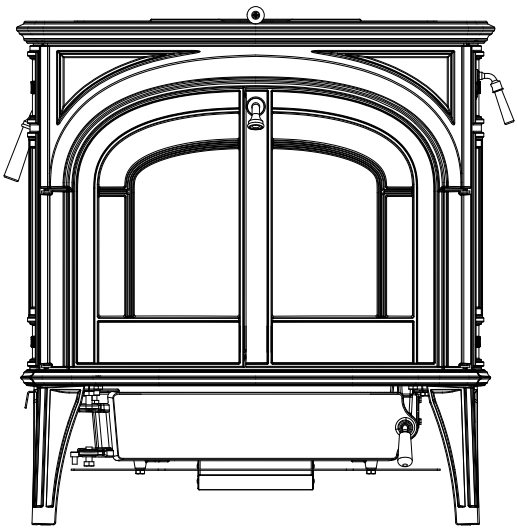
Owner's Manual
Operation & Care

INSTALLER: Leave this manual with party responsible for use and operation.
OWNER: Retain this manual for future reference.

Contact your dealer with questions on installation, operation, or service.

VERMONT CASTINGS™

Dauntless FlexBurn®
Catalytic / Non-Catalytic
Wood Stove



NATIONAL FIREPLACE INSTITUTE

Installation and service of this appliance should be performed by qualified personnel. Hearth & Home Technologies recommends HHT Factory Trained or NFI certified professionals.

hearthED FACTORY TRAINING Fuel Your Fire

NATIONAL FIREPLACE INSTITUTE A CERTIFICATION AGENCY

⚠ WARNING

If the information in these instructions is not followed exactly, a fire may result causing property damage, personal injury, or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- Do not over fire - If appliance or chimney connector glows, you are over firing. Over firing will void your warranty.
- Comply with all minimum clearances to combustibles as specified. Failure to comply may cause house fire.

⚠ WARNING

HOT SURFACES!
Glass and other surfaces are hot during operation AND cool down.
Hot glass will cause burns.

- Do not touch glass until it is cooled
- NEVER allow children to touch glass
- Keep children away
- CAREFULLY SUPERVISE children in same room as fireplace.
- Alert children and adults to hazards of high temperatures
- **High temperatures may ignite clothing or other flammable materials.**
- Keep clothing, furniture, draperies and other flammable materials away.

NOTE

To obtain a French translation of this manual, please contact your dealer or visit www.vermontcastings.com

Pour obtenir une traduction française de ce manuel, s'il vous plaît contacter votre revendeur ou visitez www.vermontcastings.com

Congratulations on your choice of a Vermont Castings Dauntless FlexBurn® Wood Stove. At Vermont Castings we take American craftsmanship seriously. We assure you that your cast-iron Vermont Castings stove has been made with the utmost care and will provide you with many years of service.

As you become acquainted with your new stove, you will find that its appearance is matched by its functionality, due to cast iron's unique ability to absorb and radiate heat.

Also, Vermont Castings products are among the cleanest-burning wood stoves available today. However, clean burning depends on both the manufacturer and the operator. Please read this manual carefully to understand how to properly operate and maintain your stove.

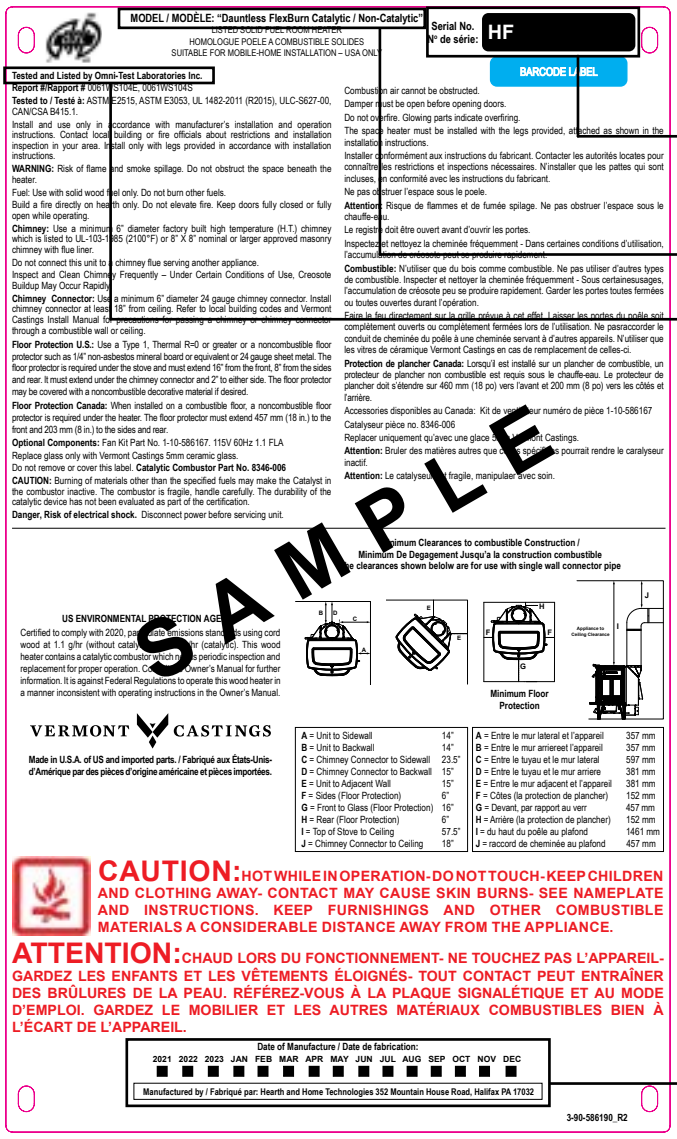
At Vermont Castings, we are committed to your satisfaction as a customer. That is why we maintain an exclusive network of the finest dealers in the industry. Our dealers are chosen for their expertise and dedication to customer service. Feel free to contact your Authorized Vermont Castings Dealer anytime you have a particular question about your stove or its performance.

This manual contains valuable instructions on the operation of your Vermont Castings Dauntless FlexBurn® Wood Stove. It also contains useful information on maintenance. Please read the manual thoroughly and keep it as a reference.

This heater meets the U.S. Environmental Protection Agency's emission limits for wood heaters sold on or after May 15, 2020.

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

Note: Cast iron is an artisan crafted material, which is made the same way today as nearly 2000 years ago. Due to the intrinsic primitive nature of the casting process, part to part variation is normal and adds to the character of a hand built cast iron appliance



⚠ Safety Alert Key:

- ***DANGER!*** Indicates a hazardous situation which, if not avoided will result in death or serious injury.
- ***WARNING!*** Indicates a hazardous situation which, if not avoided could result in death or serious injury.
- ***CAUTION!*** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- ***NOTICE:*** Indicates practices which may cause damage to the appliance or to property.

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➔ = Contains updated information

A. Warranty Policy

Hearth & Home Technologies LLC
LIMITED LIFETIME WARRANTY

Hearth & Home Technologies LLC ("HHT") extends the following warranty for HHT gas, wood, pellet and electric hearth appliances (each a "Product" and collectively, the "Product(s)") and certain component parts set forth in the table below ("Component Part(s)") that are purchased from a HHT authorized dealer or distributor.

WARRANTY COVERAGE:

HHT warrants that the Products and their Component Parts will be free from defects in materials and workmanship for the applicable period of Warranty coverage set forth in the table below ("Warranty Period"). If a Product or Component Parts are found to be defective in materials or workmanship during the applicable Warranty Period, HHT will, at its option, repair the applicable Component Part(s), replace the applicable Component Part(s), or refund the purchase price of the applicable Product(s). The maximum amount recoverable under this Warranty is limited to the purchase price of the Product. This Warranty is transferable from the original purchaser to subsequent owners, but the Warranty Period will not be extended in duration or expanded in coverage for any such transfer. This Warranty is subject to conditions, exclusions, and limitations as described below.

WARRANTY PERIOD:

Warranty coverage begins at the date of installation. In the case of new home constructions, Warranty coverage begins on the date of first occupancy of the dwelling or six months after the sale of the Product(s) by an independent, authorized HHT dealer or distributor, whichever occurs earlier. However, the Warranty coverage shall commence no later than 24 months following the date of Product shipment from HHT, regardless of the installation or occupancy date.

The term "Lifetime" in the table below is defined as: 20 years from the beginning date of warranty coverage for gas appliances, and 10 years from the beginning date of warranty coverage for wood and pellet appliances. These time periods reflect the minimum expected useful lives of the designated Component Parts under normal operating conditions.

Warranty Period		**HHT Manufactured Appliances and Venting**					
Component Parts	Labor	Gas	Pellet	Wood	Electric	Venting	Component Parts Covered by this Warranty
1 Year		X	X	X		X	All parts including handles, external enameled components and other material except as covered by Warranty Conditions, Warranty Exclusions, and Warranty Limitations listed
2 Years					X		All parts except as covered by Warranty Conditions, Warranty Exclusions, and Warranty Limitations listed
2 years			X	X			Igniters, Auger Motors, Electronic Components, and Glass
		X					Electrical components limited to modules, remotes/wall switches, valves, pilots, blowers, junction boxes, wire harnesses, transformers and lights (excluding light bulbs)
		X		X			Molded Refractory Panels, Glass Liners
3 years			X				Firepots, burnpots, mechanical feeders/auger assemblies
5 years	1 year	X					Vent Free Burners, Vent Free Logs
			X	X			Castings, Medallions and Baffles
6 years	3 years			X			Catalysts
7 years	3 years		X	X			Manifold tubes, HHT Chimney and Terminations
10 years	1 year	X					Burners, logs and refractory
Limited Lifetime	3 years	X	X	X			Firebox and heat exchanger, FlexBurn® System (engine, inner cover, access cover and fireback)
1 Year	None	X	X	X	X	X	All purchased replacement parts

WARRANTY CONDITIONS:

- Because HHT cannot control the quality of any Products sold by unauthorized sellers, this Warranty only covers Products that are purchased through an HHT authorized dealer or distributor unless otherwise prohibited by law; a list of HHT authorized dealers is available on the HHT branded websites.
- This Warranty is only valid while the applicable Product remains at the site of original installation.
- This Warranty is only valid in the country in which the HHT authorized dealer or distributor that sold the applicable Product is authorized to sell applicable Product.
- Contact your installing distributor or dealer for Warranty service. If the installing dealer or distributor is unable to provide necessary parts, contact the nearest HHT authorized dealer or supplier. Additional service fees may apply if you are seeking Warranty service from a dealer other than the dealer from whom you originally purchased the applicable Product.
- No HHT consumer should bear cost of warranty service or costs incurred while servicing warranty claims (i.e., travel, gas, or mileage) when the service is performed within the terms of this Warranty. Check with your dealer or distributor in advance for any costs to you when arranging a warranty call. Travel and shipping charges for parts are not covered by this Warranty.

WARRANTY EXCLUSIONS:

This Warranty does not cover the following:

- Changes in surface finishes as a result of normal use. As a heating appliance, some changes in color of interior and exterior surface finishes may occur. This is not a flaw and is not covered under the Warranty.
- Damage to printed, plated, or enameled surfaces caused by fingerprints, accidents, misuse, scratches, melted items or other external sources and residues left on the plated surfaces from the use of abrasive cleaners or polishes.
- Repair or replacement of parts that are subject to normal wear and tear during the Warranty Period are not covered. These parts include: paint, wood and pellet gaskets, firebricks, grates, flame guides, batteries and the discoloration of glass.
- Minor expansion, contraction, or movement of certain parts causing noise. These conditions are normal and complaints related to this noise are not covered by this Warranty.
- Damages resulting from: (1) failure to install, operate, or maintain the applicable Product in accordance with the installation instructions, operating instructions, and listing agent identification label furnished with the applicable Product; (2) failure to install the applicable Product in accordance with local building codes; (3) shipping or improper handling; (4) improper operation, abuse, misuse, continued operation with damaged, corroded or failed components, accident, or improperly/incorrectly performed repairs; (5) environmental conditions, inadequate ventilation, negative pressure, or drafting caused by tightly sealed constructions, insufficient make-up air supply, or handling devices such as exhaust fans or forced air furnaces or other such causes; (6) use of fuels other than those specified in the operation instructions; (7) installation or use of components not supplied with the applicable Product or any other components not expressly authorized and approved by HHT; (8) modification of the appliance not expressly authorized and approved by HHT in writing; and/or (9) interruptions or fluctuations of electrical power supply to the applicable Product.
- Non-HHT venting components, hearth connections or other accessories used in conjunction with the applicable Product.
- Any part of a pre-existing fireplace system in which an insert or a decorative gas applicable Product is installed.
- HHT's obligation under this Warranty does not extend to the Product's capability to heat the desired space. Information is provided to assist the consumer and the dealer in selecting the proper Product for the application. Consideration must be given to the Product location and configuration, environmental conditions, insulation and air tightness of the structure.

This warranty is void if:

- The applicable Product has been over-fired, operated in atmospheres contaminated by chlorine, fluorine, or other damaging chemicals. Over-firing can be identified by, but not limited to, warped plates or tubes, deformation/warping of interior cast iron structure or components, rust colored cast iron, bubbling, cracking and discoloration of steel or enamel finishes.
- The applicable Product is subjected to prolonged periods of dampness or condensation.
- There is any damage to the applicable Product due to water or weather damage which is the result of, but not limited to, improper chimney or venting installation.

LIMITATIONS OF REMEDIES AND LIABILITY:

- **EXCEPT TO THE EXTENT PROVIDED BY LAW, HHT MAKES NO EXPRESS WARRANTIES OTHER THAN THE WARRANTY SPECIFIED HEREIN. The owner's exclusive remedy and HHT's sole obligation under this Warranty or in contract, tort or otherwise, shall be limited to replacement of the Component Part(s), repair of the Component Part(s), or refund of the original purchase price of the applicable Product(s), as specified above; provided, however, that (i) if HHT is unable to provide replacement of the Component Part(s) and repair of the Component Part(s) is not commercially practicable or cannot be timely made, or (ii) the customer is willing to accept a refund of the purchase price of the applicable Product(s), HHT may discharge all such obligations by refunding the purchase price of the applicable Product. In no event will HHT be liable for any incidental or consequential damages caused by defects in the applicable Product. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights and you may also have other rights which vary from State to State. THE DURATION OF ANY IMPLIED WARRANTY IS LIMITED TO DURATION OF THE EXPRESSED WARRANTY SPECIFIED ABOVE FOR THE APPLICABLE PRODUCT. Some States do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.**

1 Product Listing and Important Safety Information

A. Appliance Certification

MODEL:	Dauntless FlexBurn® Wood Stove
LABORATORY:	Tested and Listed by OMNI Test Laboratories, Inc
REPORT NO.	0061WS104E, 0061WS104S
TYPE:	Solid Fuel Type Room Heaters
STANDARD(s):	ASTM E2515, ASTM E3053, UL-1482, ULC-S627-00, B415.1

B. BTU & Efficiency Specifications

EPA Report #:	240-19 (without catalyst) 246-19 (catalytic)
EPA Certified Emissions:	1.1 g/hr (without catalyst) 1.2 g/hr (catalytic)
***LHV Tested Efficiency:**	81.6% (without catalyst) 82.6% (catalytic)
****HHV Tested Efficiency:**	76.9% (without catalyst) 77.9% (catalytic)
*****EPA BTU Output:**	12,250 - 49,430 (without catalyst)
	14,520 - 41,940 (catalytic)
******Peak BTU/Hour Output:**	45,500
Vent Size:	6 Inch (152 mm)
Firebox Size:	1.8 cu. ft.
Outside Air Size:	3 Inch
Recommended Length:	16 Inch
Max. Wood Length:	18 Inch
Fuel Orientation:	East, West
Fuel	Seasoned Cordwood (20% moisture or less)
*Weighted average LHV efficiency using Douglas Fir dimensional lumber and data collected during EPA emissions test.	
**Weighted average HHV efficiency using Douglas Fir dimensional lumber and data collected during EPA emissions test.	
***Efficiencies are based on test results calculated using B415; these calculated efficiencies are then used to calculate output BTU's.	
******A peak BTU out of the appliance calculated using the maximum first hour burn rate from the High EPA Test and the BTU content of cord wood (8600) times the efficiency.	

The Vermont Castings Dauntless FlexBurn® Wood Appliance meets the U.S. Environmental Protection Agency Certified to comply with the 2020 particulate emission standards using cord wood.

C. California

WARNING

This product and the fuels used to operate this product (wood), and the products of combustion of such fuels, can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, and carbon monoxide, which is know to the State of California to cause birth defects or other reproductive harm. For more information go to: www.P65Warnings.ca.gov

D. Mobile Home Approved (USA ONLY)

- This appliance is approved for mobile home installations in the USA when not installed in a sleeping room and when an outside combustion air inlet is provided.
- The structural integrity of the mobile home floor, ceiling, and walls must be maintained.
- The appliance must be properly grounded to the frame of the mobile home with #8 copper ground wire, and chimney must be listed to UL103 HT or a listed UL-1777 full length six inch (152mm) diameter liner must be used.
- Mobile Home Brackets must be installed in a mobile home installation. (supplied with stove)

E. Glass Specifications

This appliance is equipped with 5mm ceramic glass. Replace glass only with 5mm ceramic glass. Please contact your dealer for replacement glass.

WARNING

Fire Risk.
Hearth & Home Technologies disclaims any responsibility for, and the warranty will be voided by, the following actions:

- Installation and use of any damaged appliance.
- Modification of the appliance.
- Installation other than as instructed by Hearth & Home Technologies.
- Installation and/or use of any component part not approved by Hearth & Home Technologies.
- Operating appliance without fully assembling all components.
- Operating appliance without legs attached (if supplied with appliance).
- Do NOT Overfire - If appliance or chimney connector glows, you are overfiring.

Any such action that may cause a fire hazard.

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage.

For assistance or additional information, consult a qualified installer, service agency or your dealer.

In the United States it is against the law to operate this wood heater in a manner inconsistent with the operating instructions in this manual.

NOTE: Hearth & Home Technologies, manufacturer of this appliance, reserves the right to alter its products, their specifications and/or price without notice.

Vermont Castings is a registered trademark of Hearth & Home Technologies.

2 Operating Instructions

A. The Dauntless FlexBurn® Controls

Two controls regulate the performance of the Dauntless FlexBurn®: a **primary air control** supplies oxygen for the fire, and a **damper** directs air flow within the stove to activate and deactivate the combustion system, Figure 2.1.

Symbols on the stove are reminders of the correct directions for using the controls. The words 'Left' and 'Right' in these directions are *facing the stove*.

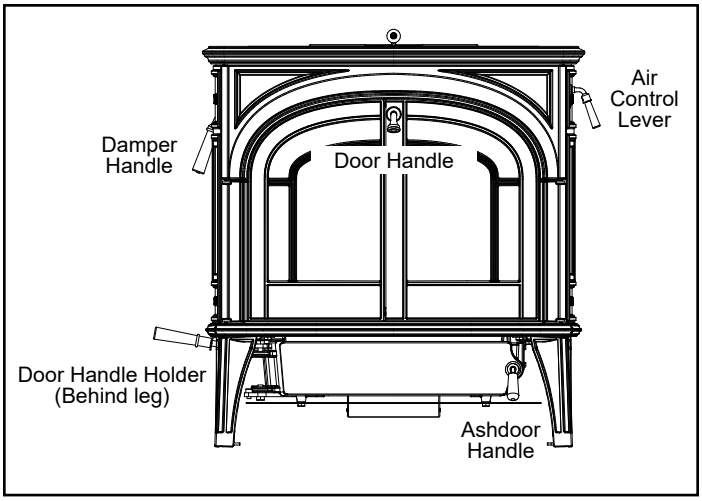


Figure 2.1 - The Dauntless FlexBurn® controls are conveniently located and easy to operate.

A Single Air Control Regulates Heat Output and Burn Time

The **primary air control lever**, on the right of the stove, controls the amount of incoming air for starting, maintaining, and reviving a fire.

Once the air control is manually set, a bi-metallic thermostat automatically maintains the heat output at a constant level for a more even heat over the life of the burn.

More air entering the stove makes the fire burn hotter and faster, while less air prolongs the burn at a lower heat output level.

For the greatest air supply and maximum heat output (but the shortest burn time), move the lever toward the front of the stove. For a fire that will last longer with less heat, move the lever toward the rear of the unit, Figure 2.2.

⚠ WARNING

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

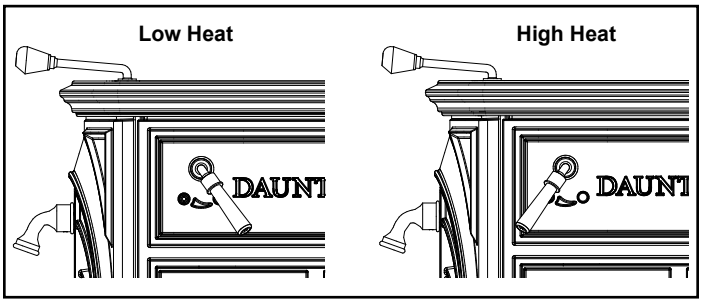


Figure 2.2 - The handle may be positioned anywhere between the two extremes for different heat levels.

A Damper Directs Air Flow Within the Stove

The **damper handle** on the left side of the stove operates the damper to direct air flow within the stove.

The damper is **open** when the handle points to the **rear**, enabling smoke to pass directly into the chimney. The damper must be open when starting or reviving a fire, and whenever the griddle or doors are opened.

The damper is **closed** when the handle points **down.** Smoke travels through the secondary combustion system where it can be further burned, before passing up the chimney, Figure 2.3.

The damper should always be either fully open or fully closed. There are no intermediate positions. When closing the damper, be sure to pull firmly enough to snap the handle into the locked position.

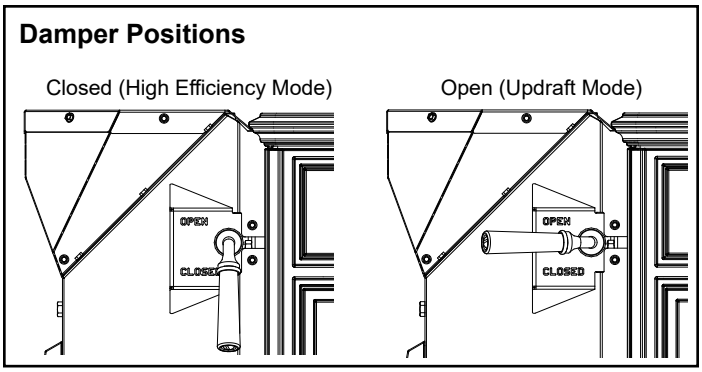


Figure 2.3 - The damper is either open or closed. There are no intermediate positions.

B. Conditioning Your Stove

Cast iron is extremely strong, but it can be broken with a sharp blow from a hammer or from the thermal shock of rapid and extreme temperature change.

The cast plates expand and contract with changes in temperature. When you first begin using your Dauntless FlexBurn®, minimize thermal stress by letting the plates adjust gradually during three or four initial break-in fires.

C. Wood Burning Operation

Burn only solid wood in the Dauntless FlexBurn® Wood Stove, and burn it directly on the grate. Do not elevate the fuel. Do not burn coal or other fuels. In the United States, it is against the law to operate this wood heater in a manner inconsistent with operating instructions in this manual.

The bypass damper must be open when starting a fire or when refueling.

Do not use chemicals or fluids to start the fire. Do not burn garbage. Never use flammable fluids such as gasoline, gasoline type lantern fuel, kerosene, charcoal lighter fluid, naptha, engine oil or similar liquids to start or "freshen up" a fire in this heater. Keep all such liquids well away from the heater while it is in use.

The following procedures are important for reliable, clean and efficient operation of your woodstove. Recommend 16" logs Properly seasoned (up to a year for denser woods) Split to 3" to 6" cross sections

Cold start:

When starting your stove at room temperature and when no burning coals are present the following kindling procedure has been found to be the most reliable.

Stack about 4 lbs of finely split kindling (1" diameter or less 10 to 20 pcs) in a 'log cabin' style directly against the rear wall. Place a small amount of newspaper on top of this pile with one or two small pieces of kindling on top. This is referred to as a top down method and while providing a slower start, also serves to preheat the combustion properly resulting in a reliable start., Figure 2.4.

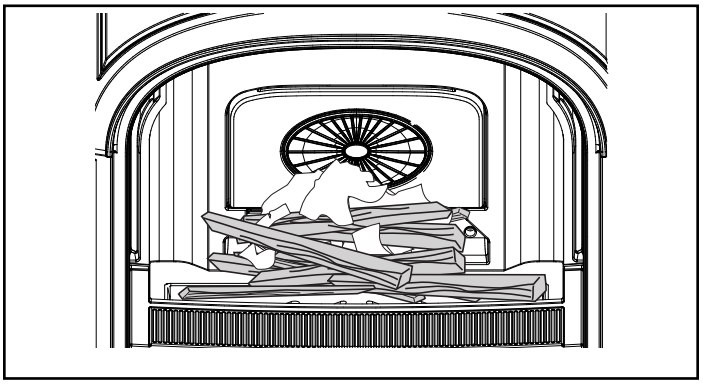


Figure 2.4 - Start the fire with newspaper and dry kindling.

With the bypass damper open and the primary air set to its highest position, light the newspaper. Leave the front door cracked until the kindling ignites, then close the doors.

After most of the kindling has burned into coals (15 to 20 minutes), open the front doors and push remaining coals and unburned wood against the rear wall. Add several pieces of larger split wood between 2 to 3 inches in diameter (about 6 lbs) directly against the rear wall and on top of the kindling coals. Close the doors and bypass to engage the combustion system. The air should remain on high for up to one hour or until the wood is mostly converted to coals.

After a hot bed of coals is produced, open the door and bypass damper and push the remaining coals again toward the rear wall. Add large pieces of wood starting against the rear wall and on top of the coals (4 to 5 pcs). Note: The stove is designed to be filled to the top. Close the doors and bypass immediately after loading the stove.

Ideally, allow this wood load to burn at the highest air setting for the entire wood load. If this is not possible, the wood should burn for at least 30 minutes prior to reducing the primary air setting.

D. Ways to Add Fuel

The griddle lifts for convenient top-loading of logs, and is the easiest way to add fuel, Figure 2.5.

However, the front doors open as well for adding an occasional log to the fire. The Dauntless FlexBurn® Wood Stove is not approved for operation with the front doors open.

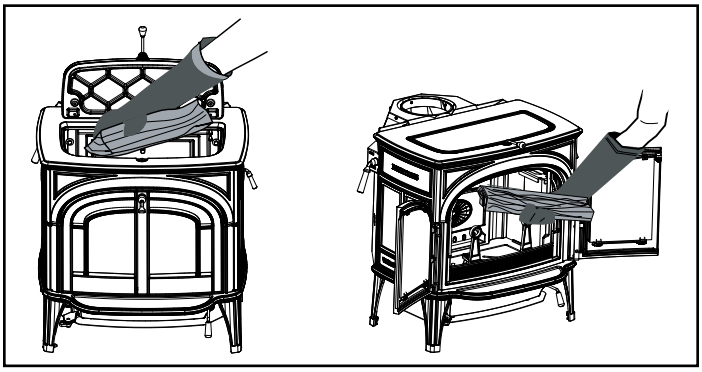


Figure 2.5 - Top loading is the best way to add fuel during regular use. Front loading is useful for kindling a fire.

To open the front doors, insert the handle into the door latch stub and turn it clockwise, Figure 2.6.

To close them, always close the left door first. Turn the handle in the right door to the left and up (to the open position) and close it. Finally, push on the door as you turn the handle counterclockwise. The doors will draw in slightly, and the handle should offer some resistance as you turn it to the closed position.

To reduce the risk of breaking the glass, avoid striking the glass or slamming the doors.

When you are not using the door handle, store it in the holder behind the right front leg of the stove.

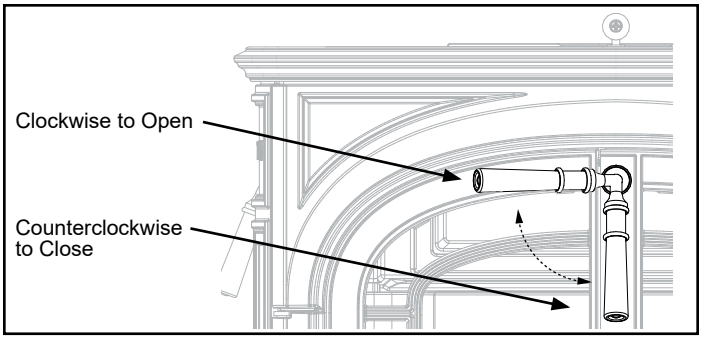


Figure 2.6 - To open the front doors, turn the handle clockwise.

For best results when refueling, wear long-cuffed stove gloves to protect your hands and forearms.

Reloading a hot stove:

When a wood load is added to a hot bed of coals (continuous use), open the bypass damper and either the top or front loading doors. Stir the hot coals to allow ash to fall through the grate. Hot coals should then be pushed against the rear wall and leveled depending on the amount of coals. Add fresh wood and close the loading door and bypass damper. If the coals are glowing and hot, it is possible to set the air control to any setting immediately after loading the stove.

Reloading a warm stove:

If the stove is relatively cold (for instance after a long overnight burn), the coal bed may need to be re-energized prior to adding a large load of wood. Open the bypass damper and either the top or front loading door. Stir the coals to allow ash to fall through the grate. Push the remaining coals toward the rear wall. Close the door(s) and bypass damper and set the primary air to the highest position. Allow the coals to re-ignite and heat the system for 10 to 15 minutes. Once the coals are glowing, a fresh batch of wood may be added following the “hot stove” procedure above.

A proper bed of coals is critical to the performance of the Dauntless stove. The rear refractory wall of the stove should be almost entirely white in color with proper operation. This indicates the combustion system is running at a proper elevated temperature. If the rear wall is black with creosote or develops a dark brown color, it is likely that the coal bed is not sufficiency large enough or hot enough. Revisit the above instructions and adjust the amount of kindling or time at high air settings to get the system hotter. Wood size or excessive moisture may also cause lower than desirable stove temperatures.

While not required, operating your stove with the catalytic combustor installed creates optimum conditions for secondary combustion and will increase your efficiency up to 15% on low burn, making sure you get the most heat out of each load of wood.

The catalytic element is a “honeycomb” coated with the catalytic material. The element sits at the bottom of the secondary combustion chamber. Smoke, gases and particulates that are not fully combusted during the secondary combustion process pass through the catalyst, creating a tertiary burn. This results in higher efficiency and lower emissions.

The catalyst will initiate combustion of smoke and particulates at 500° - 600°F (260° - 315°C), half the temperature normally required for unaided secondary combustion. If you followed the startup operation steps in the previous section the stove will be sufficiently hot to allow the combustor to work. Once the combustor starts working, heat generated by burning the smoke will keep it working.

To determine whether the combustor is operating, refer to the temperature probe which shows the operating range of the catalytic combustor. This is located on the back of the stove and is viewed from the top.

NOTE: It will take several minutes after closing the bypass damper for the temperature probe to fully adjust to the new temperature. If the probe indicator is below the operate catalyst range, add fuel or open the bypass damper to allow the fire to further build before engaging the catalyst again.

If the probe indicator is above the operate catalyst range, the catalytic combustor is running too hot and may be damaged. In many cases, decreasing the primary air can reduce the catalyst temperature and adding less wood with each loading can also help if overheating is persistent. Do not add wood to the stove if the probe reads above the operate catalyst range.

Avoid using a full load of very dry wood in the firebox, such as dry slab wood or wood with below 14% moisture content. This may result in continuous very high temperatures in the secondary combustion area and damage the combustor.

Never burn treated wood, garbage, solvents or trash. All of these may poison the catalyst and prevent it from operating properly. Never burn cardboard or loose paper except for kindling purposes. Never burn coal; doing so can produce soot or large flakes of char or fly ash that can coat the combustor and cause smoke to spill into the room. Coal smoke can also poison the catalyst so that it won’t operate properly.

NOTE: The catalytic combustor is fragile and will crack if subjected to thermal shock. Thermal shock can occur when refueling with wet wood or closing the bypass damper too early after refueling.

⚠ WARNING

DO NOT OPERATE THE STOVE WITH THE ASH DOOR OPEN. OPERATION WITH THE ASH DOOR OPEN CAN CAUSE AN OVER-FIRING CONDITION TO OCCUR. OVER-FIRING THE STOVE IS DANGEROUS AND CAN RESULT IN PROPERTY DAMAGE, INJURY OR LOSS OF LIFE.

Andirons Help Protect the Glass

Your stove has andirons to keep logs away from the glass panels. The andirons are essential to maintain clear fire viewing, and should be left in place. Since the andirons may slightly hinder refueling through the front doors, most stove owners will prefer the convenience of top loading through the griddle. Do not place fuel between the andirons and the doors.

Burn Only High-Quality Wood

The Dauntless FlexBurn® is designed to burn natural wood only; do not burn fuels other than that for which it was designed.

IMPORTANT: Do not burn any type of artificial or synthetic materials such as fire starter logs (containing wax) in this appliance. Never burn liquid-based fuels such as kerosene, gasoline or alcohol.

Burning any materials not allowed in these instructions, or over-firing the stove, may void the warranty.

You'll enjoy the best results when burning wood that has been adequately air-dried. The wood should be 16" - 18" (406-457 mm) in length. Avoid burning "green" wood that has not been properly seasoned. (**Note:** Properly seasoned firewood has a moisture content below 20 percent.) Do not burn construction materials; they often contain chemicals and metals that can damage the inside surfaces of the stove and pollute the air. Do not burn ocean driftwood; when it burns, the salt it contains will attack the cast iron.

The best hardwood fuels include oak, maple, beech, ash, and hickory that has been split, stacked, and air-dried outside under cover for at least one year.

If hardwood is not available, you can burn softwoods that include tamarack, yellow pine, white pine, Eastern red cedar, fir, and redwood. These should also be properly dried.

Store split wood under cover to keep it dry. Even for short-term storage, be sure to keep wood a safe distance from the stove and keep it out of the areas around the stove used for refueling and ash removal.

Surface Thermometer is a Valuable Guide to Operation

An optional surface thermometer tells you when to adjust the air control, and when to refuel, Figure 2.7.

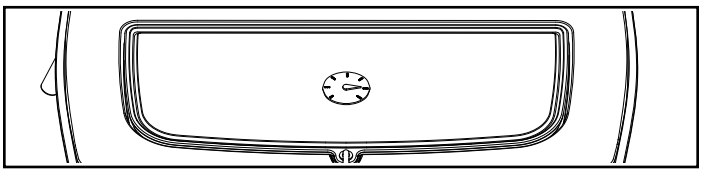


Figure 2.7 - Take temperature readings with a thermometer located in the middle of the griddle.

For example, when the thermometer registers at least 450°F (230°C) on the stove top after start-up you know the stove is hot enough and it may be time to close the damper if a sufficient ember bed has also been established. Note that the stove will warm up much sooner than the chimney, though; a warm chimney is the key to easy, effective stove operation. When thermometer readings drop below 350°F. (175°C) it's time to adjust the air control for a higher burn rate or to reload the stove. A temperature reading over 650°F. (340°C) is a sign to reduce the air supply to slow the burn rate.

Use the following temperature ranges as a guide:

- Readings in the 350°-500°F. (175°-260°C) range indicate low to medium heat output.
- 500°-600°F. (260°-315°C) readings indicate medium heat output.
- Readings of 600°-650°F. (315-340°C) indicate high heat output. Operating your Dauntless FlexBurn® continuously at griddle temperatures higher than 650° F (340°C) may damage the cast iron or enamel finish.

Use the Air Control Settings that Work Best for You

No single air control setting will fit every situation. Each installation will differ depending on the quality of the fuel, the amount of heat desired, and how long you wish the fire to burn; outdoor air temperature and pressure also affect draft.

The control setting also depends on your particular installation's "draft," or the force that moves air from the stove up through the chimney. Draft is affected by such things as the length, type, and location of the chimney, local geography, nearby obstructions, and other factors.

Too much draft may cause excessive temperatures in the Dauntless FlexBurn®, and could even damage the stove. On the other hand, too little draft can cause backpuffing into the room and/or the "plugging" of the chimney.

How do you know if your draft is excessively high or low? Symptoms of too much draft include an uncontrollable burn or a glowing-red stove part. Signs of weak draft are smoke leaking into the room through the stove or chimney connector joints or low heat output.

In some newer homes that are well-insulated and weather-tight, poor draft may result from an insufficient air supply in the house. In such instances, an open window near the stove on the windward side of the house can provide the combustion air supply needed.

Another option for getting more combustion air to the stove is to duct air directly from outside to the stove. In some areas provisions for outside combustion air are required in all new construction.

When first using the stove, keep track of the air control settings. You will quickly find that a specific setting will give you a fixed amount of heat. It may take a week or two to determine the amount of heat and the length of burn you should expect from various settings.

Most installations do not require a large amount of combustion air, especially if adequate draft is available. Do not for any reason attempt to increase the firing of your heater by altering the air control adjustment range outlined in these directions.

E. Ash Disposal

(Refer to the first page of the Operation section.)

DO NOT OPERATE THE STOVE WITH THE ASH DOOR OPEN. OPERATION WITH THE ASH DOOR OPEN CAN CAUSE AN OVER-FIRING CONDITION TO OCCUR. OVER-FIRING THE STOVE IS DANGEROUS AND CAN RESULT IN PROPERTY DAMAGE, INJURY OR LOSS OF LIFE.

Routine ash removal is important for ease of maintenance, and is important for the stove's durability. Remove ash before it reaches the top of the ash pan. Check the level at least once a day. Every few days, clear any ash from the outer edges of the firebox. Most of the ash will fall through the grate. Stir the ash with a shovel or poker so that it falls through the grate slots.

IMPORTANT: Check the level of ash in the ash pan before reloading the stove. If the ash level is close to the top edge of the pan, empty the pan according to this procedure:

- Open the damper.
- Open the griddle or front doors, and use a shovel or poker to stir excess ash through the ash slots in the grate down into the ash pan.
- Close the griddle or doors, and unlatch the ash door, Figure 2.8. It will pivot, swinging the ash pan out of the stove.

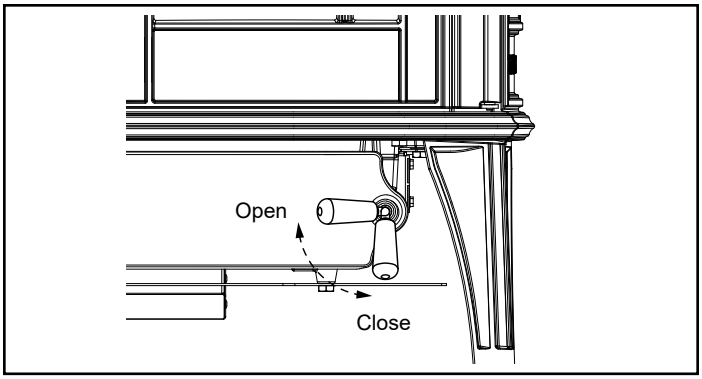


Figure 2.8- Turn the ashdoor handle clockwise to open and counterclockwise to close.

- Slide the cover onto the pan, making sure it is securely closed, Figure 2.9.

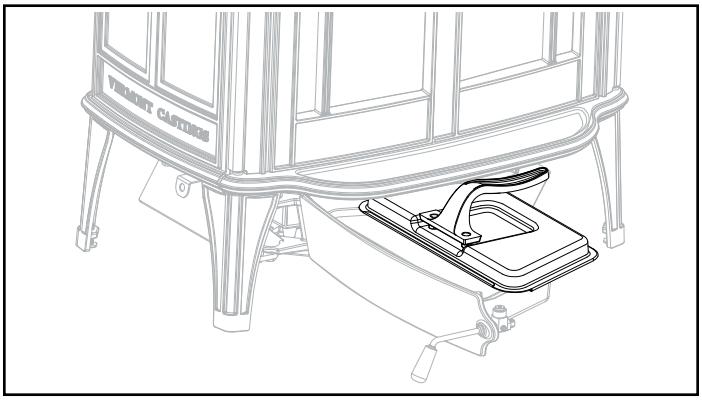


Figure 2.9 - Be sure the cover is securely attached before removing the ash pan.

- Remove the ash pan, making sure to keep it level.
- To keep the cover from sliding off and to keep ash from falling on the floor, do not tilt the ash pan forward.
- If the stove is in operation, close the ash door while disposing of the ash. You may need to lift the latch end of the door slightly to align the latch with the mating part on the stove bottom.
- Properly dispose of the ash in a metal container with a tight-fitting lid. Store the container outdoors away from all combustible material.
- Return the ash pan to its original position in the stove, and close and latch the ash door.

⚠ WARNING

Do not operate the stove with the ash door open. This will result in over-firing, and could cause damage to the stove, void the warranty, or even lead to a house fire.

Empty the ash pan regularly, typically every one to three days. The frequency will vary depending on how you operate your Dauntless FlexBurn®: ash will accumulate faster at higher heat outputs.

Removed ash should be placed outdoors in a metal container with a tight-fitting lid. Keep the closed container of ash on a noncombustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ash is disposed of by burial in soil or otherwise locally dispersed, it should be kept in the closed container until all cinders have thoroughly cooled.

⚠ CAUTION

Never use your household or shop vacuum cleaner to remove ash from the stove; always remove and dispose of the ash properly.

F. Opacity (Visible Smoke)

This is the measure of how cleanly your appliance is burning. Opacity is measured in percent; 100% opacity is when an object is totally obscured by the smoke column from a chimney, and 0% opacity means that no smoke column can be seen. As you become familiar with your appliance, you should periodically check the opacity. This will allow you to know how to burn as nearly smoke-free as possible (goal of 0% opacity).

⚠ WARNING

Fire Risk

- DO NOT BURN GARBAGE OR FLAMMABLE FLUIDS SUCH AS GASOLINE, NAPTHA OR ENGINE OIL.
- Do NOT burn treated wood or wood with salt (driftwood).
- May generate carbon monoxide if burn material other than wood.

May result in illness or possible death.

⚠ WARNING

Fire Risk

Keep combustible materials, gasoline and other flammable vapors and liquids clear of appliance.

- Combustible materials may ignite.
- Do NOT store flammable materials in the appliance's vicinity.
- DO NOT USE GASOLINE, LANTERN FUEL, KEROSENE, CHARCOAL LIGHTER FLUID OR SIMILAR LIQUIDS TO START OR "FRESHEN UP" A FIRE IN THIS Appliance.
- Keep all such liquids well away from the appliance while it is in use.

⚠ CAUTION

When burning your first fire, you will experience smoke and odor from the appliance resulting from the curing of paint and burning off of any oils remaining from manufacturing.

OPEN WINDOWS DURING INITIAL BURN TO DISSIPATE SMOKE AND ODORS!

- Odors may be irritating to sensitive individuals.
- Smoke detectors may activate.

G. Negative Pressure

⚠ WARNING

Asphyxiation Risk

- Negative pressure can cause spillage of combustion fumes, soot and carbon monoxide.
- Appliance needs to draft properly for safety.

Negative pressure results from the imbalance of air available for the appliance to operate properly. It can be strongest in lower levels of the house.

Causes include:

- Exhaust fans (kitchen, bath, etc.)
- Range hoods
- Combustion air requirements for furnaces, water appliances and other combustion appliances
- Clothes dryers
- Location of return-air vents to furnace or air conditioning
- Imbalances of the HVAC air handling system
- Upper level air leaks such as:
  - Recessed lighting
  - Attic hatch
  - Duct leaks

To minimize the effects of negative air pressure:

- Install outside air to the stove with the intake facing prevailing winds during the heating season
- Ensure adequate outdoor air for all combustion appliances and exhaust equipment
- Ensure furnace and air conditioning return vents are not located in the immediate vicinity of the appliance
- Avoid installing the appliance near doors, walkways or small isolated spaces
- Recessed lighting should be a "sealed can" design
- Attic hatches weather stripped or sealed
- Attic mounted duct work and air handler joints and seams taped or sealed

H. Important Information

Creosote is a by-product of slow wood-burning. It's an organic tar that can condense in the flue if it is present in the exhaust, slow-moving, and cools to less than 290°F (130°C). 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 that will encourage good draft and minimize creosote production.

Because letting the exhaust cool off and slow down is one of the keys to creosote accumulation, 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 (NFPA) recommends a chimney liner 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. 'Green' wood contains a lot of moisture; it will burn, but some of the heat potential is used to boil the extra moisture from the wood. This reduces the amount of heat 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 (Moisture content of 20% or less is best). 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, wood can be too dry and too volatile. Smoke and combustible gases can 'gas out' from the wood quickly and densely enough to overload the combustion system. If you hear a rumbling or roaring noise (like a propane torch) from the stove, that is a sign that the stove is over-firing.

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 until they are concentrated enough and hot enough to ignite. If your stove back-puffs, the stove needs to cool down. You should open the damper to let the smoke rise to the flue more quickly, allow more air into the firebox, avoid big loads of firewood and check that the wood moisture is not too low.

Draft Testing

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 awhile 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.

Conclusion: Wood-burning is an art rather than a science. Once the stove and chimney system are in place, you can only vary your 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 years of reliable heating.

3 Maintenance

Keep Your Stove Looking New and Working Its Best

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

This wood appliance needs periodic inspection and repair for proper operation. It is against federal regulations to operate this wood appliance in a manner inconsistent with operating instructions in this manual.

Care of the Cast Iron Surface

An occasional dusting with a dry rag will keep the painted cast iron of your Dauntless FlexBurn® looking new.

The stove's paint can be touched up as needed. First, mask the areas, such as enameled parts, glass, or handles, around the spot to be painted. Clean the spot with a wire brush. Remove the griddle and set it aside. It is normal for the griddle to darken after use. You can clean it with a fine-bristle wire brush, or steel wool.

Then, touch up the stove with high temperature stove paint. Apply the paint sparingly; two light coats of paint are better than a single heavy one.

Care of the Porcelain Enamel Surface

Use a dry or slightly damp rag or soft brush to remove spills or stains. For difficult jobs that require a cleaning agent, use only a kitchen appliance cleaner or polish recommended for use on enamel surfaces.

If porcelain enamel becomes chipped or scratched during use, apply "enamel epoxy" to the damaged area and allow to dry. Once the epoxy has dried, sand the area to blend with surrounding area and apply appropriate color touch-up paint. Allow to dry completely before operating stove.

A. Cleaning the Glass & Replacement

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. To clean the glass, follow this procedure:

- 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. Use cleaning agents sparingly and be sure to keep them off the outer surfaces of the stove.
- Rinse the glass thoroughly.
- Dry the glass completely.

Replace Broken Glass Immediately

Do not operate your stove if the glass in the doors is damaged.

If you need to replace the glass, use only the high temperature 5 mm ceramic glass supplied by Vermont Castings. Do not use substitutes.

Removing the Glass

1. Remove the right and left door assemblies by removing (4) 1/4-20 bolts located inside the door opening, Figure 3.1.

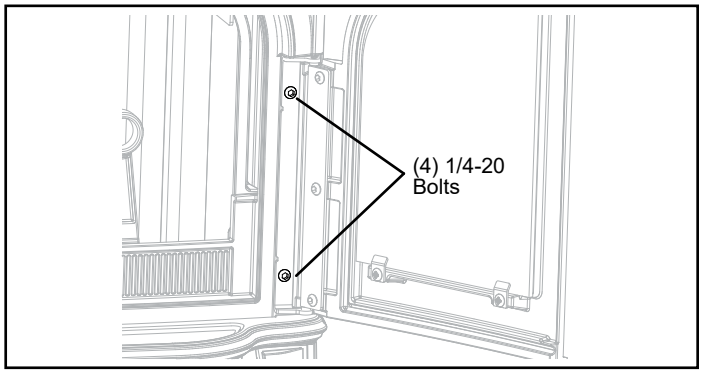


Figure 3.1

2. Place the doors face down on a padded work surface. Be especially careful with enameled doors.
3. Remove the screws that hold the glass retainer clips in place, and remove the clips.
4. Carefully lift the broken glass panel from the door.

Installing the Glass

Check the gasket around the window; it should be soft and resilient so that the glass will seal properly against the door. Replace the gasket if it has hardened or if it is compressed.

1. Center the glass on the gasket.
2. Secure the glass on both doors with the retainer clips. Tighten all screws, Figure 3.2.
3. Replace the doors on the stove.
4. Open and close the doors to check that they fit and work properly. Adjust as necessary.

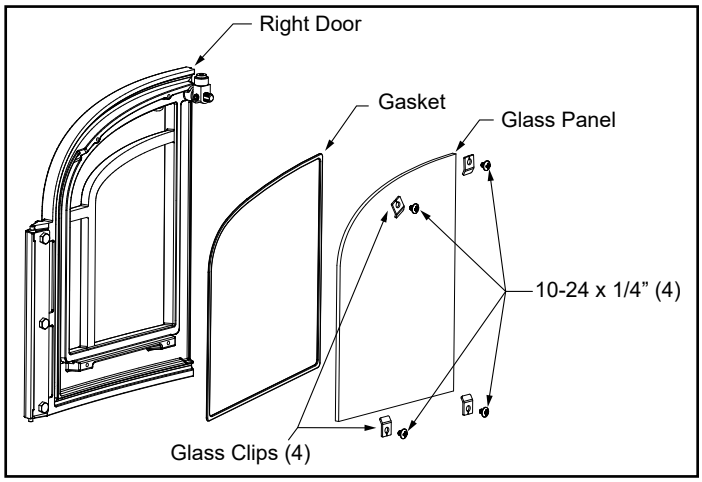


Figure 3.2 - Exploded view of the glass assembly for the right door.

B. Damper Adjustment (as Needed)

The tension on the Dauntless FlexBurn's damper is adjustable to compensate for compression of the gasket that seals the damper to the upper fireback. To adjust the damper:

1. Remove the griddle. Loosen the lock nut at the center of the damper, Figure 3.3.
2. Turn the pressure screw approximately one half turn clockwise with an Allen wrench provided with your stove.
3. Tighten the lock nut. Prevent the pressure screw from turning as you tighten the nut. Re-test the damper.

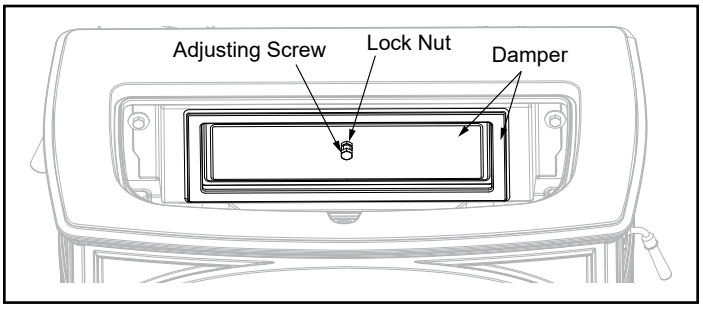


Figure 3.3 - Adjust the damper with the Allen wrench.

Tighten the Damper Handle as Needed

A handle on the left side of the stove controls the damper. The handle attaches to the damper rod with a set screw. Periodically check the set screw and tighten as necessary.

C. Door Latch Adjustment

The front door of the stove should close securely to prevent accidental opening and should close tightly to prevent air from leaking into the fire chamber. The door handle will be positioned vertically when the door is closed.

Over a period of time, the gasket around the door will compress and the latch may need adjustment. To adjust the handle, follow this procedure:

1. Remove and retain the lock nut with a 9/16" wrench, Figure 3.4.
2. Loosen the set screw with a 1/8" Allen wrench.
3. Rotate the pawl 180°. Replace the lock nut. Tighten the set screw, Figure 3.4.
4. Additional adjustment can be made by removing the flat washer. Or any combination of washer removal and/or pawl rotation.

Test the door seal. Close the door on a dollar bill and attempt to pull it free. If the bill is freed with little resistance, the gasket isn't snug enough at that spot. Continue to make small adjustments until the setting is right.

If additional adjusting of the latch does not enable the door to seal sufficiently in one area, try adjusting the gasket in that area. Pack more cement or a smaller diameter gasket into the channel beneath the gasket so the main gasket is raised and makes contact with the door frame. If this procedure doesn't solve the problem, replace the gasket. Instructions for gasket replacement are given later in this section.

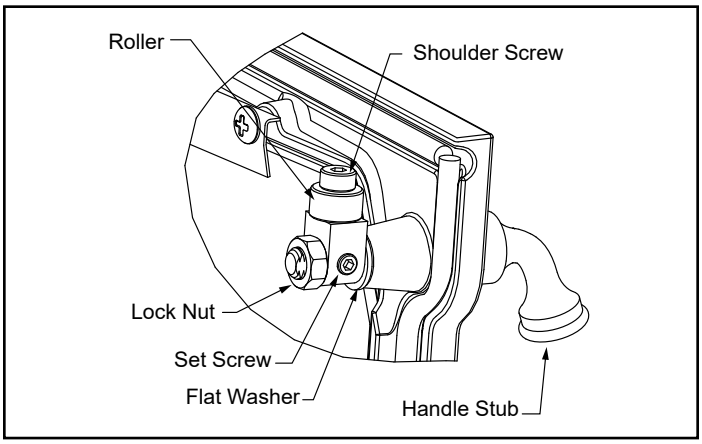


Figure 3.4 - Rotate pawl and/or remove flat washer to adjust latch.

D. Gasket Replacement (as needed)

Your Dauntless FlexBurn® uses fiberglass rope gaskets to make a tight seal between some parts. With use, particularly on moving parts, 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" The griddle to the stove top (wire reinforced gasket)

3/8" The damper to the damper frame

5/16" The front doors to the stove front; and the doors to each other.

3/8" The ash door to the front of the bottom panel

3/16" The outer glass panes to the door

If you need to change a gasket, first obtain an appropriate replacement from your Vermont Castings' Authorized 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 gaskets is the same, regardless of the gasket location. Follow these steps:

1. Remove the existing gasket by grasping an end and pulling firmly, Figure 3.5.

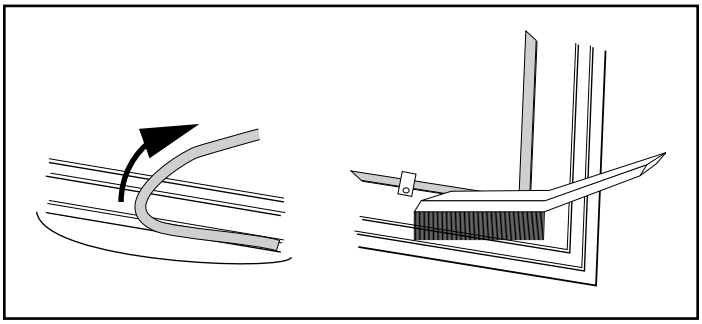


Figure 3.5 - Remove gasket then clean channel with wire brush.

2. Use a wire brush or the tip of 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, Figure 3.5.
3. Determine the correct length of the appropriate-sized gasket by laying it out in the channel. Allow an extra 1-2" (25-50 mm), 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 1/8" (3 mm) bead of silicone or cement in the newly-cleaned channel, Figure 3.6.

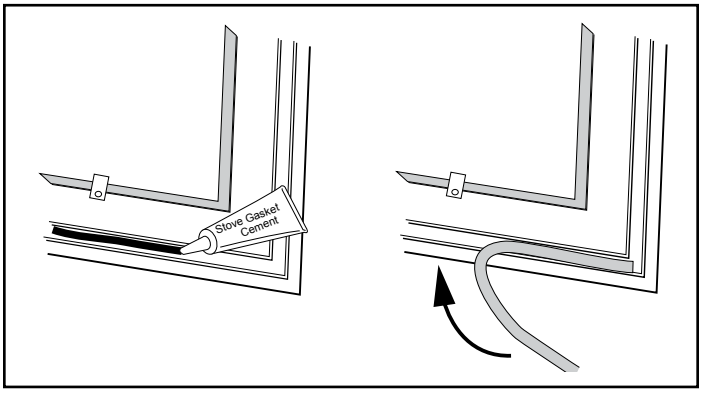


Figure 3.6 - Lay a bead of gasket silicone or cement then press gasket in place.

6. Starting at one end, press the gasket into the channel, Figure 3.6. Ensure a good joint where the gasket meets before trimming any excess. Do not overlap the gasket ends or leave ends with ragged edges.
7. Press the gasketed part firmly against its normal mating surface to seat the gasket evenly in its channel. Close and latch the door to do this, or tap other parts with the rubber mallet (or hammer/block of wood).
8. Clean any excess cement from around the channel, then let the cement that holds the new gasket dry thoroughly.
9. The stove's doors may need adjustment after you have regasketed them. Initially, it may require loosening the latch to accommodate the new gasket; after a few weeks, it may need tightening to compensate for compression of the new gasket.

All Gasketed Construction Gaskets

Other gaskets form seals between all other 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. Refer to the service parts list for gasket replacement.

E. The Chimney System

Creosote

Your Dauntless FlexBurn® is designed to reduce creosote build-up 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 your 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.

⚠ WARNING

Inspect and Clean Chimney Frequently – Under certain conditions of use, creosote buildup may occur rapidly.

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 of a slow-burning fire. 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 a significant layer of creosote has accumulated —1/8" (3 mm) or more — it should be removed to reduce the risk of a chimney fire.

You can never be too safe. Contact your local fire authority for information on what to do in the event of a chimney fire, and have a clearly understood plan on how to handle one.

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

- Close the damper and air control lever.
- Get everyone out of the house.
- Call the Fire Department.

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 you cannot inspect the flue system in this fashion, the stove must be disconnected to provide better viewing access.

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.

Clean the chimney connector 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 joints between individual sections with sheet metal screws.

If you cannot inspect or clean the chimney yourself, contact your local Vermont Castings dealer or a professional chimney sweep.

F. Maintenance Schedule

The Stove

After First Week of Burning:

- Check damper ramp adjustment and damper tightness. When closing the damper, there should be a distinct stop as the handle rotates to the closed position. If the damper handle does not click over into the closed position or if the damper falls open on its own after manually closing the damper, the damper ramp needs to be tightened to ensure damper sealing and positive engagement of the damper system. Refer to page 16 for instructions on how to adjust the damper ramp.

Daily:

- Clear any ash build-up from around the air holes and combustion flow path in the lower fireback.
- Ashes should be removed before they reach the top of the ash pan. Check accumulation at least once a day.
- Keep the area around the stove clear of any combustible materials such as wood, furniture or clothing.

Two Months:

- Check door handle to be sure it is working properly. Gasketing becomes compressed after a period of time. Adjust handle tightness if necessary.
- Check leg bolts and heat shield screws; tighten if necessary.
- **If installed:** Inspect the combustor for fly ash accumulation and physical damage. Clean the combustor as needed.

Annual Spring Cleaning:

- Check gasketing for wear, and replace if necessary.
- Remove ashes from the ash pan and replace with a moisture absorbing material (such as kitty litter) to keep the interior of the stove dry.
- Clean the dust from the inner sides of bottom, rear or pipe heat shields if your stove is equipped with them. Clean surfaces are better heat reflectors than dirty surfaces.
- Touch up the black paint.
- Inspect for and remove ash build-up behind the combustion package. This should be done in conjunction with annual cleaning of the chimney connector. Inspect the passage behind the combustion package (a mirror will be helpful) and vacuum away ash using a flexible vacuum hose inserted in the passage, Figure 3.7.

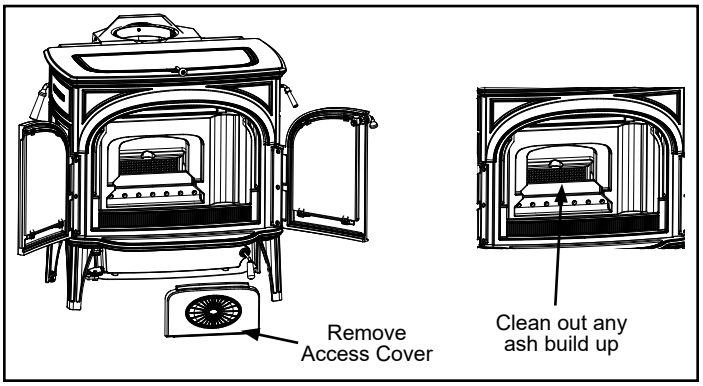


Figure 3.7 - Inspect and clean out ash accumulation behind the combustion system.

The Chimney Connector

Two Weeks:

- Inspect the chimney connector and chimney. Clean if necessary.

Two Months:

- Inspect the chimney and chimney connector. Pay particular attention to the horizontal runs of chimney connector, and the elbows. Clean the system if necessary.

Annual Spring Cleaning:

- Disassemble the chimney connector and take it outdoors for inspection and cleaning. Replace weak sections of connector.
- Inspect the chimney for signs of deterioration. Repairs to a masonry chimney should be made by a professional mason. Replace damaged sections of prefabricated chimney. Your local Vermont Castings dealer or a chimney sweep can help determine when replacement is necessary.
- Thoroughly clean the chimney.

G. The Catalytic Element (Optional)

⚠ CAUTION

BURN UNTREATED WOOD ONLY. OTHER MATERIALS SUCH AS WOOD PRESERVATIVES, METALS, FOILS, COAL, PLASTIC, GARBAGE, SULPHUR, OR OIL, MAY DAMAGE THE CATALYST.

The Dauntless FlexBurn® is designed to burn equally well with or without a catalytic combustor (Part #SRV8346-006), however higher efficiencies will be achieved when operating with the catalyst. The following section only applies if the catalytic performance pack (#0003406) has been purchased and installed. The Dauntless FlexBurn® is designed and certified to function with or without a catalyst. In the event the combustor becomes non-functioning the combustor can either be replaced or removed completely.

If a non-active catalyst is left installed in the unit, it will burn sluggishly and produce noticeable smoke at the outlet of the venting system. The simplest situation in that case is to remove the deactivated catalyst and operate the unit as non-catalytic. The catalyst can then be replaced as time allows without producing a smoky burn or low heat output.

Under normal operating conditions, the catalytic combustor should remain active for five to seven years (depending on the amount of wood burned). However, it is important to monitor the combustor periodically to ensure that it is functioning properly, as well as to determine when it needs to be replaced.

When to Suspect a Combustor Problem

The best way to evaluate the performance of your Dauntless FlexBurn's combustor is to observe the amount of smoke leaving the chimney — both when the combustor has "lighted-off" and when it has not. Follow these steps:

- With a fire going and the combustor properly activated and the damper closed to route smoke through it as described in the Operation Section, go outside and observe the smoke leaving the chimney.
- Then, open the stove damper and once again check the smoke leaving the chimney.

You should see significantly more smoke when the stove damper is open and exhaust does not pass through the combustor. However, be careful not to confuse smoke with steam from wet wood. Steam dissipates in the air quickly; smoke does not. Remember that a hot stove with a 2"-3" established coal bed is required for catalytic combustion to occur.

If this test indicates a problem, consider other possible factors as well, such as the weather or a change in the quality of your fuel. In warm weather, draft is weaker than it is in colder winter weather, and fires can burn sluggishly. Small, hot fires are a good solution under these conditions.

NOTE

Burning "green" (insufficiently seasoned) wood will result in poorer performance than burning properly seasoned fuel. Reloading with green wood can also thermal shock the catalyst, resulting in cracking, or the eventual fallout, of the honeycomb substrate. You may have to run your stove hotter (more air) to achieve acceptable performance using green or wet wood.

Also, consider any changes in your operating routine.

Once you have ruled out any other possible causes for a decline in performance, inspect and clean the combustor if necessary. Be sure to protect any surface you use for setting the stove parts aside.

Inspecting the Combustor

Remove access door and inner firebrick. Remove the catalytic combustor by lifting up and pulling towards you, Figure 3.8.

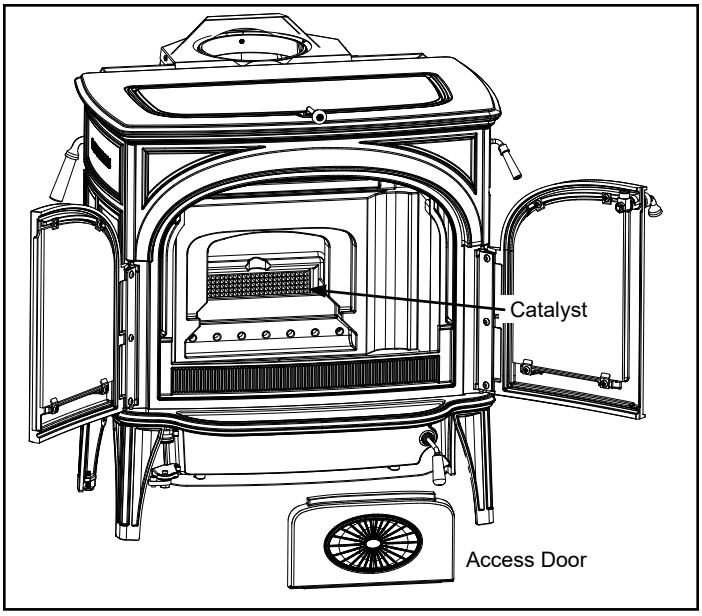


Figure 3.8 - Inspect the catalytic combustor.

Cleaning the Optional Combustor

1. Check the combustors honeycomb-like catalyst for a buildup of fly ash. If any is evident, take the catalyst outside and clean it by blowing air gently through it. Do not push anything through the honeycomb; the combustor should be cleaned by forcing air through the combustor to remove fly ash using a vacuum or can of compressed air.
2. Inspect the catalyst for damage or degradation. Although small hairline cracks will not affect performance, the catalyst should be essentially intact. If the catalyst is broken in pieces or has sections missing, it should be removed or replaced. Call your local Vermont Castings Authorized Dealer for a replacement catalyst.
3. If the catalyst is in good condition and clean, re-install it in the stove and replace the refractory access door.

4 Troubleshooting Guide

With proper installation, operation, and maintenance your wood appliance will provide years of trouble-free service. If you do experience a problem, this troubleshooting guide will assist you or a qualified service person in the diagnosis of a problem and the corrective action to be taken.

Start Fire Problems	Possible Cause	Solution
• Can not get fire started • Excessive smoke spillage • Burns too slowly • Not enough heat output	Not enough kindling/paper or no kindling/paper	Use dry kindling, more paper. Arrange kindling & wood for air movement.
	Not enough air for fire to ignite	Check for restricted termination cap
		Check for blockage of outside air kit (if installed).
		Check for flue blockage.
		Pre-warm flue before starting fire (refer to Building a Fire Section).
		Check for adequate vent height (refer to Chimney Height Section).
		Refer to Negative Pressure section
	Wood condition is too wet, too large	Use dry, seasoned wood (refer to Seasoned Wood Section).
	Bed of coals not established before adding wood	Start with paper & kindling to establish bed of coals (refer to Building a Fire Section).
	Flue blockage such as birds' nests or leaves in termination cap	Have chimney inspected for creosote and cleaned by a certified chimney sweep.
	Down draft or negative pressure Competition with exhaust devices	Do not use exhaust fans during start-up (refer to Negative Pressure Section).
Fire burns too fast	Extremely dry or soft wood	Mix in hardwood.
		Mix in larger pieces of wood after fire is established.
	Overdrafting	Check for correct vent height; too much vertical height creates overdrafting.
		Check location of vent termination (refer to Chimney Termination Requirement Section).
Low Heat Output	Coal Bed too small	Open damper. Establish deeper coal bed and move coals to the rear of the firebox.
Excessive Coal Bed	Operating on high for extended periods	Reduce burn rate and allow coals to burn down before reloading.

Contact your dealer for additional information regarding operation and troubleshooting.
Visit www.vermontcastings.com to locate a dealer.

5 Reference Materials

A. Service & Maintenance Log

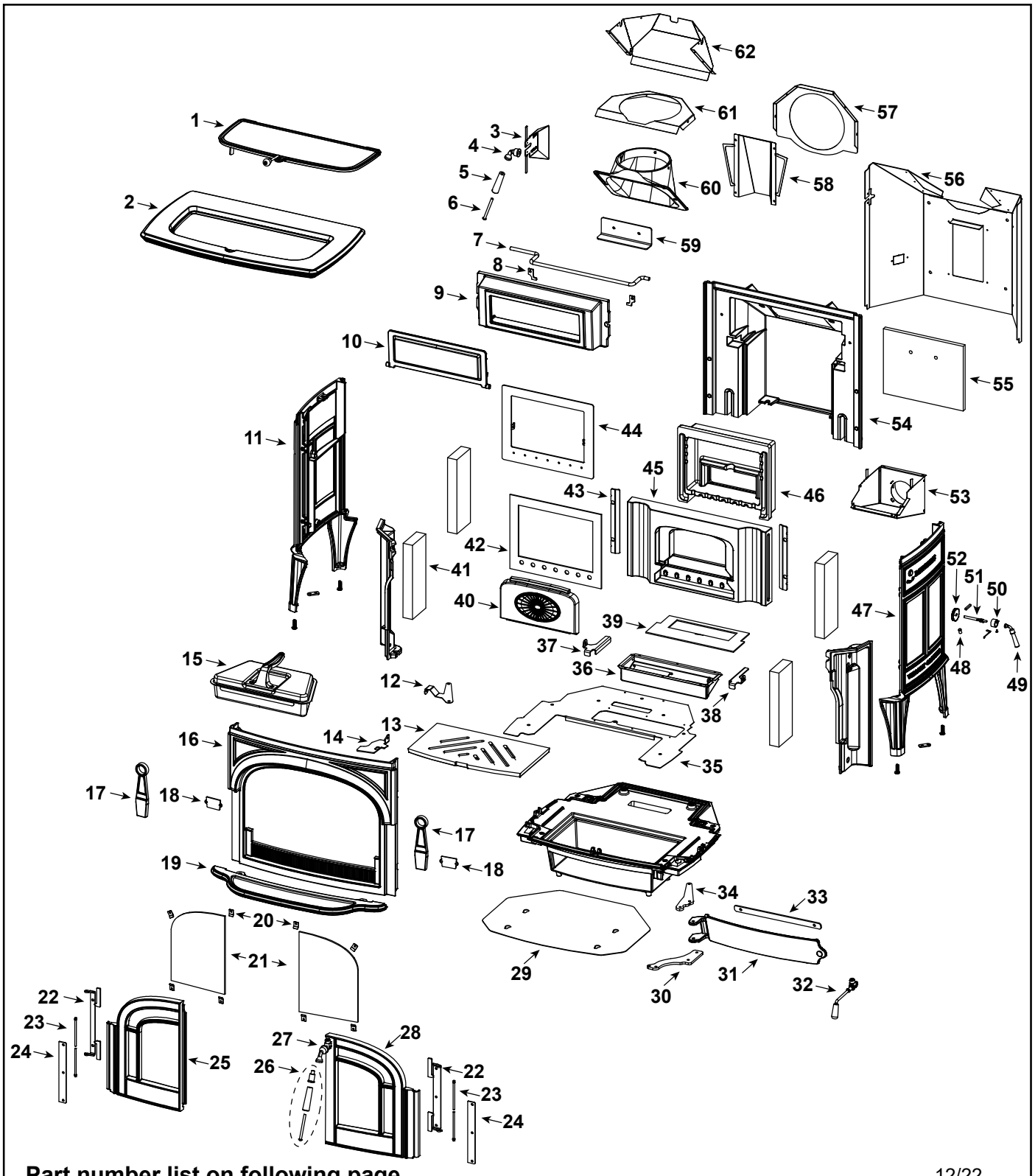
Date of Service	Performed By	Description of Service

B. Service Parts & Accessories

VERMONT CASTINGS™ **Service Parts** **Dauntless**

0002235 (Classic Black)
0002236 (Biscuit) - Ending Manufacturing Date: Feb 2022
0002237 (Majolica Brown)
0002238 (Bordeaux)
0002239 (Twilight)

Beginning Manufacturing Date: May 2020
Ending Manufacturing Date: Active

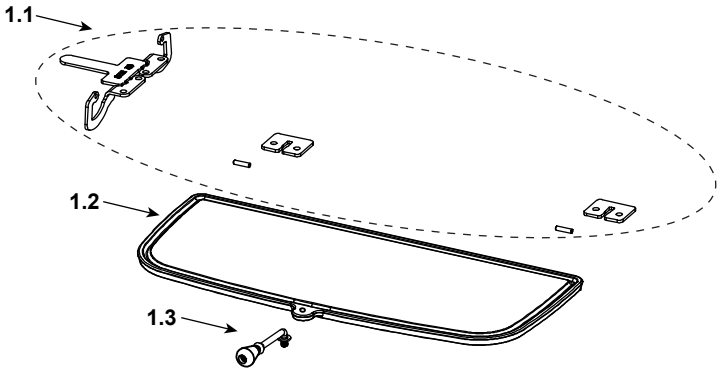


Part number list on following page.

12/22

Beginning Manufacturing Date: May 2020
Ending Manufacturing Date: Active

IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers**. Provide model number and serial number when requesting service parts from your dealer or distributor.

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	Stocked at Depot
#1 Griddle Assembly 				
1	Griddle Assembly w/Brackets		SRV1-10-586134	
1.1	Griddle Brackets (Includes Left & Right, Dowel Pins & Retainers)		SRV3000731	
	Dowel Pin	Qty 2 req	30007368	
1.2	Griddle		4-00-586134A	
1.3	Handle Assembly, Griddle		1-00-586170	**Y**
	Knob, Griddle	Maple, Black	1600661	
	Bushing, Griddle Handle (Qty 2 req)	Pkg of 10	1201900-10	
	#10 External Tooth Lock Washer	Pkg of 100	3-30-0001-100	
	Gasket, 5/16 Wire w/Core	10 Ft	1-00-1203668	**Y**
2	Top	Classic Black	4-00-586135A	
		Biscuit	4-00-586135-32A	
		Majolica Brown	4-00-586135-31A	
		Bordeaux	4-00-586135-33A	
		Twilight	4-00-586135-30A	
	Gasket, 3/8 Adhesive (Top)	15 Ft	1-00-30002422	**Y**
3	Cover, Damper Rod		SRV2-00-586191	
4	Damper Steel Handle w/Set Screw		30002720A	
5	Handle, Damper	Maple, Black	1600664	**Y**
6	Philips RD HD 1/4-20x3	Pkg of 10	1201310-10	
7	Damper Rod		SRV3-40-586164	
	Damper Adjuster		SRV2-00-586201	
	Damper Plate & Rod Repair Kit		SRV8787-019	**Y**
8	Damper Shaft Retainers	Pkg of 2	SRV2-00-586186	
9	Damper Frame		4-00-586184A	
	Gasket, 3/8 Fiberglass Low (Inside)	15 Ft	1-00-1203589	**Y**
	Gasket, 3/8 Adhesive (Outside)	15 Ft	1-00-30002422	**Y**

Additional service part numbers appear on following page.

Beginning Manufacturing Date: May 2020
Ending Manufacturing Date: Active

IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers**. Provide model number and serial number when requesting service parts from your dealer or distributor.

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	Stocked at Depot
10	Damper Plate		4-00-586200A	
	CS Hex Head 1/4-20 x 3/8	Pkg of 10	1201337-10	
	Screw 1/4-20 x 1/2 Black	Pkg of 10	1201338-10	
	Screw 1/4-20 x 1 Black	Pkg of 10	1201376-10	
	Hex Jam Nut, 1/4-20	Pkg of 10	3-30-8015-10	
	Fasteners for Damper Assembly to Back Casting			
	Screw 1/4-20 x 1 Black	Pkg of 10	1201376-10	
	Flat Washer	Pkg of 10	1202470-10	
	Nut, Hex	Pkg of 10	1203210-10	
11	Side, Left	Classic Black	4-00-586123A	
		Biscuit	4-00-586123-32A	
		Majolica Brown	4-00-586123-31A	
		Bordeaux	4-00-586123-33A	
		Twilight	4-00-586123-30A	
	LVLR Bolt, 1/4-20x1	Pkg of 10	1201745-10	
	Gasket, 3/8 Adhesive	15 Ft	1-00-30002422	**Y**
	Mobile Home Bracket	Pkg of 2	SRV586189	
12	Front Handle Holder		SRV2-00-586197	
13	Ash Grate		3-00-586122A	
14	Air Control Baffle		SRV2-00-586148	
15	Ash Pan Assembly		30007339	
16	Front	Classic Black	4-00-586121A	
		Biscuit	4-00-586121-32A	
		Majolica Brown	4-00-586121-31A	
		Bordeaux	4-00-586121-33A	
		Twilight	4-00-586121-30A	
	Gasket, 3/8 Adhesive	15 Ft	1-00-30002422	**Y**
17	Andiron	Qty 2 req	3-00-586128A	
18	Mounting Plate, Andiron	Qty 2 req	SRV2-00-586169	
	HHCS 1/4-20x3/8	Pkg of 10	1201337-10	
19	Ash Lip	Classic Black	3-00-586144A	
		Biscuit	3-00-586144-32A	
		Majolica Brown	3-00-586144-31A	
		Bordeaux	3-00-586144-33A	
		Twilight	3-00-586144-30A	
	TRS HD PH 10-24 x 1/2	Pkg of 10	1200998-10	

Additional service part numbers appear on following page.

Beginning Manufacturing Date: May 2020
Ending Manufacturing Date: Active

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ITEM	DESCRIPTION	COMMENTS	PART NUMBER	Stocked at Depot
20	Glass Clip (Qty 4 req per Door)	Pkg of 4	SRV2-00-586207	
	Glass Clip Screw, 10-24x1/4 (Qty 4 req per Door)	Pkg of 10	1200980-10	
21	Glass, Load Door	Qty 1 req, per Door	SRV3-40-586138	
	Glass Gasket, 3/16 PSA	10 Ft	1-00-1186258229	**Y**
22	Door Hinge Set, Left & Right		SRV2-00-586204	
23	Door Pins	Qty 2 req, per Door	30002727	**Y**
24	Hinge Clamp Plate	Qty 1 req, per Door	SRV2-00-586205	
	BHSCS 1/4-20X3/8 (Hinge Bracket to Door)	Pkg of 10	3-30-3014-10	**Y**
25	Door, Left	Classic Black	4-00-586126A	
		Biscuit	4-00-586126-32A	
		Majolica Brown	4-00-586126-31A	
		Bordeaux	4-00-586126-33A	
		Twilight	4-00-586126-30A	
	Gasket, Door 5/16 Med	15 Ft	1-00-1203588	**Y**
	BHSCS 1/4-20 x 3/8 (Door to Stove Front)	Pkg of 10	3-30-3014-10	**Y**
26	Wood Handle w/Lifter		30004175K	**Y**
	Damper Handle	Wood	1600664	**Y**
	Damper Handle Screw	Pkg of 10	1201310-10	**Y**
	Insert Lifter		30002714	**Y**
27	Latch Assembly, Front Door		SRV1-10-586145	**Y**
	Front Steel Handle/Shaft		30002717	
	Spring Washer	Pkg of 10	63D0069-10	
	Pawl Assembly		30005157	**Y**
	Flat Washer, 10mm	Pkg of 10	1202560-10	
	Nut Jam, 3/8-16 Top Lock	Pkg of 10	1203290-10	
28	Door, Right	Classic Black	4-00-586127A	
		Biscuit	4-00-586127-32A	
		Majolica Brown	4-00-586127-31A	
		Bordeaux	4-00-586127-33A	
		Twilight	4-00-586127-30A	
	Gasket, Door 5/16 Med	15 Ft	1-00-1203588	**Y**
	BHSCS 1/4-20 x 3/8 (Door to Stove Front)	Pkg of 10	3-30-3014-10	**Y**
29	Bottom Heat Shield		SRV2-00-586165	
30	Lower Mount Bracket, Ash Door		SRV2-00-586143	
	Washer 5/16	Pkg of 10	7000-579/10	
	Screw 1/4-20 x 3/4, Black	Pkg of 10	1201374-10	

Additional service part numbers appear on following page.

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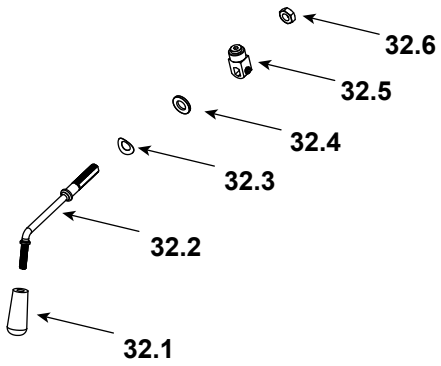
ITEM	DESCRIPTION	COMMENTS	PART NUMBER	Stocked at Depot
31	Ash Door		4-00-586206A	
	Gasket, Ash Door 3/8 Fiberglass Low	15 Ft	1-00-1203589	**Y**

#32 Ash Door Handle Assembly



32	Handle Assembly, Ash Door		SRV1-10-1600663	
32.1	Handle, Ash Door	Hardwood, Black	1600663	
32.2	Shaft, Handle		30005301	
32.3	Spring Washer	Pkg of 10	63D0069-10	
32.4	Flat Washer, 10mm	Pkg of 10	1202560-10	
32.5	Pawl Assembly		30005157	**Y**
32.6	Nut Jam, 3/8-16 Top Lock	Pkg of 10	1203290-10	
33	Ash Pan Bracket		30007376A	
34	Upper Mount, Ash Door		SRV2-00-586142	
35	Bottom Air Cover		SRV2-00-586147	
36	Air Control Assembly		SRV1-10-586156	
37	Brick Clip, Left		SRV2-00-586193	
38	Brick Clip, Right		SRV2-00-586194	
39	Gasket, Refractory		SRV3-44-586168	
40	Access Cover, Refractory		SRV3-40-586152	
41	Firebrick, Cut 9 3/4 x 3 1/2 x 1 1/4	Qty 4 req	SRV2-00-586192	
42	Insulation, Fiberfrax (Replace during Engine, Fireback or SS Fireback replacement)		SRV3-44-586196	
43	Brick Clip, Rear	Qty 2 req	SRV2-00-586153	
44	SS Fireback Plate		SRV2-00-586188	
45	Fireback, Refractory		SRV3-40-586151	

Additional service part numbers appear on following page.

Beginning Manufacturing Date: May 2020
Ending Manufacturing Date: Active

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ITEM	DESCRIPTION	COMMENTS	PART NUMBER	Stocked at Depot
46	Refractory Engine		30007299A	
	CS Hex Head, 1/4-20 x 3/8	Pkg of 10	1201337-10	
	CS Hex Head, 1/4-20 x 5/8	Pkg of 10	1201372-10	
47	Side, Right	Classic Black	4-00-586124A	
		Biscuit	4-00-586124-32A	
		Majolica Brown	4-00-586124-31A	
		Bordeaux	4-00-586124-33A	
		Twilight	4-00-586124-30A	
	LVLR Bolt, 1/4-20x1	Pkg of 10	1201745-10	
	Gasket, 3/8 ADHES	15 Ft	1-00-30002422	**Y**
	Mobile Home Bracket	Pkg of 2	SRV586189	
48	Ball Plunger 5/16 x 1/2		3-31-5500	
49	Primary Air Control Handle Assembly	Wood, Maple, Black	SRV1-10-586149	**Y**
	Thermostat Handle, Knob	Wood, Maple, Black	1600660	
	Round Head SL 8-32 x 2	Pkg of 10	1202560-10	
50	Thermostat Stub w/Set Screw		30002716	
	Cable Assembly	Call Tech	SRV30007519	
51	Air Control		SRV1-10-1601430	
52	Air Control Wheel		SRV2-00-586163	
53	Outside Air Box Assembly		SRV1-10-586161	
54	Rear Housing		4-00-586129A	
	Gasket, 3/8 Adhesive (Side Openings)	15 Ft	1-00-30002422	**Y**
	Gasket, 7/16 PSA (Refractory Opening)	15 Ft	1-00-30001910	**Y**
55	Insulation Board, Back		SRV3-44-586183	
56	Air Jacket, Rear		SRV2-00-586177	
57	Heat Shield, Rear Cover, Rear Vent		SRV2-00-586175	
58	Air Inlet		SRV2-00-586173	
59	Exhaust Diverter		SRV2-00-586182	
60	Flue Collar, 6 “	Classic Black	4-00-250102A	
	Gasket, 3/8 Adhesive	15 Ft	1-00-30002422	**Y**
61	Heat Shield, Cover, Top Vent		SRV2-00-586176	
62	Heat Shield Common		SRV2-00-586174	
	Outside Air Kit		1-10-09542	
	Finish Bag		SRV1-00-586209	
	Touch-up Paint		3-42-19905	
	Catalyst Performance Package (Catalyst, Temp Probe, Bracket, & Install Items)		0003406	
	Catalyst Ceramic		SRV8340-006	
	Cooking Grill		0003407	
	Fan Kit		0003410	

C. Contact Information

VERMONT CASTINGS™

CONTACT INFORMATION

Hearth & Home Technologies
352 Mountain House Road
Halifax, PA 17032

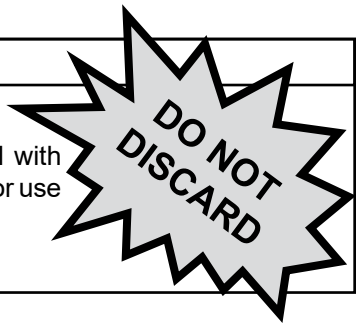
Please contact your Vermont Castings dealer with any questions or concerns.

For the number of your nearest Vermont Castings dealer log onto www.vermontcastings.com

CAUTION

DO NOT DISCARD THIS MANUAL

- Important operating and maintenance instructions included.
- Read, understand and follow these instructions for safe installation and operation.
- Leave this manual with party responsible for use and operation.



We recommend that you record the following pertinent information for your heating appliance.

Date purchased/installed: _____

Serial Number: _____ Location on appliance: _____

Dealership purchased from: _____ Dealer phone: _____

Notes: _____

_____

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_____

This product may be covered by one or more of the following patents: (United States) 5341794, 5263471, 6688302, 7216645, 7047962 or other U.S. and foreign patents pending.

HEARTH & HOME technologies™