OWNERS MANUAL

Models # 30 - 30 - 3000, 36 - 42 - 4500, 36 - 42,- 6000, 48 - 54 - 11000

(REVISED December 23, 2025)

Note: In an effort to provide our customers with the best product and experience available, Northern Stoker reserves the right to update and modify the contents of this Owners Manual and Furnaces at anytime as deemed necessary.

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Introduction

Models: 30-30- 3000,
36-42-4500, 36-42-6000
48-54- 11000

Hello Customer,

Congratulations! You have purchased a Northern Stoker Outdoor Furnace. We have fulfilled our commitment to you. We have built an efficient, super heavy duty, attractive furnace. It is now your job to ensure that it works as it was intended to work.

When you purchased your Northern Stoker, you took control of your home comfort level and heating costs.

However, in taking control of your heating and home comfort, you have assumed some new responsibilites.

1. To yourself: To keep a supply of proper fuel in storage for your furnace. This would be split, dry firewood.

2. To yourself: Your neighbours and the environment. Do not burn green, wet wood, or other products, such as garbage, as you will create clouds of smelly, noxious emmisions, which may affect those close to you.

3. To Northern Stoker: If you put the proper fuel in your furnace, it will perform as we have said it would. Also, with split dry firewood, you will burn 30-50% less fuel. This would represent a very high return on your labour.

Your Northern Stoker will give you the best results if you burn the best possible fuel, which is Dry Wood. If you cut your own fuel, wood over 5" (127 mm) in diamter should be split. Remember unsplit wood is wet wood.

Also, the length of the firewood will affect your cost and quality of the burn in your unit. It costs less to cut 1 piece of 48" (1219 mm) wood than 3 pieces at 16" (406 mm). If you have a Northern Stoker 48-54, it was designed to burn 48" (1219 mm) wood. Long wood allows you to completely fill the burn chamber, allowing for maximum burn time and maximum efficiency.

The bottom line is:
Wood, cut to the proper length, split, allowed to dry properly and stored in a dry location, will give you the most satisfaction and the best financial return on your purchase.

PLEASE SAVE THESE INSTRUCTIONS
READ THE ENTIRE MANUAL PRIOR TO INSTALLING AND OPERATING YOUR NORTHERN STOKER

NORTHERN STOKER
4 THOMPSON ROAD, P.O. BOX #550
SUNDERLAND, ONTARIO, CANADA L0C 1H0
PHONE: (705) 357-3999 FAX: (705) 357-3388
www.northernstoker.ca

Safety

IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE INSTALLATION

PRE-INSTALLATION PRECAUTIONS:

CAUTION: Read and follow these directions carefully. Retain this manual for as long as you own your Northern Stoker.

CAUTION: The Northern Stoker is designed for outdoor use. We do not recommend installing in a building.

CAUTION: All installation and operations must follow PROVINCIAL and LOCAL CODES for wiring, plumbing, and firing of this unit. These CODES may differ from this manual. Installation should be performed by a **Qualified Installer.**

CAUTION: Load wood carefully to avoid injury to hands and fingers that may come into contact with stove opening. Always wear leather gloves when refueling a Northern Stoker.

CAUTION: Circulator pumps must run continuously whenever the Northern Stoker is being used even in the summer.

CAUTION: All covers or guards must be in place at all times, except for maintenance or service.

CAUTION: Burn Dry Wood Only.

CAUTION: Do not store fuel or other combustible material within marked installation clearances.

CAUTION: Do not connect this unit to a chimney flue serving another appliance.

CAUTION: Cut split seasoned wood (below 25% moisture) is the recommended fuel.

CAUTION: Keep door closed while burning unless to load. See Refueling Instructions and follow as directed.

CAUTION: Seals must be maintained and kept in good condition.

CAUTION: Only responsible adults should operate your furnace.

CAUTION: Hot surfaces – Keep Children Away. Do not touch during operation.

CAUTION: To prevent unauthorized persons from opening the combustion chamber fuel loading door as well as the control house doors, always keep them locked.

CAUTION: Never allow children to play near or tamper with your furnace. Always keep the area around, and in front of fuel loading door clean and free from combustible materials.

CAUTION: It is important to regularly clean the flue pipes and chimney and is especially important to thoroughly clean at the end of the heating season to minimize corrosion during the summer months caused by accumulated ash or creosote.

CAUTION: While maintaining clearance of 8' (2438 mm) from each side 8' (2438 mm) front & back from combustibles, keep the non-combustible concrete pad the stoker is sitting on swept clean of chips, saw dust or any other combustible materials.

CAUTION: Manufacturer recommends a minimum 30 ft. (9.144 m) clearance from buildings or fire hazards. Keep grass cut around the furnace area.

CAUTION: Warning: Risk of Fire.
Always keep the area around, and in front of fuel door clean and free of all combustible materials.

CAUTION: **All models operate at atmospheric pressure. DO NOT obstruct, block, or plug in any way the overflow vent pipe which is located directly on top of the furnace or at the back going into the expansion tank.**

CAUTION: Keep the Control House doors closed to keep the control house above freezing temperature.

CAUTION: Do not use chemicals for fluids to start the fire.

CAUTION: In the event of a chimney fire or "runaway fire" be sure fans are off, water pumps are running, loading door and rear clean out doors are closed tight, check to ensure dampers are closed tight, check water level is ok. Once fire is under control it is ok to operate stove in normal operating mode. Be sure to find the source of the runaway fire. Causes can be burning fuel other than wood, doors left open, seals around door need replacing or damper stuck open. Correct any of these conditions.

CAUTION: **This is an auxiliary cost saving heat source, not your primary heat source. It should be installed so the primary heat source will maintain an above freezing temperature to the area being heated & the Northern Stoker Furnace in the event of auxiliary failure.**

Furnace Installation

LOCATION:
It is important to consider the prevailing wind directions in the heating season. The Northern Stoker should be placed so that the load door is facing into the prevailing wind and the smoke exiting the unit will not create problems for you or your neighbours. Consult your Northern Stoker Dealer for suggestions where to locate the unit.

PAD TO SUPPORT YOUR NORTHERN STOKER:
First, remove the top soil, build a form, and fill it with concrete. The pad should be 5" – 6" (127 – 152 mm) thick and have some wire mesh or rebar in it. It should be a least 16" (400 mm) in front and 8" (200 mm) on either side of the fuel loading and ash removal doors. Consult your Northern Stoker Dealer for the local code requirements in your area.

CAUTION! Check before you dig!

Telephone Lines – Hydro Lines – Gas Lines – Water Lines – Sewer Lines – Drainage Tiles

LIFTING TECHNIQUES

CAUTION! Lift between the legs from the side or from the lift hook on the top only! Do NOT lift from under the "control house" at the rear of the furnace. Ensure that the lifting device is rated for weight of the furnace and can safely lift and maneuver the Northern Stoker into position.

TRENCH FOR INSULATED WATER LINES AND ELECTRICAL WIRE:
The trench should be approximately 4' (1219 mm) deep and 18" (457 mm) wide. Place all the dirt to one side of the trench to allow room for working on the other side. Rake the bottom of the trench so it is smooth, no large bumps or sharp stones. Add sand under and over the insulated line.

WATER LINES:
Water line to use: 1" (25 mm) water line with a minimum rating of 100 psi (689.5 kPa) at 180ºF / 82ºC rating.
Water line insulation: Must be rated for at least R-8. Cover the insulated pipes with 3" (76 mm) of clean sand to avoid stone punctures. Contact you Northern Stoker dealer for approved water line insulation.
Burying tip: When burying your water lines, be sure to sure to label the water lines at each end for ease of installation.
Burying tip: If installing the water lines underneath a driveway, they should be buried approximately 5' (1524 mm) below grade. Try to avoid installing pipe in wet areas.
Burying Tip: It is easiest to hook up your Northern Stoker when it is mounted on a concrete pad before the trench is dug. If this is not possible, be sure to leave adequate pipe above the pad to complete the hook-up.
Installation Tip: Be sure to install a furnace fill valve inside your home in the cold water return line preferably close to domestic water supply. This will aid when filling water into your system (see page 4).

**** *Warning***: It is recommended to have water tested BEFORE filling the furnace.**

WIRING:
The electrical wire used must be rated for underground and at least12 AWG copper, two wire plus a ground (12/2). Place the electrical wire in the bottom of the trench and cover with 3" (76 mm) of sand along with the water lines from the Northern Stoker. The electrical wire must maintain a minimum 24" (610 mm) depth. As with any buried electrical wires you must install a "Caution Buried Electrical Cable Below" tape over top of the wire. **Always follow the applicable local Provincial and Municipal laws, regulations and codes.**

CHIMNEY SPECIFICATIONS:

All MODELS
Secure Temp ASHT S/S 8" (203 mm) I.D.
10" (254 mm) O.D.
24" (610 mm) Long Tested to UL-103HT Standards.
No additional chimney is required
Do not connect to a chimney flue serving another appliance.

Maintain the following clearances to combustibles:
Sides – 8' (2438 mm) Front – 8' (2438 mm) Back - 8' (2438 mm)

FILLING SYSTEM WITH WATER AND BLEEDING OF AIR:

If after testing your homes water and it is adequate to fill your furnace with, it would be advantageous to tie your return (cold side) of furnace loop into your water system for initial fill and periodic addition of water due to evaporation.
A back flow valve or disconnect hose should be installed to prevent furnace water from possibly entering your potable water system.
If your furnace cannot be tied into your water system the furnace can be filled from a remote water tank by being either filling through the vent tube located on top of the 30-30-3000 and 36-42-4500 or pumped into the ¾" ball valve located under the blower fan on the 36-42-6000 and 48-54-11,000 models.
DO NOT TURN ON YOUR CIRCULATING PUMP UNTIL YOU KNOW THE SYSTEM IS FULL OF WATER AND ALL BALL VALVES ARE OPEN IN THE LOOP.
The 30-30-3000 and 36-42-4500 are full when water flows out the vent tube on to the roof. More water will overflow onto the roof once the furnace is lit and the water expands as it heats up, this is normal.

The 36-42-6000 and 48-54-11,000 are full once hear and see water entering the expansion tank through the site tube. Only fill to approximately 1/3rd as the water will expand once the furnace it lit and water heats up. If too much water is put into the expansion tank it can be drained off by unhooking the site tube and tipping it over to about the center height of the expansion tank.
Air bleeding of system; to be done next day after initial fill and monthly.

1. unplug circulating pumps. (shut off power to pumps)
2. close all ball valves at furnace.
3. turn on water fill valve from water supply (water will not fill yet as you have completed step 2)
4. open return (cold side) ball valve at furnace until water flows out the vent tube on the roof or "gurgling" stops in the expansion tank and water rises in the site tube as in initial fill. All air will now be bled from the system. Close return ball valve at furnace.
5. Shut off water supply valve, disconnect hose between furnace loop and potable water supply if a back flow valve was not installed.
6. Open all ball valves at the furnace.
7. turn power back on to circulating pumps, observe water temperature is normal.

WATER TREATMENT:

It is important to add approved Northern Stoker Water Treatment fluid to the furnace's water system. The Northern Stoker Water Treatment fluid prolongs the life of the equipment by helping to prevent rust buildup, metal corrosion and scaling. There are various ways and various system setups to add your Northern Stoker Water Treatment fluid. Please contact your Northern Stoker Dealer for the best way to do so as per your system design. Model 30-30 requires approximately 1 gallon (3.78 L), 36-42 approximately 1 gallon (3.78 L) and model 48-54 approximately 2 gallons (7.56 L) of Northern Stoker Water Treatment for the furnace and lines.

Note: Water Treatment must be added on an ANNUAL basis to ensure longevity of equipment.

Please contact your Northern Stoker Dealer for Northern Stoker Water Treatment and if needed, a water treatment test.

**** *Warning***: It is recommended to have water tested BEFORE filling the furnace.**

Connecting to an Existing Boiler

EXISTING BOILER SYSTEM:

There are a number of ways to connect a Northern Stoker to an existing Hot Water System. Each depends on the design of what is currently in place. **It is strongly advised to have a certified technician to do this type of install.**

If you choose to do this yourself, observe the following guidelines:

The add-on boiler shall:

i. be installed without interfering with the normal delivery of heated water from the original boiler,
ii. be installed without affecting the operation of the electrical and mechanical safety controls of the original boiler,
iii. provide for a changeover for one fuel to the other without requiring manual adjustment of any controls or components other than the thermostats.
iv. have provisions for preventing, or adequate water capacity within the boiler to prevent damage from loss of circulation due to electrical power failure.
v. be installed without changing the function of the controls or rewiring the original boiler. A wiring interconnection is permitted. The electrical system of both boilers shall be powered from a single branch circuit without exception.

1. **OPERATE THE (GAS, OIL, ELECTRIC) BOILER PERIODICALLY TO ENSURE THAT IT WILL OPERATE SATISFACTORILY WHEN NEEDED.**

2. DO NOT RELOCATE OR BYPASS ANY OF THE SAFETY CONTROLS IN THE ORIGINAL (GAS, OIL, ELECTRIC) BOILER INSTALLATION.
3. CAUTION: THIS EQUIPMENT MAY ONLY BE INSTALLED BY QUALIFIED PERSONNEL.
4. DISCONNECT ELECTRIC POWER TO BOTH BOILERS BEFORE SERVICING
5. CAUTION: MAINTAIN COMBUSTION AIR SUPPLY TO BOTH BOILERS. AIR STARVATION IS DANGEROUS. PROVIDE A FRESH AIR OPENING AT LEAST 2,000 MM^2 (3 IN^2).
6. THE OPERATION OF THE GAS BOILER MUST BE VERIFIED FOR ACCEPTABLE OPERATION BEFORE AND AFTER INSTALLATION OF THE ADD ON APPLICA NCE BY A GAS FITTER WHO IS RECOGNIZED BY THE REGULATORY AUTHORITY.

The installation should comply with requirements of **CAN/USA-B365**, and changes to the installation should comply with **CSA B139** (for oil fired), **C22.1** (for electric), or **CAN/CGA-B149. 1** or **CAN/CGA-B149.2** (for gas fired).

Note: Once again, we stress that this is a job for a certified technician.

CIRCULATOR PUMP:

Important! The circulator must always be on, even in the off season

Add-on Options

NORTHERN STOKER OPTIONS:

Now that you have a Northern Stoker, there are additional options available to maximize your investment, minimize your household energy consumption and be environmentally conscious by using a renewable energy source. The following is a list of options available to add-on to the Northern Stoker heating system.

Note: If you are interested in any of these options please contact your Northern Stoker Dealer for information, sales and installation.

Domestic Hot Water

You can supplement your current hot water tank by installing a water to water heat exchanger that can preheat the water before it enters the Hot Water system of your household. This can reduce the energy consumed by conventional hot water tanks (oil, gas and electric).

Hot Water Boiler and In-Floor Radiant Heating

There are many residences that contain a Hot Water Boiler system as a primary source of heat for their homes. The Northern Stoker can be connected to the existing system and thereby reduce the energy consumed by conventional Hot Water Boiler systems (oil, gas and electric). This is accomplished by the installation of a water to water heat exchanger.

Forced Air Furnaces

With the addition of a water to air heat exchanger installed into the plenum of the forced air furnace, the Northern Stoker can provide an excellent source of heat for your home. Not only does this setup reduce your energy consumption of conventional fuels (oil, gas and electric), but it provides the home owner with an additional heating system as a backup. This gives our customers peace of mind knowing their family members are safer and their investments (the home) are better protected.

Pool and Hot Tub Heaters

If you would like to heat your pool, you know that keeping the water heated is certainly an additional household cost that you wish could reduce. Now with the Northern stoker you can have installed a water to water heat exchanger unit that supplements the existing heating system (oil, gas and electric).

Note: All of the above options should be installed by qualified dealers and contractors.

Starting a Fire

By following these instructions, you will be able to start a fire in your Northern Stoker without using chemicals and/or any unnecessary risk to you or your furnace.

CAUTION! Never use Gas, Oil, Naptha, Diesel Fuel, Tires or any other inappropriate combustibles to start a fire.
Do Not Burn Garbage, Burn Dry Wood Only.

1. Take a look around your Northern Stoker to be sure there is no fuel (dry wood) or other combustibles, within 8' (2438 mm) of it, before starting a fire. Do not store fuel or other combustible material within marked installation clearances.
2. Before starting , be sure you have removed the rain cap from the chimney.
3. Be sure the water level is at required level. circulating pumps are **ON**, electronic control system is plugged in and selector "SYSTEM" is **ON**.
4. Turn "**OFF**" combustion chamber fan at switch on the side (upper right side toogle switch on structure.) of the Northern Stoker.
5. Place some dry paper, birch bark, dry leaves, shavings or cardboard on the grate within the combustion chamber. On top of this, put some fine split wood, such as pine or cedar kindling.
6. Then place a few pieces of wood on top of your kindling. Now you are ready to strike a match and start a fire.

CAUTION! DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.
BURN WOOD ONLY!
WARNING: RISK OF FIRE!
Do not operate with fuel loading or ash removal doors open.
Do not store fuel or other combustible material within marked installation clearances.
Inspect and clean flues and chimney regularly

7. When you have started the fire, close the door.

CAUTION! NEVER LEAVE AN OPEN DOOR.
Do not operate with fuel loading or ash removal doors open.

8. It is time to turn **ON** the combustion chamber blower fan. (upper right side toogle switch on structure.) The fan must be on to provide proper combustion air. Press the ON/OFF/RESET button on the control panel.
9. You have a fire started and the combustion chamber blower fan is **ON**. It is time to go get more fuel from the dry storage building (Suggestion: use a wheel barrow) in preparation to increase your fire.
10. When you need to add this additional fuel, turn "**OFF**" the combustion chamber blower fan, follow instructions on page 8 for Refueling the Northern Stoker. Wait a minimum of one minute or until smoke clears from the chimney. Open the door slowly, keeping the door between you and the fire opening. You can see the base fire and add the necessary fuel. You may, also, notice some moisture in the fire drum, do not be alarmed, it is condensation and will only happen on a cold start.
11. When you have added the fuel to the fire, close and securly latch the door. **NEVER LEAVE AN OPEN DOOR**. Turn "**ON"** the combustion chamber blower fan.
12. Now you have successfully started the first fire in your new Northern Stoker.

Notes: Establish a routine for dry storage of fuel, care of the stoker & firing techniques.
Check daily for creosote build up until experience shows how often cleaning is necessary. Remove cresote when evident, especially check the chimney flue, chimney connector and chimney.
Inspect & clean flues and chimney regularly.

Approved Fuel: Dry split wood

REFUELING THE NORTHERN STOKER:

CAUTION! NEVER ALLOW CHILDREN OR UNTRAINED PERSONS TO OPERATE YOUR NORTHERN STOKER

When your Northern Stoker requires more fuel, we have developed a guide line, which must be followed for the safety of you, the owner/operator, and the long life of your Northern Stoker.

1. If you go to your Northern Stoker and it is burning (in a full fire combustion cycle) turn "**OFF"** the combustion chamber blower fan (Upper right side toogle switch on structure.).
2. Allow the fire to cool for a minimum of 1 minute.
3. Open the loading door to the first step on the safety latch, allowing some air into the fire box. Also, this may allow some smoke and hot gases out of the fire box. When the smoke has cleared, it is safe to open the loading door, by moving the handle to the second notch of the safety latch. As you open the loading door, slowly step backwards, keeping the fire door between you and the loading door opening. If there should be a rush of smoke and hot gasses from the combustion chamber, the loading door will help deflect and shield you. Now you can see the fire and remaining fuel. Use the poker or ash hoe to level or move the fuel to a flat fire bed. Now close the loading door.

CAUTION! NEVER LEAVE AN OPEN DOOR!
Do not operate with fuel loading or ash removal doors open.

4. Now you know how much room there is in the burn chamber for fresh fuel. Bring the required amount of fuel from the covered storage area to the furnace, ready to be put in. (Suggestion: use a wheel barrow)
5. Open the loading fire door following the procedure in step 3, and put the new fuel into your Northern Stoker. When placing the fuel in your furnace, it should be placed in the firebox combustion chamber, and not in the loading door frame area. Wood can be loaded to the top of the opening, but must be in the firebox combustion chamber. Never force wood into the unit by striking it, or pushing it with the door. Do this as quickly as possible, then close and securely latch the loading door. The fire loading door must never be open for more than (2) minutes. The loading door being left open for long periods of time may compromise the operation of your furnace and your safety. **NEVER LEAVE AN OPEN DOOR.**
   If for any reason you step away from your furnace, the fire loading door must always be closed and securely latched. **NEVER LEAVE AN OPEN DOOR.**
6. Now the furnace is full of fuel, there is no need to open the fire loading door for 8-12 hours. This time frame depends on your heat requirements and the type of fuel used.
7. Whenever you open the fire loading door, you must always follow all the steps #1 through #3 to ensure the safety of you and your furnace.
8. Before you leave the Northern Stoker, be sure to turn the combustion chamber fan "**ON**".

CAUTION! BURN WOOD ONLY! WARNING: RISK OF FIRE! Do not operate with fuel loading or ash removal doors open. Do not store fuel or other combustible material within marked installation clearances. Inspect and clean flues and chimney regularly. Approved Fuel: Dry split wood

Cleaning your Northern Stoker

When you purchased your Northern Stoker, you bought a heavy duty, high output very efficient furnace. In order for the furnace to work properly, it must be fired with the proper fuel. Dry Wood! If the wood you burn is too high in moisture, excessive amounts of creosote will accumulate and cause problems.

CREOSOTE: -Formation and need for removal- 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. Short and intense fires are preferable. The chimney should be inspected at least twice per month, during the heating season to determine if a creosote buildup has occurred. If creosote has accumulated, it should be removed to reduce corrosion.

DISPOSAL OF ASHES: - Ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be placed on a non-combustible floor or on the ground, well away from the 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 thoroughly cooled.

1. When you go to your furnace in the morning, and the fuel is very low (a bed of coals), this is the time to look at the combustion chamber walls. If there is a light layer of soot, fly ash and/or creosote, use a scraper for this job and scrape down the combustion chamber.

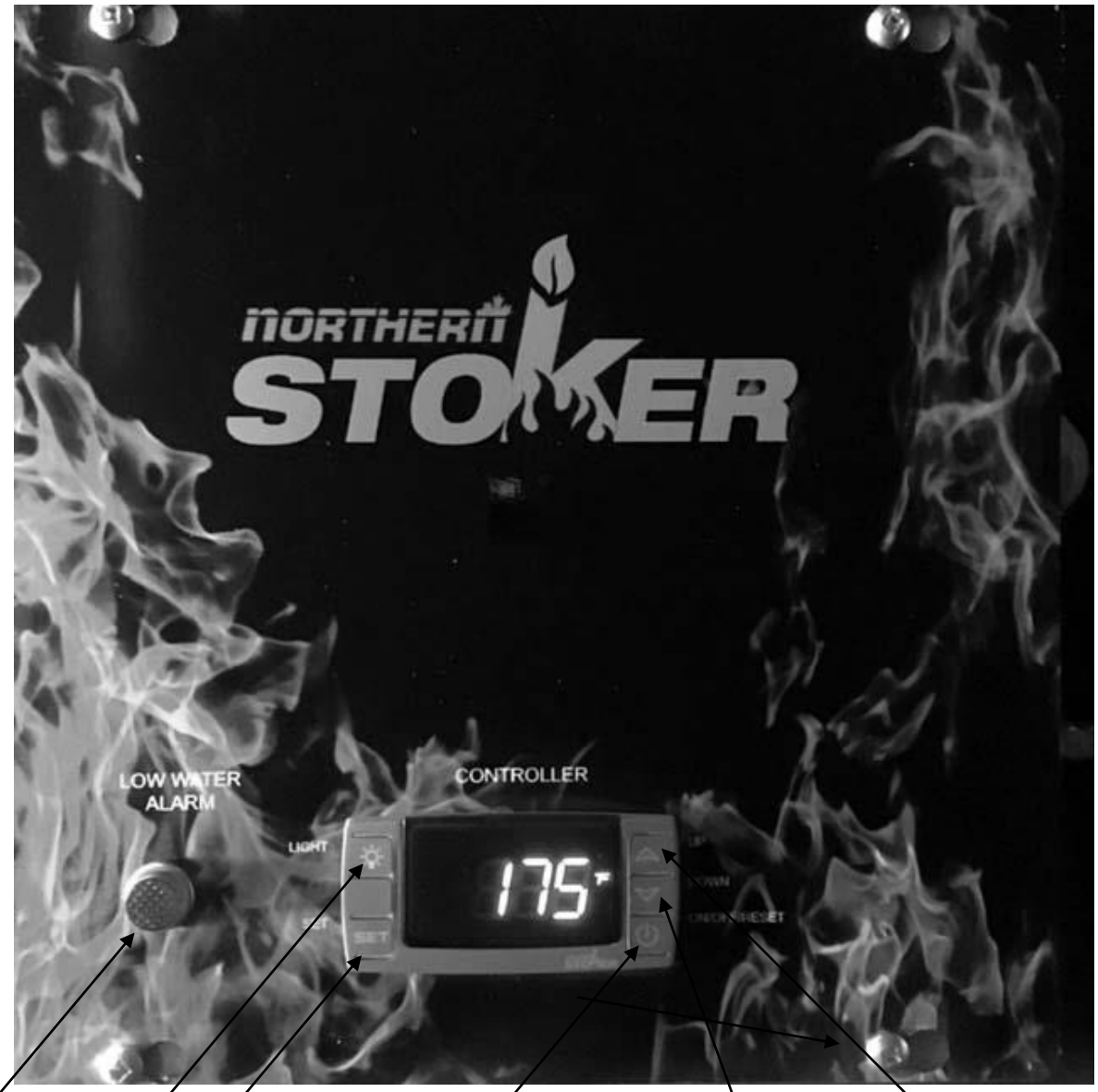
CAUTION! NEVER LEAVE AN OPEN DOOR.
Do not operate with fuel loading or ash removal doors open.

2. Go to the control house and open the heat exchanger doors, pull out the ash tray directly below and turn the top auger first in the direction indicated by the arrows and then bottom auger. This will clean the heat exchanger tubes and deposit the fly ash back into the combustion chamber. Every two (2) weeks or there about, it is advisable to remove the augers and clean the augers with a wire brush, then scrape the heat exchanger tubes with a scraper. Whenever doing this, wear safety glasses and leather gloves.
3. After a few days of continuous burning, ash will begin to accumulate in the combustion chamber. This ash is removed by way of the fire loading door and a shovel. When removing ash, try to remove as little charcoal and live embers as possible. The ash should be placed in a metal container, with a metal lid that is tight fitting. The closed container of ashes 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 thoroughly cooled. This can take two (2) or (3) days to cool.
4. At some point in time, you may notice that the fire has become lazy or not as hot and robust as it was compared to the first firing. This may be due to ash build up under the combustion grate. Some ash may have gone down the air holes and accumulated there. By opening the combustion chamber blower air injection door in the control house, the ash can easily be removed with a scraper and pan. As required, the entire grate can be removed for complete ash removal. This should be done when there are no hot embers present. Follow directions outlined in paragraph section 3 on this page.
5. When cleaning ashes this is a good time to check the condition of the doors, latches & hinges. It is also necessary to maintain seals in good condition. If door seal is not soft & pliable it should be replaced, contact your Northern Stoker Dealer for a new door seal. (This is a consumable product.)

Control Panel

The Northern Stoker has an easy and accurate control system. Our system monitors and controls the temperature of the water and thereby giving you an efficient and comfortable heat source. Simply plug your furnace into a 15A circuit!

The following will describe the layout and function of the control panel on the Northern Stoker.



NORTHERN STOKER

Control Panel Operating Instructions

THE ON/OFF FUNCTION:

- ⏻ **TO TURN THE CONTROL PANEL ON, OFF & RESET (BOTTOM RIGHT)**
- **TEMPERATURE DISPLAYED ON SCREEN IS CURRENT FURNACE TEMPERATURE**
- **PUSH THE SET BUTTON ONCE TO SEE WHAT THE FURNACE TEMPERATURE IS SET FOR**
- **TO CHANGE THE FURNACE TEMPERATURE SETTING PRESS & HOLD THE SET BUTTON FOR APROXIMATELY 3 SECONDS UNTIL THE DISPLAYED TEMPERATURE FLASHES, THEN PRESS ^ UP OR v DOWN TO DESIRED SETTING**
- **THE PANEL COMES PRESET WITH A MINIMUM TEMPERATURE SETTING OF 150 F (65 C) AND A MAX 185 F (85 C)**
- **PRESS & HOLD THE v DOWN BUTTON FOR APROXIMATELY 3 SECONDS TO CHANGE FROM FAHRENHEIT TO CELCIUS OR CELCIUS TO FAHRENHEIT.**
- **IF CA IS FLASHING THE FAN WILL BE OFF & THE TEMPERATURE WILL BE BELOW 120 F (48 C)**

  THE FAN IS PROGRAMMED TO SHUT OFF IF THE FURNACE WATER TEMPERATURE GOES BELOW 120 F (48 C)

  THIS WILL HAPPEN WHEN THE FURNACE IS LOW ON FUEL (WOOD) & SHUTS DOWN TO PRESERVE THE COALS.

  RAKE AROUND THE BED OF COALS,
  RELOAD WITH WOOD AND PRESS ⏻ TO RESET (START FAN) AGAIN

Maintenance Schedule

IMPORTANT! This maintenance schedule is recommended however, depending on the usage, seasonal climate and fuels used, you the owner may need to step up the frequency of the routines listed here to ensure a properly functioning Northern Stoker.

DAILY:

- Each morning and evening, refuel the fire in the Northern Stoker**.**
- **Turn OFF combustion chamber blower fan when refueling!**
- **Once refueled, turn ON combustion chamber blower fan (Toggle Switch on upper corner of structure). Press the "START" button on Electronic Control System.**
- **Clear any flammable debris 8' (2438 mm) around the front, back and sides.**
- **Check that the Circulator Pump is functioning.**

WEEKLY:

- Clean ash out from under grate with supplied shovel or hoe.
- Turn auger in heat exchange tube, shut off fan and do this when the auger is at its coolest a few degrees before the fan would have come on to prevent bending of auger flighting. If the auger binds due to creosote build up, turn auger on opposite direction to thread out. Clean creosote and reinstall auger and turn.

MONTHLY:

- Inspect and top up the system water level. See fill instructions on page 4. Check for any leakage around fittings.
- Clean ash out of the entire furnace every 4 to 6 weeks. Pick a warmer day that's not windy and let the coals burn down by not loading when you normally would.
- Place a couple shovel full of hot coals in a steel pail to use on restart if desired.
- Shovel the rest of the ashes off the top of the grate into a metal container with a metal lid.
- Remove the grate, pull completely out of the furnace.
- Turn the top auger direction of the arrow on the disc, then remove auger completely.
- Turn bottom auger in direction of arrow on disc, then remove auger completely.
- Wire brush augers clean, scrape heat exchange tubes with supplied hoe.
- Clean heat exchange door surfaces, fan area, and air flap area.
- Reinstall augers (discs towards doors as they were) Close doors.
- Completely clean ALL remaining ash from burn chamber, load door neck and load door surfaces.
- Reinstall grate, dump pail of coals on grate if you kept some separate, load burn chamber with wood, close load door, resume normal operation and repeat in 4 to 6 weeks as necessary.

ANNUAL SPRING SHUTDOWN

Thoroughly clean entire furnace, shovel ash out, scrape any creosote and vacuum burn chamber, heat exchange tubes and augers clean. Clean load door, chimney doors, and fan door silicone seal areas and door necks they seal against. Check silicone in doors is pliable and seals against the door necks. Chalk can be applied to perimeter of the necks, close doors and reopen. The chalk will transfer to the silicone perimeter to show seal area. Adjust doors or replace rope and silicone as required. Northern Stoker can be called for advise on this if required.

Install chimney cap to prevent rain from entering furnace anytime furnace is not in use. Rain water mixed with ash and creosote WILL corrode your furnace !

ANNUAL SPRING SHUTDOWN CONTINUED

When load door seals are complete spray a light film of rust inhibitor oil down heat exchange tubes, on augers, and in burn chamber.
Check air damper flap opens and closes easily and snaps closed completely, replace springs if necessary. Add a little oil to flap shaft.
Top up corrosion inhibitor and keep circulating pumps running all year to prevent water from becoming stagnant.
Wash entire furnace and touch up any paint as required.
Enjoy your summer, and oh yea, your wood for next season should be cut, split and piled under a roof for next winter by now. (Middle of May)

FALL START UP

Before starting your Northern Stoker furnace for the first time;
1) check water lever and bleed air (page 4)
2) check pumps are circulating
3) REMOVE CHIMNEY CAP
4) light fire in the furnace, observe fan and air flap door are working correctly. Observe temperature reading is increasing on control panel. Check entire loop for leaks and heat exchangers are getting heat. A recommend temperature setting in the fall is 150 F (66 C). Check the fan turns off and on from the side switch during initial start up. Observe the fan shuts off at desired setting and restarts when temperature drops 10 F

APPROVED FUEL	NON-APPROVED FUELS
Dry split wood (up to 25% moisture content)	Fire starter fluids of any kind. Gas, Diesel Fuel, Oil, Tires

YOUR INVESTMENT:

You have invested your hard earned money and like any piece of equipment, maintenance and proper operation is critical to ensure a fully functional furnace, longevity and peace of mind.

TROUBLESHOOTING GUIDE:

ISSUE	ACTION
FURNACE – NO HEAT	Check fire. Refuel as needed. Press the "**ON/OFF**" button on Control Panel.
	Check Circulator Pump. Check to see if pump is functioning. If the circulator pump is not, then disconnect from power and inspect. If circulator pump has failed contact your Northern Stoker Dealer.
	Check control panel for CA. Scenario: if the temperature reads 122° F (50°C) and you are loading cold wood into the firebox, the temperature can decrease by 3°F. This will trip the low temperature alarm (<120°F) and shut the fan off. The operator must wait and press the "**ON/OFF**" button to restart.
	Check that combustion chamber blower fan toggle switch is **ON**. Press the "**ON/OFF**" button on Control System.
	Check that the combustion chamber blower fan and damper are functioning.
	Check chimney for blockage. If blocked, remove debris.
	If the Northern Stoker is attached to existing primary heat source (Example: Fan Forced Furnace), make sure that existing primary heat source is operating correctly.
	If the temperature reading is inaccurate, check that the temperature probe has a loose connection, come out of the drywell or has failed. Contact your Northern Stoker dealer for service and repair.
FURNACE – BOIL OVER CONDITION **Note: If the furnace has boiled over, check the water level and fill if needed.**	Check the combustion chamber loading door that it is not open. Close if it is. Check that the air damper is closing properly between fan and furnace.
	Check door gaskets and seals, they need to be tight fitting and not allow air into combustion chamber. If gaskets and seals are worn or hard, contact your Northern Stoker Dealer to replace them.
	Check ambient temperature. If outside temperature is to warm, lower your set temperature. Make sure the circulator pumps are on. By circulating and mixing the return water, it will aid in balancing the temperature of the furnace.

IMPORTANT! Contact your Northern Stoker Dealer if none of these troubleshooting methods corrects the issue.

NORTHERN STOKER

Specifications

MODEL #30-30 - 3000	
LOADING DOOR OPENING	17 3/4" (45 cm) W x 17 3/4" (45 cm) H
FIREBOX (BURN CHAMBER)	30" (76.2 cm) Diameter x 30" (76.2 cm) L, 3/8" (0.95 mm) thick steel
APPROX. WEIGHT (EMPTY)	1972 Ibs (895 kg)
MAXIMUM OUTSIDE DIMENTIONS INCLUDING HANDLES	68" (173 cm) Long; 44" (112 cm) Wide; 93" (237 cm) Tall
APPROX. WATER CAPACITY	99 Imp gallons (450 L)
APPROX. HEATING OUTPUT	3,000 sq ft (278.7 m^2) of well insulated building
CORROSION INHIBITOR (WATER ADDITIVE)	Northern Stoker Water Treatment Fluid (requires approx. 1 gallon (3.78 L) for furnace and lines))
MODEL #36-42-4500 & MODEL #36-42 -6000	
LOADING DOOR OPENING	21 3/4" (55 cm) W x 21 3/4" (55 cm) H
FIREBOX (BURN CHAMBER)	36" (91 cm) Diameter x 42" (107 cm) L, 3/8" (0.95 cm) thick steel
APPROX.WEIGHT (EMPTY)	Model #36-42-4500: 2568 lbs (1165 kg) Model #36- 42-6000: 3175 lbs (1440 kg)
MAXIMUM OUTSIDE DIMENTIONS INCLUDING HANDLES	Model #36-42-4500: 78" (199 cm) Long, 49" (125 cm) Wide, 97" (247 cm) Tall Model #36-42-6000: 89" (226 cm) Long, 49" (125 cm) Wide, 108" (275 cm) Tall
APPROX. WATER CAPACITY	Model #36-42 4500: 151 imp gallons (687 L)) Model #36-42-6000: 167 imp gallons (759 L)
APPROX. HEATING OUTPUT	Model #36-42-4500: 4500 sq ft (418 sq m.) Model #36- 42-6000: 6000 sq ft (557 sq m.)
CORROSION INHIBITOR WATER ADDITIVE	Northern Stoker Water Treatment Fluid (requires approx. 1 gallon (3.78 L) for furnace and lines)
MODEL #48-54-11,000	
LOADING DOOR OPENING	30 1/2" (77.5 cm) W x 30 1/2" (77.5 cm)H
FIREBOX (BURN CHAMBER)	48" (122 cm)Diameter x 54" (137 cm) L, 3/8" (0.95 cm) thick steel
APPROX.WEIGHT (EMPTY)	4420 Ibs (2005 kg)
MAXIMUM OUTSIDE DIMENSIONS INCLUDING HANDLES	101"" (257cm) Long x 61" (155 cm) Wide 117" (298 cm) Tall
APPROX. WATER CAPACITY	298 Imp gallons (1355 L)
APPROX. HEAT OUTPUT	11,000 sq ft (1021.9 m^2)
CORROSION INHIBITOR (WATER ADDITIVE)	Northern Stoker Water Treatment Fluid (requires approx. 2 gallons (7.56 l) for furnace and lines)
STANDARD: **WATER JACKET INSULATION**: **ELECTRICAL RATING:** **FUEL TYPES:**	 R-38 roof and upper wall insulation,R-24 insulation lower wall, control house and floor 120V,60HZ, 15A Dry split softwood or hardwood

NORTHERN STOKER

MODEL #30-30-3000
MODEL #36-42-4500
MODEL #36-42-6000
MODEL #48-54-11000
SERIAL # _____

C ETL LISTED US
Intertek

Control# 4007135
Conforms to UL 2523, Certified to CAN/CSA B366.1
Electrical Rating: 120 V, 60 HZ, 15 AMPS, 1 Φ
Certified As An Add On Model Date September 2012

INSTALLATION: Use only chimney suitable for solid fuel. DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE. Place only on non-combustible flooring with adequate support. Maintain the following minimum clearances to combustibles: Sides – 8 Ft. (2.44 m), Front – 8 Ft. (2.44 m), Back – 8 Ft. (2.44 m)

CAUTION: This equipment may only be installed by qualified personnel.

OPERATION: Refer to owner's manual supplied with this appliance. Burn Wood Only. Load fuel carefully.

DO NOT ALTER THE FUEL FEEDING EQUIPMENT IN ANY WAY. Burn Wood Only

DANGER – Risk of Fire Or Explosion: Do not use chemical fluids to start the fire. Do not burn garbage, gasoline, naphtha, engine oil, or the other inappropriate materials. Do not store fuel within the above minimum clearances. Do not operate with fuel door, ash removal door, or clean-out doors open. Turn off electrical power before servicing.

CAUTION – Hot Surfaces: Keep children away. Do not touch during operation.

The heat exchanger, flue pipe, and chimney must be cleaned regularly to remove accumulated creosote and ash. Ensure that the heat exchanger tubes, burn chamber and chimney are cleaned at the end of the heating season to minimize corrosion during the summer months. The appliance, flue pipe, and chimney must be in good condition.

This unit may be connected to an existing boiler system. Follow instructions in owner's manual.

OPERATE THE (OIL, GAS, ELECTRIC) BOILER PERIODICALLY TO ENSURE IT WILL OPERATE SATISFACTORILY WHEN NEEDED.

DO NOT RELOCATE OR BYPASS ANY OF THE SAFETY CONTROLS IN THE ORIGINAL BOILER INSTALLATION.

CAUTION: THIS EQUIPMENT MAY ONLY BE INSTALLED BY QUALIFIED PERSONNEL.

DISCONNECT ELECTRIC POWER TO BOTH BOILERS BEFORE SERVICING.

CAUTION: MAINTAIN COMBUSTION AIR SUPPLY TO BOTH BOILERS. AIR STARVATION IS DANGEROUS.
PROVIDE A FRESH AIR OPENING AT LEAST 3 in^2 (2,000 mm^2).

In the event of a power failure the system will resume normal function when power is restored. Depending on the duration of power outage the furnace may need to be cleaned & the fire relit. This unit can also be run by a portable generator providing 120V, 60 Hz, 15 Amps. Unplug from power source & plug into generator. Fans & circulating pumps will be operating normally; follow your normal refueling instructions to check status of fire. Reconnect to normal power supply when power has resumed.

In the event of a chimney fire or "run-away fire" – be sure fans are off, circulating pumps are running, loading door, rear clean out doors are closed tight, check dampers are closed tight, check water level is ok.

When fire is in control it is ok to operate stove in normal operating mode. Be sure to find the source of the run-away fire causes can be burning fuel other than wood, doors left open, seals around door need replacing or damper stuck open. Correct any of these conditions.

For Outdoor Installation Only.

Manufactured by Northern Metalworks, 4 Thompson Road, PO Box 550, Sunderland, ON, L0C 1H0

Date of Manufacture: Month _____, Year_____

NORTHERN STOKER

Notes

DEALER'S COPY

OWNER'S WARRANTY REGISTRATION

(Fill out and send to your Dealer for complete warranty coverage as soon as furnace is installed)

PURCHASING INFORMATION

DATE OF PURCHASE: _____

INSTALLED DATE: _____

TODAY'S DATE: _____

MODEL NUMBER: _____

SERIAL NUMBER: _____

DEALERS NAME: _____

_____

OWNER'S INFORMATION

NAME: _____

_____

ADDRESS: _____

_____

_____

_____

PHONE NUMBER 1: (____)_____

PHONE NUMBER 2: (____)_____

FAX: (____)_____

EMAIL:

_____

_____

INSTALLATION INFORMATION

INSTALLED BY: ☐ DEALER ☐ CUSTOMER

INSTALLED FOR: ☐ HOUSE ☐ COMMERCIAL ☐ AGRICULTURAL ☐ GARAGE ☐ SHOP ☐ GREENHOUSE ☐ OTHER _____

FURNACE AND ACCESSORIES RECEIVED IN GOOD ORDER ☐ YES ☐ NO

INSTALLATION COMPLETED IN PROFESSIONAL MANOR ☐ YES ☐ NO

INSTALLER EXPLAINED FURNACE OPERATION AND ACCESSORY PRODUCTS ☐ YES ☐ NO

INSTALLED WITH BIOMASS STOKER ADD-ON: ☐ YES ☐ NO

MANUFACTURED BY: **NORTHERN STOKER**
4 THOMPSON ROAD, PO BOX 550, SUNDERLAND, ONTARIO, CANADA, L0C 1H0
P:705-357-3999, F:705-357-3388, www.northernstoker.ca

CUSTOMER SIGNATURE: _____

CUSTOMER (PRINT) NAME:_____

DEALER SIGNATURE: _____ DEALER (PRINT) NAME: _____

MANUFACTURER'S COPY

OWNER'S WARRANTY REGISTRATION

(Fill out and send to the Manufacturer for complete warranty coverage as soon as furnace is installed)

PURCHASING INFORMATION

DATE OF PURCHASE: _____

INSTALLED DATE: _____

TODAY'S DATE: _____

MODEL NUMBER: _____

SERIAL NUMBER: _____

DEALERS NAME: _____

_____

OWNER'S INFORMATION

NAME: _____

_____

ADDRESS: _____

_____

_____

_____

PHONE NUMBER 1: (____)_____

PHONE NUMBER 2: (____)_____

FAX: (____)_____

EMAIL:

_____

_____

INSTALLATION INFORMATION

INSTALLED BY: ☐ DEALER ☐ CUSTOMER

INSTALLED FOR: ☐ HOUSE ☐ COMMERCIAL ☐ AGRICULTURAL ☐ GARAGE ☐ SHOP ☐ GREENHOUSE ☐ OTHER _____

FURNACE AND ACCESSORIES RECEIVED IN GOOD ORDER ☐ YES ☐ NO

INSTALLATION COMPLETED IN PROFESSIONAL MANOR ☐ YES ☐ NO

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P:705-357-3999, F:705-357-3388, www.northernstoker.ca

CUSTOMER SIGNATURE: _____

CUSTOMER (PRINT) NAME:_____

DEALER SIGNATURE: _____ DEALER (PRINT) NAME: _____

Warranty

WARRANTY:

TEN YEAR LIMITED WARRANTY ON BURN CHAMBER & WATER JACKET

THE OWNER OF THE NORTHERN STOKER FURNACE MUST REGISTER THE FURNACE WITH THE DEALER AND MANUFACTURER TO RECEIVE WARRANTY COVERAGE AS OUTLINED HERE.

WARRANTY COVERS MANUFACTURER DEFECTS AND WORKMANSHIP.

ALL WARRANTY CLAIMS WILL BE ASSESSED BY THE DEALER. FINAL DECISION WILL BE DETERMINED BY THE MANUFACTURER.

YEAR #1 – 100% COVERAGE IF THERE IS A LEAK IN THE STOVE – INTERNAL OR EXTERNAL.

WARRANTY ON LEAKS EXCLUDES FITTINGS AND CONNECTIONS.

PERCENTAGE COVERED BY WARRANTY AFTER YEAR #1
YEAR #2 – 80 %, YEAR #3 – 70%, YEAR #4 - 60%, YEAR #5 – 50%, YEAR #6 – 40%,
YEAR #7 – 30%, YEAR #8 – 20%, YEAR #9 – 10%

PERCENTAGE OF WARRANTY IS ON ORIGINAL PURCHASE PRICE BEFORE TAX AND CAN BE APPLIED TO A REPAIRS OR DEDUCTED OFF THE PRICE OF A NEW NORTHERN STOKER FURNACE ALONG WITH THE TRADE IN OF THE WARRANTY FURNACE.

IF THE TOTAL PERCENTAGE OF THE WARRANTY IS USED, THAT WILL BE THE END OF THE WARRANTY.

AFTER THE DAY OF THE TENTH ANNIVERSARY OF THE INITIAL PURCHASE THE MANUFACTURER PROVIDES NO WARRANTY, FULL CUSTOMER SERVICE WILL BE PROVIDED TO SERVE THE CUSTOMER WITH ANY MAINTENANCE REQUIRED AT THE CUSTOMERS COST.

WARRANTY IS TO THE ORIGINAL OWNER ONLY UNLESS RESOLD BY A NORTHERN STOKER DEALER – WARRANTY WILL BE DETERMINED AT TIME OF RESALE.

WARRANTY WILL NOT COVER:

- DAMAGE DUE TO FREEZING OR OVERHEATING (OVER BOILING).
- NEGLIGENCE, SUCH AS ABUSE FROM CREOSOTE OR ASH CORROSION., THE FURNACE MUST BE CLEANED DURING THE HEATING SEASON AND THOROUGHLY CLEANED AT THE END OF THE HEATING SEASON. KEEP THE CHIMNEY COVERED WHEN NOT IN USE TO KEEP RAIN FROM ENTERING.
- .DAMAGE DUE TO USE OF NON-APPROVED FUELS.
- DAMAGES INCURRED TO PROPERTY BY DISTRIBUTORS, DEALERS AND SUB-TRADES.
- DAMAGE CAUSED BY CORROSIVE WATER.

WATER TREATMENT PURCHASED FROM A NORTHERN STOKER DEALER MUST BE ADDED TO HELP WITH CORROSION & LUBRICATION OF PUMPS.

ALL LOADING & UNLOADING, SHIPPING AND HANDLING IS AT THE COST OF THE CUSTOMER.

ONE YEAR WARRANTY ON AL PARTS OTHER THAN THE BURN CHAMBER & WATER JACKET. PURCHASED PARTS SUCH AS ELECTRICAL, FANS, PUMPS, SOLENOIDS, AND STAINLESS CHIMNEY ARE COVERED BY MANUFACTURER'S WARRANTY THROUGH YOUR NORTHERN STOKER DEALER. GRATING &AUGERS ARE COVERED BY A ONE (1) YEAR 100% WARRANTY BY NORTHERN STOKER FOR MANUFACTURED DEFECTS. WARPING OF THE GRATE FROM HEAT IS NORMAL AND EXPECTED AND IS NOT COVERED BY THE WARRANTY. WEAR PARTS SUCH AS, LOADING DOORS, AUGER CLEAN OUT DOORS, LOWER BLOWER DOOR, LATCHES AND LOCKS ARE COVERED BY A ONE YEAR WARRANTY. DOOR ROPE AND DAMPER SPRINGS ARE CONSIDERED CONSUMABLE PRODUCTS AND ARE NOT COVERED BY WARRANTY.

IT IS RECOMMENDED THAT THE OWNER OF THE NORTHERN STOKER HAVE AN ANNUAL WATER TEST COMPLETED.
IF THERE IS A WARRANTY CLAIM, THE DISTRIBUTOR/DEALER AND OR THE MANUFACTURER CAN REQUEST A WATER TEST OF THE NORTHERN STOKER FURNACE WATER. IF DENIED ACCESS TO A WATER TEST FOR WARRANTY PURPOSES THE DEALER/DISTRIBUTOR AND OR THE MANUFACTURER HAVE THE OPTION TO VOID THE WARRANTY AND NOT EXTEND COVERAGE.