



The Intrepid[®] III Multi-Fuel Heater

Model CS1B0

Homeowner's
Installation
and Operating
Manual

For use in Europe



SAFETY NOTICE: IF THIS APPLIANCE IS NOT PROPERLY INSTALLED, OPERATED AND MAINTAINED, A HOUSE FIRE MAY RESULT. TO REDUCE THE RISK OF FIRE, FOLLOW THE INSTALLATION INSTRUCTIONS. FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY OR EVEN DEATH. CONTACT LOCAL BUILDING OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.

Do Not Discard This Manual: Retain for Future Use

Welcome

Congratulations on your choice of a Vermont Castings Intrepid Multi-Fuel Heater. With this purchase, you made a commitment to make the hearth a place of warmth, beauty and comfort in your home. At Vermont Castings we share that joy and appreciation for the hearth, and we show it in all our cast-iron stoves and fireplaces.

As you become acquainted with your new stove, you will find the aesthetic appeal of cast iron is matched by its superb capacity to absorb and radiate heat. But effective heating depends on both the manufacturer and the operator. Please read this manual carefully to understand how to properly operate your stove.

At Vermont Castings, we are committed to your satisfaction as a customer and that is why we maintain an exclusive network of the finest dealers in the industry. Chosen for their expertise and dedication to customer service, our dealers are factory-trained and know each Vermont Castings products in detail. Feel free to contact your Authorized Vermont Castings Dealer anytime you have question about your stove or its performance.

We have built your Intrepid Multi-fuel stove with the utmost care. With normal use and proper care, it will provide you with many years of service.

This manual contains valuable instructions on the installation and operation of your Vermont Castings stove. You will also find useful information on assembly and maintenance procedures. We urge you to read the manual thoroughly and to keep it as a reference.

Sincerely,

All of us at MHSC

Save These Instructions For Future Reference

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Specifications

Intrepid III Multi-Fuel, Model CS1B0

	Wood	Smokeless Fuel ²
Nominal heat output	10.7 kW ¹ (36,900 BTU/hr)	6.4kW ¹ (21,800 BTU/hr)
Minimum flue draught	12 Pa (0.048" WG)	12Pa (0.048" WG)
Mean flue gas temp	413°C (775°F)	268°C (514°F)
Efficiency (space heating)	71.7%	70.1%
Fuel size/type	406 mm wood	Smokeless fuel
Flue mass gas flow	6.9 g/s	6.4 g/s
CO Emissions (@ 13% O ₂)	8100 ppm	5200ppm
Area heated	Up to 92 sq. m (1000 sq. ft.) ¹	
Loading	Front or top	
Chimney connector.....	152 mm (6") diameter	
Chimney flue size	152 mm (6") minimum	
Flue exit position.....	Reversible, top or rear	
Primary air	Manual set, thermostatically maintained	
Ash handling system	Removable ash pan	
Glass panels.....	High temperature ceramic	

Weight	131 kg (289 lbs.)
Width (leg-to-leg).....	546 mm (21½")
Depth (leg-to-leg).....	349 mm (13¾")
Height to top of flue collar:	
.....	591 mm (23¼") top exit
.....	553 mm (21¾") rear exit

1. This value can vary depending on how the stove is operated, the type and moisture content of the fuel used, as well as the design, construction and climatic location of your home. Figures shown are based on nominal fuel consumption obtained under laboratory conditions and on average efficiencies.
2. This stove is approved for use with processed coal fuels generally known as smokeless. Ask your dealer which fuels are acceptable in your area.

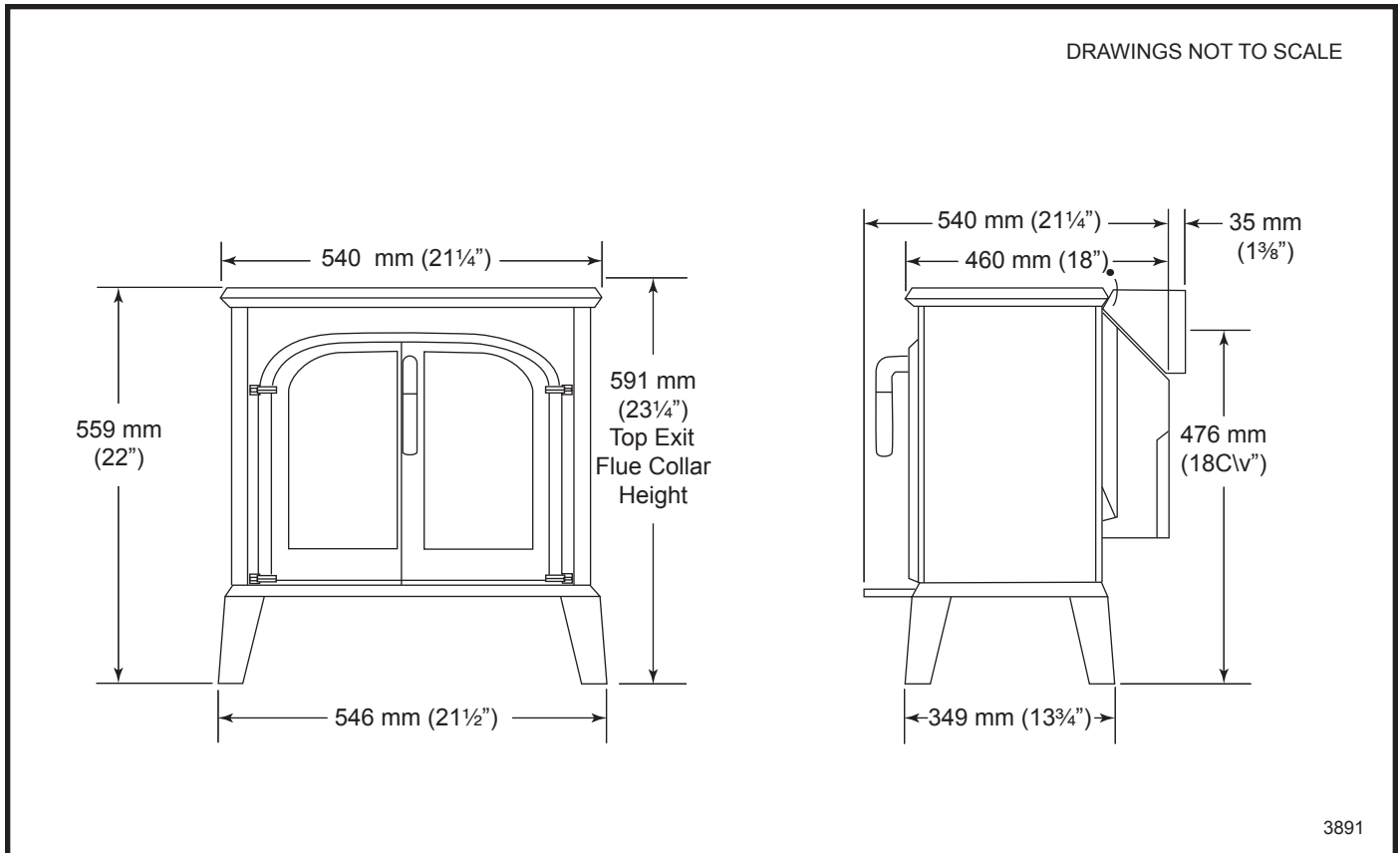


Fig. 1 Intrepid Multi-fuel Heater dimensions.

Installation

SAFETY NOTICE: IF YOUR STOVE IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. TO REDUCE THE RISK OF FIRE, FOLLOW THE INSTALLATION INSTRUCTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.

Before you begin an installation, review your plans to see that:

- Your stove and chimney connector will be far enough from combustible material to meet all clearance requirements.
- The floor protector is large enough and is constructed properly to meet all requirements.
- You have all necessary permits from local authorities.

Your local building official is the final authority for approving your installation as safe and determining that it meets local and state codes.

The metal label permanently attached to the back of every Vermont Castings stove indicates that the stove has been tested to current standards. The test standards are UL 1482 and UL 737 for the US and EN13240:2001 + A2:2004 for Europe. Clearance and installation information also is printed on the label. When the stove is installed according to the information both on the label and in this manual, local authorities in most cases will accept the label as evidence that the installation meets codes and can be approved.

However, codes vary in different countries. Before starting the installation, review your plans with the local building authority. Your local dealer can provide any additional information needed.

IMPORTANT: Failure to follow these installation instructions may result in a dangerous situation, including a chimney or house fire. Follow all instructions exactly, and do not allow makeshift compromises to endanger property and personal safety.

All local regulations, including those referring to national and European standards, need to be complied with when installing this stove.

Outside Air

In some modern, super-insulated homes, there is not enough air for combustion because of insufficient air infiltration into the building. Such air enters a home through unsealed cracks and openings. Kitchen or bath exhaust fans can compete with the stove for available air and compound the problem.

When poor draft is caused by a low infiltration rate, opening a ground floor window on the windward side of the house and in the vicinity of the stove will usually alleviate the problem.

Another solution is to install a permanent outside air supply to the stove and/or room. In some areas, in fact, bringing air for combustion from outside the home directly to the air inlet of the stove is required for new construction.

An outside air supply is not affected by pressure variations within the house, and improved stove performance often results. An Outside Air Adapter Kit #33258 for the Intrepid is available from your local Vermont Castings dealer.

What Kind of Chimney to Use

Your Intrepid Multi-fuel must be connected to a code-approved masonry chimney with a flue liner, to a relined masonry chimney that meets local codes, or to a prefabricated metal chimney. Whatever kind you use, the chimney and chimney connector must be in good condition and kept clean. Figure 2 shows the two chimney types.

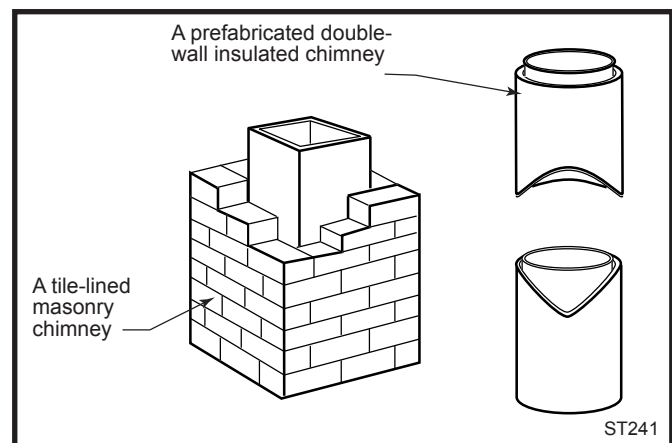


Fig. 2 Standard chimney types.

If you use an existing masonry chimney, it must be inspected to ensure safe condition before the stove is installed. Your local professional chimney sweep, building inspector, or fire department official will be able to inspect the chimney or provide a referral to someone who can.

The flue and chimney design must meet requirement J2, Part J of the building regulations 2000 (Combustion Appliances and Fuel Storage Systems).

Masonry Chimneys

An inspection of the chimney must confirm that it has a lining. Do not use an unlined chimney. The chimney should have no cracks, loose mortar, other signs of deterioration, or blockage. Repair any defects before using the chimney with your stove.

Seal any unused openings in an existing masonry chimney with masonry to the thickness of the chimney wall, and repair the chimney liner. Openings sealed with pie plates or wallpaper are a hazard; seal them with mortar or refractory cement. In the event of a chimney fire, flames and smoke may be forced out of these unused thimbles.

The chimney should be thoroughly cleaned before use.

A newly-built masonry chimney must conform to the standards of your local building code or, in the absence of a local code, to a recognized national code. Masonry chimneys must be lined, either with code-approved masonry or precast refractory tiles, stainless steel pipe, or a code-approved, "poured-in-place" liner. The chimney's clean-out door must seal tightly.

Prefabricated Chimneys

These should be an internal diameter of 150 mm (6") and be of the twin wall insulated construction that has been approved for solid fuel use (e.g. Rite Vent ICS of ICID Lite Chimney Systems). Diameters over 200 mm (8") are not recommended due to the large cross-section causing excessive cooling of the flue gases.

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

Chimney Size

An Intrepid Multi-fuel is approved for venting into a masonry chimney with a nominal flue size of 203 x 203 mm (8" x 8"), and into a round flue size of 152 mm (6").

It may not be vented into larger chimneys without a liner to reduce the effective flue size to 152 mm (6") diameter. Larger chimneys must have their flues relined for proper stove performance.

Accessories to make the connection between stainless steel chimney liners and your Intrepid II are available through your local dealer.

Chimney Connector Guidelines

Chimney connector is the double-wall or single-wall pipe that connects the stove to the chimney. The chimney is a masonry or prefabricated structure that encloses the flue. Chimney connectors are used only to make the connection from the stove to the chimney.

Connecting Flue Pipes

Connector pipes should meet the requirements of the building regulations. This can be achieved by the use of connecting fluepipes included in the following categories:

- a) Vitreous enamelled steel pipe complying with BS 6999: 1989 (1996);
- b) Pipes made from stainless steel as described in BS EN 1008-1:1995 grades 1.4401, 1.4404, 1.4432 or 1.4436 with flue wall thickness of at least 1 mm;
- c) Mild steel fluepipes complying with BS 1449: Part 1: 1991, with a flue wall thickness of at least 3 mm;
- d) Cast iron fluepipes complying with BS 41: 1973 (1998).

Flue Pipes with a spigot and socket joint should be fitted with the socket facing upwards, to contain condensates and moisture within the flue. Joints should be made gas tight using proprietary jointing accessories, or, where appropriate, by packing joint with noncombustible rope and fire cement.

Double-wall chimney connectors must be tested and listed for use with solid-fuel burning appliances. Single-wall chimney connectors should be made of 24 gauge or heavier steel, and should be 152 mm (6") in diameter. Do not use galvanized connector; it cannot withstand the high temperatures that can be reached by smoke and gases, and may release toxic fumes under high heat.

If possible, do not pass the chimney connector through a combustible wall or ceiling. If passage through a combustible wall is unavoidable, refer to the section following on Wall Pass-Throughs. Do not pass the chimney connector through an attic, a closet, or any similar concealed space. The whole connector should be exposed and accessible for inspection and cleaning.

In horizontal runs of single-wall chimney connector without protective shields, maintain a clearance of at least 660 mm (26") from the ceiling.

Keep the horizontal run of chimney connector as short and direct as possible, with no more than one 45 degree elbow. The maximum total length of chimney connector should not exceed 2.4 m (8').

In cathedral ceiling installations, extend the prefabricated chimney down to within 2.4 m (8') of the stove.

SAFETY NOTE: ALWAYS WEAR GLOVES AND PROTECTIVE EYEWEAR WHEN DRILLING, CUTTING OR JOINING SECTIONS OF CHIMNEY CONNECTOR.

Double-wall Chimney Connector

Information on assembling and installing double-wall connector is provided by the manufacturer of the double-wall pipe. Follow the manufacturer's instructions exactly as you assemble the connector and attach it to

the stove and chimney. Using connectors and chimneys from the same manufacturer makes the assembly and installation straightforward.

NOTE: For installations using double-wall connectors, minimum clearances must conform to the listed clearances in the clearance chart on Page 9.

Single-wall Chimney Connector

- Beginning at the flue collar of the stove, assemble the chimney connector. Insert the first crimped end into the stove's flue collar, and keep each crimped end pointing toward the stove.

Using the holes in the flue collar as guides, drill 3 mm (1/8") holes in the bottom of the first section of chimney connector and secure it to the flue collar with three #10 x 1/2" sheet metal screws.

- Secure each joint between sections of chimney connector, including telescoping joints, with at least three sheet metal screws.

The predrilled holes in the top of each section of chimney connector serve as guides when you drill 3 mm (1/8") holes in the bottom of the next section.

- Secure the chimney connector to the chimney. Instructions for various installations follow.

- Be sure the installed stove and chimney connector are correct distances from nearby combustible material.

NOTE: Special slip pipes and thimble sleeves that form telescoping joints between sections of chimney connector are available to simplify installations. They often eliminate the need to cut individual connector sections. Consult your local dealer about these special pieces.

Securing the Single-wall Connector to a Prefabricated Chimney

For prefabricated chimneys, follow the installation instructions of the chimney maker exactly as you install the chimney. The maker of the chimney will supply the accessories to support the chimney, either from the roof of the house, at the ceiling of the room where the stove is installed, or from an exterior wall.

Special adaptors are available from your local dealer to make the connection between the prefabricated chimney and the chimney connector. The top of such adaptors attaches directly to the chimney or to the chimney's ceiling support package, while the bottom of the adaptor is screwed to the chimney connector.

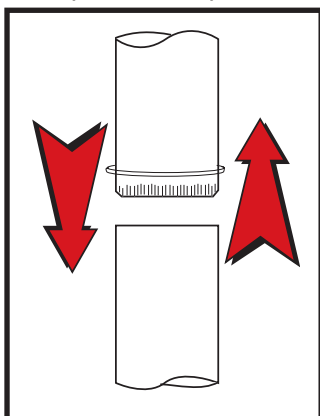


Fig. 3 The crimped end of the connector points toward stove.

These adaptors are designed so the top end will fit outside the inner wall of the chimney, and the bottom end will fit inside the first section of chimney connector. When assembled in this way, any soot or creosote falling from the inner walls of the chimney will stay inside the chimney connector.

Securing the Single-wall Connector to a Masonry Chimney

For masonry chimneys, both freestanding and fireplace chimneys may be used for installation of your Intrepid Multi-fuel.

Freestanding Chimney Installations

If the chimney connector must pass through a combustible wall to reach the chimney, follow the recommendations in the Wall Pass-through section that follows.

The opening through the chimney wall to the flue (the "breach") must be lined with either a ceramic or metal cylinder, called the "thimble", which is cemented firmly in place. The fit must be snug and the joint between the thimble and the chimney wall must be cemented. (Fig. 4)

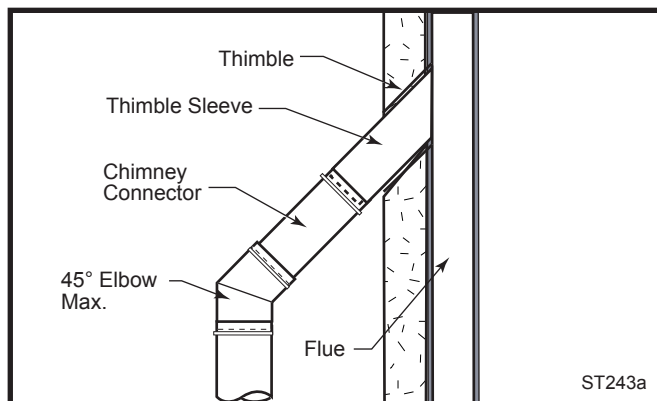


Fig. 4 The thimble, made of either ceramic or metal, must be cemented securely in place.

A special piece called the "thimble sleeve," slightly smaller in diameter than standard connector and most thimbles, will facilitate the removal of the chimney connector system for inspection and cleaning. Thimble sleeves should be available from your local dealer. (Fig. 5)

To install a thimble sleeve, slide it into the breach until it is flush with the inner flue wall. Do not extend it into the actual flue passage, as this could interfere with the draft.

The thimble sleeve should protrude 25-51 mm (1-2") into the room. Use furnace cement and thin gasketing to seal the sleeve in place in the thimble. Secure the chimney connector to the outer end of the sleeve with sheet metal screws.

Without a thimble, a suitable length of chimney connector can be extended through the breach to the inner

face of the flue liner, and cemented securely in place. Additional pieces of connector are then attached with sheet metal screws.

Fireplace Chimney Installations - Above a Fireplace

The Intrepid Multi-fuel may be connected to a chimney above a fireplace opening also. In such installations, the stove is positioned on the hearth in front of the fireplace and the chimney connector rises from the stove top and then angles 45° back into the chimney. (Fig. 5)

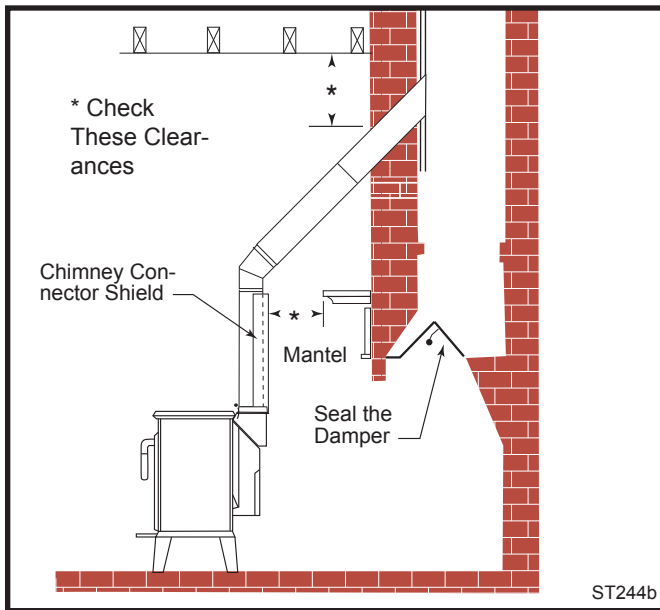


Fig. 5 Chimney connector enters chimney above the fireplace.

The chimney liner should extend to the point at which the chimney connector enters the chimney.

If the chimney connector from your installation enters the chimney above a fireplace, follow all the guidelines mentioned above for freestanding installations. In addition, give special consideration to the following points:

- Check the clearance between the stove and the chimney connector, and any combustible trim or the mantel. Use the necessary combination of mantel, trim, and connector heat shields to achieve the required clearances.
- Check the clearance between the chimney connector and the ceiling. If no heat shields are used, the clearance should be at least 660 mm (26"). To find out how much this clearance may be reduced with heat shields, see the clearance chart on Page 12.
- The fireplace damper must be sealed to prevent room air from escaping up the flue. However, it must be possible to reopen the damper to inspect or clean the chimney.

Fireplace Chimney Installations - Through a Fireplace

If your fireplace height is at least 635 mm (25"), you may install an Intrepid Multi-fuel with standard legs through the fireplace opening using a 90° Tee kit available from your local dealer. This positive connection kit ensures a tight fit between the stove flue collar and the chimney flue. (Fig. 6)

Fireplace installations, whether connected to the flue above or through the fireplace opening, have special clearance requirements to adjacent trim and the mantel. You will find the required clearances for the Intrepid Multi-fuel fireplace installations on Page 12.

Floor protection requirements also apply to fireplace installations. Floor protection information is on Page 8.

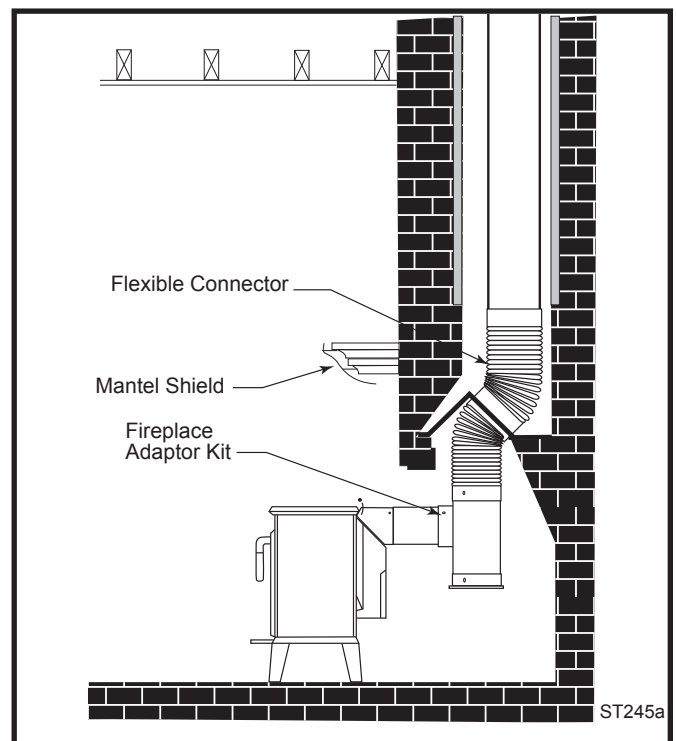


Fig. 6 Chimney connector enters chimney through the fireplace opening.

Wall Pass-Throughs

Whenever possible, design your installation so that the connector does not pass through a combustible wall. If you are considering a wall pass-through in your installation, check with your building inspector before you begin. Also, check with the chimney connector manufacturer for any specific requirements.

Accessories are available for use as wall pass-throughs. If using one of these, make sure it has been tested and listed for use as a wall pass-through.

Always adhere to local building codes when installing a wall pass-through.

Figure 7 shows an alternate method of passing a connector through a wall. All combustible material in the wall is cut away to provide the required clearance that is three times the pipe diameter. The resulting space must remain empty. A flush-mounted sheet metal cover may be used on one side only. If covers must be used on both sides, each cover must be mounted on noncombustible spacers at least 25 mm (1") clear of the wall.

DO NOT CONNECT AN INTREPID MULTI-FUEL TO ANY AIR DISTRIBUTION DUCT OR SYSTEM.

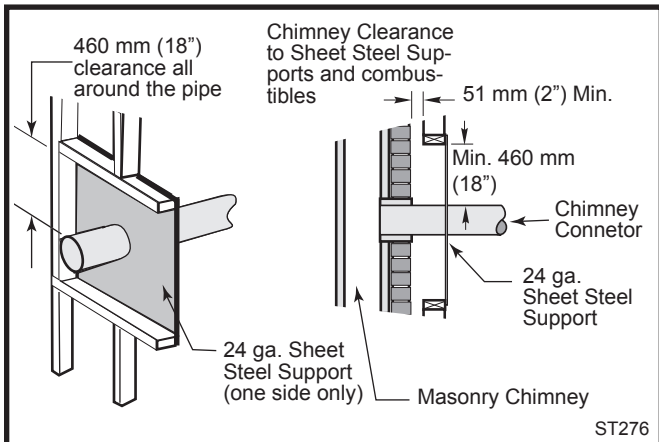


Fig. 7 An approved wall pass-through.

Hearths

This appliance must be installed on to hearth that meets the requirements of Part J of the Building Regulations 2000 (Combustion Appliances and Fuel Storage Systems). This can be achieved by ensuring that the hearth is constructed and sized in accordance with the guidelines included in section 2 of approved document 'J'. The size and clearances of the hearth are as follows:

The constructed hearth should be constructed in accordance with the recommendations in document J, and should be of minimum width 840 mm and minimum depth 840 mm (if a free standing hearth b) above) or a minimum projection of 150 mm from the jamb (if a recessed hearth a) above).

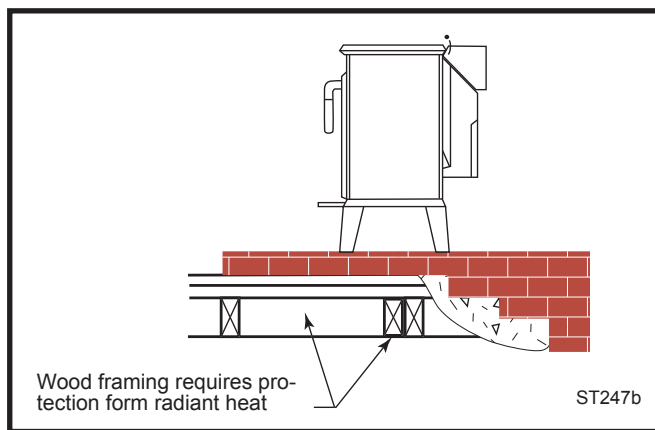


Fig. 8 Supporting timbers under fireplace hearth are considered to be combustible.

Floor Protection for Fireplace Installations

Do not assume your fireplace hearth is completely noncombustible.

Many fireplace hearths do not satisfy the "completely noncombustible" requirement because the brick or concrete in front of the fireplace opening is supported by heavy wood framing as in Figure 8. Because heat passes through brick or concrete readily, it can easily pass through to the wood. As a result, such fireplace hearths can be a fire hazard and are considered a combustible floor.

Keep in mind that many raised hearths will extend less than the required clearance from the front of the heater when it is installed. In such cases, sufficient floor protection as described above must be added in front of the hearth to satisfy the minimum floor protector requirement from the front of the stove: 406 mm (16") from the front. Fireplace hearths must also offer the required protection of 152 mm (6") on either side.

Optional 76 mm (3") short legs may be used only on such hearths that meet the width and depth requirements outlined previously under "floor protection."

Hearth rugs do not satisfy the requirements for floor protection.

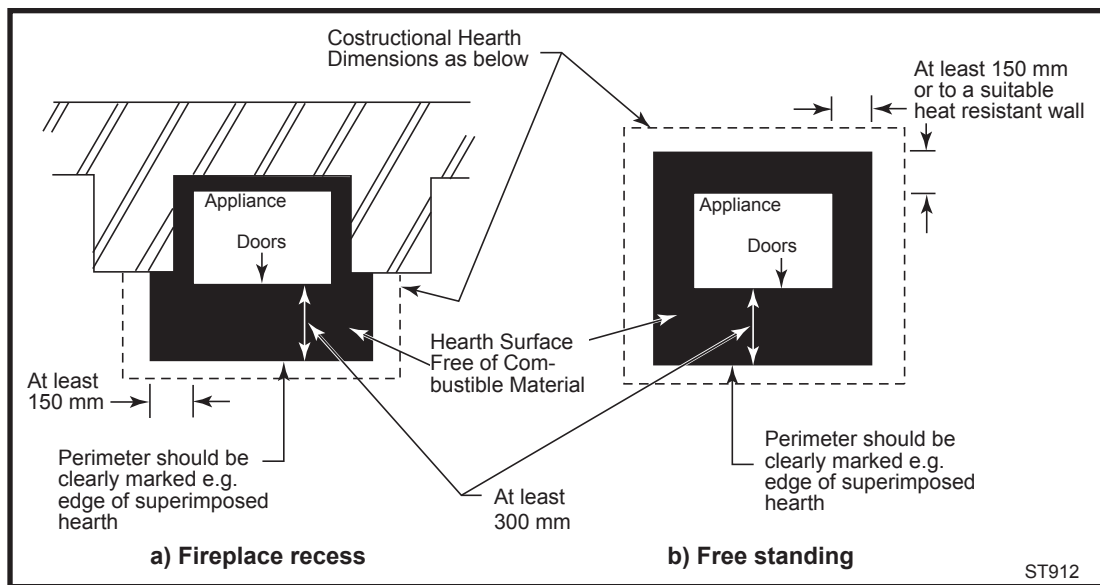


Fig. 9 Noncombustible hearth surface dimensions.

Keep the Stove a Safe Distance from Surrounding Materials

Specifications herein are primarily related to common timberframe construction. Both a stove and its chimney connector radiate heat in all directions when operating, and dangerous overheating of nearby combustible materials can occur if they are too close to the heat. A safe installation requires that adequate clearance be maintained between the hot stove and its connector and nearby combustibles.

Clearance is the distance between either your stove (measured from the back edge of the stove's top plate) or chimney connector, and nearby walls, floors, the ceiling, and any other fixed combustible surface. Your stove has special clearance requirements that have been established after careful research and testing. These clearance requirements must be strictly observed.

In addition, furnishings and other combustible materials must be kept away from the stove as well. In general, a distance of 1220 mm (48") must be maintained between the stove and moveable combustible items such as drying clothes, furniture, newspapers, firewood, etc. Keeping those clearance areas empty assures that nearby surfaces and objects will not overheat.

Clearances

As with any solid fuel heating stove, extremely high surface temperatures can occur, particularly in the event of uncontrolled operation, e.g. if the doors are inadvertently left open. It is crucial that sufficient clearances are allowed to any combustible surfaces, e.g. wooden mantels or lintels, and to timber framed (studded) walls even if they are faced

with noncombustible board. Detailed information on fireplace and hearth construction is provided in section 2 of Document J, all installations must comply with these requirements or with the relevant National or local building standards.

Clearances to timber framed (studded) walls are included below. There are no specific minimum clearances to solid **noncombustible** surfaces (e.g. the sides and rear of Inglenook fire openings constructed from solid masonry) other than to allow safe access to the controls of the stove. For this reason minimum side clearances of 125 mm, and a minimum rear clearance of 50 mm are recommended.

Summary of Clearances

Minimum recommended side clearances to noncombustible surfaces 125 mm (5").

Minimum recommended rear clearance to noncombustible surfaces 50 mm (2").

NOTE: The minimum thickness of solid noncombustible materials is specified in section 2 of Document 'J', in relation to the clearance of the appliance from the surface. As a general rule, the thickness of solid noncombustible material forming the recess of a fireplace is a minimum of 200 mm.

Minimum rear clearance from combustible walls (e.g. timber framed or studded walls) 760 mm (30") measured from the rear edge of the stove top. (Fig. 10, B)

Minimum side clearance from combustible walls 610 mm (24") measured from the side edge of the stove top. (Fig. 10, A)

Minimum distance from stove to movable combustible materials (e.g. furniture, drying clothes, etc.) 1220 mm (48").

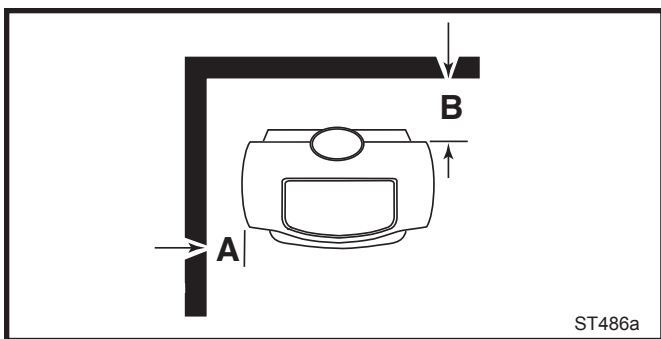


Fig. 10 Minimum clearances.

Connecting Flue Pipe - Clearances

Single wall connecting fluepipes can reach extremely high temperatures; therefore, clearances from the connecting fluepipe (chimney connector) must comply with the requirements of Part J of Building Regulations 2000 (Combustion Appliances and Fuel Storage Systems). This can be achieved by following the recommendations of Approved Document 'J'. These are as shown in Figure 11.

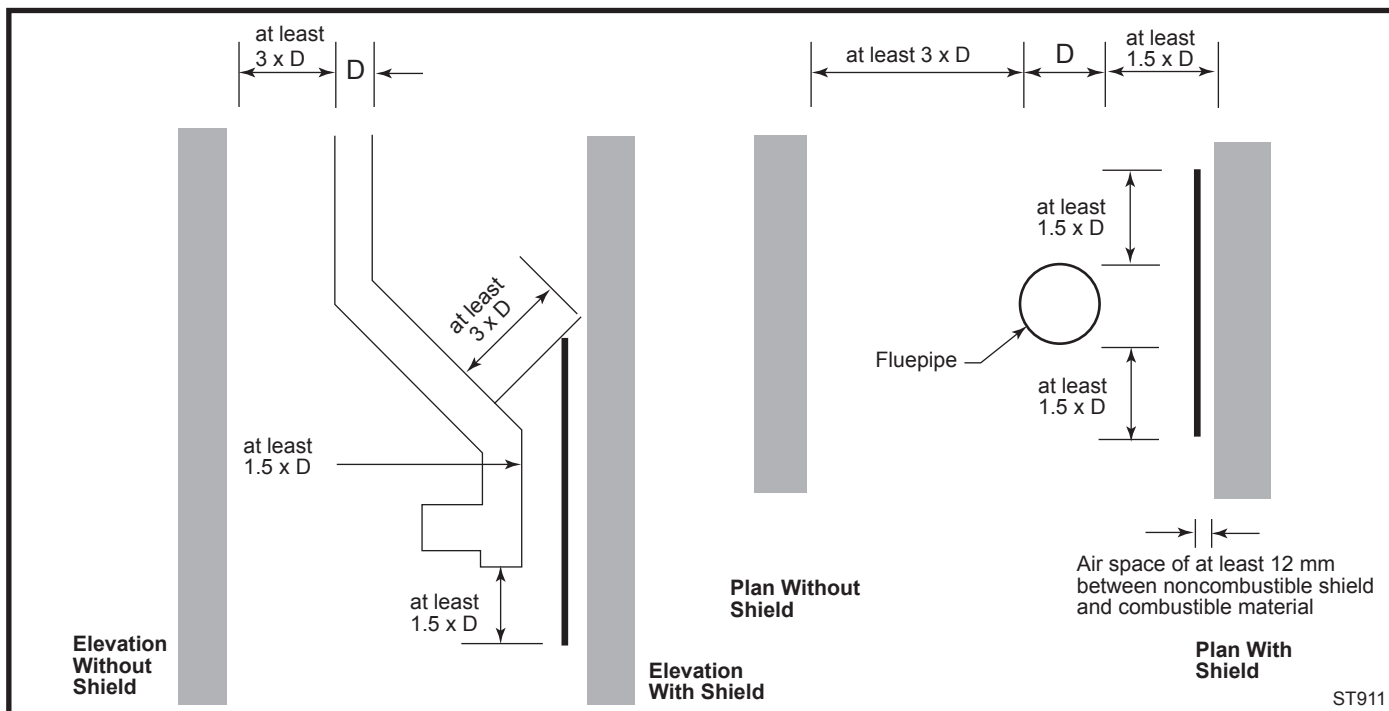


Fig. 11 Connecting fluepipe clearances.

Assembly

Unpacking the Stove

Carefully remove the outer packaging carton from the stove and pallet. Remove the loose items from inside the stove. Check the contents as listed, see diagrams below:

Packing Check List Contained inside polythene bag:

- 3, Handles (door, shaker grate, damper)
- 4, Leg securing bolts
- 4, Leg securing washers
- 1, Door handle storage bracket (secures under front right hand leg fixing bolt)
- 1, Large Allen key
- 1, Small Allen key
- 1, Shaker grate handle bracket
- 2, Shaker grate handle bracket securing nuts
- 3, Self tapping screws (to secure fluepipe connector)

Hardware Bag:

- 4, Legs packed in bubble wrap
- 1, Poker/slicer
- 3, Grate insert plates (for wood burning)

NOTE: No optional short legs are available for the Intrepid stove.

Preparing the Stove for Installation

This stove is very heavy and therefore requires careful handling both to avoid injury and damage to the stove.

Carefully lift up and remove the griddle plate from the top of the stove, and place in a safe place pending installation. (Fig. 12)

Remove the wood burning grate inserts and the wooden packaging piece from inside the stove firebox. (Fig. 13)

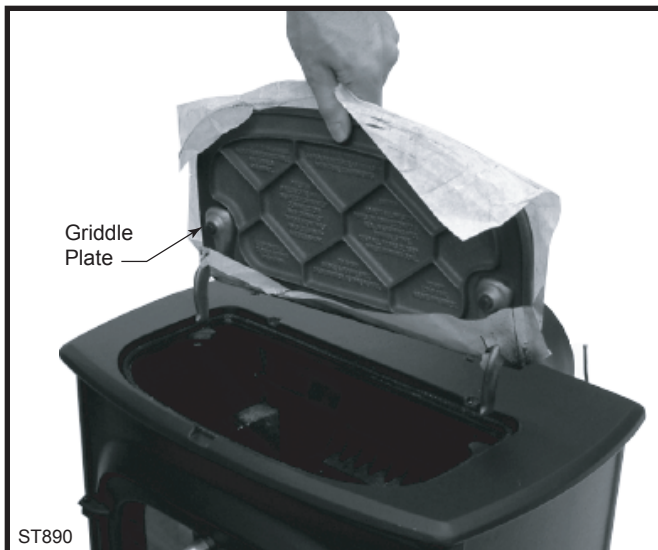


Fig. 12 Carefully remove griddle plate.



Fig. 13 Remove burn grates.

Carefully remove the wood strips that secure the stove to the pallet during transit.

Carefully manoeuvre the stove on the pallet in to a position that allows it to be safely tilted backwards while still resting on the pallet. This will prevent damage to the rear of the stove or the floor, and allow access to the base of the stove for attaching the legs.

Remove the four screws at each corner of the base of the stove. Secure each leg in place at all four corners of the stove using the bolts and washers provided in the hardware bag. Note that the door handle storage bracket must secure to the front left hand leg on this model.



Fig. 14 Attach door handle storage bracket to front left leg.

Attach the shaker bar (riddling grate) handle bracket to the threaded spindle on the right hand side of the base of the stove using the two (2) locking nuts provided in the hardware bag, (Fig. 15)

To facilitate ease of lifting of the stove, it may be helpful to remove all of the firebrick and grate components from the stove before lifting in to the final installed position.

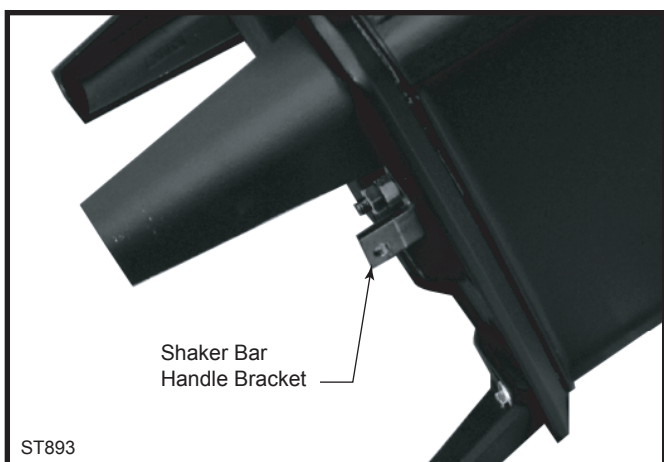


Fig. 15 Attach shaker bar handle bracket to right hand side of base of stove.

tion. If this is required, follow the grate removal instructions.

Install the Removable Door Handle to the Stove

The door handle which comes with the stove is designed to be removeable to prevent overheating during use. To use the handle, simply slide the collar into the door handle and open the doors. When you have either opened or closed the doors, remove the handle and store in a safe place. Alternatively, the handle can be secured in position using the concealed socket head grub screw behind the handle boss. If the handle is secured in place it will become extremely hot when the stove is in use. **Suitable protective insulated gloves must always be used when opening the door when the stove is in use.** Please note the door handle is attached with the allen key provided.

Installing the Stove

Please note that document 'J' states that where a chimney cannot be cleaned through the appliance, a debris collection space which is accessible for emptying and a suitable sized opening(s) for cleaning should be provided. Because the Intrepid allows the chimney / flue to be cleaned through the appliance by removal of the damper assembly, this does not apply. However it is recommended that where possible, additional debris collection space is provided, e.g. by use of a tee with cleaning access and a horizontal flue connection. This prevents debris or deposits from falling in to the stove outlet from the flue and facilitates easier flue cleaning.

There are several satisfactory methods of installing the stove into flue systems. Any method used must comply with the requirements of part 'J' of the Building Regulations 2000. The following are examples of the most common methods of installing the Intrepid in to chimney or flue systems:

If you have a stone or brick built chimney with an integral clay flue liner, the stove may be installed using a vertical fluepipe connector and a suitable steel or non-combustible register plate to close off the base of the chimney, sealed around the fluepipe connector. It is advisable to make this register plate assembly with a method of access for cleaning the flue, although this is not mandatory because this multifuel stove does allow cleaning access to the flue through the stove.

Alternatively, if space permits the stove can be connected to a lined chimney using a horizontal flue outlet position and a 90° tee shaped fluepipe connector, with a debris collection / cleaning cap on the base.

If you have a stone or brick built chimney without an integral clay flue liner, a suitable flexible twin wall steel liner should be used that is designed and approved for solid fuel applications (e.g. Rite-Vent Chimflex). It is recommended that a 152 mm (6") diameter liner is used. The stove may then be connected using a vertical fluepipe connector and a suitable steel or non-combustible register plate to close off the base of the chimney and secure the based of the flexible flue liner to fluepipe connector. The instructions provided by the manufacturer of the flue liner must be followed using the components specified for connecting and securing the liner within the chimney.

Again, if space permits the stove can be connected to a lined chimney using a horizontal flue outlet position and a 90 degree tee shaped fluepipe connector, with a debris collection / cleaning cap on the base.

If no chimney is present, a proprietary pre-fabricated twin wall insulated flue system may be used providing it is approved for solid fuel applications, (e.g. Rite-Vent Icid / Icid Light). The manufacturer's instructions must be followed. Connection to the insulated flue system may be made with a horizontal, 45° or vertical fluepipe connector, depending on the connection present on the flue system starter section.

Flue Collar Reversal

If you wish to install the flue pipe on the Intrepid multi-fuel stove in the vertical position, you will need to rotate the flue collar from the horizontal position from which it is set at the factory, to the vertical position. To complete this please see below :

1. Remove the two fixing screws that hold the flue collar in position, as on the photograph below.
2. Take care to lift the flue collar away from the stove. Rotate the flue collar 180° clockwise, taking care not to damage the rope seal on the collar, and attach to the appliance. (Fig. 16)

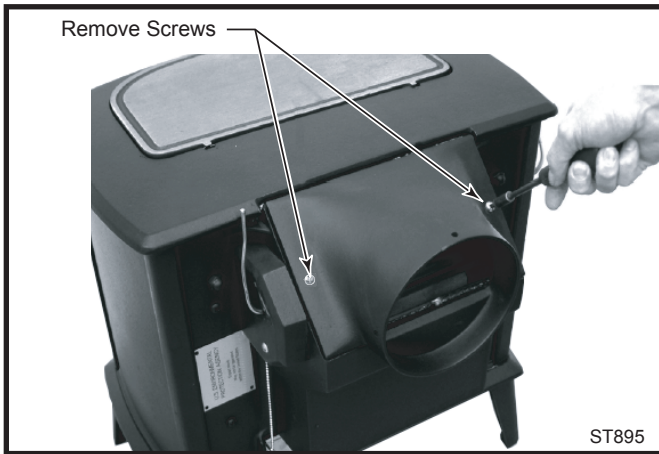


Fig. 16 Remove screws securing flue collar.

Install the Fluepipe Connector

The fluepipe connector should be secured to the stove flue collar using the three self-tapping screws provided, to provide a mechanically sound joint. Secure the screws through the flue connector holes in the flue outlet. (Fig. 17) The joint should then be sealed with high temperature cement or proprietary flue joint sealant designed for solid fuel applications.

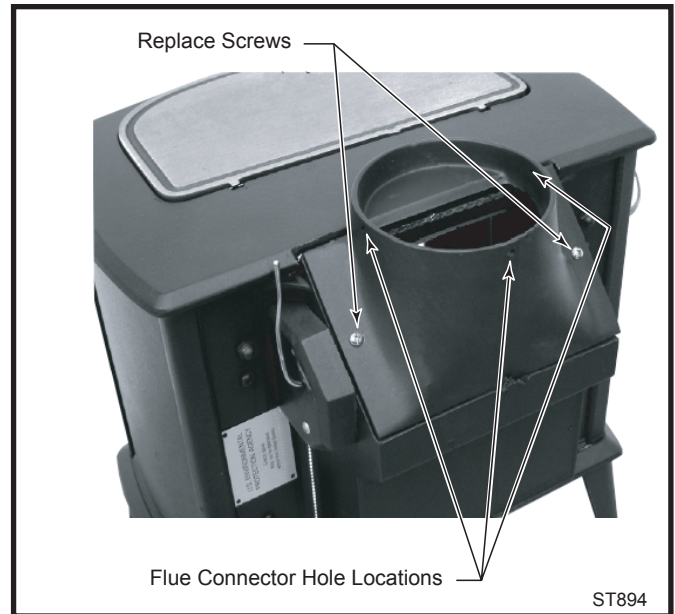


Fig. 17 Replace screws after turning flue collar 180°.

Operation

Basic Operation of the Stove

This stove is a premium product constructed from cast iron, and if looked after, will last for many years, even with constant use. The controls are simple to use and comprise a flue damper that opens or closes the flue outlet and a primary air control lever. The primary air control is thermostatic and provides a consistent output at any setting. The flue damper can be opened to increase flue draught for starting or rekindling the fire, and is closed to provide secondary combustion of the flue gases by forcing the flue gases through the louvers in the rear of the firebox in to the secondary chamber.

Secondary combustion occurs in the secondary combustion chamber in the rear of the firebox. The high temperatures attained in this area encourage further burning of the volatile gases in the smoke, reducing emissions, reducing creosote deposits in the flue and increasing the efficiency of the stove. Long burn periods are achieved when the stove is in secondary combustion mode with the damper closed.

Using the Controls

Two controls are used to regulate the performance of the Intrepid multifuel. A primary air control lever (situated on the top right hand rear of the stove) regulates the supply of air to the fire. A damper (situated at the left hand rear of the stove) opens and closes the direct flue

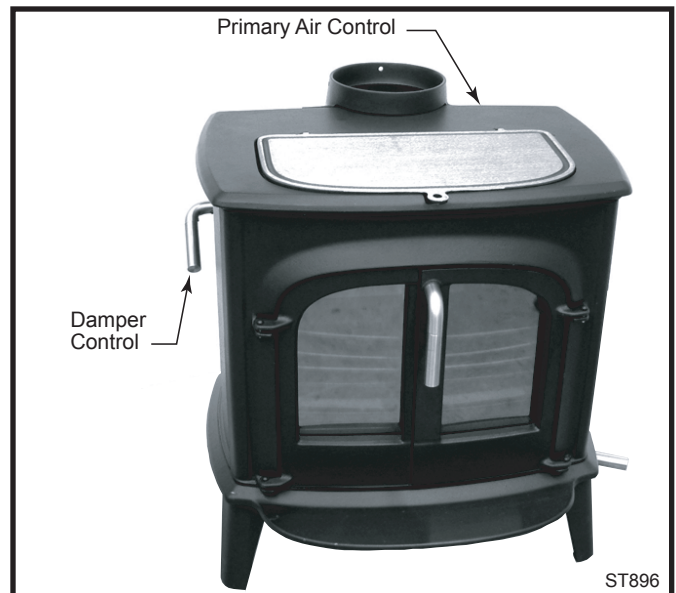


Fig. 18 Air control levers for the Intrepid.

outlet from the rear of the firebox. In the closed position this damper directs the flue gases through the secondary combustion chamber in the rear of the stove, and in the open position allows unrestricted flow of the flue gases in to the flue, thereby increasing flue draught.

Primary Air Control

The primary air control lever, located at the top right rear corner of the stove, controls the amount of incoming combustion air for starting, maintaining and reviving a fire. More air entering the stove makes the fire burn hotter and faster, while less air prolongs the burn at a lower heat level.

For maximum air supply and greatest heat output the lever should be moved to the rear of the appliance, this will also give the shortest burn time as the high air supply will consume the fuel more quickly. The Intrepid also features an automatic thermostat that works in conjunction with the primary air control shutter to ensure consistent heat output at any setting you select. The thermostat responds to the temperature of the cast iron, closing and opening as required to maintain the casting temperature at the chosen level.

In addition to the primary air control, two secondary air controls are located on the back of the stove. These shutters should be open when burning wood and should be closed when burning coal.

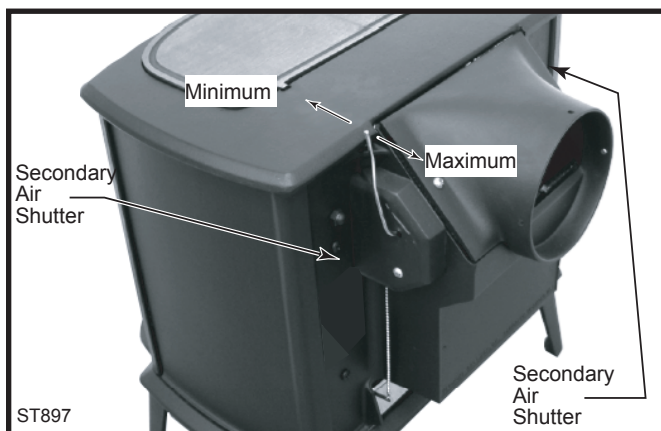


Fig. 19 Primary air control lever.

The Damper

The damper handle, located on the top left hand side of the stove, is used to open and close the damper plate. Use the removable handle to operate this control, it may be fixed in place using the allen screw provided or left loose and stored in the door handle holder behind the front left hand leg.

When the handle is positioned upwards the damper is open. In this position smoke passes directly into the chimney and maximum flue draught is provided. The damper must be open when starting or reviving the fire and whenever the doors or griddle plate are opened. With the handle in the downward position, the damper plate is closed. This forces the smoke from the fire down through the secondary combustion chamber before passing into the chimney. This creates high temperatures in the secondary chamber that assist in burning volatile gases and particles present in the smoke.



Fig. 20 The damper positions.

This position provides long burn times and maximum efficiency. There are no intermediate positions and the damper must be fully open or firmly closed. (Fig. 20)

The Glass Door Panels

The glass panels used in the doors of this stove feature a heat reflective coating on the outside surface. Heat reflected back by this surface helps to maintain a higher inner glass surface temperature. This, in conjunction with the wash of pre-heated primary combustion air over the glass, helps to reduce build up of deposits on the glass and maintain clear viewing under most conditions.

The Front Grate

The front grate bars are removable for cleaning and servicing, however they are designed to keep fuel away from the glass door and the stove should not be operated without the front grate bars in place.

The bars are removed by lifted them vertically upwards and freeing them from the retaining channel, they can then be removed from the stove through the front. (Fig. 21)



Fig. 21 The front grates may be removed for servicing and cleaning.

Adding Fuel

There are two ways to add fuel to the Intrepid multifuel stove. The top griddle opens and provides the most convenient way to add fuel, and, providing the damper is open, this can be accomplished without smoke spilling into the room. Alternatively, fuel can be added by opening the front glass doors on the stove, again ensuring that the damper is first opened.

To open the doors, using suitable heat resistant protective gloves, the door handle should be inserted in to the door latch stub (unless previously secured in place), and turned leftwards and up.

The doors must be closed correctly after use. This is achieved by closing the left hand door first, then with the handle in the open position the right hand door should be closed. The door handle should then be firmly rotated downwards and rightwards to the closed position to securely clamp both doors shut and prevent air leakage into the stove. (Fig. 22) Door handle in closed position

For safety and greatest efficiency the stove should only be operated with the doors and griddle fully closed.

Using the Air Control Settings Effectively Correct use of the primary air control will require some experience of using the stove, as exact performance will depend on the flue draft available and the type (and seasoning if wood) of the fuel available.



Fig. 22 Close the door and turn the handle down and to the right.

When first using the stove it is advisable to keep track of the settings used for different levels of room temperature and stove output, and start lower and work upwards to higher outputs as you gain a feel for how the stove performs.

For longer burns, the air control will need to be fully or almost fully shut down. Experimentation will reveal whether fully shut down results in the stove dying away and going out, particularly with hard types of solid fuel.

Most applications do not require large amounts of combustion air, especially if adequate draft is available. For this reason it is not advisable to use the very high air settings until you have first established that these will not cause over-firing of the stove. If any part of the stove glows during use, this is over-firing and may cause permanent damage to parts of the stove and increase the risk of chimney fire.

Recommended Fuels

The stove is a multifuel product and, as such, may be operated on most types of solid fuel and wood.

Solid Fuels

The following are recommended for use with this stove: House coal (trebles, doubles and other small sizes are not recommended)

Anthracite (Large Stove Nuts)
Phurnacite Homefire and Homefire Ovals
Sunbrite
Ancit
Taybrite

Petcokes and derivatives of petcoke are not recommended for this stove as excessive temperatures can occur and may result in damage to the stove.

Wood

Well seasoned hardwoods are recommended for this stove and will give the best output and cleanliness in use. As a rough guide, hardwoods should be split and stacked and allowed to air dry under cover for approximately 8-18 months depending on the split size. Incorrectly seasoned, green wood or wet timber will not burn effectively as large amounts of heat are required to drive out the moisture from the wood before it can burn. This lowers the temperature of the stove and flue, reduces output and can cause a substantial increase in deposits of creosote in the stove and flue.

With experience, correctly seasoned wood can be identified by the weight and appearance of the logs. Well seasoned wood loses approximately a third of its weight when seasoned and contraction cracks are usually visible on the cut ends.

Examples of the best UK hardwoods for wood burning are: Oak, Beech, Chestnut, Ash, Hawthorn. Other hardwoods are also suitable. Softwoods may be burned but will burn away quickly and provide a lower heat output. The high resin content of softwoods will lead to increased creosote production and deposits in the stove and flue components.

Lighting the Stove for the First Time

Conditioning Your Stove

Cast iron is a superior material for stove construction, but can be broken by a sharp blow or by the severe thermal shock caused by rapid and extreme temperature change. The cast iron plates expand and contract with changes in temperature. When using the stove for the first time it is important to minimise the thermal stress by allowing the plates to adjust gradually during three or four initial break-in fires by following steps 1-3 below (for wood) or over page (for coal or solid fuel).

How to Build and Sustain a Wood Fire

The damper must be open when starting a fire or refueling. Insert the three (3) wood burning grate inserts if burning wood. Also, when burning wood and in order to achieve optimal performance, the two air shutters, located on either side of the outer back, should be opened. These should always remain closed when burning coal.

1. Open the damper and fully open the primary air control.
2. Place several sheets of crumpled newspaper in the stove. Place eight or ten finger sized sticks on to the paper, then lay two or three larger sticks of split dry wood of approximately 25-51 mm (1-2") in diameter.

DO NOT USE CHEMICALS OR FLUIDS TO START OR REVIVE THE FIRE. NEVER USE PETROL, LIGHTER FLUID, PARAFFIN, KEROSENE OR ANY FLAMMABLE LIQUID ON OR NEAR THIS STOVE UNDER ANY CIRCUMSTANCES.

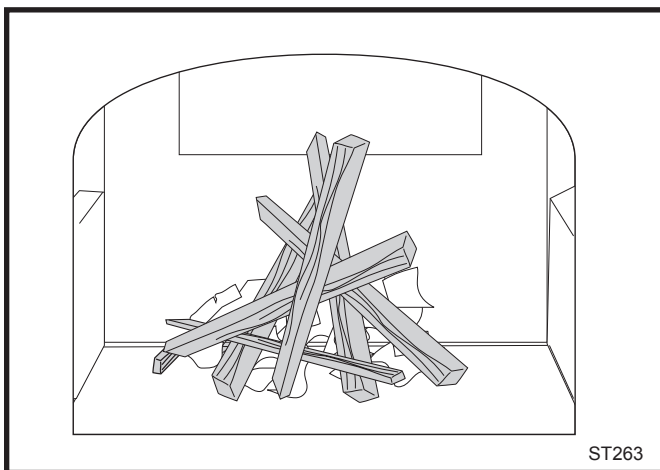


Fig. 23 Start the fire with newspaper and dry kindling.

3. Light the newspaper and close the door. Gradually build up the fire by adding a few 76 mm (3") splits. **If this is one of the first few "break-in" fires allow the fire to burn brightly, then let it die out.**

During the break-in fires do not allow the stove temperature to exceed 260° C (500° F) as measured on the optional stove top thermometer. Adjust the air control to regulate the fire accordingly. **During the first few fires it is normal to experience some odour as the various materials used in the stove cure under heat.**

4. After the stove has been broken-in, using steps 1-3, build the fire gradually. Add larger wood with a diameter of 76-102 mm (3"-4"). (Fig. 24) Continue adding split logs of this size to the briskly burning fire until there is a glowing ember bed of at least 76 mm (3") deep. A good ember bed is necessary to sustain the fire after the damper is closed.

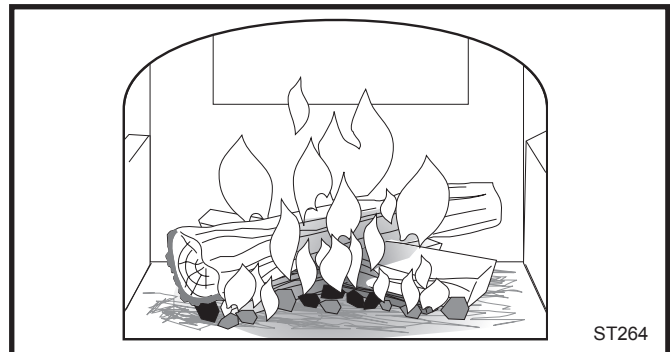


Fig. 24 Add larger pieces of wood as the fire begins to burn well.

5. Close the damper when the fire is fully established. (Fig. 20)
6. Adjust the primary air control to the desired output.

Refuel While the Embers are Still Hot

Refuel the stove whilst it is still hot and there are plenty of glowing embers to rekindle the fire. Include some smaller pieces of wood in the new load to help the stove rebuild to operating temperature quickly. Wear appropriate heat resistant gloves and:

1. Open the primary air control lever.
2. Open the damper.
3. Check the ash level in the pan and empty if necessary. (Fig. 25)
4. Use the slicer / poker to freshen the charcoal bed (do not use the shaker grate when burning wood as this will cause the embers to fall away into the ash pan).
5. Add fuel.
6. Close the damper and rest the primary air control as soon as the fire is re-established. With a thick ember bed and well seasoned wood this may be carried out immediately after re-fuelling.

Ash Disposal

Remove ash before it reaches the top of the ash pan. Check the level at least once a day, and before each refuelling. If the ash level is close to the top of the pan, empty the ash pan as described below: Failure to do this will result in premature failure of the shaker bars due to excessive temperatures caused by ash build up.

Wear suitable heat resistant protective gloves.

1. Open the damper.
2. Fully open the front doors.
3. Using the slicer, pull the ash pan fully out of the stove, sliding the slicer through the slot in the front of the ash pan so the hook in the end of the slicer locates in the slot in the rear of the ash pan. This provides a secure location and allows the slicer to act as a handle for the ash pan. (Fig. 25)
4. Remove the ash pan and dispose of the ashes safely.
5. Replace the ash pan in the stove. Ash should be stored outside in a metal container with a tight fitting lid, away from any combustible material until fully cool. It is essential to ensure that any ash is fully cooled before final disposal. Pure wood ash can be composted and used as a garden fertilizer. Coal and solid fuel ash, or mixed ash should be disposed of with domestic refuse.

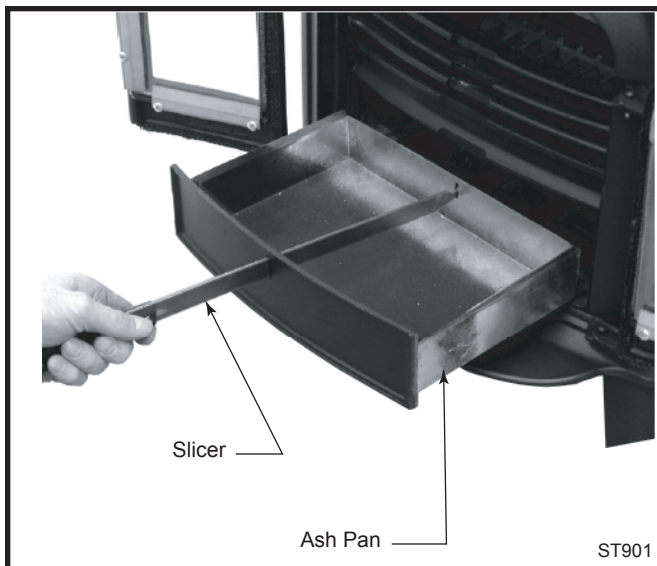


Fig. 25 Check the ash pan regularly and clean out when necessary.

Creosote

Creosote is a by-product of wood burning at lower temperatures. It is a form of tar that results when unburned combustion gases condense inside the flue system at temperatures of approximately 140° C (284° F). Creosote is volatile and can result in severe chimney fires if allowed to accumulate. The chimney or flue and fluepipe connector should be inspected regularly and cleaned if this accumulation exceeds 5-6mm in thickness. Normally the creosote deposit is a black /grey flaky residue that is easily swept away. In severe cases, creosote can form black shiny tar like deposits that can form in runnels in the flue that are extremely difficult to remove. If this has occurred, it suggests that the flue is running too cool, due to either excessive cross-sectional area of the flue, or to severe heat loss. This will require immediate remedial action to prevent continuing build up and an increased risk of chimney fire. Large cross-sectional area chimneys are best addressed by the use of a proprietary twin walled flexible flue liner. This will serve to increase flue gas temperatures and reduce heat loss, thereby helping to bring the temperature above the condensing temperature of the flue gases.

It is advisable to operate the stove for a period at high output on a regular basis to help prevent formation of creosote.

Draft Management

A stove is part of a system, which includes the chimney, the operator, the fuel, and the home. The other parts of the system will affect how well the stove works. When there is a good match between all the parts, the system works well.

Wood stove operation depends on natural (unforced) draft. Natural draft occurs when the smoke is hotter (and therefore lighter) than the outdoor air at the top of the chimney. The bigger the temperature difference, the stronger the draft. As the smoke rises from the chimney it provides suction or 'draw' that pulls air into the stove for combustion. A slow, lazy fire with the stove's air inlet fully open indicates a weak draft. A brisk fire, supported only by air entering the stove through the normal inlet, indicates a good draft. The stove's air inlet is passive; it regulates how much air can enter the stove, but it doesn't move air into it.

Depending on the features of your installation - steel or masonry chimney, inside or outside the house, matched to the stove's outlet or oversized - your system may warm up quickly, or it may take a while to warm up and operate well. With an 'airtight' stove, one which restricts the amount of air getting into the firebox, the chimney must keep the smoke warm all the way to the outdoors. Some chimneys do this better than others. Here's a list of features and their effects.

Masonry Chimney

Masonry is a traditional material for chimneys, but it can perform poorly when it serves an 'airtight' stove. Masonry is a very effective 'heat sink' - it absorbs a lot of heat. It can cool the smoke enough to diminish draft. The bigger the chimney, the longer it takes to warm up. It's often very difficult to warm up an outdoor masonry chimney, especially an oversized one, and keep it warm enough to maintain an adequate draft.

Steel Chimney

Most factory-made steel chimneys have a layer of insulation around the inner flue. This insulation keeps the smoke warm. The insulation is less dense than masonry, so the inner steel liner warms up more quickly than a masonry chimney. Steel doesn't have the good looks of masonry, but it performs much better.

Indoor/Outdoor location

Because the chimney must keep the smoke warm, it's best to locate it inside the house. This uses the house as insulation for the flue and allows a little heat release into the home. An indoor chimney won't lose its heat to the outdoors, so it takes less heat from the stove to get it warm and keep it warm.

Flue sizing

The inside size of a chimney for an 'airtight' stove should match the size of the stove's flue outlet. When a chimney

serves an airtight stove, more is not better; in fact, it can be a disadvantage. Hot gases cool off through expansion; if we vent a stove with a 152 mm (6") flue collar [181 sq cm(28 square inch) area] into a 254 x 254 mm (10 x 10") flue, the gases expand to over three times their original size. This cools the gases, which weakens draft strength. If an oversized flue is also outside the house, the heat it absorbs gets transferred to the outdoor air and the flue usually stays cool.

It's common for a masonry flue, especially one built for a fireplace, to be oversized for an airtight stove. It can take quite a while to warm up such a flue, and the results can be disappointing. The best solution to an oversized flue is an insulated steel chimney liner, the same diameter as the stove or insert's flue outlet; the liner keeps the smoke at its original volume, and the result is a stronger draft. An uninsulated liner is a second choice - the liner keeps the smoke restricted to its original size, but the smoke still must warm up the air around the liner. This makes the warm-up process take longer.

Pipe & Chimney Layout

Every turn the smoke must take in its travel from the stove to the chimney top will slow it down. The ideal pipe and chimney layout is straight up from the stove, to a completely straight chimney. If you're starting from scratch, use this layout if possible. If the stovepipe must elbow to enter a chimney, locate the thimble about midway between the stove top and the ceiling. This achieves several goals: it lets the smoke speed up before it must turn, it leaves some pipe in the room for heat transfer, and it gives you long-term flexibility for installing a taller stove without relocating the thimble.

There should be no more than eight feet of single-wall stove pipe between the stove and a chimney; longer runs can cool the smoke enough to cause draft and creosote problems. Use double-wall stove pipe for long runs.

Single Venting

Each 'airtight' stove requires its own flue. If an airtight stove is vented to a flue that also serves an open fireplace, or a leakier stove, it's easier for the chimney draft to pull air in through those channels than it is to pull air through the airtight, and performance suffers. Imagine a vacuum cleaner with a hole in the hose to see the effect here. In some cases the other appliance can even cause a negative draft through the airtight, and result in a dangerous draft reversal.

Creosote

Creosote is a by-product of slow woodburning. It's an organic tar that can condense in the flue if it's dense in the smoke, and slow-moving, and cools off to less than 143° C (290° F). Condensed creosote is volatile, and can generate chimney fires if it gets hot enough. All the features that

affect chimney draft also affect creosote condensation - so use whatever combination of installation features and operational steps will encourage good draft and minimize creosote production.

Because letting the smoke cool off and slow down is one of the keys to creosote production, it makes sense to line a chimney to match the stove's outlet size, for safety reasons as well as performance. Canadian law requires a matching liner to serve any stove or insert vented through a fireplace chimney; in the US, the National Fire Protection Association recommends one if the flue is more than three times bigger (in square area) than the outlet on the stove or insert. Some localities enforce the NFPA guidelines as part of their building codes.

Fuel

Even the best stove installation will not perform well with poor fuel. The best fuel is hardwood that has air-dried 12-18 months. Softwood burns, but not as long as hardwood. Fairly 'green' wood has a good amount of moisture in it; it will burn, but some of the heat potential is used to drive the remaining moisture off the wood. This reduces the amount that reaches your home and can contribute to a creosote problem. There are moisture meters available for firewood; you can also judge your wood by its appearance and weight. If you get it green, lift a piece and get a sense of its weight; it can lose a third or more of its weight as it dries. Also look at the ends of a log; as it dries it shrinks and often cracks. The more weathered and cracked a piece is, the drier it is.

Dry wood burns readily with a good chimney draft. But with modern stoves, especially catalytic ones, the wood can be too dry. While extra-dry wood has little creosote in it, the remainder can 'gas out' from the wood quickly and densely enough to overload the catalytic burner. If you hear a rumbling or roaring noise, like a propane torch, from the stove, that is a sign that the catalyst is seriously overfiring. The catalyst is a platinum film on a ceramic base; the metal can get to higher temperatures than the ceramic can take, and overfiring the catalyst can break it. Dry wood can also burn out faster than you want. If your dry wood burns out too quickly or overloads the catalyst you can mix in greener wood to slow the fire down.

Backpuffing

Back-puffing results when the fire produces volatile gases faster than the chimney draft pulls them out of the firebox. The gases back up in the firebox till they're dense enough and hot enough to ignite. If your stove back-puffs, you should open up the damper to let the smoke rise to the flue more quickly, let more air into the firebox, and avoid big loads of firewood. Run your stove with enough primary air so that you always see lively, dancing flames in the firebox; a lazy, smoky fire is inefficient and can contribute to creosote buildup in the chimney.

An easy way to test your chimney draft is to close the stove's damper, wait a few minutes to let the airflow stabilize, then see whether you can vary the strength of the fire by swinging the air control open and closed. Results are not always instant; you may need to wait a few minutes for a change in the air control setting to have an effect on the fire. If there's no change, then the draft isn't strong enough yet to let you close the damper, and you'll need to open it for a while longer and manage the fire with the air inlet until the draft strengthens. If you keep track of your burning habits and relate them to their effects on the stove's operation, you'll be rewarded with good performance and a safe system.

Negative Pressure

Good draft also depends on a supply of air to the stove; a chimney can't pull in more air than is available to it. Sluggish draft results when a house is tight enough to prevent the ready flow of air to the stove, or by competition between the stove and other equipment that sends indoor air outside - especially power-driven equipment like range hoods, clothes dryers, etc. If the chimney draws well with all other equipment turned off (or sealed, in the case of fireplaces and/or other stoves), then you simply need to be careful with timing the use of the other equipment. If you need to crack a nearby window or door to enable the chimney to draw well, that's a sign that you should install an outside-air intake to bring combustion air directly to the stove. Vermont Castings dealers carry adapters to attach to the stove to connect an air duct for outdoor combustion air.

In many cases, local or national codes require the installation of permanently open air vents, particularly with larger appliances (i.e. above 5 kW). Refer to these codes to determine specific requirements for your installation.

Conclusion

Woodburning is an art rather than a science. Once the stove and chimney system are in place, the stove user can only vary technique, mostly your timing, to achieve good results. If you keep track of your burning habits and relate them to their effects on the stove's operation, you'll be rewarded with good performance and a safe system.

Maintenance

Let the fire in the stove go out and allow the stove to cool completely before beginning any maintenance procedure.

Care of the Cast Iron Surface

An occasional dusting with a dry rag will keep the painted cast iron of your Intrepid looking new. The stove's paint can be touched up as needed. First, clean the areas to be painted with a wire brush. Remove the griddle and set it aside. Then, touch up the stove with Vermont Castings high temperature stove paint. Apply the paint sparingly, and keep in mind that two light coats of paint are better than a single heavy one.

Cleaning the Glass

Most of the carbon deposits on the glass will burn off during hot fires. However, the ash residue that accumulates on the glass surface should be removed regularly to prevent etching. Follow this procedure to clean the glass:

- Be sure the glass is completely cool.
- Clean the glass with water or a cleaner made especially for this purpose. Do not use abrasive cleaners.
- Rinse the glass thoroughly.
- Dry the glass completely.

Glass Replacement

The panes of glass in the doors of the Intrepid rest on a cushion of gasket, and are held in place by four clips. The glass is coated on one side. The coated side is slightly colored and is further identified with white labels marked "CV+". Remove the doors from the stove and place them on a sturdy, level work surface. To install the glass, follow this procedure:

1. Remove the door. Swing the door back and forth while lifting it, to remove its hinges from the stove front. Set the door down on a flat, padded surface. Remove the clips and the broken glass; set them aside.
2. Inspect the Gasket. If the window gasket is in good condition, you can leave it in place. If you replace it, use only a Vermont Castings gasket, part no. 1203556. Be sure the channel around the window opening is clean and free of dust. Place the gasket in its channel; make sure that its outer edge fits against the cast iron surround ridge.
3. Install the glass. Lay the glass on the inner gasket with the coated side down (toward the outside of the door). Tighten the screws snugly, but loose enough to allow for a little movement of the glass when the

stove is in operation. Overtightening can crack the glass immediately or cause it to crack if it is unable to expand when hot.

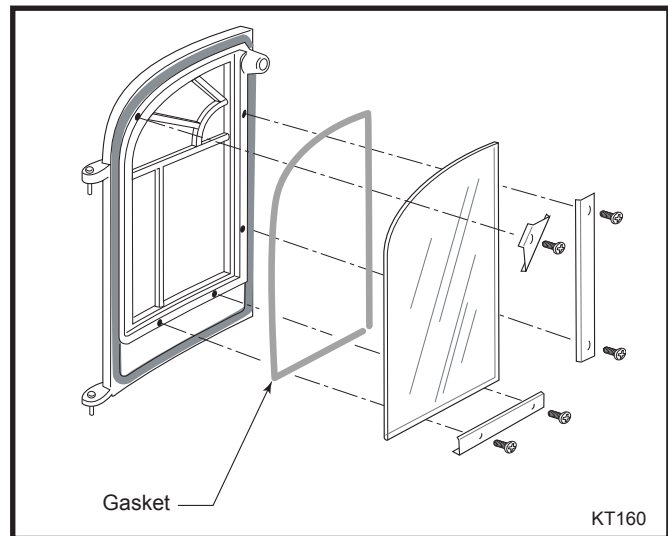


Fig. 26 Door glass installation.

Check the Operation of the Primary Air Shutter

The primary air shutter is visible from the back of the stove. The shutter must open and close freely when you move the thermostat lever. If it does not, check for any obstruction, or for a bound or stretched chain needing adjustment. (Fig. 27)

On a cold stove the shutter should be open no more than 1/8" (3mm) when the primary air control lever is pushed completely to the left (closed), as seen from the back of the stove. When the lever is pushed completely to the right (open), the shutter should be open to an angle of approximately 70 degrees from the stove back.

The ball chain should measure 8½" (216 mm) from connection to the thermostat coil to connection on the primary air flap.

If setting is incorrect, the thermostat coil may be bent or broken. Call your Vermont Castings Dealer for help.

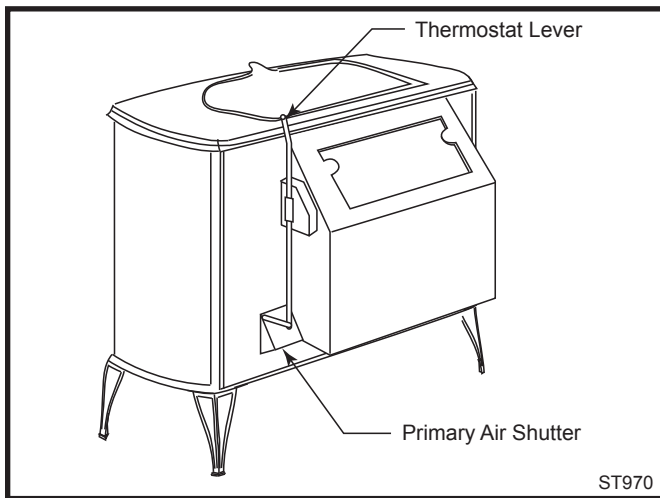


Fig. 27 The primary air shutter must move freely.

How to Adjust the Door Latch

Over time, the gasketing around the doors will compress, and the latch may need adjustment. To adjust the latch, loosen the small locking nut, extend the striker screw one turn while keeping the striker screw from turning. (Fig. 28) Keep making adjustments a little at a time until the setting is right.

The front doors of the stove should close securely and tightly, when the handle is in the closed position. When the latch is properly adjusted there should be a slight resistance as the doors are moved to the completely closed position.

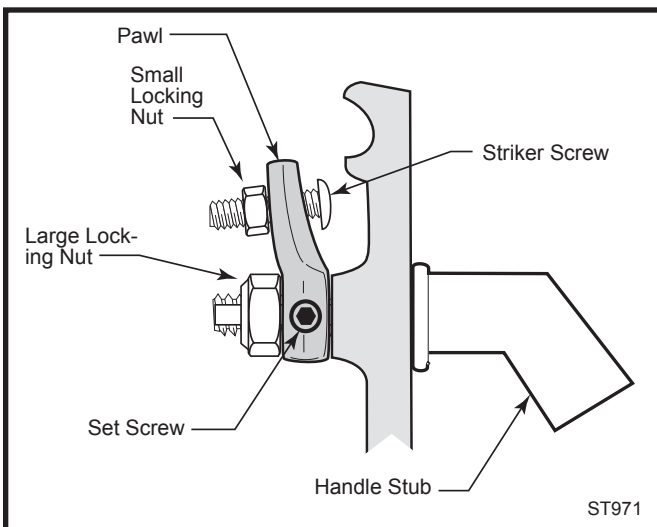


Fig. 28 Turn the door latch striker screw in or out to tighten or loosen the door latch.

Tighten the Damper Handle as Needed

The damper handle is attached to the damper rod with a set screw bearing against a flat spot on the rod. Check the set screw periodically for tightness; tighten as needed.

Replace the Stove Gaskets as Needed

The Intrepid uses fiberglass rope gaskets to make a tight seal between some parts. With use, particularly on those parts that move, gaskets can become brittle and compressed, and can begin to lose their effectiveness. These will need periodic replacement.

The sizes of replaceable gasket are listed below, along with their applications.

Gasket Diameter... And the Parts it Seals

5/16" wire gasket	The griddle to the stove top
5/16"	The damper to the upper fire-back; the front doors to the stove front; and the door halves to each other
3/16"	The glass panes to the door

Refer to Page 20 for information on replacing the glass panels or its gasket.

If you need to change a gasket, first obtain an appropriate replacement from your Vermont Castings Dealer.

Wait until the fire is out and the stove has cooled. Be sure to follow the standard safety procedure for working with dusty materials: Wear safety goggles and a dust mask.

The procedure for replacing the gaskets is the same, regardless of the gasket location.

1. Remove the existing gasket by grasping an end and pulling firmly.
2. Use a wire brush or a screwdriver to clean the channel of any remaining cement or bits of gasket. Remove stubborn deposits of cement with a cold chisel if necessary. (Fig. 30)

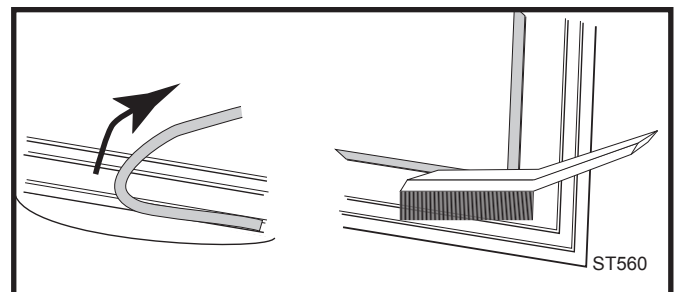


Fig. 30 Remove gasket then clean channel with wire brush.

3. Determine the correct length of the appropriate-sized gasket by laying it out in the channel. Allow an extra 25-51 mm (1-2") and mark the spot to be cut.
4. Remove the gasket from the channel, place it on a wood cutting surface, and cut it at the marked spot with a utility knife. Twist the ends slightly to keep the gasket from unraveling.

5. Lay an unbroken 3 mm (1/8") bead of gasket cement in the newly-cleaned channel. Starting at one end, press the gasket into the channel. Ensure a good joint where the gasket meets before trimming any excess. Do not overlap the gasket ends or leave ends with ragged edges. (Fig. 31)
6. Press the gasketed part firmly against its normal mating surface to seat the gasket evenly in its channel.
7. For doors, replace the doors and close them on a piece of waxed paper to keep the cement from migrating onto the stove front, or tap other parts with the rubber mallet (or hammer/block of wood).
8. Clean excess cement from around the channel. Let the cement that holds the new gasket dry thoroughly.

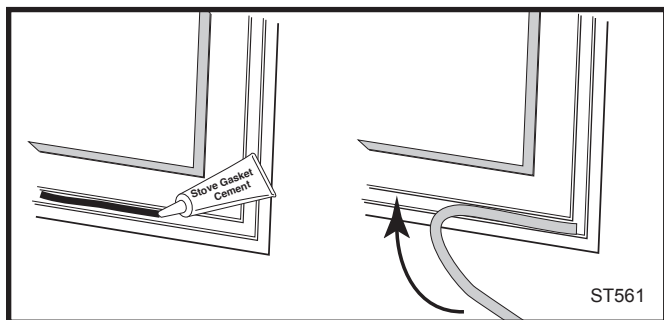


Fig. 31 Lay a bead of gasket cement then press new gasket in place.

Adjust the Door if Necessary

The door latch or damper mechanism may need adjustment after you have regasketed them. Initially, it may require loosening to accommodate the new gasket; after a few weeks, it may need tightening to compensate for compression of the new gasket. The directions for adjusting the latch and damper are on Page 26.

Permanent Gaskets

Other gaskets seal between non-moving parts, but these are not subject to the same wear and deterioration as gaskets on moving parts. It is unlikely that you will ever need to replace these gaskets unless the involved parts are disassembled and then put back together. If this is the case, the job should be done only by a qualified service technician. The diameter of the gasket that seals these non-moving parts is 5/16", and the areas sealed are the flue collar to the stove back; and the lower fireback to the sides. Refer to Page 20 for information on the glass panels and their gaskets.

The Chimney System

Creosote

Your Intrepid Multi-fuel is designed to reduce creosote buildup significantly. However, regular chimney inspection and maintenance must still be performed. For safety, good stove performance, and to protect your chimney and chimney connector, inspect the chimney and chimney connector on a regular schedule. Clean the system if necessary. Failure to keep the chimney and connector system clean can result in a serious chimney fire.

When wood is burned slowly, it produces tar, organic vapors and moisture that combine to form creosote. The creosote vapors condense in the relatively cool chimney flue. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire within the flue system that can damage the chimney and overheat adjacent combustible material.

If you do have a chimney fire, act promptly to:

- **Close the damper and thermostat lever.**
- **Get everyone out of the house.**
- **Call the Fire Department.**

You should inspect the system every two weeks during the heating season as part of a regular maintenance schedule. To inspect the chimney, let the stove cool completely. Then, using a mirror and a strong light, sight up through the flue collar into the chimney flue. If it is not possible to inspect the flue system in this fashion the stove must be disconnected to provide better viewing access.

If a significant layer of creosote has accumulated - 1/8" (3mm) or more - remove it to reduce the risk of a chimney fire.

Clean the chimney using a brush the same size and shape as the flue liner. Flexible fiberglass rods are used to run the brush up and down the liner, causing any deposits to fall to the bottom of the chimney where they can be removed through the clean out door.

The chimney connector should be cleaned by disconnecting the sections, taking them outside, and removing any deposits with a stiff wire brush. Reinstall the connector sections after cleaning, being sure to secure the individual sections with sheet metal screws.

If you cannot inspect or clean the chimney yourself, contact your local Vermont Casings, Majestic Products authorized dealer or hire a professional chimney sweep.

Annual Maintenance

Every spring, at the end of the heating season, perform a thorough cleaning, inspection and repair. The stove and chimney system should be inspected and maintained by a qualified engineer.

- Thoroughly clean the chimney and chimney connector.
- Inspect the chimney for damage and deterioration. Replace weak sections of prefabricated chimney. Have a mason make repairs to a masonry chimney.
- Inspect the chimney connector and replace any damaged sections.
- Check gasketing for wear or compression, and replace if necessary. A 'paper test' will guide you on this. Close and lock the door or damper on a slip of paper and then try to pull the paper out. If the paper pulls out with little or no resistance, the gasket is not snug enough at that spot. If adjusting the damper or latch does not result in a seal that makes it hard to pull the paper out, replace the gasketing.
- Check door and damper handles for tightness. Adjust if needed.
- Check heat shield screws. Tighten as necessary.
- Clean dust from the inner sides of bottom, rear and connector heat shields.
- Remove ashes from the ash pan and replace with moisture absorbing material (such as cat litter) to keep the stove interior dry. Close the stove door to keep cats from using the litter.
- Touch up the paint on black stoves.

Disassembly of the Stove and Grate Components

Disassembly Sequence

1. Carefully lift up and remove the three front grate bars from the retaining channel.
2. Lift up and remove the lower front grate bar.

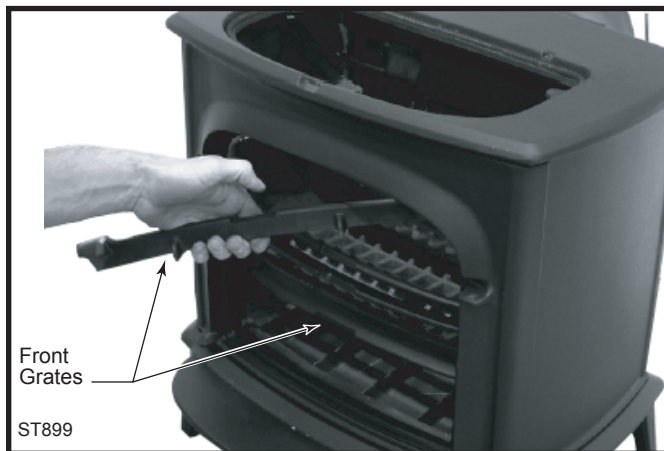


Fig. 32 Remove the front grate bars.

3. Remove the two side firebricks.
4. Remove the left and right horizontal inserts.
5. Carefully lift up and simultaneously remove the right side of the three bottom grates along with the shaker linkage. These are supported at the right side by open retaining slots in the right vertical grate insert.
6. Remove the left and right vertical grate inserts. Note that it may be necessary to gently tap these with a soft faced mallet to break out any residual beads



Fig. 33 Remove side firebricks.



Fig. 34 Remove left and right horizontal inserts.



Fig. 35 Remove right side bottom grate.

of stove cement left from the original factory stove assembly that may be holding them in place. **NOTE: They must not be refitted with stove cement, they are designed to be dry fitted and would prove extremely difficult to remove again if cemented in place.**



Fig. 36 Remove vertical grate inserts.

Removal of the Secondary Combustion Chamber Firebricks and Damper Assembly

1. The damper assembly is retained by two tab bolts. These must first be loosened from both sides of the upper rear face of the stove.
2. When loosened, rotate the two tab bolts from inside the stove to release the damper assembly. Carefully remove the damper retaining plate.



Fig. 37 Loosen damper assembly bolts.



Fig. 38 Remove the damper retaining plate.



Fig. 39 Remove damper plate.

3. Carefully remove the damper plate.
4. Remove the outer firebrick followed by the inner firebrick.
5. With both vertical fire bricks removed the secondary combustion chamber can be thoroughly cleaned out, then if required the base firebrick can be removed.
6. Reassemble in the reverse sequence, taking care to ensure that the front and rear vertical firebricks are correctly positioned to allow the flue gases to pass between.



Fig. 40 Remove outer and inner firebrick.



Fig. 41 Inside of stove can now be cleaned thoroughly.

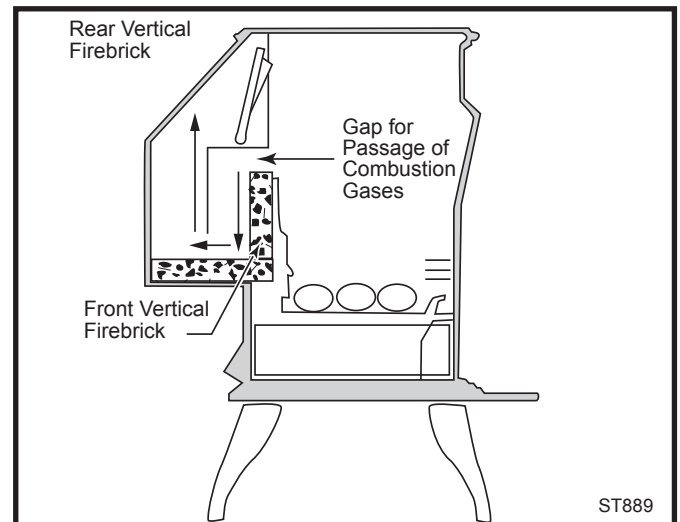
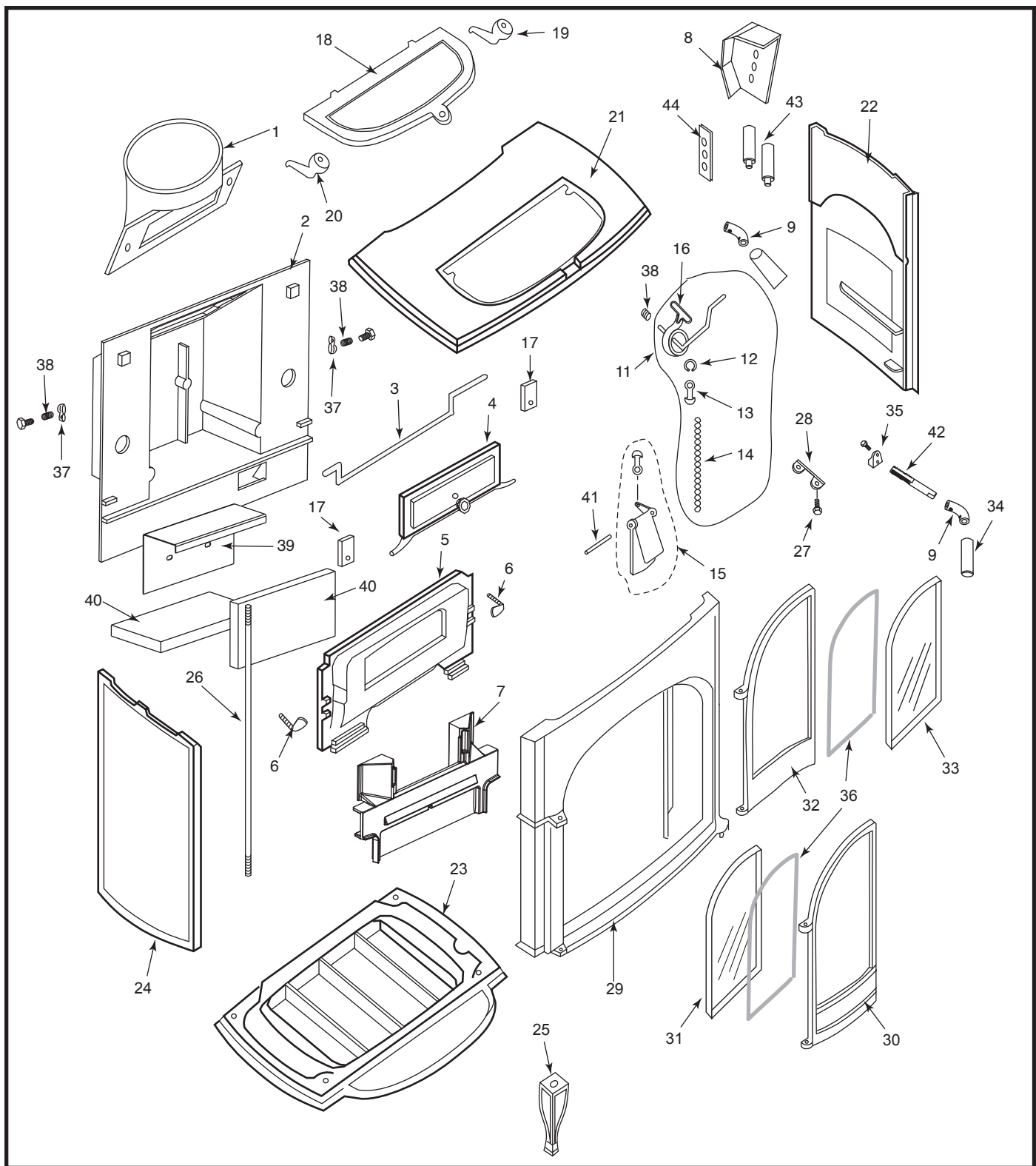


Fig. 42 Remove vertical firebrick.



MHSC reserves the right to make changes in design, materials, specifications, prices and discontinue colors and products at any time, without notice.

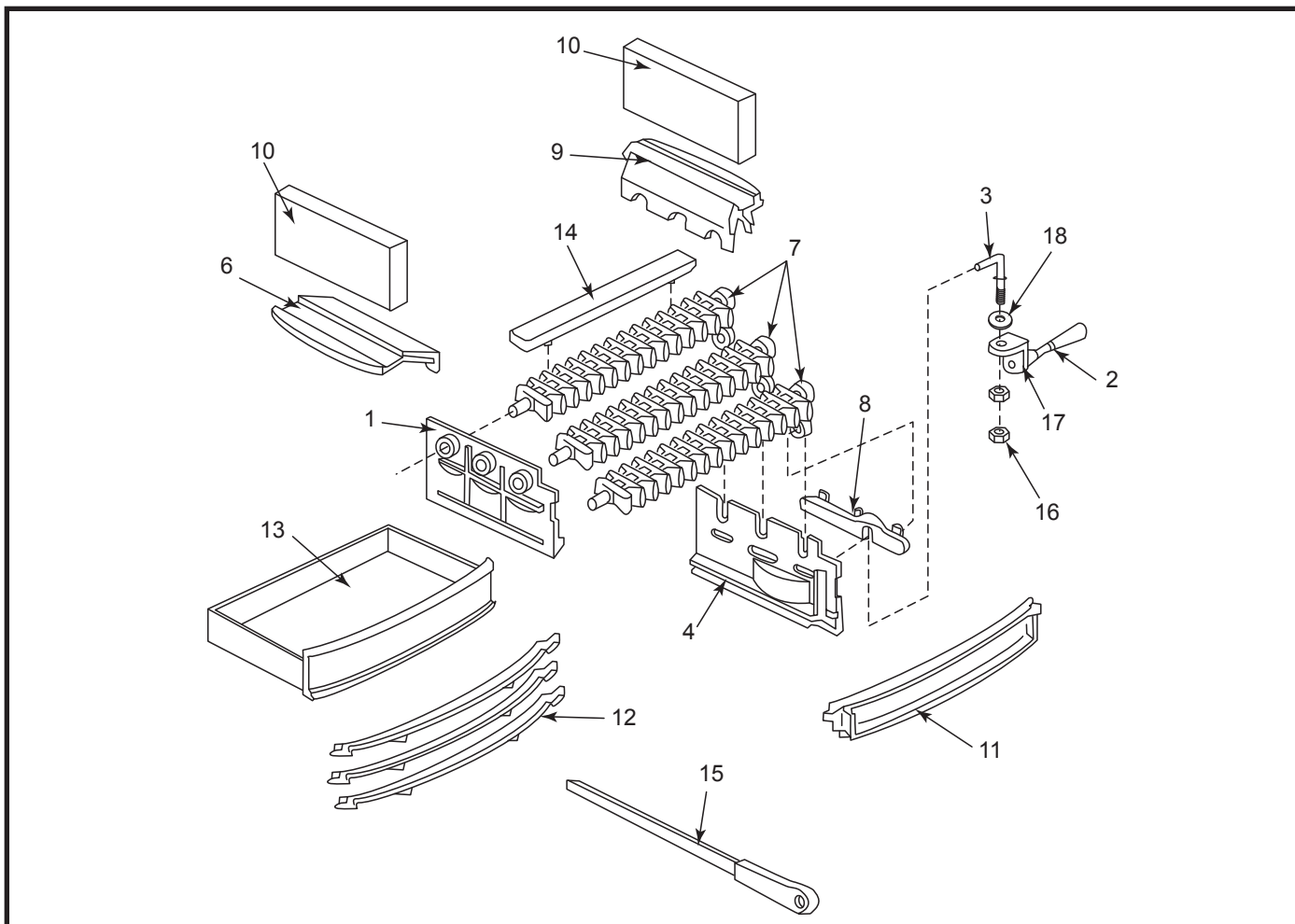
Intrepid Multi-Fuel Heater

Model CS1B0

Intrepid Multi-Fuel Heater

Model CS1B0 (continued)

Ref.	Description	Part Number
1.	Flue Collar	1306561
2.	Back Panel	30004301
3.	Damper Rod	1600852
4.	Damper	1306367
5.	Upper Fireback	1306381
6.	Weld Screw	1201583
7.	Lower Fireback	30004218
8.	Thermostat Cover	30005114
9.	Handle Stub	30002040
10.	Friction Spring	1201846
11.	Thermostat Assy	5005467
12.	Jump Ring	1201985
13.	Ball Chain Fitting (2)	1201972
14.	Ball Chain	1201960
15.	Primary Air Flap Assy.	5005431
16.	Thermostat Clip	1601408
17.	Damper Tab	1601488
18.	Griddle	1306356
19.	Right Griddle Quad (Pre-2010)	1301832
19a.	Right Griddle Quad	30005119
20.	Left Griddle Quad (Pre-2010)	1301807
20a.	Left Griddle Quad	30005118
21.	Top	30002027
22.	Right Side	30002025
23.	Bottom	30002032
24.	Left Side	30002026
25.	Leg	30002030
26.	Tie Rod	1601640
27.	Leg Bolt, 3/8"-16 x 1" Hex Bolt	1201432
28.	Handle Holder	1600600
29.	Front	30002031
30.	Left Door	30002024
31.	Left Glass Panel ²	1401157
32.	Right Door	30002023
33.	Right Glass Panel ²	1401156
34.	Handle	30002041
35.	Pawl Assy.	30002362
36.	Glass Gasket	1203556
37.	Air Control	1300671
38.	Friction Spring	1201846
39.	Flue Deflector	30004341
40.	Firebrick (2)	1601103
41.	Damper Wire	1601555
42.	Front Handle Shaft	30001890
43.	Spacer	30005112
44.	Therm Plate	30005113



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Intrepid Multi-Fuel Heater

Model CS1B0

Item Description	Part Number
1. Left Vertical Grate Insert	1306546
2. Fallaway Shaker Handle Assembly	30002041
3. Shaker Rod	1600922
4. Right Vertical Grate Insert	1306533
6. Left Horizontal Insert	1306528
7. Bottom Grate / Arm Assy.	5003720
8. Shaker Linkage	1306581
9. Right Horizontal Insert	1306534
10. Firebrick (2)	1601103
11. Front Lower Grate Bar	1306517
12. Front Grate Bars (3)	1306437
13. Ash Pan Assy w/Cover	5003540
14. Woodburning Grate Inserts (3)	1306557
15. Slicer / Poker	5005708
16. Nut, Hex 3/8-16	1203161
17. Shaker Link	30002042
18. Washer FL 3/8-Z	1202488

Intrepid Multi-Fuel Heater

Model CS1B0 (continued)

1. In the diagrams and throughout this manual, 'left' and 'right' mean as you face the stove.
2. The glass panels have a heat-reflective coating on the outside and are not interchangeable.
3. Hardware in this stove is in standard U.S. (inch) sizes. Most hardware items are available at local hardware stores.

**Please record the following information
for future reference.**

Stove Serial No. _____

Dealer _____

Phone _____

Date Purchased _____

Installer _____

Phone _____

Date Installed _____

Warranty

Limited 3 Year Warranty

MHSC warrants that this woodburning stove will be free of defects in material and workmanship for a period of three years from the date you receive it, except that the catalyst, thermostat assembly, handles, glass door panels, cement, and gasketing shall be warranted as described below.

MHSC will repair or replace, at its option, any part found to be defective upon inspection by a Vermont Castings Authorized Dealer. The customer must return the defective part or the stove, with shipping prepaid, to the Authorized Dealer or pay for any Authorized Dealer in-home travel fees or service charges for in-home repair work. It is the dealer's option whether the repair work will be done in the customer's home or in the dealer's shop. If, upon inspection, the damage is found to be the fault of the manufacturer, repairs will be authorized at no charge to the customer for parts and/or labor.

Any woodburning stove or part thereof that is repaired or replaced during the limited warranty period will be warranted under the terms of the limited warranty for a period not to exceed the remaining term of the original limited warranty or six (6) months, whichever is longer.

Limited 1 Year Warranty

The following parts of the woodburning stove are warranted to be free of defects in material and workmanship for a period of one year from the date you receive it: The thermostat assembly, handles, glass door panels, cement, and gasketing. Any of these items found to be defective will be repaired or replaced at no charge, upon the return of the part with postage prepaid to a Vermont Castings Authorized Dealer.

Any part repaired or replaced during the limited warranty period will be warranted under the terms of the limited warranty for a period not to exceed the remaining term of the original limited warranty or six (6) months, whichever is longer.

Limited Catalyst Warranty

The catalyst will be warranted for a six year period as follows: If the original catalyst or a replacement catalyst proves defective or ceases to maintain 70% of its particulate emission reduction activity (as measured by an approved testing procedure) within 24 months from the date the Intrepid Multi-Fuel is received, the catalyst itself will be replaced free.

From 25 - 72 months a pro-rated credit will be allowed against a replacement catalyst and the cost of labor necessary for its installation at the time of replacement.

For stove purchases made after June 30, 1990, a third year (25 - 36 months) of no charge replacement will be made when combustor failure is due to thermal degradation of the substrate (crumbling of ceramic material). The customer must pay for any in-home travel fees, service charges, or transportation costs for returning the Intrepid Multi-Fuel to the Authorized Dealer.

Amount of Time Since Purchase	Credit Towards Replacement Cost
0 - 36 months	100%
37 - 48 months	30%
49 - 60 months	20%
61 - 72 months	10%

Any replacement catalyst will be warranted under the terms of the catalyst warranty for the remaining term of the original warranty. The purchaser must provide the following information in order to receive a replacement catalyst under the terms of this limited warranty:

1. Name, address and telephone number.
2. Proof of original purchase date.
3. Date of failure of catalyst.
4. Any relevant information or circumstances regarding determination of failure.
5. In addition, the owner must return the failed catalyst.

Exclusions & Limitations

1. This product must be installed or serviced by a qualified installer, preferably NFI or WETT (Canada) certified, as prescribed by the local jurisdiction. It must be installed and operated at all times in accordance with the Installation and Operating instructions furnished with the product. Any alteration, willful abuse, accident, or misuse of the product shall nullify this warranty.

2. This warranty is transferable; however, proof of original retail purchase is required.

3. This warranty does not cover misuse of the Intrepid. Misuse includes overfiring which will result if the Intrepid is used in such a manner as to cause one or more of the plates to glow red. Overfiring can be identified later by warped plates and areas where the paint pigment has burned off. Overfiring in enamel fireplaces is identified by bubbling, cracking, chipping and discoloration of the porcelain enamel finish. MHSC offers no warranty on chipping of enamel surfaces. Inspect your woodburning stove prior to accepting it for any damage to the enamel.

4. This warranty does not cover misuse of the stove as described in the Owner's Guide, nor does it cover any stove which has been modified unless authorized by a MHSC representative in writing. This warranty does not cover damage to the Intrepid Multi-Fuel caused by burning salt saturated wood, chemically treated wood, or any fuel not recommended in the Owner's Guide.

5. This warranty does not cover a stove repaired by someone other than a MHSC Authorized Dealer.

6. Damage to the unit while in transit is not covered by this warranty but is subject to a claim against the common carrier. Contact Vermont Castings Authorized Dealer from whom you purchased your stove or MHSC if the purchase was direct. (Do not operate the stove as this may negate the ability to process the claim with the carrier.)

7. Claims are not valid where the installation does not conform to local building and fire codes or, in their absence, to the recommendations in the Owner's Guide.

8. The salt air environment of coastal areas, or a high-humidity environment, can be corrosive to the porcelain enamel finish. These conditions can cause rusting of the cast iron beneath the porcelain enamel finish, which will cause the porcelain enamel finish to flake off. This warranty does not cover damage caused by a salt air or high-humidity environment.

9. MHSC shall have no obligation to enhance or update any unit once manufactured.

IN NO EVENT SHALL MHSC BE LIABLE FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES. ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. THIS WARRANTY SUPERCEDES ALL OTHER ORAL OR WRITTEN WARRANTIES.

Some states do not allow the exclusion or limitations of incidental and consequential damages or limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific rights and you may have other rights which vary from state to state.

How to Obtain Service

If a defect is noted within the warranty period, the customer should contact a Vermont Castings Authorized Dealer or MHSC if the purchase was direct with the following information:

1. Name, address, and telephone number of the purchaser.
2. Date of purchase.
3. Serial number from the label on the back.
4. Nature of the defect or damage.
5. Any relevant information or circumstances, e.g., installation, mode of operation when defect was noted.

A warranty claim will then start in process. MHSC reserves the right to withhold final approval of a warranty claim pending a visual inspection of the defect by authorized representatives.

MHSC

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www.mhsc.com