

Installation and Operation Manual



BARREL ROASTING OVEN

Speciality Oven

Wood-Fired Model

BARREL ROASTING OVEN WS-BRO

Wood Stone

WOOD STONE CORPORATION

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**INSTALLATION AND OPERATION MANUAL FOR THE
WOOD STONE BARREL ROASTING OVEN**

**STONE FIRED COOKING EQUIPMENT
SOLID FUEL BARREL ROASTING OVEN
WS-BRO**

ADDITIONAL COPIES AVAILABLE UPON REQUEST





INSTALLATION AND OPERATION MANUAL FOR THE WOOD STONE WS-BRO BARREL ROASTING OVEN

READ ALL INSTRUCTIONS BEFORE INSTALLING AND USING THIS APPLIANCE

Please read this entire manual before you install the oven. Failure to follow instructions may result in property damage, bodily injury or even death. Contact your local building or fire officials about restrictions and installation inspection in your area.

WARNING: Do not pack required air space with insulation or other material

FOR YOUR SAFETY: Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

**WOOD FIRED OVEN. DO NOT USE PRODUCTS NOT SPECIFIED FOR USE WITH THIS OVEN.
USE SOLID WOOD FUEL ONLY**

A MAJOR CAUSE OF OVEN RELATED FIRES IS A FAILURE TO MAINTAIN REQUIRED CLEARANCES TO COMBUSTIBLE MATERIAL. IT IS OF UTMOST IMPORTANCE THAT THIS OVEN BE INSTALLED ONLY IN ACCORDANCE WITH THESE INSTRUCTIONS.

SAVE THE INSTRUCTIONS

Wood Stone's Wood-Fired Ovens have been tested and approved by Intertek Testing Services (ETL SEMKO) and are ETL Listed to UL Subject 2162 and ULC Subject 1482-M1990, and to ANSI/NSF Standard 4.



Intertek

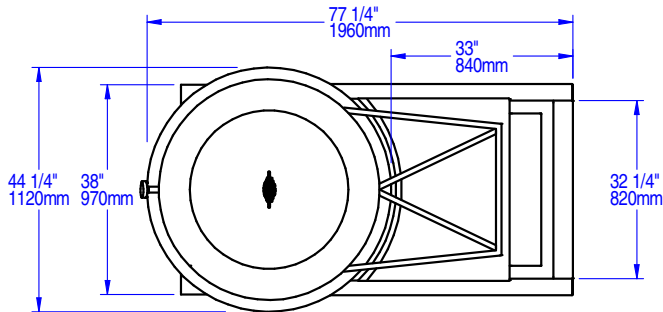


Intertek

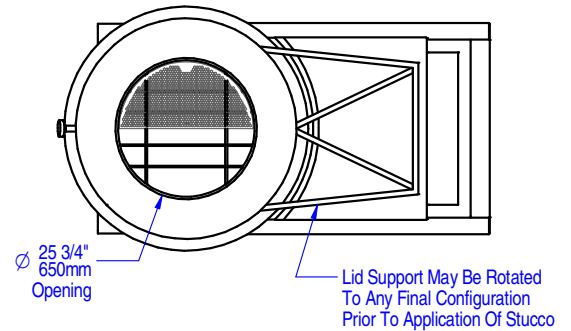
ANSI/NSF STD 4



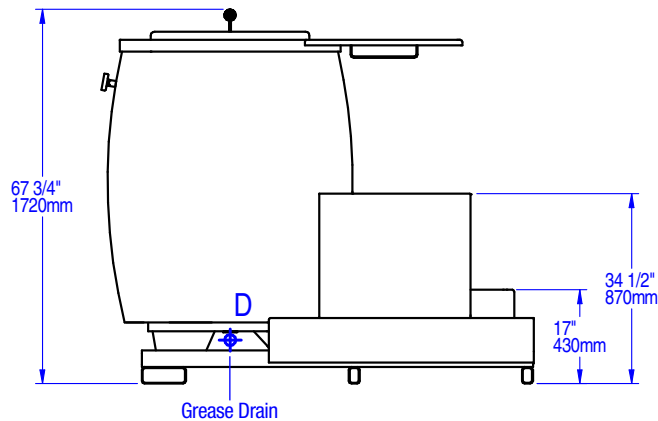
Plan view (with lid)



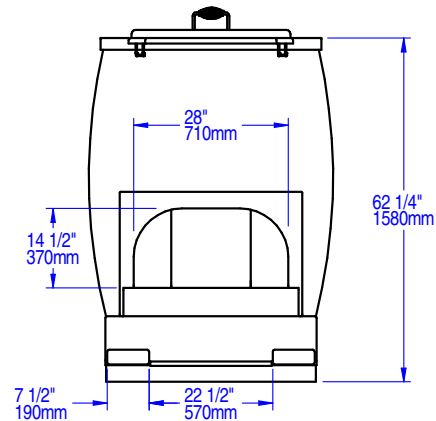
Plan view (without lid)



Side view



Front view



Shipping weight: 3,300 lbs.

UTILITY SPECIFICATIONS

Drain to Floor Sink (grease trap)

A 1-1/2" drain outlet tube at the bottom of the oven is provided. This outlet must be connected to an indirect waste pipe and discharge by means of an air gap in accordance with all applicable plumbing codes. The indirect waste pipe should discharge into a drain system that is serviced by a grease trap.

Venting

This oven may be vented with a Listed Type 1 exhaust hood or one constructed in accordance with NFPA 96 and all relevant local and national codes. The oven must be vented in accordance with all relevant local and national codes, and in a manner acceptable to the authority having jurisdiction.

IMPORTANT: This model must be vented as a solid fuel appliance.



UNLOADING THE BARREL ROASTING OVEN

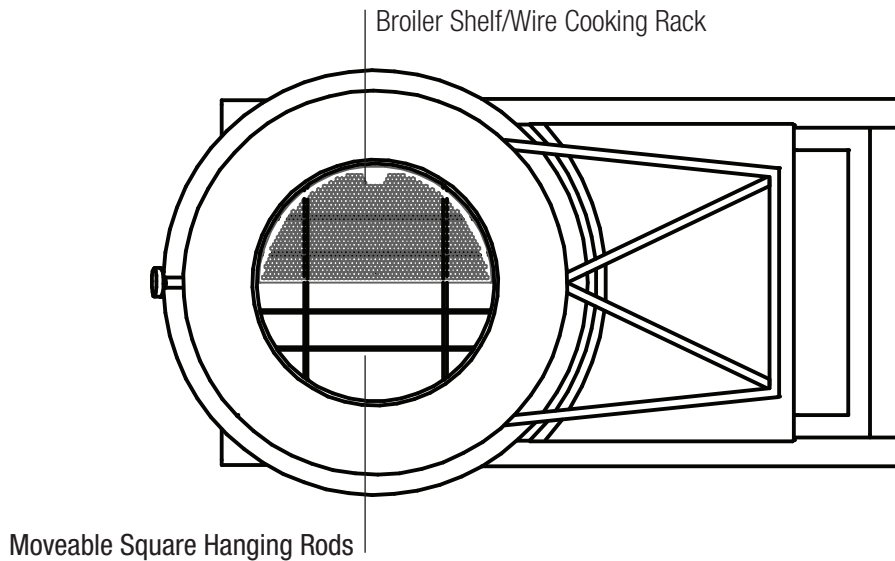
Our Barrel Roasting oven weighs 3,200 lbs. Under no circumstances should manual unloading be attempted. If a receiving dock is available, a pallet jack should be sufficient to remove the crated unit from the delivery truck. A suitable forklift should be used when moving the unit from the delivery truck to ground level.

DRAIN

This oven is equipped with a grease collector that captures any grease that may accumulate at the bottom of the cooking vessel. It is equipped with a drain pipe that must be connected to a drain equipped to handle grease, in accordance with all applicable plumbing codes. Drain pipe and Connection Kit included.

ADDITIONAL COOKING ACCESSORIES

Also included are 4 Moveable Square Hanging Rods (2 each of two sizes) and 1 Broiler Shelf/Wire Cooking Rack.





CLEARANCE TO COMBUSTIBLES



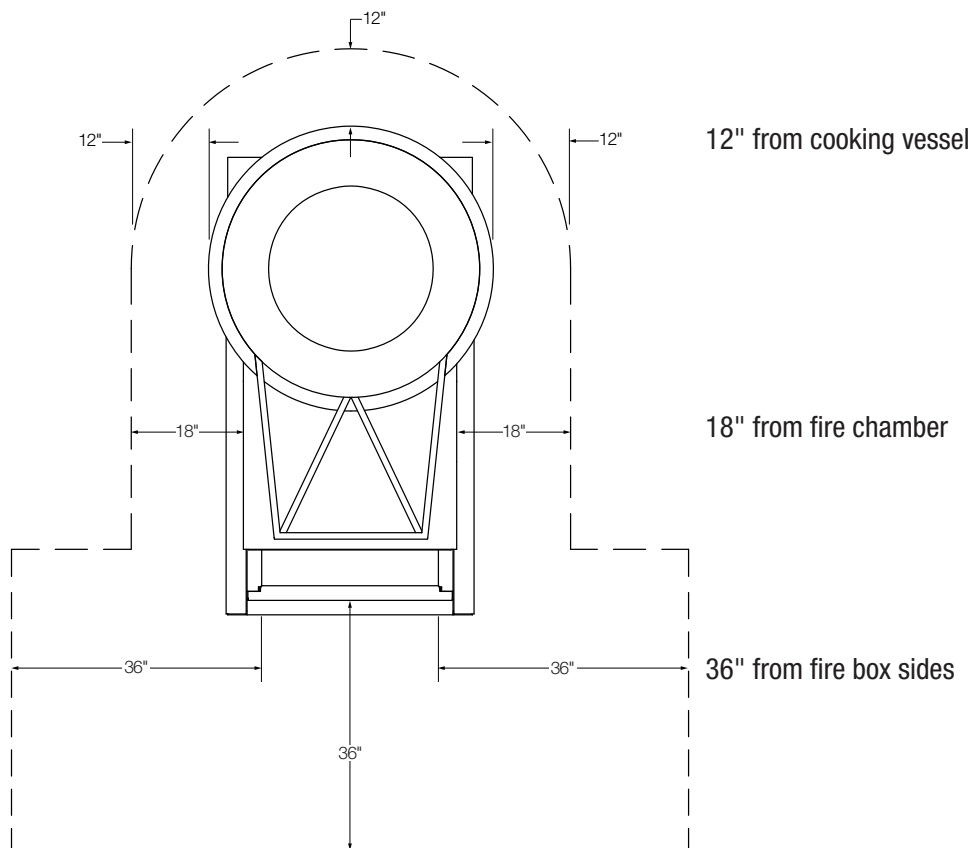
WARNING: Do not pack required air space (clearance) with insulation or other materials. When non-combustible building materials contact the body of the oven, the clearances to combustibles are transferred to those non-combustibles.

INSTALLATION CLEARANCES

Floor: The Barrel Roasting oven should be installed on a non-combustible floor extending 3 ft. in all directions from the appliance, or one provided with a non-combustible covering acceptable to the authority having jurisdiction.

Minimum clearances to combustible construction (refer to diagram below): 12-inches from cooking vessel, 18-inches from fire chamber, 36-inches from fire box sides.

Note: This oven should be vented with a Listed Type 1 exhaust hood, or one constructed in accordance with NFPA 96 and all relevant local and national codes. See VENTING section for more detail.





VENTING

This oven must be vented with a Listed Type 1 exhaust hood, or one constructed in accordance with NFPA 96 and all relevant local and national codes. Hood and ductwork must be manufactured and installed in accordance with the Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, NFPA 96 and all relevant local and national code requirements for solid fuel appliances.

Solid fuel burning ovens must be vented separately from non-solid fuel burning equipment. Due to the possibility of sparks entering the duct, exhaust systems serving solid fuel equipment **MUST NOT** be combined with exhaust systems serving other non-solid fuel equipment. This model is rated as solid fuel equipment and must be vented as such.

As with all solid fuel cooking equipment and exhaust systems, a regular inspection and cleaning schedule is needed to prevent the possibility of fire. The frequency of inspection and cleaning will depend on hours of use and type and quality of fuelwood. Typically we recommend monthly cleaning for all solid fuel ovens. A fire protection system is required for safe installation of this piece of equipment; refer to national and local codes for solid fuel cooking equipment.



BARREL ROASTING OVEN DRAIN INSTALLATION

DRAIN TO FLOOR SINK (GREASE TRAP)

A 1-1/2" drain outlet tube at the bottom of the oven is provided. This outlet must be connected to an indirect waste pipe and discharge by means of an air gap in accordance with all applicable plumbing codes. The indirect waste pipe should discharge into a drain system that is serviced by a grease trap.

The Roasting Oven is shipped with two 2-piece stainless clamps, two rubber O-ring gaskets, one stainless drain line with 90° connection and one stainless drain line with straight connection on one end.



1. Begin by centering one of the O-rings on the 90 degree flange of the drain line.



2. Fit the drain line to the drain fitting on the bottom of the oven vessel so that the line is on the side near the floor drain, making sure that the O-ring is in place in the groove on both flanges.

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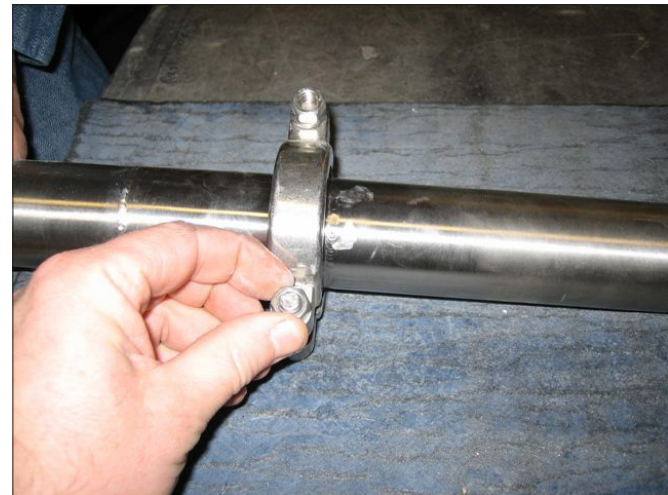
3. Have another person hold the drain line in place to the flange and fit the first half of the clamp with the retaining bolts around the flange mating collars of the drain and drain line.



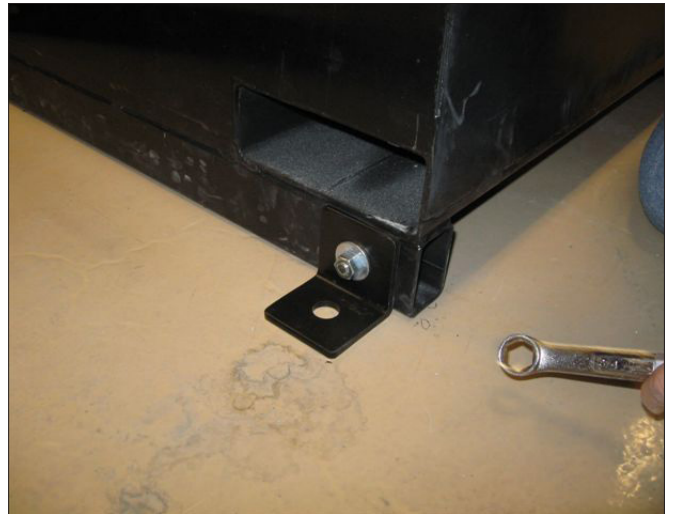
4. Slip the second half of the clamp over the bolts.



5. Slip on the lock washers (provided) and fit the nuts. Then tighten the nuts to assure a leak-free seal.



6. If the drain line reaches the floor drain, the installation is complete. If the drain comes up short, test fit the straight section of drain line, and mark it at the correct length to reach the floor drain. Cut off any excess from the non-flanged end of the straight section, then attach the remaining length to the flange of the first line using the second O-ring and clamp assembly.



1. Remove the (2) 3-inch angle shipping skids from the front and back of the oven by removing the (4) 1/2-inch mounting bolts, nuts, and washers from each side of the oven.

Note: The bolt fits through from the frame tube on each side.

2. Using the same hardware, mount one of the anchor tabs at each corner. The larger hole should be down toward the floor. Secure to the floor using minimum 1/2-inch diameter anchor bolts.



THE FIRE

The fire is to be built in the fire-box located at the front of the oven. Start the fire using small pieces of kindling at first and progressing to larger pieces of wood as the fire takes.

CAUTION: Never use gasoline-type lantern fuel, kerosene, charcoal starter fluid, or similar liquids to start or freshen a fire! Keep all such flammable liquids well away from the oven while it is in use!

**CAUTION: BURN THE FIRE ONLY IN THE FIRE-BOX.
DO NOT ATTEMPT TO BUILD A FIRE IN THE COOKING VESSEL.**

WOOD

Use only well seasoned hardwood to fuel the oven. The wood should have a moisture content less than 20%. For best results, pieces should be split so that the diameter does not exceed 2 or 3 inches. See the FUELWOOD FACTS section at the end of this manual.

CAUTION: DO NOT OVER FIRE. WHEN FLAME SPILLS OUT OF THE FIREBOX, YOU ARE OVERFIRING.

ASH DISPOSAL

Place ashes into a metal container with a tight-fitting lid. The closed container of ashes should be placed on a non-combustible floor or on the ground, well away from all combustible materials, pending final disposal. They should be retained in the closed container until all the cinders have thoroughly cooled. Ashes can then be disposed of safely.



Wood Stone's optional Double
Compartment Ash Dolly. View the
spec sheet at woodstone-corp.com
in the Tools and Accessories section.

**REMOVAL OF CREOSOTE AND SOOT**

As with all commercial cooking equipment exhaust systems, a regular inspection and cleaning schedule is needed to prevent the possibility of a hood or duct fire. The frequency of inspection and cleaning will depend on hours of use and type and quality of wood used as fuel. Only use hardwood species dried to a moisture content of 20% or less. See the FUELWOOD FACTS section at the end of this manual.

CREOSOTE: FORMATION AND NEED FOR REMOVAL

When wood is burned slowly, it produces tar and other organic vapors that combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool oven flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining and exhaust hood. When ignited, the creosote makes an extremely hot fire.

The duct serving this oven should be inspected at least twice a month during the first two months of operation, to establish rate of creosote buildup and necessary cleaning schedule. If creosote or soot has accumulated, it should be removed to reduce the risk of a flue fire.

The interior floor and dome of the oven do not require creosote or soot removal. The oven flue and exhaust system will require inspection and cleaning. The exhaust system should be inspected and cleaned per the manufacturer's and or local code official's recommendations. Typically, we recommend monthly cleaning for all solid fuel ovens.

DISPOSE OF ASHES

1. Place ashes into a metal container with a tight fitting lid.
2. Place the closed container of ashes on a non-combustible floor or on the ground.
3. Place the closed container of ashes well away from all combustible materials, pending final disposal.
4. Retain the ashes in the closed container until all the cinders have thoroughly cooled. Ashes can then be disposed of safely.

NOTE: Wood Stone's stainless steel ash shovel and double compartment ash disposal system offer a safe and convenient way to dispose of ash. See the Tools & Accessories section of woodstone-corp.com for details.

NEVER POUR WATER INTO THE CERAMIC VESSEL**CERAMIC VESSEL**

Any accumulation of soil on the ceramic vessel can be removed (if desired) by operating the oven at high temperature until the buildup is gone. Stainless and other metal surfaces should be cleaned as necessary, using a mild detergent and a nonabrasive scouring pad.



WHAT TYPE OF WOOD SHOULD YOU USE TO FIRE YOUR SOLID FUEL COOKING EQUIPMENT?

The answer to this question depends on several considerations: geographical location, availability and relative cost of various fuelwood species and individual preferences regarding the flavor qualities of various wood types. There are a wide variety of good fuelwood species in all geographic locations. Each species of wood has different characteristics. The table below should help weigh the pros and cons of various types of wood. Wood from conifers (pine trees) is not recommended due to its poor fuelwood characteristics (low weight, low-med heat, poor coaling, high sparking and high residual creosote).

Wood Type	Heat	Lb/Cord	Lighting	Coaling	Sparks	Fragrance*
Alder	Med-Low	2500	Fair	Good	Moderate	Slight
Apple	High-Med	4400	Fair	Excellent	Few	Excellent
Ash	High	3500	Fairly Difficult	Good-Excellent	Few	Slight
Beech	High	3800	Difficult	Excellent	Few	Good
Birch (white)	Medium	3000	Easy	Good	Moderate	Slight
Cherry	Medium	2000	Fair	Excellent	Few	Excellent
Elm	High	2300	Very Difficult	Good	Very Few	Fair
Hickory	Very High	4200	Fairly Difficult	Excellent	Moderate	Excellent
Maple (red)	High-Med	3200	Fairly Difficult	Excellent	Few	Good
Maple (sugar)	High	3700	Difficult	Excellent	Few	Good
Mesquite	Very High		Very Difficult	Excellent	Many	Excellent
Oak (live)	Very High	4600	Very Difficult	Excellent	Few	Fair
Oak (red)	High	3700	Difficult	Excellent	Few	Fair
Oak (white)	Very High	4200	Fairly Difficult	Excellent	Few	Fair
Pecan	High		Fair	Good	Few	Good

*The desirability of various fragrances is largely a matter of personal preference.

Whichever type of wood you use, **MAKE SURE YOU KNOW THE MOISTURE CONTENT.** Properly seasoned wood contains 20% moisture or less. If wood contains more than 20% moisture, it should not be accepted for use. Wood should be stored off the ground and out of the rain in an environment that allows good air circulation so that the drying process can continue. Wet wood is the most common operational difficulty associated with wood-fired cooking equipment. Wood Stone's optional Mini-Ligno E Wood Moisture Meter can save you from paying for water when you thought you were paying for wood (see the Tools & Accessories section of woodstone-corp.com, contact your dealer or Wood Stone).

Calculate your approximate monthly, daily and hourly fuel-wood costs using the following formulas:

The cost of well-seasoned hardwood varies greatly with geographical location.

$$\text{Cost per month} = A \times C \quad \text{Cost per day} = \frac{A \times C}{30} \quad \text{Cost per hour} = \frac{A \times C}{30 \times 12 \text{ hr day}}$$

A = Cost/cord (from wood supplier)

B = lb/cord (from above table)

C = Cords/mth (from experience, or call Wood Stone for an estimate)

When burned, a pound of any wood releases approximately 6500 BTU/hr, so it is better to compare the price of wood by the pound rather than by the cord. A full cord of wood measures 4' x 4' x 8' when stacked.

$$\text{Cost per lb} = \frac{A}{B}$$

Do not use pressed wood products in Wood Stone food service equipment, they may damage the ceramics.



ALL WARRANTY SERVICE MUST BE PRE-APPROVED BY WOOD STONE

Wood Stone warrants its equipment to the original purchaser against defects in material or manufacture for a period of one year from the original date of purchase, subject to the following exclusions and limitations.

Please contact the factory first at 1.800.988.8103 or 1.360.650.1111, seven days a week. Our normal business hours are 8am to 5pm Pacific Time Monday–Friday. If calling during non-business hours, follow the recorded instructions for emergency service and a Wood Stone technician will get back to you promptly.

EXCLUSIONS

The warranties provided by Wood Stone do not apply in the following instances:

1. In the event that the equipment is improperly installed. Proper installation is the responsibility of the installer; proper installation procedures are prescribed by the Wood Stone Installation and Operation Manual.
2. In the event the equipment is improperly or inadequately maintained. Proper maintenance is the responsibility of the user; proper maintenance procedures are prescribed in the Wood Stone Installation and Operation Manual. Burner problems resulting from debris or ash in the burner well will not be covered by the warranty. Call with questions regarding maintenance frequency.
3. In the event that the failure or malfunction of the appliance or any part thereof is caused by abnormal or improper use or is otherwise not attributable to defect in material or manufacture.
4. In the event that the appliance, by whatever cause, has been materially altered from the condition in which it left the factory.
5. In the event that the rating plate has been removed, altered or obliterated.
6. On parts that would be normally worn or replaced under normal conditions.
7. Normal cracking due to expansion and contraction stress relief in the ceramic firebox.
8. In wood-fired equipment configurations, in the event that pressed log products of any type have been burned in the equipment.
9. In coal-fired oven configurations, in the event any type of coal other than anthracite coal fuel has been used.
10. Damage resulting from the use of chemical cleaning products in the oven, as well as any damage from liquids or chemicals, including water, being poured or sprayed into the oven.

If any oral statements have been made regarding this appliance, such statements do not constitute warranties and are not part of the contract of sale. This Limited Warranty constitutes the complete, final and exclusive statement with regard to warranties.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER WRITTEN, ORAL OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE OR WARRANTY AGAINST LATENT DEFECTS.

LIMITATIONS OF LIABILITY

In the event of warranty claim or otherwise, the sole obligation of Wood Stone shall be the repair and/or replacement, at the option of Wood Stone, of the appliance or component or part thereof. Such repair or replacement shall be at the expense of Wood Stone with the exception of travel over 100 miles or two hours, overtime, and holiday charges which shall be at the expense of the purchaser. Any repair or replacement under this warranty does not constitute an extension of the original warranty for any period of the appliance or for any component or part thereof. Parts to be replaced under this warranty will be repaired or replaced at the option of Wood Stone with new or functionally operative parts. The liability of Wood Stone on any claim of any kind, including claims based on warranty, expressed or implied, contract, negligence, strict liability or any other theories shall be solely and exclusively the repair or replacement of the product as stated herein, and such liability shall not include, and purchaser specifically renounces any rights to recover, special, incidental, consequential or other damages of any kind whatsoever, including, but not limited to, injuries to persons or damage to property, loss of profits or anticipated profits, or loss of use of the product.

TO SECURE WARRANTY SERVICE

If you claim a defect covered by this Limited Warranty, contact:

Wood Stone Corporation, Attn: Service Department, 1801 W. Bakerview Rd., Bellingham, WA 98226 USA
Phone 1.800.988.8103 or 1.360.650.1111



WOOD STONE CORPORATION

1801 W. Bakerview Rd.

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Tel 360.650.1111

Fax 360.650.1166

www.woodstone-corp.com

An ongoing program of product improvement may require us to change specifications without notice.