66-4062-1 & 2 (9-76)

HOBART

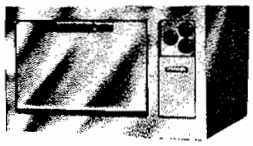
FOOD EQUIPMENT

installation ovens

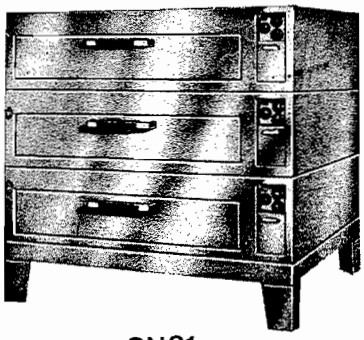
27 MODELS

Basic - CN40, CN50, CN60, CN70, CN74, CN78 and Their Combinations

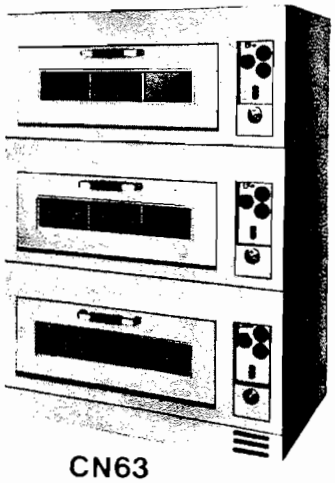
Installation & Owner's Manual



CN40



CN81



CN63

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

OUTPUT/CAPACITY						PREHEAT TIME (MINUTES) TO 450F	OVERALL BODY DIMS.			MODEL/TYPE		CONSISTS OF:
QUANTITY/LOAD							W"	D"	H" (LESS FLUE)			
NO. 1-LB. BREAD LOAVES	NO. 18"x26" PANS	NO. 9" PIE TINS	LBS. MEAT/ LOAD	NO. & SIZE PIZZAS	DECK AREA (SQ.FT.)							
1- & 2-PAN ALL PURPOSE DECK OVENS												
10	1	6	60	–	4	20	36	36	22	CN40–Basic Sect.	1-PAN	Oven w/deck
10	1	6	60	–	4	20	36	36	41	CN41–1-All Purp.		1 CN40, 19" legs
20	2	12	120	–	8	20	36	36	55	CN42–2-All Purp.		2 CN40, 11" legs
30	3	18	180	–	12	20	36	36	72	CN43–3-All Purp.		3 CN40, 6" legs
20	2	12	125	–	7.2	38-42	54-3/8	36	23	CN60–Basic Sect.	2-PAN	Oven
20	2	12	125	–	7.2	38-42	54-3/8	36	55	CN61–1-All Purp.		1 CN60, 1 deck, 1 base, 27" legs
40	4	24	250	–	14.4	38-42	54-3/8	36	70	CN62–2-All Purp.		2 CN60, 2 decks, 1 base, 19" legs
60	6	36	375	–	21.6	38-42	54-3/8	36	74	CN63–3-All Purp.		3 CN60, 3 decks, 1 base
2-PAN BAKE, PIZZA & COMBINATION DECK OVENS (CN50 Series – bake with air-cushion deck, CN70 Series – Pizza with corplate deck)												
20	2	12	–	6 12" Pizzas	7.2	35–CN50 series	54-3/8	36	19	CN50–Basic Sect. CN70	2-PAN BAKE & PIZZA	Oven
20	2	12	–		7.2		54-3/8	36	51	CN51–1-Sect. CN71		1 sect., 1 base, 27" legs
40	4	24	–		14.4	40–CN70 series	54-3/8	36	70	CN52–2-Sect. CN72		2 sections, 1 base, 27" legs
60	6	36	–		21.6		54-3/8	36	70	CN53–3-Sect. CN73		3 sections, 1 base, 8" legs
40	4	24	125	–	14.4	36-42	54-3/8	36	66	CN44–1-Bake 1-All Purp.	2-PAN BAKE ALL-PUR-POSE	1 CN50, 1 CN60, 2 decks, 1 base, 19" legs
60	6	36	125	–	21.6	36-42	54-3/8	36	72	CN45–2-Bake 1-All Purp.		1 CN60, 2 CN50, 3 decks, 1 base, 6" legs
60	6	36	250	–	21.6	36-42	54-3/8	36	70	CN46–1-Bake 2-All Purp.		1 CN50, 2 CN60, 3 decks, 1 base
4- & 6-PAN BAKE DECK OVENS												
40	4	24	–	–	14.5	90	54-3/8	64½	19	CN74–Basic Sect.	4-PAN	Oven
40	4	24	–	–	14.5	90	54-3/8	64½	51	CN75–1-Sect.		1 CN74, 1 deck, 1 base, 27" legs
80	8	48	–	–	29	90	54-3/8	64½	70	CN76–2-Sect.		2 CN74, 2 decks, 1 base, 27" legs
120	12	72	–	–	43.5	90	54-3/8	64½	70	CN77–3-Sect.		3 CN74, 3 decks, 1 base, 8" legs
60	6	36	–	–	22	120	54-3/8	64½	19	CN78–Basic Sect.	6-PAN	Oven
60	6	36	–	–	22	120	54-3/8	64½	51	CN79–1-Sect.		1 CN78, 1 deck, 1 base, 27" legs
120	12	72	–	–	44	120	54-3/8	64½	70	CN80–2-Sect.		2 CN78, 2 decks, 1 base, 27" legs
180	18	108	–	–	66	120	54-3/8	64½	70	CN81–3-Sect.		3 CN78, 3 decks, 1 base, 8" legs

TABLE 1 – IDENTIFICATION & DESCRIPTION

INSTALLATION INSTRUCTIONS

GENERAL

Table 1 shows the make-up, type and characteristics of the 27 models which comprise line of installation ovens. Consult floor plans (Figs. 1–6) for area positioning and related information. See Tables 2 and 3 for composite electrical data.

Each basic oven section is a complete unit in itself and operates entirely independent of other sections. The sections (except CN40 series) nest on an insulated base section with one section on top of another to assemble into complete multiple-compartment ovens that are one, two or three sections high.

Model numbers of individual sections appear on the nameplate located on the outside of the switch panel or above switch panel on oven front.

When devices have to be stacked in the field, electrical interconnections have to be made in the field. Device(s) must be grounded in accordance with requirements of the National Electrical Code or applicable local code.

METHOD OF SHIPMENT

The oven sections, complete with heating units and integral control panel, are shipped separately. The base section, decks, and legs (if required) are also shipped separately.

(ASSEMBLING OVEN SECTIONS (CN40 SERIES)

1. Uncrate an oven section and set it on supports slightly higher than the legs. Attach a leg at each corner using bolts, washers, and nuts provided. Set the oven and leg assembly on the floor. Use this oven section as the bottom oven section.
2. Place the oven on a substantial, level floor.
3. Remove packing from the inside of the oven(s). Assemble the handle to the door and slide the oven rack into place in the channels in the center of the oven.
4. For each additional oven
   a. Remove five knockouts in the top of the oven section already stacked. Four of these are locator holes (for the locating studs in the bottom of the oven to be stacked on top) which are found at the sides 3 inches in from the back and three inches in from the front. The fifth knockout (for electrical wires) is an oval opening located 2 inches back from the front right corner. (See Fig. 7.)
   b. Place a flue flange casting with the larger opening up on the vertical flue of the oven section already mounted.
   c. Assemble the four locating studs in the holes in the bottom flanges (the smaller holes located 3 inches from the front and rear) of the oven section to be added. Use the studs and nuts and washer assemblies provided and assemble the studs projecting away from the oven section. Tighten nuts to secure studs solidly to bottom.
   d. Place the oven section on top of the section already mounted. The four locating studs in the bottom of the top oven section will register with the holes in the oven section below it, holding the oven sections in alignment. When lowering the oven section into place, make sure that the lower end of the rectangular flue nests properly in the flue-flange casting. These ovens may be stacked three high.
5. Place a flue-flange casting on the flue of the top oven with the **smaller** end up.
6. All sections should seat firmly together. Check oven sections for being level, as this is important to the operation of the oven. It may be necessary to shim under one or more of the legs to level the oven assembly.

ASSEMBLING OVEN SECTIONS (CN50, CN60, CN70, CN74 & CN78 SERIES)

1. Carefully uncrate the base section with the bottom side of the crate down. The insulation is held in the base section by the crate during shipping and handling. Exercise care to keep the insulation in place while removing the crate. Set the uncrated base section on supports slightly higher than the legs. Attach a leg at each corner of the base with the bolts, washers, and nuts furnished. Set the base and leg assembly on the floor. It is most convenient for the electrical installers to complete conduit connections to the base at this point.
2. Place the oven on a substantial, level floor.
3. Set the base section's flue riser in position in the rectangular opening near the right rear corner of the base section. Place flue-flange casting on the base riser with the larger opening on top.
4. Screw locating studs in bottom side flanges of the oven section.
5. Place oven section on top of base section. Locating studs register with the holes in the top flanges of the base section and hold the sections in alignment. When lowering the oven section onto the base section, make sure that the lower end of the oven vertical flue engages properly in the lower flue flange casting.
6. For each additional oven section added, place a flue-flange casting with the **larger** opening up on the flue of the last oven installed, and repeat steps 4 and 5. Stack up to three high. No flue-flange needed on top of top oven.
7. Place the cover over the opening on the top oven and fasten with sheet metal screws provided. Place the top on the top oven with the flange to the right and fasten with sheet metal screws (See Fig. 8). The cover and top are shipped with the base section.
8. Assemble handles to the oven doors.
9. After assembling all sections, remove temporary blocking inside each oven compartment - blocking holds heating units in place during shipment.
10. Slide deck into position in each oven section. Make sure the deck is located all the way to the rear under the rear deck clips. Push the front deck clips down to meet the deck and tighten the holding screws.
11. Pull upper heating unit frames as far forward as possible and centralize them from side to side.
12. All sections should seat firmly together. Ensure that all oven sections are level so your oven operates properly. If not level, shim one or more leg.

OVEN FLUE VENTING (ALL OVENS)

DO NOT connect the oven flue pipe directly to a flue or vent system since it will cause uneven heating and greatly reduce oven efficiency. If you want an outside flue connection, provide a hood spaced above the top of the oven flue to prevent a direct pull of air thru the oven.

ELECTRICAL CONNECTIONS (CN40 Series)

IMPORTANT PRECAUTIONS

Installation: to avoid electrical hazard the oven must be connected and grounded to the grounding electrode conductor in accordance with the National Electrical Code and your local electrical code. Here's how.

1. MATCH VOLTAGE: before connecting power to oven, ensure that line voltage at point of installation matches

nameplate voltage rating of oven(s). Failure to do so can cause damage to oven components and affect performance. Such malfunctions are not covered by warranty.

2. FUSING: the 208V & 230V ovens and broilers are fused. 460V ovens & 460V broilers are not fused. In either case the oven or stacked system must still be connected to a circuit having the proper fuses or circuit breaker, sized in accordance with requirements of the National Electric Code and your local electrical code.
3. DISCONNECT: installer must provide a means for disconnecting oven or stacked system from electric power supply. Disconnect must be in accordance with National Electric Code 422-23 and your local electrical code.
4. GROUNDING: oven must be grounded in accordance with requirements of National Electrical Code and your local electrical code. A grounding lug is provided adjacent to conduit hole in bottom of terminal compartment.

SUPPLY CONNECTIONS

1. The terminal compartment is located in oven's lower right front side with a terminal block, equipment grounding lug, and knockouts provided in oven's bottom and back.
2. In a stacked system, terminal block in bottom oven section serves as field terminal block for complete stacked system. Note that total connected load of a stacked oven system is comprised of the sum of the loads of stacked sections. See Fig. 1 and Table 1 for knockout sizes and locations.
3. Use power supply conductors (line wires) made of copper with at least 75C (167°F) temperature rating and sized in accordance with National Electrical Code and your local code for the voltage and load of the oven or of stacked system.

HOOKING UP A SINGLE CN40 OVEN

1. See Fig. 9 (208 or 230VAC) or Fig. 10 (460V) for correct wiring diagram. Note all CN40 ovens are wired single phase at factory and each oven is single phase in its own operation.
2. Open small access door on oven lower right front by loosening single screw at door top. Door is hinged at bottom.
3. Select proper size knockout in bottom or back to match conduit size and remove the knockout plug by twisting it.
4. Connect conduit to knockout.
5. Pull line wires through conduit and connect to terminal block terminals per appropriate voltage and phase wiring diagram.
6. Connect grounding electrode to oven grounding lug attached to oven bottom. Grounding lug is marked label "GND" adjacent to it.

Model Series	Distance in Inches From Front	Distance in Inches From Right Side	Separate 110-V Line Required?
CN40	4-5/16	4-9/16	No
CN50	4.0	3-3/4	No
CN60	4.0	3-3/4	No
CN70	4.0	3-3/4	No
CN74	4.0	3-3/4 – Power Line Conduit	
	7.0	3-3/4 – Light Circuit Conduit	Yes
CN78	4.0	3-3/4 – Power Line Conduit	
	7.0	3-3/4 – Light Circuit Conduit	Yes

TABLE 2. – CONDUIT ENTRANCE LOCATIONS (Facing Oven)

7. Check routing of supply lines to assure that they are clear of oven door lever and cable.
8. After making electrical connections and checking connection security and wire routing, close and secure access door.

HOOKING UP A TWO/THREE STACKED OVEN SYSTEM

First stack ovens per instructions in paragraphs numbered 4 through 6 and then make electrical connections as follows:

1. See Fig 9 (208 or 230VAC) or Fig.10 (460V AC) for correct wiring diagram. Note all CN 40 ovens are wired single phase at factory and each oven is single phase in its own operation.
2. In a stacked oven system, only one set of electrical supply connections are made to terminal block in bottom oven. Stacked ovens are connected to terminal block in bottom oven by interconnecting leads supplied with each oven. Installer attaches and routes these interconnections between oven terminal blocks per appropriate voltage and phase wiring diagrams.
3. On each oven, open small access door on oven lower right front by loosening single screw at door top. The door is hinged at bottom. In bottom oven of stacked system, select proper size knockout in oven bottom or back to match conduit size and remove knockout plug by twisting it.
4. Connect the conouit to knockout.
5. In second and third stacked ovens, remove small 1-1/4 x 3-7/8 cover attached to oven bottom by two screws. Discard cover(s) and screws. Note: leave cover in bottom oven in place. Removal of this cover exposes elliptical hole in bottom making a passageway for routing oven interconnections.
6. a. two sets of interconnecting leads numbered 14 & 15 (short ones) and 16 & 17 (long ones) are shipped with each 208 & 230V CN40 oven section. Two sets of interconnecting leads numbered 12 & 13 (short ones) and 14 & 15 (long ones) are shipped with each 460V oven section. One end of each lead is stripped and left straight while the other end is stripped and looped for a 1/4-inch-diameter stud connection. A wire terminal may be crimped on the wire in place of the loop.

   b. the short-length leads are used for interconnections between first stacked oven and bottom oven for 2 stacked sections or between middle-stacked oven and bottom oven for 3 stacked sections.

   c. the long length leads are used for interconnections between top oven and bottom oven for 3 stacked sections. Discard leads not used.

   d. make interconnecting lead connections to proper oven terminal post per appropriate voltage and phase wiring diagram for type of stacking arrangement.

   e. Straight stripped end of interconnecting leads are attached to pressure lugs in stacked oven(s). Remaining part of interconnecting leads are routed through elliptical holes in oven bottom and top of lower oven(s) and into wiring compartment of bottom oven. Before slipping looped wire over stud terminal post in the bottom oven, add a narrow flat washer from furnished envelope. If another interconnecting lead is to be connected to this same post, add it before adding second narrow flat washer and nut-washer assembly from same envelope. Make remaining interconnections to terminal block studs in bottom oven in same way. Tighten all nuts added and be careful not to move pressure terminal lugs.

   f. Route interconnecting leads to have them tension free at terminal post connections and away from the oven door lever and cable in each oven section.
7. Pull line wires through conduit and connect to terminal block terminal lugs in bottom oven per appropriate voltage and phase wiring diagram.

MODEL	TOTAL KW CONN.	3-PHASE LOADING KW Per Phase						NOMINAL AMPS PER LINE WIRE											
								3-PHASE									1 PHASE		
		208/230 V.			460V			208V			230V			460V			208V	230V	460V
		X-Y	Y-Z	X-Z	X-Y	Y-Z	X-Z	X	Y	Z	X	Y	Z	X	Y	Z			
CN41	6	0.0	0.0	6.0	0.0	0.0	6.0	28.0	0.0	28.8	26.1	0.0	26.1	13.0	0.0	13.0	28.8	26.1	13.0
CN42	12	0.0	6.0	6.0	0.0	6.0	6.0	28.8	28.8	49.8	26.1	26.1	45.1	22.6	13.0	13.0	57.7	52.2	26.1
CN43	18	6.0	6.0	6.0	6.0	6.0	6.0	49.8	49.8	49.8	45.1	45.1	45.1	22.6	22.6	22.6	86.5	78.3	39.1

Standard Voltages – 208, 230 or 460 AC 1 or 3 phase (CN41 - single phase only)

MODEL	TOTAL KW CONN.	3-PHASE LOADING KW PER PHASE			NOMINAL AMPS PER LINE WIRE											
					3-PHASE									1 PHASE		
					208V			240V			480V			208V	240V	480V
		X-Y	Y-Z	X-Z	X	Y	Z	X	Y	Z	X	Y	Z			
CN44	12.4	5.2	3.6	3.6	36.8	36.8	30.0	32.0	32.0	26.1	16.0	16.0	13.0	59.5	51.7	25.8
CN45	18.6	6.2	6.2	6.2	51.6	51.6	51.6	44.7	44.7	44.7	22.3	22.3	22.3	89.4	77.5	38.8
CN46	18.6	6.2	6.2	6.2	51.6	51.6	51.6	44.7	44.7	44.7	22.3	22.3	22.3	89.4	77.5	38.8

Standard Voltages – 208, 240 or 480 AC, 1 or 3 phase 60 HZ

MODEL	TOTAL KW CONN.	3-PHASE LOADING KW PER PHASE			NOMINAL AMPS PER LINE WIRE											
					3 PHASE									1 PHASE		
					208V			240V			480V			208V	240V	480V
		X-Y	Y-Z	X-Z	X	Y	Z	X	Y	Z	X	Y	Z			
CN51,CN71	7.2	3.6	0.0	3.6	30.0	17.3	17.3	26.0	15.0	15.0	13.0	7.5	7.5	34.6	30.0	15.0
CN52,CN72	14.4	7.2	3.6	3.6	45.8	45.8	30.0	39.7	39.7	26.0	19.7	19.7	13.0	69.2	60.0	30.0
CN53,CN73	21.6	7.2	7.2	7.2	60.0	60.0	60.0	51.9	51.9	51.9	26.0	26.0	26.0	103.8	90.0	45.0

Standard Voltages – 208, 240 or 480V AC, 1- or 3-Phase. 60 HZ

MODEL	TOTAL KW CONN.	3-PHASE LOADING KW PER PHASE			NOMINAL AMPS PER LINE WIRE											
					3-PHASE									1 PHASE		
					208V			240V			480V			208V	240V	480V
		X-Y	Y-Z	X-Z	X	Y	Z	X	Y	Z	X	Y	Z			
CN61	6.2	2.6	0.0	3.6	26.0	12.5	17.3	22.4	10.8	15.0	11.2	5.4	7.5	29.8	27.0	13.5
CN62	12.4	5.2	3.6	3.6	36.8	36.8	30.0	32.0	32.0	26.0	16.0	16.0	13.0	59.6	53.9	27.0
CN63	18.6	6.2	6.2	6.2	51.6	51.6	51.6	44.7	44.7	44.7	22.3	22.3	22.3	89.4	81.0	40.5

Standard Voltages – 208, 240 or 480 AC 1 or 3 phase, 60 HZ.

MODEL	TOTAL KW CONN.	3-PHASE LOADING KW PER PHASE			NOMINAL AMPS PER LINE WIRE											
					3 PHASE									1 PHASE		
					208V			240V			480V			208V	240V	480V
		X-Y	Y-Z	X-Z	X	Y	Z	X	Y	Z	X	Y	Z			
CN75	7.5	3.2	0.0	4.3	31.4	15.4	20.7	27.2	13.3	17.9	13.6	6.67	8.96	36.1	31.2	15.6
CN76	15.0	6.4	4.3	4.3	44.9	44.9	35.8	38.8	38.8	30.6	19.4	19.4	15.2	72.2	62.6	31.3
CN77	22.5	7.5	7.5	7.5	62.5	62.5	62.5	54.1	54.1	54.1	27.0	27.0	27.0	108.3	93.8	46.0

Standard Voltages – 208, 240 or 480V AC 1- or 3-Phase, 60 HZ. Separate 115V line required for deck light & control circuit.

MODEL	TOTAL KW CONN.	3-PHASE LOADING KW PER PHASE			NOMINAL AMPS PER LINE WIRE											
					3 PHASE									1 PHASE		
					208V			240V			480V			208V	240V	460V
		X-Y	Y-Z	X-Z	X	Y	Z	X	Y	Z	X	Y	Z			
CN79	11.0	4.7	0.0	6.3	46.0	22.6	30.3	39.9	19.6	26.3	19.9	9.8	13.1	52.8	45.8	22.9
CN80	22.0	9.4	6.3	6.3	65.6	65.8	52.5	57.0	57.0	45.5	28.5	28.5	22.7	105.6	91.6	45.8
CN81	33.0	11.0	11.0	11.0	91.7	91.7	91.7	79.3	79.3	79.3	39.6	39.6	39.6	158.4	137.4	68.7

Standard Voltages – 208, 240 or 480 AC. Single or Three Phase, 60 HZ. Separate 115 V line required for deck light & control circuit.

TABLE 3 – ELECTRICAL DATA

8. Connect grounding electrode conductor to oven grounding lug attached to oven bottom. Note: grounding of each stacked section is accomplished thru a pin in the bottom of stacked oven in contact with an attached grounding strap in underside of top of lower oven.
9. Check routing of supply lines to assure that they are clear of oven door lever and cable.
10. After making electrical connections, and checking connection security and wire routing, close and secure access door of each oven section.

ELECTRICAL CONNECTIONS (CN50, CN60, CN70, CN74, CN78 SERIES)

1. The power line conduit(s) enter the oven assembly at the bottom of the base section as shown in Table 2. Leave sufficient wire length beyond the conduit to extend to the terminal block in the base section. Where a separate 110-120 volt line is needed for deck lights, and control circuit (CN74&78) leave enough wire beyond the conduit to extend to the terminal block in the lower oven. See Table 2 for conduit entrance locations and Table 3 for phase loading.

NOTE: *If the ovens are already stacked when power line conduit is to be installed, it may be necessary to either jack up the oven assembly or remove the individual ovens. This may be avoided by using flexible conduit or by following the suggestion in Fig. 20.*

2. Drop the coiled wires from each oven section to the base. These wires are accessible through the access door in each oven section. See Fig. 8.
3. Refer to wiring diagrams (Fig. 11 through Fig. 19) for applicable model oven and make wiring connections.

   Each base has a grounding lug for the equipment ground. Run ground wire up to each oven as indicated on associated wiring diagram.

ELECTRICAL CHECK (ALL OVENS)

After all connections have been made, the oven should be checked electrically to ensure all wiring is correct and that the oven functions properly.

1. Turn on power supply to the ovens.
2. Turn top and bottom (pull to turn) heat switches to the high position. Turn circuit breaker switch (if provided) and "On-off" switch (if provided) to the "on" position.
3. Set the thermostat control knob to 250 F setting.
4. Oven should now be operating. Indicator light on switch panel should be on.
5. Check phase power and currents using Table 3.
6. To turn off the oven, turn both heat switches and the thermostat control knob to the "off" position or flip circuit breaker to "off" if applicable.
7. Check for proper grounding. **Device(s) must be grounded in accordance with requirements of the National Electrical Code or applicable local code.**

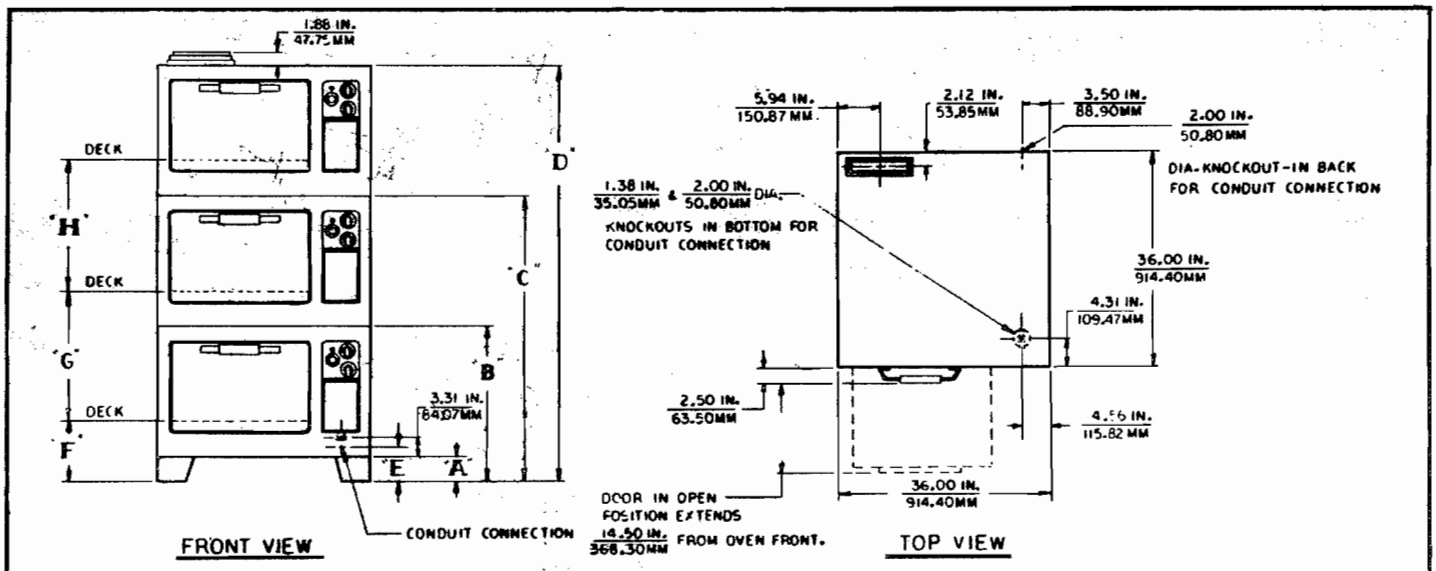
STEAM CONNECTIONS (CN74, CN78 SERIES)

These models have interior piping for connecting standard exterior steam connections. Standard outside steam connections may be ordered extra and assembled by the customer. For CN50 & 70 series, Steam Connections are optional extra.

See Fig. 19 for details of assembly.

CAUTION: *in connecting steam, take care that no water enters the oven thru steam connections. The following precautions are necessary prior to and while admitting steam into oven:*

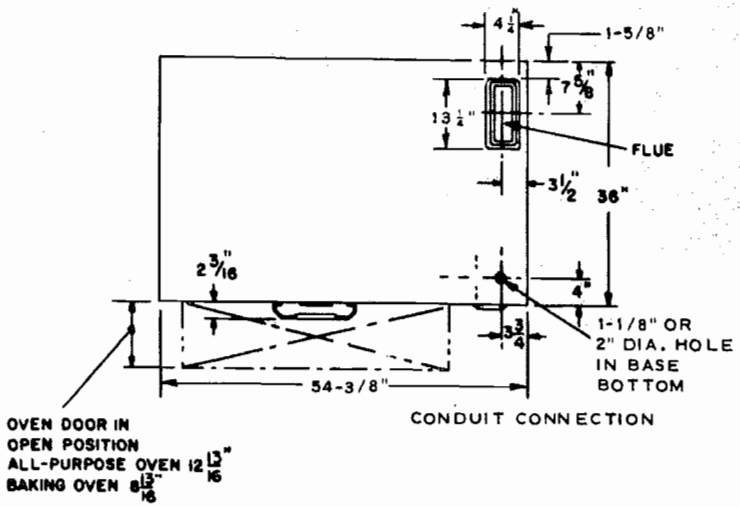
1. *Make sure that outside steam piping is dry (clear of water).*
2. *Supply line must be trapped or drained.*
3. *Steam valves must be closed tightly whenever oven is not using steam.*
4. *Make sure that valves do not leak.*
5. *Make sure that steam or water does not drip into an idle oven (rust/corrosion could damage heating units and other metal parts).*
6. *Follow instruction tag (attached to outside steam connections).*



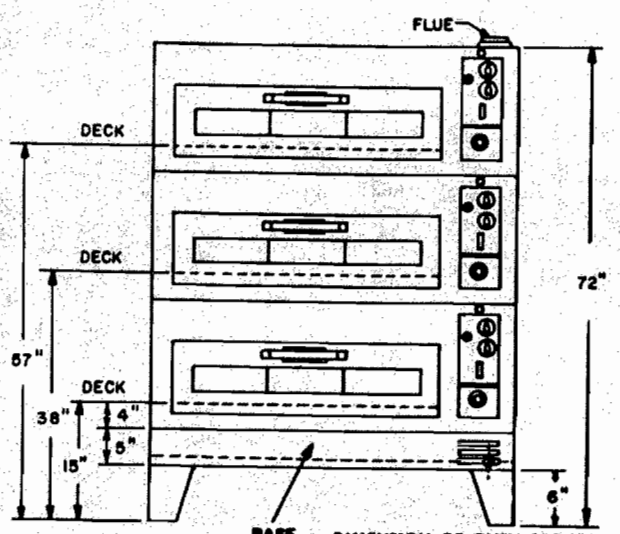
MODEL	SECTIONS	DIMENSIONS IN INCHES (IN.) AND MILLIMETERS (MM)							
		"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
CN41	1	19.00 IN. 482.60MM	41.00 IN. 1041.40MM	—	—	20.25 IN. 514.35MM	25.00 IN. 635.00MM	—	—
CN42	2	11.00 IN. 279.40MM	—	55.00 IN. 1397.00MM	—	12.25 IN. 311.15MM	17.00 IN. 431.80MM	22.00 IN. 558.80MM	—
CN43	3	6.00 IN. 152.40MM	—	—	72.00 IN. 1828.80MM	7.25 IN. 184.15MM	12.00 IN. 304.80MM	22.00 IN. 558.80MM	22.00 IN. 558.80MM

MODEL	DIMENSIONS OF LARGEST PIECE
CN41	22.38 IN. X 36.00 IN. X 38.50 IN. 568.45MM X 914.40MM X 977.90MM
CN42	22.88 IN. X 36.00 IN. X 38.50 IN. 581.15 MM X 914.40MM X 977.90MM
CN43	22.88 IN. X 36.00 IN. X 38.50 IN. 581.15MM X 914.40MM X 977.90MM

FIG. 1 – FLOOR PLAN - CN40 SERIES

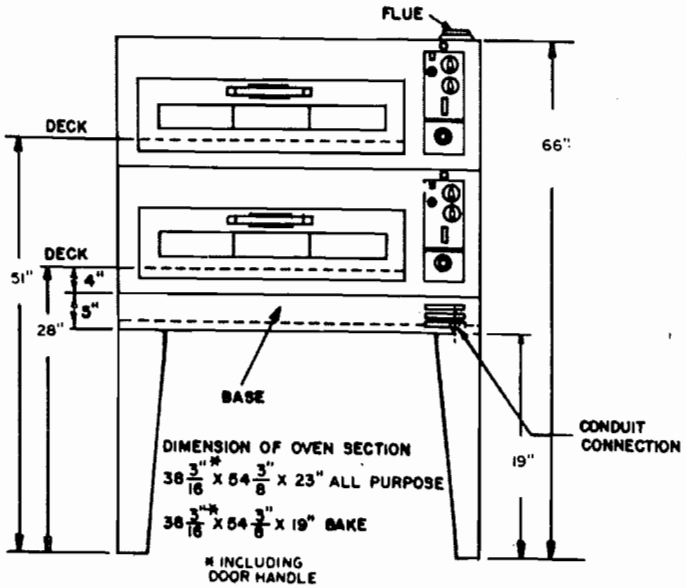


CN46 TOP VIEW (CN44 & CN45 are typical)



DIMENSION OF OVEN SECTION
38 3/16" x 54 3/8" x 23" ALL PURPOSE
38 3/16" x 54 3/8" x 19" BAKE

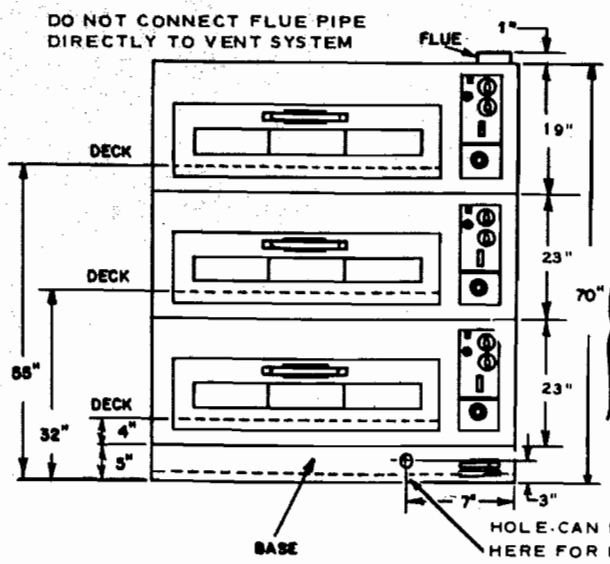
FRONT VIEW



DIMENSION OF OVEN SECTION
38 3/16"* X 54 3/8" X 23" ALL PURPOSE
38 3/16"* X 54 3/8" X 19" BAKE

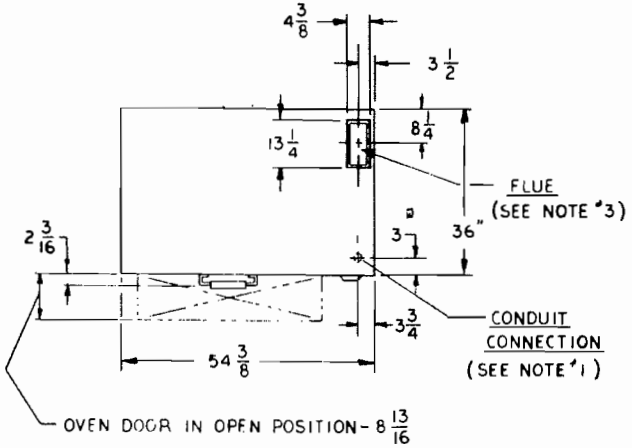
* INCLUDING DOOR HANDLE

FRONT VIEW



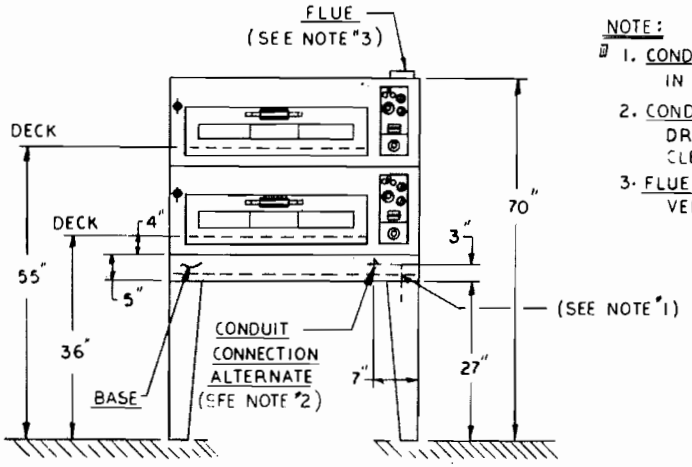
FRONT VIEW

FIG. 2 – FLOOR PLANS - CN44, 45, 46



CN51 & CN71 TOP VIEW

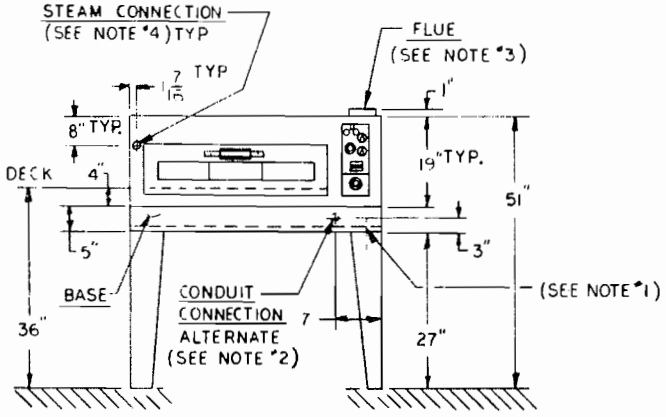
(CN52, CN72 & CN53, CN73 ARE TYPICAL)



CN52 & CN72 FRONT VIEW

NOTE:

1. CONDUIT CONNECTION - 1 3/32, 1 3/8 & 1 3/4 DIA. KNOCKOUTS IN BASE BOTTOM.
2. CONDUIT CONNECTION ALTERNATE - HOLE CAN BE DRILLED HERE FOR CONNECTION IN THE REAR TO CLEAR THE FLUE.
3. FLUE - DO NOT CONNECT FLUE PIPE DIRECTLY TO VENT SYSTEM.

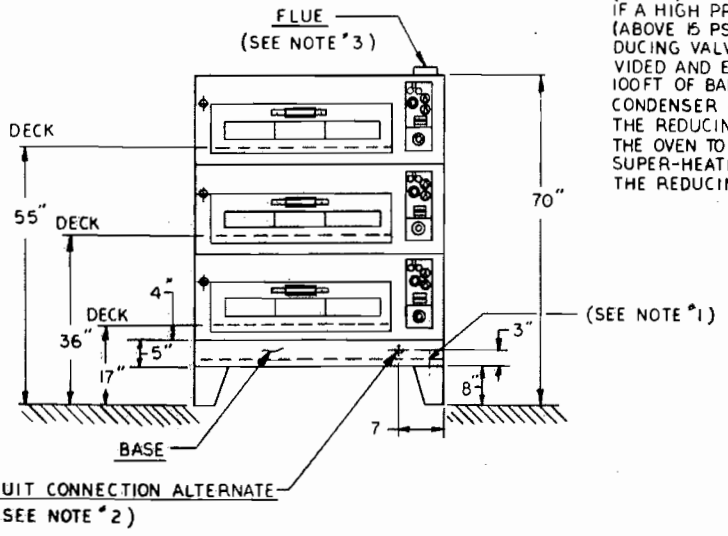


DIMENSIONS OF EACH OVEN SECTION

38 3/16 X 54 3/8 X 19"

* INCLUDING DOOR HANDLE

CN51 & CN71 FRONT VIEW



CN53 & CN73 FRONT VIEW

USE SATURATED OR SLIGHTLY PRIMED LOW PRESSURE STEAM (5-7PSI) DO NOT EXCEED 10PSI IF A HIGH PRESSURE BOILER (ABOVE 15 PSI) IS USED, A REDUCING VALVE SHOULD BE PROVIDED AND EITHER AT LEAST 100FT OF BARE PIPE OR A CONDENSER USED BETWEEN THE REDUCING VALVE AND THE OVEN TO OFFSET THE SUPER-HEATING EFFECT OF THE REDUCING VALVE.

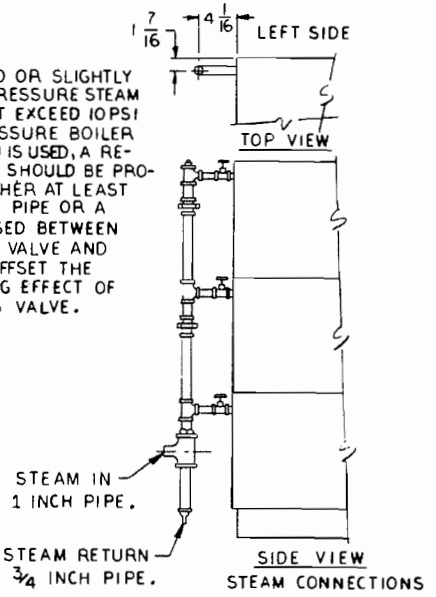
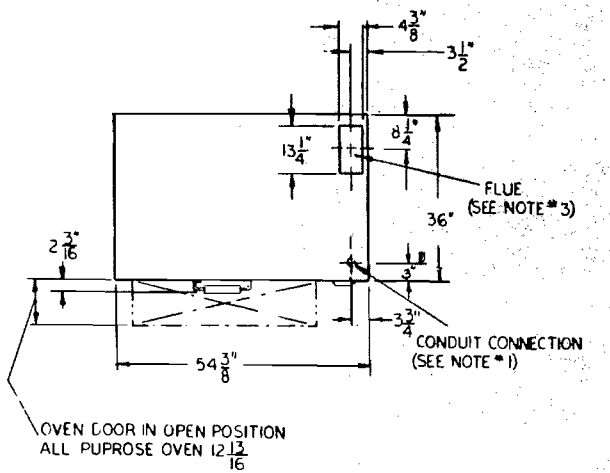
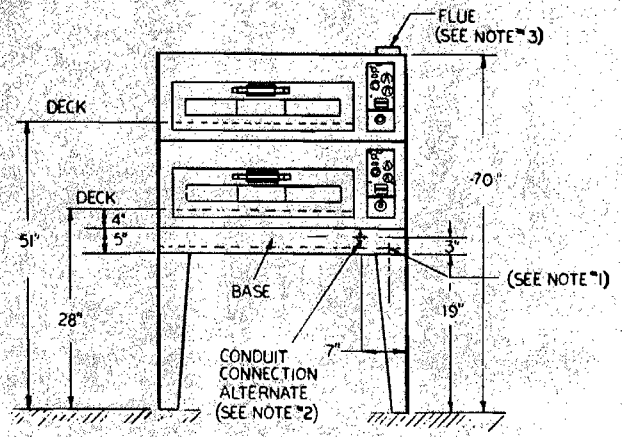


FIG. 3 – FLOOR PLANS CN51, 52, 53, CN71, 72, 73



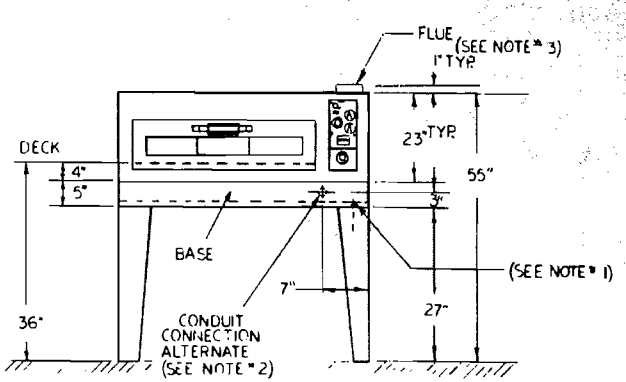
CN61 TOP VIEW (CN62 & CN63 ARE TYPICAL)



CN62 FRONT VIEW

NOTE:

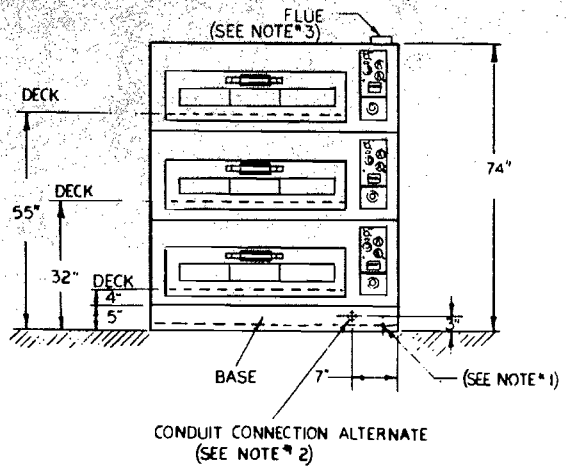
* 1. CONDUIT CONNECTION: 1 3/32, 1 3/8 & 1 3/4" DIA. KNOCKOUTS IN BASE BOTTOM.
2. CONDUIT CONNECTION-ALTERNATE: HOLE CAN BE DRILLED HERE FOR CONNECTION IN THE REAR TO CLEAR THE FLUE.
3. FLUE: DO NOT CONNECT FLUE PIPE DIRECTLY TO VENT SYSTEM.



DIMENSIONS OF EACH OVEN SECTION
36 5/16" X 54 3/8 X 23"

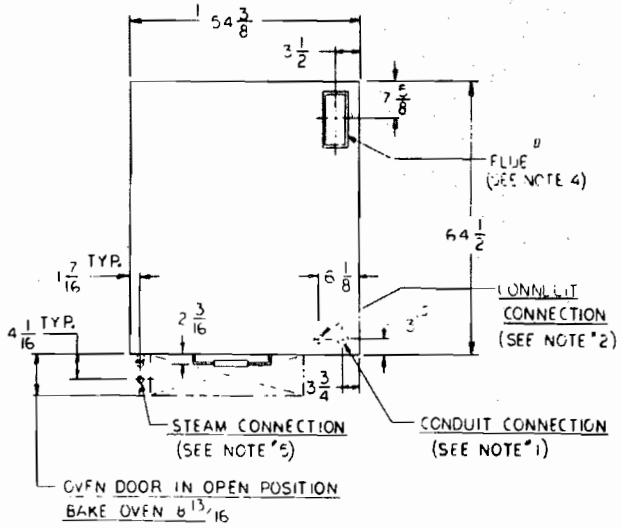
* INCLUDING DOOR HANDLE

CN61 FRONT VIEW

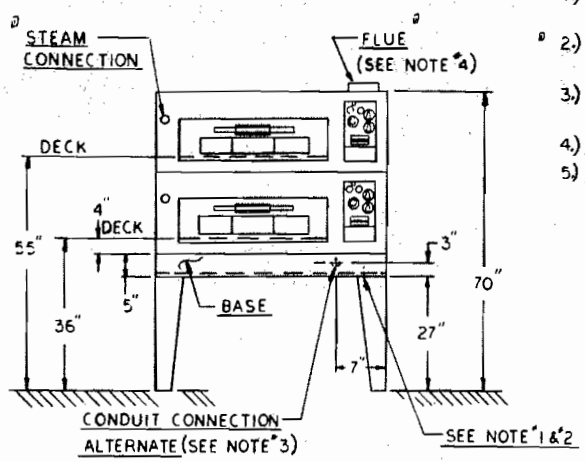


CN63 FRONT VIEW

FIG. 4 – FLOOR PLANS CN61, 62, 63



CN75- TOP VIEW (CN76 & 77 ARE TYPICAL)

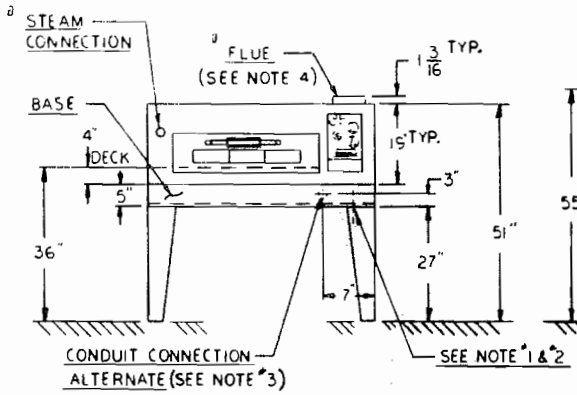


CN76 - FRONT VIEW

NOTE:

1. CONDUIT CONNECTION-POWER SUPPLY: 1 3/32, 1 3/8, 1 3/4 Ø 2" DIA. KNOCKOUTS IN BASE BOTTOM.
2. CONDUIT CONNECTION-LAMP CIRCUIT: 7/8 DIA. KNOCKOUT IN BASE BOTTOM.
3. CONDUIT CONNECTION-ALTERNATE: HOLE CAN BE DRILLED HERE FOR CONNECTION IN THE REAR TO CLEAR THE FLUE.
4. FLUE: DO NOT CONNECT FLUE PIPE DIRECTLY TO VENT SYSTEM.
5. STEAM CONNECTION: EACH OVEN SECTION PROVIDED WITH INTERNAL STEAM CONNECTIONS. OUTER STEAM CONNECTIONS ARE AN OPTIONAL EXTRA. (STEAM PRESSURE AT OVEN SHOULD BE 5-7PSI).

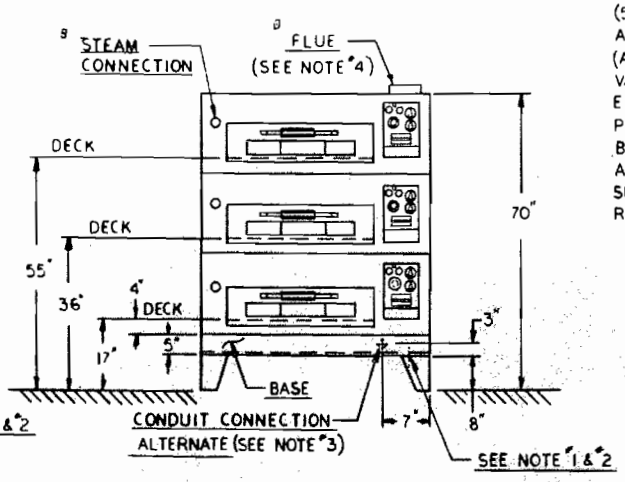
MODEL	"A" IN.	"B" IN.
CN75	16 7/8	31 7/8
CN76	16 7/8	31 7/8
CN77	7 3/8	22 3/8



DIMENSIONS OF EACH OVEN SECTION
66 11/16" X 54 3/8 X 19"

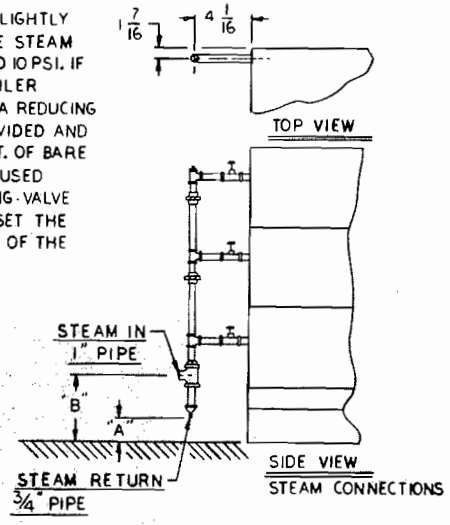
* INCLUDING DOOR HANDLE

CN75 - FRONT VIEW



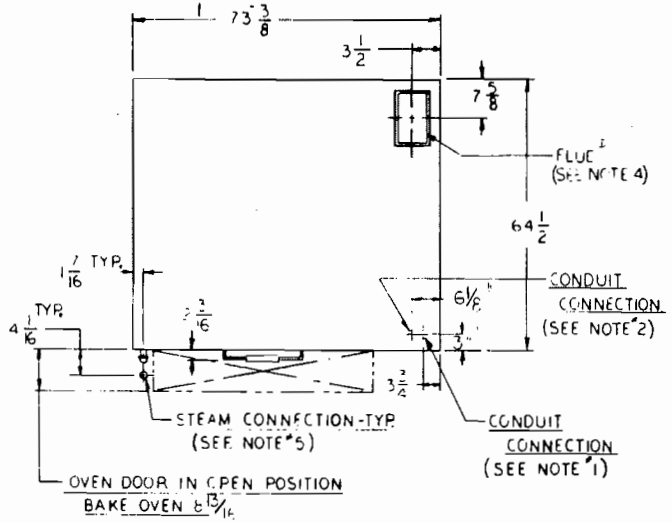
CN77 - FRONT VIEW

USE SATURATED OR SLIGHTLY PRIMED LOW PRESSURE STEAM (5-7PSI) DO NOT EXCEED 10 PSI. IF A HIGH PRESSURE BOILER (ABOVE 15 PSI) IS USED, A REDUCING VALVE SHOULD BE PROVIDED AND EITHER AT LEAST 100FT. OF BARE PIPE OR A CONDENSER USED BETWEEN THE REDUCING VALVE AND THE OVEN TO OFFSET THE SUPER-HEATING EFFECT OF THE REDUCING VALVE.

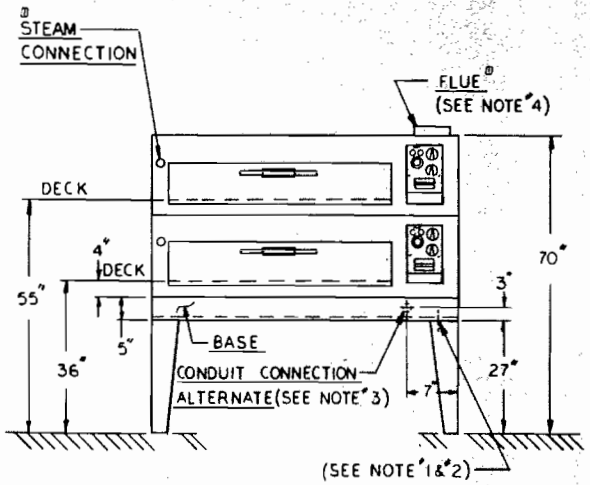


STEAM CONNECTIONS

FIG. 5 – FLOOR PLANS CN75, 76, 77



CN79-TOP VIEW (CN80 & CN81 ARE TYPICAL)



CN80-FRONT VIEW

NOTE:

1.- CONDUIT CONNECTION-POWER SUPPLY: 1 3/32, 1 3/8, 1 3/4 & 2" DIA. KNOCKOUTS IN BASE BOTTOM.

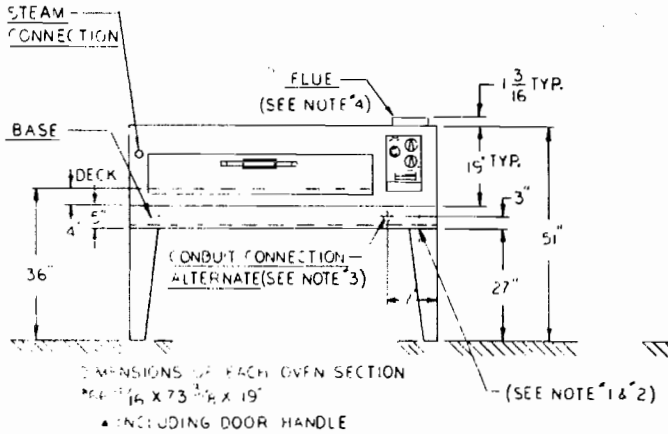
2.- CONDUIT CONNECTION-LAMP CIRCUIT: 7/8 DIA. KNOCKOUTS IN BASE BOTTOM.

3.- CONDUIT CONNECTION-ALTERNATE: HOLE CAN BE DRILLED HERE FOR CONNECTION IN THE REAR TO CLEAR THE FLUE.

4.- FLUE: DO NOT CONNECT FLUE PIPE DIRECTLY TO VENT SYSTEM.

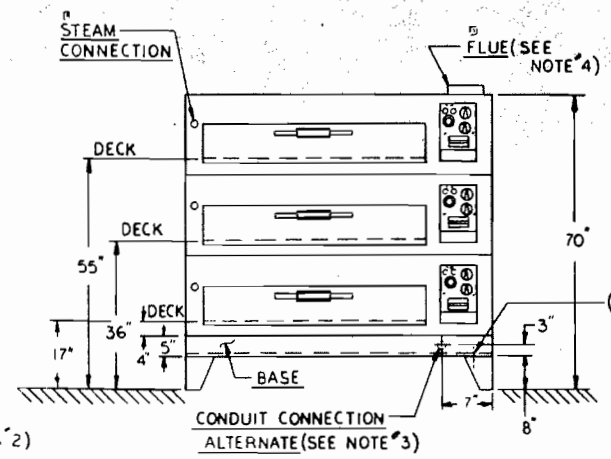
5.- STEAM CONNECTION: EACH OVEN SECTION PROVIDED WITH INTERNAL STEAM CONNECTIONS. OUTER STEAM CONNECTIONS ARE AN OPTIONAL EXTRA. (STEAM PRESSURE AT OVEN SHOULD BE 5-7 PSI).

MODEL	"A" IN.	"B" IN.
CN79	16 7/8	31 7/8
CN80	16 7/8	31 7/8
CN81	7 3/8	22 3/8



DIMENSIONS OF EACH OVEN SECTION
[illegible] 16 X 73 3/8 X 19"
* INCLUDING DOOR HANDLE

CN79-FRONT VIEW



CN81-FRONT VIEW

USE SATURATED OR SLIGHTLY PRIMED LOW PRESSURE STEAM (5-7PSI) DO NOT EXCEED 10 PSI IF A HIGH PRESSURE BOILER (ABOVE 15PSI) IS USED, A REDUCING VALVE SHOULD BE PROVIDED AND EITHER AT LEAST 100FT. OF BARE PIPE OR A CONDENSER USED BETWEEN THE REDUCING VALVE AND THE OVEN TO OFFSET THE SUPER-HEATING EFFECT OF THE REDUCING VALVE.

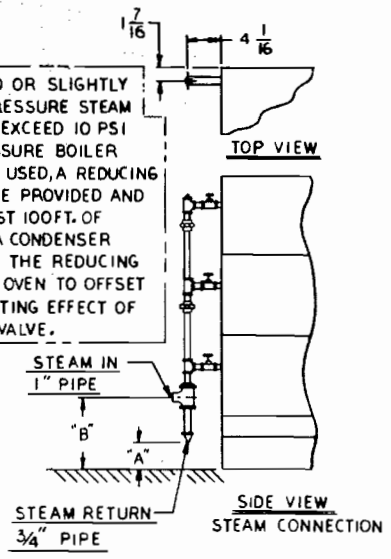
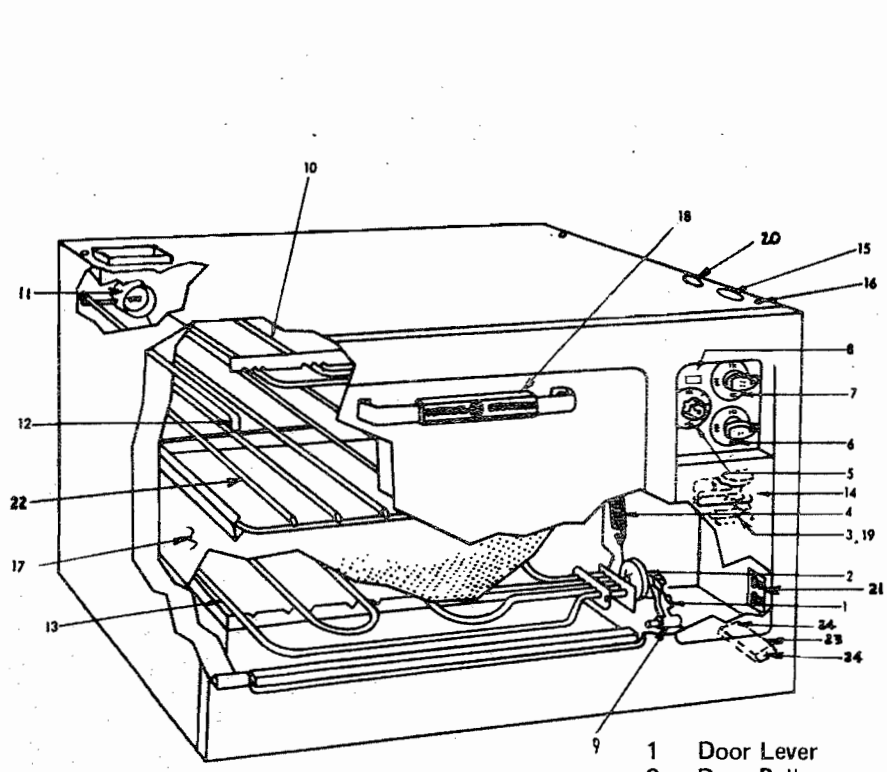
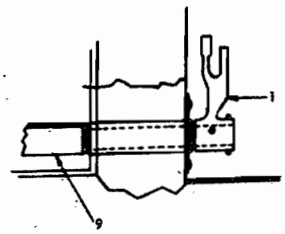


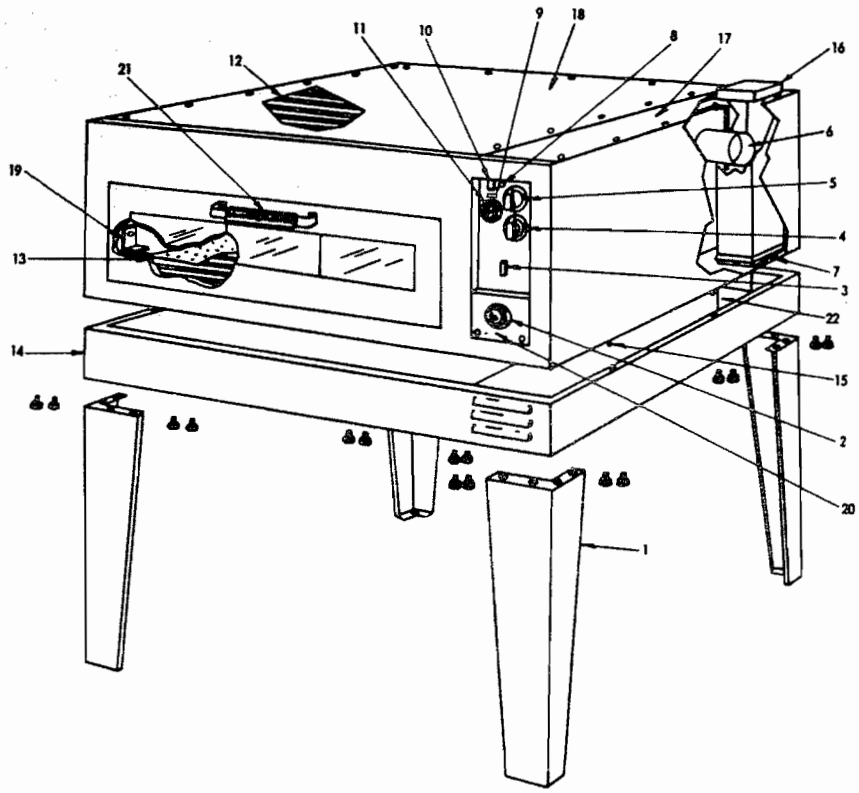
FIG. 6 — FLOOR PLANS CN79, 80, 81





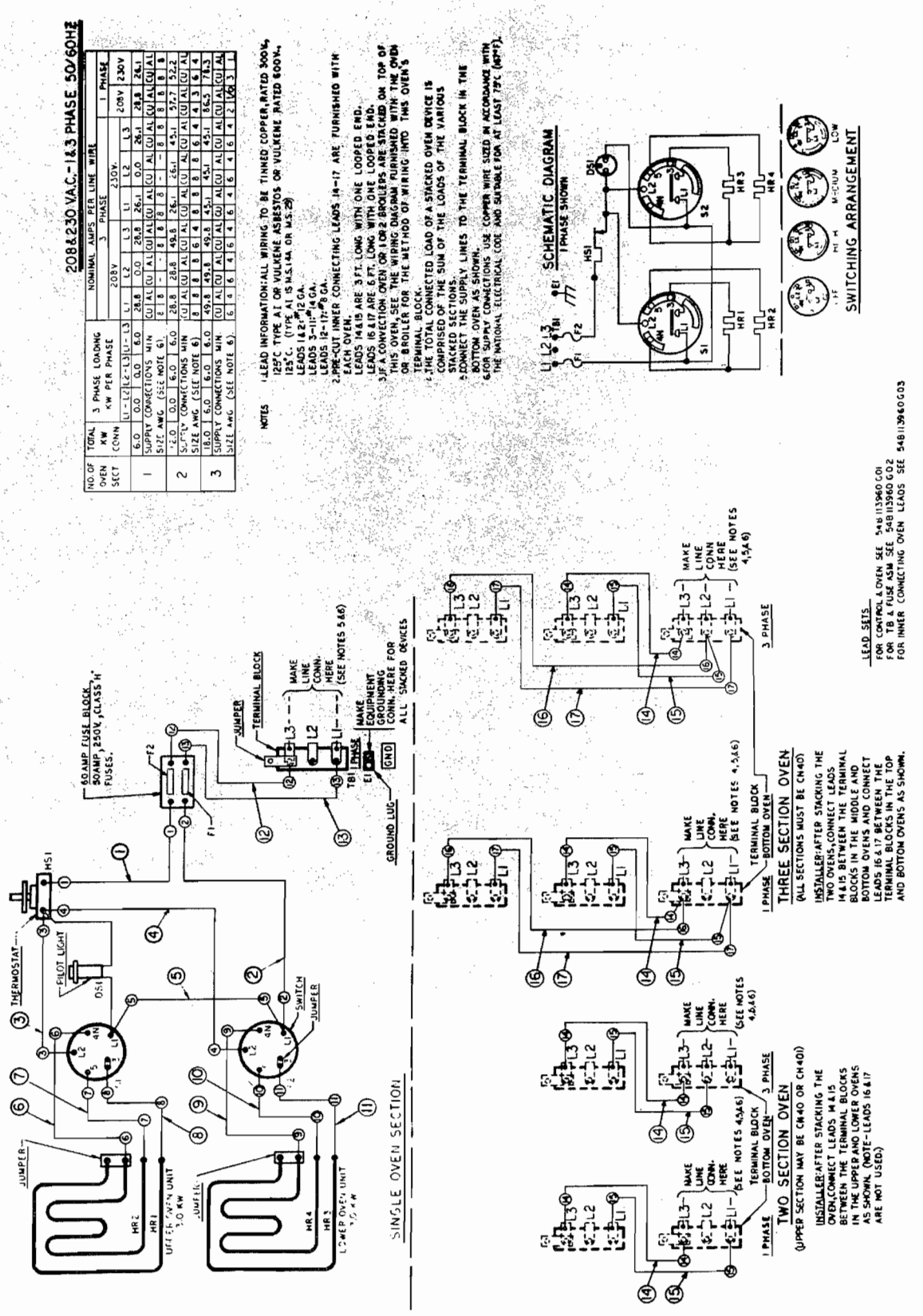
1 Door Lever
2 Door Pulley
3 Fuse Block (208 & 240V only)
4 Door Spring
5 Thermostat
6 Lower Heat Switch
7 Upper Heat Switch
8 Signal Light
9 Door Shaft
10 Upper Heating Unit
11 Butterfly Damper
12 Damper Control Rod
13 Lower Heating Unit
14 Access Door
15 Knockout For Wires (for Stacked Ovens)
16 Locating Stop Holes (4) (for Stacked Devices)
17 Oven Deck
18 Oven Door Handle
19 Fuses – (208 & 230 only)
20 Knockout for Wires (for Stacked Broilers)
21 Field Terminal Block
22 Rack
23 Cover
24 Screw

FIG. 7 – MODEL CN40 OVEN ASSEMBLY, SHOWING CONTROLS AND LOCATION OF COMPONENTS



1 Leg
2 Timer
3 Circuit Breaker (when used)
4 Lower Heat Switch
5 Upper Heat Switch
6 Butterfly Damper
7 Flue Flange
8 Light Switch
9 Signal Light
10 Damper Control Rod
11 Thermostat
12 Upper Heating Unit
13 Lower Heating Unit
14 Base
15 Locating Stud
16 Flue Trim
17 Cover
18 Top
19 Deck Clamps
20 Access Door
21 Door Handle
22 Flue Riser

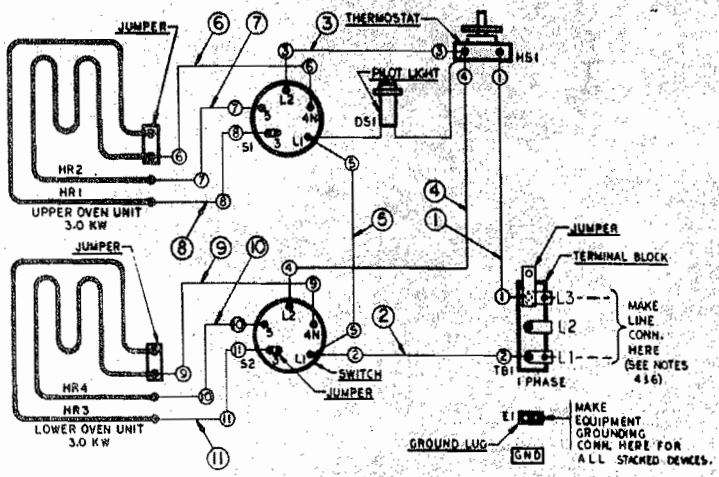
FIG. 8 – TWO-PAN OVEN ASSEMBLY, MODEL CN51 & CN71 SHOWN INCLUDE BASE AND LEGS



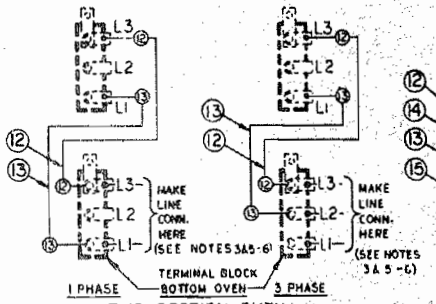
NO. OF OVEN SECT	TOTAL KW CONN	3 PHASE LOADING KW PER PHASE	NOMINAL AMPS PER LINE WIRE									
			3 PHASE 208V			3 PHASE 230V			1 PHASE 208V	1 PHASE 230V		
		L1-L2/L2-L3/L1-L3	L1	L2	L3	L1	L2	L3				
1	6.0	6.0 / 0.0 / 6.0	28.8	0.0	28.8	26.1	0.0	26.1	28.8	24.1		
	SUPPLY CONNECTIONS MIN		CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
	SIZE AWG (SEE NOTE 6)		8	8	-	8	8	-	8	8	8	8
2	12.0	6.0 / 0.0 / 6.0	28.8	28.8	49.8	26.1	26.1	45.1	57.7	52.2		
	SUPPLY CONNECTIONS MIN		CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
	SIZE AWG (SEE NOTE 6)		8	8	6	8	8	6	4	3	6	4
3	18.0	6.0 / 6.0 / 6.0	49.8	49.8	49.8	45.1	45.1	45.1	86.5	74.3		
	SUPPLY CONNECTIONS MIN		CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
	SIZE AWG (SEE NOTE 6)		6	4	6	4	6	4	6	4	2	1/0	3	1

FIG. 9 – WIRING DIAGRAM, MODEL CN40, 208/230 VOLTS, SINGLE OR THREE-PHASE CONNECTIONS. – 54D113959

FIG. 10 – WIRING DIAGRAM, MODEL CN40, 460 VOLTS, 50/60 Hz SINGLE- OR THREE-PHASE CONNECTIONS 54D113961



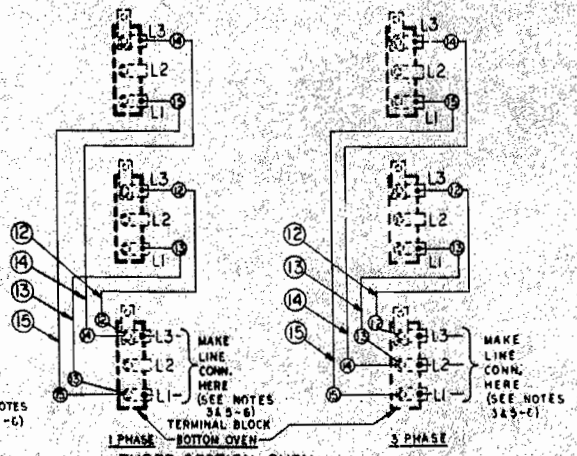
SINGLE OVEN SECTION



TWO SECTION OVEN

(UPPER SECTION MAY BE CN40 OR CN401)

INSTALLER: AFTER STACKING THE OVEN, CONNECT LEADS 12 & 13 BETWEEN THE TERMINAL BLOCKS IN THE UPPER AND LOWER OVENS AS SHOWN. (NOTE - LEADS 14 & 15 ARE NOT USED.)



THREE SECTION OVEN

(ALL SECTIONS MUST BE CN40)

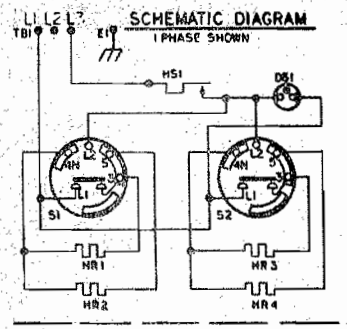
INSTALLER: AFTER STACKING THE TWO OVENS, CONNECT LEADS 12 & 13 BETWEEN THE TERMINAL BLOCKS IN THE MIDDLE AND BOTTOM OVENS AND CONNECT LEADS 14 & 15 BETWEEN THE TERMINAL BLOCKS IN THE TOP AND BOTTOM OVENS AS SHOWN.

LEAD SETS
FOR CONTROL & OVEN SEE 54B113962 G01
FOR TB & FUSE ASM SEE 54B113962 G02
FOR INNER CONNECTING OVEN LEADS SEE 54G113962 G03

460 V.A.C. – 1 & 3 PHASE 50/60 HZ

NO. OF OVEN SECTIONS	TOTAL KW CONN.	3 PHASE LOADING KW PER PHASE			NOMINAL AMPS PER LINE WIRE (460V)						1 PHASE	
		L1 – L2	L2 – L3	L1 – L3	3 PHASE L1		L2		L3			
1	6.0	0.0	0.0	6.0	13.05		0.0		13.05		13.05	
	SUPPLY CONNECTIONS MIN. SIZE AWG (SEE NOTE 6).				CU 12	AL 10	CU -	AL -	CU 12	AL 10	CU 12	AL 10
2	12.0	0.0	6.0	6.0	22.6		13.05		13.05		26.1	
	SUPPLY CONNECTIONS MIN. SIZE AWG (SEE NOTE 6).				CU 10	AL 8	CU 12	AL 10	CU 12	AL 10	CU 8	AL 8
3	18.0	6.0	6.0	6.0	22.6		22.6		22.6		39.1	
	SUPPLY CONNECTION: MIN SIZE AWG (SEE NOTE 6)				CU 10	AL 8	CU 10	AL 8	CU 10	AL 8	CU 6	AL 6

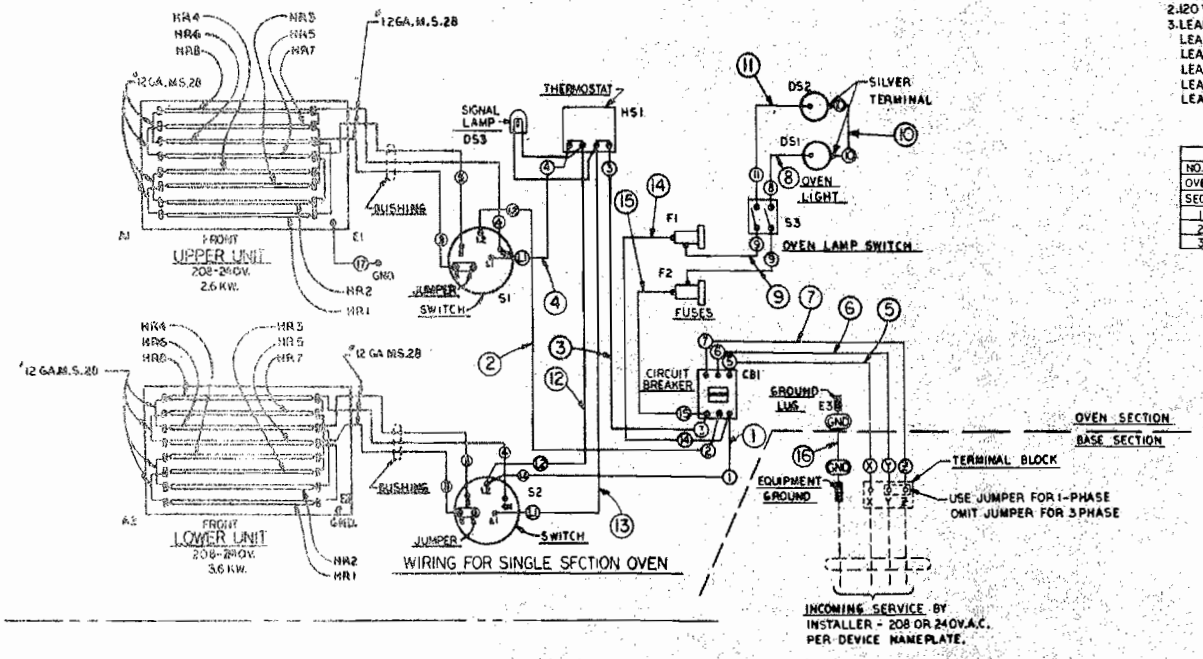
1. ALL WIRING TO BE 12 GA., 600V., 110°C., TYPE AIA OR VULKENE 600V., 125°C., TINNED COPPER. USE JUMPER AT "3" TERMINAL OF BOTH SWITCHES.
2. PRE-CUT INNER CONNECTING LEADS 12–15 ARE FURNISHED WITH EACH OVEN.
   LEADS 12 & 13 ARE 3 FT. LONG WITH ONE LOOPED END.
   LEADS 14 & 15 ARE 6 FT. LONG WITH ONE LOOPED END.
3. IF A CONVECTION OVEN OR 1 OR 2 BROILERS ARE STACKED ON TOP OF THIS OVEN, SEE THE WIRING DIAGRAM FURNISHED WITH THE OVEN OR BROILER FOR THE METHOD OF WIRING INTO THIS OVEN'S TERMINAL BLOCK.
4. THE TOTAL CONNECTED LOAD OF A STACKED OVEN DEVICE IS COMPRISED OF THE SUM OF THE LOADS OF THE VARIOUS STACKED SECTIONS.
5. CONNECT THE SUPPLY LINES TO THE TERMINAL BLOCK IN THE BOTTOM OVEN AS SHOWN.
6. FOR SUPPLY CONNECTIONS USE COPPER WIRE SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND SUITABLE FOR AT LEAST 75°C (167°F).



SCHEMATIC DIAGRAM

SWITCHING ARRANGEMENT

FIG. 11 – WIRING DIAGRAM, MODEL CN60, 208/240 VOLTS, 50/60 Hz
SINGLE OR THREE-PHASE CONNECTIONS – 54D113973

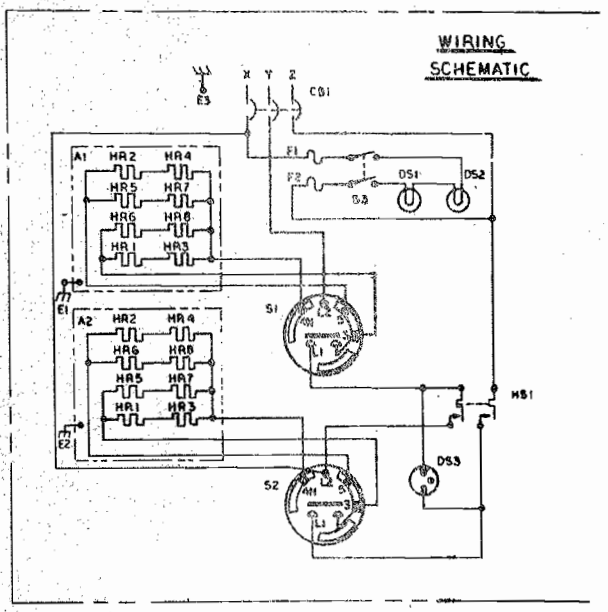


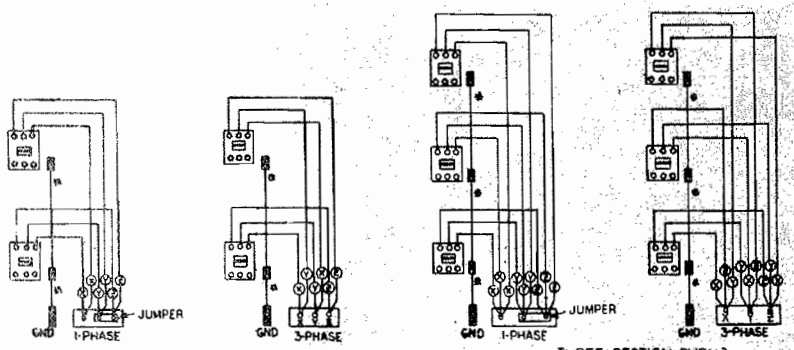
NOTES:
1. CIRCUIT BREAKER – 50 AMP.
2. 120 V., 40 WATT OVEN LAMPS WITH 15 AMP. FUSES, 250V., CLASS "G"
3. LEAD 1: #12 GA., M.S. 29.
   LEADS 2-4, 12 & 13: #14 GA., M.S. 29.
   LEADS 5-7, 14 & 15: #12 GA., M.S. 14C.
   LEADS 8-11: #16 GA., M.S. 14C.
   LEAD 16: #6 GA., M.S. 666C.
   LEAD 17: #10 GA., M.S. 28.

208 – 240V.A.C. – 1 OR 3 PHASE

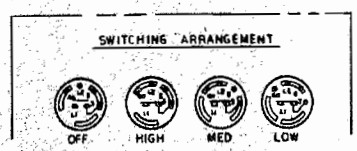
FOR LEAD SET ASSY SEE: 54B114145G01

NO. OF OVEN SECT.	TOTAL KW	3 PHASE LOADING KW PER PHASE X-Y	Y-Z	X-Z	NOMINAL AMPS PER LINE WIRE 3 PHASE 208V. X	Y	Z	240V. X	Y	Z	1 PHASE 208V.	240V.
1	6.2	2.6	0.0	3.6	26.0	12.5	14.3	22.5	10.8	15.0	29.8	25.8
2	12.4	5.2	3.6	3.6	36.8	36.8	30.0	31.7	32.0	26.0	59.6	51.7
3	18.6	6.2	6.2	6.2	51.6	51.6	51.6	44.7	44.7	44.7	89.4	77.5





NOTES:
1. AFTER ASSEMBLY OF OVEN SECTIONS, CONNECT EACH SECTION TO SUPPLY LINE AT TERMINAL BLOCK IN BASE SECTION USING #12 GA. M.S. 14C WIRE, FURNISHED BY G.E., MARKED X, Y & Z.
*2. CONNECT EQUIPMENT GROUND TO GROUND LUG IN BASE. CONNECT UPPER OVENS TO GROUND USING WIRE FURNISHED



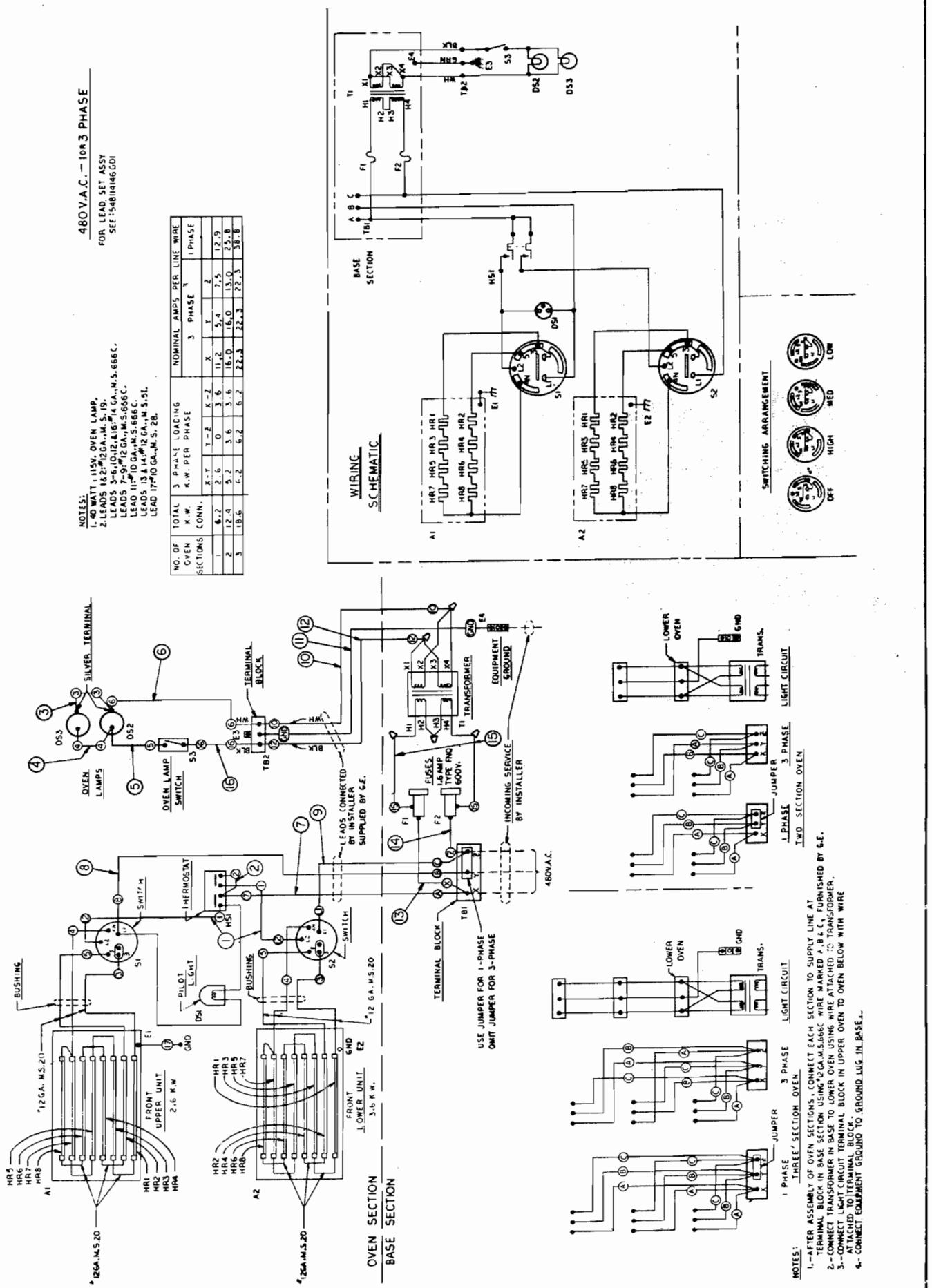


FIG. 12 — WIRING DIAGRAM, SECTIONAL OVEN WITH DECK LT.
CN60 — 480 VOLT OVENS, 60 Hz — 54D113975

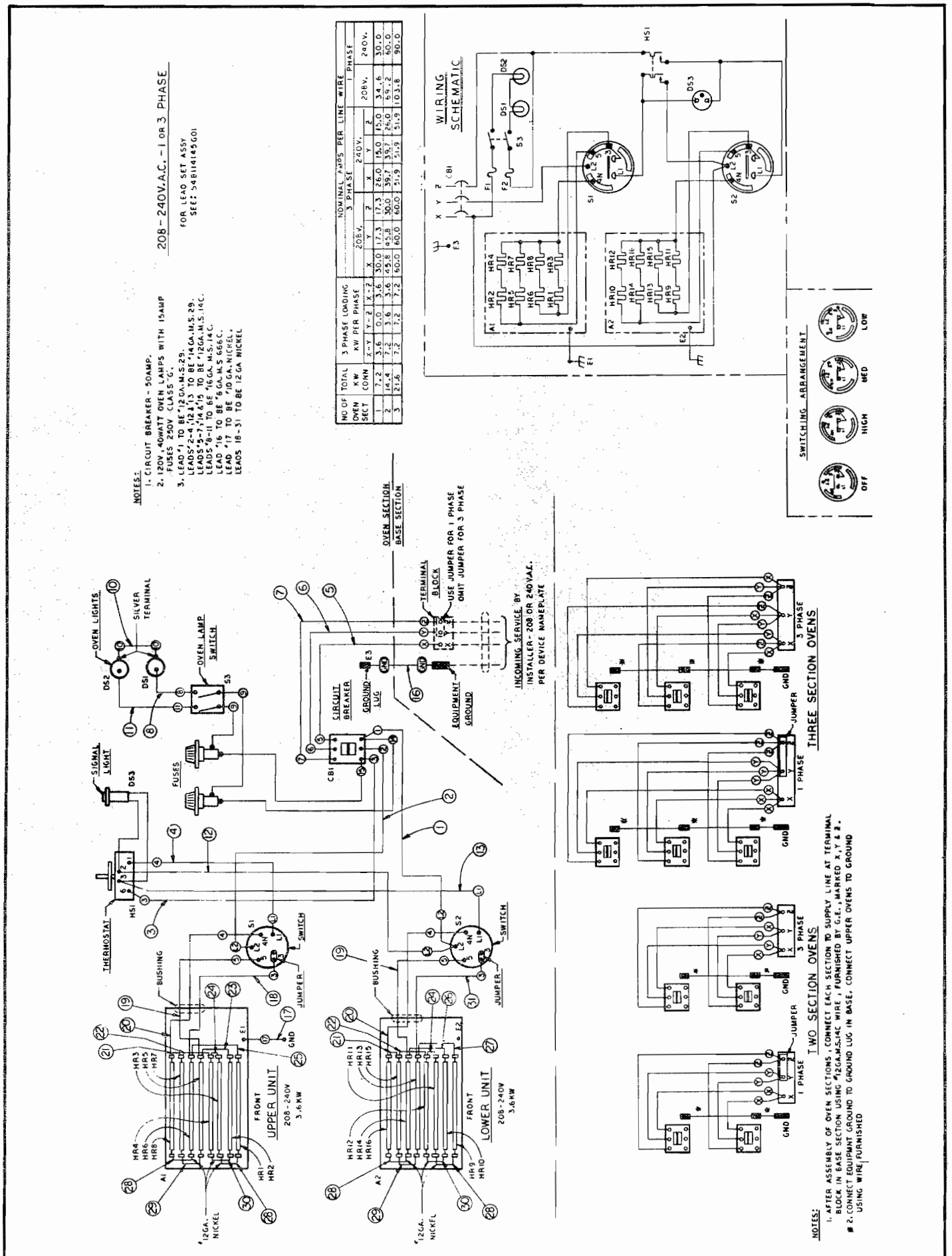


FIG. 13 – WIRING DIAGRAM, MODEL CN50 & CN70, 208/240 VOLTS, 50/60 Hz SINGLE OR THREE-PHASE CONNECTIONS – 54D114543

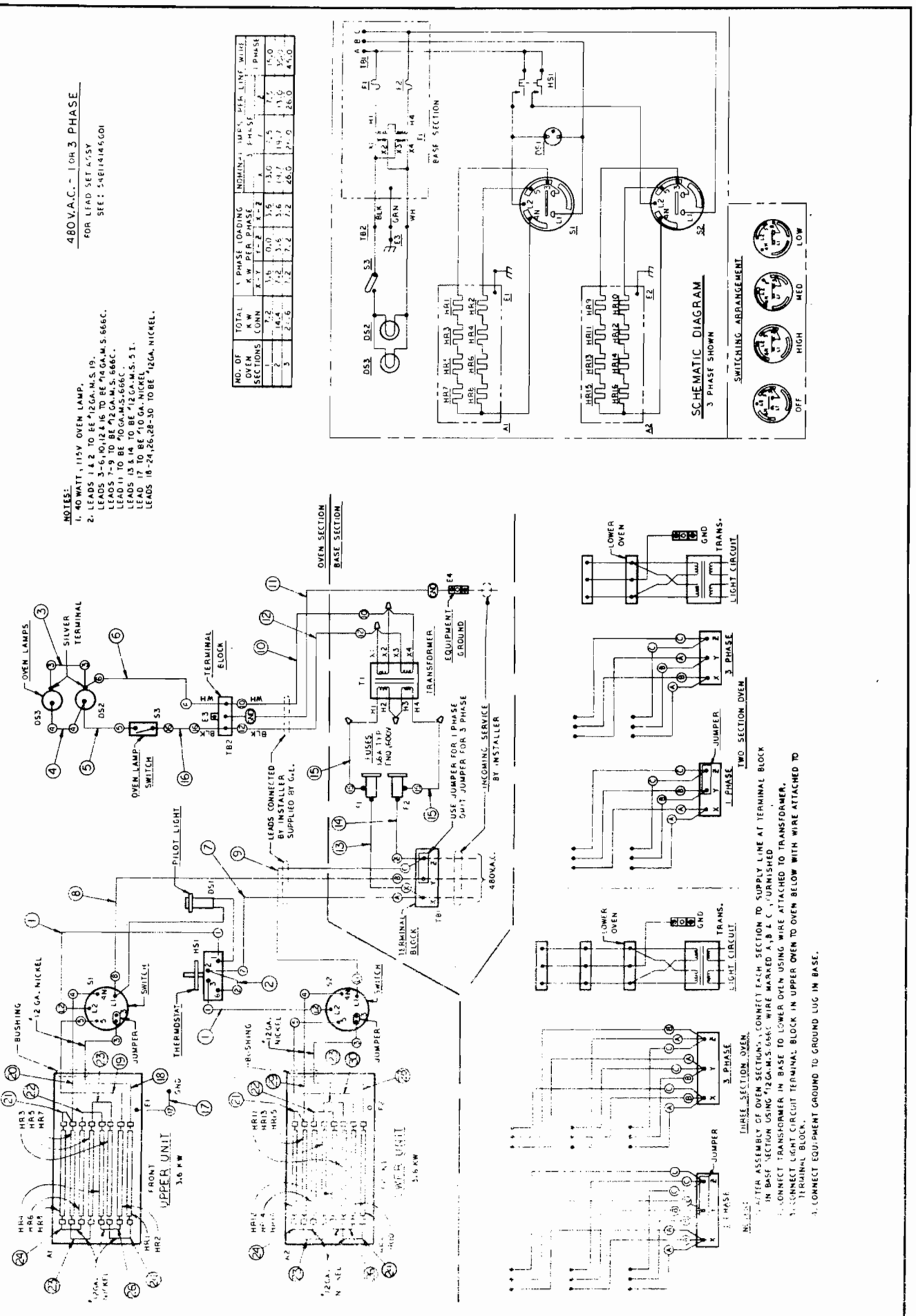


FIG. 14 – WIRING DIAGRAM, MODELS CN50 & CN70 SERIES, 480 VOLTS – 540114544

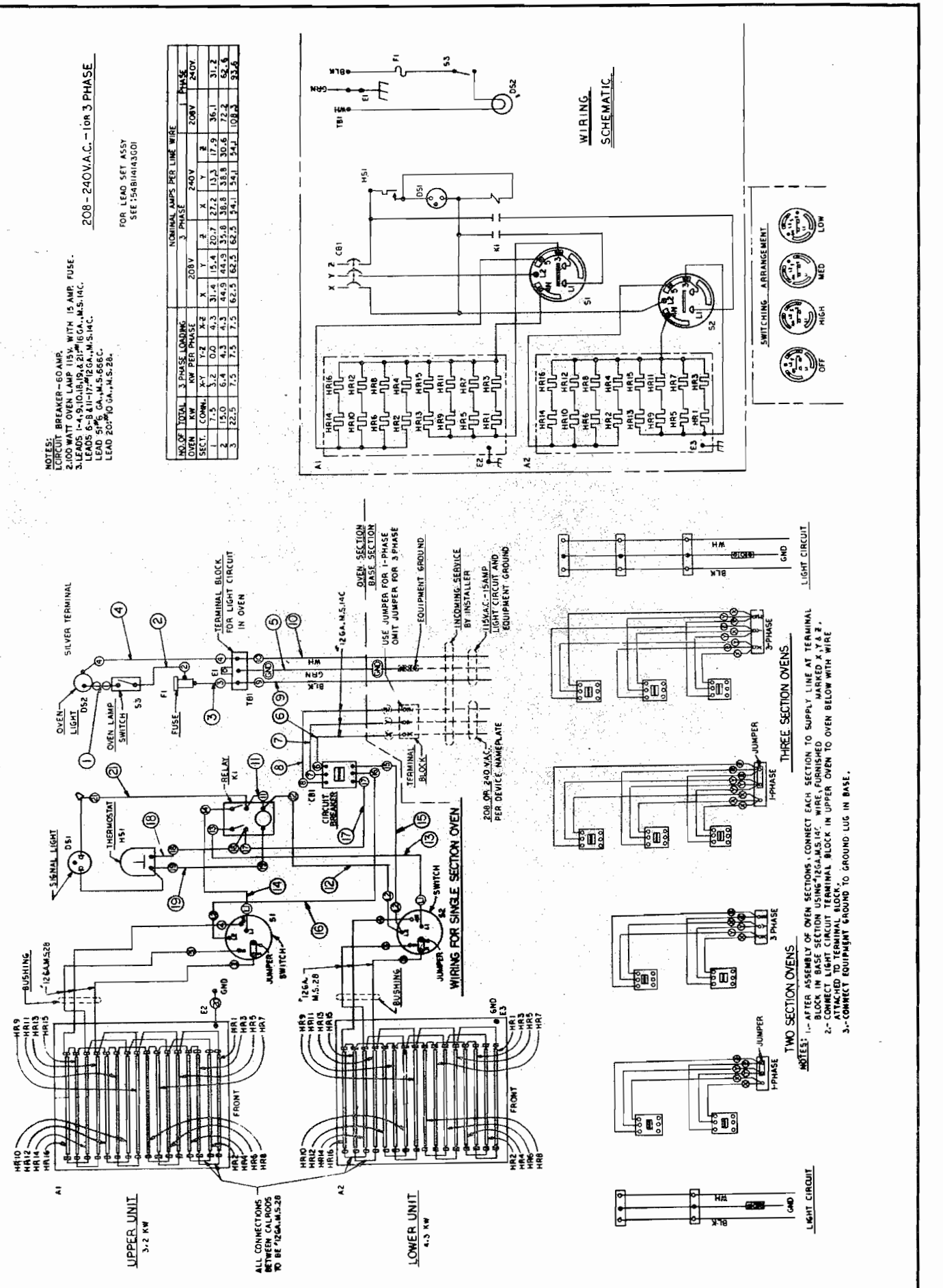
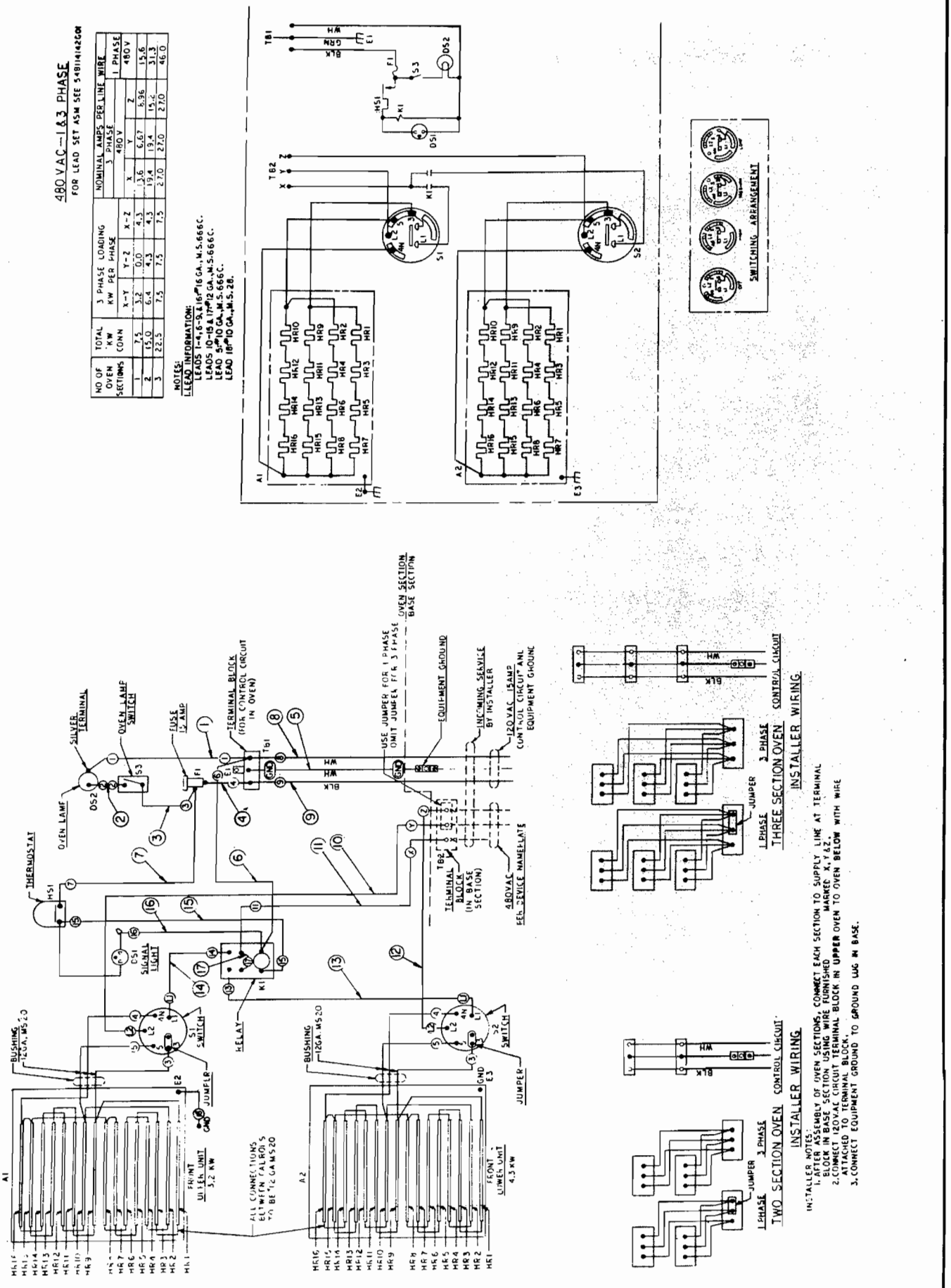
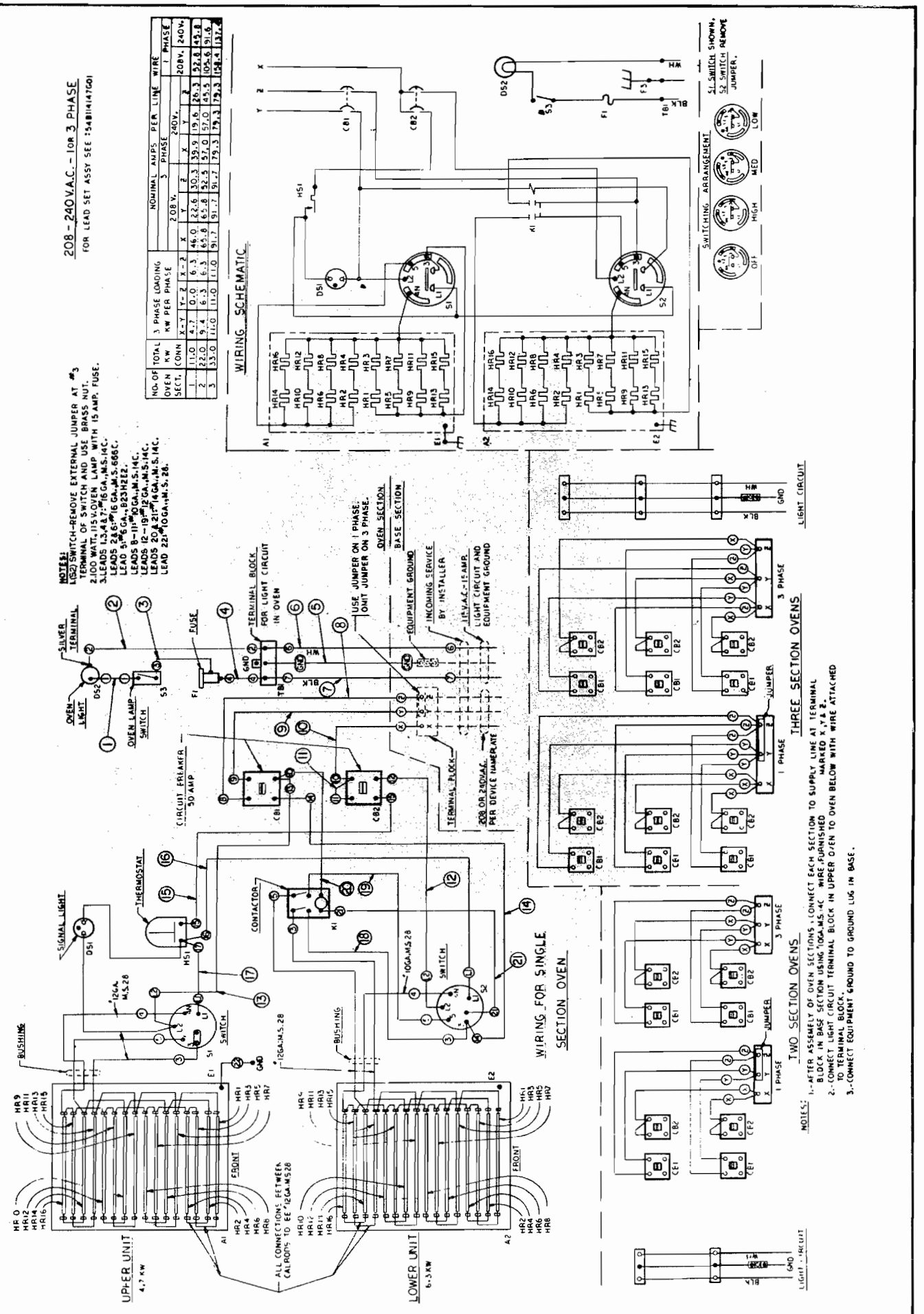


FIG. 15 — WIRING DIAGRAM, MODEL CN74, 208/240 VOLTS, SINGLE- OR THREE-PHASE CONNECTIONS — 54D113974



NO OF OVEN SECTIONS	TOTAL KW CONN	3 PHASE LOADING KW PER PHASE X-Y	Y-Z	X-Z	NOMINAL AMPS PER LINE WIRE 3 PHASE 480V X	Y	1 PHASE 480V Z
1	7.5	3.2	0.0	4.3	3.6	6.67	6.96
2	15.0	6.4	4.3	4.3	19.4	19.4	15.6
3	22.5	7.5	7.5	7.5	27.0	27.0	31.3

FIG. 16 — WIRING DIAGRAM, MODEL CN74, 480 VOLTS, 60 Hz
SINGLE- OR THREE-PHASE CONNECTIONS — 54D113978



NO. OF OVEN SECT.	TOTAL KW CONN	3 PHASE LOADING KW PER PHASE			NOMINAL AMPS. PER LINE WIRE								
					3 PHASE						1 PHASE		
					208 V.			240 V.			208 V.	240 V.	
		X-Y	Y-Z	X-Z	X	Y	Z	X	Y	Z			
1	11.0	4.7	0.0	6.3	46.0	22.6	30.3	39.9	19.6	26.3	52.8	45.8	
2	22.0	9.4	6.3	6.3	65.8	52.5	57.0	57.0	45.5	105.6	91.6		
3	33.0	11.0	11.0	11.0	91.7	91.7	79.3	79.3	79.3	158.4	137.2		

FIG. 17 — WIRING DIAGRAM, MODEL CN78, 208/240 VOLTS, SINGLE- OR THREE-PHASE CONNECTIONS
54D113977

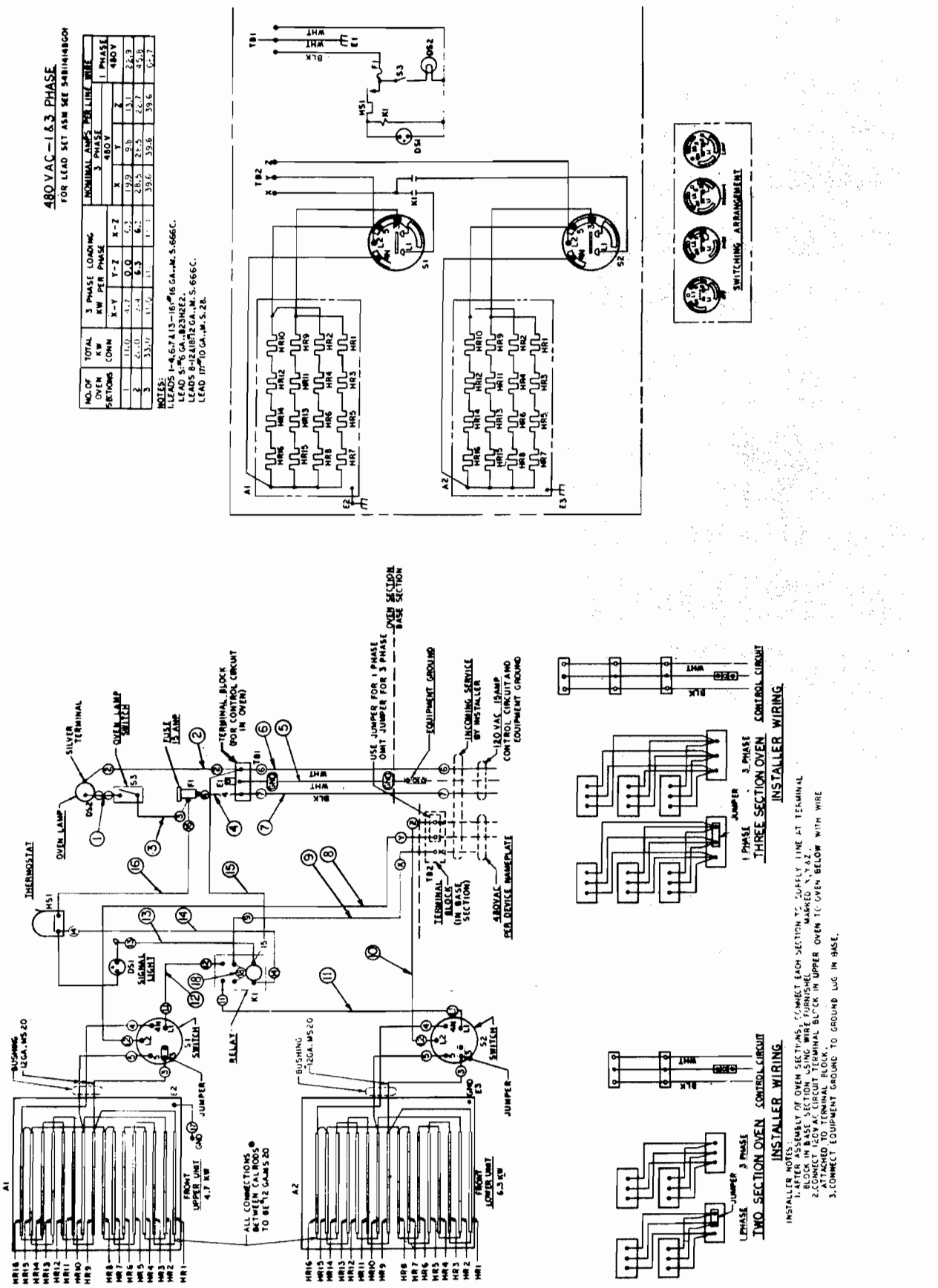


FIG. 18 — WIRING DIAGRAM, MODEL CN78, 480 VOLTS, THREE-PHASE CONNECTIONS — 54D113979

PIPING COMPONENTS SUPPLIED FOR BAKE OVENS					
PART NUMBER	PART NAME	QUALITY			
		1 SECTION OVEN	2 SECTION OVEN	3 SECTION OVEN	FOR EXTRA OVEN SECTION
N241P601	REDUCER	1	1	1	0
N241P602	2 x 12 NIPPLE	1	1	1	0
N241P603	½ x 1½ NIPPLE	1	3	4	1
N241P604	½ x 12 NIPPLE	0	1	2	1
N241P605	½ x 5 NIPPLE	0	1	2	1
N241P609	BUSHING	1	1	1	0
N241P607	TEE	1	1	1	0
N241P608	TEE	1	2	3	1
N241P612	PLUG	1	1	1	0
N241P611	GLOBE VALVE	1	2	3	1
N241P610	UNION	0	1	2	1
N241P606	NIPPLE	1	0	0	0

USE SATURATED OR SLIGHTLY PRIMED LOW PRESSURE STEAM (5-7 psi). DO NOT EXCEED 10 psi. IF A HIGH PRESSURE BOILER (ABOVE 15 psi) IS USED, A REDUCING VALVE SHOULD BE PROVIDED AND EITHER AT LEAST 100 ft. OF BARE PIPE OR A CONDENSER USED BETWEEN THE REDUCING VALVE AND THE OVEN TO OFFSET THE SUPER-HEATING EFFECT OF THE REDUCING VALVE.

54B104151P1

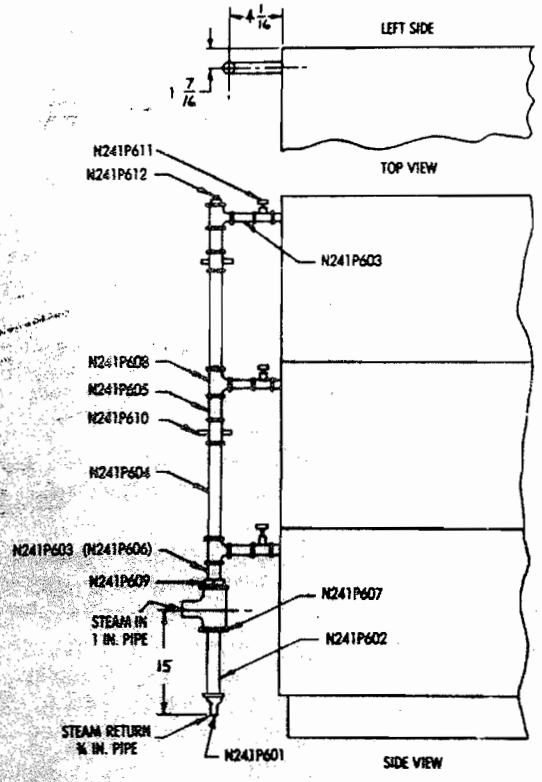


FIG. 19 – STEAM CONNECTIONS

1. Thread the conduit long at the top. Thread a nut on the conduit as far as it will go.
2. Thread wires through the conduit. Insert the long threaded end of conduit into conduit opening in the base section.
3. Pull wires through the conduit and straighten conduit at the same time.
4. Screw conduit into coupling. Run nut up on threads till it meets the bottom of the base.
5. From the inside of the base tighten another nut on the conduit against the base bottom. Top the conduit with a bushing.

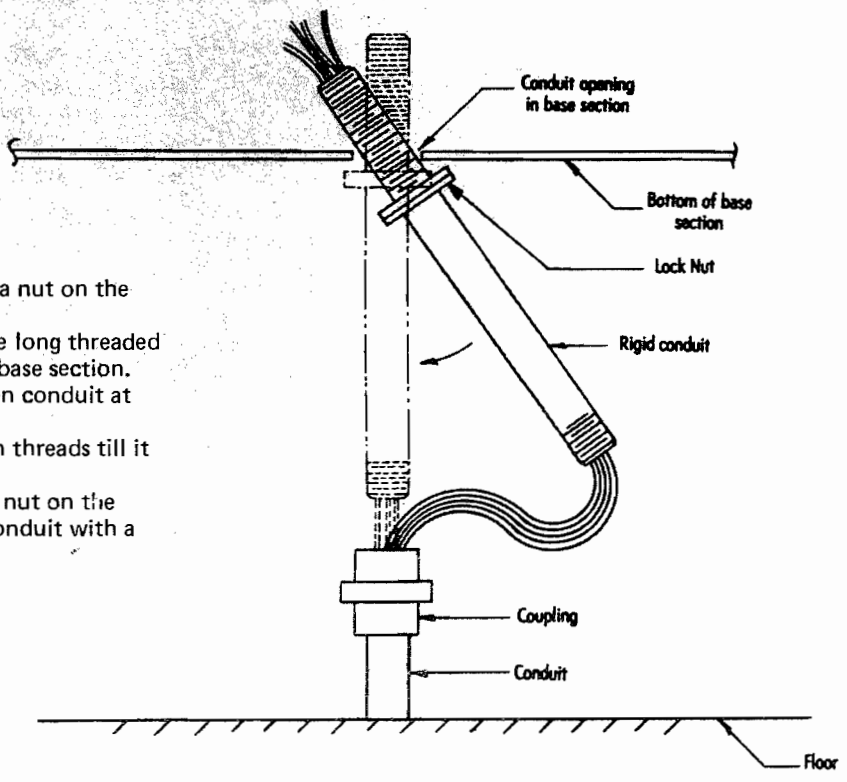


FIG. 20 – INSTALLATION OF RIGID CONDUIT TO THE BASE SECTION WHEN OVENS ARE ALREADY MOUNTED
(Models CN50 through CN78)

OWNER'S INFORMATION

Table 1 offers a composite description of the 27 models, with key characteristics and capabilities. The following design highlights are, except as noted, common to full line of installation ovens.

- CONTROLLED DIRECTIONAL HEATING – Each section contains two fast-responding Calrod® heating element banks - one in the top, one under the oven deck. Use the top element to "custom" brown food.
- STURDY PULL-TO-TURN SWITCHES – Provide low, medium or high directional heat control. Afford balanced or unbalanced heat to meet particular production requirement.
- "SEALED-HEAT" OVEN CHAMBER – Oven has quality insulation on six sides.
- LARGE, CLEANABLE PICTURE WINDOW – (Except CN40 and CN78 series) High-temperature, heat-resistant glass. Both sides of single pane clean easily - promotes sanitation and food viewing.
- CORPLATE OR AIR CUSHION DECK – (depending on model choice). Removes for cleaning.
- ALUMINIZED STEEL OVEN LINERS – Permit better heat reflectivity and easier cleaning.
- INTERIOR LIGHT – Illuminates oven for convenient food inspection. (Except CN40 series)
- VERSATILE – Each basic oven section adapts easily to GE modular line-up.

ACCESSORIES

ELECTRICAL BASES

CZ12	For CN51, CN52, CN53, CN61, CN62, CN63, CN71, CN72, CN73
CZ13	For CN75, CN76, CN77
CZ14	For CN79, CN80, CN81

LEGS & SUPPORTS

CX072	Set of four 6" angular legs (CN43, CN45)
CX073	Set of four 8" angular legs (CN53, CN73, CN77, CN81)
CX074	Set of four 11" angular legs (CN42)
CX075	Set of four 19" angular legs (CN41, CN44, CN62)
CX077	Set of four 27" angular legs (CN51, CN52, CN61, CN71, CN72, CN75, CN76, CN79, CN80)
CX087	3B Accessory package. 19" legs w/casters (CN41, CN61, CN62)
CX090	3B Accessory package. 27" legs w/casters (CN51, CN52)

OTHER

CX106	Intermediate shelf for CN60 on runners for field installation.
CX169	Oven rack for CN40 section
CX419	Intermediate shelf for CN60 (will fit ovens built after 1975)

STAINLESS STEEL BACKS

CX316	For CN50, CN70, CN74 sections
CX317	For CN60 sections
CZ49	For CN40 sections

STAINLESS STEEL TOPS

CZ19	For CN50, CN60, CN70
CZ20	For CN75, CN76, CN77
CZ21	For CN78

STEAM CONNECTIONS

CX132	External for 1-section ovens (CN51, CN71, CN75, CN79)
CX133	External for 2-section ovens (CN52, CN72, CN76, CN80)
CX134	External for 3-section ovens (CN53, CN73, CN77, CN81)

Internal steam connection for CN50 section is factory-assembled, must be ordered per section with CN50 series.

HOW TO USE YOUR AUTOMATIC ELECTRIC OVEN

Before Using Oven For First Time

1. Clean the Oven Deck

Use a soft brush to remove any dust from oven deck.

2. "Burn In" the Oven

To release any fumes that might result from the new oven lining, the oven must be "burned in" before roasting/baking food in it.

Open the damper wide by pulling damper control lever all the way out. Turn thermostat to 300F. Set both switches (pull to turn) to MEDIUM. Permit oven to idle from 6 to 8 hours. Then turn to desired setting.

TO OPERATE OVEN

1. Preheat

Set top and bottom switches to HIGH. Turn thermostat to desired temperature (see Table 4 or 5 for suggested cooking temperatures). The oven signal light goes on when oven is heating. Light goes off when desired temperature has been reached.

Keep oven door closed when preheating. While waiting for oven to reach desired temperature, load the food into appropriate pans.

Some foods require different amounts of top and bottom heat. Example: white layer cake. Merely set different heats on separate top and bottom heat switches. When preheating however, set both switches to HIGH for maximum speed.

After preheating, set both top and bottom switches to desired temperatures (LOW, MEDIUM or HIGH).

2. Load Oven

Oven is ready for loading when oven signal light goes off for the first time. To minimize heat loss from the open door, load oven as quickly as possible. Place pans in rows from rear to front along the right wall, then the next row, etc., until oven is full. Do not load closer than three inches from door. Pans should not touch each other or the walls of the oven. Close oven door.

3. Allow Food to Bake (or Roast)

Follow the time tables given in Tables 4 and 5 (or recipe in any standard cook book). Because your
Oven is automatically controlled, uniform, exact heat distribution eliminates guesswork and eliminates need to "peek" while foods cook.

If steam escapes around the oven door during baking/roasting process, open damper just enough to stop steam at the door. If no steam escapes, keep damper closed to conserve heat. To open damper, pull damper rod out. To close, push rod all the way in.

4. Turn Oven OFF and Unload

Upon completion of the day's operation, turn both switches and automatic temperature control to OFF. Open door and

start unloading with first row on right. Close oven door and open damper to remove remaining vapors. Wash off surface stains around door, or on finish, immediately. Before starting next day's operation, close damper. See Step 3, above.

HOW TO CARE FOR YOUR AUTOMATIC ELECTRIC OVEN

1. How to Clean Your Oven

Keep inside of oven and decks wiped clean to avoid spotty heating, particularly around door opening and edges. Spots of carbon on decks may cause uneven baking.

If food particles or carbon accumulate so doors cannot be tightly closed, heat is wasted and oven will not operate properly. Poorly closed doors permit constant escape of steam and vapor around the door which condenses and deteriorates finish around the oven front and door lining.

For best results, decks should always be level and clean. When cleaning your oven's interior, use a stiff wire brush or spatula to loosen spillage, and sweep clean. NEVER POUR WATER, OR USE A SOAKING WET RAG, IN THE INTERIOR OF YOUR OVEN. DO NOT CLEAN HEATING UNIT; CALROD HEATING UNITS ARE SELF-CLEANING.

To remove hardened food spillage, sprinkle salt on the hardened particles. Turn the thermostat to 500 degrees. Close oven door and allow oven to idle until spillage has carbonized (charred) completely. Then scrape surface clean with spatula or blunt knife.

To keep stainless steel front bright and gleaming at all times, just 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.*

2. Washing

Wash all exterior surfaces except control panels at least once daily . Use a damp cloth only when cleaning control panel. Use a cloth with warm water and a mild soap or detergent. Where surfaces have been polished, use cloth lightly – hard rubbing will remove polish. Follow with a clear rinse, then dry. This simple beauty treatment not only keeps your equipment dirt-free and sparkling, but virtually eliminates the danger of grease accumulation – which may form a hard-to-remove stain if left on too long.

3. How to Remove Grease Stains

If grease has accumulated and attacked the PERMALUCENT finish, remove with any silicone-base polish, following directions on the container. NEVER use a scouring-pad-type cleaner on the PERMALUCENT finish.

4. To "Touch Up" Damaged Surfaces

If the surface should be accidentally marred, it can be quickly and easily restored to its original beauty with a "PERMALUCENT Touch-Up-Kit," available through your food service equipment dealer. Full instructions are in each kit.

5. Plastic Control Knobs and Switches

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

TABLE 4 – BAKING CHART

NOTE: Data in this chart is of a general nature. Your own experience will, of course, dictate variations that best fit your particular requirements.

Fresh Product	Temperature (F)	SETTINGS Top Switch	Bottom Switch	Time (Minutes)
Two-Crust Pies	400-425	Medium	High	40-60
Open Face Pie	400-425	Medium	High	35-50
Pumpkin Pie*	375-400	Medium	Medium	35-50
Custard Pie*	375-400	Medium	Medium	35-50
Meringue Pie (Browned)	425-450	High	Off	5-6
Pie Shell	400-425	Medium	Medium	20-30
Parker House Rolls	400-425	Medium	Medium	20-30
Whole Wheat Rolls	375-400	Medium	Medium	20-30
Danish Rolls	375-400	Medium	Medium	20-30
Sweet Rolls	375-400	Medium	Medium	20-30
Klotches	375-400	Medium	Medium	10-15
Tea Biscuits	375-400	Medium	Medium	20-25
Corn Bread	400-425	Medium	Medium	25-35
Cup Cakes	400-425	Medium	Medium	15-20
Layer Cake	350-375	Medium	Medium	20-30
Loaf Cake	350-375	Medium	Medium	45-60
Angel Cake	300-325	Medium	Medium	40-50
Puddings	325-375	Medium	Medium	35-60
Baked Apples	300-325	Low	Low	60-70
Pizza	400-450	High	High	20-25

*Used when crust and filling are baked as a unit.

When crust is pre-baked and filling only is to be baked, most bakers use a temperature of approximately 300-350F.

TABLE 5 – MEAT ROASTING CHART

Switch Settings: for best results, balanced heat is most desirable. Therefore, when roasting, we suggest that you set both oven switches on HIGH, with the thermostat at the indicated setting. Measured top heat provides excellent coloring and a caramelized finish to meats; but where a seared or browned appearance is not desired as in roasting fowl, the upper oven switch should be set to MEDIUM, LOW, or OFF.

Meat Fully Thawed	Temperature Setting °F	Internal Meat Temp. °F	Minutes Per Lb.
BEEF			
Standing Rib 3 Rib 6–8 pounds	300	Rare 140 Medium 160 Well 170	20 25 30
Standing Rib 7 Rib 20–25 pounds	300	Rare 140 Medium 140 Well 150	13 15 17
Rolled Rib 7 Rib 16–18 pounds	250	Well 150	25
Rump or Chuck 18–23 pounds	300	140-170	20-30
Round Rump	300	140-170	12-16
Shank Off 50 pounds			
LAMB			
Leg 7–8 pounds	300	180	30-35
Leg 15–20 pounds	300	160	20-30
Shoulder	300	180	40-45
Breast Stuffed	300	175-180	30-35
PORK			
Ham Leg 15 pounds	350	185	30-35
Ham Leg 25 pounds	350	185	30-35
Ham Boned 15 pounds	350	185	30-35
Loin	350	185	
Boston Butt	350	185	45-50
Cured Ham 20 pounds	300	140-160	15-18
VEAL			
Leg 16 pounds	300	170	22
Leg 25 pounds	300	170	18-20
Shoulder 15 pounds	300	170	25
Shoulder Rolled 10 pounds	300	170	35-40
Loin 10 pounds	300	170	25-30
POULTRY			
Chicken, Dressed 4–6 pounds	250-300	190	35-40
Duck, Dressed 5–8 pounds	300	190	25-30
Turkey, Dressed 14–19 pounds	300	190	20-25
Turkey, Dressed 27–33 pounds	300	190	15-20

NOTE: *The data on Table (#5) is of a general nature. Many factors such as size of bone, thickness of meat, temperature at time of roasting, individual taste as to degree of doneness, seasoning, etc., must be taken into consideration. Pan selection and cooking times will also be governed by total weight and number of pieces in load. Preheating for roasting is not necessary.*

HOW TO SAVE WITH YOUR AUTOMATIC ELECTRIC OVEN

Here are a few ways to save energy and money. As a bakery usually uses its ovens between 8 p.m. and 10 a.m. (entirely off the power company's "peak" load), it usually enjoys very favorable electric rates. If you do not now bake between these hours, it will pay you to investigate the rate your power company offers for this "off-peak" operation.

Here are three things you can do to reduce demand.

1. While preheating oven, use a minimum of electricity for other purposes.
2. Operate the smallest oven possible over the longest period of time to reduce the amount of energy required for preheating. With large ovens idle only a few hours a day, it is advisable to keep the temperature up constantly.
3. Preheat on MEDIUM or LOW if time is available.

TO REDUCE CURRENT CONSUMPTION

- Avoid excessive door opening.
- Avoid direct air current on oven.
- Keep oven-door opening free of charred food particles to permit door to close completely.

SOME IMPORTANT DON'TS REGARDING YOUR OVEN

DON'T:

- Pour water on decks.
- Connect oven vent to exhaust ducts.
- Open damper more than necessary to carry off steam as this may cause uneven baking front to back.
- Use oven thermometers to measure oven heat. At best, they are an inaccurate gage since they measure only the air temperature which is changed immediately on opening the door. If the performance of oven indicates it is not up to standard, it should be checked with a thermocouple by a qualified service man.

WHAT KIND OF UTENSILS SHOULD YOU USE?

Select pans of medium or light weight. It is not economical to bring heavy pans to oven temperature. For baking operations, dull seasoned pans are recommended. Dull aluminum or tin baking sheets with shallow sides or no sides give the most evenly-browned products. Meats should always be roasted in an open shallow pan deep enough to catch all the juices. See Table for oven capacities and pan sizes.

HOW TO ROAST BETTER . . . MORE ECONOMICALLY

One of the best ways to increase your profits is by reducing meat shrinkage. The most important factor in reducing shrinkage during roasting is keeping a low, constant oven temperature. Because your Oven has accurate, long-life thermostats that give day-after-day dependable performance . . . and because electric heat seals in natural juices and cooks with no "drying out", you can now reduce meat shrinkage 5 to 15 percent with resulting increase in servings per pound.

Some operators believe that searing a roast at high temperatures will hold in the juice. On the contrary, a roast which is seared shrinks more than one which is not seared at all. Nor does searing increase palatability. Not only is there great loss of weight in roasts cooked at high temperature, but actually fewer servings can be sliced from the roasts. In other words, as the oven temperature is increased, the number of slices, or servings, per pound of meat decrease.

AT WHAT TEMPERATURE SHOULD YOU ROAST?

A temperature as low as 150 degrees has proved sufficient in theory, but it makes roasting an all-day job. Research studies have shown that temperatures in the range of 300F are most practical.

WHY USE A MEAT THERMOMETER?

Because it will help inexperienced kitchen personnel to more accurately roast meat to the desired "doneness."

DIRECTIONS FOR ROASTING

Select tender meat cuts. Wipe with a clean damp cloth, and, if desired, season with salt and pepper. Place fat up on rack (or deck) in open, shallow roasting pan. Insert meat thermometer so that the center of the bulb reaches the center of the largest muscle but does not rest in fat or on bone. Do not cover or add water. Roast at a constant, low oven temperature, (300-350F) depending on the kind of meat and size of roast. (See Table 5). Roast only to the desired degree of doneness.

THE USE OF STEAM IN BAKING

Some foods, such as hearth breads, hard rolls, split-top and some plain-top pan breads require steam.

Steam produces the proper oven spring of the dough and gives a thin, crisp, glossy, golden-brown crust. With split-top bread, the proper amount of steam APPLIED AT THE RIGHT TIME has much to do with obtaining a satisfactory break and shred.

Low-pressure steam (5-7 pounds per square inch) enters the baking chamber before the foods are added. This permits steam to condense as a moisture-film on the cold surface of the dough when placed into the oven. The steam atmosphere is generally maintained for 5 or 10 minutes after the oven is loaded. Then, turn off steam for the rest of the bake cycle. After the dough has set, steam has very little effect.

Steam is injected into the oven and distributed uniformly in the baking chamber through interior steam piping. Steam pressure of 5 to 7 pounds per square inch (never exceeding 10 pounds) and the use of saturated or slightly primed — but never super-heated — steam gives best results. If high-pressure steam is used, the desired effect of the steam on the product is lessened or eliminated entirely, due to the steam superheating at the sudden reduction of pressure when injected into the oven. The effect is no more than that obtained by blowing in a hot-dry gas, and the desired moist atmosphere is not produced.

If you have a high-pressure boiler (above 15 pounds per square inch at the boiler) use a reducing valve and approximately 100 feet of bare pipe or a "condenser" between the reducing valve and the oven. This will offset the super-heating effect of the reducing valve and restore the steam to a proper condition of wetness.

The oven steam lines should be large enough to insure supplying the oven with the proper amount of steam. All piping must be installed and properly trapped to prevent any chance of condensation water entering the oven. Also, the boiler should be operated under automatic pressure control to insure a uniform steam supply and hence uniform results in the oven.

The size boiler required to furnish steam to an oven should be at least 0.75 boiler horsepower (BHP) for 100 pounds of bread-baking capacity per hour.

CAUTION: *Before admitting steam into the oven, be sure that outside steam piping is clear of water to prevent water from being blown into the oven. Keep steam valves closed tightly when not using steam in oven. Make sure that valves do not leak and that water or steam does not drip into oven when oven is idle as it may damage units and cause rapid corrosion.*

SERVICING

Your oven is covered by a one year warranty against defects. If at any time this appliance should require service, contact your authorized servicer or food service Equipment dealer.