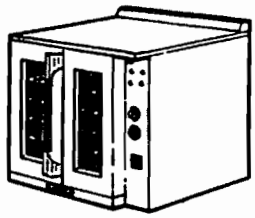
CONVECTION
OVENS



INSTRUCTIONS

MODELS CN90, CN91 & CN95 SERIES ELECTRIC CONVECTION OVENS

CN90 ML-43391
ML-43392
ML-43393
ML-43394

CN91 ML-43406
ML-43407
ML-43408
ML-43409

CN95 ML-43435
ML-43436
ML-43437

HOBART
CORPORATION

EXECUTIVE OFFICES
701 RIDGE AVENUE
TROY, OHIO 45374-0001

FORM 16266 Rev. C (6-94)

Installation, Operation and Care of CN90, CN91 & CN95 SERIES ELECTRIC CONVECTION OVENS

SAVE THESE INSTRUCTIONS

GENERAL

The CN90, CN91, and CN95 model electric convection ovens are efficient, versatile, and productive tools for the cooking industry.

These units have an electronic thermostat to control the temperature in the oven and an electronic timer to control cooking time. The timer display indicates the time remaining on the cooking cycle.

INSTALLATION

UNPACKING

Immediately after unpacking, check the oven for possible shipping damage. If the oven is found to be damaged, save the packaging material and contact the carrier within 15 days of delivery.

Prior to installation, test the electrical service to be sure that it agrees with the specifications on the oven data plate.

INSTALLING SINGLE OVENS

Installing Basic Oven (CN90, CN91, & CN95)

The basic oven must be installed on legs or be mounted on a modular stand. Installations on concrete bases or other supports restricting air circulation on the bottom will void the warranty. If using the modular stand, set the oven on the stand after uncrating.

Assembling the legs to the Oven (CN901, CN911, & CN951)

1. Position the oven on its back, taking care not to scratch the sides.
2. Attach the four leg assemblies to the bottom of the oven with the twenty-four bolts and lockwashers.
3. Reposition the oven by setting it on its legs in the installed position.

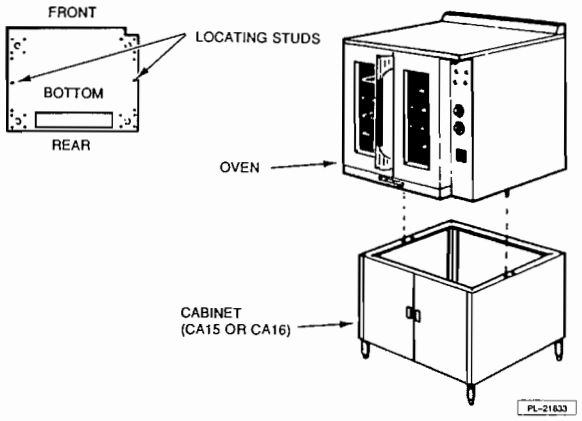


Fig. 1 — Installation of basic oven on cabinet — (procedures identical for installing open stand, CA286 or CA337).

Assembling Cabinet Base or Stand (CN903, CN904, CN913 & CN914)

1. Screw two locating studs (found in cabinet base or stand carton) into bottom of oven (Fig. 1).
2. Mount the oven on top of the stand or cabinet (Fig. 1).

Assembling the Chimney and Flue Extension

Remove the oven chimney and flue extension from the rear of the oven (motor compartment) and use the screws provided to fasten the chimney to the top rear of the oven. **NOTE:** The flanges on the chimney are to be positioned under the top cover. Also attach the flue extension.

Electrical Connections

WARNING: ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER LOCAL ELECTRICAL CODES.

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH INDICATING THAT YOU ARE WORKING ON THE CIRCUIT.

Assure that the electrical supply agrees with the specifications on the oven data plate.

Remove the wiring compartment cover on the front of the oven (the lower portion of the control panel). Remove the appropriate knock-out on the bottom of the oven and attach the power supply conduit to the bottom of the oven.

Comply with the appropriate wiring diagram attached to the oven when making connections to the electrical supply lines.

Replace the wiring compartment cover, and energize the power supply.

ELECTRICAL DATA

	TOTAL KW	208-240V 3-PHASE LOADING			480V 3-PHASE LOADING			NOMINAL AMPERES PER LINE WIRE											
								3-PHASE									1-PHASE		
		KW PER PHASE			KW PER PHASE			208V			240V			480V					
		L1-L2	L2-L3	L1-L3	L1-L2	L2-L3	L1-L3	L1	L2	L3	L1	L2	L3	L1	L2	L3	208V	240V	480V
Single Oven	11	3.35	3.35	4.30	3.33	3.33	4.33	32.0	27.9	32.0	27.7	24.2	27.7	13.9	12.0	13.9	52.8	45.8	22.9
Stacked Oven	22	6.70	6.70	8.60	6.66	6.66	8.66	64.0	55.8	64.0	55.4	48.4	55.4	27.8	24.0	27.8	105.6	91.6	45.8

The 208, 240, and 480 volt ovens covered by this manual are for connection to a 1 or 3 phase power system. Ovens leaving the factory are wired for connection to a 3 phase power system. Wires can be changed at the installation site for connection to a 1 phase power system by altering the wiring at the terminal block.

Leveling

Adjust the legs to assure that the oven racks are level in the final installed position.

INSTALLING DOUBLE OVENS

Assembling Stacked Ovens (CN902, CN912, & CN952)

1. Position one oven on its back for access to the oven bottom, taking care not to scratch the sides. Attach the four leg assemblies with the twenty-four bolts and lockwashers provided.
2. Place the lower oven (with legs) on the floor and remove the two 7/16" diameter knock-outs on each side of the top cover plus the 1⅜" diameter knock-out at the right front of the top cover.
3. Install the two locating studs (included in the leg stack set) into the screw plates on the under side of the upper oven. (See Fig. 1).
4. Remove oven chimneys stored at the rear of both ovens. Discard one chimney. Attach the remaining chimney to the top of the upper oven (oven without legs). **NOTE:** The flanges on the chimney are to be positioned under the top cover.
5. Move the oven with legs to the installed position and place the upper oven on top of the lower oven using the locating studs. Remove the wiring compartment cover from the front of both ovens. Also unfasten the control panel (of the lower oven only) and carefully pull forward. This will facilitate routing the power leads (furnished) to the top oven, as well as attaching the one-inch conduit nipple and lock nut (also furnished).
6. Attach the short flue extension over the exhaust vent at the rear of the upper oven. Slide the long flue extension tube over the exhaust vent at the rear of the lower oven. These extensions should direct the exhaust fumes upward through and above the top oven.
7. Place the 1" conduit nipple through the 1⅜" hole in the bottom of the top oven and the top of the bottom oven and clamp the two ovens together with the locknut from the underside.

Electrical Connections

WARNING: ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER LOCAL ELECTRICAL CODES.

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH INDICATING THAT YOU ARE WORKING ON THE CIRCUIT.

Assure that the electrical power supply agrees with the specifications on the oven data plate and complies with the wiring diagram on the oven.

1. Attach the power leads to the line side of the terminal block of the upper oven. Then carefully route these leads (furnished as part of the stack set) down through the conduit nipple and behind the control panel of the lower oven.
2. Attach these leads to the lower oven terminal block per the wiring diagram. At the same time, attach the power supply conduit to the bottom of the lower oven. Also attach the power supply leads to the line side of the terminal block.
3. Finally, inspect and check all wiring and terminal connections for tightness and proper routing away from any moving parts (relay solenoid core), or pinch points (cover on oven frame). Then carefully replace the lower oven control panel and wiring compartment covers for both ovens.

ELECTRICAL DATA

	TOTAL KW	208-240V 3-PHASE LOADING			480V 3-PHASE LOADING			NOMINAL AMPERES PER LINE WIRE											
								3-PHASE									1-PHASE		
		KW PER PHASE			KW PER PHASE			208V			240V			480V					
		L1-L2	L2-L3	L1-L3	L1-L2	L2-L3	L1-L3	L1	L2	L3	L1	L2	L3	L1	L2	L3	208V	240V	480V
Single Oven	11	3.35	3.35	4.30	3.33	3.33	4.33	32.0	27.9	32.0	27.7	24.2	27.7	13.9	12.0	13.9	52.8	45.8	22.9
Stacked Oven	22	6.70	6.70	8.60	6.66	6.66	8.66	64.0	55.8	64.0	55.4	48.4	55.4	27.8	24.0	27.8	105.6	91.6	45.8

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Leveling

Adjust the legs to assure that the oven racks are level in the final installed position.

INSTALLING OPTIONAL LINER KITS

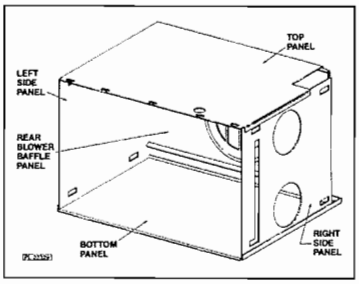

Fig. 2 — Contents of CX333 non-stick coated liner kit for standard 36" deep convection ovens. CX339 panel kit for these models is stainless steel. CX380 (non-stick coated) and CX381 (s/s) panels for deeper convection ovens are 8 inches deeper.

The CX333 liner kit components (and related CX339, CX380 and CX381 components) are identified above. Please follow the sequence shown below to install.

Steps to Adding Panels

WARNING: DISCONNECT ELECTRICAL POWER AND PLACE A TAG AT THE DISCONNECT SWITCH INDICATING THAT YOU ARE WORKING ON THE CIRCUIT.

Fig. 3

Fig. 4

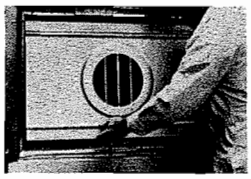

Fig. 5

Remove all racks by pushing down slightly on front of rack top to disengage the positive rack rear lock. When rack back is raised to clear, pull straight out as shown in Fig. 3.

Remove both left and right rack guides by lifting them straight up, tilting the bottom of the guides toward the oven center, and pulling out as shown in Fig. 4.

Remove aluminized steel back blower baffle by lifting straight up, then pulling forward and out. Tilt slightly from left to right to clear side brackets as shown in Fig. 5. Discard this blower baffle.

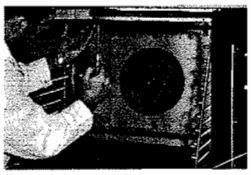

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Install top panel by inserting screws (3 screws in front, 2 in back) and screwing tightly to top of oven interior as shown in Fig. 6.

Install new non-stick coated back blower baffle by tilting the panel slightly from left to right to clear the side rack guide brackets as shown in Fig. 7. Then press panel up against the oven's back interior. Lift and lower panel until it rests on blower baffle supports. No screws are required.

Install bottom panel by lifting over rack guide brackets and pushing straight in as shown in Fig. 8.

Install left and right side panels placing the cut-out notches over light bank (right panel), thermostat guard (right panel) and rack guide support brackets (right and left panels), Fig. 9.

Reassembling Rack Guides and Racks

Reassemble the left and right rack guides by inserting them in support brackets (reverse procedure in Fig. 4). Insert racks in rack guides (reverse procedure in Fig. 3).

OPERATION

BEFORE FIRST USE

Before using the convection oven for the first time, it must be "burned in" to release any odors that might result from heating the new surfaces in the chamber.

- Using a clean damp cloth, wipe the inside of the oven including the racks.
- Wipe the outer surfaces to remove any dirt or film that may have accumulated during shipment.
- Close the oven door, turn on the oven, set the thermostat to 300° for 6-8 hours. Smoke with an unpleasant odor will normally be given off.

CONTROLS

FUSE HOLDERS — **WARNING:** DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH INDICATING THAT YOU ARE WORKING ON THE CIRCUIT BEFORE REPLACING FUSES. Replace fuses with appropriate type described on control panel.

ON/OFF/COOLDOWN Switch — Controls power to the control circuit; POWER light is ON when this switch is ON. The COOLDOWN position energizes the fan only (not the heating elements) to cool the oven rapidly when the doors are open.

LIGHT Switch — Turns the lights in the oven ON or OFF.

2 SPEED FAN Switch — Ovens with a 2 SPEED FAN use the HI setting as the usual operating speed and the LO setting for delicate product like Meringue which might be blown around in the oven.

COOK TEMPERATURE Thermostat — Controls the oven temperature. The HEAT light is energized when the heating elements are producing heat.

TIMER KEYPAD — To set the timer, press CLEAR, enter the HOURS and MINUTES of the cooking time period and press START. The timer will display the setting and begin to count down. To enter a new setting, press CLEAR and begin again. CLEAR also turns off the buzzer alarm.

DOOR INTERLOCK — An electrical door interlock de-energizes the FAN and heating elements when the door is open. The COOLDOWN switch energizes the FAN only to cool the oven when the door is open.

CONSERVING ENERGY

- Turn off unused equipment.
- Do not open door unnecessarily; use window for observation of food in oven.

PREHEATING

With the doors closed and the thermostat dial set at the desired temperature, preheating is started by turning on the oven. Your oven will preheat to 350°F in just 10 minutes. PREHEATING is complete when the HEAT light goes OFF indicating that the thermostat temperature has been reached.

LOADING

Since the oven chamber is large and loading requires keeping the doors open, temperature drops will occur. To offset this for a full capacity load, it is suggested that the preheat temperature setting be 50°F higher than the required cooking temperature. After the foods are loaded in the oven, the setting can be returned to the appropriate temperature for that particular food. To minimize heat loss during loading, the doors should be open for the least amount of time.

RACK DATA (Pan Capacities Shown For Single Rack)

MODEL	NO. STD. RACKS	STD. RACK SPACING IN.	NO. OPTIONAL RACKS	11 RACK SPACING IN.	RACK SIZE IN.	9″ OD PIE TINS	#200 PANS	18″ × 26″ PANS
CN901 CN903 CN904 CN951	5	2.87	6	1.25	27.5 × 20	6	2	1
CN902 CN952	10	2.87	12	1.25	27.5 × 20	6	2	1
CN911 CN913 CN914	5	2.87	6	1.25	27.5 × 28	9	2	1
CN912	10	2.87	12	1.25	27.5 × 28	9	2	1

COOKING TEMPERATURES AND TIMES

Because of the moving air in the convection oven, the temperatures required to bake various products are lower and the cooking times are shorter than in a conventional deck-type oven with still air. Since recipes and foods are subject to many variations and tastes, the guidelines regarding temperature settings and cooking times contained in this manual are *SUGGESTED ONLY.* You should experiment with your food products to determine the cooking temperatures and times that give you the best results.

Guidelines for Baking and Roasting

PRODUCT	TEMPERATURE	TIME	NO. RACKS
BREAD PRODUCTS			
Bread (24, 1-lb. loaves)	340F	30 min.	3 (every other rack starting with bottom rack)
Hamburger Rolls	300F	15 min.	5
Corn Bread	335F	25 min.	5
Yeast Rolls	325F	25 min.	5
Baking Soda Biscuits	400F	6 min.	5
PASTRIES			
Frozen Berry Pies (22 oz.)	350F	34 min.	5 (30 pies)
Frozen Fruit Pies (46 oz.)	350F	45-50 min.	5 (20 pies)
Fresh Apple Pie (20 oz.)	350-375F	25-30 min.	5 (30 pies)
Sheet Cake (5 lbs. per pan)	335F	15 min.	5
Sugar Cookies	300F	15 min.	5
Cherry Crisp	300F	25 min.	5
Chocolate Cake	335F	20 min.	5
Cinnamon Buns	335F	20 min.	5
Brownies	350F	15 min.	5
Danish	335F	12 min.	5
Angel Cakes	250F	25-30 min.	3
Cream Puffs	350F	20-25 min.	5
Pumpkin Pie	300F	30-35 min.	5
Fruit Cakes	275F	70 min.	3
Apple Turnovers	350F	15 min.	5
MEAT			
Hamburger Patties (5 per lb.) (well done)	400F	10-12 min.	11 (264)
Steamship Round (80 lb. quartered)	275F	2¾ hrs. (well done)	2 (2 pans ea. rack)
Steamship Round (whole 60-80 lbs.)	275F	8 hrs. (med.)	1
Rolled Beef Roast (20 lb. avge.)	300F	4 hrs. (med.)	3 (2 roasts per pan)
Prime Ribs	275F	3 hrs. (med.)	2 (2 roasts per pan)
Baked Stuffed Pork Chops	375F	25-30 min.	5
Boned Veal Roast (15 lbs.)	300F	3 hrs. 10 min.	2
Lamb Chops (small lean)	400F	6 min.	5 (24 per pan)
Shell Steaks (10 oz.)	450F	7-8 min.	5 (16-18 per pan)
Meat Loaf	325F	40-45 min.	5 (2 pans per rack)
FISH			
Fish Stix	335F	16-18 min.	11
Baked Stuffed Shrimp	400F	6-7 min.	5
Baked Stuffed Lobster (1½ lbs.)	400F	10 min.	3
Halibut Steaks (Frozen 5 oz.)	350F	30 min.	5
FOWL			
Chicken Breast – Thigh	350F	33-35 min.	5
Chicken Back – Wing	350F	30-33 min.	5
Chicken (2½ lb. quartered)	350F	30 min.	5 (26 per pan)
Turkey Rolled (18 lb. Rolls)	310F	3¾ hrs.	3 (6 pans – 2 rolls ea. rack)
OTHER			
Macaroni and Cheese	350F	30 min.	5
Beef Pot Pies	400F	30-35 min.	5
Turkey Pot Pies	400F	30-35 min.	5
Stuffed Peppers	350F	15-20 min.	3
Melted Cheese Sandwiches	400F	10 min.	5 (120)
Pizza (7" Frozen)	435F	11 min.	6
Idaho Potatoes (120 count)	440F	50 min.	5

*Where the number of racks is 5, insert the first rack on the bottom position and place the others on every other rung.

CLEANING YOUR CONVECTION OVEN

Always allow the oven to cool prior to cleaning. If the oven is hot, make sure the doors are only slightly ajar to minimize the exposure of the operator to the hot air. To speed up the cooling process, turn the ON/OFF/COOLDOWN switch to COOLDOWN and the fan will operate with the doors open.

CLEANING THE INTERIOR OF YOUR OVEN

Ovens With Standard Aluminized Steel Liners

Keep the inside of the oven and racks wiped clean. If food particles or carbon accumulate so doors cannot be tightly closed, heat is wasted and the oven will not operate properly. Poorly closed doors permit a constant escape of steam and vapor around the door. This causes condensation which deteriorates the finish around the oven front and door lining.

When cleaning the interior of your oven, it is important to bear in mind that the aluminum coating, though tightly adherent, is still a coating. To preserve the coating and for ease of maintenance, clean often when the oven is cold with mild detergent (or soap) and water. This will prevent food and dirt from "baking on" and will frequently be all the cleaning that is necessary.

Where soil resists soap and water cleaning, use a wooden tool to loosen spillage from the cold oven. Follow with a non-etching cleaner which is specifically recommended for aluminized steel. Use clear water to rinse; dry with a soft clean cloth.

DO NOT USE STEEL WOOL, WIRE BRUSHES OR CAUSTIC SOLUTIONS SUCH AS LYE, SODA ASH, OR AMMONIA.

Ovens With Stainless Steel Liners

In general, the principles detailed above for aluminized steel apply. Soap or detergent and water will usually handle routine cleaning; dry with a soft clean cloth.

For burned-on foods and grease which resist simple soap and water cleaning, an abrasive cleanser (scouring powder) mixed into a paste may be used. Apply with stainless steel wool or sponge, always rubbing with the "grain".

This treatment is equally effective for "heat tint" (slightly darkened areas caused by oxidation). Again, remember to rub in the direction of the polish lines. Rinse with clear water and dry with a soft cloth.

Ovens With Teflon Coated Liners

In order to preserve the easy-care properties of your Teflon coated oven panels, frequent cleaning is recommended. Panels should be cleaned as soon as soil begins to turn brown. This will minimize the possibility of discoloration. Do not use sharp instruments, abrasive materials, or oven cleaners on Teflon surfaces or the warranty is void.

To clean the Teflon panels, remove panels and wash thoroughly with hot, sudsy water using a sponge or web pad supplied with the oven. Do not use harsh abrasive or steel wool pads. Rinse with clean water and dry. Between these cleanings, oven spatters can be easily wiped off with sudsy sponge or cloth, rinsed, and dried. With Teflon, there is never a need for oven cleaners.

REMOVING PANELS

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH INDICATING THAT YOU ARE WORKING ON THE CIRCUIT.

Remove tray racks by pulling straight out.

Remove right and left rack guides by lifting straight up.

Right and left panels may now be removed by moving toward the center and pulling out. To avoid scratching, do not rest panels on bottom panel.

Remove bottom panel by pulling straight out.

Remove blower baffle by lifting straight up and pulling out toward the front. Care should be exercised to clear brackets on the side. Blower wheel can now be cleaned as described in *Cleaning The Blower Wheel*, immediately following.

Top panel and stainless steel interior panels can be cleaned while in place. If removal of top panel is desired, unscrew three screws from front top edge of top and two screws from rear flange of top. Slide out toward front.

Reassemble by reversing the above procedure.

Cleaning The Blower Wheel

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH INDICATING THAT YOU ARE WORKING ON THE CIRCUIT.

Remove all racks by pulling forward, lifting up and out.

Remove both right and left rack supports by lifting up.

Remove the blower baffle by lifting up and pulling out. Wash blower thoroughly with hot sudsy water using a sponge or plastic web pad. Rinse with clean water and dry.

Replace the hardware by reversing the disassembly procedure.

Cleaning the Exterior of Your Oven

Wash all exterior surfaces at least once daily using a cloth with warm water and a mild soap or detergent. Where surfaces have been waxed, use the cloth lightly — hard rubbing will remove polish. Follow with a clear rinse, then dry. This simple treatment will keep your equipment clean and sparkling, and eliminates the danger of grease accumulation.

Permalucent Finish

If grease has accumulated and attacked the PERMALUCENT finish, use any silicon-based polish following directions on the container. NEVER use a scouring pad on the PERMALUCENT finish.

If the surface is accidentally marred, it can be quickly and easily restored with a "PERMALUCENT Touch-Up Kit", available through your Dealer. Full instructions are in each kit.

Cleaning Stainless Steel Surface

To keep the stainless steel front spotless, clean regularly with a damp cloth and polish with a soft, dry cloth. To remove discolorations which may have formed when regular cleaning was neglected, use any detergent or plain soap and water. For particularly stubborn discolorations, a self-soaping scouring pad may be used.

CAUTION: Always rub with the "Grain" in a horizontal direction.

Rinse, dry and polish with a soft cloth. Avoid using gritty soaps or harsh cleaners.

Replacing Lamps

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH INDICATING THAT YOU ARE WORKING ON THE CIRCUIT.

Remove all racks by pulling forward, lifting up and out.

Remove the right rack support by lifting up.

Unscrew glass dome(s) from light body.

Replace the bulb(s).

Replace glass dome(s), rack support, and racks by reversing the disassembly procedure.

LEGEND:

EI ELECTRICAL CONNECTION
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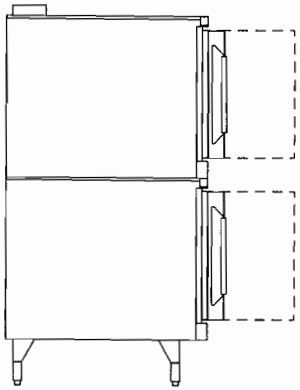

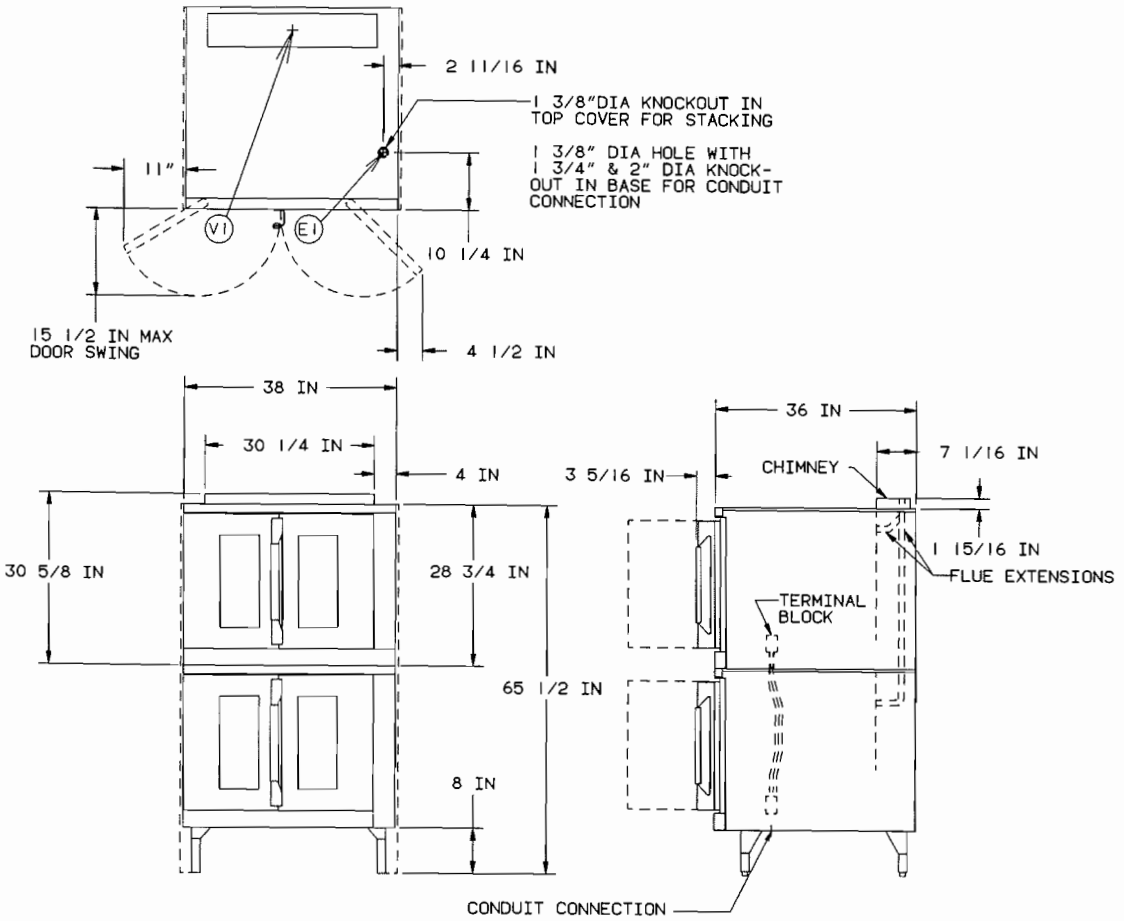

MODELS: CN902, DN972

D–342207G Sheet 3 of 10