

**USER
INSTRUCTIONS**



Built Better to Last Longer

SBB100

**User Instructions
COMBINATION Wood/Oil warm air FURNACE**

Read and understand these instructions
before operating your Summerraire furnace.
Save these instructions for reference

This furnace must be installed and serviced by a qualified installer
and where required by law, a licenced technician.

**SUMMERRAIRE MFG.
PETERBOROUGH, ONTARIO**

FOR SERVICE CALL:

NAME: _____
ADDRESS: _____

TELEPHONE: _____

IMPORTANT :THESE INSTRUCTIONS SHALL BE READ AND UNDERSTOOD BY THE HOME OWNER

Your Summerraire combination wood / oil furnace is controlled automatically. This furnace is shipped with two thermostats, One thermostat controls the Oil Burner and the other thermostat controls the Wood fire

These entire instructions shall be read to ensure the best possible operation and safest use of this furnace. Manufacturer's recommendations and codes set down by the Regulating Authorities must be followed when installing and operating the furnace. ALL solid fuel burning furnaces manufactured by Summerraire Mfg. have been tested for safety by the Canadian Standards Association Laboratories and carry their Certificate of approval which is recognized by Insurance Underwriters in Canada.

WARNING!

- DO NOT USE CHEMICALS OR FLUIDS TO START THE FIRE
- NEVER FIRE WITH TREATED WOOD, OR BURN GARBAGE, GASOLINE, NAPHTHA OR ENGINE OIL
- DO NOT FILL THE FIREBOX ABOVE THE BOTTOM OF THE SMOKE BAFFLE, LOCATED AT THE TOP PORTION OF THE FIREDOOR OPENING
- DO NOT STORE COMBUSTIBLES WITHIN THE MINIMUM INSTALLATION CLEARANCES.
- BUILD A SMALL INTENSE FIRE AT LEAST ONCE A DAY TO REDUCE CREOSOTE BUILD UP.
- CLEAN CHIMNEY AT LEAST ONCE A YEAR, AND INSPECT REGULARLY FOR CREOSOTE BUILD UP
- FOR SAFETY, KEEP FIRE CHARGING DOOR TIGHTLY CLOSED.
- DO NOT ADJUST ELECTRICAL CONTROL SETTINGS OR BLOWER PULLEY ARRANGEMENT.
- OPERATE OIL SIDE OF UNIT ONCE A WEEK TO ENSURE THAT IT WILL OPERATE SATISFACTORILY WHEN NEEDED.

- KEEP FIREDOOR CLOSED AND MAINTAIN ALL SEALS IN GOOD CONDITION.
- MAKE SURE ADEQUATE COMBUSTION AIR IS PROVIDED IN FURNACE AREA.
- DO NOT START WOOD FIRE IF OIL VAPOR IS PRESENT.
- LEAVE A MINIMUM OF 2” OF SAND OR ASH ON THE BOTTOM OF THE WOOD FIREBOX.
- DO NOT USE FLUIDS, GASOLINE, OILS OR CHEMICALS TO START A FIRE.
- DO NOT BURN GARBAGE, PAPER (except to start the fire) TAR PRODUCTS, GASOLINE, OILS, PLASTIC, DRIFT WOOD OR MATERIALS CONTAINING SALTS OR CHEMICALS . THIS IS EXTREMELY DANGEROUS AND WILL VOID THE WARRANTY.
- THIS FURNACE IS NOT TO BE CONNECTED TO OR USED WITH AN AUTOMATIC STOKER OR SAWDUST BURNER.

WOOD SECTION OPERATION

This unit is not to be connected to or used with an automatic stoker or sawdust burner.

Solid fuel fires require sufficient supply of air for combustion. Combustion air is required above the fire bed.

Keep the furnace smoke pipes and chimney clean. This will increase efficiency and reduce the risk of excess soot and creosote fires.

This furnace, smoke pipes and chimney should be inspected monthly.

FIRING

Start the fire in your furnace with paper and kindling only.

Crumple a quantity of paper and place it on the “floor” of the fire box.

Randomly stack kindling on top if the paper allowing for good combustion and air circulation.

Set your “ Wood “ thermostat so that it is 7 – 10 degrees higher than room temperature. This will open the draft damper allowing combustion air into the furnace.

Light the paper and close the fire charging door.

When the kindling is burning well, put in some hardwood and allow this to begin burning.

Add Hardwood : do not fill the fire box above the bottom of the smoke baffle located at the top portion of the fire door Fig. #1

Do not put too much wood at one time during initial start – up as you could smother the fire.

When fire has been established properly, set “ Wood “ thermostat to your desired setting. The thermostat controlling the “Wood” section should be set at least 5 ° above the “Oil” section thermostat, i.e. set “Oil” section thermostat at 18 ° C (65 ° F) and the “Wood” section thermostat at 21 ° C (70 ° F)

LOAD FUEL CAREFULLY OR DAMAGE MAY RESULT

MAINTAINING THE FIRE

You will be required to maintain the fire in your furnace manually.

The rate at which you will have to charge your furnace will vary with the size of house, type of wood, and weather conditions.

When the fire in your furnace is not great enough to properly heat your home, the air circulation blower fan will begin to come on more frequently. In a few days you will establish the basic recharging period for your specific application.

It is better to build small intense fires than building large smoldering fires as they reduce creosote build up.

WHEN BURNING WOOD; DO NOT FILL THE FIREBOX ABOVE THE BOTTOM OF THE SMOKE BAFFLE, LOCATED AT THE TOP PORTION OF THE FIREDOOR - FIG. #1

DO NOT OVERFILL

Combustion air is supplied into and over the fire through the “damper door and chute” assembly. This arrangement helps to retard the formation of creosote in the flue system.

Operate “Oil” burner one day a week to help reduce creosote formation.

Clean filters at least once a month and replace with new filters twice a year, unless conditions require more frequent replacement.

If air flow is obstructed, the furnace will run longer and waste fuel !

Oil blower motor and burner motor where oil “holes” are provided at least twice a year with number 20 non detergent oil, 2 drops only for each “oil hole”

Do Not Oil Blower Bearings !

A fixed “LIMITER“ device is installed on the damper door of your furnace.

DO NOT TAMPER WITH THIS DEVICE!

ASH REMOVAL

- 1) Allow fire to burn out
- 2) Turn “ Wood “ thermostat to its lowest setting.
This de-activates damper motor and allows the damper door to close.
- 3) Remove ash with clean – out tool provided.
- 4) Ash is to be disposed of in a steel container with a tightly fitting lid, and moved out of doors immediately. Other waste shall not be placed in this container.
- 5) After ash removal, return “Wood” thermostat to normal setting and restart fire.

OUT OF CONTROL FIRES

These can be caused by excessive fueling – build up of creosote – too much draft

- Stop the flow of combustion air by lowering the thermostat to its lowest setting and unhook the damper motor chain (an open link is provided in the chain for this purpose). Fig. #1
- Reduce the draft by fully opening the barometric damper.
- Excess heat can damage the safety controls.
- Your complete furnace, chimney and controls should be checked by a qualified technician prior to restarting the unit.

WOOD SECTION - OPERATION DURING POWER FAILURE

- Remove blower compartment door and air filter
- If necessary, insert a space under the “damper door” to provide combustion air to the fire.
- Fire at not more than _ normal firing level
- Open all warm air registers and dampers
- Check fire at frequent intervals to ensure safe operation.
- **DO NOT OVERFIRE YOUR FURNACE DURING POWER FAILURE – A POTENTIALLY DANGEROUS SITUATION WILL RESULT.**

NOTE: When power has been restored, remove space from under the “damper door” (if inserted).

Reinstall blower compartment door.

FURNACE MAINTENANCE AND CARE

Establish a routine for the storage of fuel, care of the appliance, and firing techniques. Check daily for creosote build up until experience shows how often cleaning is necessary. Be aware that the hotter the fire, the less creosote will be deposited, and weekly cleanings may be necessary in mild weather though monthly cleanings may be enough in the coldest months.

Have a clearly understood plan to handle a chimney fire.

To control creosote when burning wood in temperate weather, stoke often with a small intense fire. Heat requirements should determine the size of the Wood fire.

To help control creosote build up in the furnace, burn well seasoned hard wood, sun – dried in an open area for at least 12 months.

Do not allow any wood fire to smolder and cool the flue system as this type of operation condenses the flue gas products creating creosote.

DO NOT OPERATE YOUR SUMMERAIRE COMBINATION FURNACE WITH THE WOOD CHARGING DOOR OPEN !

CLEANOUTS

It is very important to clean the heat exchanger at least on an annual basis.

One cleanout cover is located on the front of the furnace above the firebox “charging” door.

To access this cleanout, remove the painted “stand – off” cover.

Remove cleanout cover by removing the nuts and carefully remove the cleanout cover gasket.

Use a wire brush to clean the secondary heat exchanger tubes to loosen any accumulation of soot or creosote that may be present.

One clean – out access cover is located on each side of the furnace.

These covers permit access to the cleanouts located in the secondary heat exchanger

Use a wire brush to loosen soot and creosote present in the area.

Remove residue from the designated cleanout areas with a suitably approved vacuum cleaner designed for removing this material

All cleanout gaskets should be replaced after each cleanout is carried out.

NOTE : It is recommended that clean out of the secondary heat exchanger and complete furnace be carried out by a qualified technician and where required by law, a licensed technician.

CHIMNEY FIRE

- Call the fire department
- Make preparations to leave the house.
- Shut off main power switch to the furnace.
- Close all combustion air openings in the furnace to reduce the fire size.
- Do not remove the smoke pipe(s) until the fire is completely out.
- Inspect the chimney and repair as necessary after any chimney fire. Do not use the furnace until these steps have been affected.

OIL SECTION NORMAL OPERATION

When operating with the oil burner, the furnace will cycle on call from the oil thermostat as an oil furnace operates.

When the oil burner starts, the damper which controls the wood fire will close automatically. When using the wood section, the wood thermostat will cause the damper motor to open the damper door on a call for heat, closing when the wood thermostat has been satisfied.

Should the temperature in the warm air plenum reach its highest allowable limit (230° F or 110° C), the damper motor will close the damper door and the oil burner will not start, the blower will continue to operate. When the temperature returns to normal levels, the normal cycle will start.

OIL SECTION OPERATING INSTRUCTIONS

- Use No 2 furnace oil ONLY
- Do not use gasoline, crankcase oil, or any oil containing gasoline.
- Do not attempt to start the burner if excess oil has accumulated, when the furnace is full of vapor, or if the combustion chamber is hot.
- Do not start the burner unless the blower access door is in place.
- Press the burner relay reset button ONLY TWICE; if the burner fails to start, call an Oil Burner Technician.
- If the oil burner is to be shut off for any period of time, shut the oil valve OFF at the oil tank.
- Do not adjust or tamper with the furnace or any of the controls
- Do not burn garbage or paper in the oil section of the unit.
- Never leave paper, rags, or other combustibles around the furnace.
- Only qualified, or where required by law, a licensed technician shall set – up this unit and adjust controls.

STARTING THE OIL BURNER

- Do not start the burner if the combustion chamber is hot or if oil vapor is present.
- Make sure all valves installed on the oil line are open.
- Turn the main oil burner switch – ON
- Set the oil thermostat at a point above room temperature.
- If the oil burner fails to start immediately, turn the main oil burner switch ‘OFF’ and call a qualified service technician.
- If the oil burner starts to operate normally, leave the switch in the ‘ON’ position and reset the thermostat to the desired temperature.

TO TURN THE BURNER OFF

- Turn the main oil burner switch to ‘OFF’
- Set the thermostat as far below room temperature as possible.

IF BURNER IS TO BE SHUT OFF FOR AN EXTENDED PERIOD.

- Turn main oil burner switch to ‘OFF’.
- Close all oil supply valves.
- The heating system should be checked and cleaned if necessary.

RESTARTING BURNER AFTER EXTENDED SHUT DOWN.

The complete oil burner should be checked and serviced by a qualified technician.

- Check oil pump strainer
- Replace oil filter cartridge
- Check electrodes
- Oil burner motor (see lubrication section)
- Restart burner by following instructions in; “STARTING THE OIL BURNER“ section.

BURNER FAILS TO OPERATE

Always call a qualified technician

The trouble may be :

- Raise your “Oil” section thermostat to 5 ° C (10 ° F) above present room temperature
- Make sure your “Oil Burner” power switch is in the “ON”position
- If you hear a hum from the oil burner, and the motor has not started, press the reset button on the burner motor once only.
- Blown fuse in electrical panel
- Thermostat may be set below room temperature.
- Burner relay (combustion control) may have to be “reset” (press reset once only)
- Oil valve may be closed.
- Oil supply may be too low.
- Manual reset fan and limit control may be “tripped”
- Blocked flue sensor “tripped”
- If the oil burner fails to start or runs for only a few seconds, call a qualified service technician.

OIL BURNER SERVICE

The oil burner and furnace should be thoroughly serviced annually by a qualified service technician, and where required by law, a licensed technician.

AIR FILTER

The air filter should be replaced at least every 3 months, more often if unit is located in a dusty location).

The replacement air filter shall be C.S.A. certified.

DO NOT USE PLEATED TYPE AIR FILTERS IN THIS APPLIANCE.

OIL FILTER

The oil filter cartridge should be changed annually when annual service is carried out.

GENERAL MAINTENANCE

- Keep the heat exchanger clean. Soot does not conduct heat. A dirty furnace requires more oil to heat a home than a clean one.
- The smoke pipe should be removed at least once a year and thoroughly cleaned.
- Ensure that the furnace, flue pipe and chimney are cleaned at the end of the heating season.

CONTROLS

The controls on your Summaire SBB100 combination furnace are factory set.
DO NOT TAMPER WITH THESE CONTROLS OR THEIR SETTINGS

WARNING!

SAFETY CONTROLS

DO NOT TAMPER WITH OR ADJUST THE FACTORY SETTINGS OF THESE CONTROLS.

Your Summaire combination wood / oil furnace is equipped with two (2) safety controls

These controls are located on either the right or left side of the furnace.

One of these controls is a “Fan & Limit” control.

“FAN” portion of this control senses when the air in the plenum chamber is warm enough to activate the air circulation fan. As the fire / heat cools down, and reaches the “OFF” setting of this control, it turns the air circulation blower OFF

“LIMIT” portion of this control senses if for some reason, the temperature in the plenum chamber exceeds the maximum temperature set in the Fan & Limit control. If this temperature exceeds this temperature, the damper door (controls the wood fire) closes, OR, the oil burner shuts OFF. The circulation blower continues to operate until the air temperature in the plenum returns to a point below the factory set temperature.

The other safety control, with a RED button and located beside the above control is a secondary “safety” limit control. This control is a “safety override” control and acts as a back – up control in the unlikely event that the above noted Fan & Limit control fails. This factory set Limit Temperature of this control is set slightly higher than the limit portion of the Fan & Limit control detailed above.

This control will shut down the furnace as noted in the above noted control. The circulation blower continues to operate until the temperature is reduced to a point below the factory setting.

This control will not allow the furnace to “restart” under any conditions UNLESS the RED button is pushed.

HOWEVER, remember, this control activated due to failure of the Fan & Limit control. Therefore the RED button should not be activated unless you have thoroughly examined the cause of the failure of the Fan & Limit control, or what caused the “safety” limit to operate.

We strongly recommend if this situation occurs, that you call a service technician as soon as possible and have a complete inspection of your furnace completed.

THIS IS A SAFETY CONTROL – A DANGEROUS SITUATION WILL RESULT IF PROPER PRECAUTIONS ARE NOT OBSERVED.

CREOSOTE – IMPORTANT WOODBURNING INFORMATION

Creosote is the black tar – like substance that forms on the heat exchanger, flue pipe and chimney when burning wood. Wood combustion is never complete, a visible sign is smoke coming from your chimney.

Wood, when freshly cut, can contain as much as 50% moisture, depending on the type. Air dried wood, when dried under ideal conditions, will still contain approximately 20% moisture. The moisture, along with flue gas products, are vented outside by way of the flue pipe and chimney. Flue gas products, when chilled, condense into liquid creosote which may become a crystal (solid form) as temperatures increase with heat requirements.

The heat control method on furnaces when burning wood, is the size of the fuel charge along with the control of combustion air, to increase or decrease the rate of burning which governs the heat output.

To help prevent creosote in both “grate and base burner” types, burn dry seasoned wood, hard wood is more desirable than soft wood. Govern your wood load with the heat output required. Spring and fall require frequent small charges. A small intense fire produces less creosote.

Short flue pipe runs help to keep the gases above the dew point.

An interior chimney holds and retains heat longer resulting in less condensation than an exterior chimney.

A good draft produces a hotter fire and exhausts the flue gases outside more rapidly at higher temperatures preventing condensation of flue products.

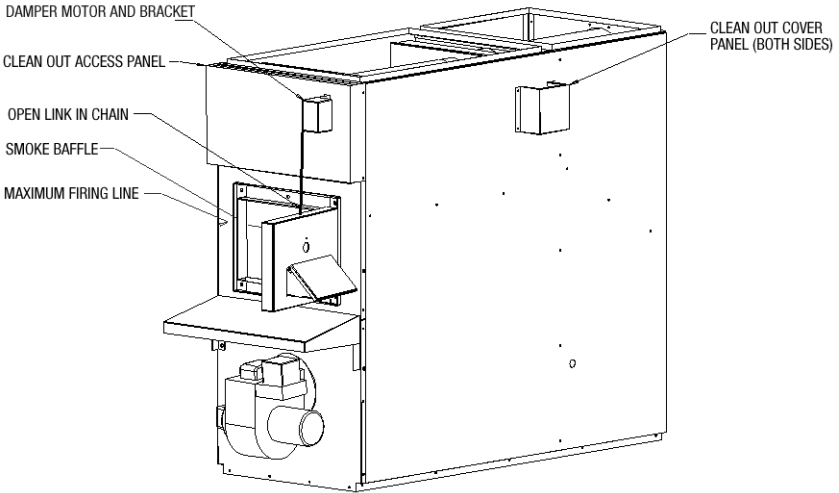
A combination furnace in need of cleaning, will have poor draft creating a lazy fire and eventually, if ignored, may smoke around the doors when the oil side is running with a wood fire. (poor draft in a clean system can also produce smoking around the door). This choked condition with soot and creosote can only be relieved by cleaning the entire system as frequent as necessary, if neglected, it will cause a chimney fire, which could result in property loss and danger to the lives of the occupants.

Wood burning equipment must be vented into a factory built Or vitreous clay or stainless steel lined masonry chimney. Chimneys must be built to Building and Energy Board Standards. Do not neglect cleaning, or deliberately set your

chimney on fire to burn out the soot and creosote. If no damage is done to the house, there will be damage to the chimney caused by extreme heat. Not even the best chimneys are designed to withstand repeated chimney fires.

FACTORY BUILT CHIMNEY MUST BE LABELED THAT IT COMPLIES WITH UNDERWRITERS LABORATORIES CANADA ULC - 629 – M

Figure #1



LIMITED WARRANTY MODEL SBB100

Summaire Mfg. warrants , on a limited basis, this furnace to be free from defects in manufacturing as follows:

- 1) The Heat Exchanger is warranted for a period of 10 years as detailed below.
 - 2) Electric controls, oil burner and outside casing (or jacket) are warranted for a period of 1 year from date of installation.
- (Copy of Bill of Sale must be provided to confirm installation date).

HEAT EXCHANGER LIMITED 10 YEAR WARRANTY

Cost to owner of replacement heat exchanger expressed as a percentage of the retail price in effect at the time of shipment of the replacement heat exchanger.

First 5 years after date of original installation 0% (replaced no charge)

From year 5 through year 6	20%
From year 6 through year 7	40%
From year 7 through year 8	50%
From year 8 through year 9	60%
From year 9 through year 10	80%
From year 10 and over	100%

The foregoing warranty applies only where installation has been made in full accordance with Federal and Local Laws and Codes or ordinances applying to installation of wood or combination wood / oil warm air furnaces, and failure is not caused by abuse, or failure to observe proper operating instructions and cleaning suggestions accompanying the furnace; furnace has been fired with the proper type of fuel and maintained in accordance with our instructions; furnace has not been fired at an output in excess of its rated or designed capacity; furnace has been installed where standard or normal atmosphere prevails and the unit is not subject to excessive humidity, dust conditions, or chemical atmosphere of any type or kind which may cause accelerated metal corrosion.

In Canada this furnace must be installed in accordance with the most current edition of CSA B140 and CSAB365-M91.

Warranty extends only to the repair or replacement of parts returned, freight prepaid, to our facilities in Peterborough, Ontario, and which prove defective after inspection and testing by us. Any labour involved in diagnostics, repair or replacement is excluded from this warranty and Summaire Mfg. assumes no responsibility for consequential damages of any kind to persons or property.

The following forms part of this warranty and is intended to elaborate on specific points of our Limited Warranty:

Warranty on above model will be denied as per the following:

- Rusting of secondary heat exchanger where obvious cause is improper cleaning; particularly at the end of each heating season to prevent damp creosote from attacking the heat exchanger material; or, a defective or improperly installed humidifier leaking water onto the heat exchanger.
- Warpage and cracking above the indicated solid fuel firing line.

Note: Your furnace requires periodic cleaning throughout the heating season. Also; at the end of the heating season your furnace must be completely cleaned including all areas of the secondary heat exchanger where creosote residue may accumulate and attract moisture from damp basement areas.

Remember, the warranty of this specified it covers the materials and workmanship of the unit. It does not cover damage resulting from improper firing practices or maintenance procedures.

Please follow our instructions and keep your unit operating at peak efficiency and keep the warranty on your unit valid.

A heat exchanger replaced under warranty, assumes only the remaining unexpired portion of the 10 year Limited Warranty period, determined by the date of original installation.

This is the **ONLY** warranty applicable to this Summeraire furnace.

Keep your warranty working for you. Please complete and mail your Warranty Registration Card to **Summeraire Mfg., 2040 Fisher Drive, Peterborough, Ontario, Canada K9J 6X6** to register this warranty.



Built Better to Last Longer

Summeraire Mfg.,
2040 Fisher Drive,
Peterborough, Ontario,
Canada, K9J 6X6.