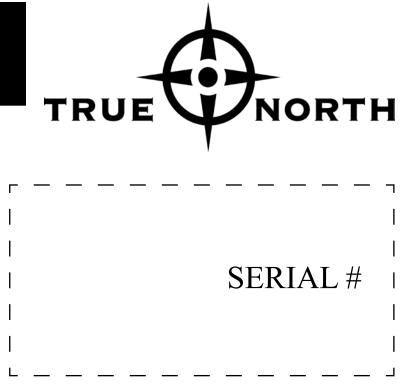
**IMPORTANT:** THESE INSTRUCTIONS ARE TO REMAIN WITH THE HOMEOWNER SAVE THESE INSTRUCTIONS

## INSTALLATION AND OPERATING INSTRUCTIONS



### SAFETY NOTICE:

If this stove is not properly installed, a house fire may result. For your safety, follow the installation instructions. Contact local building or fire officials about restrictions and installation inspection requirements in your area.

**TESTED and LISTED to ULC S627 / UL 1482** Meets the U.S. Environmental Protection Agency's May 2020 Cribwood Particulate Emission Standards





Wood Energy Technical Training www.wettinc.ca



# **MODEL: TN25C**

31010016 - Leg model 31010017 - Pedestal model

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### PLEASE SAVE THESE INSTRUCTIONS

This manual describes the installation and operation of the True North, TN25C Freestanding wood heater. This heater meets the 2020 U.S. Environmental Protection Agency's crib wood emission limits for wood heaters sold after May 15, 2015. Under specific test conditions this heater has been shown to deliver heat at rates ranging from 13,500 to 29,200 Btu/hr.

## NOTE: WE STRONGLY RECOMMEND THAT SMOKE AND CARBON MONOXIDE DETECTORS BE INSTALLED IN THE AREA WHERE THE HEATER IS TO BE INSTALLED.

If smoke detectors have been previously installed, you may notice that they are operating more frequently. This may be due to curing of stove paint or fumes caused by accidentally leaving the fire door open. Do not disconnect the detectors.

#### SAFETY NOTICE: If this stove is not properly installed, a house fire may result. For your safety, follow the installation instructions. Contact local building or fire officials about restrictions and installation inspection requirements in you area.

Please read this entire manual before you install and use your new room heater. Failure to follow instructions may result in property damage, bodily injury, or even death.

### **Specifications**

EPA Certified Emissions	1.1 grams per hour
LHV Tested Efficiency 1	75%
HHV Tested Efficiency 2	76%
EPA BTU Output 3	13,500 to 29,200 btu/hr
Peak BTU/Hr Output 4	60,000
Maximum Wood Length	20 inches
Ideal Wood Length	18 inches
Fuel	Seasoned Cord wood

### **Efficiency and BTU Output**

1 Weighted Average Lower Heating Value (LHV) efficiency as tested using CSA B415 Performance testing of solid-fuelburning heating appliances. LHV assumes the moisture is already in a vapor state so there is no loss of energy

2 Weighted Average Higher Heating Value (HHV) efficiency as tested using CSA B415 Performance testing of solid-fuelburning heating appliances. HHV includes the energy required to vaporize the water in the fuel

3 The range of BTU outputs is based on efficiency using CSA B415 Performance testing of solid-fuel-burning heating appliances and burn rates from the low and high EPA tests using Douglas Fir dimensional lumber.

4 The Peak BTU/hr is based on efficiency using CSA B415 Performance testing of solid-fuel-burning heating appliances, the Maximum one hour High burn rate from the High Burn EPA test and the BTU content of cord wood (8600 btu/lb).

Experience will give you the right settings for proper combustion and efficient burning for the wood you are using. Remember the correct air inlet setting is affected by variables such as type of wood, outside temperature, chimney size and weather conditions. With practice, you will become proficient in operating your heater and will obtain the performance for which it was designed. WARNING: Never use chemicals or any other volatile liquid to start a fire. Do not burn garbage, or flammable fluids such as gasoline, naptha, or engine oil.

## WARNING: ONLY USE MATERIALS SUPPLIED BY MANUFACTURER WHEN DOING MAINTENANCE OR REPLACEMENTS.

- Burn only dry and well seasoned cord wood. The denser or heavier the wood when dry, the greater its heat value. This is why hardwoods are generally preferred. Green or wet wood will cause a rapid buildup of creosote. If you feel it is necessary to burn wet or unseasoned wood, do so only with the air inlet set open enough to maintain a good strong fire and fairly high chimney temperatures. Do not attempt to burn overnight using green wood or wet wood. Wet wood can cause up to 25% drop in heater output, as well as contributing significantly to creosote buildup.
- 2. Remove ashes frequently. Embers can roll out the door and create a fire hazard. Maintain a 1"(25mm) minimum ash base.
- 3. If glass becomes darkened through slow burning or poor wood, it can readily be cleaned with fireplace glass cleaner when stove is cold. Never scrape with an object that might scratch the glass. The type and amount of deposit on the glass is a good indication of the flue pipe and chimney buildup. A light brown dusty deposit that is easily wiped off usually indicates good combustion and dry, well-seasoned wood and therefore relatively clean pipes and chimney. On the other hand, a black greasy deposit that is difficult to remove is a result of wet and green wood and too slow a burning rate. This heavy deposit is building up at least as quickly in the chimney.
- 4. DOOR GASKETS The gasket used for the True North (5/8"(16mm) medium density fiberglass rope) requires only light pressure to seal. This will prolong seal life. It is important that the door seal be main-tained in good condition. Periodically inspect seals and replace if necessary. Follow instructions included in the Gasket kit obtainable from your nearest True North dealer.
- DOOR GLASS Do not slam loading door or otherwise impact glass. When closing door, make sure that no logs protrude to impact the glass. If the glass gets cracked or broken, it must be replaced before using the stove. Replacement glass can be obtained from your dealer. Use 9-1/4"(235mm) x 13-1/4"(337mm) x 5 mm. Ceramic glass only. Do not substitute with any other type.
- -To remove broken glass, undo the four retaining screws and remove clamps, noting position for re-assembly. Remove all particles of glass. Be careful as they are very sharp. Install new glass complete with gasket. Replace clamps and screws.

### CAUTION:

- do not overtighten, tighten screws very carefully
- do not clean glass when hot
- do not use abrasive cleaners on glass
- 6. The area where boost combustion air enters the firebox must be kept clear of excessive ash buildup which will block air flow. This area is at the front of the firebox.
- 7. Do not store wood within heater installation clearances, or within the space required for fuel loading and ash removal. Keep the area around the heater clean and free of loose combustibles, furniture, newspapers, etc.
  - 4 ©PACIFIC ENERGY FIREPLACE PRODUCTS LTD.

- 8. Establish a routine for the fuel, wood burning and Lighting techniques. Check daily for creosote buildup in the firebox, until you are experienced and are operating the stove cleanly and safely.
- 9. Be aware that the hotter the fire, the less creosote is deposited. More frequent chimney cleaning may be necessary in mild weather or when burning "wet" or unseasoned wood.
- 10. Instruct all members of your family on the safe operation of the heater. Ensure they have enough knowledge of the entire system if they are expected to operate it. Stress the section on chimney fires and the importance of following the steps outlined "In Case of Chimney Fire".

### Maintenance Checks -

Check the following parts for premature wear and/or damage such as cracks, excessive corrosion, burned out sections and excessive warping:

### Note: Maintenance and Troubleshooting for the Catalyst Combustor can be found on page 29.

### Weekly:

- Firebrick Visual, for cracking and/or missing pieces.
- Door Gasket sagging, placement, damage.

### Monthly

- Brick retainers and baffle air boxes.
- Back side of airwash chamber.
- Top baffle board.
- Baffle Tubes.

### As Needed

• It is recommended that the chimney be inspected a minimum of every 2 months and cleaned as needed a minimum of 2 times a year.

### When Cleaning the Chimney System:

The Chimney connector must be disconnected from the wood stove to clean and inspect the chimney. The TN25C is equipped with a thermocouple inside the flue collar that is sensitive and easy to damage. Care must be taken when cleaning the chimney.

- Flame shield and mounting bolt.
- Brick retainers and baffle air boxes.
- Manifold.
- Catalyst.

- Baffle Tubes.
- Baffle Boards.
- Rear Brick Retainer.
- Thermocouple guard(Flue Protector)
- Replace the baffle tubes if they show signs of cracking or breakage.

- Please contact your Dealer for replacement parts if you experience any of the issues listed above. Continuing to operate your stove with broken parts may accelerate damage to other parts and will void your warranty

### **Blower:**

The blower should be cleaned out a minimum every six months by using a vacuum on the grill openings in the back and bottom of the blower casing to remove any dust and debris.

### **Chimney Smoke and Creosote Formation**

When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire. The chimney connector and chimney should be inspected periodically (at least once every two months) during the heating season to determine if a creosote buildup has occurred. If creosote has accumulated (3 mm. or more), it should be removed to reduce the risk of a chimney fire.

- 1. Highest smoke densities and emissions occur when a large amount of wood is added to a bed of hot coals and the air inlet is closed. The heated wood generates smoke, but without ample air, the smoke cannot burn. Smoke-free, clean burning requires small fuel loads, two or three logs at a time or 1/4 to 1/2 of fuel load and leaving the air inlet relatively wide open, especially during the first 10 to 30 minutes after each loading, when most of the smoke generating reactions are occurring. After 30 minutes or so, the air inlet can be turned down substantially without excessive smoke generation. Wood coals create very little creosote-producing smoke.
- 2. The cooler the surface over which the wood smoke is passing, the more creosote will be condensed. Wet or green wood contributes significantly to creosote formation as the excess moisture that is boiled off cools the fire, making it difficult for the tars and gases to ignite, thus creating dense smoke and poor combustion. This moisture-laden smoke cools the chimney, compounding the problem by offering the smoke the ideal place to condense.

In summary, a certain amount of creosote is inevitable. Regular inspection and cleaning is the solution. The use of dry, seasoned wood and ample combustion air will help to minimize annoying smoke emissions and creosote buildup.

### **Chimney Fires**

The dangerous side effect of excessive creosote buildup is a chimney fire. This causes much higher than normal temperatures in the chimney and on its exterior surfaces. Temperatures inside the chimney can exceed 2000°F (1100°C). Ignition of nearby or touching combustible material is more likely during a chimney fire. Proper clearances are critical to prevent damage during such a fire.

Chimney fires are easy to detect; they usually involve one or more of the following:

- Flames and sparks shooting out of the top of the chimney
- A roaring sound
- Vibration of the chimney

### To Avoid a Chimney Fire

- 1. Burn wood cleanly. Do not burn wet wood or turn down the unit too quickly after loading.
- 2. Do not let creosote build up to a point where a chimney fire is possible.
- 3. Do not have fires in the heater that may ignite chimney fires. These are excessively hot fires, such as when burning household trash, cardboard, Christmas tree limbs, or even ordinary fuel wood; (e.g. with a full load on a hot bed of coals and with the air inlet wide open for more time than is needed to completely char a fresh fuel load.)
- 4. The Chimney and connector pipe should be inspected /cleaned periodically.

#### In the event of a Chimney Fire

Have a fire extinguisher handy. Contact your local, municipal or state/provincial fire authority for further information on how to handle a chimney fire. It is most important that you have a clearly understood plan on how to handle a chimney fire.

- 5. Close down the air inlet on the stove.
- 6. Call the local fire department.
- 7. Prepare to evacuate to ensure everyone's safety. Have a well understood plan of action for evacuation. Have a place outside where everyone is to meet.
- 8. After the chimney fire is out, the chimney must be cleaned and checked for stress and cracks before starting another fire. Also check combustibles around the chimney and the roof. The services of a competent or certified installer, (certified by the Wood Energy Technical Training program (WETT) in Canada, National Fireplace Institute (NFI) in U.S.A., are strongly recommended.

### **Operation**

CAUTION: Hot while in operation. Keep children, clothing and furniture away. Contact may cause skin burns.

WARNING: Always keep loading door closed when burning. This heater is not designed for open door burning.

WARNING: No alteration or modification of the combustion air control assembly is permitted. Any tampering will void warranty and could be very hazardous.

WARNING: Do not use grates or andirons to elevate the fuel. Burn directly on the fire bricks. Replace broken or missing bricks. Failure to do so may create a hazardous condition.

WARNING: Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or 'freshen up' a fire in this heater. Keep all such liquids well away from the heater while in use.

Your True North heater is designed for maximum overall efficiency at a moderate firing rate. Over firing the appliance will shorten the life of the product. Failure to rectify an over firing condition can be hazardous and may void the manufacturer's warranty. Too slow a burn may contribute to creosote buildup and lowers combustion efficiency.

### **Wood Selection**

This heater is designed to burn natural wood only. Higher efficiency and lower emissions generally result when burning air-dried seasoned hardwoods, as compared to softwoods or to green or freshly cut hardwoods.

Wood should be properly air dried (seasoned) for six months or more. Wet or damp wood will cause the fire to smoulder and produce large amounts of smoke and creosote. Wet wood also produces very little heat and tends to go out often. Wood should be stored under cover away from open flame or heat sources.

### DO NOT BURN:

\* These materials contain chlorides which will rapidly destroy metal surfaces and void warranty.

Salt water wood *	Treated wood
Wet or green wood	Coal/charcoal
Garbage*	Solvents
Lawn clippings/yard waste	Unseasoned wood
Railroad ties	Manure or animal remains
Materials containing rubber, including tires	Materials containing plastic
Waste petroleum products, paints or paint thin- ners, or asphalt products	<ul> <li>Materials containing asbestos</li> </ul>
Construction or demolition debris	<ul> <li>Paper products, cardboard, plywood, or particleboard.</li> </ul>

Burning these materials may result in the release of toxic fumes or render the heater ineffective and cause smoke.

The prohibition against burning these materials does not prohibit the use of fire starters made from paper, cardboard, saw dust, wax and similar substances for the purpose of starting a fire in an affected wood heater.

**Do not burn anything but cord wood.** Other fuels, e.g. lump charcoal, can produce large amounts of carbon monoxide, a tasteless, odorless gas that can kill. Under no circumstances should you attempt to barbecue in this heater.

### How to Test Your Wood

Add a large piece of wood to the stove when it has a good large bed of coals. It is dry if it is burning on more than one side within one minute. It is damp if it turns black and lights within three minutes. If it sizzles, hisses and blackens without igniting in five minutes it is soaked and should not be burned.

### Lighting a Fire

## Remove the retaining clip on the front of the baffle before lighting for the first time.

- 1. Move air control lever to the left-most position (maximum firing rate) and open door.
- 2. Place crumpled newspaper in the centre of the heater and crisscross with several pieces of dry kindling. Add a few small pieces of dry wood on top.
- 3. Ignite the paper and leave the door ajar approximately 1/2"(13mm) 1"(25mm) until the wood kindling is fully engulfed in flame. DO NOT LEAVE UNATTENDED.



- 4. After the kindling is fully engulfed add a few small logs. Close door.
- 5. Begin normal operation after a good coal base exists and wood has charred.

#### **Normal Operation**

WARNING: This wood heater must have periodic inspection and/or repair for proper operation. This wood heater has a manufacturer-set minimum low burn rate that must not be altered. It is against federal regulations to alter this setting or otherwise operate this wood heater in a manner inconsistent with the operating instructions in this manual.

- Set air control to a desired setting. If smoke pours down across the glass (waterfall effect) this indicates you have shut the control down too soon or you are using too low a setting. The wide range control panel makes finding the desired setting for your application easy. As every home's heating needs vary (i.e. insulation, windows, climate, etc.) the proper setting can only be found by trial and error and should be noted for future burns.
- 2. To refuel, adjust air control to high, and give the fire time to brighten. Open the door slowly, this will prevent back puffing.
- 3. Use wood of different shape, diameter and length (up to 18" (457mm)). Load your wood and try to place the logs so that the air can flow between them. Always use dry wood.
- 4. Do not load fuel to a height or in such a manner that would be hazardous when opening the door.
- 5. For extended or overnight burns, un-split logs are preferred. Remember to char the wood completely on maximum setting before adjusting air control for overnight burn/low burn. (see step 1 concerning "water-fall effect")

### **Restarting After Extended or Overnight Burns**

- 1. Open door and rake hot embers towards the front of the heater. Add a couple of dry, split logs on top of embers, close door.
- 2. Adjust air control to high (control lever to the left) and in just a few minutes, logs should begin burning.
- 3. After wood has charred, reset air control to desired setting.
- 4. To achieve maximum firing rate, set air control lever to the left-most position. Do not use this setting other than for starting or preheating fresh fuel loads.

## DO NOT OVER FIRE THIS HEATER: Attempts to achieve heat output rates that exceed heater design specifications can result in permanent damage to the heater and chimney.

### **Proper Draft**

- 1. Draft is the force that pulls air into the appliance and up through the chimney. The amount of draft in your chimney depends on the length of the chimney, local geography, nearby obstructions and other factors.
- 2. Too much draft may cause excessive temperatures in the appliance. An uncontrollable burn or a glowing red stove part or chimney indicates excessive draft.
- 3. Inadequate draft may cause back puffing into the room and plugging of the chimney. Smoke leaking into the room through appliance and chimney connector joints indicates inadequate draft.

### **Curing of the Paint Finish**

To achieve the best finish, the paint on your stove must be baked on. Follow the Paint Curing instructions. When burning your stove for the first 2-3 times it is very important that the room be well ventilated. Open all windows and doors. Smoke and fumes caused by the curing process may cause discomfort to some individuals.

### Ash Removal

**Caution:** Ashes are to be removed only when the heater is cold. Whenever ashes get 3"(76mm) to 4"(102mm) deep in your firebox, and when fire has burned down and cooled, remove excess ashes. Leave an ash bed approximately 1" (25 mm) deep on the firebox bottom to help maintain a hot charcoal bed.

### **Disposal of Ashes**

Ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be placed outside on a non-combustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in closed container until all cinders have thoroughly cooled. Other waste should not be placed in this container.

### Heat Output

Experience will give you the right settings for proper combustion and efficient burning. Remember that the correct air inlet setting is affected by variables such as type of wood, outside temperature, chimney size and weather conditions. With practice, you will become proficient in operating your heater and will obtain the performance for which it was designed.

### • Stove Dimensions

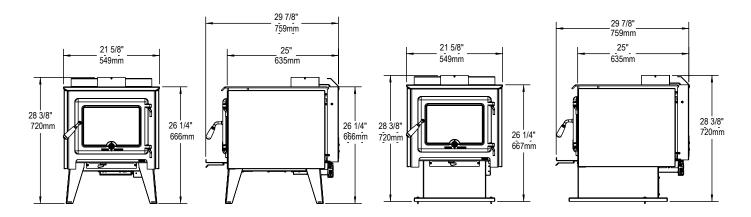


Figure 1: TN25C Dimensions.

Assembly \_

### **Crate Removal**

- 1. Carefully remove wood top and supports.
- 2. Remove plastic cover.
- 3. Remove all screws holding the Legs or Pedestal, to the Pallet. **Catalyst Installation**

### DO NOT OPERATE WITH CATALYST REMOVED.

### The Catalyst comes packaged inside the unit and needs to be installed before lighting the unit.

#### Installation

- 1. Remove the catalytic combustor from the packaging.
- 2. Insert the catalytic combustor into the flue collar from above. Figure 2
- 3. Position the end of the catalytic combustor down beside the flue thermocouple. (Be careful not to bend the thermocouple.) Figure 3



Figure 2: Insert combustor into flue.



Figure 3: Combustor next to thermocouple.



Figure 4: Rotate combustor under thermocouple.

4. Rotate the catalytic combustor clock-wise under the thermocouple.

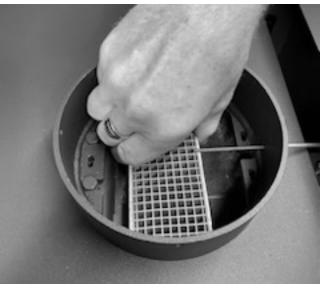


Figure 5: Position over combustor bracket.

5. Align the catalytic combustor over the combustor bracket.

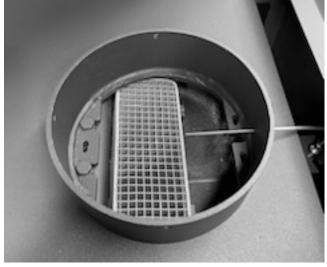


Figure 6: Placed into combustor bracket.

6. Carefully place the catalytic combustor into the combustor bracket.

### **Connecting the A/C Adapter**

Remove the A/C Adapter from inside the unit and connect the barrel plug to A/C Adapter plug in the Control Board then connect the adapter to a wall outlet.Figure 8

NOTE: If you unplug the unit for any reason, unplug the adapter from the wall and wait a minimum of 10 seconds before plugging the unit back in. Also, if the power to the unit flickers, the control board may freeze up. Unplug the A/C Adapter from the wall for a minimum 10 seconds before plugging it back in to reset the control board.

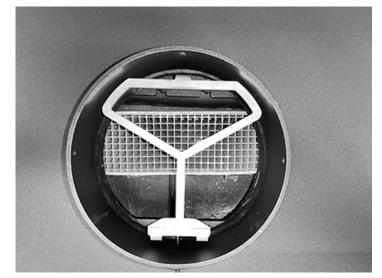


Figure 7: Install Flue protector.

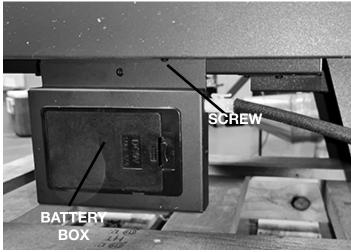
7. Remove the flue protector from inside the unit and place it inside the flue collar, engaging the tabs in the slots in the position shown.



Figure 8: A/C Adapter plug

### **Battery Box Installation**

- 1. Remove the Battery Box from the packaging.
- 2. Connect the plug from the Battery Box to the connection on the right side of the Control Board. (Right is "your right" and determined when standing facing the front of the unit.)
- 3. Put the #8 X 1/2" screw provided into the hole in the bottom flange of the right side panel.
- 4. Hook the top flange of the Battery Box inside the right panel engaging the screw in the bottom flange of the right side panel into one of the holes. (Right is "your right" and determined when standing facing the front of the unit.)





### Residential Installation

Warning: Under no circumstances is this heater to be installed in a makeshift or "temporary" manner. It may be fired only after the following conditions have been met.

- DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.
- THIS ROOM HEATER MUST BE CONNECTED TO:
  - 1. A CHIMNEY LISTED TO: UL 103HT (USA) or ULC-S629 (CANADA) or
  - 2. A CODE APPROVED MASONRY CHIMNEY WITH A LISTED FLUE LINER.

### In Canada:

ULC S635, Standard Lining Systems for Existing Masonry or Factory Built Chimneys and Vents. In U.S.A.:

UL1777 Standard for liners in new and existing masonry chimneys in the USA

We recommend that our products be installed and/or serviced by professionals who are certified by a "Qualified agency";

NFI (National Fireplace Institute®) in the United States,

CSIA (Chimney Safety Institute of America) in the United States and Canada,

WETT (Wood Energy Technology Transfer) in Canada or

APC (Association des Professionnels du Chauffage) in Quebec

- DO NOT ATTEMPT TO CONNECT THIS HEATER TO ANY AIR DISTRIBUTION DUCT.
- Outside combustion air or fresh air into the room may be required in your area, consult local building codes (see Combustion Air section).



We recommend that our products be installed and serviced by professionals who are certified in the U.S. by the National Fireplace Institute (NFI) or in Canada by Wood

IFIED Training (WETT)

**Energy Technical** 



#### **Residential Clearances**

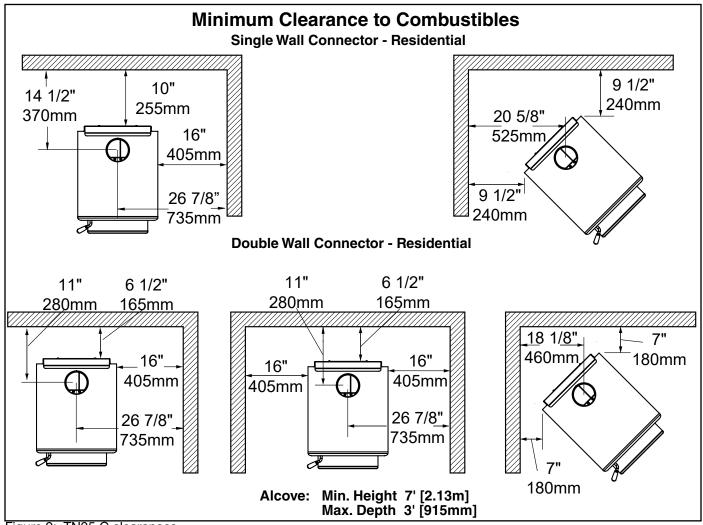
#### BOTH CHIMNEY SYSTEM AND CONNECTOR MUST BE 6"(150mm) DIAMETER AND LISTED TO: CANADA - CONNECTOR - LISTED to ULC S-641 and CHIMNEY LISTED to ULC-S-629 USA - CONNECTOR AND CHIMNEY LISTED to UL-103 HT

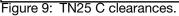
1. Residential Clearances to Combustible surfaces and materials;

This heater may be installed using a single-wall connector (smoke pipe) as per local and National fire and Installation codes. See Single wall Connector in figure 2. Clearances may be reduced with various heat shielding or insulating materials. Consult local and national fire codes and authorities for approval

For close clearances, use a listed double-wall connector, See (Figure 9). "Double Wall Connector

Mobile Home installation See "Figure 15" on page 21.





### Ember Protection

The stove may be installed on a combustible floor, provided ember protection (UL 1618 type 1 )made from a non-combustible material (a minimum K value of 23.7 btu/ft h  $^{\circ}$  F) the equivalent of 20 Gauge steel or tile is used.

This protection must extend as follows:

In Canada: 18" (457 mm)from the loading door on the firing side and 8" (203 mm) from the sides. See Figure 10, below.

In USA: 16" (406 mm) to the front of the firebox and 8" (203 mm) from the sides of the fuel loading door opening. See Figure 11, below. This protection is also required under a horizontal chimney connector and 2" (51 mm) beyond each side of it.

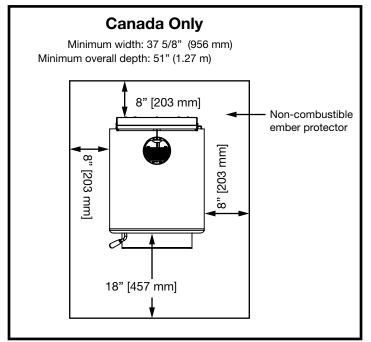


Figure 10: TN25C Floor protector Canada.



These will be needed to anchor the stove in a mobile home installation and are recommended when installing combustion air to prevent movement of the unit and separation of the combustion air intake.

1. The hold down brackets are provided in a bag with the unit. Insert the brackets by sliding them through the slots in the rear legs. Then secure the bracket to the floor or hearth pad with a lag screw.

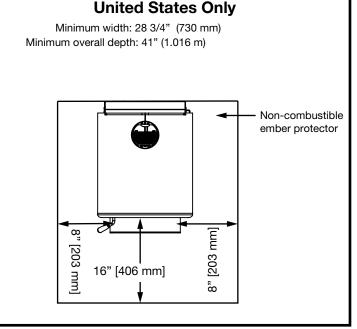


Figure 11: TN25C Floor protector U.S..



Figure 12: Securing bracket.

#### **Procedure:**

## Follow the chimney manufacturer's instructions, The installation instructions included below are just general steps.

- 1. Position stove and floor protection (with hole for combustion air if required) in accordance with the clearances as stated on the label and in Figure 10 on page 15 (Canada) and Figure 11 on page 15 (U.S.A.).
- 2. Mark the position for the hole in the ceiling and roof by using a string and plumb-bob.
- 3. Check that the intended location will not interfere with floor joists, ceiling joists or rafters before proceeding further.
  - Cut a hole in the ceiling and roof to suit the chimney system and frame in the sides.
  - Install roof or ceiling support as required in the installation.
  - Install the roof flashing, be sure to secure the flashing and seal with the appropriate sealant as per instructions
  - Assemble the chimney sections so the finished length is resting on the support and protruding through the roof. Install the radiation shield. Avoid having chimney joints between ceiling and roof.
  - Install the storm collar and required chimney sections to achieve a safe height. Attach rain cap and check system for leaks.
- 4. If double-wall connector pipe is to be connected between the stove and the listed insulated chimney,
  Use listed double-wall connector and install all components to the connector pipe manufacturer's installation requirements.
- 5. If smoke pipe is being used to connect between the stove and the listed insulated chimney,
  - As short and straight as possible, use 6"(150mm) diameter, minimum 24 gauge black pipe, that is clean and in new condition.

Install the smoke pipe (chimney connector), crimped edge of the pipe down and inside the stove's collar. This will carry any liquid creosote or condensation back into the stove. Use holes provided in stove collar to secure pipe with three screws.

- Install the remaining lengths of pipe, one on top of the other to the finished height of the listed insulated chimney adapter and secure to each other. A slip-section will make attaching the smoke pipe to the chimney system adapter easier. Secure with 3 screws at each joint.
- The Smoke pipe/chimney connector shall not pass through an attic, roof space, closet or similar concealed space, or a floor, or ceiling. Where passage through a wall, or partition of combustible material is desired, the installation shall conform to CAN/CSA-B365, INSTALLATION CODE FOR SOLID-FUEL-BURNING APPLIANCES AND EQUIPMENT or NFPA 211 STANDARD FOR CHIMNEYS, FIREPLACES AND SOLID FUEL BURNING APPLIANCES

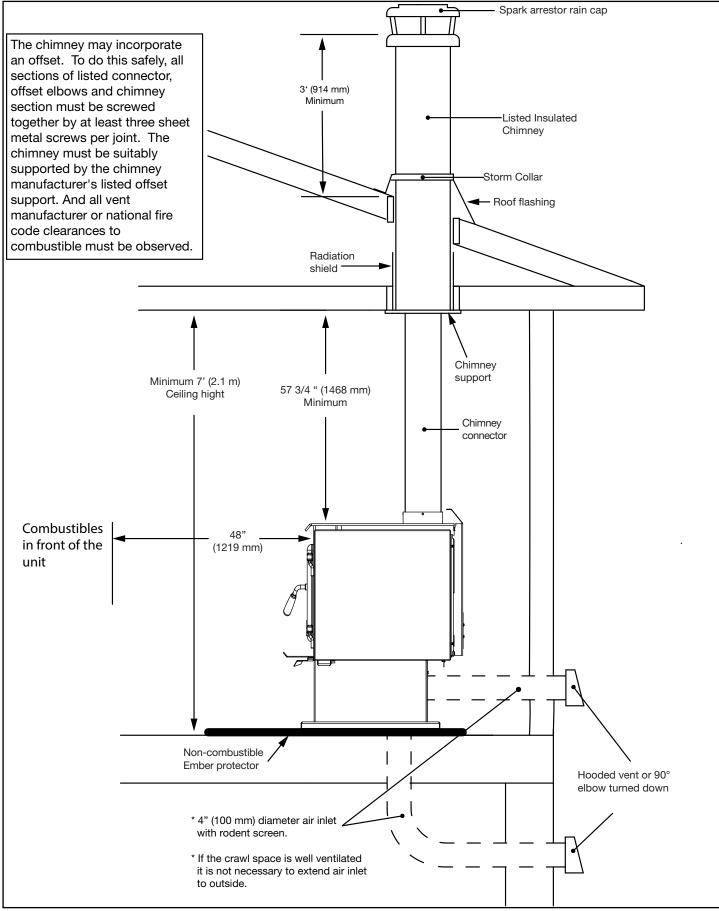


Figure 13: Mobile home or typical home installation.

#### Connecting to a masonry chimney

Ensure that the chimney is in good condition and meets local building codes. Your stove may work better if the chimney is fully lined with a stainless steel liner, this is because the liner will retain heat and promote draft. The chimney flue or liner should be the same size as the stove outlet for optimal performance. Reducing or increasing the flue size may adversely affect stove performance. Chimney flue exit is to be 3 feet (1 m.) above the roof and two feet (0.6 m.) above highest projection within 10 feet (3 m.). The installation must meet all local codes. Do not connect this unit to a chimney flue serving another appliance. Minimum system height is 12 feet (3.0 m.) (Measured from top of appliance).

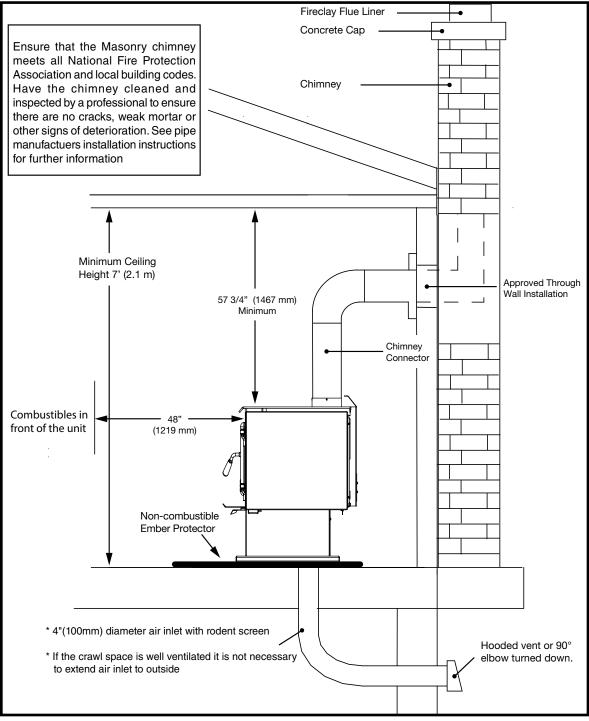


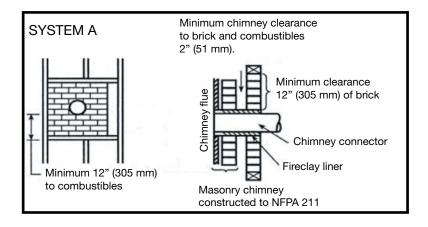
Figure 14: Venting to a masonry chimney.

## Through Wall Installations (as per NFPA 211-2013)

#### ATTENTION: VAPOR BARRIER MUST BE MAINTAINED WHEREVER CHIMNEY OR OTHER COMPONENTS PENETRATE TO THE EXTERIOR OF THE STRUCTURE. SEE LOCAL BUILDING CODES FOR PROPER AND APPROVED METHODS OF MAINTAINING VAPOR BARRIER.

System A. Minimum 3.5 in. (90 mm) thick brick masonry wall framed into combustible wall with a minimum of 12 in. (305 mm) brick separation from clay liner to combustibles. Fireclay liner (ASTM C 315, Standard Specifications for Clay Fire Linings, or equivalent), minimum 5/8 in. (16 mm) wall thickness, shall run from outer surface of brick wall to, but not beyond, the inner surface of chimney flue liner and shall be firmly cemented in place.

Clearance 12 in. (305mm)

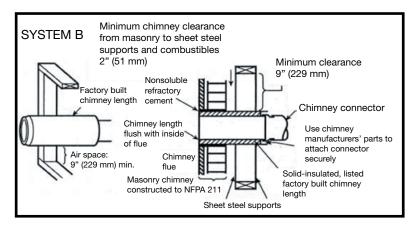


System B. Solid-Insulated, listed factory-built chimney length of the same inside diameter as the chimney connector and having 1 in. (25.4 mm) or more of insulation with a minimum 9 in. (229 mm) air space between the outer wall of the chimney length and combustibles.

The inner end of the chimney length shall be flush with the inside of the masonry chimney flue and shall be sealed to the flue and to the brick masonry penetration with non-water-soluble refractory cement. Supports shall be securely fastened to wall surfaces on all sides.

Fasteners between supports and the chimney length shall not penetrate the chimney liner.

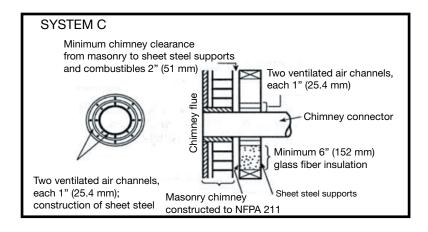
Clearance 9 in. (229mm)



System C. Sheet steel chimney connector, minimum 24 gauge [0.024 in. (0.61 mm)] in thickness, with a ventilated thimble, minimum 24 gauge [0.024 in. (0.61 mm)] in thickness, having two 1 in. (25.4 mm) air channels, separated from combustibles by a minimum of 6 in. (152 mm) of glass fiber insulation. Opening shall be covered, and thimble supported with a sheet steel support, minimum 24 gauge [0.024 in. (0.61 mm)] in thickness.

Supports shall be securely fastened to wall surfaces on all sides and shall be sized to fit and hold chimney section. Fasteners used to secure chimney section shall not penetrate chimney flue liner.

Clearance: 6 in. (152mm)

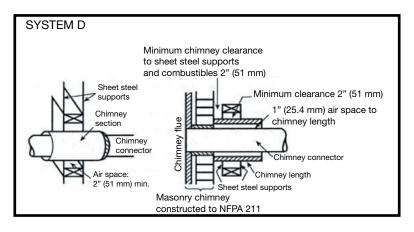


System D. Solid-Insulated, listed factory-built chimney length with an inside diameter 2 in. (51 mm) larger than the chimney connector and having 1 in. (25.4mm) or more of insulation, serving as a pass-through for a single-wall sheet steel chimney connector of minimum 24 gauge [0.024 in. (0.61 mm)] thickness, with a minimum 2 in. (51 mm) air space between the outer wall of chimney section and combustibles.

Minimum length of chimney section shall be 12 in. (305 mm). Chimney section concentric with and spaced 1 in. (25.4 mm) away from connector by means of sheet steel support plates on both ends of chimney section. Opening shall be covered, and chimney section supported on both sides with sheet steel supports of minimum 24 gauge [0.024 in. (0.61 mm)] thickness.

Supports shall be securely fastened to wall surfaces on all sides and shall be sized to fit and hold chimney section. Fasteners used to secure chimney section shall not penetrate chimney flue liner.

Clearance: 2 in. (51mm)



### Mobile Home Installation

Warning: Under no circumstances is this heater to be installed in a makeshift or "temporary" manner. It may be fired only after the following conditions have been met.

- DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.
- DO NOT INSTALL IN A SLEEPING ROOM.(U.S. INSTALLATIONS ONLY)

THIS HEATER MUST BE INSTALLED WITH LISTED DOUBLE-WALL CONNECTOR. BOTH CHIMNEY SYSTEM AND CONNECTOR MUST BE 6"(150mm) DIAMETER AND LISTED TO: IN CANADA - ULC S-641 LISTED CONNECTOR AND ULC-S-629 LISTED CHIMNEY, IN USA - UL-103 HT LISTED CONNECTOR AND CHIMNEY

• Outside combustion air supply must be used for Mobile Home installations see page 22

### **Mobile Home Clearances**

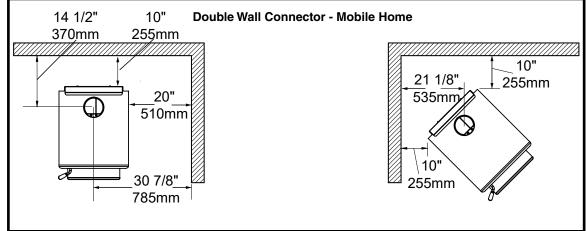


Figure 15: TN25 C Mobile home clearances.

### Installation

## Minimum chimney height from top of unit is 12' (3.66 m) or as per chimney manufacturers roof clearances whichever is greater.

NOTE: Longer chimney lengths and different pitch flashings may be used. Install all components to the connector or chimney manufacturer's installation requirements. Consult your chimney supplier for installation advice.

### **Procedure:**

## Follow Chimney Manufacturer's Installation Instructions for installation or removal of the chimney.

## WARNING: THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR, WALL AND CEILING/ROOF MUST BE MAINTAINED.

Note: See "Combustion Air" on page 22.

- Attach stove to floor using two 1/4" x 1" for Leg Model and 1/4" x 1 1/2" for Pedestal Model lag screws. If installing a leg model, insert anchor tabs into slot on bottom of two rear legs and secure to floor with 1/4" x 1" or longer lag screws (Figure 12).
- If installing the Optional Blower Kit the unit must be grounded to the mobile home.

### Combustion Air -

Combustion air can be supplied to the stove in one of two ways. Consult your local building code or CAN/ CSA-B365, or NFPA 211

### **Pedestal Model**

- 1. Direct outside air supply (Necessary for mobile home installation, optional for residential installation.)
  - To draw outside air through the floor; leave the knockout or square cover plate in the rear of the pedestal in place. Use an approved 4"(102mm) inlet vent cap. Cut or drill a 4"(102mm) diameter or larger hole in the floor anywhere inside the perimeter of the pedestal base. Cover the hole with a 20GA wire mesh minimum, rodent screen and staple/nail in place. This hole must get its air from a ventilated crawl space or be extended with duct to the outdoors (see Figure 13 on page 17 or Figure 14 on page 18
  - To draw air from behind the stove. Cut or drill a corresponding hole in the closest exterior wall. Install an approved 4"(102mm) inlet vent cap. Attach the outside air adapter (11100005) to the back of the pedestal. Connect the adapter to the inlet vent cap using 4"(102mm) flexible or rigid metal venting. Provide water protection as required.
- 2. Room air supply Remove the knockout or cover plate from the rear of the pedestal enclosure. The stove will now draw its air from the room through this opening and into the firebox intake

### Leg Model

- 1. Direct outside air supply (Necessary for mobile home installation, optional for residential installation.)
  - To draw outside air through the floor; Cut or drill a 4"(102mm) diameter or larger hole in the floor under the stove. Attach the outside air adapter (11100005) to the underside of the stove. Connect the adapter to the hole using 4"(102mm) flexible or rigid metal venting. Cover the hole with a 20GA wire mesh minimum, rodent screen and staple/nail in place. This hole must get its air from a ventilated crawl space or be extended with duct to the outdoors (see Figure 13 on page 17 or Figure 14 on page 18. if extended use an approved 4"(102mm) inlet vent cap
  - To draw air from behind the stove. Cut or drill a corresponding hole in the closest exterior wall. Install an approved 4"(102mm) inlet vent cap. Attach the outside air adapter (11100005) to the underside of the stove. Connect the adapter to the inlet vent cap using 4"(102mm) flexible or rigid metal venting. Provide water protection as required.
- 2. Room air supply The stove will draw its air from the room through the opening in the bottom

### Note:

The use of outside combustion air for installation requires the unit to be secured to the structure to prevent dislodging of the air duct. (See: Securing Bracket Installation page 15)

In Canada, the use of outside combustion air for installation requires the use of an air intake damper with indicator of damper position. This damper must be 100% open when using your wood stove.

The damper must:

- Allow 100% closure
- Prevent material from dropping into any area beneath the structure
- Permit zero clearance to combustible construction and
- Weather hoods shall not permit line of sight access to the intake opening

The living space around the heater must be well ventilated with good air circulation. Anything that may cause a negative pressure can cause gases or fumes to be pulled into the living area. During extremely cold weather, and especially when burning at very slow rates, the upper parts of the exposed chimney may ice up, partially blocking the flue gases. If blockage occurs, flue gases may enter living space.

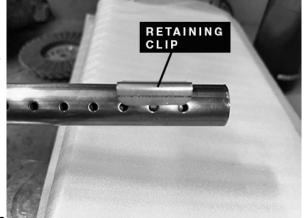
This unit is **not** designed to be operated with the firing door open. In addition to the obvious hazard of sparks landing on combustibles, an open fire door will cause the heater to draw air from the living space and possibly cause suffocation in an air tight home.

### Baffle Board / Tube Removal

### DO NOT OPERATE WITH BAFFLE BOARD INSULATION OR TUBES REMOVED.

### Removal

- 1. Lift the baffle board and pop out the retaining clip on the right side of the front baffle tube by rotating it up then disengage the tab from the hole in the front of the tube.
- 2. Slide the tube to the right to disengage the left end of the tube from the baffle air box and remove the tube from the unit. Repeat the first two steps with the next baffle tube.
- 3. Grasp the front edge of the left half of the baffle board and tilt up at the back. Guide the board down and through the door opening.



- 4. Grasp the right half of the baffle board and slide it over to the left and tilt the back of the board up and guide it down and through the door opening.
- 5. Repeat the first two steps to remove the remaining two tubes.
- 6. Reverse the process to replace the baffle assembly.

### Installation

- 1. Install the two rear baffle tubes first as per steps #4 & #5 below.
- 2. Insert one half of baffle board above the two back baffle tubes inside the firebox, slide over to the right and allow to rest on the baffle air assembly.
- 3. Ensure that the second half is inserted to allow the two cuts in the baffle boards to overlap. Insert the other half of the baffle board and allow to rest on the left side baffle air assembly.
- 4. With the holes facing forward and the notch to the left side, insert a baffle tube into the hole in the baffle air channel on the right at an angle and then raise and insert into the opposite hole on the left side baffle air assembly until the tube sits tight to the tab in the hole.
- 5. Place the retaining clip tab into the hole in the baffle tube on the right side and pop it back over the tube to secure it in place.
- 6. Repeat steps #4 & #5 with the remaining baffle tube.
- 7. Slide the baffle board halves together and then separate slightly to ensure there are no gaps on either side of the baffle board.
- 8. Push baffle board tight against the rear of the firebox.

## **A**WARNING

### **DO NOT USE THIS APPLIANCE WITHOUT A COMBUSTOR**

**WARNING:** "This wood heater contains a catalytic combustor, which needs periodic inspection and replacement for proper operation. It is against federal regulations to operate this wood heater in a manner inconsistent with operating instructions in this manual, or if the catalytic element is deactivated or removed."

It is important to periodically monitor the operation of the catalytic combustor to ensure that it is functioning properly. A non-functioning combustor will result in a loss of heating efficiency, and an increase in creosote and emissions. Following is a list of items that should be checked on a periodic basis:

• Combustors should be visually inspected at least three times during the heating season to determine if physical degradation has occurred(see "Catalyst Removal for Service" on page 26). Actual removal of the combustor is not recommended unless more detailed inspection is warranted because of decreased performance.

#### CATALYTIC COMBUSTOR, CLEANING

Under certain conditions, ash particles may become attached to the face of the combustor. These may be seen when the fire is out. Any deposit on the visible face of the combustor should be removed. Wait until the fire is out and the appliance is cold before performing any cleaning.

Brushing the combustor with a soft bristle paint brush will remove some deposits. Passing a vacuum cleaner wand or brush near the face of the combustor will remove most deposits. (Hot ash in a vacuum cleaner bag will burn, may melt the vacuum or cause a house fire. Exercise caution and never clean the appliance when the appliance or ashes are hot.)

Never scrape the combustor with any hard tool or brush. Never run pipe cleaner through the individual cells of the combustor. This is not needed, and may do more harm than good. Limit cleaning to the face of the combustor.

TIP: A hot fire will usually prove to be the best method of cleaning the combustor of deposits

### CATALYTIC COMBUSTOR, TROUBLESHOOTING

### NORMAL CATALYTIC COMBUSTOR CONDITION



### PROBLEM - CREOSOTE PLUGGING

Possible Cause: Burning materials that produce a lot of char and fly-ash

Solution: Do not burn materials such as garbage, gift wrap, or cardboard.

Possible Cause: Burning wet, pitchy woods or burning large loads of small diameter wood with the combustor in place without the thermocouple in the active zone. Solution: Burn dry, seasoned wood.

Possible Cause: Combustor not functioning. If proper burning procedures have been followed to no avail, the combustor is not functioning.

Solution: Replace the combustor with a new combustor from the manufacturer.

#### **PROBLEM - CATALYST MASKING**

(The catalyst is coated with a layer of fly-ash or soot which prevents catalytic activity)

Possible Cause: Accumulation of fly-ash

Solution: Brush cooled combustor with a soft-bristled brush or vacuum lightly at least once per burning season.

### **PROBLEM - MECHANICAL & THERMAL CRACKING**

Possible Cause: Mishandling, abuse.

Solution: Handle with care

Possible Cause: Distortion of holding bracket. Impact with chimney brush

Solution: Combustor should be held firmly in its place. It should slide easily into and out of the holding bracket of the stove. If severe cracking has resulted in loss of large chunks of combustor, replace combustor. Also replace any warped stove parts.

**Possible Cause:** Normal operation, as long as the combustor remains intact.

Solution: If cracking causes large pieces to fall out, replace the combustor.











### MECHANICAL & THERMAL CRACKING

#### DO NOT OPERATE WITH BAFFLE BOARD INSULATION , CATALYST OR TUBES REMOVED.

#### Removal

- 1. Lift the baffle board and rotate the retaining clip on the right side of the front baffle tube up then disengage the tab from the hole in the tube.
- 2. Slide the tube to the right to disengage the left end of the tube from the baffle airbox and remove the tube from the unit. Repeat the first two steps with the second baffle tube.
- 3. Grasp the front edge of the left half of the baffle board and tilt up at the back. Guide the board down and through the door opening.
- 4. Grasp the right half of the baffle board and slide it over to the left and tilt the back of the board up and guide it down and through the door opening.
- 5. Reach up then push the combustor up and out of the holding bracket, located at the back of the flame shield, until it is against the firebox top.
- 6. Slide the combustor towards the back of the unit and drop it down to remove it.
- 7. Reverse these steps to reinstall the combustor, the baffle boards and baffle tubes.

### Optional Blower -----

The optional blower kit (#31140001) is equipped with a three prong power cord and may be installed at any time. Route power supply cord away from heater.

Electrical rating: Blower - 115-120V, 60Hz, 0.5 amps. The blower operates at a speed of 80 CFM.

### **Blower Installation**

- 1. Remove the two screws and cover plate from the rear shield on the stove (Figure 17).
- 2. Place the blower into the opening in the rear shield with the blower outlet pointing up (Figure 18). Attach by using the screws provided with the Blower Kit,
- 3. Tighten the screws.

### **Blower Operation**

Proper blower speed matched with air control setting will ensure peak performance from your stove. Operate as follows:

• Except on "High" setting, wait 30 minutes before turning on blower to desired setting.

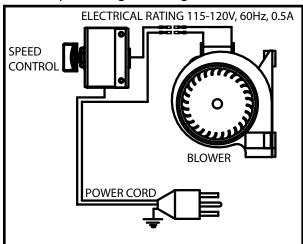
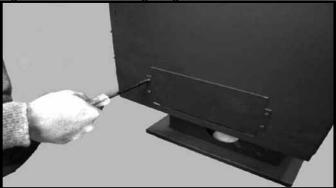


Figure 16: Blower Wiring Diagram.



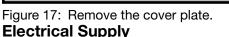




Figure 18: Installing the blower.

Electrical rating: A/C Adapter - 12V, 60Hz, 1.0 amps.

For your protection against shock hazard, use only a properly grounded outlet that will accept a threepronged plug. Do not cut or remove the grounding prong. Do not route power cord under unit. Power cord must be routed to avoid contact with any hot or sharp surfaces.

Consult local codes or, in the absence of local codes, with the current CSA C22.2 Canadian Electrical Code and in the USA with the National Electrical Code, ANSI/NFPA 70 (latest edition).

### **Firebrick Installation**

The package contains 20 full-size firebricks. With the stove in its final position, install the firebricks as follows:

- 1. Place the first brick up under the rear brick retainer (Figure 19) and slide it to either the far left or far right.
- 2. Place 3 more bricks up under the rear brick retainer to complete the rear brick placement (Figure 20).
- 3. Place the floor bricks as shown in Figure 21.





Figure 19: Firebox and brick rails.

Figure 20: Bricks against rear wall.

- 4. On both the right and left sides, place the first side wall brick under the brick retainer and on top of the floor bricks and slide it all the way to the back, so that it is up against the rear wall bricks.
- 5. Using the same method, place three more bricks along one of the side walls. Figure 22

## NOTE: TAKE CARE TO AVOID THE THERMOCOUPLE WHILE INSTALLING THE BRICKS ON THE RIGHT SIDE OF THE FIREBOX.

6. Repeat the side wall brick installation on the opposite side to complete the firebrick installation.

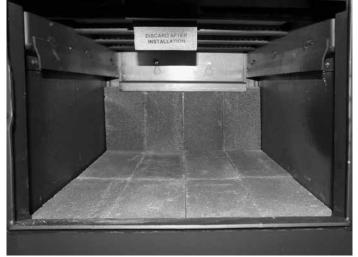


Figure 21: Floor bricks laying lengthwise.

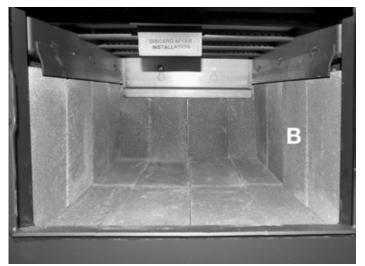


Figure 22: Remaining side wall bricks installation.

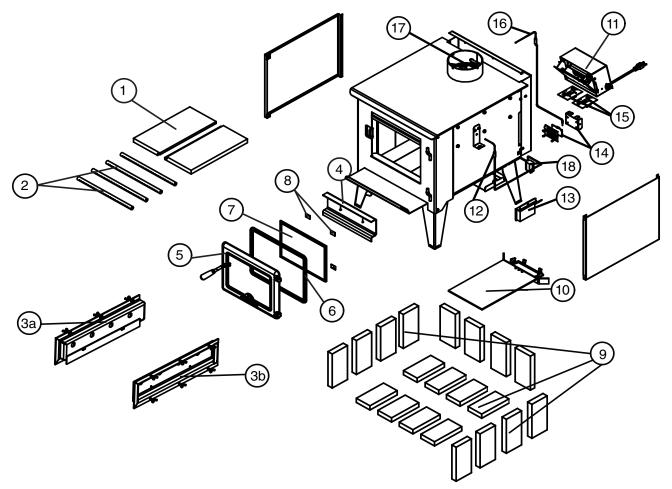
### Troubleshooting —

Problem	Cause	Cure		
Glass is Dirty	1. Wood is wet	- Use dry wood		
	2. Turning down air control or damper too soon	- Do not turn down until a) there is a good bed of coals b) the wood is charred		
	3. Draft too low	<ul> <li>Improper chimney height and / or diameter</li> <li>Chimney plugged or restricted, check flue</li> <li>Provide outside air for combustion</li> </ul>		
	4. Door gasket leakage	- Replace gasket - Check latch		
Excessive Creosote Buildup - See 1, 2, 3, above.				
Low Heat Output	<ol> <li>Wood is wet</li> <li>Fire too small</li> <li>Draft too low</li> </ol>	<ul> <li>Use dry wood</li> <li>Build a larger fire</li> <li>Chimney plugged or restricted, inspect and clean</li> </ul>		
Won't Burn Overnight	<ol> <li>Air control is set too high</li> <li>Not enough wood</li> <li>Draft too high</li> </ol>	<ul> <li>Set control lower</li> <li>Unsplit wood is preferred for overnight burns</li> <li>Excessive chimney height and/or diameter, See "Proper Draft" on page 10.</li> </ul>		
Stove Won't Burn	1. Combustion air supply blocked	<ul> <li>Check outside air supply for obstruction</li> <li>Check that room air cover is removed</li> </ul>		
	2. Draft too low	<ul> <li>Chimney plugged or restricted, inspect and clean</li> <li>Chimney oversized or otherwise unsuitable, Consult Dealer</li> </ul>		

### 

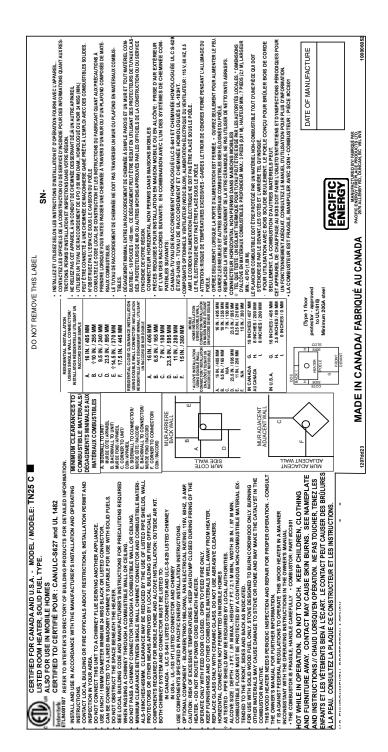
### (WHEN ORDERING, INCLUDE PART NUMBER WITH DESCRIPTION)

	DESCRIPTION	PART NO.
1	Baffle Board (2pcs.)	
2	Baffle Tube Set (4pcs.)	
3a	Baffle Air Box, Left (c/w gasket/screws)	
3b	Baffle Air Box, Right (c/w gasket/screws)	
3c	Baffle Air Box, Gasket with Screws (1 side)	
4	Rear Brick Rail	
5	Door Casting Assy - No Glass (c/w Handle)	
6	Door and Glass Gasket	
7	Replacement Glass (c/w clamps/gasket)	
8	4 pc Glass Clamp set (c/w screws)	
9	Firebrick Set 9" x 4 1/2" x 1 1/4" (20 pcs.)	80000620
10	Flame Shield Assembly, TN25C (c/w hardware)	
11	Optional Fan	
11a	Blower	
11a 11b	Fan Speed Control	
11c	Speed Control Knob	
12	Firebox Thermocouple	
	1	
13	Optional Battery Box assembly	
14	Control Board assembly	
15	Motor Control assemblies	
16	Flue Thermocouple	
17	Flue Protector(Thermocouple guard)	
18	Wall Adapter 12V	
19	Catalytic Combustor(not shown)	
20	Baffle Tube Retaining Clip(not shown)	80002850



### **Rating label location**

The Rating label is located on the lower portion of the rear cover.



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For technical support, please contact your retailer

Web site: www. truenorthstoves.com 2975 Allenby Rd., Duncan, BC V9L 6V8