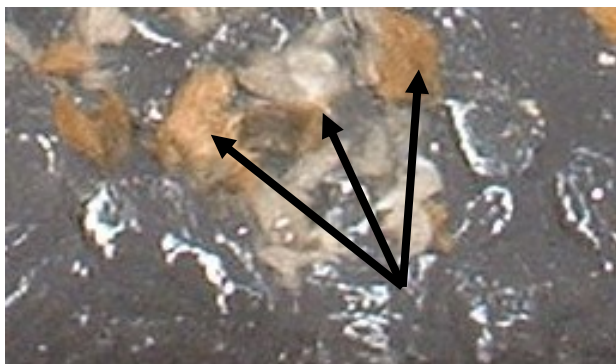
**Photo 25 – Log 4 Position**

6. Gently place Log 5 in the indentation on the burner and rest it on log 3 as shown.



**Photo 26 – Log 5 Position**

7. Place small tufts of the Platinum Bright Embers on the burner and log surfaces for additional glow as desired – **do not block burner ports.**



**Photo 27 –Platinum Bright Embers (Enlarged to Show Detail)**

## Installation of the Optional Screen


To install the optional screen, you must have access to the glass frame (for access instructions see page 15).

2. Hang screen by folded lip on top of glass frame as shown in photo 28.



**Photo 28 – Mounted Screen Detail**

## Removal of Log Set

 **CAUTION: THE LOG SET, BURNER, AND EMBERS RETAIN HEAT AND CAN BE VERY HOT! ALLOW 2 TO 3 HOURS TO COOL AFTER PILOT LIGHT IS TURNED OFF FOR SAFE HANDLING.**

To remove the log set, follow the Installation of Log Set instructions in the reverse order.

## Completing the Installation

1. Close the firebox – reverse the firebox access procedure outlined on page 15.
2. Install any batteries as necessary. Synchronize the Remote Transmitter and Receiver if applicable to your model (see page 39).
3. Install the Blower Assembly Kit (DX Model). See the instructions provided with the kit.
4. Install the stone set (see page 32).



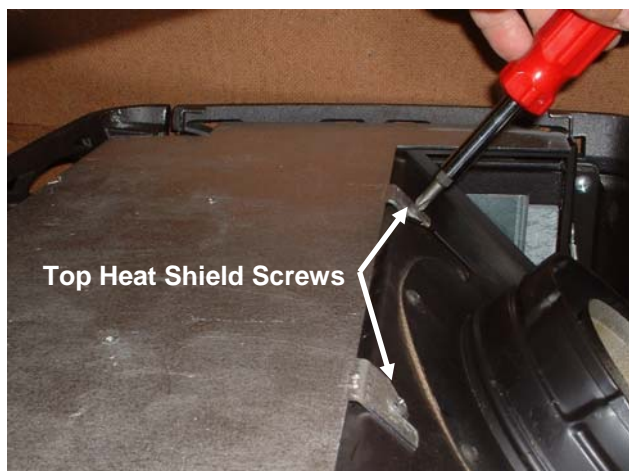
## Stone Installation

1. Remove the top casting (lift off) and lay it face down on a clean work surface.



**Photo 29**

2. Loosen the two screws securing the top heat shield and slide it up and forward to remove – set carefully aside.



**Photo 30**

3. **Installing the side stones.** Locate the four side stones. Arrange the stones so the grain runs in the same direction.
4. Slide one stone down the side of the stove between the cast iron and the firebox as shown in *Photo 31*. Ensure the beveled edges are on the top and bottom and facing out. Slide it down until the stone is resting on the bottom plate.



**Photo 31**

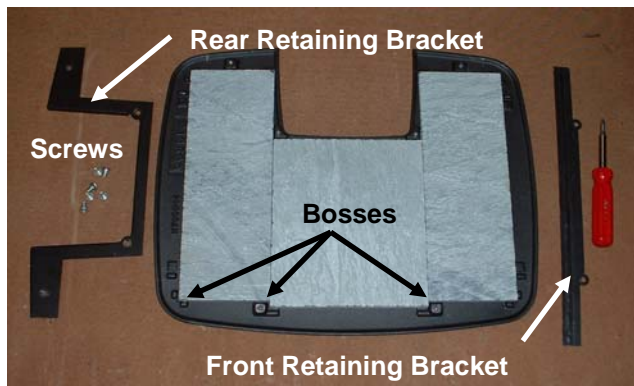
5. Slide the second stone down on top of the first stone. The two beveled edges should touch evenly when the second stone is in position
6. Locate the side stone retaining shields. Slide one shield down between the stone and the firebox as shown in *Photo 32*.



**Photo 32**

7. Repeat Steps 1 through 4 on the other side of the stove. Your side stones are now in place.
  - a. **HINT:** The side shields should provide enough tension to hold the stones out against the side castings so they do not rattle, yet not so much tension that they are difficult to install and remove. Adjust the shield's tension by simply bending the metal until it achieves the proper shape to apply the correct pressure.
8. Reinstall the top heat shield removed in step 2 – tighten the mounting screws (see *Photo 30*).

9. **Installing the top stones.** Refer to *Photos 33 - 35* when installing the top stones and stone brackets.



**Photo 33**

10. With the top outer surface facing down, locate and place the center top stone in position between the bosses and in the center of the top with the beveled edges and polished surface facing down.
11. Locate and place the 2 outer top stones face down between the side bosses. Place the side stones tightly against the center stone to minimize spaces at the seams.
12. Using 2 retaining screws, mount the Front Stone Retaining Bracket.
13. Using 4 retaining screws, mount the Rear Stone Retaining Bracket.




**Photo 34**


14. The brackets should hold the stones securely and prevent any shifting. Lift the completed assembly and carefully set it back on the Tucson body.



**Photo 35**

## Lighting & Operation

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

 **CAUTION: LIGHTING THE TUCSON FOR THE FIRST TIME AND ADJUSTMENTS TO THE UNIT SHOULD BE PERFORMED BY QUALIFIED SERVICE PERSONNEL.**

### Lighting Instructions

Use a gas sniffer device or smell all around the appliance area for gas. Be sure to check next to the floor because some gases are heavier than air (propane). If you do not detect or smell gas, proceed with the lighting procedure. If you do detect or smell gas, **DO NOT** proceed with the lighting procedure. Instead, **immediately refer to the *What To Do If You Smell Gas Warning*, on the cover of this manual.**

### Pilot Light Warning

Do not attempt to light the unit with a match or by any means other than the ignition system supplied with the unit.

### To Light the Stove:

**For the Tucson ST:** plug the AC/DC power transformer into the nearest 120V electrical outlet and/or install batteries in the battery holder.

1. Open the gas supply to the valve.
2. On the control panel, switch the ON/OFF/T"STAT switch to the ON position.
3. Switch the pilot to CPI mode and turn up the regulator on the valve.

The control system will beep several times when lighting the unit for the first time until all air in the gas line is purged. The pilot will ignite automatically when the air is purged. The main burner should ignite seconds later.

**For the Tucson DX:** connect the power cord from the Fan Control Module to the nearest 120V electrical outlet.

1. Open the gas supply to the valve.
2. Slide the ON/ REMOTE/OFF switch to the ON position.
3. Switch the pilot to CPI mode

The control system will beep several times when lighting the unit for the first time until all air in the gas line is purged. The pilot will ignite automatically when the air is purged. The main burner should ignite seconds later.

### Using the Remote:

The Remote and Receiver must be synchronized before initial use, and after every battery change (for instructions, see page 39).

### Smoke and Fumes Warning

When lit for the first time, the Tucson will emit some smoke and fumes. This is normal "off-gassing" of the paints and oils used in the manufacturing and assembly of the unit. Open windows to vent the room if necessary. The off gassing and fumes will subside after the first 10 to 20 minutes of operation.

### Odors and Impurities

A heater of this type may produce odors during heater operation at any time due to impurities that may exist in the immediate area around the unit. Sources of impurities can be cleaning solvents, paint solvents, cigarettes, candles, smoke, pet hair, dust, adhesives, new carpet, and/or textiles. Such odors will eventually dissipate. However, opening a window or otherwise providing additional ventilation to the area can alleviate the condition sooner. If any odor persists, find and remove the cause, or contact your dealer or an authorized service technician.

### Initial Adjustments

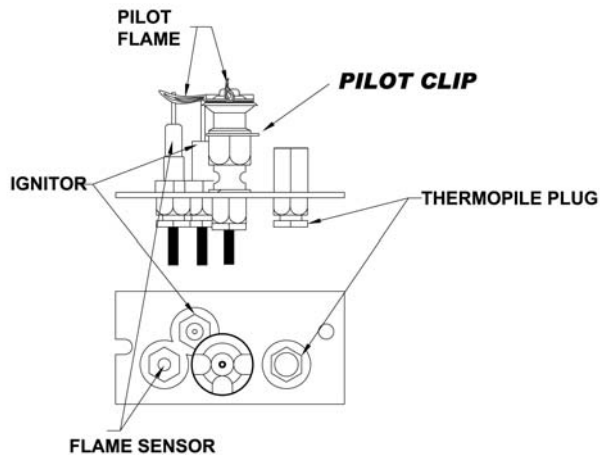
Once the Tucson is set in place, connected and assembled as described in the Clearances To Combustibles, Venting Components & Configurations, Electrical Connections, and Gas Supply and Connections sections of this manual, the unit is ready to be lit and adjusted to its particular installation. Hearthstone tests each unit prior to shipment, so ignition should take place without failure. However, a number of small adjustments may be necessary to compensate for variations in gas pressure, altitude, and other factors particular to each installation.

### Pilot Adjustment

The pilot light is preset by the manufacturer and should not need adjustment. The pilot light flame should be large enough to engulf the sensor (*refer to Figure 17*) and to reach the light off ports on the burner but not so large as to create excessive noise or consume excessive gas. However, it can be adjusted by means of the pilot light adjustment screw located on the gas control valve. Controlling the Tucson by a remote or wall-mounted thermostat may become erratic, nonexistent, or the unit may go



out, if the pilot flame is too small or misdirected away from the thermopile.



**Figure 17: Pilot Flame Pattern**

**WARNING: THE CONTROL HAS AN INTERLOCK DEVICE. IF THE STOVE HAS BEEN LIT, IT WILL NOT RELIGHT AGAIN IMMEDIATELY. AFTER SHUTTING OFF ALL GAS FLOW, THE PILOT BURNER CANNOT BE RELIT UNTIL THE FLAME SENSOR HAS COOLED, ALLOWING THE ELECTROMAGNET TO BE RELEASED (APPROX. 60 SEC.).**

### Air Shutter

The air shutter is used to regulate the air-to-gas combustion mixture, which in turn influences the size and color of the flames. The air shutter is factory positioned in the general location needed for testing the unit with natural gas (NG) and minimum venting. However, if the unit is not burning as well as it should in your installation, then the air shutter may need adjusting.

To determine if the air shutter needs adjustment, it is necessary to view the flame pattern with the burner output set at its highest setting. Allow the unit to operate for at least 10 minutes to allow the entire unit to reach temperature, and for the flame pattern to stabilize. Generally, the more air (open shutter) in the mixture, the bluer the flame. Less air (closed shutter) results in a more yellow flame, but too little air will result in incomplete combustion, low efficiency and a dirty burn. There are two simple guidelines to aid in determining the correct flame pattern:

1. If the flame just above the surface of the burner or at the base of the logs is completely blue, the air shutter may be open too far;

2. If the flame is dirty, sooty or licks the top of the baffle, the air shutter may be closed too far.

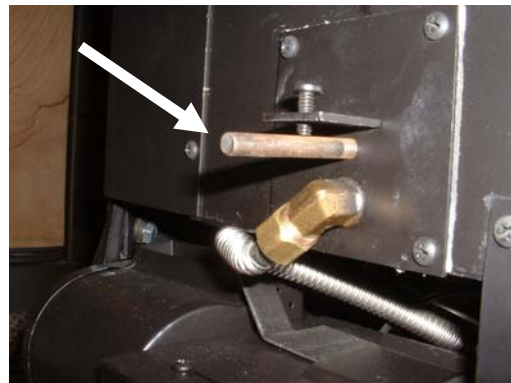
Some conditions cannot be corrected through air shutter adjustment; an adjustment must be made to the gas supply pressure or by changing the restriction plate setting. Qualified service personnel must perform supply line/manifold gas line pressure adjustments and restrictor plate adjustments. Do not attempt to complete any part of the installation or adjustment of this unit unless technically qualified.

### Air Shutter Adjustments

**WARNING: THE ADJUSTING ROD IS HOT!**

**WARNING: THE AIR SHUTTER IS FACTORY SET AND ONLY A QUALIFIED GAS TECHNICIAN SHOULD MAKE ADJUSTMENTS.**

The air shutter is adjustable while the stove is burning. Loosen the set screw on the adjusting rod located in the lower rear center of the stove. Move the rod in or out to adjust the flame pattern. See *Photos 36 and 37*. Push the rod in to open the air shutter, and pull it out to close the shutter. When the flame pattern is correct, tighten the set screw without letting the rod move.



**Photo 36 – Air Shutter Closed**



**Photo 37 – Air Shutter Opened**

**Note:** Very little movement is needed to substantially change the burn and flame patterns. Some conditions cannot be corrected through air shutter adjustment; an adjustment must be made to the gas supply pressure. Supply line/manifold gas line pressure adjustments must be performed by qualified service personnel. Do not attempt to complete any part of the installation or adjustment of this unit unless technically qualified to do so.

### Burner Flame Appearance

Once the unit is lit, observe the flame pattern and adjust as necessary. Also, a periodic visual check of the burner flame should be performed. The burner flames can be adjusted by means of the air shutter. To determine if the burner flame needs adjustment, it is necessary to view the flame pattern with the valve output at its highest setting. Allow the unit to operate for 10 minutes enabling the entire unit to reach temperature and for the flame pattern to stabilize. The flame pattern should be similar to the one shown in Photo 38. There are several guidelines to aid in determining if the flame pattern is correct:

1. The flame should not be dirty, smoky, sooty, or lick the top of the stove.
2. The flame should not rise off the pan burner; this is called "lifting".
3. Flames should not impinge heavily on the log set. They should "fit" through the pre-formed spaces designed in the log set.



**Photo 38 – Typical Burner Flame Appearance**

### Daily Operation

Your Tucson gas-fired heater is easily operated once installed and adjusted by qualified service personnel. The unit is controlled via the

ON/OFF/T'STAT switch (ST model), ON/REMOTE/OFF switch on the Receiver (DX Model) or by the Remote Control (DX model).

**For the ST model:** simply slide the switch to the ON position to automatically light the burner and enjoy the heat from the unit. Slide the switch to 'T'Stat' to control your stove with an optional wall thermostat, or remote thermostat.

Manually adjust the flame height on the variable output control located on the gas control valve; you can vary the rate of heat output to meet the heating requirements of the season.



**Photo 39 – ST Valve Output Control**

**For the DX model:** with the Receiver switch set to 'REMOTE' you have the option of setting the thermostat on the remote control to the desired room temperature and the unit will cycle on and off as required. Or you can set the switch on the Receiver to 'ON' and the burner will light and remain on High until you turn it off.




**Photo 40 – DX Receiver Switch**

You can adjust the flame height on the DX via the remote control, or use the 'Smart' mode to let the system automatically adjust it for you. See the Proflame GTMF use and installation instructions included with the Remote transmitter for detailed system operation instructions.



**For both models:** During the summer non-heating season, switch the unit “OFF”, and flip the pilot switch to Intermittent (IPI). This will improve the overall efficiency of the unit as the heat from the pilot is not wasted. When putting the unit back into service, replace any batteries with fresh ones, and refer to the lighting instructions on page 34.

 **Note: the unit will produce odors for a short time when lit after a long period of non-use. A thorough cleaning of the unit to remove dust will minimize this effect. Open a window briefly to help quickly dissipate the odors.**

When the unit is first lit, especially when cool, it is normal to experience some condensation on the inside of the window glass. This condensation will burn off within the first few minutes of operation. If

continuous condensation on the window glass or dripping water from any part of the unit or venting system (chimney) is noted, immediately discontinue operation of the unit and contact qualified service personnel.

### ***To Turn off Gas and Shut Down the Appliance:***

1. Close the shut-off in the gas supply to the valve.
2. Set the thermostat to the “OFF” position or turn the ON/OFF/T-STAT or ON/REMOTE/OFF switch to the “OFF” position.
3. Switch the Pilot mode switch to IPI mode.

## Routine Maintenance and Care

Your Tucson requires minimal routine maintenance and care. Ensure the unit is cool and off when cleaning, or servicing.

 **WARNING: DO NOT SUBSTITUTE MATERIALS.**

For replacement parts, or for information about parts or service, contact your local Hearthstone dealer.

### Cleaning


 **WARNING: DO NOT CLEAN THE UNIT WHEN HOT.**

The unit should receive regular cleaning on, under, and around the stove to prevent the buildup of dust and lint. The exterior surfaces of the unit can be cleaned using soap, water, and a soft cloth. Do not use abrasive or chemical cleaners and take care not to scratch the glass or enamel finish (if so equipped) when cleaning the unit. The use of chemical wax based cleaners or polishes are not recommended due to the potential for discoloration of the castings, stones or enamel when the residue of the cleaners or polishes is exposed to heat. Excessive buildup of dust, spider webs, or room air contamination may cause odors when the stove is hot.

### Monthly:

#### Glass Cleaning

As fuel gas may contain some impurities; it will be necessary to clean the inside of the glass occasionally. Do not use abrasive cleaners. Scratching the glass will weaken the integrity of the glass. **Do not clean the glass when hot!** Allow the glass to cool and apply a mild window cleaning fluid. Special gas appliance window cleaner is available from your local Hearthstone dealer.

 **WARNING: DO NOT OPERATE THIS APPLIANCE WITH THE GLASS PANEL REMOVED, CRACKED, OR BROKEN. DO NOT SUBJECT THE GLASS OR ITS FRAME TO ABUSE, SUCH AS STRIKING OR BENDING. REPLACEMENT OF THE GLASS PANEL SHOULD BE DONE BY A LICENSED OR QUALIFIED SERVICE PERSON.**


**NOTE:** If the venting system is disassembled for any reason, re-install per the instructions provided in the venting section of this manual.

### Annually:

#### Clean Firebox, Pilot, & Burner Assembly

The firebox requires periodic cleaning to prevent the accumulation of dust, lint, and other debris. To clean the firebox, set the switch to the "OFF" position, and turn off the gas supply to the valve. When the unit is cool, remove the front panel and glass (see page 15 for Firebox Access instructions) and carefully remove the decorative ceramic log set, taking care not to damage the logs or chip the enamel cast iron. Remove all ember material. Clean the firebox baffle, ceramic burner, and carefully vacuum the entire surface of the log set with a soft brush attachment. Thoroughly vacuum the ports (holes) along the top of the burner, and the pilot assembly.

With the decorative ceramic logs out of the firebox, reseal the firebox and briefly light the unit according to the lighting instructions described on page 34. Check to ensure a proper flame is burning from each burner port. The pilot flame should be burning properly as shown in Figure 17.

 **NOTE: Do not operate the unit for more than 1-2 minutes without the log set in place. Turn the unit off by setting the switch to "OFF", and turning off the gas supply to the valve. Allow the unit to cool.**

Check and clean any burner ports that are not burning, or not burning properly. Clean burner ports using a soft brush or vacuum cleaner. If the pilot flame height needs adjustment, it should be adjusted by qualified service personnel as described on page 34.

Complete the cleaning procedure by carefully placing the log set within the firebox as described on page 28. Reattach the glass and front panel to seal the firebox. Turn on the gas, light the unit and check for proper operation. Flame patterns should look similar to the flames in Photo 38. Regularly check to ensure the area around the Tucson is kept free from combustible materials, gasoline, and other flammable vapors and liquids. Check that the flow of combustion and ventilation air is not obstructed.

## **Battery Replacement**

 **WARNING: DISCONNECT POWER TO THE UNIT AND SHUT OFF THE GAS SUPPLY TO THE VALVE BEFORE REPLACING ANY BATTERIES.**

Hearthstone recommends replacing all batteries at least every season. Keep a supply of good quality rechargeable batteries on hand to ensure functionality during power outages, and to give the environment a break.

### **Remote Transmitter Battery Replacement**

You can easily change the Remote Transmitter batteries by accessing the rear cover plate. Ensure you orient the batteries correctly as indicated in the battery compartment.

### **Receiver Battery Replacement**

1. Move the switch to the OFF position. Remove the cover plate screws and pry the entire plate with the switch off the receiver's battery compartment.
2. Install four new AA batteries. Ensure you orient the batteries correctly as indicated on the battery compartment cover.
3. Ensure the switch is still in the OFF position, align the slider with switch stem and snap the cover plate back onto the battery compartment.
4. Replace the cover plate screws.

### **Initializing the Remote Control**

Whenever you replace the batteries, you must synchronize communication between the Receiver and the Remote Control transmitter.

1. Place the slider switch in the REMOTE position.
2. Insert the end of a paper clip into the hole marked PRG on the Receiver cover. The Receiver will beep three times to indicate it is ready to synchronize with the Remote Control.
3. Install three AAA batteries in the Remote Control, and push the ON button. The Receiver will beep four times to indicate the Remote's command is accepted and is set to the particular code of that Remote. The system is now initialized.

## **Professional Inspection**

Once a year, have the unit, and venting system inspected by qualified service personnel to ensure that they are clean, free of obstruction, safe, and in good working order. If service or maintenance is required, have qualified service personnel perform it.

## **As Needed:**

### **Glass and Gasket Replacement**

In the event that you need to repair or replace a cracked or broken glass or gasketing use the following instructions to replace the components. For a broken glass ask for kit #97-58710 from your Authorized Hearthstone Dealer. Your Tucson uses a folded flat fiberglass gasket to make a tight seal between the glass frame and the firebox. In time, the gasket can become brittle and compressed and should be replaced. New gasket material is also available from your Authorized Hearthstone Dealer. Protect your hands with work gloves, and wash up later.

1. Allow the Tucson to cool completely. Remove the glass from the glass frame by drilling out the four 1/8" rivets that lock the glass in place. Pull the glass away from the frame and set it aside.
2. Remove the existing gasket from the glass by grasping one end and pulling firmly. Clean off as much of the hanging fiber "hairs" as possible
3. Locate the 1" x1/8" flat tape gasket. Peel the adhesive protecting paper away from one end. Starting at the center of the long end of the glass apply the gasket centered on the edge of the glass. Continue to wrap the gasket around the edge until you meet at the starting point. Do not overlap the gasket ends or leave ends with ragged edges.
4. Firmly and evenly, fold the gasket around the edges of the glass so it lies flat on the surface.
5. Place the gasket back in the glass frame. With four new 1/8" rivets replace the 2 glass clips. The glass and frame are now ready to be placed back on the unit.

## Parts List

Part #	Description	Part #	Description
17YY-355	Side Stone	5710-224	Control Door Hinge, Left
17YY-360	Top Center Stone	7000-104	Battery Holder (ST)
17YY-362	Top Outside Stone	7000-394	Remote Control Receiver (DX)
27XX-100	Foot	7000-393	Remote Control Transmitter (DX)
27XX-200	Control Door	7200-241	NG Burner Orifice #41
27XX-300	Left Side	7200-253	LP Burner Orifice #53
27XX-350	Right Side	7211-588	Ember Burner
27XX-400	Front	7211-590	Log 1, Rear
27XX-500	Top	7211-591	Log 2, Center Base
27XX-486	Heat Exchanger	7211-592	Log 3, Right Lower
3120-150	Heat Wave Baffle	7211-593	Log 4, Right Top
3160-150	Heat Exchanger Gasket	7211-594	Log 5, Left Top
3160-105	Delayed Ignition Relief Gasket	7211-395	IPI (NG)Pilot Burner Assembly
3160-152	Pilot Gasket	7211-163	NG Pilot Orifice .62mm
3160-106	Venturi Tube Gasket	7211-136	LP Pilot Orifice .35mm
3160-107	Rear Orifice Plate Gasket	7211-340	LP Regulator Manual (ST)
3160-081	¾"x 1/8" Gasket Tape	7211-344	LP Regulator Stepper (DX)
3160-155	Gasket 4", Inlet	7211-100	NG Valve, Manual (ST)
3160-157	Gasket 6", Exhaust	7211-110	NG Valve, Stepper (DX)
3170-150	Platinum Bright Embers	7211-101	DFC Board
5710-200	Firebox	7211-104	Power Adapter (ST)
5710-015	Venturi Tube	7211-102	DFC Wire Harness
5710-220	Base Plate	7211-103	GTMF Wire Harness (DX)
5710-230	Glass Frame	7211-105	Fan Control Module (DX)
5710-240	Stone Support Panel	7211-404	Knob extension, 1" (ST)
5710-279	Glass Handle, Spring Hook	7211-517	Charcoal embers 4oz
5710-211	DFC Board Mounting Plate	97-58710	Glass Assembly
5710-226	Modesty Panel (ST)	97-57100	Replacement Blower Kit
5710-227	Modesty Panel (DX)	97-56100	LP Conversion Kit Manual (ST)
5710-277	Pilot Shield	97-56104	LP Conversion Kit Stepper (DX)
5710-222	Control Door Hinge, Right	97-56102	NG Conversion Kit Manual (ST)
		97-56105	NG Conversion Kit Stepper (DX)

### Key:

XX = Finish (e.g. 10 = Matte Black Paint) – Specify finish required when ordering parts

YY = Stone Type (e.g. 41 = Polished Grey Soapstone)

 **WARNING: DO NOT SUBSTITUTE MATERIALS. FOR REPLACEMENT PARTS, OR FOR INFORMATION ABOUT PARTS OR SERVICE, CONTACT YOUR AUTHORIZED HEARTHSTONE RETAILER.**

 **For the name of the authorized retailer nearest to you, visit our website [www.hearthstonestoves.com](http://www.hearthstonestoves.com) or write:**

Hearthstone Quality Home Heating Products, Inc.  
317 Stafford Ave.  
Morrisville, Vermont 05661-8695

## Troubleshooting

Symptom	Possible Cause	Corrective Action
1. Pilot will not light.	<p>A. Power supply not plugged in and/or batteries are dead.</p> <p>B. Insufficient gas pressure, air in the pilot line, or dirty or kinked gas line.</p> <p>C. Pilot orifice plugged.</p> <p>D. Defective or misaligned electrode in pilot assembly.</p> <p>E. Defective ignitor.</p> <p>F. After sitting for "off" season (summer), pilot assembly may be dirty.</p>	<p>A. Ensure power supply is plugged in and receiving 120V AC. Ensure power supply output is 6V DC. Replace all batteries with known good batteries.</p> <p>B. Allow time for system to purge air in line. Check the inlet gas pressure. Make sure it is within the Min/Max. allowable pressures.</p> <p>C. Clean or replace the pilot assembly.</p> <p>D. If a flame lights the pilot, check the electrode gap and location. The gap should be 1/8" in the flame area.</p> <p>E. Check for a good connection between ignitor and electrode. Check wire insulation. If everything is properly connected and still no spark, replace the DFC Ignition Module.</p> <p>F. Clean or replace the pilot assembly.</p>
2. Pilot in CPI mode but will not stay lit after carefully following lighting instructions.	<p>A. Low or too high gas pressure</p> <p>B. Faulty connections.</p> <p>C. Pilot dirty or plugged.</p>	<p>A. Check for proper inlet pressure for the fuel gas in use.</p> <p>B. Check connections on the valve.</p> <p>C. Clean or replace the pilot assembly.</p>
3. Pilot burning, no gas to main burner, ON/OFF/T'STAT or ON/REMOTE/OFF switch in the "ON" position.	<p>A. Switch, Thermostat, Receiver, DFC Ignition Module, or wires defective.</p> <p>B. No power and batteries may be dead.</p> <p>C. Plugged burner orifice.</p>	<p>A. Check wiring for proper connections. Check components for proper operation. Place jumper wire across terminals at thermostat if present. If burner comes on, replace defective thermostat. If not OK, place jumper across thermostat wires at gas valve. If burner comes on, tighten connections, or replace faulty wires.</p> <p>B. Restore 120V service. Check for proper output of FCM, or AC adaptor – replace unit if defective. Replace batteries to ignition system and/or remote receiver.</p> <p>C. Remove and check burner orifice - clean or replace. Note: do not use any metal cleaning device, as this may damage the orifice.</p>
4. Pilot and burner come on, but go out after some warm-up.	<p>A. Inconsistent or insufficient flame on flame rectification sensor.</p> <p>B. Insufficient gas pressure.</p> <p>C. Excessive draft.</p>	<p>A. Adjust pilot flame size and assure that the flame is aimed directly at the rectification sensor.</p> <p>B. Check line pressure to ensure that the correct inlet pressure is present for the type of gas being used. If propane pressure is inconsistent, check for water condensation at the regulator.</p> <p>C. Check Restriction settings per this manual.</p>



Symptom	Possible Cause	Corrective Action
5. Frequent pilot outage problem in CPI mode.	A. Pilot flame may be too low or blowing, (high), causing the pilot safety to drop out.  B. Excessive draft	A. Clean and/or adjust the pilot flame for maximum impingement on the rectification sensor.  B. Check Restriction settings per this manual.
6. Glass fogs	A. A normal result of gas combustion in a cold stove.	A1. After the heater has warmed up, the glass should clear. A2. Leave pilot in CPI mode to keep stove warmer.
7. Blue Flames	A. A normal result during the first 20 minutes.	A. Flames should begin to turn more yellowish after 20 minutes of burning.  B. If the blue color stays; adjust the air shutter for a proper burn.
8. Floating flames, lazy ill-defined, quiet flames, which roll around, sometimes completely off of the port, sometimes with overly, yellow tips. Possible sooting. Usually accompanied by the odor of aldehydes.	A. Potentially dangerous incomplete combustion due to incorrect air to fuel ratio (lack of combustion air or excessive fuel delivery I.e. excessive gas pressure, overrating of appliance).  B. Incorrect air intake/exhaust flow system. Causes may be:  B1. Blocked burner. B2. Blocked primary air B3. Blocked secondary air inlets  C. Incorrect air shutter position.	A. Check the appliance input rate and reduce if necessary. The air intake/exhaust flow system may be too restrictive or blocked (the rate at which the exhaust leaves [draft] determines the rate at which the combustion air is delivered). Poor draft results in insufficient air delivery or a restricted exhaust. Correct air intake/exhaust flow system.  B1. Clear ports. B2. Clear obstructions. B3. Clear obstructions.  C. If gas pressures are correct and the flames stay the same, adjust the air shutter for a proper burn.
9. Burner flashback. Air-gas mixture ignites inside the burner near the orifice, usually creating a roaring noise like a blowtorch. The problem is an imbalance of gas flow velocity and burning speed pattern.	A. Excessive primary air.  B. Burner input underrated.  C. Valve leak if flashback occurs with burner valve in off position.  D. Improper gas pipe size.	A. Adjust the air shutter for a proper burn.  B. Check input rate. Check input pressure using a manometer. Confirm correct gas pressure at house meter or tank (call gas company). Confirm burner orifice size.  C. Replace valve. If above corrections do not eliminate flashback, replace burner.  D. Correct plumbing.
10. Delayed ignition (makes a sudden "whoosh" noise as the burner lights). This is a buildup of gas prior to ignition. This is more prevalent with propane (LP) fuel.	A. Incorrect air-to-fuel ratio.  A1. Primary air incorrect. A2. Burner ports plugged.  B. Improper log placement.  C. Pilot shield not installed properly.	A1. Adjust the air shutter for a proper burn. A2. Open ports to allow for proper travel of flames.  B. Reposition logs to eliminate interference with flame travel. C. Ensure the pilot shield is installed in the proper position.

# Rating Label

MODEL # 8702-

SERIAL #

MODEL NAME: TUCSON DIRECT VENT GAS FIRED HEATER

LISTED: GAS FIRED DIRECT VENT HEATER

TESTED TO: ANSI Z21.88b-2005/CSA 2.33b-2005

CGA-2.1.7-M9.1 CSA P4.1-02

CERTIFIED FOR AND US CANADA  
HOMOLOGUÉ POUR LE CANADA  
ALSO FORMOBILE HOME INSTALLATION



CAUTION: DO NOT OPERATE WITH GLASS REMOVED, CRACKED, OR BROKEN.  
Remplacement on the panel should be done by a licensed or qualified service person.  
CAUTIONNER: N'opère l'appareil avec le verre enlevé, craqué ou cassé. Le  
remplacement du panneau devra être fait par une personne de service qualifiée ou autorisée.

This appliance must be installed in accordance with the local codes, if any, if not, follow the National Fuel Gas Code, ANSI Z223.1 or Canadian Installation Codes, CSA B149.1. (Ins taller l'appareil selon les codes locaux, ou, en l'absence de tels règlements, selon les Codes d'installation CSA-B149.1)

FUEL TYPE:	■ NG	■ LP
INPUT RATING (Btu/hr) 0-2000 ft	25,000	25,000
INPUT RATING (Btu/hr) 2000-4000 FT	24,200	24,200
ORIFICE SIZE (DMS) 0-2000 ft	41	53
ORIFICE SIZE (DMS) 2000-4000 ft	42	54
MANIFOLD PRESSURE - LO (in. w.c./kpa)	1.6/0.40	6.4/1.59
MANIFOLD PRESSURE - HI (in. W.c./kpa)	3.5/0.87	10.0/2.48
MINIMUM INLET PRESSURE (in. W.c./kpa)	5.0/1.25	12/2.99
MINIMUM INPUT (btu/hr) 0/2000 ft	18,000	21,600
MAXIMUM OUTPUT (btu/hr) 0-2000 ft	17,350	19,100

WARNING: Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to the owner's information manual provided with this appliance. For assistance or additional information consult a qualified installer, service agency or the gas supplier. (L'AVERTISSEMENT: L'installation incorrecte, ajustement, modification, service ou entretien peut causer les dommages de propriété ou blessure. Référez au manuel d'information de propriétaire fourni cet appareil. Pour l'assistance ou l'information supplémentaire consultez un qualifié installateur, agence de service ou le fournisseur de gaz.)

## MINIMUM CLEARANCES TO COMBUSTIBLES

UNIT TO REAR WALL	2" / 51 mm
UNIT TO SIDE WALLS	6" / 153 mm
CORNER	4" / 102 mm

This appliance is only for use with the type of gas indicated on this rating plate and may be installed in an aftermarket, permanently located, manufactured (mobile) home where not prohibited by local codes. See owner's manual for details. This appliance is not convertible for use with other gases, unless a certified kit is used. If the vent air intake system is disassembled for any reason, re-install per the instructions provided with the initial instructions. This vented gas fireplace heater is not for use with air filters. This appliance must be properly connected to a venting system in accordance with the manufacturer's installation instructions.

VENTED GAS FIREPLACE HEATER - NOT FOR USE WITH SOLID FUEL.

MANUFACTURED BY: HearthStone, MORRISVILLE, VERMONT 05661



Date of Manufacture

2009	2010	2011	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

DO NOT REMOVE OR COVER THIS LABEL      MADE IN USA      3300-540

## **WARRANTY REGISTRATION**

The Original Purchaser can complete their warranty registration on our website at [www.hearthstonestoves.com](http://www.hearthstonestoves.com), or send a completed and signed Warranty Registration Form, which is enclosed in the Gas Stove warranty packet, to the following address:

Hearthstone Quality Home Heating Products, Inc.  
Warranty Department  
317 Stafford Avenue  
Morrisville, VT 05661

 **NOTE: SENDING IN THE SIGNED WARRANTY REGISTRATION FORM IS *NOT REQUIRED* AS A CONDITION OF WARRANTY COVERAGE OR HEARTHSTONE'S PERFORMANCE.**