



Forno Bravo

Authentic Italian Wood-Fired Ovens

Modena W Installation and Operating Manual

Forno Bravo, LLC

Modena Refractory Oven, Including:

Modena120W (FRPM120W)

Modena140W (FRPM140W)

Modena160W (FRPM160W)

Modena180W (FRPM180W)

Installation and Operating Manual

A MAJOR CAUSE OF OVEN-RELATED FIRE IS FAILURE TO MAINTAIN REQUIRED CLEARANCES (AIR SPACES) TO COMBUSTIBLE MATERIALS. IT IS OF UTMOST IMPORTANCE THAT THIS OVEN BE INSTALLED ONLY IN ACCORDANCE WITH THESE INSTRUCTIONS.

*Forno Bravo, LLC
399 Business Park Court, #104
Windsor, CA 95492
(800) 407-5119
info@fornobravo.com
<http://www.fornobravo.com>*

Tested to UL 737-07, UL Subject 2162-01, and NSF/ANSI 4-07.





WARNING

READ ALL INSTRUCTIONS BEFORE INSTALLING AND USING THE APPLIANCE. FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY, OR EVEN DEATH.

When this oven is not properly installed, a fire may result. To reduce the risk of fire, follow the installation instructions. It is essential to use only building and insulation materials designed for the purpose.

Use proper safety equipment when installing this oven, including gloves and professional breathing masks.

Contact your local building or fire officials for clarification on any restrictions on installation of this oven in your area, or need for inspection of the oven installation.

HOT WHILE IN OPERATION. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.

DO NOT BURN GARBAGE OR FLAMMABLE FLUIDS.

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

Keep children and pets away from hot oven.

Use firewood for burning only. DO NOT use charcoal, pressure treated lumber, chipped wood products, sappy wood such as pine, laminated wood or any material other than dry medium or hard firewood.

DO NOT USE liquid fuel (firelighter fluid, gasoline, lantern oil, kerosene or similar liquids) to start or maintain a fire.

BEWARE of very high temperatures in the oven and use long oven gloves and mitts to handle pots and tools. DO NOT put unprotected hands or arms inside oven while it is lit.

Dispose of ashes using a metal shovel and place in a metal bin with a tightly fitting lid. The container should be stored on a non-combustible surface, away from all combustible materials. Ensure ashes are completely cold before disposing of them appropriately.

BEWARE of flying sparks from mouth of oven. Ensure that no combustible materials are within range of oven at any time.

DO NOT close the oven door fully while a fire is in the oven. Closing the door fully will cut off oxygen to the fire, causing the fire to erupt suddenly when the door is removed. Always keep door tilted to allow air to circulate in the oven.

DO NOT use water to dampen or extinguish fire in the oven.

DO NOT pack required air spaces with insulation or other materials.

When the curing of the refractories is not done as part of the manufacturing process, the manufacturer's recommended curing process shall be specified. Follow the instructions for curing the oven. Failure to follow the curing schedule can cause damage to the oven, and void the oven warranty.

SAVE THESE INSTRUCTIONS



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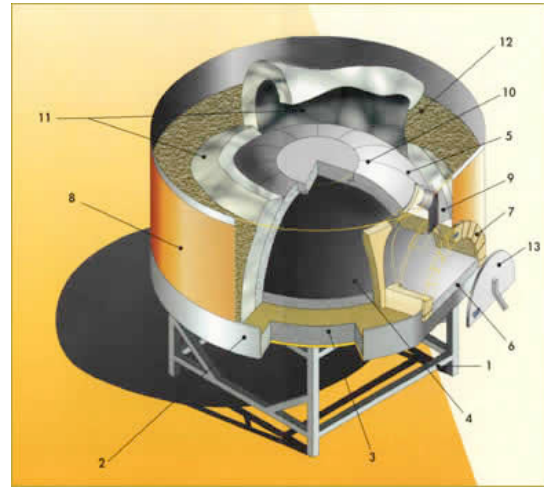
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1. Contained in the Crate

One assembled Forno Bravo Modena W Series Pizza Oven, including:

- The fully insulated pizza oven with 20 cm round vent;
- Metal stand;
- Three-piece commercial pizza oven tool set, including a rectangular pizza peel, a round pizza peel and a copper brush;



1. Support stand in square tubular steel; stove enamel coating.
2. Steel support platform, reinforced with square tubular steel sections; stove enamel coating.
3. 6" thick under-oven insulation comprised of a double layer of high-efficiency solid-state refractory insulating tiles, fired at 1700°F.
4. Monoblock 2 $\frac{3}{4}$ " cooking floor, made from proprietary high-density, vibrated refractory material.
5. Dome segments between 3" sides and 4" top thick, made from proprietary high-density, vibrated refractory material.
6. Oven landing, made from proprietary high-density, vibrated refractory material covered with high-grade stainless steel.
7. Arch, which projects 2" beyond the oven enclosure allowing for custom partition wall enclosure.
8. Steel enclosure panels with red stove enamel coating; durable, washable and non-rusting.
9. Steel vent, with paint finish capable of withstanding high heat.
10. The joints between the dome sections, and between the oven floor and cooktop overlap, and are grouted with refractory plastic mortar capable of withstanding 2500°F.
11. Ceramic fiber dome insulation between 4"-8" thick; capable of withstanding 2500°F.
12. Additional loose insulation.
13. Oven door.



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2. Unpacking and Moving the Oven

The Forno Bravo Modena W Series ovens must be removed from the delivery truck with a forklift and set on the ground. **DO NOT USE A LIFTGATE TO LOWER THE OVEN FROM THE DELIVERY TRUCK TO THE GROUND.**

Be sure to use a forklift rated to lift more than the oven weight. Fork length must be at least 6 feet, if not, fork extensions should be used. The oven is very top heavy so spread the forks as far apart as possible.

Oven Weights

Oven	Weight (lbs.)	Forklift Rating
Modena120W	2420	5000
Modena140W	2750	5000
Modena160W	3080	6000
Modena180W	3410	6000

Use a forklift to set the oven chamber on the included stand. Line up the stand openings on the oven tray to fit over the stand.

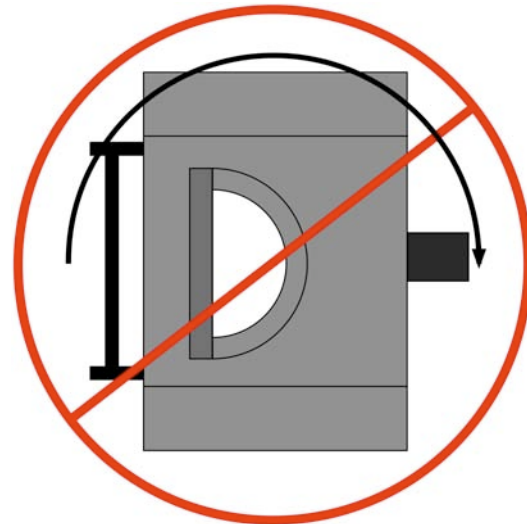


The Modena ovens can be set in place with either a forklift or pallet jack.

DO NOT ATTEMPT TO ROLL OR DRAG THE OVEN.

THE OVEN IS VERY TOP HEAVY. MOVING THE OVEN UP OR DOWN A RAMP ON A PALLET JACK IS NOT SAFE.

DO NOT TURN THE OVEN ON ITS SIDE!

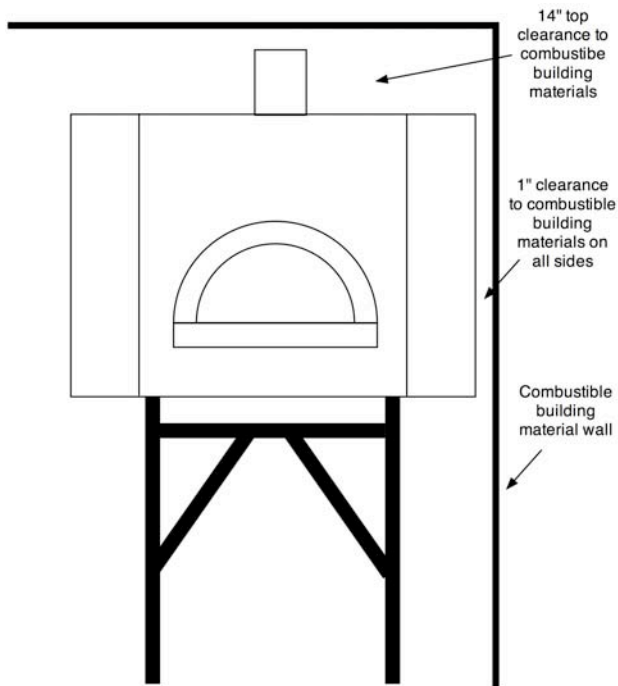




3. Oven Clearances

It is essential to maintain clearance space between the oven components and any combustible material, such as walls and ceilings. Failure to maintain these clearances can result in fire.

Combustible Wall Clearance



The oven must have a minimum 1" (25 mm) clearance to combustibles from all sides, and 14" (356 mm) clearance to combustibles from the top.

If building materials will contact the oven, they must be completely noncombustible. Please note that standard drywall (or sheet rock) is considered a combustible.

The area directly above the doorway and 6" (152 mm) to each side of the doorway must be covered with non-combustible material.

Non-combustible construction may contact the oven and must then maintain 1" (25 mm) clearance to combustibles.

Install this oven only on a non-combustible floor, which extends at least 36" (914 mm) in front of and 30" (762 mm) to either side of the door.

If the space between the legs of the stand is used for wood storage, it is recommended that it be a covered container or box to prevent the possibility of sparks or embers from making contact with the stored wood. An 8-1/2" (eight and one-half inch) air space clearance is required between the bottom of the oven and any wood storage container.



4. Sanitation

The Forno Bravo Modena W Series ovens carry an ETL Sanitation listing. The oven interior only is listed to NSF/ANSI Standard 4. This means that the surfaces of the oven which are meant to be left exposed after the facade has been put in place, have been evaluated from the standpoint of sanitation and food safety and complies with NSF/ANSI Standard 4. To operate the oven in accordance with NSF/ANSI Standard 4, only pizza and bread products may be cooked directly on the floor of the oven. Other types of food may be cooked on or in pans, or other suitable containers to prevent spillage onto the oven deck.

Any facade above and/or within 6 inches to the side of the doorway must be constructed of non-combustible building materials.

If using an exhaust hood over the oven, make sure your facade allows for the proper access for removal of the hood filters.

IMPORTANT NOTE: If you are enclosing the oven behind a partition wall, you must allow access to UL Marking label attached to the oven stand.

Outdoor Installations

The Modena W Series ovens are ETL approved for outdoor installation. When installed outdoors, the open area beneath the oven must be enclosed. The oven may be installed in a weatherproof enclosure. Be sure to maintain all clearances and adhere to the installation requirements included in this manual. Keep the area around the and beneath the oven clear of grass, leaves, and other combustible materials.



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5. Dimensions

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MODELLO	LARG. UTILE L	PROF. UTILE P	LARG. INGOMBRO Li	PROF. INGOMBRO Pi	PESO Kg
120	1200	1200	1600	1550	1100
140	1400	1350	1800	1700	1400
140/160	1400	1550	1800	1950	1600
140/180	1400	1750	1800	2150	1800

Oven	Internal	External Width	External Depth
Modena120W	46.4" x 49.1"	62.9"	60.9"
Modena140W	55.0" x 53.1"	70.7"	66.8"
Modena160W	55.0" x 60.9"	70.7"	76.6"
Modena180W	55.0" x 68.8"	70.7"	84.5"



6. Ventilation

This information is provided to assist in safe and functional installation of Forno Bravo Modena W ovens. The oven must be installed in accordance with all relevant local and national codes, and in a manner acceptable to the authority having jurisdiction.

It is never appropriate to use "B vent" in any part of an exhaust system connected to a Forno Bravo oven. Due to the possibility of sparks entering the duct, exhaust systems serving Solid Fuel equipment **SHOULD NOT** be combined with exhaust systems serving other (non-solid-fuel) cooking equipment. Submit you venting plans to your local authorities before proceeding with your installation, as there may be additional requirements in your area.

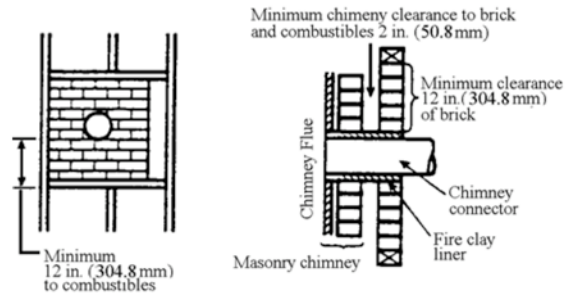
There are two venting options:

1. Direct connection to a UL 103 Type HT listed chimney.
2. A masonry chimney approved by your local authorities. The minimum air space clearance between interior masonry chimneys and combustible materials shall be 2". Any chimney with at least one interior wall shall be treated as interior. All spaces between chimneys and floors or ceilings through which chimneys pass shall be fire stopped with non-combustible material. The fire stopping of spaces between chimneys and wood joists, beams or headers shall be galvanized steel not less thinner than 26 gage in thickness or non combustible sheet material not more thicker than 1/2 in.

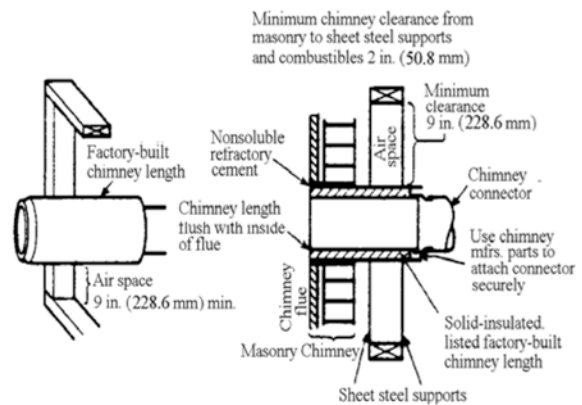
If it is necessary to pass through combustible walls to connect the oven to a chimney liner, the following clearances must be maintained.

Method A. 12" (304.8 mm) Clearance to Combustible Wall Member: Using a minimum thickness 3.5" (89 mm) brick and a 5/8" (15.9 mm) minimum wall thickness clay liner, construct a wall pass-through. The clay liner must conform to ASTM C315 (Standard Specification for Clay Fire Linings) or its equivalent. Keep a minimum of 12" (304.8 mm) of brick masonry between the clay liner and wall

combustibles. The clay liner shall run from the brick masonry outer surface to the inner surface of the chimney flue liner but not past the inner surface. Firmly grout or cement the clay liner in place to the chimney flue liner.



Method B. 9" (228.6 mm) Clearance to Combustible Wall Member: Using a 6" (152.4 mm) inside diameter, listed factory-built Solid-Pak chimney section with insulation of 1" (25.4 mm) or more, build a wall pass-through with a minimum 9" (228.6 mm) air space between the outer wall of the chimney length and wall combustibles. Use sheet metal supports fastened securely to wall surfaces on all sides, to maintain the 9" (228.6 mm) air space. When fastening supports to chimney length, do not penetrate the chimney liner (the inside wall of the Solid-Pak chimney). The inner end of the Solid-Pak chimney section shall be flush with the inside of the masonry chimney flue, and sealed with a non-water soluble refractory cement. Use this cement to also seal to the brick masonry penetration.



Method C. 6" (152.4 mm) Clearance to Combustible Wall Member: Starting with a minimum 24 gage (.024" [.61

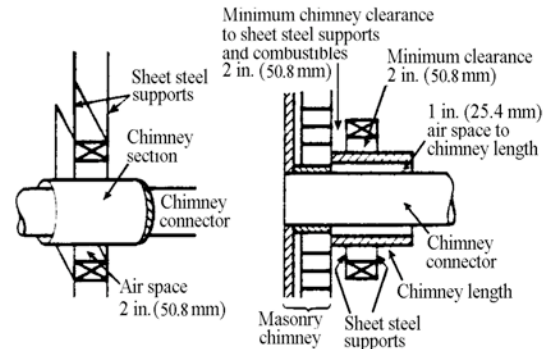


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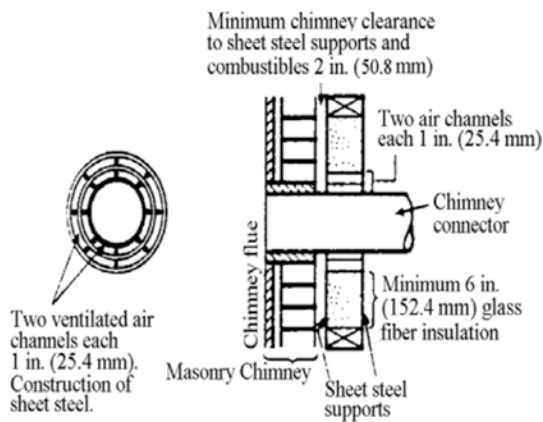
mm]) 6" (152.4 mm) metal chimney connector, and a minimum 24 gage ventilated wall thimble which has two air channels of 1" (25.4 mm) each, construct a wall pass-through. There shall be a minimum 6" (152.4 mm) separation area containing fiberglass insulation, from the outer surface of the wall thimble to wall combustibles. Support the wall thimble, and cover its opening with a 24-gage minimum sheet metal support. Maintain the 6" (152.4 mm) space. There should also be a support sized to fit and hold the metal chimney connector. See that the supports are fastened securely to wall surfaces on all sides. Make sure fasteners used to secure the metal chimney connector do not penetrate chimney flue liner.



IMPORTANT SAFETY CONSIDERATIONS

Solid-fuel exhaust contains creosote and other substances that accumulate in ducting, creating a risk of fire. The rate of accumulation will vary with respect to flue gas temperature, wood type and moisture content. Frequent, regularly scheduled, thorough flue cleaning is the best way to minimize the risk of flue fires.

VERY IMPORTANT! SUBMIT YOUR VENTING PLANS TO LOCAL CODE AUTHORITIES BEFORE PROCEEDING WITH INSTALLATION.



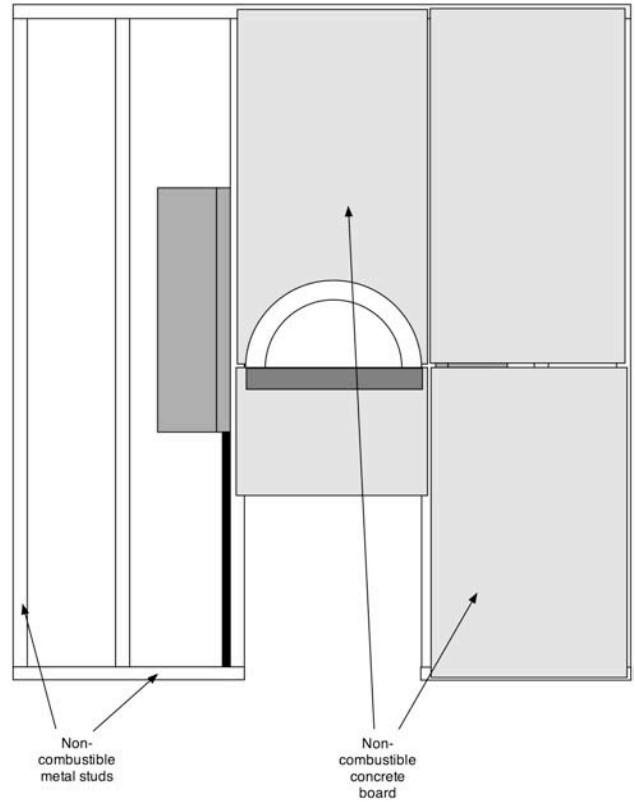
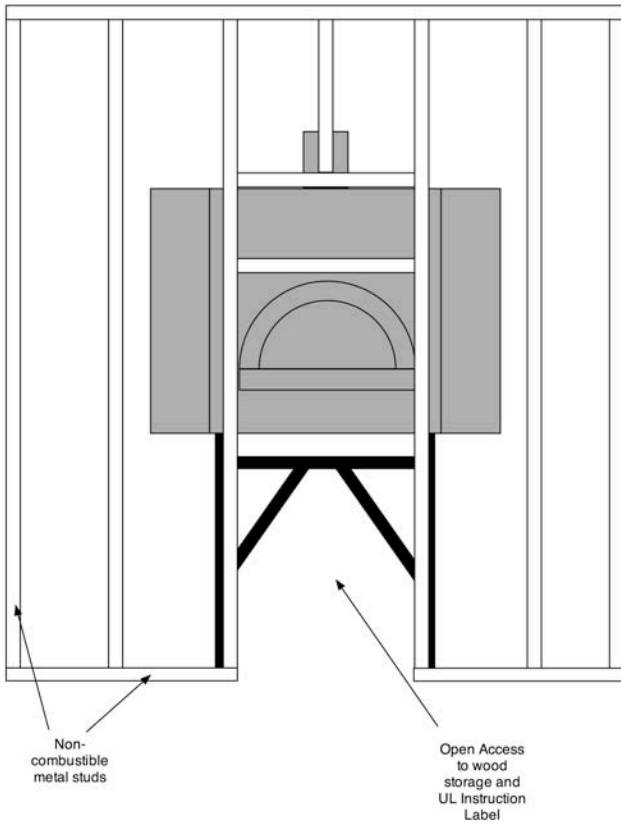
Method D. 2" (50.8 mm) Clearance to Combustible Wall Member: Start with a solid-pak listed factory built chimney section at least 12" (304 mm) long, with insulation of 1" (25.4 mm) or more, and an inside diameter of 8" (2 inches [51 mm] larger than the 6" [152.4 mm] chimney connector). Use this as a pass-through for a minimum 24-gage single wall steel chimney connector. Keep solid-pak section concentric with and spaced 1" (25.4 mm) off the chimney connector by way of sheet metal support plates at both ends of chimney section. Cover opening with and support chimney section on both sides with 24 gage minimum sheet metal supports. See that the supports are fastened securely to wall surfaces on all sides. Make sure fasteners used to secure chimney flue liner.



7. Partition Wall

The oven can be installed behind a decorative partition wall.

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





9. Curing Your Oven

It is important at this point that you cure your oven slowly, by building a series of five increasingly larger fires, starting with a low temperature. If you begin building large fires in your oven right way, you will compromise your oven's longevity and ability to cook well, and cause damage, including cracking.

After you have installed your oven, there is still a great deal of moisture in the mortars, hearth concrete, vermiculite, and the oven chamber and vent. Each of these oven components was recently produced using an air-drying, water-based process. Simply letting the oven stand for a week does not "cure" the moisture out of them oven.

Before you start the curing process, let the complete oven sit for one week. Then, start a series of low and growing fires, using the analog temperature gauge provided in the oven door/frame. The temperature gauge reads the oven's air temperature. For a more accurate temperature reading of the oven refractory surfaces, which can be use for many types of cooking, you can use the optional Digital Infrared Thermometer, which can be purchased in the Forno Bravo Store.

Day 1. Maintain a fire temperature of 300°F throughout the day and as long as possible into the evening.

Day 2. Repeat at 350°F.

Important Note. While it is difficult to maintain consistent, low temperature fires, it is critical for proper curing that you do not go above these temperatures during the first two days.

Day 3. Repeat at 400°F.

Day 4. Repeat at 450°F.

Day 5. Repeat at 500°F.

Close the oven door every evening to preserve dryness and heat.

SMALL "HAIRLINE" CRACKS CAN OCCUR WITH NORMAL HEATING AND COOLING. THEY WILL NOT AFFECT THE PERFORMANCE OR LONGEVITY OF THE OVEN. IF CRACKS OF 1/8" OR MORE DEVELOP, CONTACT FORNO BRAVO.

Important Notes

Use solid wood fuels only. DO NOT use charcoal, pressure treated lumber, chipped wood products, sappy wood such as pine, laminated wood or any material other than dry medium or hard firewood.

Do not use products not specified for use with this oven.

DO NOT USE liquid fuel (firelighter fluid, gasoline, lantern oil, kerosene or similar liquids) to start or maintain a fire.

Never use water to lower temperature inside the oven, or to extinguish the fire.

There must be a period of time between completing the masonry work and beginning the actual firing cure. Longer is better than shorter, particularly for the actual dome cement. The cement and mortar must cure first and this process is actually improved by keeping the cement moist and not letting it dry out. Cement is exothermic and gives off heat. If you were to start the Oven curing too soon, you drive this exothermic action the wrong way and damage the new cement.

Also, using a space heater can help, but only so far. It is not an alternative to fire curing. We tested a space heater in an assembled Forno Bravo precast oven for two days, then quickly heated the oven up, (don't do this at home -- it was an experiment to see what would happen to an oven that we have here) and we found that we created a very large amount of steam from the oven, mortars and vermiculite, which went on for hours and hours.



10. Firing and Operation

Oven bricks intended for direct contact with bread and/or pizza products only. All other food products must not come into contact with brick surface but should be contained within approved cookware.

Start your fire using a taste-free, odor-free fire starter and dry kindling. Build your fire up slowly, adding wood to the back and sides as the fire grows.

Continue to add wood until the oven reaches the desired temperature. Then, move the fire to one side and brush the oven floor. Only use the copper brush that was provided with your oven, and do not use steel wire brushes, natural fiber brushes or wet clothes to clean the oven floor.

The fire can be built directly on the oven floor.

You can monitor your oven temperature using the analog oven air temperature gauge provided with the oven, or with an optional Digital Infrared Thermometer.

DO NOT over fire your oven, or build a fire where flame exits the oven door opening.

BEWARE of very high temperatures in the oven and use long oven gloves and mitts to handle pots and tools. **DO NOT** put unprotected hands or arms inside oven while it is lit.

BEWARE of flying sparks from mouth of oven. Ensure that no combustible materials are within range of oven at any time.

DO NOT close the oven door fully while a fire is in the oven. Closing the door fully will cut off oxygen to the fire, causing the fire to erupt suddenly when the door is removed. Always keep door tilted to allow air to circulate in the oven.

Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or “freshen up” a fire in the oven. Keep all such liquids well away from the oven when in use.

The oven should be operated only with the doors fully opened or fully closed. When doors are left partially open, gas and flame may be drawn out of the oven opening, creating the risk of both fire and smoke.

Keep the oven door opening free of all combustible materials when the oven is in operation.

Disposal of Ashes. Ashes should be placed in a metal container with a tight-fitting lid. The closed container of ashes should be placed on a non-combustible floor, or on the ground, well away from all combustible materials pending disposal. When the ashes are disposed by burial in soil, or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.

Wood can be stacked in the area under the oven hearth.



11. Maintenance and Cleaning

The oven can inspected through the door opening. Allow the oven to completely cool before inspecting the vent and chimney pipe for creosote build up.

Have your chimney cleaned by a professional chimney sweep if you have doubts about your ability to clean it. Use a plastic, wood, or steel brush. Do not use a brush that will scratch the stainless steel liner of your chimney. Scrub the spark arrestor with a wire brush.

To remove the Chimney Cap for cleaning, either twist counter-clockwise to remove the entire cap, or unscrew the four (4) screws that attach the cap's support legs to the cap base. The Tee Cleanout Cap can be removed by turning counter-clockwise. Be sure to replace Tee Cleanout Cap when you are finished cleaning the chimney.

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 a relatively cook oven flue and exhaust hood of a slow burning fire. As a result, creosote residue accumulates on the flue lining and exhaust hood. When ignited, this creosote makes an extremely hot fire.

The oven flue should be inspected at least twice a year to determine when creosote buildup has occurred.

When creosote has accumulated, it should be removed to reduce risk of fire.