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

## SAFETY NOTICE

Please read this entire manual before installation and use of this pellet fuel-burning room heater. Failure to follow these instructions could result in property damage, bodily injury or even death.



## INSTALLATION AND OPERATING INSTRUCTIONS



Contact your local building or fire officials regarding permits and any information on installation and inspection requirements in your area.

TESTED and LISTED to ASTM 1509-12, CAN/ULC S627 AND UL 1482-11





FREESTANDING WOOD PELLET STOVE



Visit www. truenorthstoves.com for the most up-to-date version of this manual

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### Introduction

### SAVE THIS INSTRUCTION MANUAL FOR FUTURE REFERENCE

This manual describes the installation and operation of the True North TN 40 Pellet Stove. PLEASE READ THIS ENTIRE OWNER'S MANUAL BEFORE INSTALLING OR OPERATING YOUR PELLET STOVE.

### Operation

For proper and safe operation, the Door, Ash Drawer and Hopper Lid must be kept closed to prevent air leaks when the unit is in operation. The Auger will not operate when they are open. Check all gaskets on the Door, Ash Pan and Hopper and replace when necessary.

### Cleaning

The unit and its venting will require routine Maintenance and Cleaning. There will be some build up of fly ash with small amounts of creosote in the exhaust. This will vary due to the ash content of the fuel used and the operation of the stove. Inspect the venting periodically during the heating season to determine if a creosote buildup has occurred. If a significant layer of creosote has accumulated,(3mm or more)it should be removed to reduce the risk of a chimney fire. Venting should be cleaned annually or every two tons of pellets used.

### Caution

The appliance, flue gas connector and the chimney flue require regular cleaning. Check them for blockage prior to re-lighting after a prolonged shut down period.

### **Smoke and CO Detectors**

Since there are always several potential sources of fire in any home, we recommend installing smoke detectors. We also recommend a CO detector be installed within the same room as the stove, this may be a requirements of your local fire code. Check with your local building/fire department for requirements in your area.

### **Optional Thermostat**

This stove can be operated manually or with an optional low voltage wall thermostat (not provided).

### **Electrical Generator Operation**

Your True North TN40 stove may be able to operate with power from a portable generator. However, the generator's electrical regulator may not be compatible with the stove's electronics. The higher the quality of the generator, (smoother the output sine wave) the greater the chance that it is compatible with the stove.

If you have any questions with regards to your stove or the information contained in this manual, please contact your local dealer for further clarification and comments.

To prevent the possibility of a fire, have the appliance installed by a professional. Ensure that the appliance is properly installed by adhering to the installation instructions. Your dealer will be happy to assist you in obtaining information with regards to your local building codes and installation restrictions.

It is strongly recommended that the stove be serviced annually by a trained professional.



## **Specifications**

### **Rating Label Location**

On the inside of the Hopper Lid.

### Listing information

Safety testing by Intertek Testing Services NA Ltd. to the following standards: ASTM 1509-12, ULC 627S, UL 1482-11.

### **EPA Specifications**

This heater meets the 2020 U.S. Environmental Protection agency's PM limits using Premium wood pellets.

EPA Certified Emissions: LHV Tested Efficiency (1): HHV Tested Efficiency (2): EPA Tested BTU output (3):	1.36 g/hr 78.9% 72.2% 7,400 to 28,200 BTU/hr.
Input:	Aprox. 10,000 Btu to 39,500 (Depending on fuel type)
Fuel:	Premium Wood Pellets

(1) Weighted Average Lower Heating Value (LHV) efficiency as tested using CSA B415 Performance testing of solid-fuel-burning heating appliances. LHV assumes the moisture is already in a vapour 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-fuel-burning 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 EPA tests

This wood pellet heater has a manufacturer-set minimum low burn that must not be altered. It is against federal regulations to alter this setting or otherwise operate this heater in a manner inconsistent with operating instructions in this manual.

### Electrical

120 volts, 60 Hz.5 Amps - Maximum.2.5 Amps - Normal operating.

The use of a surge protected power bar is recommended to ensure the stove's electrical components are not damaged due to a surge in the electrical supply or lightning strike.

Your True North TN40 Pellet stove may be able to operate with power from a portable generator. However, the generator's electrical regulator may not be compatible with the stove's electronics. The higher the quality of the generator, (smoother the output sine wave) the greater the chance that it is compatible with the stove.

## Warnings

### Caution

### Unit hot while in operation.

Parts of the appliance, especially the external surfaces, will be hot to touch when in operation. Keep children, clothing and furniture away. Contact may cause skin burns. Children and adults should be alerted to the hazards of high surface temperatures and should stay away to avoid burns or clothing ignition. Young children should be carefully supervised when they are in the same room as the Pellet stove.

### Flammable Liquids:

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

### Caution

Do not connect to any air distribution duct or system. Do not install a flue damper in the exhaust venting system of this unit. Do not connect this unit to a chimney flue serving another appliance.

### Warning

Never place furniture, wood, paper, drapes or other combustible materials within 48" (122cm) of the front of the unit, 6" (15cm) from each side, and 3" (8cm) from the back of the unit. Do not let children or pets touch it when it is hot.

### **Chimney or Run Away Vent Fire**

Call local fire department. Extinguish the fire in the burn pot liner with a cup of water and close the door. Examine the flue pipes, chimney, attic, and roof of the house, to see if any part has become hot enough to catch fire. If necessary, spray with fire extinguisher or water from the garden hose. IMPORTANT: Do not operate the stove again until you are certain the chimney and its lining have not been damaged.

### Glass

Do not abuse the glass by striking or slamming the door. Do not operate appliance with the glass front removed, cracked, or broken. The stove uses ceramic glass. Replacement of the glass should be done by a qualified service technician. Replacement glass must be purchased through a Pacific Energy Fireplace Products dealer. Do not attempt to open the door and clean the glass while the unit is in operation or if glass is hot.

## KEEP ASH PAN FREE OF RAW FUEL. DO NOT PLACE UNBURNED OR NEW PELLET FUEL IN ASH PAN. A FIRE IN THE ASH PAN MAY OCCUR.

Any grill, panel, or glass removed for service MUST be replaced prior to operating the stove. Failure to due so may allow contact with shock or fire hazards.

### Caution:

When operating during extreme weather, if the unit exhibits dramatic changes in combustion stop using the unit immediately.

### Warning

This appliance is equipped with a three-prong (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-prong, 120 volt, 60 Hz receptacle. Do not cut or remove the grounding prong from this plug. Do not route power cord under or in front of appliance. The power supply cord must be routed to avoid contact with any of the hot or sharp exterior surface areas of the stove.





## **Negative Pressure Warning**

This appliance has not been designed to be operated in a negatively pressurized room. Provide adequate air for combustion.

The stove's combustion system works with negative combustion chamber pressure and a slightly positive chimney pressure. It is very important to ensure that the exhaust system be sealed and airtight. The ash pan and viewing door must be locked securely for proper and safe operation of the pellet stove (See "Ash Pan Removal and Cleaning: (Leg or Pedestal models)" on page 13).

Do not burn with insufficient combustion air. A periodic check is recommended to ensure proper combustion air is admitted to the combustion chamber. Setting the proper combustion air (with the stove's damper) is required after installation. Minor adjustments can also be made on the controls.

The combustion air inlet for this stove is drawn through a pipe inside the rear of the stove. Air can be provided by the room the stove is installed in or by connection to outside of the house.

Room air: The room must be well ventilated - In well insulated/air tight homes, a lack of air for combustion can easily be caused by many common household appliances which exhaust air from the home (such as a furnace, heat pump, air conditioner, clothes dryer, exhaust fans, fireplaces, and other fuel burning appliances).

Outside air: A 2"(51mm) id. non-combustible flexible or rigid pipe can be attached between the stove's air intake and an outside duct to draw air from outside the house. This will greatly reduce the risk, but may not eliminate the problem.

Pacific Energy Fireplace Products Ltd. accepts no liability for damages resulting from negative pressures described here.

Outside Fresh Air is required for mobile home installations.

## Paint Curing

This stove has been painted with a high-temperature metallic paint. It is dry to the touch, but completes the curing process during the first few times the stove is burned on high. Also, some parts of the appliance may be lightly coated with machining oil. During the first firings, the paint and oil may give off unpleasant odors. Open the windows to ventilate the room.

### Pellet Fuel Specifications

This stove is designed and EPA certified to burn premium wood pellet fuel. Burning any other fuel that is not approved for use with this appliance will void the appliance warranty.

### Caution

It is important to select and use only fuel that is free of dirt or other impurities such as chemical binders or high salt content. "Dirty" fuel will adversely affect the operation and performance of the unit and will void the warranty. We recommend the use of pellets that meet or exceed the PFI standards. Ask your dealer for a recommended pellet type.

Store fuels at least 48" (1.2 m) away from the pellet stove.

### In The U.S.

• Burn only pellets that have been graded by an EPA approved organization. Pellet Fuels Institute, ENplus or CANplus are approved organizations.

Minimum Fuel Specifications; DENSITY: > 38lbs/cuft. DIMENSIONS: < 1.5 in. with a diameter of .230 to .285 INORGANIC FINES (Ash Content): <1% CHLORIDES: <300ppm by weight. ASH CONTENT: < 2% TRACE METALS: < 100mg/kg Contains no construction or demolition waste.

### In Canada

• Use premium grade pellets.

Max. feed rate is approx. 4.5 lbs/hour. \*\* Feed Rates can vary greatly depending on fuel type and quality \*\* Due to this, the stove may require adjustment to the damper and or the feed rate trim to achieve a satisfactory burn on low.

### Ash

The ash content of the fuel and operation of your stove will directly determine the frequency of cleaning. The use of high ash fuels may result in the stove needing to be cleaned daily. Pellets made from hardwoods generally produce more ash than those made from softwoods.

### Clinkering

[Clinkers are minerals, silica (sand) or other impurities in the fuel that will form a hard mass during the burning process]. If the Burn Pot Liner holes do become blocked, remove the liner (when the unit is cold) and clean/scrape the clinkers out. (See "Burn-Pot and Liner Cleaning" on page 12).

### **BTU Content**

BTU (heat value) content may range from just under 7,000 to almost 9,000 Btu/lb., depending upon species and region of the country and other variables.

The use of Cord wood is Prohibited. Do not burn garbage, rubber, plastics or flammable fluids such as gasoline, naphtha or engine oil.



### **Control Panel**

The following is a list of the control panel's features:

- 1. POWER light Is red during start-up, switching to green when the stove is at operating temperature. The light will change to orange during shutdown.
- 2. ON/OFF Button Is pushed to start the stove, and to turn the auger off and start the shut down sequence.
- 3. HEAT LEVEL Buttons The down arrow is pushed to reduce the heat output. It is also used to reduce the values of the "trim" settings. The up arrow is pushed to increase the heat output setting. It is also used to increase the values of the "trim" settings.
- 4. AUGER The Auger will operate continuously while this button is pressed. It is also used with the Heat level buttons to trim the auger ON time pulses when the pellet quality/size requires more or less fuel to burn properly.
- 5. MAN-HI/LO-AUTO Thermostat mode selector switch. The slide switch is used to select the desired thermostat mode. (See "Thermostat Operation" on page 10)
- 6. HEAT LEVEL INDICATORS Show what heat output setting the unit is on. Low or #1 (far left) and High or #5 (far right). Also used to show fault codes and trim settings.

### Fault Codes

If the stove shuts down unexpectedly, the following Heat Level indicator may be flashing.

- Fault code, #3 light flashing: Stove did not light / Fire went out / Stove went cold while in operation.
- Fault code, #4 light flashing: Hi limit switch is open / Stove over heated.

### See trouble shooting section for causes and solutions



Figure 1: Control panel.



### **Operation**

Note: when the stove is plugged into power for the first time the combustion blower will come on and run for 10 minutes, this is the same function as after a power failure.

### **Filling the Hopper**

The hopper can be accessed by lifting the top of the stove. The hopper will hold up to 80 pounds (36 Kg) of pellets. Check for any foreign objects in the hopper before filling with pellets.

### **Opening the Door**

Rotate the door handle clockwise to the horizontal position and slowly pull open. This will help prevent large amounts of ash from being sucked out as you open the door. To close the Door, reverse the steps.

### Before Lighting your stove

Check the holes in the Burn Pot Liner to make sure they are clear. Remove any ash/clinkers if needed. (See "Burn-Pot and Liner Cleaning" on page 12). Check to see that the Burn Pot Liner is seated correctly and pressed back against the Ignitor Tube for proper ignition and operation.

### **Lighting your Stove**

Note: If this is the first time the stove has been started or the stove has run out of pellets, the auger will be empty and the Burn-Pot liner will need to be primed. To prime, place a handful of pellets into the middle of the liner. Or hold down the Auger button, this will cause the auger to run continuously while the button is held. Release the button once pellets begin to drop.

Push the ON/OFF button, on the control board, This will turn the POWER indicator light red and will begin a 15 minute lighting sequence. During the lighting sequence, the auger will pre-load the Burn-Pot liner with pellets, the igniter will light the pellets and once lit, the auger will resume feeding pellets. Some smoke inside the firebox can be expected during light up. Once the ignition cycle is finished and the stove is lit, the POWER light will turn green. The stove will continue to burn at the desired level indicated by the HEAT LEVEL display.

Caution: Do not attempt to re-start the lighting sequence before it has run its course as the Burn-Pot will overload with pellets. If after 15 minutes the stove is not lit, the middle light of the HEAT LEVEL display will flash red. When cooled, safely empty the burn pot liner of any unburned pellets and re-start the stove.

WARNING: Never empty unburned pellets from the Burn-Pot into the pellet hopper. Pellets that appear to be cool may retain enough heat to ignite other pellets resulting in smoke or fire damage.

### **General Operation**

Use the HEAT LEVEL LOW and HIGH buttons to adjust the heat level to the desired setting.

Avoid over firing the stove - do not hand feed pellets to the appliance during operation.

Due to different sizes and quality of the fuel, the stove may require adjustment to the damper and or the feed rate trim to achieve an optimal burn on High or Low

### Turning the Unit OFF

Normal - To turn the stove off, press the ON/OFF button. The Power light will turn orange and the control panel lights will go out. The Auger will stop running but the fans will continue to operate until the exhaust temperature drops to a safe temperature and the control board completes the shut down cycle.



### **Operating Instructions**

### **Convection Blower Operation**

Your TN40 stove comes equipped with a room air convection blower that extracts heat from the stove. After the stove warms up, the fan will turn on automatically. The speed of the fan will automatically vary with the burn rate of the stove. The fan will continue to operate after the Auger shuts off, until the stove has cooled down.

### Auger Feed Trim

The controls allow you to adjust the Fuel Feed Trim slightly. [Factory setting is number 3]

- For low quality pellets where the unit goes out during long periods on the Low Heat setting, you can increase the amount of pellet feed across the whole heat range. Hold down the Auger button and the display will change to four lights on and one off, press the UP arrow for the Heat Output to increase the auger on time.

## WARNING THIS WILL INCREASE THE FEED RATE FOR THE COMPLETE RANGE - BE CAUTIOUS - DO NOT OVER FIRE THE UNIT

- To decrease the Auger feed on High energy pellets, (if the low heat is still to warm) decrease the fuel feed by holding down the Auger button and the display will change to four lights on and one off, then press the Down arrow for the Heat Output to reduce the auger on time across the complete heat range

### **Combustion Blower Trim.**

WARNING: THIS SHOULD ONLY BE USED AFTER THE DAMPER HAS BEEN ADJUSTED AS PER THIS MANUAL AND AS A LAST RESORT. This feature should only be used if the unit is getting too much or too little combustion air when on lowest heat settings due to a sudden change in pellet quality. By adjusting the Combustion Blower Voltage you will effect the lowest four heat output combustion blower settings. To adjust hold down the hidden button under the TH in "True North" on the controls and use the Heat Level buttons to adjust up or down the same way as the Auger Feed Trim. The factory setting is position number 3.

### **Normal Operating Sounds**

As the True North TN40 stove is burning, a number of normal operational sounds may be heard. When the blowers come on, the sound of rushing air can be heard as well as some small creaks. The lower the burn rate the slower the fan operates. Pellets can be heard dropping into the Burn-Pot. Also, the motor turning the auger may be heard as it pulses on and off. Occasionally a cracking noise might be heard as the auger cuts a pellet in half.

### **Power Outage**

If the stove loses electrical power and it is still hot when power returns, the stove will go into a start-up sequence and will continue to operate. If the power loss is long enough for the stove to cool, the exhaust blower will run for 10 minutes to purge any smoke. If the stove is connected to a thermostat in the "Auto mode", the stove will not start the ignition sequence until the thermostat calls for heat again.

### Thermostat Operation (Optional)

Once installed, the thermostat can control the operation of the stove. Use a low voltage/millivolt thermostat. (See "Optional Thermostat Installation" on page 28) for installation instructions.

Important: When connected to a thermostat, it is necessary to push the ON/OFF button for the initial burn, when the electrical power to the stove is interrupted, or if the stove runs out of pellets and therefore shuts off with a fault code.

#### Manual Mode

After the stove is burning (See "Before Lighting your stove" on page 9), the heat level setting controls the pellet feed rate and the stove's heat output. Once set, the stove will continue to burn at this rate until the heat level is changed or the stove is shut off.

### • HI/LO Mode

After the initial ignition sequence, when the thermostat calls for heat (the room temperature is less than the temperature set on the thermostat), the stove will burn at the heat level setting. The higher the setting, the quicker the room will heat up. Once the thermostat no longer calls for heat (the room is up to the desired temperature), the stove will drop down to burn at the lowest HEAT LEVEL setting. This cycle will continue until the stove is turned off or runs out of fuel.

### AUTO Mode

When the thermostat calls for heat (the room temperature is less than the temperature set on the thermostat), the stove will burn at the heat level setting. The higher the setting, the quicker the room will heat up. Once the thermostat no longer calls for heat (the room is up to the desired temperature), the stove will drop down to burn at the lowest HEAT LEVEL setting. The stove will continue to burn for 45 minutes at the lowest setting. If the thermostat does not call for heat again during that time, the stove will shut off. It will relight when the thermostat calls for heat. If, during that 45 min., the thermostat calls for heat again, the stove will again burn at the HEAT LEVEL setting until the thermostat no longer calls for heat.

### Damper Adjustment

The Damper is used along with the Combustion Blower control to regulate air flow through the stove.

# THE DAMPER MUST BE SET AFTER INSTALLATION, DURING THE FIRST FIRING. This procedure should be done by a Qualified Installer or Service Technician. (See "Setting the Damper" on page 27)

Because of the differences in pellet quality, the Damper may need to be adjusted from time to time. If the stove goes out continually on low, the unit may need to have the damper closed slightly for reduced airflow at the lower heat settings. If the stove continually builds up with ash/clinkers in the liner the damper may need to be opened slightly for more airflow through the liner.



## **Routine Checks and Maintenance**

Inspection /cleaning	weekly	monthly	yearly	
Ash Pan - Pedestal	X			or Every 30 bags of fuel burned
Ash Pan - Leg Model	X			or Every 15 bags of fuel burned
Burn-Pot	X			or Every 5 bags of fuel burned
Burn-Pot Liner	X			Daily - depending on fuel quality
Blower - Convection			X	or more frequently if pets present
Blower - Exhaust			X	or more frequently depending on fuel quality
Firebox		Х		or more frequently depending on fuel quality
Venting system			X	more frequently depending on fuel quality
Glass	X			or if viewing area becomes completely obstructed
Door Seals/Gaskets		Х		Replace if damaged

## CAUTION: INSTALLATION AND REPAIR SHOULD ONLY BE PERFORMED BY A QUALIFIED SERVICE TECHNICIAN. DO NOT ATTEMPT TO SERVICE THE APPLIANCE YOURSELF.

### IMPORTANT CAUTIONS:

## SHUT DOWN THE STOVE, UNPLUG THE POWER CORD AND ENSURE THE APPLIANCE IS COLD BEFORE PERFORMING ANY MAINTENANCE WORK.

- Some brands of pellets produce more ash and clinkers than others. Therefore the frequency of performing the following cleaning procedures depends to a great degree on the type of pellets burned.
- Not cleaning this unit will cause it to burn poorly and may void your warranty.
- A cleaning brush can be used to loosen any ash build-up before vacuuming.

### CAUTION: \*\*\*DO NOT USE A STANDARD HOUSEHOLD VACUUM, USE AN ASH OR SHOP VACUUM. A FINE DUST FILTER MUST BE INSTALLED IN THE SHOP VACUUM, AS THE STANDARD FILTERS WILL LEAK THE FINE PARTICLES OF ASH INTO THE HOME. DEPENDING ON THE SYSTEM, USE CAUTION AS SOME DUST MAY STILL PASS THROUGH THE VACUUM.\*\*\* \*\*\*DO NOT VACUUM HOT ASH!\*\*\*

• Using a drop cloth is recommended as some ash may spill onto the floor during the cleaning process.

### Soot

Operation of the stove with insufficient combustion air will result in the formation of soot and/or creosote which will collect on the glass, the heat exchanger, the exhaust vent system, and may stain the outside of the house. Frequently check your stove and adjust as needed to ensure proper combustion (See "Setting the Damper" on page 27).

### **Burn-Pot and Liner Cleaning**

The Burn-Pot Liner has a number of holes in the bottom and sides that provide combustion air to the pellets. The extreme temperatures in the Burn-Pot can cause the impurities in the pellets to form clinkers. The liner should be inspected daily to ensure the holes are clear of any build up.

The Burn-Pot should be checked/cleaned out after burning about 5 - 10 bags of pellets. When the stove is cool, open the door then lift up on the Burn Pot Liner to remove. Using a suitable vacuum

TNORTH TN40

### **Operating Instructions**

clean out the Burn Pot. Or remove the Burn Pot by loosening the nuts on the bottom corners of the Burn Pot and sliding the Pot towards the back. Lift up at the front of the pot pull it towards the front of the firebox to remove it from the tubes. Empty the ash from the Burn-Pot and Liner. Scrape the bottom of the pot with a scraper to remove all ash and clinkers from these surfaces if needed.

Make sure all the holes in the Burn Pot Liner are open. Clean/scrape any hard clinkers out. Clean the holes with a small pointed object if required

Reinstall the Burn-Pot into the stove by reversing the removal procedure. Then place the Burn-Pot Liner back into the Burn-Pot, ensuring that the Ignitor hole is towards the back of the stove. Push the Burn Pot Liner back in the Burn Pot against the ignitor tube to create a seal for the ignitor. Tighten Burn Pot mounting screws if required.

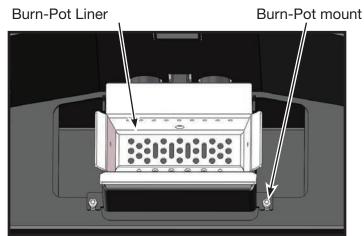




Figure 2: TN40 Burn Pot Mount.

Figure 3: Leg Ash drawer open.

### **Cleaning Glass**

CAUTION: Do not clean glass when hot. Do not open the front door when the stove is hot.

Open the Door and clean the glass using a soft cloth or paper towel and household non-abrasive glass cleaner or wood stove window cleaner. **DO NOT use abrasive cleaners.** 

### Ash Pan Removal and Cleaning: (Leg or Pedestal models)

CAUTION: Do not remove the ash pan when the stove is operating or hot.

To remove the Ash Pan, Rotate the latch counter-clockwise to release the ash pan. Pull the Ash Pan up then out from the stove. Safely dispose of ashes or Vacuum out the Ash Pan enclosure before inserting the Ash Pan.

CAUTION: Disposal of Ashes - Ashes should be placed in a metal container with a tight fitting lid. The closed container should be placed on a non-combustible surface – 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 the closed container until all cinders have been thoroughly cooled.

To close, push the Ash Pan in until the bottom catches and drops down. Make sure the Ash Pan is tight to the face of the Ash Pan enclosure, then tighten the Latch.

WARNING: if the ash pan does not seal tightly to the stove, the stove can produce excess smoke and emissions. Creosote may also form that will cover the inside of the unit and be expelled out of the venting. If the Ash pan is left open enough the Firebox Vacuum Switch will open stopping the auger and the stove will shut down.





### **Operating Instructions**

### **Inspect Gaskets**

Inspect the condition of the gaskets around the door, window and ash pan, periodically. If the gasket becomes loose or falls off, is excessively frayed or has a gap in it, replace as necessary. Inspect the die-cut gaskets on the blowers when cleaning and replace if they become torn or damaged.

### **Cabinet Side Removal**

Loosen or Remove the two screws holding the back of the Cabinet Side to the chassis. Push the panel forward to disengage the screws at the front. Installation is the reverse.

### **Cleaning the Flue Gas Passages**

Cleaning the flue gas passage should be done at least once a year or every one to two tons of pellets used.(50-100 bags) Burning high ash pellets may require this cleaning to be done more often. Clean this passage only when the stove and ash are cold.

### **Cleaning the Firebox Passage**

Remove the Burn-Pot and Liner as described in (See "Burn-Pot and Liner Cleaning" on page 12), and use an Ash Vacuum to remove the loose ash from the firebox.

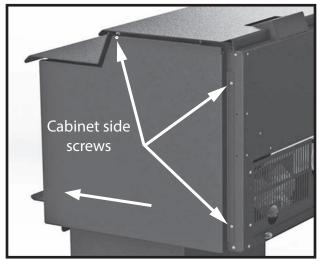


Figure 4: Side shield removal.

- Remove the Upper Firebox Liner by pulling it forward. It will then drop down and can be pulled out through the door opening
- Using penetrating oil and a ratchet with a 5/16" socket, remove a total of five screws securing both sides of the Firebox Liner to the firebox (Figure 5).

Using a 3/8" socket, remove the two screws securing the center firebox liner section and remove from firebox (Figure 6).

Using an ash vacuum, clean out all the ash in the exhaust passages (Figure 7).

Don't forget to clean up around the heat exchanger by using the vacuum on the openings above the door opening. Once the passage is clear of ash build-up, reinstall the Firebox Liners.

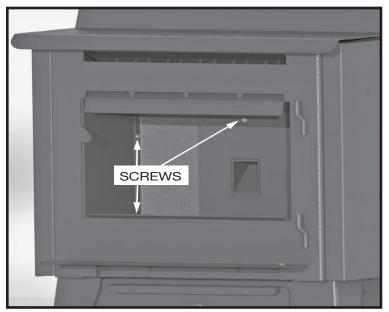


Figure 5: Firebox Liner removal.

TN40 TRUE

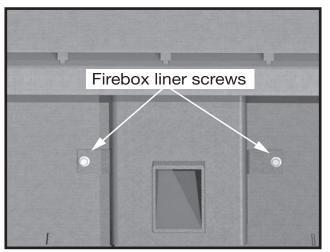


Figure 6: Internal rear liner removal.

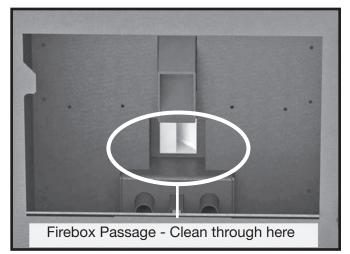


Figure 7: firebox passage cleaning.

## Pacific Energy Fireplace Products recommends having your stove inspected and cleaned by a trained professional.

### **Cleaning the Vent Pipe**

Soot and Fly-ash – Formation and Need for Removal: The products of combustion will contain small particles of fly-ash and/or soot. The Fly-ash and/or soot will collect in the exhaust venting system and restrict the flow of the flue gases. The exhaust venting system should be inspected at least once every year to determine if cleaning is necessary. Sweep the pipe as needed. A tee and clean-out in the vent system at the transition from horizontal to vertical will make this cleaning easier.

### **Cleaning the Exhaust/Combustion Blower**

To clean the combustion blower, unplug the stove, remove the left cabinet side. Remove the four screws (Figure 8) with a Phillips screwdriver. The motor can now be pulled from the fan housing. The blower cooling fan and main blade can be vacuumed once the motor is removed. Before reinstalling, vacuum out the blower housing and the flue gas passages leading to and from the combustion blower. Clean the inner surface of the Proof of Fire Switch located on the combustion fan housing. When reinstalling the motor, check the gasket between the motor and the fan housing, a new gasket may need to be installed if damaged. Place the motor back on the fan housing (motor down) and rotate clockwise to lock the flange, tighten the four screws with a Phillips screwdriver.

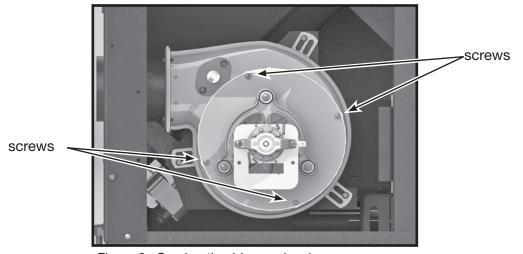


Figure 8: Combustion blower cleaning.

### **Operating Instructions**

### **Cleaning the Convection Blower**

To clean the convection blower, remove the four screws securing the cover on the back of the pedestal base or the Ash box(leg model) and set the cover aside (Figure 9). Disconnect the stove power cord from the electrical outlet.

Using a 5/16" socket, remove the four screws (Figure 10) securing the blower to the pedestal A vacuum can be used to remove any dust accumulation on the blower's blades or inside the blower ducts. Caution should be used not to damage the blower's blades during cleaning. Reverse this process to reinstall the blower.

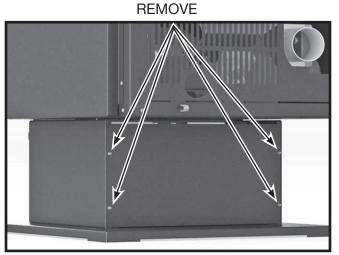


Figure 9: Pedestal cover removal.

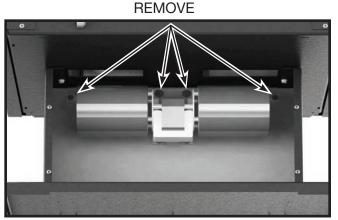


Figure 10: Convection blower removal.

### Door Removal

CAUTION: Do not open the Firebox door when the stove is hot or operating.

To remove the door, rotate the door handle clockwise to release, and swing the door open. Lift the door up and off the hinges. To reinstall the door, repeat the steps in reverse order.

### **Back Grill Removal**

To remove the back grill, loosen the three screws securing the grill to the chassis. The back can now be pulled up and off of the stove. Installation is the reverse.



## Basic Troubleshooting -

PROBLEM	CAUSE	SOLUTION
Stove won't turn ON (No lights or fan noise after 30sec.)	No Power to stove	Check power cord is plugged in. Check household Circuit Breaker
	High Limit switch faulty or tripped	Contact dealer/Service
Pellets won't drop in to	Hopper Empty	Check Hopper fuel level
Burn Pot Liner	Hopper lid open	Close lid
	Sawdust/pellets plugging auger	Remove sawdust/pellets from Auger system.
	Hopper lid switch damaged	Contact Dealer/Service
	Vacuum switch/lines plugged or damaged	Check switch and vacuum hose for damage or kinks.
	Combustion Blowerblocked or damaged	Check/Clean venting system.
	Auger Motor fuse blown	Check motor for visible signs of a short , if OK, replace fuse (See wiring diagram)
Pellets won't light after 8-10 min.	Burn Pot/Burn Pot Liner not installed correctly	Ensure Burn Pot and Liner is installed properly. See, "Burn Pot and Liner Cleaning" section
	Igniter hole in Burn Pot Liner restricted or plugged	Clean Liner holes and igniter tube.
	Igniter fuse blown	Check Igniter Fuse –if blown, check igniter for visible damage (See wiring diagram. page 26)
	Igniter faulty	Contact Dealer/Service
Stove turns off while operating (Fault Code 3 -	Fire went out or fire too cold	See "Stove won't turn ON, Pellets won't drop" Low grade fuel - Trim auger feed to get more heat. (See "Operation" on page 3)
see page 8)		Check firebox vacuum levels. Adjust if needed. (See "Setting the Damper" on page 27)
		See"Pellets won't drop in to Burn Pot Liner" Check venting for ash build-up. Clean venting as required.

Stove won't turn off after ExhaustTemp.Switchdirtyordamaged Contact Dealer/Service Shutdown period

(unit may take up to 20 min to cool, depending on operating temp. at time of shutdown.)

## Stove Dimensions

Weight - 325 pounds (147 Kg.)

Hopper Capacity - up to 80 pounds (36 Kg.) Results will vary based on fuel density.

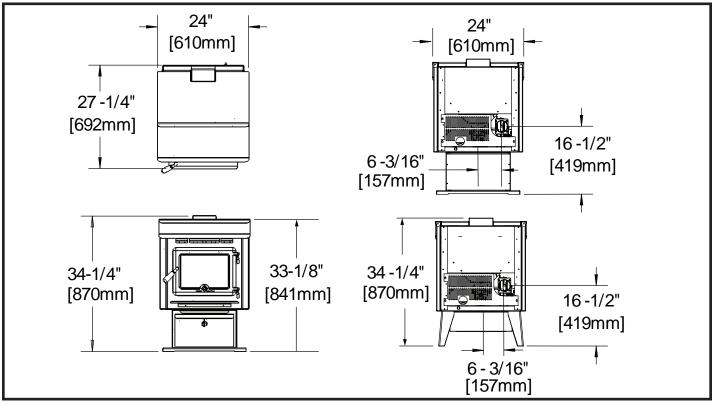


Figure 11: TN40 Dimensions.

### Installation

### Before you begin

Please read and carefully follow all of the installation and operating instructions found in this manual. Please pay special attention to the safety instructions provided in this manual.

It is recommended that you have this appliance installed by a W.E.T.T or N.F.I. qualified installer.

Contact your local building or fire official to obtain a permit and any information on installation restrictions and inspection requirements for your area. Check all local building and safety codes before installation. The installation instructions and appropriate code requirements must be followed exactly and without compromise. Familiarity with these requirements before installation is essential.

Failure to follow these instructions will void the manufacturers warranty. Alterations to the stove are not allowed.

### Installation Options

- Residential or Manufactured/Mobile Home
- Maximum 36" deep Alcove
- Vertical and Horizontal Vent (See "Venting" on page 24).
- Thermostat or manual operation
- Outside Air Compatible

#### Selecting a Location

Be sure to maintain the structural integrity of your home when passing a vent through walls, ceilings, or roofs, and all construction meets local building codes. It is recommended that the unit be secured into its position in order to avoid any displacement. This appliance must be installed on a floor with an adequate load bearing capacity, if existing construction doesn't meet load capacity, suitable measures (e.g. load distributing plate) must be taken to achieve it.

Due to high temperatures, the stove should be located out of traffic areas and away from furniture and draperies.

The layout of your house and the location of the Pellet Stove will determine how efficient it is at heating the intended area. Pellet Stoves use mainly air circulation to disperse their heat, therefore a central location with good airflow works best. Try to locate the heater in the area you want heated.

### Consider the following things when selecting a location:

- Use of an existing approved Chimney
- Location of Vent Termination
- Aesthetic Considerations
- Interference with House Framing, Plumbing and Wiring
- Floor Protection
- Room Traffic Patterns
- Proximity to Combustibles
- Location of Air for Combustion
- Electrical Outlet
- Pellet Fuel Storage

#### Caution:

DO NOT CONNECT TO OR USE IN CONJUNCTION WITH ANY AIR DISTRIBUTION DUCT WORK. THIS UNIT IS NOT APPROVED FOR SUCH INSTALLATIONS.



## Ember Protection

The appliance must be installed on a non-combustible ember protector extending the full width and depth under the heater (including the vent pipe), and must extend an additional 6" (152mm) beyond the front and beyond each side of the Firebox <u>Viewing Door</u> and <u>Ash Pan openings</u>.

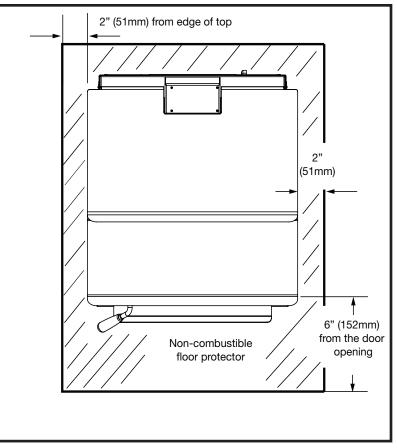


Figure 12: TN40 Hearth Protection.

## Outside Air

Connecting the True North TN40 stove to outside combustion air is optional, except in mobile home installations and when required by local building codes. The stove's internal air intake will accept 2"(51mm) ID non combustible pipe to accommodate outside air installations. The air intake on the exterior of the home should always be located substantially below the flue termination and terminate with a screen cover to keep out weather and pests.

Outside air can be taken from a well ventilated crawl space. However, outside air must not be drawn from an enclosed space (garage, unventilated crawl space).

Maximum recommended length is 10ft. (3m). If a longer run is needed increase the intake supply tube to 3" (75mm)

TN40 TRUE NORTH

**Clearances to Combustibles** 

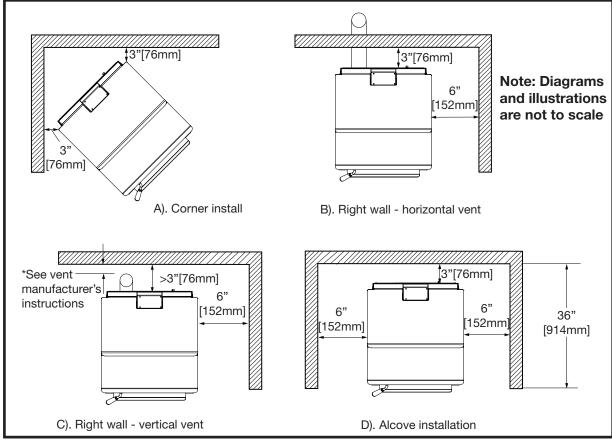
#### Clearances

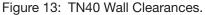
Front 48" (1.2m) Side 6" (152mm) from edge of top Back 3" (76mm) from back of hopper

The center of the flue is 16-1/2" (419mm) above the surface upon which the stove rests.

### IMPORTANT: INSTALL VENT AT CLEARANCES SPECIFIED BY THE VENT MANUFACTURER.

- Minimum clearances specified may not allow for ease of operation and maintenance (please take this in to account when planning the installation). If installed to the minimum clearances, removal of the appliance may be necessary for servicing.
- Recommended clearance zone from the front of the appliance to combustibles is 4 feet(1.2m) minimum.





### **Corner Installations**

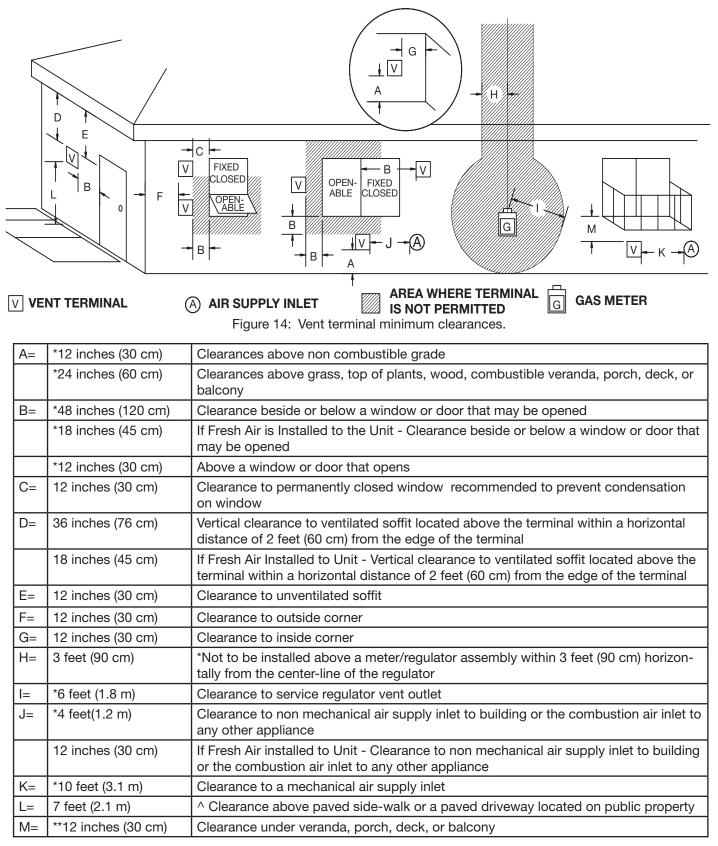
Refer to (Figure 13) for minimum clearances.

### Alcove Installations

Minimum alcove height is 7 ft. (2.13 m), minimum width is 36 in. (92 cm) and maximum depth is 36 in. (92 cm), (Figure 13).

Note: it will be difficult to service the unit when installed in a 36 in(92cm) wide alcove and may require the unit to be removed for servicing. Please allow as much area on either side of the unit as possible for ease of service.

## Vent Terminal Minimum Clearances



^ a vent shall not terminate directly above a side-walk or paved driveway which is located between two single family dwellings and serves both dwellings\*

\*\* only permitted if veranda, porch, deck, or balcony is fully open on a minimum of 2 sides beneath the floor\*

\* Note: local Codes or Regulation may require different clearances

TN40 NORTH

TN40 TRUE

## Vent Termination Requirement

- 1. Do not terminate the vent in any enclosed or semi-enclosed areas such as a carport, garage, attic, crawl space, narrow walkway, closely fenced area, under an enclosed sun deck or porch, or any location that can build up a concentration of fumes such as stairwells, covered breezeway, etc.
- Termination must exhaust above the inlet elevation. It is recommended that a minimum of 5 feet of vertical pipe be installed in the vent system. This will create a natural draft to prevent the possibility of smoke or odor during appliance shut down or power failure and avoid exposing people or landscaping shrubs to high temperatures.
- 3. Vent surfaces can become hot enough to cause burns if touched. Non-combustible shielding or guards may be required if exposed vent is located in high traffic areas.
- 4. The Vent must terminate a minimum of 12 inches (30 cm) from the wall. Vertical termination must protrude a minimum of 24" (60 cm) from the roof surface.
- 5. Locate the vent termination at least two feet away from combustible materials such as shrubs, plants, grass, fences, roof overhangs and adjacent buildings.

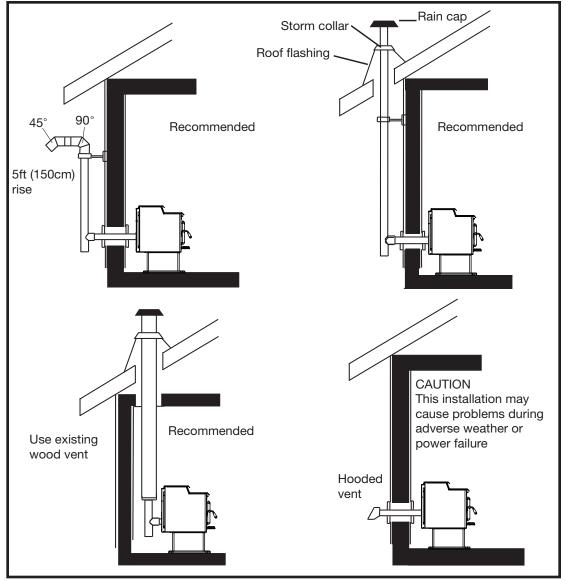


Figure 15: TN40 Vent installed into wood stove pipe.

## - Venting

## FOLLOW THE VENT MANUFACTURERS INSTALLATION GUIDELINES. INSTALL VENT AT CLEARANCES SPECIFIED BY THE VENT MANUFACTURER.

This heater is approved for venting with any 3"(76mm) or 4"(102mm) Type PL and Type L pellet vent pipe listed to UL 641 and ULC S609. Stainless Steel Single wall pipe can ONLY be used as a liner inside a masonry or approved wood burning chimney system on this pellet stove. The stove's starter flue collar is 3" in outside diameter.

The vent pipe can be installed vertically or horizontally (see Venting section for recommended installations). Note: When installing this stove at altitudes over 4000 feet, we suggest the use of 4"(102mm) pellet vent.

The stove's combustion blower pressurizes and pushes flue gases out the vent pipe. The vent pipe should be siliconed and fastened with three screws to the stove's starter pipe. If the pipe does not have a locking system then all pipe joints should be screwed together with three screws. If required, seal all joints externally with high temperature silicone or aluminium tape.

An approved wall thimble or approved ceiling firestop must be used when the pellet pipe passes through a combustible wall or ceiling. Where the vent pipe may pass through a wall, or partition of combustible materials, the installation shall conform to CAN/CSA-B365, as well as any local/regional codes. When installing the wall thimble and other venting components, follow the vent manufacturers instructions. Maintain an effective vapor barrier at the location where the chimney or other component penetrates to the exterior of the structure.

The longer the run of pipe and the more elbows used, the greater the resistance to the flow of flue gases. 4 inch diameter pellet pipe is recommended for horizontal runs greater than 10 feet (3 m) or when more than 3 elbows are used.

To aid in cleaning, whenever possible, the venting system should include a tee with clean out at the transition from horizontal to vertical.

### DO NOT INSTALL A FLUE DAMPER IN THE EXHAUST VENTING SYSTEM OF THIS UNIT.

### DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.

Horizontal installations that terminate without any vertical sections of pipe are approved; however, it is recommended that a minimum of 5 ft.(1.5m) of vertical be included in the vent system. Having a vertical section in the venting will help prevent smoke from exiting the appliance during power failures.

Wind may direct flue gases back towards the vent and the house, causing operation and/or discoloring problems. For this reason, - vertical through the eaves - installations are ideal.

The chimney may incorporate an offset. Follow the pellet venting manufacturer's instructions. The chimney must be suitably supported by the chimney manufacturer's listed offset support.

### Venting into a Wood Stove Pipe

Your pellet stove can be vented into existing 6"(152mm) inside diameter approved wood stove pipe using approved adapter.



### Installing into a Masonry Chimney

When venting into a masonry chimney, use an approved

3"(76mm) or 4"(102mm) Stainless Steel Liner Kit all the way up the chimney. Use a top plate at the top of the chimney and a rain cap on the flue pipe as per liner kit manufacturer's instructions.

A "Chimney connector" shall not pass through an attic or roof space, closet or similar concealed space, a floor, or ceiling. Where passage through a wall or partition of combustible construction is desired, the installation shall conform to CAN/CSA-B365, Installation code for Solid-Fuel Burning Appliances and Equipment

### **Mobile Home Installations**

The following additional items are required to install your stove in mobile homes:

- 1. Connecting the stove to outside combustion air is required (See "Outside Air" on page 20).
- 2. The stove must be fastened to the steel frame of the mobile home, using lag screws. The screws can be inserted through the holes in the pedestal or legs (Figure 16).
- 3. The stove must be electrically grounded with a #8 (0.128" dia.) or larger copper wire to the steel chassis of the Mobile Home. This is in addition to the power cord ground.



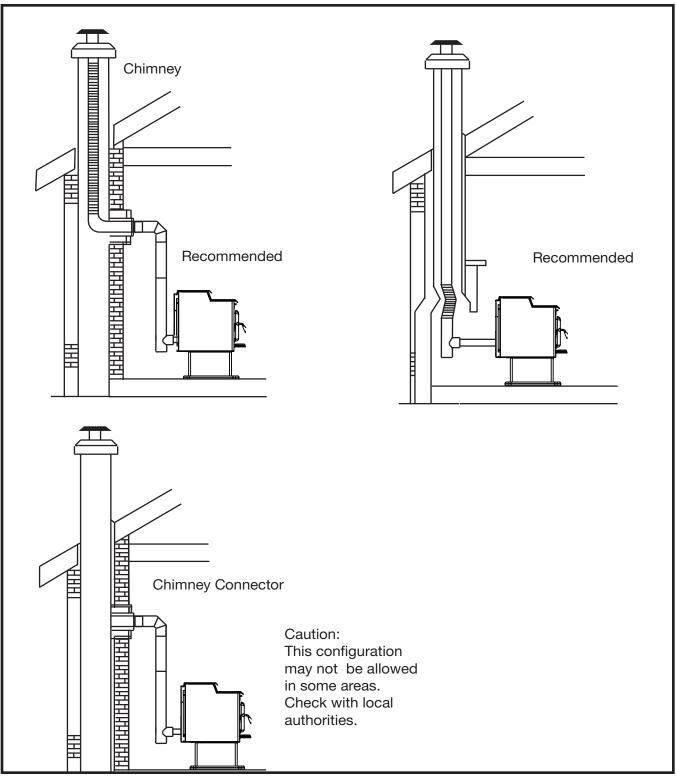
Figure 16: Anchor tabs for mobile homes.

It is important that you use all specified components.

### WARNING: DO NOT INSTALL THIS STOVE IN A SLEEPING ROOM IN A MANUFACTURED HOME.

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







## Setting the Damper

The stove's damper will need to be set after installation, during the initial burn in. This will optimize the stoves performance and reduce emissions based on the installation. This should be done with a low pressure digital vacuum gauge or magnehelic.

Install the gauge using a sealed 1/8" metal probe into the port located above or to the side of the ash pan door.

Remove the left side panel (See "Inspect Gaskets" on page 14). Find the damper, located against the back of the Air Jacket.

## After the unit has been running on high for 15-20 min. adjust the damper slider to achieve a reading of 0.10-0.11n.w.c.

To increase the vacuum in the firebox, pull the damper out towards the outside of the stove See"Figure 18: TN40 Damper." and push it in to reduce the vacuum.

Reinstall the left side shield.

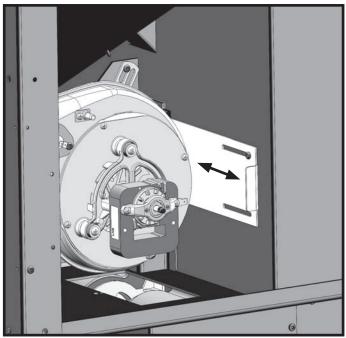


Figure 18: TN40 Damper.

## Optional Thermostat Installation

Your Pellet Stove can be operated manually or by a thermostat. The stove comes from the factory in the manual mode. To operate in the two "Thermostat" modes a low voltage thermostat must be installed.

To install the thermostat:

- 1. Unplug the stove from the electrical outlet. Open the right cabinet side (See "Inspect Gaskets" on page 14) and remove the 2 screws holding the main board to the side of the hopper (Figure 19).
- Locate the double screw terminal wiring block at the top of the board (Figure 20), loosen the two screws on the block. Insert one of the wires from the thermostat into one of the slots and tighten the screw. Repeat this process for the other thermostat wire.

(See "Thermostat Operation (Optional)" on page 11) for thermostat operation modes.

IMPORTANT NOTE: Follow the Thermostat manufacturers installation and set-up instructions. Failure to follow manufacturers instructions could result in a malfunction. Pay special attention to the thermostat location requirements. If the location requirements are not followed, the appliance may operate erratically or failure may occur.

Do not mount the thermostat where it may be affected by:

- Radiant heat from the stove, sun or other heat sources.
- Drafts or dead spots behind doors or in corners.
- Hot or cold air from ducts.



Figure 19: Main board location.

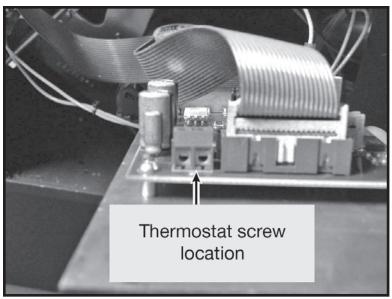
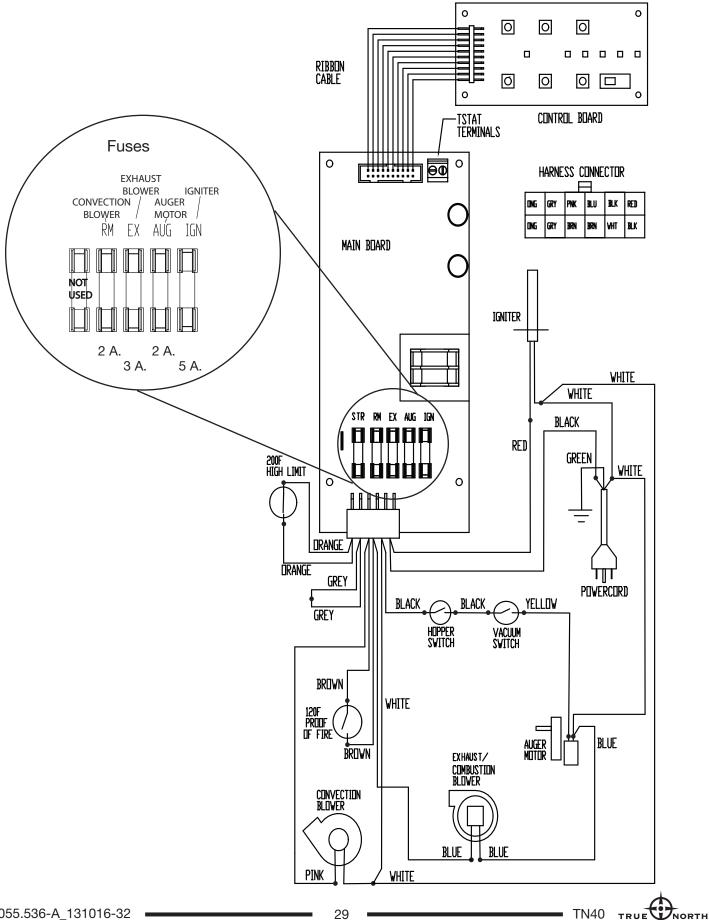


Figure 20: Thermostat screw location.

## - Wiring Diagram



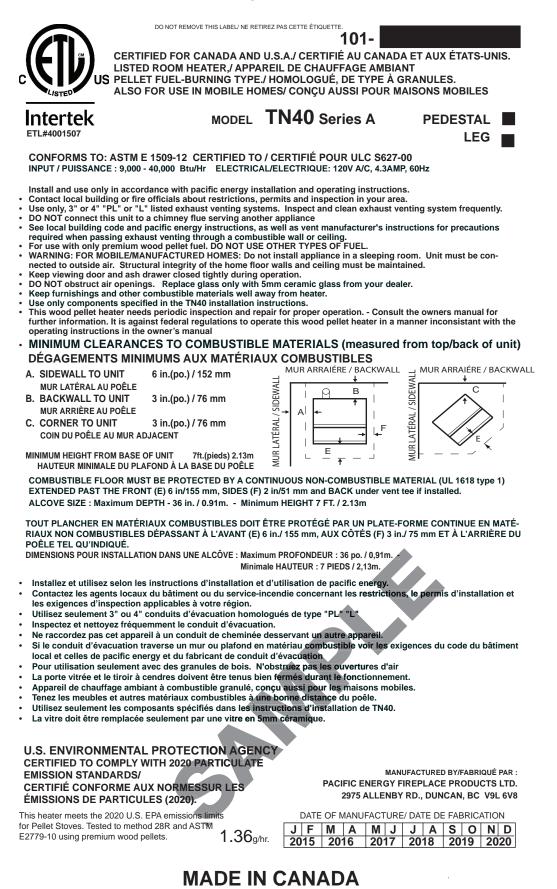
## Components List

### QTY. PART NUMBER

### DESCRIPTION

1	TN40.BRKA	DOOR
1	TN40.RP752550	BURN-POT
1	TN40.RP752525	BURN-POT LINER
1	TN40.RP752533	PEDESTAL ASH DRAWER
1	TN40.RP752530	PEDESTAL BASE
1	TN40.RP752554	LEG ASH DRAWER
1	TN40.RP752557	LEG ASH/BLOWER BOX
1	TN40.RP752539	SIDE PANEL, RHS
1	TN40.RP752528	SIDE PANEL, LHS
1	TN40.RP5027171	120 F - N/O Temp Switch, Proof of Fire
1	TN40.RP5024503	COMBUSTION BLOWER - SIT
1	TN40.RP2095	1/8" x 1/2" FIBERGLASS ROPE W PSA
1	TN40.RP752540	
1	TN40.RP752563	CONTROL PANEL - FS
1	TN40.RP752544	KEYPAD DAUGHTER CARD
1	TN40.RP752564	BACK GRILL
1	TN40.RP752524	
1	TN40.RP5001001	AUGER ASSEMBLY
1	TN40.RP752549	INLET AIR ASSEMBLY
1	TN40.RP5001004	
1	TN40.RP5027173	PELLET VACUUM SWITCH
1	TN40.RP5001003	1 RPM AUGER MOTOR
1	PERP.5028	POWER CORD
1	TN40.RP752552	
1	TN40.RP752548	UPPER FIREBOX LINER
1	TN40.RP5027172	200 F - N/C MANUAL RESET, HI Limit
1	TN40.RP5027175	HOPPER SWITCH
1	TN40.RP7609	DOOR ROPE GASKET KIT
1	TN40.RP502451	CIRCULATION BLOWER

### **Rating Label**



5050.820-A

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