



**IMPORTANT FOR FUTURE
REFERENCE**

Please complete this information
and retain this manual for the life of
the equipment: _____

OWNER'S MANUAL

TruVapor

Electric Combination Ovens

Models
TVPRES/10SC
TVPRES/20SC
TVPRES/30SC



Model TVPRES/30SC



Model TVPRES/10SC (as base)

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

1100 Old Honeycutt Road, Fuquay Varina, NC 27526 USA
www.southbendnc.com

SAFETY PRECAUTIONS

Before installing and operating this equipment, be sure everyone involved in its operation is fully trained and aware of precautions. Accidents and problems can be caused by failure to follow fundamental rules and precautions.

The following symbols, found throughout this manual, alert you to potentially dangerous conditions to the operator, service personnel, or to the equipment.



DANGER

This symbol warns of immediate hazards which will result in severe injury or death.



WARNING

This symbol refers to a potential hazard or unsafe practice which could result in injury or death.



CAUTION

This symbol refers to a potential hazard or unsafe practice which could result in injury, product damage, or property damage.

NOTICE

This symbol refers to information that needs special attention or must be fully understood, even though not dangerous.

 **WARNING**
FIRE HAZARD
FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

Keep area around appliances free and clear of combustibles.

Purchaser of equipment must post in a prominent location detailed instructions to be followed in the event the operator smells smoke. Obtain the instructions from the local electrician/installer.

NOTICE

Be sure this Operator's Manual and important papers are given to the proper authority to retain for future reference.

NOTICE

This product is intended for commercial use only. NOT FOR HOUSEHOLD USE.

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Congratulations! You have purchased one of the finest pieces of heavy-duty commercial cooking equipment on the market.

You will find that your new equipment, like all Southbend equipment, has been designed and manufactured to meet the toughest standards in the industry. Each piece of Southbend equipment is carefully engineered and designs are verified through laboratory tests and field installations. With proper care and field maintenance, you will experience years of reliable, trouble-free operation. **For best results, read this manual carefully.**

RETAIN THIS MANUAL FOR FUTURE REFERENCE.

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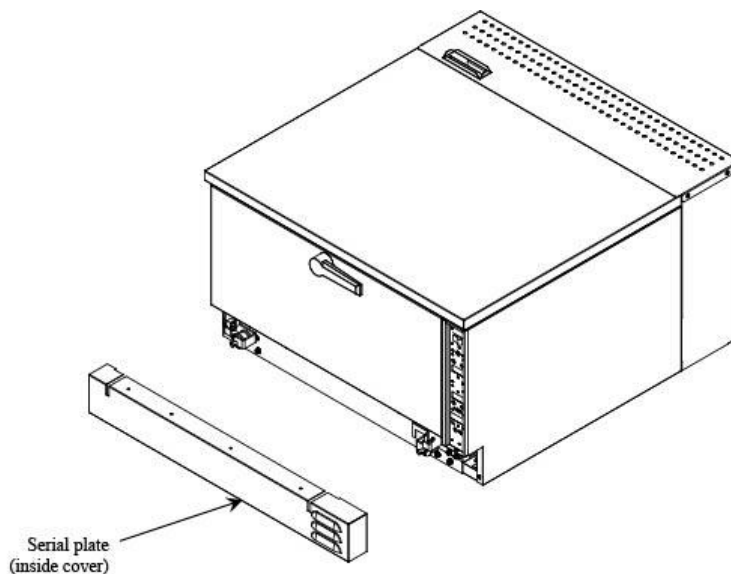
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Read these instructions carefully before attempting installation. Installation and initial startup should be performed by a qualified installer. Unless the installation instructions for this product are followed by a qualified service technician (a person experienced in and knowledgeable with the installation of commercial gas and/or electric cooking equipment) then the terms and conditions on the Manufacturer's Limited Warranty will be rendered void and no warranty of any kind shall apply.

In the event you have questions concerning the installation, use, care, or service of the product, contact:

Southbend Technical Service
 1100 Old Honeycutt Road
 Fuquay Varina, North Carolina 27526 USA
www.southbendnc.com

The serial plate is located on the interior side of the lower front panel, as shown below.





SPECIFICATIONS

NOTICE

The appliance, when installed, must be electrically grounded and comply with local codes, or in the absence of local codes, with the *National Electrical Code, ANSI/NFPA 70*, or the *Canadian Electrical Code, CSA C22.2*, as applicable.

Southbend reserves the right to change specifications and product design without notice. Such revisions do not entitle the buyer to corresponding changes, additions, or replacements for previously purchased equipment.

This product is intended for commercial use only, not for household use.

ELECTRICITY SUPPLY

The following table lists the electricity supply requirements PER OVEN (double for dual-oven models; triple for triple-oven models).

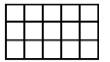
Supply Voltage	Oven Component	Total kW	3-Phase Loading (kW/phase)			Nominal Amperes per Line-Wire				Minimum Supply Wire (AWG) Size	
			L1-L2	L2-L3	L1-L3	3-Phase			1-Phase Total	3-Phase	1-Phase
480	Heating Elements	22.5	7.5	7.5	7.5	27.1	27.1	27.1	46.9	10	8
	Motor & Controls	0.90	0.00	0.00	0.90	2.2	0.0	2.2	2.2		
415	Heating Elements	22.5	7.5	7.5	7.5	31.3	31.3	31.3	54.3	8	6
	Motor & Controls	0.90	0.00	L1-N	0.90	0.0	0.0	3.8	3.8		
380	Heating Elements	22.5	7.5	7.5	7.5	34.2	34.2	34.2	59.3	8	6
	Motor & Controls	0.90	0.00	L1-N	0.90	0.0	0.0	4.1	4.1		
240	Heating Elements	22.5	7.5	7.5	7.5	54.2	54.2	54.2	93.8	6	2
	Motor & Controls	0.90	0.00	0.00	0.90	3.8	0.0	3.8	3.8		
220 (50Hz)	Heating Elements	22.5	7.5	7.5	7.5	59.1	59.1	59.1	102.3	6	2
	Motor & Controls	0.90	0.00	0.00	0.90	4.1	0.0	4.1	4.1		
208	Heating Elements	22.5	7.5	7.5	7.5	62.5	62.5	62.5	108.2	4	2
	Motor & Controls	0.90	0.00	0.00	0.90	4.3	0.0	4.3	4.3		

An electrical diagram is located on the access panel assembly (see drawing on page 15). Electrical diagrams can also be found in this manual beginning on page 35.

The electrical connections are made directly to the terminals of the terminal block, which is located inside the control-panel compartment on the rear of the oven. A circular opening sized for a strain-relief fitting is located on the back of the oven near the access panel (see illustration on page 15). Models with two or three stacked ovens have a separate electrical connection for each oven.

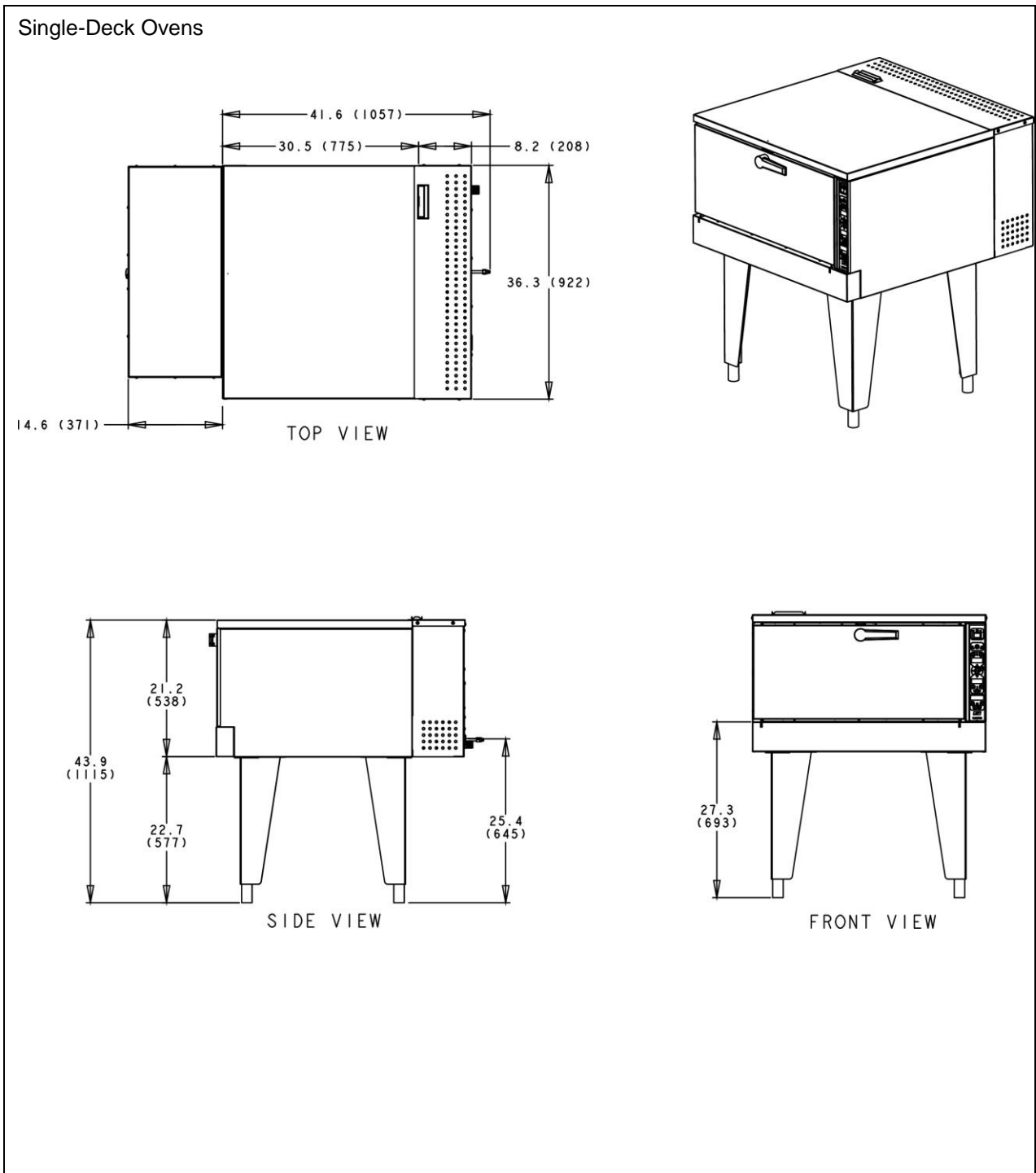
Use 167°F (75°C) minimum wire for all supply lines.

Ovens are shipped wired for either single-phase or three-phase operation, depending on which was specified on the factory order. If necessary, an oven can be field-converted to use either single-phase or three-phase power (see page 31).

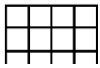


EXTERIOR DIMENSIONS

SPECIFICATIONS



Oven Interior (per deck)			Rack Clearance	
width	depth	height	width	depth
29"	21.5"	13.5"	28.19"	21"

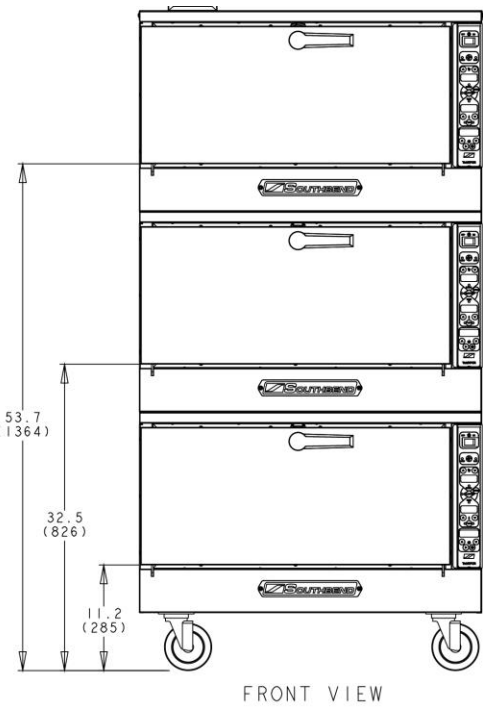
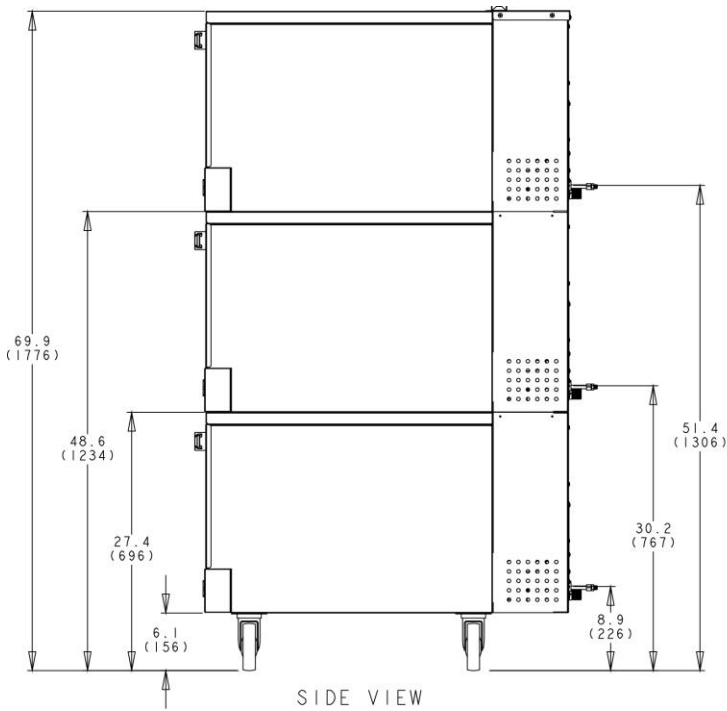
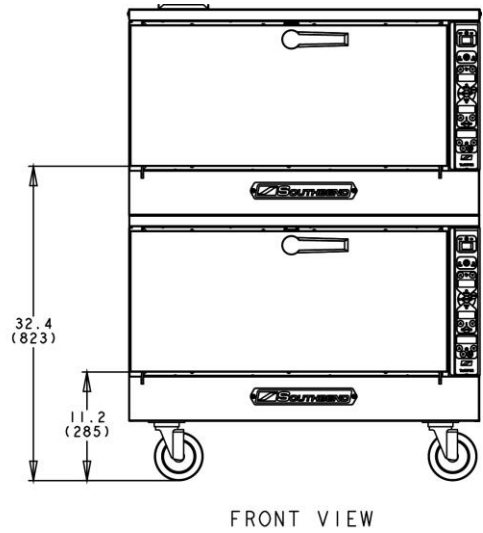
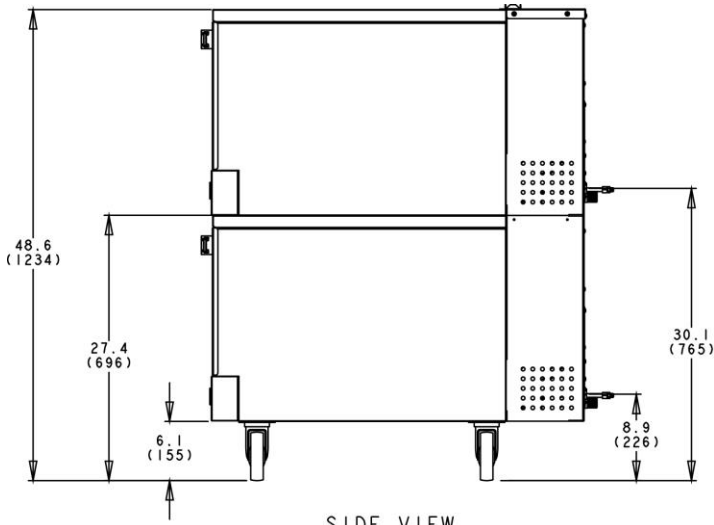


SPECIFICATIONS

ELECTRIC TRUVAPOR OVENS

SPECIFICATIONS

Double-Deck and Triple-Deck Ovens





MINIMUM CLEARANCES

⚠ WARNING

	Minimum Clearance from Combustible Construction	Minimum Clearance from Non-Combustible Construction
Back	2"	2"
Right Side	0"	0"
Left Side	0"	0"
Floor	0"	0"

Adequate clearance must be provided in the aisle to allow the doors to open sufficiently to permit the removal of the racks and for serviceability.

Care must be taken to provide adequate air circulation around the unit to keep it from overheating.

Do not locate the oven adjacent to any high heat or grease-producing piece of equipment, such as a range top, griddle, fryer, etc., that could allow radiant heat to raise the exterior temperature of the oven above 130°F (54°C). **DO NOT MOUNT ABOVE OTHER COOKING EQUIPMENT.**

VENTILATION

NOTICE

Proper ventilation is the owner's responsibility. Any problem due to improper ventilation will not be covered by the warranty.

The Southbend warranty recommends but does not require that electric TruVapor ovens be installed under a ventilation canopy. However, local codes may require installation under a ventilation canopy.

If a ventilation canopy is used, it is recommended that a canopy extend 6" past the appliance and that the bottom edge be located 6'6" from the floor. Filters should be installed at an angle of 45° or more from the horizontal. This position prevents dripping grease and facilitates collecting the run-off grease in a drip pan, usually installed with a filter.

If an exhaust fan is used, it should be installed at least 2" above the vent opening at the top of the unit. A strong exhaust fan tends to create a vacuum in the room. Fresh air openings approximately equal to the fan area will relieve such a vacuum. In case of unsatisfactory performance on any appliance, check the appliance with the exhaust fan in the "OFF" position. Do this only long enough to check equipment performance, then turn the exhaust fan back on and let it run to remove any exhaust that may have accumulated during the test.



INSTALLATION

NOTICE

These installation procedures must be followed by qualified personnel or warranty will be void.

Local codes regarding installation vary greatly from one area to another. The National Fire Protection Association, Inc. states in its NFPA 96 latest edition that local codes are the “authority having jurisdiction” when it comes to installation requirements for equipment. Therefore, installations should comply with all local codes.

This appliance, when installed, must be electrically grounded in accordance with local codes, or in the absence of local codes, with the *National Electrical Code, ANSI/NFPA 70* or the *Canadian Electrical Code, CSA C22.2*, as applicable.

Step 1: Unpacking

IMMEDIATELY INSPECT FOR SHIPPING DAMAGE

All containers should be examined for damage before and during unloading. The freight carrier has assumed responsibility for its safe transit and delivery. If damaged equipment is received, either apparent or concealed, a claim must be made with the delivering carrier.

Apparent damage or loss must be noted on the freight bill at the time of delivery. The freight bill must then be signed by the carrier representative (Driver). If the bill is not signed, the carrier may refuse the claim. The carrier can supply the necessary forms.

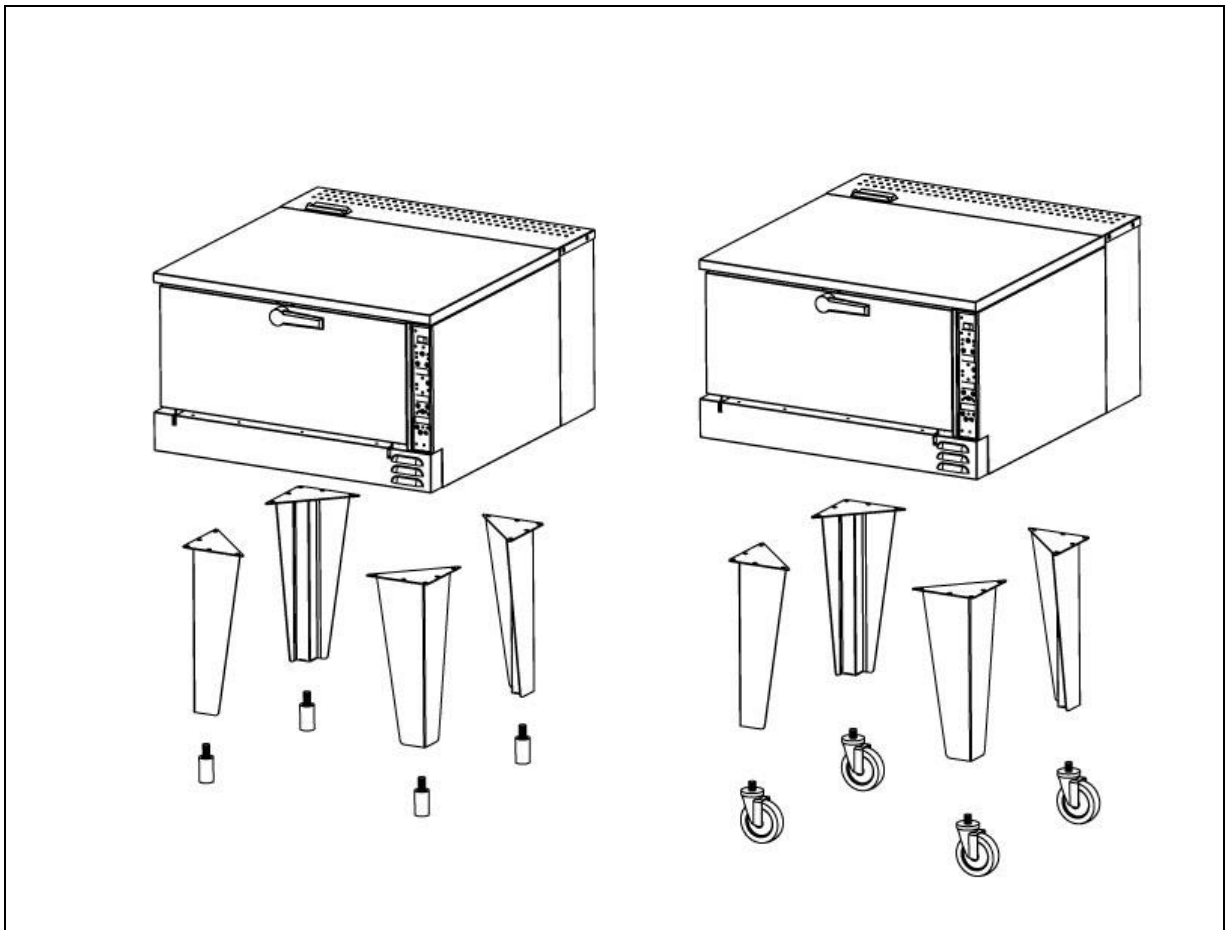
A request for inspection must be made to the carrier within 15 days if there is concealed damage or loss that is not apparent until after the equipment is uncrated. The carrier should arrange an inspection. Be certain to hold all contents plus all packing material.

1. Cut banding straps and remove packing material.
2. Remove tie-down strap holding oven to wooden skid.
3. If you are installing a single-deck oven, go to Step 2a.
If you are installing a double-deck or triple-deck oven, go to Step 2b.



Step 2a: Installation of Legs on Single-Deck Ovens

1. Raise oven sufficiently to allow clearance for the legs to be attached. Use of a lift truck or other mechanical lifting means is recommended. For safety, "shore up" and support the oven with an adequate blocking arrangement strong enough to support the load. (If it is absolutely necessary to rest the oven on its side, rest it on its left side and take care to protect the finish.)
2. Attach the legs to the bottom corners of the oven using the provided machine screws, flat washers, and lock washers. Each leg is secured by five screws. The mounting holes are pre-drilled and threaded.
3. Screw into the bottom of each leg either an adjustable foot or a caster (depending on which option was ordered). If attaching casters, the two casters with brakes should be attached to the front legs.
4. Lower the oven gently onto a level surface. Never drop or allow the oven to fall.
5. Use a level to make sure that the oven is level. The adjustable feet can be screwed in or out to lower or raise each corner of the oven.
6. Go to Step 5 on page 15.

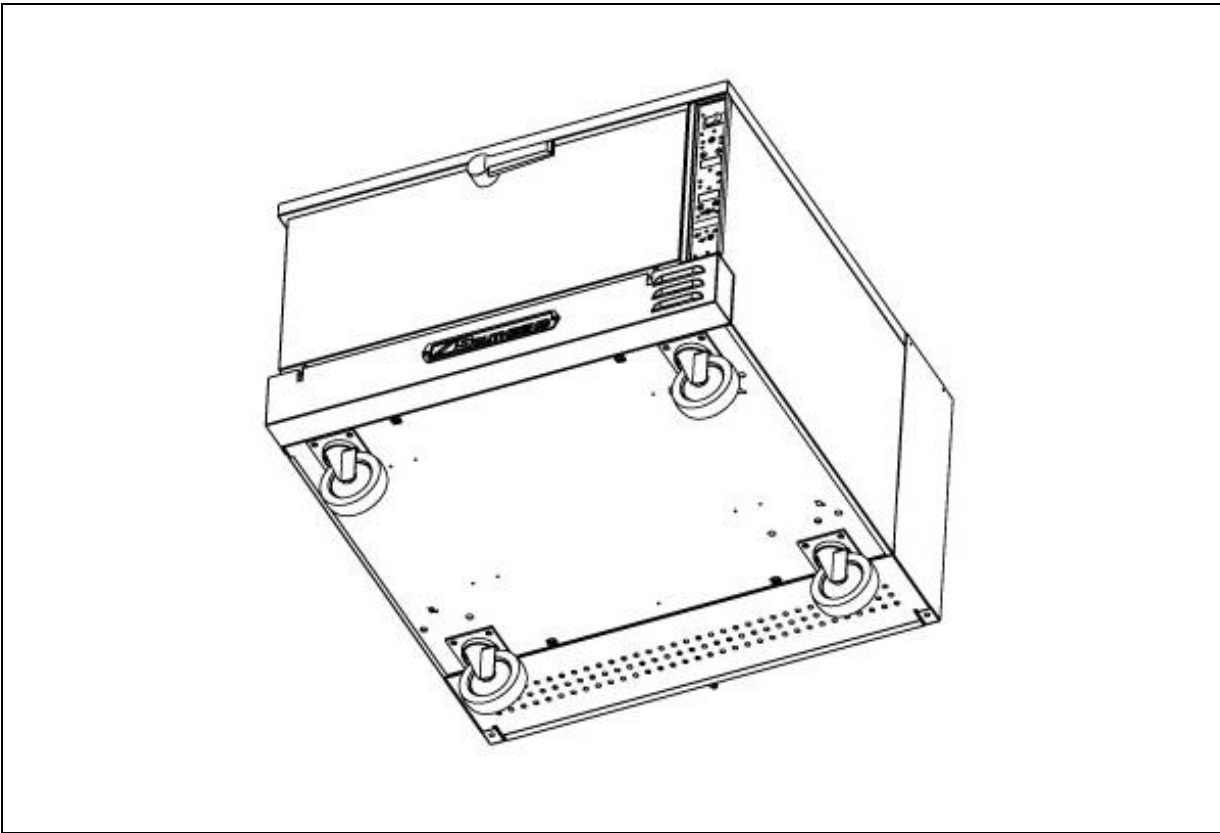




Step 2b: Installation of Legs on Double-Deck or Triple-Deck Ovens

Double-deck (or triple-deck) ovens can be shipped either already bolted together, or as two (or three) separate ovens to be bolted together after delivery. In either case, the oven that is (or will be) the bottom oven will have leg pads already bolted to the bottom corners of the oven. Do the following:

1. Raise oven sufficiently to allow clearance for the legs to be attached. Use of a lift truck or other mechanical lifting means is recommended. For safety, “shore up” and support the oven with an adequate blocking arrangement strong enough to support the load. (If it is absolutely necessary to rest the oven on its side, rest it on its left side and take care to protect the finish.)
2. Screw into the center of each leg pad either an adjustable leg or a caster (depending on which option was ordered). If attaching casters, the two casters with brakes should be attached to the front leg pads.
3. Lower the oven gently onto a level surface. Never drop or allow the oven to fall.
4. Use a level to make sure that the oven is level. The adjustable legs can be screwed in or out to lower or raise each corner of the oven.



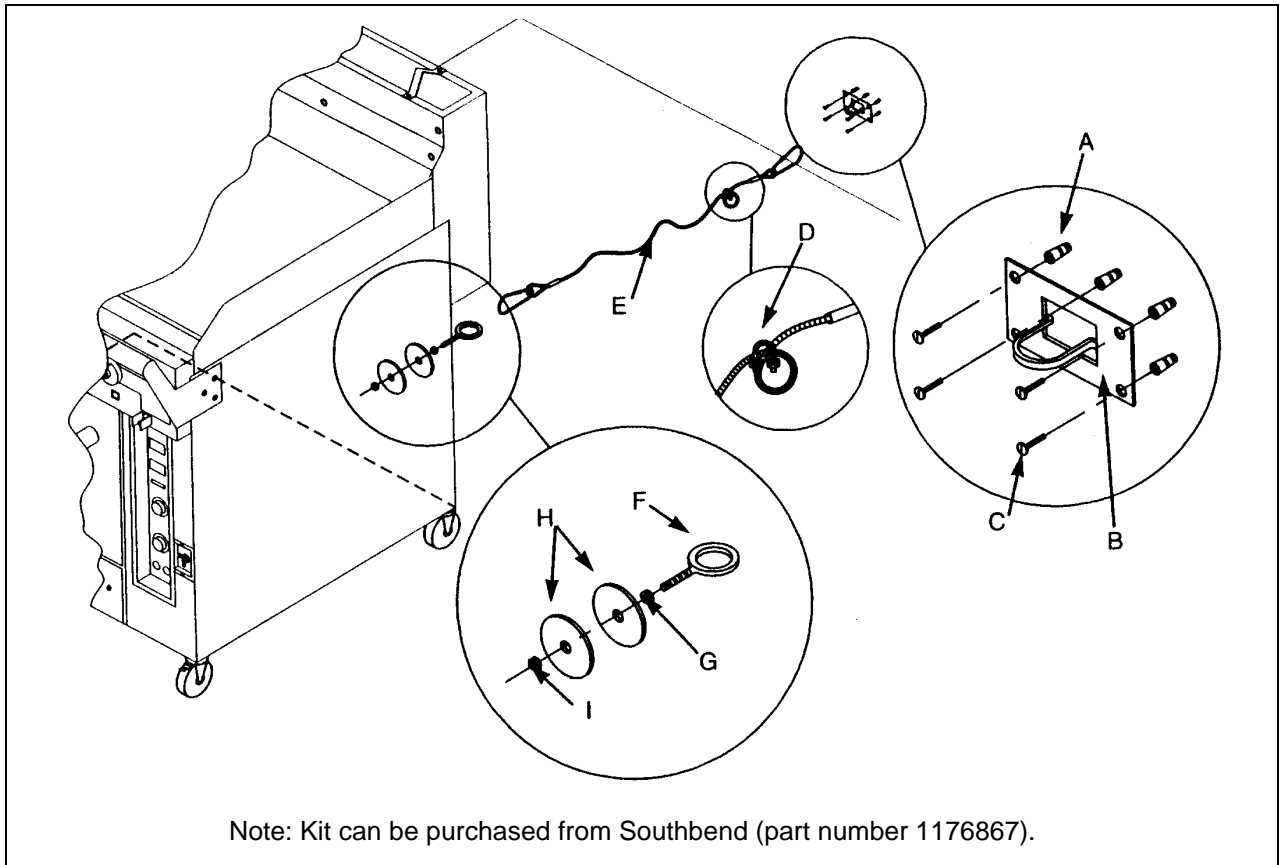


Step 3: Installation of Restraint (Only for Ovens with Casters)

NOTICE

For an appliance equipped with casters, adequate means must be provided to limit the movement of the appliance without depending on or transmitting stress to the electrical conduit. The restraining means should be attached to a frame member on the back of the unit and the appliance should be installed using flexible conduit.

1. Secure the restraining-device bracket (item "B" in the following illustration) to a wall stud located as close as possible to the appliance connector inlet and outlet connections. Use four #12 screws (items "C") and plastic anchors (items "A") if necessary.



2. Install eye-bolt (item "F") to a frame member on the rear of the equipment. After checking carefully behind the frame member for adequate clearance, drill a 1/4" hole through the frame member.
3. Thread hex nut (item "G") and slide the washer (item "H") onto the eye-bolt. Insert the eye-bolt through the 1/4" drilled hole and secure with a washer (item "H") and nylon lock nut (item "I").
4. Using the spring-loaded snap hooks, attach the restraining device to the bracket and the eye-bolt.
5. Using the cable clamp (item "D"), adjust the restraining device extended length to prevent over-bending or kinking of the appliance connector.

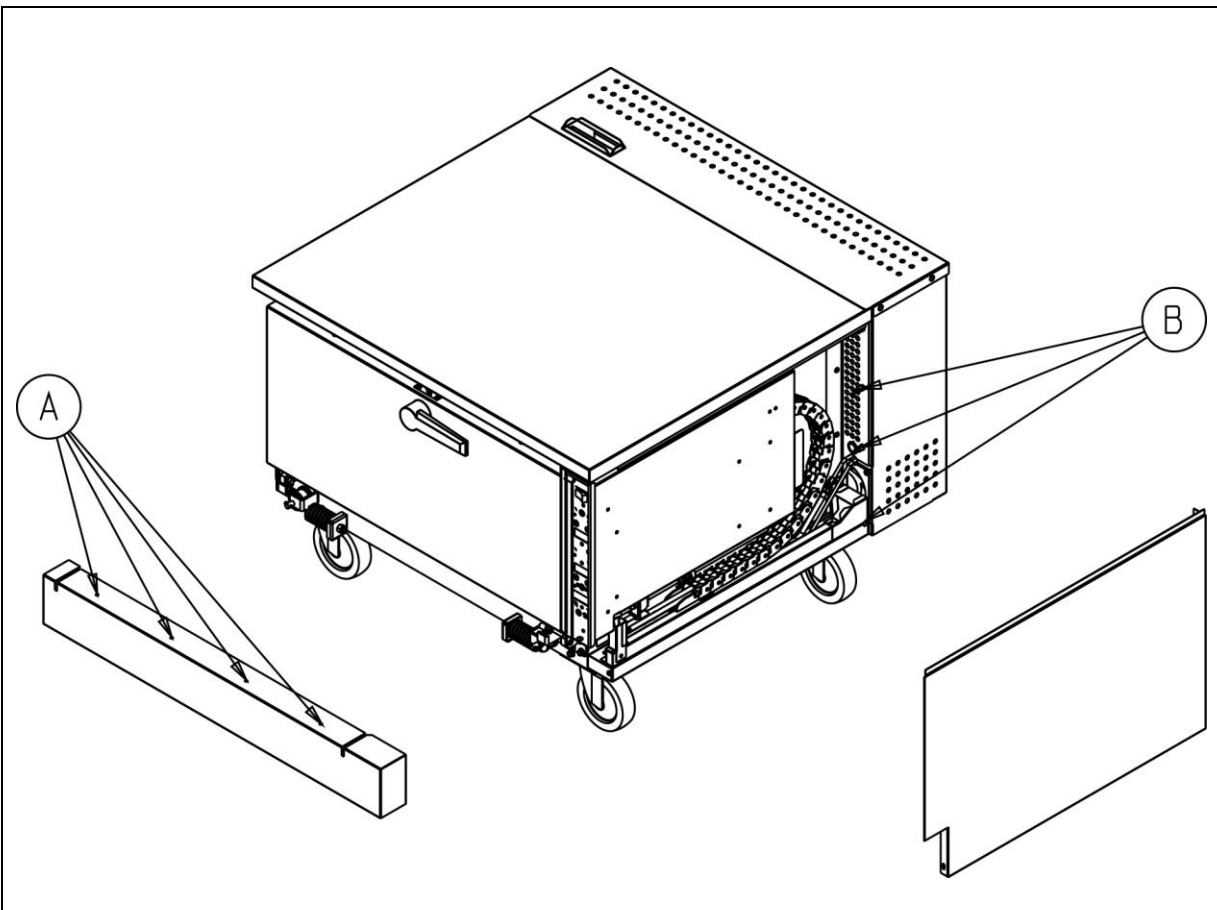


INSTALLATION

Step 4: Stack Ovens (if necessary)

Double-deck (or triple-deck) ovens can be shipped already assembled, but can instead be shipped as two (or three) single-deck ovens to be stacked in the field. Also, ovens that were originally ordered as single ovens can be stacked in the field (additional parts are required). This installation step describes the procedure for stacking two single-deck ovens to form a double-deck oven. For a triple-deck oven, repeat this step.

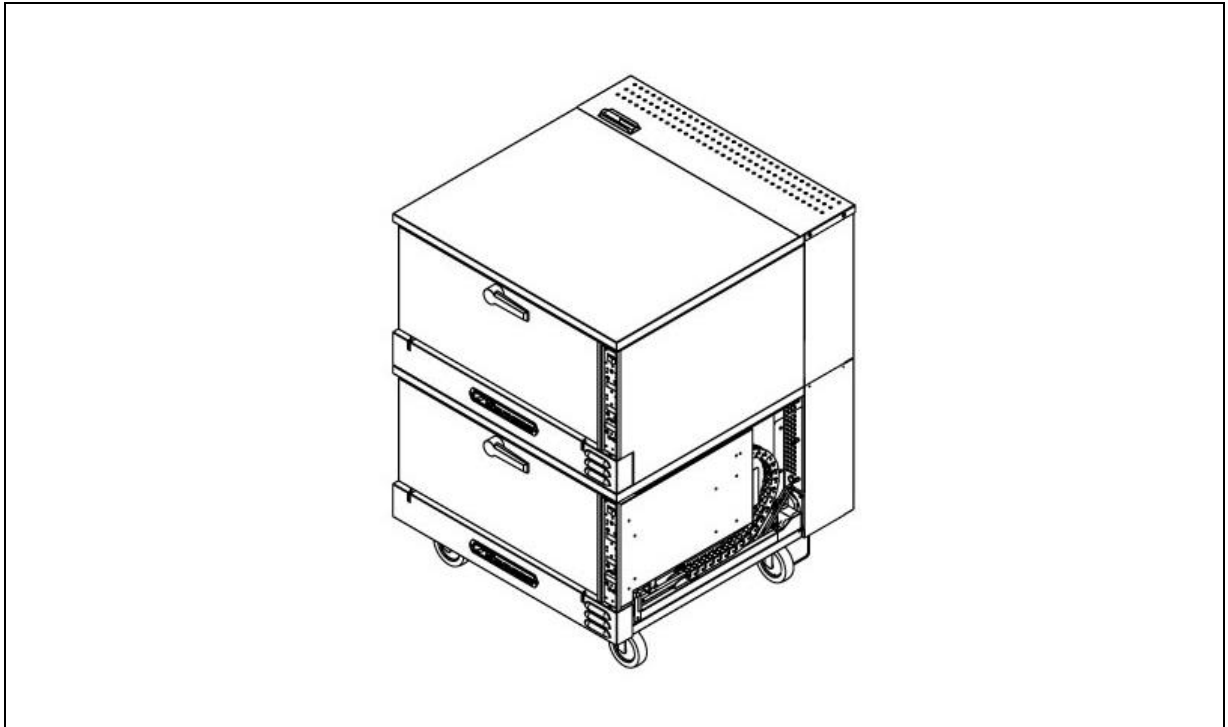
1. Uncrate the ovens. Identify the oven that will be the bottom unit (it will be the oven with pads attached to the bottom corners). Attach the legs (or casters), to the lower oven as described in Step 2b on page 10.
2. If the oven that will be the top unit was NOT ordered as part of a double-deck or triple-deck oven, remove the four mounting legs or casters from the bottom of that oven.
3. Locate and remove the four screws that secure the front panel, (items "A" in the drawing below). Lift up the panel and pull it forward to remove it, then set it aside.



4. Locate and remove the two now-accessible screws that secure the lower front corner of the side panel.
5. Locate and remove the rear panel to gain access to the side panel screws.
6. Locate and remove the three screws that secure the right side panel to the oven (items "B" in the drawing below). Remove the right side panel and insulation and set them aside.
7. If the oven that will be the bottom unit was NOT ordered as part of a double-deck or triple-deck oven, holes will need to be drilled in the existing top, or an optional mounting top can be ordered. The panel sides and insulation will also need to be removed from lower oven to allow access for bolting the units together.

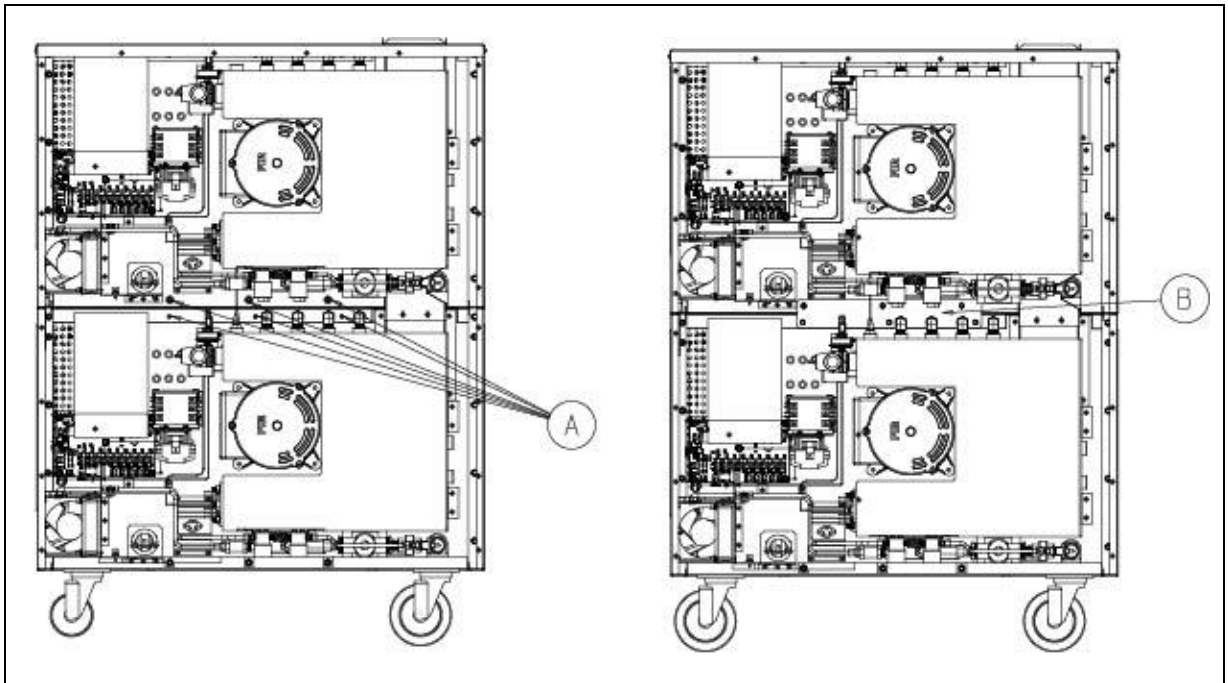


8. Lift the top oven onto the lower oven and position it as shown in the drawing below.



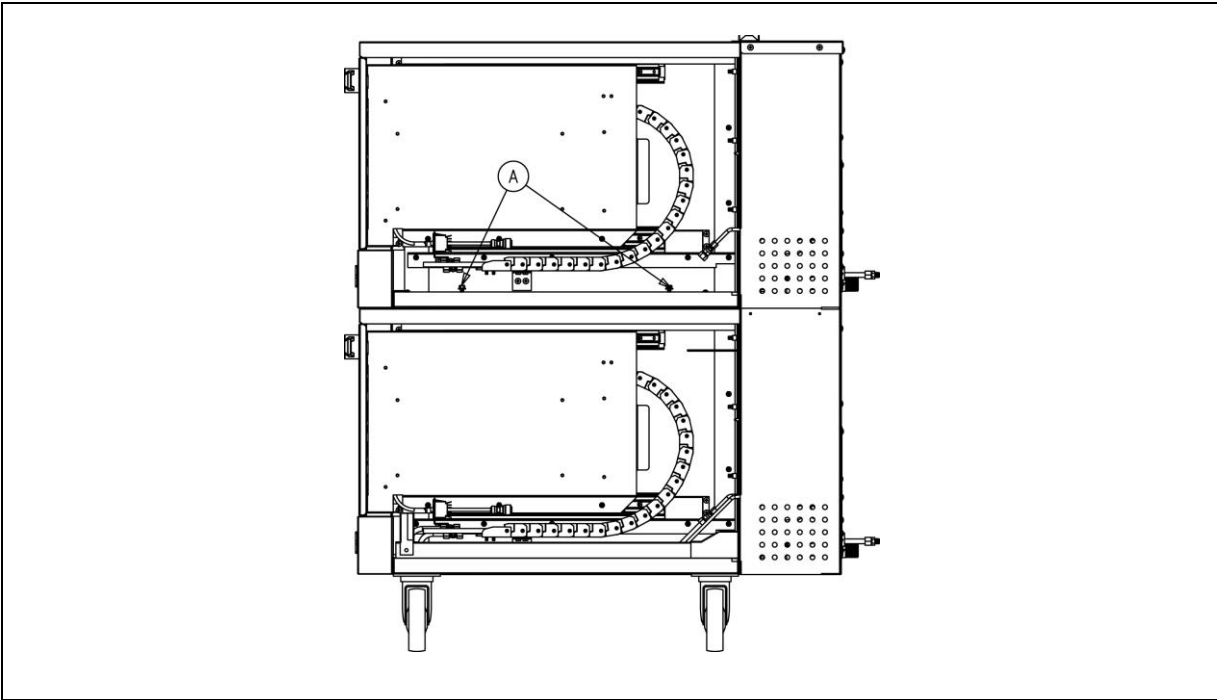
INSTALLATION

9. Move to the rear of the ovens and remove the six screws shown as items "A" in the left-hand drawing below. Position the tie bracket (item "B") as shown in the right-hand drawing below. Re-insert the screws that you just removed through the holes in the tie bracket, but do not tighten them yet.

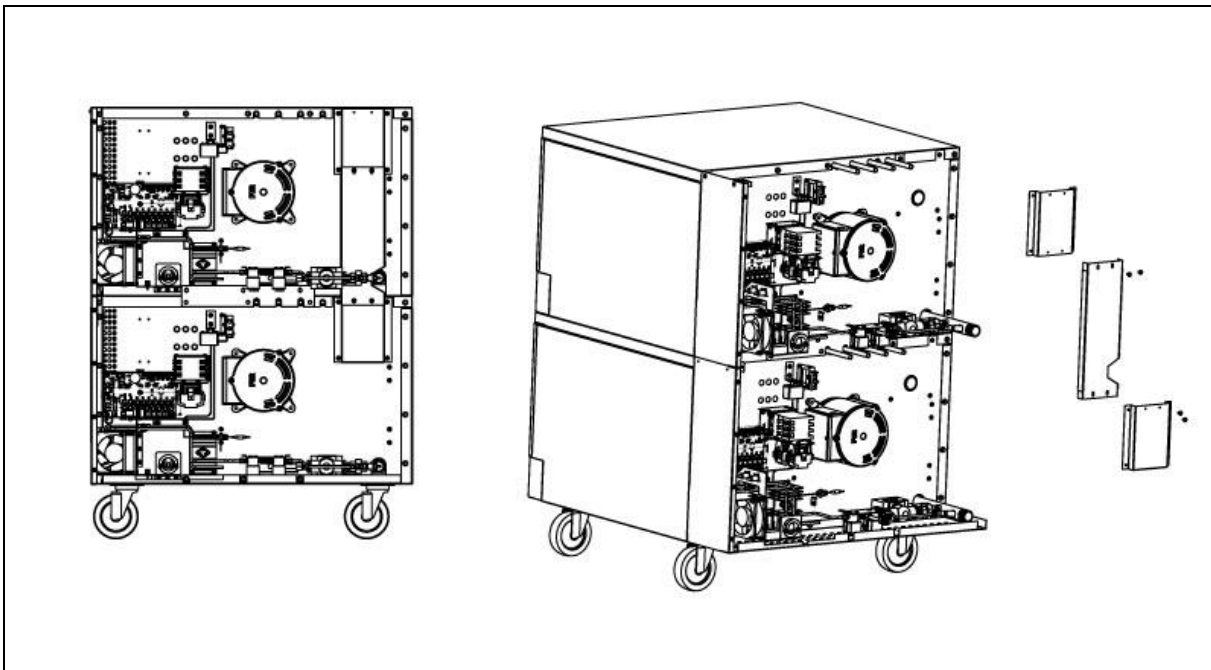




10. Insert two 1/4-20 bolts on each side (items "A" in the following diagram), as shown in the pictures below. Screw them down into the threaded inserts of the optional mounting top on the lower unit, or use a bolt and nut to secure if holes were manually drilled.



11. Install vent connector as shown in the following diagram.



12. Replace the right side insulation, exterior panel, rear panel and lower front panel that were removed in Step 4 of this procedure.



Step 5: Connect Electricity Supply

WARNING

ELECTRIC GROUNDING INSTRUCTIONS

This appliance, when installed, must be electrically grounded in accordance with local codes, or in the absence of local codes, with the *National Electrical Code, ANSI/NFPA 70* or the *Canadian Electrical Code, CSA C22.2*, as applicable.

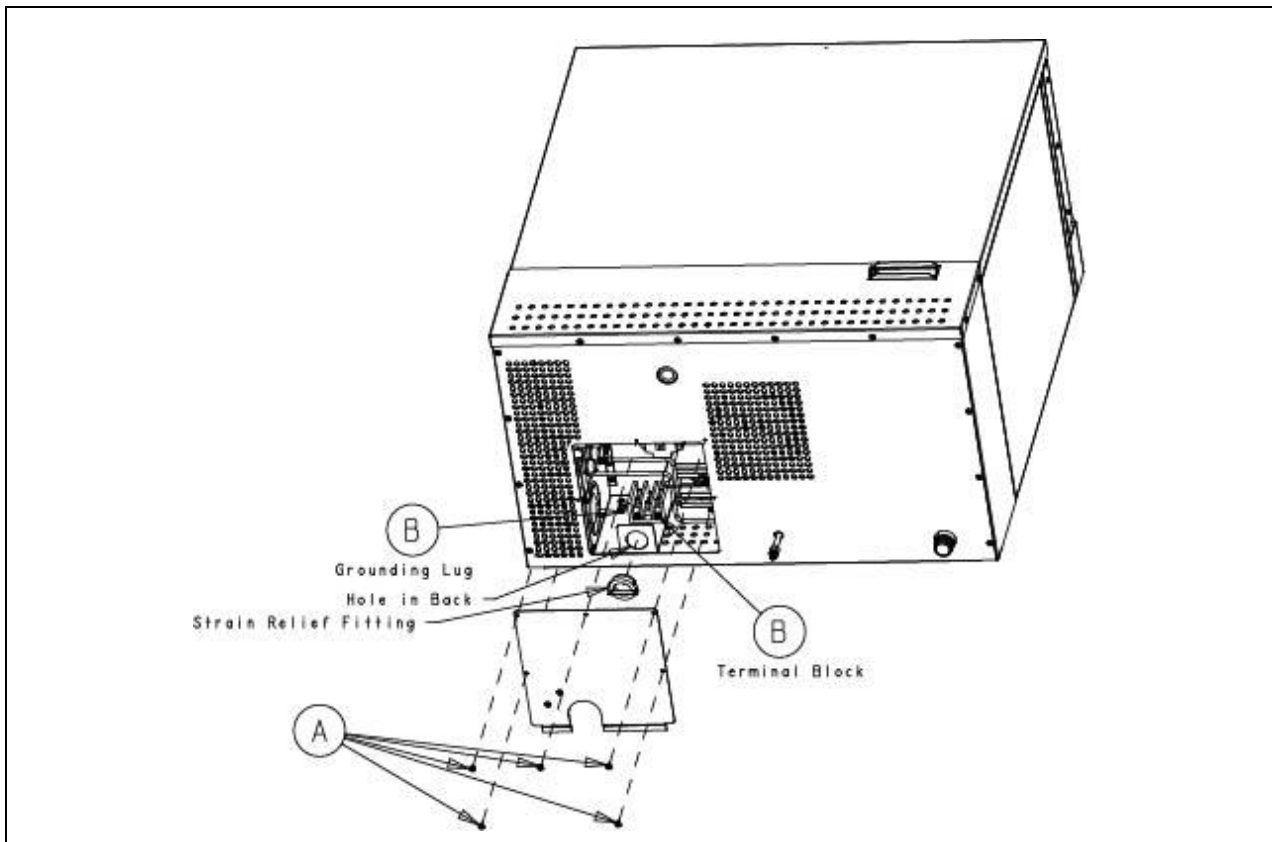
Ovens are shipped wired for either single-phase or three-phase power according to the original factory order. Wiring diagrams are located on the side of the control panel assembly, as well as in this manual (beginning on page 34). Be sure that the input voltage and phase match the requirements shown on the serial plate, which is located inside the lower front panel.

Conversion between single-phase and three-phase power can be performed in the field (see page 30).

The oven must be adequately grounded.

Use 167°F (75°C) minimum wire for all supply lines.

The following drawing shows the locations of items referred to in the following procedure.



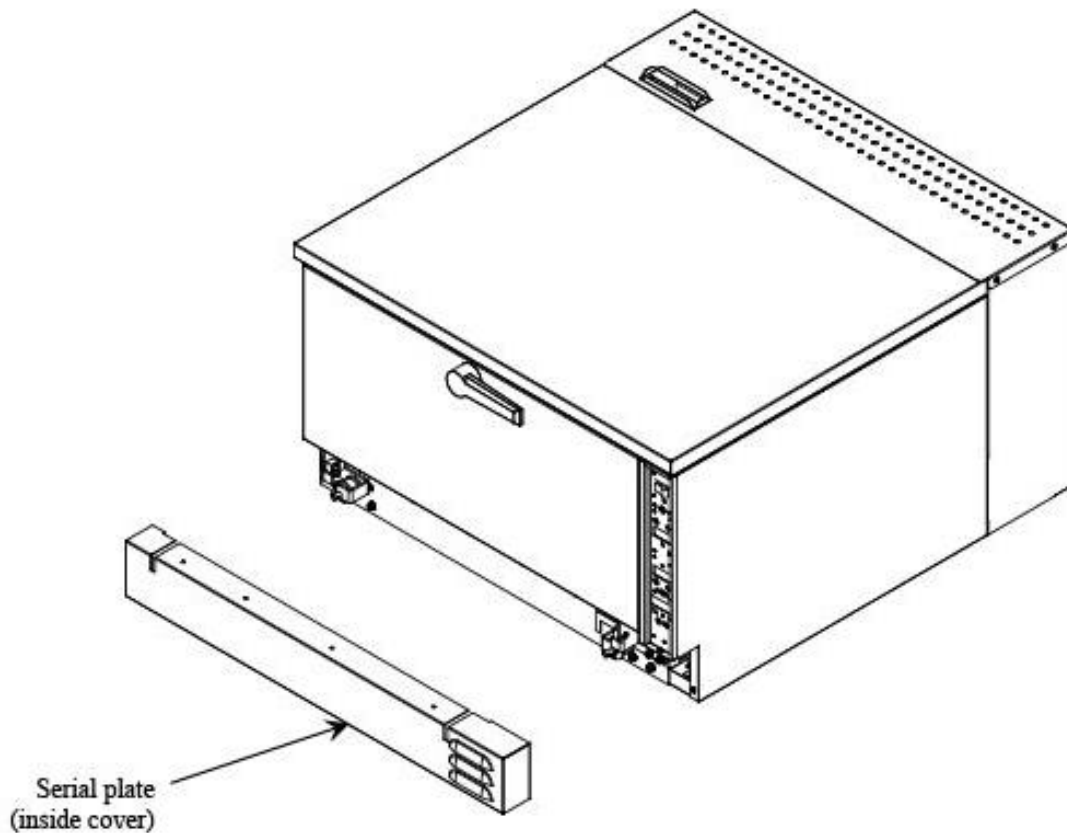
1. **CHECK THAT THE POWER SUPPLY CIRCUIT BREAKER IS OPEN.**
2. Locate and remove the screws that secure the rear access panel (items "A" in the drawing above), then set it aside.
3. Locate the terminal block and ground lug (items "B" in the drawing above).



4. Route the supply wires and the grounding wire through the hole on the back of the oven. Use a strain-relief fitting.
5. Attach each supply wire to the appropriate terminal of the terminal block (according to the wiring diagrams starting on page 34), taking care not to disconnect any wires that may already be connected to the terminal block.
6. Insert the ground wire into the grounding lug and tighten the screw.
7. Check that all connections match the wiring diagram and are tight.
8. Reattach the rear access panel.

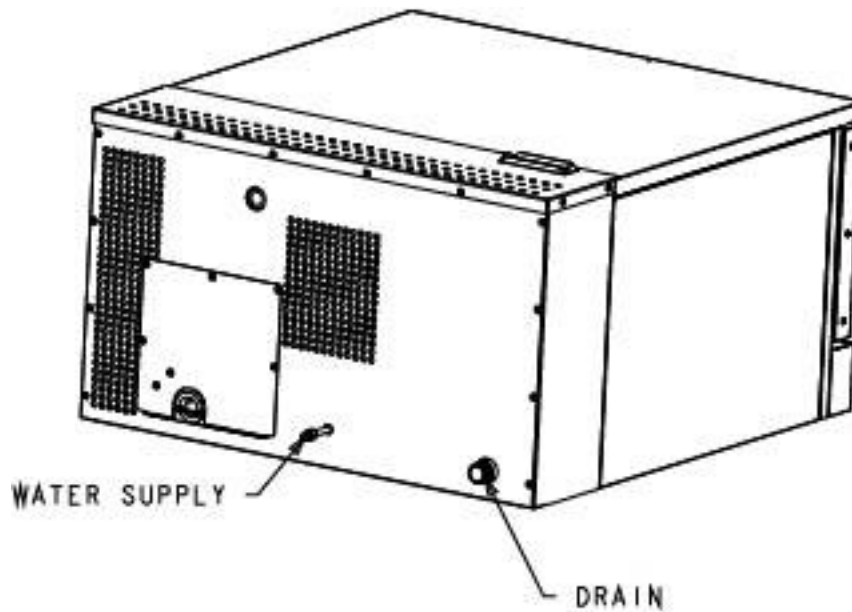
Step 6: Connect the Water Supply

1. Connect a cold water line to the 3/8" compression fitting located at the lower center of the unit as you face the back of the unit (item "A")





2. Water line pressure should be 30 psi (205 kpa) minimum to 60 psi (410 kpa) maximum.

**WARNING**

Do not connect the unit to a hot water hose. A hot water connection can damage the unit.

Step 7: Check the Installation

1. Check that all screws and bolts are tightened.
2. Move the oven into the position at which it will be operated.
3. Check that the oven is level. If not, adjust the legs.
4. Check that the appropriate clearances are satisfied (see page 7).
5. Turn-on supply power and check oven for proper operation.



OPERATION

OPERATING THE CONTROLS

A combination oven is a different type of oven that offers many features and advantages to the food service operation. The additional capabilities and features of the oven require some learning. However, the operation of the oven is not difficult to understand or control once you have some practice.

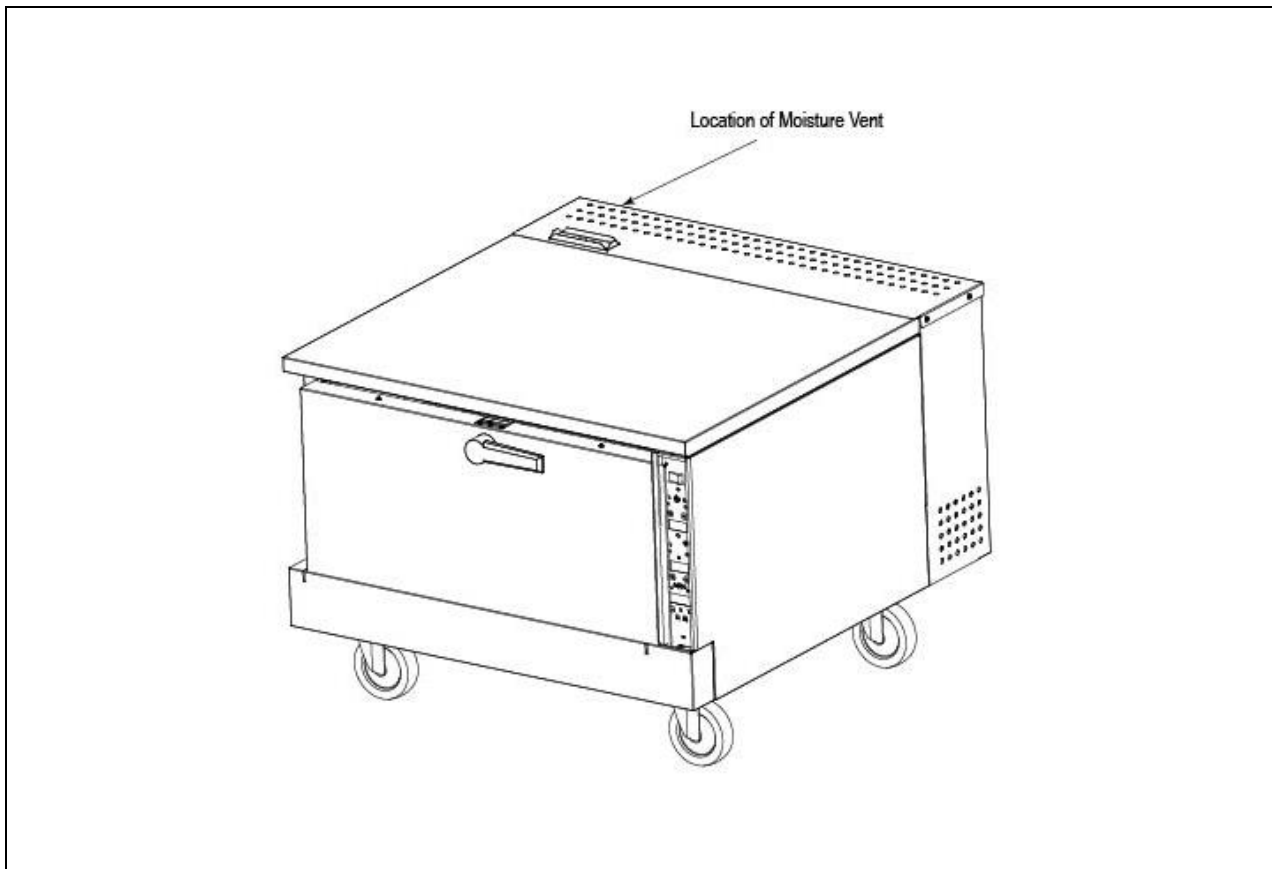
MOISTURE VENT

Each oven has a moisture vent that is open. The vent is kept open to allow pressure to escape.

⚠ WARNING

This unit produces steam, use extreme caution when opening the door. Stand back and allow the steam to escape prior to completely opening the door.

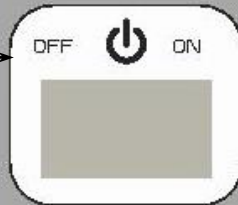
OPERATION





Power Switch

Switch ON to use the oven, switch OFF when done using the oven.



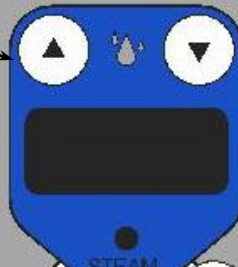
Steam Power Control

Press ▲ or ▼ to set the desired steam power percentage.



Fan Speed

Use to select fan speed (HI or LOW). The appropriate speed is determined by the type of food being cooked.

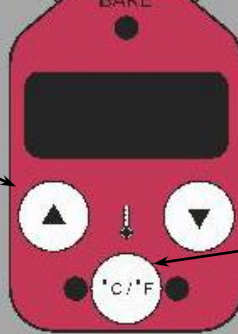


Mode

Press the mode button to toggle between Steam mode, Bake mode and TruVapor (combination) mode.

Cook Temperature Control

Press ▲ or ▼ to select desired cooking temperature. After a few seconds, the display will show the actual cavity temperature.

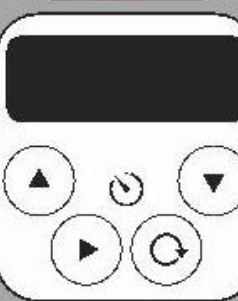


Units

Press °C/°F to toggle between Celsius and Fahrenheit

Timer

Press ▲ or ▼ to set time duration in minutes. Press ▶ to start the timer. An alarm will sound when the timer runs out. The timer is a reminder to the user: the timer does not control the oven. Press reset to reset the timer.



TruVAPOR

OPERATION



BAKE MODE:

TruVapor ovens operate much like a convection oven when in bake mode: you turn the oven ON and select a cooking temperature. Another control is used to control the fan (as described below).

The timer is a reminder to you of when to remove food from the oven. **The timer does NOT control the temperature of the oven.**

To cook, do the following:

1. Turn the oven ON using the Power Switch at the top of the control panel and press the mode button until you enter bake mode.
2. Select the desired fan speed using the Fan Speed switch. The appropriate fan speed (HI or LOW) depends on the type of food being cooked.
3. Set the cooking temperature by pressing ▲ or ▼ on the Cook Temperature Control until the display reads the desired cooking temperature. After a few seconds, the display will show actual temperature. Note: some overshoot of temperature on the first few cycles is normal.
4. Wait until the actual temperature stays within a few degrees of the set point consistently. At that time the oven will have reached the set cooking temperature.
5. Open the oven door, load the product into the oven, and close the door.
6. You can use the Timer as a reminder of when to remove the load from the oven. If so desired, press ▲ or ▼ on the timer until the indicator reads the desired cooking time (up to 99 minutes). Press ► to start the timer. The timer will count down as the timer runs down, indicating how much time remains. You can press ▲ or ▼ while cooking to increase or decrease the remaining time. When the timer runs out, a buzzer will sound. To silence the buzzer, press reset. The timer is a reminder to you; **the timer does not control the oven.**

If you open the oven door, the elements and fan will shut off and the timer will pause and beep until the door is closed.

7. When you are done cooking, turn the Cook Temperature to the lowest setting and switch the Power Switch to OFF.

STEAM MODE:

TruVapor ovens operate much like a convection steamer when in steam mode. You turn the oven ON and select steam mode. Another control is used to control the fan (as described below).

The timer is a reminder to you of when to remove food from the oven. **The timer does NOT control the temperature of the oven.**

To steam, do the following:

1. Turn the oven ON using the Power Switch at the top of the control panel and press the mode button until you enter steam mode.
2. Select the desired fan speed using the Fan Speed switch. The appropriate fan speed (HI or LOW) depends on the type of food being cooked.
3. The cooking temperature defaults to 212° and remains there. Steam power percentage defaults to 100 and stays for full steam power. After a few seconds, the display will show actual temperature. Note: some overshoot of temperature on the first few cycles in normal.
4. Wait until the actual temperature stays within a few degrees of the set point consistently. At that time the oven will have reached the set cooking temperature.



5. Open the oven door, load the product into the oven, and close the door. **WARNING: This unit produces steam, use extreme caution when opening the door. Stand back and allow the steam to escape prior to completely opening the door.**
6. You can use the Timer as a reminder of when to remove the load from the oven. If so desired, press ▲ or ▼ on the timer until the indicator reads the desired cooking time (up to 99 minutes). Press ► to start the timer. The timer will count down as the timer runs down, indicating how much time remains. You can press ▲ or ▼ while cooking to increase or decrease the remaining time. When the timer runs out, a buzzer will sound. To silence the buzzer, press reset. The timer is a reminder to you; **the timer does not control the oven.**
If you open the oven door, the elements and fan will shut off and the timer will pause and beep until the door is closed.
7. When you are done cooking, switch the Power Switch to OFF.

TRUVAPOR MODE:

TruVapor ovens operate like a convection oven and a steamer combined. You turn on the unit and select cooking temperature and steam power %. Another control is used to control the fan (as described below).

The timer is a reminder to you of when to remove food from the oven. **The timer does NOT control the temperature of the oven.**

To TRUVAPOR cook, do the following:

1. Turn the oven ON using the Power Switch at the top of the control panel and press the mode button until you enter TruVapor mode.
2. Select the desired fan speed using the Fan Speed switch. The appropriate fan speed (HI or LOW) depends on the type of food being cooked.
3. Set the cooking temperature and steam power % by pressing ▲ or ▼ on the Cook Temperature Control and Steam Power Control until the display reads the desired cooking temperature and steam power percent. After a few seconds, the display will show actual temperature. Note: some overshoot of temperature on the first few cycles is normal.
4. Wait until the actual temperature stays within a few degrees of the set point consistently. At that time the oven will have reached the set cooking temperature.
5. Open the oven door, load the product into the oven, and close the door. **WARNING: This unit produces steam, use extreme caution when opening the door. Stand back and allow the steam to escape prior to completely opening the door.**
6. You can use the Timer as a reminder of when to remove the load from the oven. If so desired, press ▲ or ▼ on the timer until the indicator reads the desired cooking time (up to 99 minutes). Press ► to start the timer. The timer will count down as the timer runs down, indicating how much time remains. You can press ▲ or ▼ while cooking to increase or decrease the remaining time. When the timer runs out, a buzzer will sound. To silence the buzzer, press reset. The timer is a reminder to you; **the timer does not control the oven.**
If you open the oven door, the elements and fan will shut off and the timer will pause and beep until the door is closed.
7. When you are done cooking, switch the Power Switch to OFF.



When the display reads “Change Filter”, perform the following:

Cartridge change: (Cartridge replacement kit – P/N 1402278)

To change filter cartridges, pull the control panel fully open. Disconnect the quick connect fittings by pressing the button and pulling them apart. Pull cartridges towards front of control panel and lift out to remove.

Notice: Valve assembly has auto shutoffs to prevent water from flowing through system after cartridges are remove (there may be some water that spills out of the cartridge during replacement).

8. Install new cartridges by aligning cartridges with bracket in control panel and connect the quick connects. Verify the cartridges are fully installed before proceeding to next step.

When the display reads “Change Filter”, perform the following:

1. Press and hold humidity ▲ and ▼ until P00 is displayed.
2. Use temperature ▲ or ▼ to cycle readings until P19 IS displayed.
3. Hold reset button of timer – reset unit. Temperature display reads 0.
4. Hold timer ▲ and ▼ buttons to return to normal operation.

OVERLOADING

Do NOT overload the oven. The size of the load that can be cooked satisfactorily depends largely on the particular product. As a rule, three racks can be successfully used for shallow cakes, cookies, pies, etc. For deeper cakes (such as angel food), use only one or two racks because of the size of the pan and the space required for rising. For hamburger patties, fish sticks, cheese sandwiches, etc., three pans is usually satisfactory.

HELPFUL SUGGESTIONS

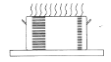
Here are some suggestions that will assist in getting the best possible performance from a TruVapor oven.

- Pre-heat the oven thoroughly before use.
- When re-thermalizing frozen products, pre-heat the oven to 50°F higher than the planned cooking temperature. After loading, reduce the temperature setting to the appropriate cooking temperature.
- Space the racks and pans as evenly as possible to allow air circulation.
- Center the load on the racks to allow for proper air circulation around the sides. Do not cover the racks completely with pans.
- Do not use a deep pan for shallow cakes or cookies, etc. Air circulation across the surface of the product is essential.



WARNING

THE USE OF ALUMINUM FOIL CAN CAUSE HEAT DISTRIBUTION PROBLEMS IN OVENS. EXTREME CARE MUST BE USED WHEN PLACING ALUMINUM FOIL IN THE OVEN TO ENSURE THAT IT DOES NOT BLOCK OR CHANGE THE AIR FLOW. THE USE OF ALUMINUM FOIL MAY VOID THE PRODUCT WARRANTY IF ITS USE IS ASCERTAINED TO BE A PROBLEM.



COOKING PROBLEMS AND SOLUTIONS

If...	then...
Cakes are dark on the sides and not done in the center...	lower oven temperature.
Cake edges are too brown...	reduce number of pans or lower oven temperature.
Cakes have a light outer color...	raise temperature.
Cakes settle slightly in the center...	bake longer or raise oven temperature slightly. Do not open doors except to load or unload product.
Cakes ripple...	do not overload pans or use batter that is too thin.
Cakes are too coarse...	lower oven temperature.
Pies have uneven color...	reduce number of pies per rack or eliminate use of bake pans.
Brown sugar topping or meringue blows off...	after oven is preheated, turn off oven and put product in oven until topping sets, then turn oven back on.
Rolls have uneven color...	reduce number or size of pans.
Meats are browned and not done in center...	lower oven temperature and roast longer.
Meats are well done and not browned...	raise temperature. Limit amount of moisture.
Meats develop hard crust...	reduce temperature or place pan of water in oven.
Excessive meat shrinkage occurs...	lower oven temperature.

GUIDE TO TIMES AND TEMPERATURES

As a guide, set oven temperatures 25°F to 75°F lower than called for in recipes for non-convection ovens, (i.e., range or deck ovens).

Time and temperature will vary depending upon load, mix, size, portion, initial temperature of food, cooking mode, steam power and other factors. Use the following chart as a starting point to develop your own cooking techniques. Rack loading and position may affect results. Experimentation may be necessary to suit individual requirements.

	Cooking Time	Temperature	Mode	Number of Racks	Steam Power
Meat and Fish					
Top Round, 18-20 lbs. (medium)	5 hours	225°F	Oven	1	0
Prime Ribs (rare)	4 hours	225°F	Oven	1	0
Burger Patties, 4 oz.	5 min.	350°F	Oven	3	0
Fish Cakes	10-12 min.	350°F	Oven	3	0
Turkey, 10-12 lbs.	3 hours	225°F	Oven	1	0



Baked Goods

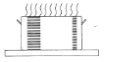
Bread, 2 lb. loaf	35 min.	375°F	Oven	2	0
Biscuits	5-10 min.	350°F	Oven	3	0
Cornbread	18 min.	400°F	Oven	3	0
French Bread	8 min.	375°F	Oven	2	0
Sheet Cake	15-18 min.	300°F	Oven	3	0
Cream Puffs	20 min.	325°F	Oven	3	0
Brown & Serve Rolls	5 min.	400°F	Oven	3	0
Ginger Bread	18 min.	300°F	Oven	3	0
Yeast Rolls, sheet pan	14-16 min.	325°F	Oven	2	0
Pineapple Upside Down Cake	25-30 min.	300°F	Oven	2	0
Apple Turnovers	15-18 min.	325°F	Oven	3	0
Fruit Cobbler	20-23 min.	350°F	Oven	2	0
Brownies	15 min.	350°F	Oven	3	0
Danish Pastry	12 min.	325°F	Oven	3	0
Pie Shells	12 min.	350°F	Oven	2	0
Fresh Fruit Pies	25-30 min.	350°F	Oven	2	0
Pumpkin Pies	25-30 min.	275°F	Oven	2	0
Fresh Apple Pies	35 min.	375°F	Oven	2	0
Frozen Berry Pies	40 min.	375°F	Oven	2	0
Frozen Fruit Pies	45 min.	375°F	Oven	2	0

Potatoes

Baked Potatoes, 10 oz.	40-45 min.	450°F	Oven	2	0
Baked Potatoes, 6-8 oz.	30-35 min.	450°F	Oven	3	0
Scalloped Potatoes	28 min.	325°F	Oven	3	0

Miscellaneous

Macaroni and Cheese	25 min.	350°F	Oven	2	0
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Stuffed Peppers	18 min.	350°F	Oven	3	0
Toasted Cheese Sandwiches	8 min.	375°F	Oven	3	0



CLEANING

Southbend equipment is sturdily constructed of the best materials and is designed to provide durable service when treated with ordinary care. To expect the best performance, your equipment must be maintained in good condition and cleaned daily. Naturally, the periods for this care and cleaning depend on the amount and degree of usage.

Following daily and periodic maintenance procedures will enhance long life for your equipment. Climatic conditions (such as salt air) may require more thorough and frequent cleaning or the life of the equipment could be adversely affected.

The oven interior is finished with stainless steel. "Spillovers" should be cleaned from the interior bottom surface as soon as possible to prevent carbonizing and a burnt-on condition. Grease or any residue should be cleaned from interior surfaces as soon as it accumulates.

 **WARNING**

FOR YOUR SAFETY, DISCONNECT THE POWER SUPPLY TO THE APPLIANCE BEFORE CLEANING. (ESPECIALLY WHEN CLEANING THE BLOWER WHEEL.) BE SURE TO HAVE THE POWER SWITCH IN THE "OFF" POSITION.

DAILY CLEANING

1. Turn the power switch to OFF and allow the oven to cool.
2. Remove the oven-interior racks and rack slide frames. (The rack slide frames are readily removable by merely raising to disengage them from their sockets.) Wash the racks and rack slides in a sink with mild detergent and warm water. Dry them thoroughly with a clean cloth.
3. Look to see if any foreign matter has accumulated on the blades of the blower wheel (which will reduce air circulation). If necessary, remove the rear lining of the oven, which is secured by thumbscrews near each corner. Use a stiff brush to remove accumulations from the blower blades, then wash with soap and water.
4. Wash the interior surfaces with a clean damp cloth. Rinse with clean water, and dry thoroughly with a clean cloth. For stubborn accumulations, a commercial oven cleaner may be used.
5. Clean the control panel with a clean damp cloth. Never use cleaning solvents with a hydrocarbon base.
6. Wipe the other exterior surfaces with a clean damp cloth. If the exterior surfaces require more thorough cleaning, see "Cleaning Stainless Steel Surfaces" on the next page.
7. Return the rack slides and racks to their appropriate locations inside the oven.
8. LEAVE THE DOOR OPEN AT NIGHT AFTER CLEANING. This allows the oven to dry thoroughly after cleaning and also prolongs the life of the door gasket.

MONTHLY CLEANING

Clean around rear of motor, cooling fans, (where the vent screen is located), louvered panels, and air holes in the rear of the oven where grease or lint may have accumulated.

SEMIANNUAL CLEANING

At least twice a year have your Southbend Authorized Service Agency or another qualified service technician clean and adjust the unit for maximum performance.

CLEANING





At least twice a year the oven's venting system should be examined and cleaned.

CLEANING STAINLESS STEEL SURFACES

To remove normal dirt, grease and product residue from stainless steel that operates at LOW temperature, use ordinary soap and water (with or without detergent) applied with a sponge or cloth. Dry thoroughly with a clean cloth.

To remove grease and food splatter, or condensed vapors, that have BAKED on the equipment, apply cleanser to a damp cloth or sponge and rub cleanser on the metal in the direction of the polishing lines on the metal. Rubbing cleanser, as gently as possible, in the direction of the polished lines will not mar the finish of the stainless steel. NEVER RUB WITH A CIRCULAR MOTION. Soil and burnt deposits which do not respond to the above procedure can usually be removed by rubbing the surface with SCOTCH-BRITE scouring pads or STAINLESS scouring pads. DO NOT USE ORDINARY STEEL WOOL, as any particles left on the surface will rust and further spoil the appearance of the finish. NEVER USE A WIRE BRUSH, STEEL SCOURING PADS (EXCEPT STAINLESS), SCRAPER, FILE OR OTHER STEEL TOOLS. Surfaces which are marred collect dirt more rapidly and become more difficult to clean. Marring also increases the possibility of corrosive attack. Refinishing may then be required.

To remove heat tint – Darkened areas sometimes appear on stainless steel surfaces where the area has been subjected to excessive heat. These darkened areas are caused by thickening of the protective surface of the stainless steel and are not harmful. Heat tint can normally be removed by the foregoing, but tint which does not respond to this procedure calls for a vigorous scouring in the direction of the polish lines, using SCOTCH-BRITE scouring pads or a STAINLESS scouring pad in combination with a powered cleanser. Heat tint action may be lessened by not applying, or by reducing heat to equipment during slack periods.



ADJUSTMENTS

WARNING

ADJUSTMENTS AND SERVICE WORK MAY BE PERFORMED ONLY BY A QUALIFIED TECHNICIAN WHO IS EXPERIENCED IN, AND KNOWLEDGEABLE WITH, THE OPERATION OF COMMERCIAL COOKING EQUIPMENT. HOWEVER, TO ASSURE YOUR CONFIDENCE, CONTACT YOUR AUTHORIZED SERVICE AGENCY FOR RELIABLE SERVICE, DEPENDABLE ADVICE OR OTHER ASSISTANCE, AND FOR GENUINE FACTORY PARTS.

NOTICE

Warranty will be void and the manufacturer is relieved of all liability if service work is performed by other than a qualified technician, or if other than genuine Southbend replacement parts are installed.

LUBRICATION

The door chains and sprockets have been lubricated at the factory with high temperature “Never Seeze” lubricant. After each six months of usage, lubricate the hinges, door chains and sprockets were applicable with the same type of lubricant.

Motor lubrication information can be found on permanent label located on motor.

ADJUSTING DOOR CHAIN / CABLE MECHANISM WHERE APPLICABLE ON “SWING OUT” DOORS

The door chain (or cable) mechanism causes the left and right doors to open and close together. To adjust the door chain mechanism, do the following:

1. Remove lower front panel that covers the door chain mechanism (next page).
2. Close both doors.
3. Check the positioning of the chain on the sprockets. There should be plenty of space for the chain or (cable) to move across the sprockets without binding. If not, open the turnbuckles and reposition the chain over the sprockets. For cable systems, loosen the sprocket hold down clamp, reposition the sprockets, re-install the hold down clamp.
4. Adjust the turnbuckles so that the right door closes about 1/4" to 1/2" inch ahead of the left door. The left door should be pushed tight over the friction catch so both doors are completely closed against the frame.
5. Secure the turnbuckles by tightening their locknuts.

ADJUSTING DOOR CHAIN / CABLE MECHANISM WHERE APPLICABLE ON “SINGLE FOLD DOWN” DOOR

The door chain (or cable) mechanism causes the door to open and close gently. To adjust the door chain mechanism, do the following:

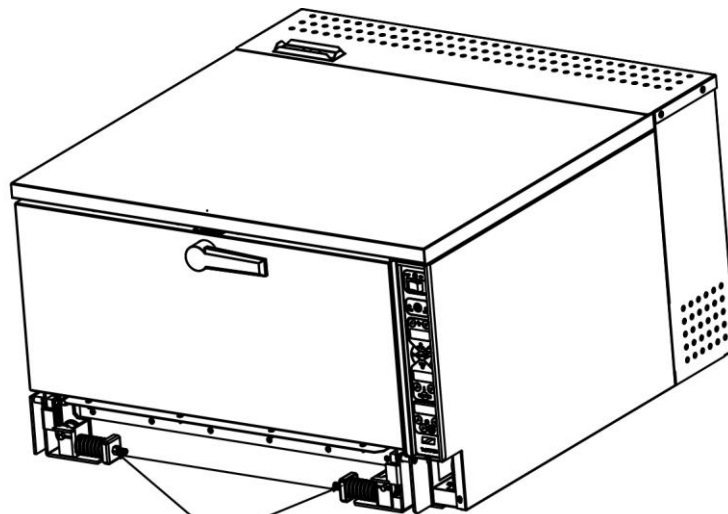
1. Remove lower front panel that covers the door chain mechanism (next page).

ADJUSTMENTS



2. Close the door.
3. Check the positioning of the chain on the rollers. There should be plenty of space for the chain to move across the rollers without the springs binding. If not, loosen the adjustment nuts and retest the opening of the door.
4. Adjust the adjustment nuts so that the door opens and closes, while maintaining even spring pressure on both sides.
5. Secure the adjustment nuts by tightening their locknuts.

Door Chain Adjustment

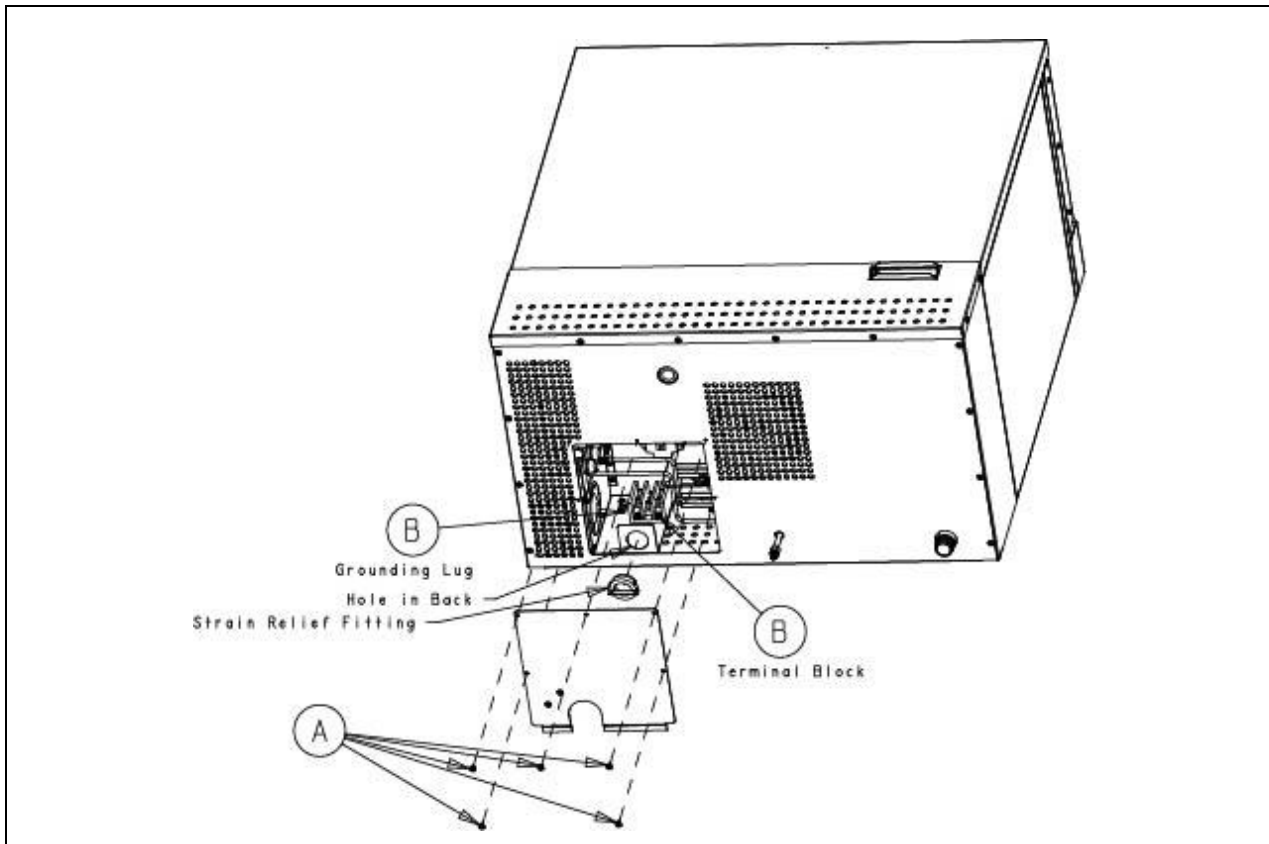


Door Chain Adjustment Nuts

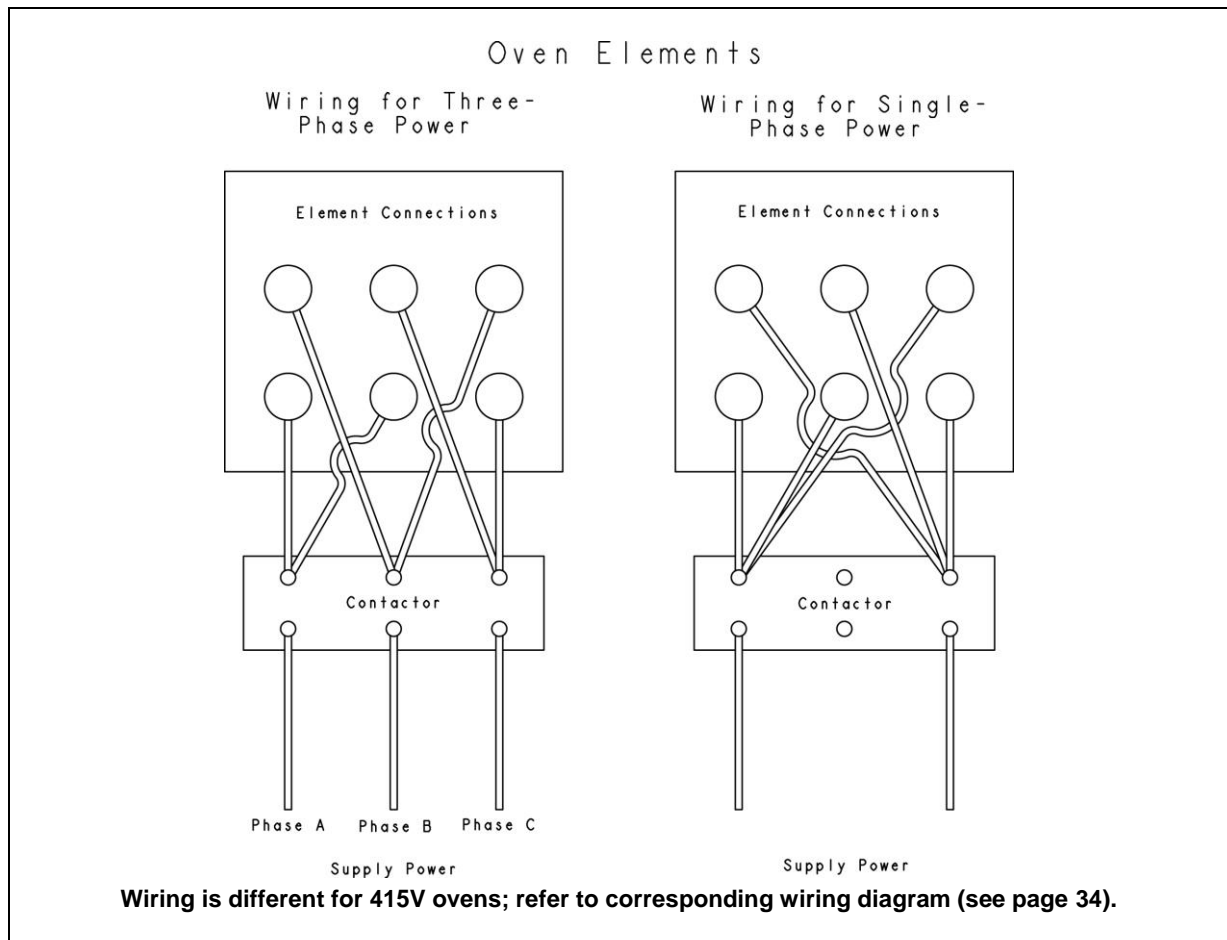


CONVERSION FROM SINGLE-PHASE TO THREE-PHASE POWER (OR VICE VERSA)

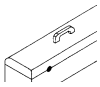
Ovens are shipped wired for either single-phase or three-phase power according to the original factory order. If the oven installation requires changing the type of power used by the oven, follow the procedure below. The following drawing shows the locations of items referred to in the procedure.



1. **If the oven is connected to a power supply, DISCONNECT OVEN FROM POWER SUPPLY.**
2. Remove the rear panel from the unit by removing the screws around its perimeter



3. Rewire the connections to the oven elements (located on the back of the oven) according to the diagram at the top of this page. (If you are changing the phase-wiring of a 415V oven, refer to the corresponding wiring diagram for conversion. See page 34.)
4. Only 2 oven element wires and 2 wires from the terminal block to the steam contactors need to be changed to convert 1 phase to 3 phase and vice versa. See wiring diagram to determine steam element wiring.
5. **Carefully compare the new wiring connections at the elements, contactor, and supply-power terminal block to the wiring diagram for the oven.** (See page 33 for the location of the wiring diagram on the oven, or page 34 for wiring diagrams printed in this manual). **Verify that all connections are tight.**
6. Reattach the rear panel.
7. Connect the oven to the power supply according to the procedure on page 15. **Note that the supply-power connections depend on whether the supply power is three-phase or single phase, and so will be different than they were prior to the conversion.**
8. Double-check supply-wire sizing for new amperage load (see page 4).



TROUBLESHOOTING

WARNING

ADJUSTMENTS AND SERVICE WORK MAY BE PERFORMED ONLY BY A QUALIFIED TECHNICIAN WHO IS EXPERIENCED IN, AND KNOWLEDGEABLE WITH, THE OPERATION OF COMMERCIAL COOKING EQUIPMENT. HOWEVER, TO ASSURE YOUR CONFIDENCE, CONTACT YOUR AUTHORIZED SERVICE AGENCY FOR RELIABLE SERVICE, DEPENDABLE ADVICE OR OTHER ASSISTANCE, AND FOR GENUINE FACTORY PARTS.

NOTICE

Warranty will be void and the manufacturer is relieved of all liability if service work is performed by other than a qualified technician, or if other than genuine Southbend replacement parts are installed.

When any difficulty arises it is always a good idea to check that the oven has been connected to the type of voltage for which it was manufactured. The serial plate is located on the inside of the lower front panel. It will list the type of voltage for which the unit was manufactured. In addition, a wiring diagram is attached to the side of the slide-out control panel, as well as reproduced in this manual (see page 34).

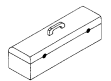
TROUBLESHOOTING GUIDE

The left column of the following table lists symptoms that indicate a problem, while the center and right columns list the possible causes and appropriate corrective action. Note that the recommendations of this table assume that the wiring connections are good. When checking a component, always check the wiring attached to the component as well.

Symptom	Possible Cause	Check or Replace
Oven will not hold correct temperature.	Temperature probe not working.	Resistance across temperature probe leads at room temperature (70°F) should be approximately 1096 ohms.
	Temperature control not calling for heat.	When heat is required, there should be applicable voltage on "C1" on the control board. If present, check centrifugal switch.
	Bad contactor.	Verify that contactor is pulling in and supplying power to the elements.
Blower motor will not come on.	No incoming electric power.	Check incoming power and fuses.
	Loose wire connections.	Check wire connections.
	Motor bad.	If power is being supplied but motor will not turn, replace motor.
	Shut down switch bad.	All power except for element supply comes through the shut down switch. Check for continuity.
	Power switch bad.	All power except for element supply comes through the power switch. Check for continuity.

TROUBLESHOOTING





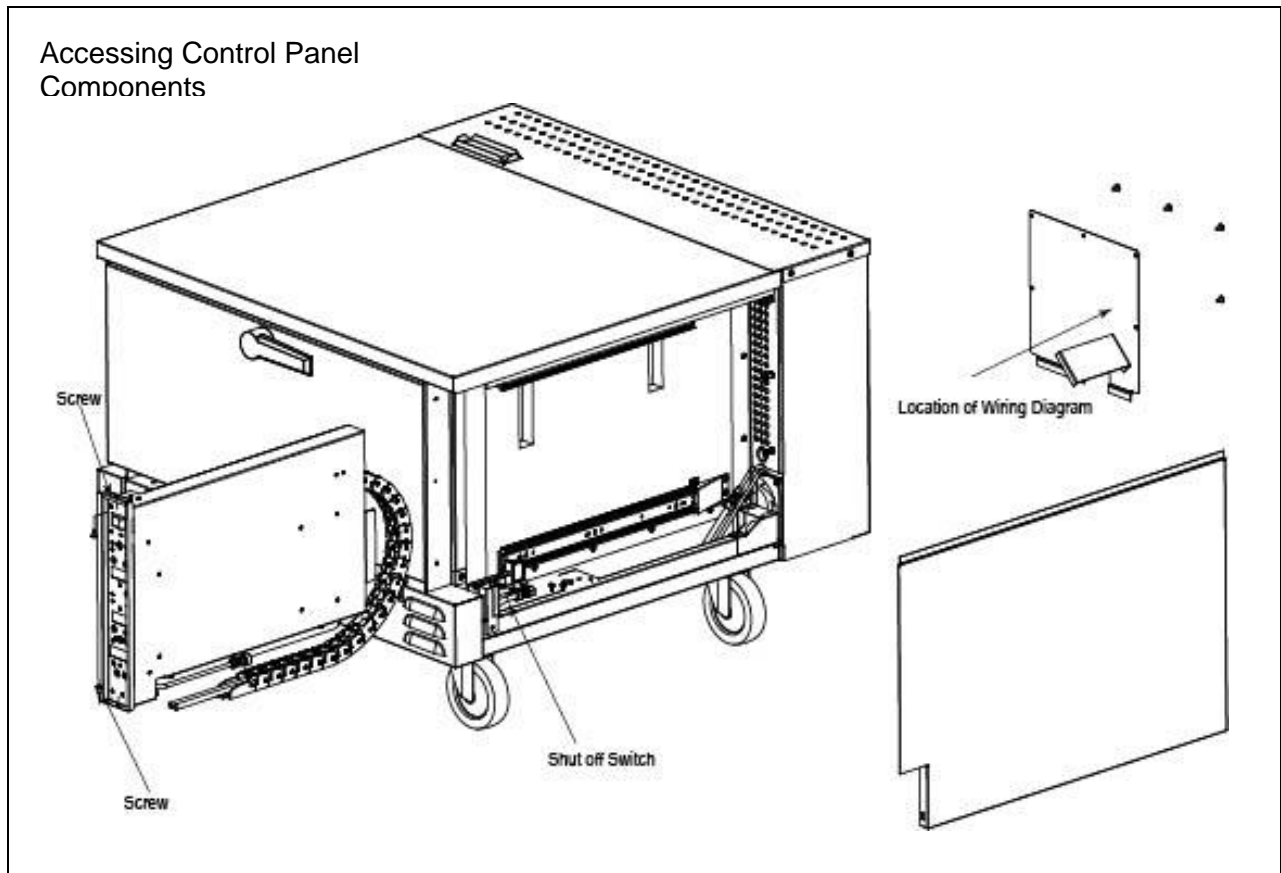
Symptom	Possible Cause	Check or Replace
Oven will not generate steam.	No water connection.	Verify incoming water connection, page 17.
	Temperature control not calling for heat.	When heat is required, there should be applicable voltage on "OL", "C2", "V3" and the control board terminals when in 100% steam power.
	Bad solenoid.	Verify that the water solenoid is pulling in and supplying water to the steam tank.
	Bad water level probes	Make sure water level probes are clean and not grounded out.

CONTROL PANEL ACCESS AND SHUT-OFF SWITCH

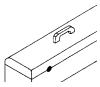
To access the control panel components, remove the screw at the top and bottom of the control panel and pull the top of the control panel out (see drawing below). A wiring diagram for the oven is located on the side of the control panel assembly. **When the control panel is slid out, all power to the control panel is cut off by a shut down switch that is located directly behind and below the control panel.** To re-energize the controls for troubleshooting, pull the plunger on the shut down switch forward.

⚠ WARNING

FOR YOUR SAFETY, DISCONNECT THE POWER SUPPLY TO THE APPLIANCE BEFORE CLEANING. (ESPECIALLY WHEN CLEANING THE BLOWER WHEEL.) BE SURE TO HAVE THE POWER SWITCH IN THE "OFF" POSITION.



TROUBLESHOOTING



BLOWER WHEEL REPLACEMENT

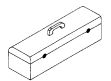
To replace the blower wheel, do the following:

1. Disconnect Power
2. Remove racks and rack guides.
3. Remove rear air baffle in front of blower wheel.
4. Loosen the two square heads on blower wheel hub.
5. Pull blower wheel from motor shaft. If blower wheel is difficult to pull off, use puller disk (available from Southbend as part number 1179100).

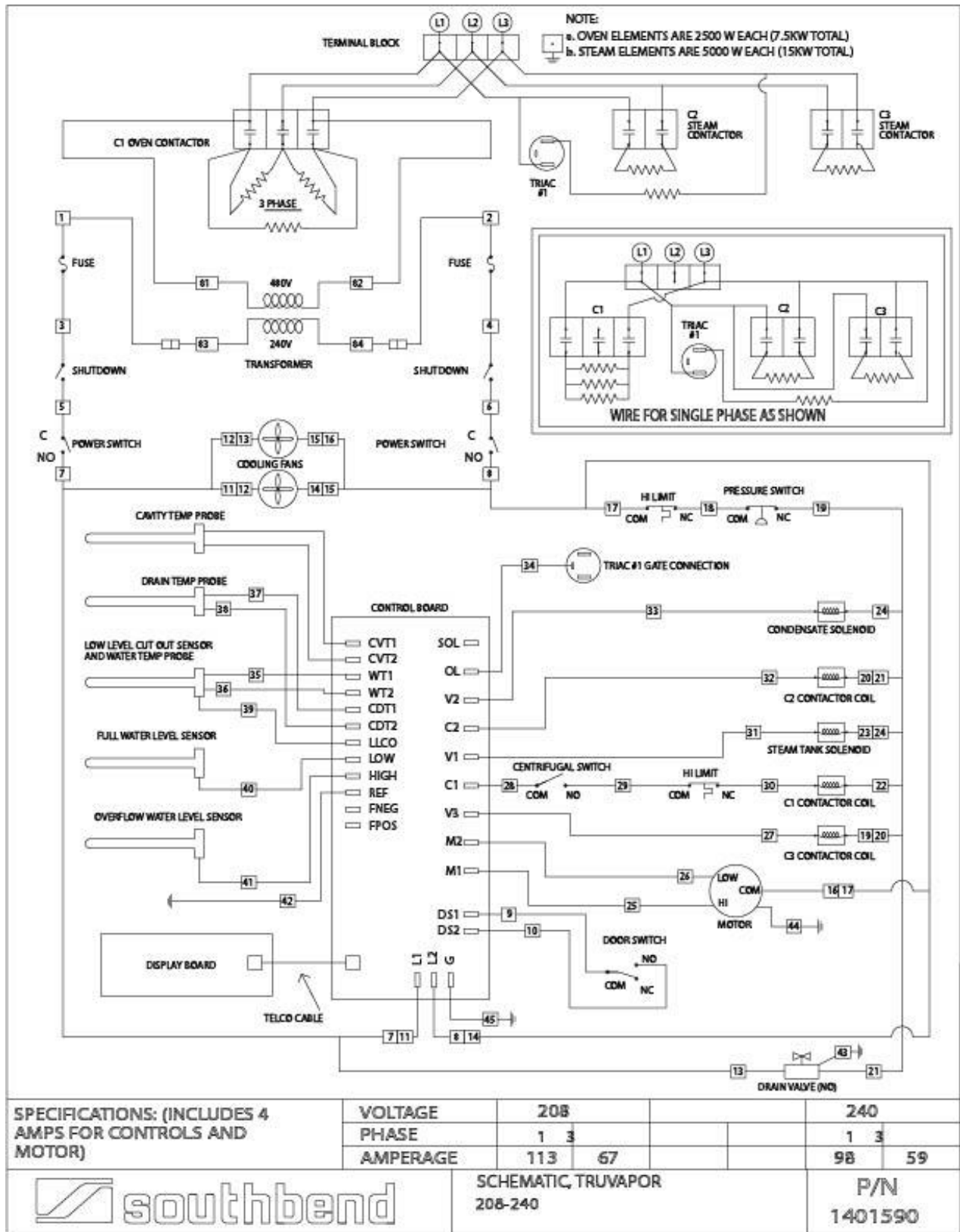
WIRING DIAGRAMS

A wiring diagram is located on the side of the control panel assembly (as shown on page 33). Wiring diagrams also appear on the following pages of this manual. Which wiring diagram is appropriate depends on the voltage.

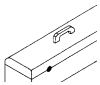
Index of Wiring Diagrams	
Page Number	Description
35	208/240 Volt Models
36	480 Volt Models



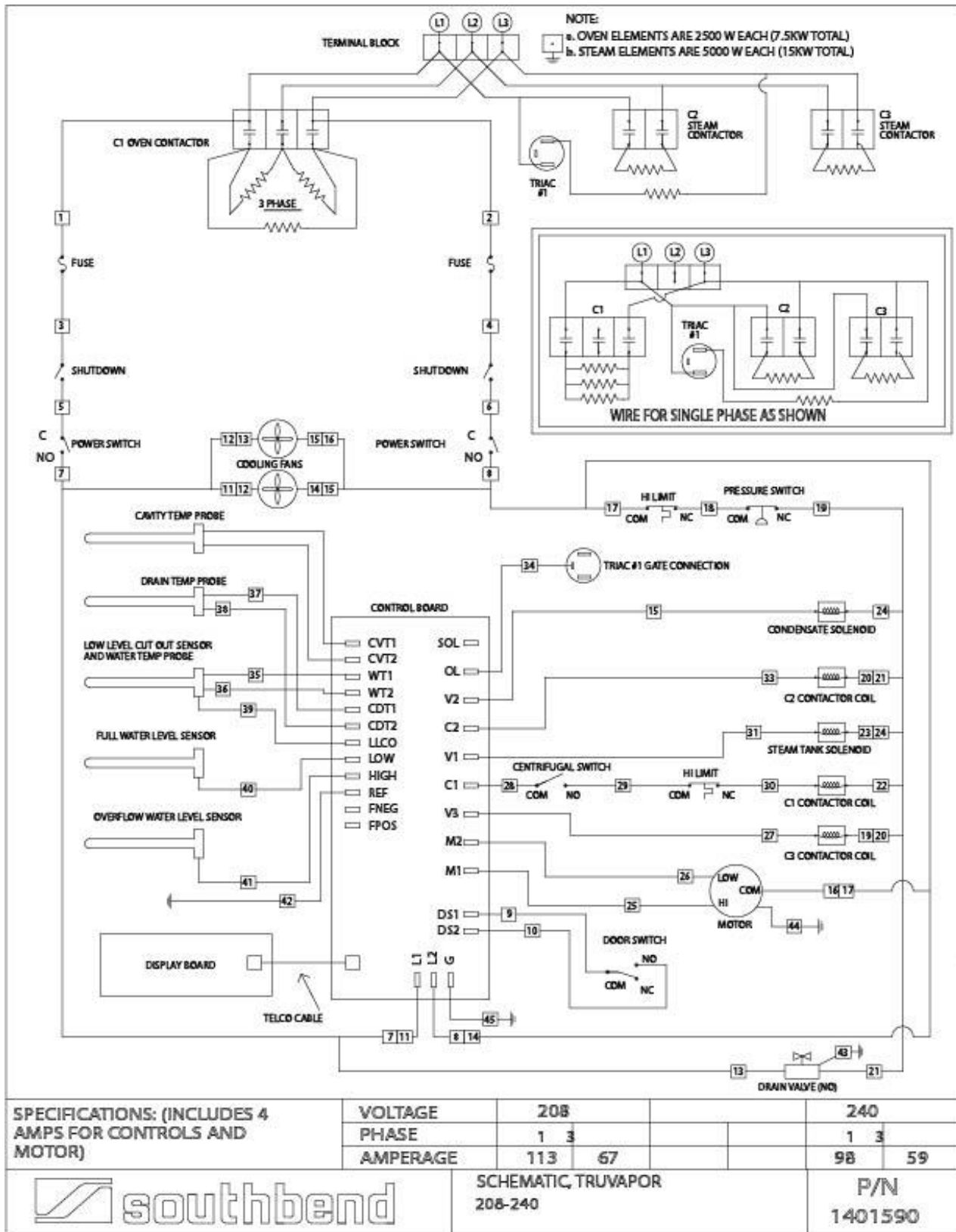
Wiring Diagram for 208/240 Volt Models



TROUBLESHOOTING



Wiring Diagram for 480 Volt Models



TROUBLESHOOTING

ELECTRIC TRUVAPOR OVENS

Notes:



Notes:

TRUVAPOR ELECTRIC COMBINATION OVENS



A product with the Southbend name incorporates the best in durability and low maintenance. We all recognize, however, that replacement parts and occasional professional service may be necessary to extend the useful life of this unit. When service is needed, contact a Southbend Authorized Service Agency, or your dealer. To avoid confusion, always refer to the model number, serial number, and type of your unit.



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