PS555E, PS555G, PS570G
Gas and Electric (Europe)
ENGLISH/German/
French/Spanish

Middleby Marshall®

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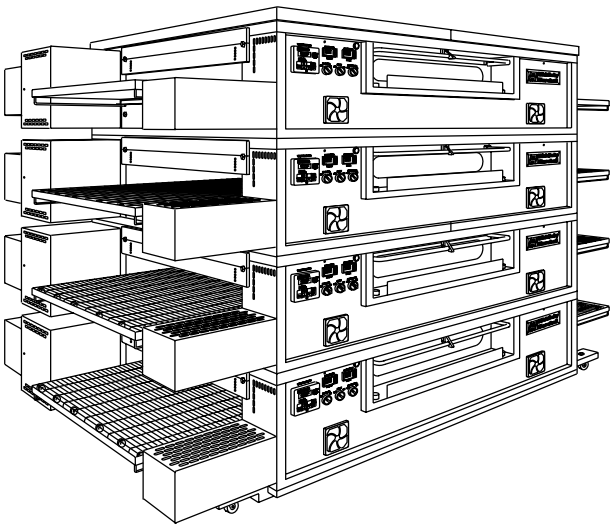

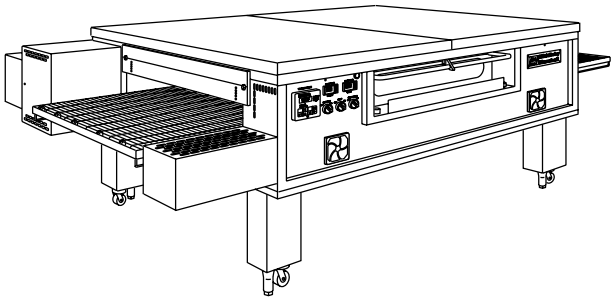

PS500 Series Gas and Electric Ovens

Models:

- PS555E Electric
- PS555G Gas
- PS570G Gas

Combinations:

- Single Oven
- Double Oven (Two-Stack)
- Triple Oven (Three-Stack)
- Quad Oven (Four-Stack)

OWNER'S OPERATING AND INSTALLATION MANUAL

	Single Oven		*Double Oven*		*Triple Oven*		*Quad Oven*	
	PS555E/G	**PS570G**	**PS555E/G**	**PS570G**	**PS555E/G**	**PS570G**	**PS555E/G**	**PS570G**
Rated Heat Input Gas Ovens	44kW	50kW	2x44kW	2x50kW	3x44kW	3x50kW	4x44kW	4x50kW
Rated Heat Input Electric Ovens	32kW	–	2x32kW	–	3x32kW	–	4x32kW	–
Heating Zones	1 controlled heat zone		2 controlled heat zones		3 controlled heat zones		4 controlled heat zones	

Middleby Cooking Systems Group • 1400 Toastmaster Drive • Elgin, IL 60120 • USA • (847)741-3300 • FAX (847)741-4406

ENGLISH

NOTICE:

This Owner's Operating and Installation Manual should be given to the user. The operator of the oven should be familiar with the functions and operation of the oven.

This manual must be kept in a prominent, easily reachable location near the oven.

Gas ovens are designed for use with EITHER natural gas OR liquid propane gas, as specified on the serial plate. Where permitted by local and national codes, the oven can be converted from natural gas to propane operation, or from propane to natural gas operation. This conversion is described in the *Installation* section of this Manual. The conversion requires the installation of the appropriate Middleby Marshall Gas Conversion Kit.

It is suggested to obtain a service contract with a Middleby Marshall Authorized Service Agent.

WARNING

POST, IN A PROMINENT LOCATION, THE EMERGENCY TELEPHONE NUMBER OF YOUR LOCAL GAS SUPPLIER AND INSTRUCTIONS TO BE FOLLOWED IN THE EVENT YOU SMELL GAS.

Instructions to be followed in the event the user smells gas shall be obtained by consulting the local gas supplier. If the smell of gas is detected, immediately call the emergency phone number of your local Gas Company. They will have personnel and provisions available to correct the problem.

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

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.

IMPORTANT
An electrical wiring diagram for the oven is located inside the machinery compartment.

IMPORTANT
It is the customer's responsibility to report any concealed or non-concealed damage to the freight company. Retain all shipping materials until it is certain that the equipment has not suffered concealed shipping damage.

NOTICE: CONTACT YOUR MIDDLEBY MARSHALL AUTHORIZED SERVICE AGENT TO PERFORM MAINTENANCE AND REPAIRS. AN AUTHORIZED SERVICE AGENCY DIRECTORY IS SUPPLIED WITH YOUR OVEN.

NOTICE: Using any parts other than genuine Middleby Marshall factory manufactured parts relieves the manufacturer of all warranty and liability.

NOTICE: Middleby Marshall (Manufacturer) reserves the right to change specifications at any time.

NOTICE: The equipment warranty is not valid unless the oven is installed, started and demonstrated under the supervision of a factory certified installer.

Retain This Manual For Future Reference

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ENGLISH

SECTION 1 - DESCRIPTION

I. OVEN USES

PS500 Series Ovens can be used to bake and/or cook a wide variety of food products, such as pizza, pizza-type products, cookies, sandwiches and others.

II. OVEN COMPONENTS - see Figure 1-1.

A. Conveyor Drive Motor: Moves the conveyor.

B. Crumb Pans: Catch crumbs and other material that drop through the conveyor belt. One crumb pan is located at each end of the conveyor.

C,D. Conveyor End Stop and Rear Stop: Prevents food products from falling off the end or rear of the moving conveyor.

E. Conveyor: Moves the food product through the oven.

F. End Plugs: Allow access to the oven's interior.

G. Eyebrows: Can be adjusted to various heights to prevent heat loss into the environment.

H. Window: Allows the user to access food products inside the baking chamber.

I. Machinery Compartment Access Panel: Allows access to the oven's interior and control components. No user-servicable parts are located in the machinery compartment.

J. Serial Plate: Provides specifications for the oven that affect installation and operation. Refer to Section 2, Installation, for details.

K. Control Panel: Location of the operating controls for the oven. Refer to Section 3, Operation, for details.

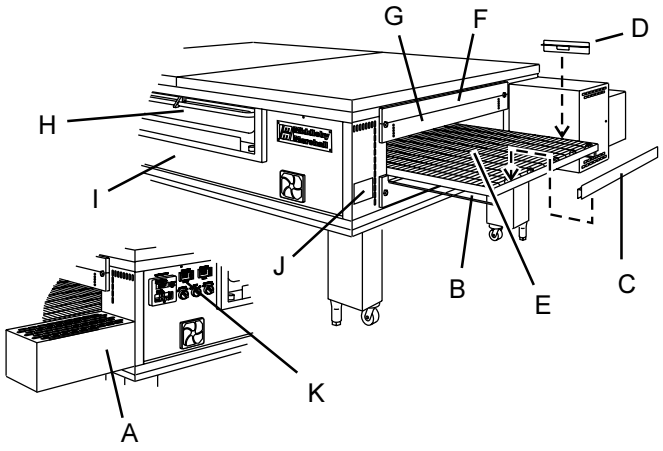
Not Shown:

L. Gas Burner (gas ovens) or Heating Elements (electric ovens): Heat air, which is then projected to the air fingers by the blowers.

M. Blowers: Project hot air from the burner or heating elements to the air fingers.

N. Air Fingers: Project streams of hot air onto the food product.

Figure 1-1 - Oven Components



III. OVEN SPECIFICATIONS

Table 1-1: Dimensions	*Single Oven*		*Double Oven*		*Triple Oven*		*Quad Oven*	
	PS555E/G	*PS570G*	*PS555E/G*	*PS570G*	*PS555E/G*	*PS570G*	*PS555E/G*	*PS570G*
Overall Height (inc. top and legs, as appropriate)	1.17m		1.53m		1.59m		1.98m	
Overall Depth (inc. rear shrouds)	1.61m		1.61m		1.61m		1.61m	
Overall Length	2.31m	2.69m	2.31m	2.69m	2.31m	2.69m	2.31m	2.69m
Conveyor Width	0.81m or 2x0.38m		0.81m or 2x0.38m		0.81m or 2x0.38m		0.81m or 2x0.38m	
Recommended Minimum Clearances								
Rear of Oven (inc. rear shrouds) to Wall	0mm		0mm		0mm		0mm	
Conveyor Extension to Wall (both ends)	0mm		0mm		0mm		0mm	

Table 1-2: General Specifications (per oven cavity)	*PS555E/G*	*PS570G*
Weight	533kg	590kg
Shipping Weight	568kg	624kg
Shipping Cube	4.53m³	4.53m³
Rated Heat Input - Gas Ovens	44 kW, 37,800 kcal	50 kW, 42,840 kcal
Rated Heat Input - Electric Ovens	32kW	--
Maximum Operating Temperature	< - - - - - - - - - - - - 288°C - - - - - - - - - - - - >	
Air Blowers	Two blowers at 39.6m³/min. at 2050 RPM, 10mm Water Static Pressure	
Average Air Jet Velocity	< - - - - - - - 13.20m/sec. average - - - - - - - >	
Warmup Time	< - - - - - - - - - - - - 15 min. - - - - - - - - - - - - >	

Table 1-3: Electrical specifications for PS555E electric ovens (per oven cavity)

Main Blower Voltage	*Control Circuit Voltage*	*Phase*	*Freq*	*Current draw (avg.) **				*Poles*	*Wires*
				L1	*L2*	*L3*	*N*		
380V	120V conveyor speed controller (w/transformer); all other control circuits 230V	3 Ph	50Hz	48.6A	48.6A	57.8A	9.2A	4 Pole	5 Wire (3 hot, 1 neutral, 1 ground)

*** *CAUTION:* The current draw shown in the chart above is an average value for normal operation. The initial amperage draw on oven startup may exceed the listed value.**

Table 1-4: Electrical specifications for PS555G and PS570G gas ovens (per oven cavity)

Main Blower Voltage	*Control Circuit Voltage*	*Phase*	*Freq*	*Electrical system kW rating*	*Current draw (avg.) **	*Poles*	*Wires*
230V	120V conveyor speed controller (w/transformer); all other control circuits 230V	1 Ph	50Hz	2.3kW	10A *	2 Pole	3 Wire (2 hot, 1 gnd)

*** *CAUTION:* The current draw shown in the chart above is an average value for normal operation. The initial amperage draw on oven startup may exceed the listed value.**

Table 1-5: Gas orifice and pressure specifications (per oven cavity)

			Supply (inlet) Pressure (mbar)							
	Gas Type	Main Orifice dia.	Pilot Orifice dia.	IE,IT,PT, ES,GB II_{2H3+}	DE $II_{2ELL3B/P}$	NL $II_{2L3B/P}$	BE,FR II_{2E+3+}	AT,CH,DK, FI,SE $II_{2H3B/P}$	Orifice (manifold) pressure	Rated Heat Input
PS555G	Natural, G20	5.79mm	0.635mm	20	20	--	20-25	20	9.0 mbar	44kw
	Natural, G25	5.79mm	0.635mm	--	20	25	--	--	12.0 mbar	44kw
	Natural, G20, G25	5.79mm	0.635mm	20	20	25	20-25	20	9.0 mbar	44kw
	Liquid, G30	3.33mm	0.381mm	29-37	--	28-30	29-37	50	23.9 mbar	44kw
	Liquid, G30, G31	3.33mm	0.381mm	--	50	30	--	50	23.9 mbar	44kw
PS570G	Natural, G20	6.35mm	0.635mm	20	20	--	20-25	20	9.0 mbar	50kw
	Natural, G25	6.35mm	0.635mm	--	20	25	--	--	12.0 mbar	50kw
	Natural, G20, G25	6.35mm	0.635mm	20	20	25	20-25	20	9.0 mbar	50kw
	Liquid, G30	3.53mm	0.381mm	29-37	--	28-30	29-37	50	23.9 mbar	50kw
	Liquid, G30, G31	3.53mm	0.381mm	--	50	30	--	50	23.9 mbar	50kw

SECTION 2 - INSTALLATION

WARNING - After any conversions, readjustments, or service work on the oven:

- **Perform a gas leak test.**
- **Test for correct air supply, particularly to the burner blower.**
- **Test for proper combustion and gas supply.**
- **Check that the ventilation system is in operation.**

WARNING

Keep the appliance area free and clear of combustibles.

WARNING

The oven must be installed on an even (level) non-flammable flooring and any adjacent walls must be non-flammable. Recommended minimum clearances are specified in the *Description* section of this Manual.

WARNING

Do not obstruct the flow of combustion and ventilation air to and from your oven. There must be no obstructions around or underneath the oven. Constructional changes to the area where the oven is installed shall not affect the air supply to the oven.

NOTE

There must be adequate clearance between the oven and combustible construction. Clearance must also be provided for servicing and for proper operation.

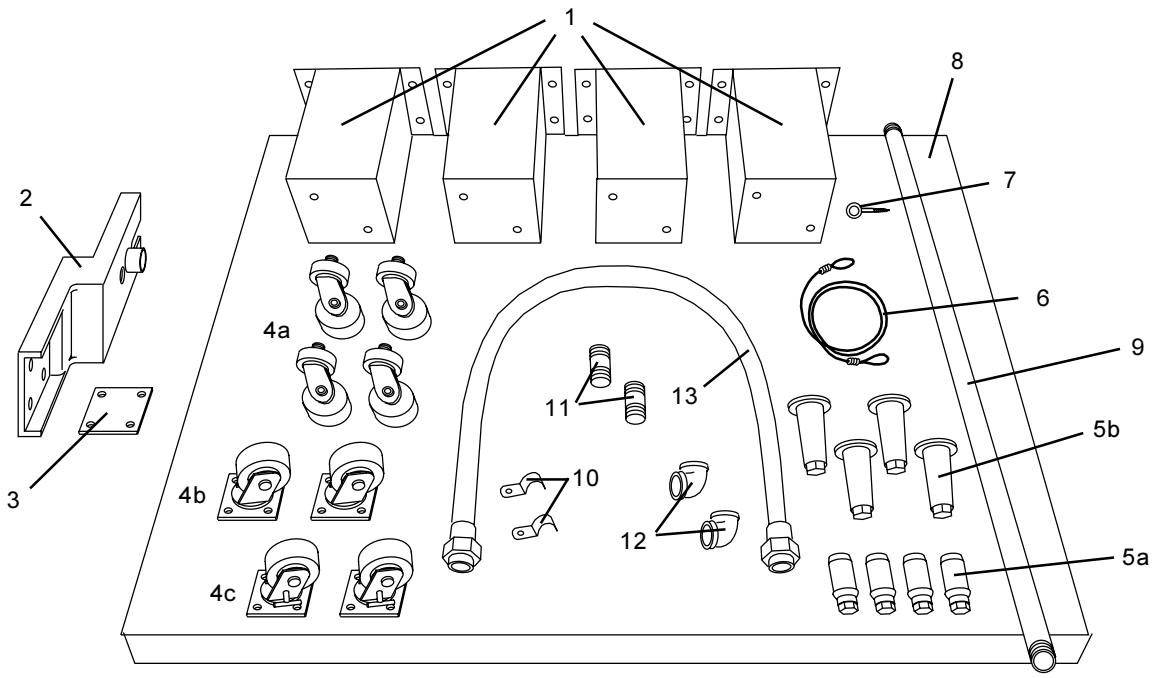
NOTE

An electrical wiring diagram for the oven is located inside the machinery compartment.

NOTE

All aspects of the oven installation, including placement, utility connections, and ventilation requirements, must conform with any applicable local, national, or international codes. These codes supercede the requirements and guidelines provided in this manual.

Fig. 2-1 - Base Pad Kit



I. BASE PAD KIT - see Figure 2-1

NOTE: **One Base Pad Kit is required for each Single, Double, Triple, or Quad Oven installation.**

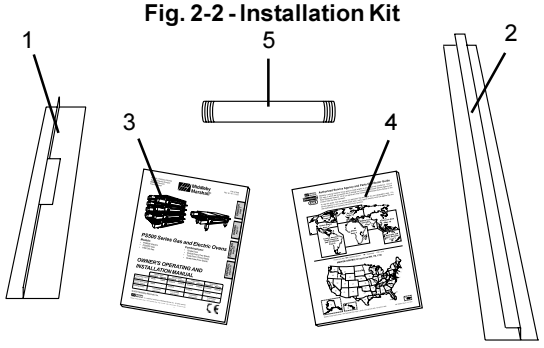
	Quantity							
Item	*Single oven with 0.48m extensions*	*Double oven with 0.25m extensions*	*Double oven with 0.38m extensions*	*Triple oven with 0.10m extensions*	*Triple oven without leg extensions*	*Quad oven with outriggers*	*Part No.*	*Description*
1a	4	--	--	--	--	--	37210-0060	Leg extension, 0.48m
1b	--	4	--	--	--	--	37210-0082	Leg extension, 0.25m
1c	--	--	4	--	--	--	37210-0057	Leg extension, 0.38m
1d	--	--	--	4	--	--	39684	Leg extension, 0.10m
2	--	--	--	--	--	4	45209	Outrigger
3	--	--	--	--	--	4	45205	Spacer, caster - for use with outrigger only
4a	4	4	4	4	4	--	37115-0102	Caster, swivel (with stud)
4b	--	--	--	--	--	2	45357	Caster, swivel (with flat plate)
4c	--	--	--	--	--	2	45664	Caster, swivel (with flat plate and brake)
5a	4	4	4	4	4	--	22450-0028	Adjustable foot, standard
5b	--	--	--	--	--	4	45206	Adjustable foot, quad ovens
6	1	1	1	1	1	1	22450-0253	Restraint cable, 1.5m
7	1	1	1	1	1	1	21392-0005	Eye bolt/lag screw
8	1	1	1	1	1	1	41643	Base pad
--	2	2	2	2	2	2	41582	Top cover (right or left)
--	8	8	8	8	8	8	21256-0069	Screw, sl trus hd #10-32 X 1-1/4"
--	16	16	16	16	--	8	21216-0018	Bolt, hex cap 1/2"-13 X 1-1/4"
--	16	16	16	16	--	8	21416-0003	Flat washer, 1/2"
--	16	16	16	16	--	8	21426-0004	Lock washer, 1/2"
--	--	--	--	--	--	16	A27727	Bolt, hex cap 3/8"-16 X 1"
--	--	--	--	--	--	32	A21924	Flat washer, 3/8"
--	--	--	--	--	--	16	21172-0004	Lock nut, hex, 3/8"-16
ADDITIONAL COMPONENTS FOR GAS OVENS:								
9	1	1	1	1	1	1	33120-0056	Gas pipe, 1-1/4" dia. X 54" (1.4m) L
10	2	2	2	2	2	2	27271-0004	Pipe clamp, 1-1/2"
11	2	2	2	2	2	2	33120-0055	Pipe nipple, 1-14" dia. X 3" (76mm) L, NPT
12	2	2	2	2	2	2	23122-0007	Elbow, 90°, 1-1/4" dia.
13	1	1	1	1	1	1	22361-0003	Gas hose, 1-1/4" dia. X 72" (1.8m) L
--	2	2	2	2	2	2	21292-0001	Screw, hex wshr hd #10-16 X 3/4"

II. INSTALLATION KIT - see Figure 2-2

NOTE: **One Installation Kit is required for each oven cavity.**

Item	*Qty.*	*Part No.*	*Description*
1	1	35900-0148	Conveyor Rear Stop
2	1	35000-1103	Conveyor End Stop
3	1	47008	Owner's Operating & Installation Manual
4	1	1002040	Authorized Service Agency Listing
ADDITIONAL COMPONENTS FOR PS555G AND PS570G GAS OVENS:			
5	1	33120-0053	Gas Pipe Nipple

Fig. 2-2 - Installation Kit



III. VENTILATION SYSTEM

IMPORTANT

Where national or local codes require the installation of fire suppression equipment or other supplementary equipment, DO NOT mount the equipment directly to the oven.

MOUNTING SUCH EQUIPMENT ON THE OVEN MAY:

- ***VOID AGENCY CERTIFICATIONS***
- ***RESTRICT SERVICE ACCESS***
- ***LEAD TO INCREASED SERVICE EXPENSES FOR THE OWNER***

A. Requirements

CAUTION

Gas oven installations <u>REQUIRE</u> a mechanically driven ventilation system with electrical exhaust air sensing control.

A mechanically driven ventilation system is <u>STRONGLY RECOMMENDED</u> for electric oven installations.

<u>PROPER VENTILATION OF THE OVEN IS THE RESPONSIBILITY OF THE OWNER.</u>

B. Recommendations

NOTE THAT THE HOOD DIMENSIONS SHOWN IN FIGURE 2-3 ARE <u>RECOMMENDATIONS ONLY</u>. LOCAL, NATIONAL, AND INTERNATIONAL CODES MUST BE FOLLOWED WHEN INSTALLING THE VENTILATION SYSTEM. ANY APPLICABLE CODES SUPERSEDE THE RECOMMENDATIONS SHOWN IN THIS MANUAL.

The rate of air flow exhausted through the ventilation system may vary depending on the oven configuration and hood design. Consult the hood manufacturer or ventilation engineer for these specifications.

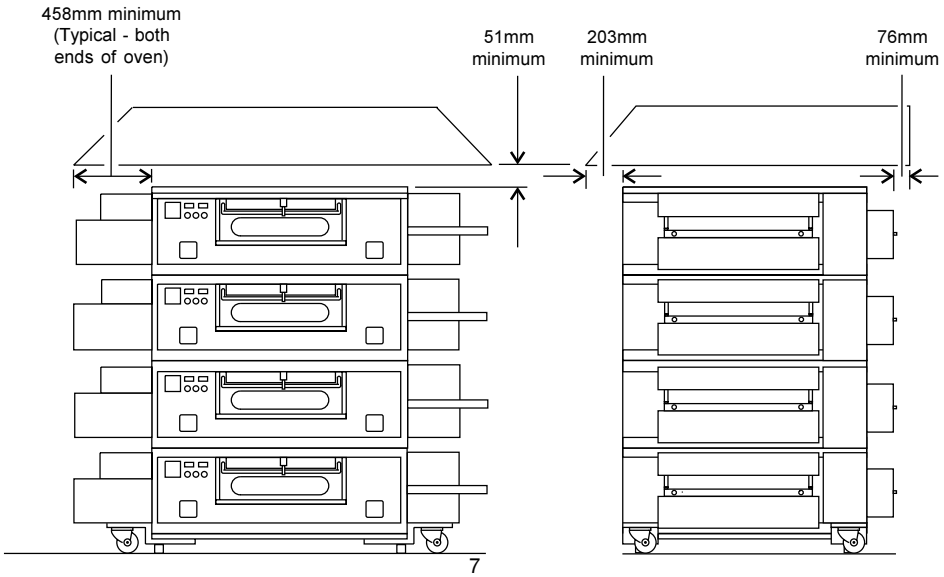
To avoid a negative pressure condition in the kitchen area, return air must be brought back to replenish the air that was exhausted. A negative pressure in the kitchen can cause heat-related problems to the oven components as if there were no ventilation at all. The best method of supplying return air is through the heating, ventilation and air conditioning (HVAC) system. Through the HVAC system, the air can be temperature-controlled for summer and winter. Return air can also be brought in directly from outside the building, but detrimental effects can result from extreme seasonal hot and cold temperatures from the outdoors.

NOTE: *Return air from the mechanically driven system <u>must</u> <u>not</u> blow at the opening of the baking chamber. Poor oven baking performance will result.*

C. Other ventilation concerns

- Special locations, conditions, or problems may require the services of a ventilation engineer or specialist.
- Inadequate ventilation can inhibit oven performance.
- It is recommended that the ventilation system and duct work be checked at prevailing intervals as specified by the hood manufacturer and/or HVAC engineer or specialist.

Fig. 2-3 - Ventilation System



IV. ASSEMBLY

A. Base Pad, Legs, Casters, and Stacking

NOTE: Optional Stacking Lift Kit (P/N 30580)
The Stacking Lift Kit, P/N 30580, is available separately. This Kit provides a complete lift adapter set, specifically designed for stacking PS500 Series oven cavities. The Kit includes an instructional videotape.

1. Install the top panels in place on the top oven cavity. Follow the instructions provided with the top panels.

2a. *Legs/Casters Installation (Standard) - Single Ovens, Double Ovens, and Triple Ovens with Leg Extensions*

- Install one leg extension to each corner of the base pad using the supplied 1/2"-13x1-1/4" bolts, 1/2" flat washers, and 1/2" lockwashers. See Figure 2-4.
- Install one adjustable foot and one caster into the holes on the bottom of the leg extension. The adjustable foot should be installed into the OUTSIDE hole (closest to the front or rear face of the oven). The caster should be installed into the INSIDE hole.

2b. *Legs/Casters Installation - Triple Ovens Without Leg Extensions*

Install one adjustable foot and one caster into the 3/4" holes on the bottom of the base pad. The adjustable foot should be installed into the OUTSIDE hole (closest to the front or rear face of the oven). The caster should be installed into the INSIDE hole. See Figure 2-5.

2c. *Legs/Casters Installation - Quad Ovens*

- Install one outrigger to each corner of the base pad using the supplied 1/2"-13x1-1/4" bolts, 1/2" flat washers, and 1/2" lockwashers. See Figure 2-6.
- Install the spacer plates and casters onto the outriggers using the 3/8"-16x1" screws, 3/8" flat washers, and 3/8"-16 hex nuts supplied in the Installation Kit. The two locking casters should be installed on the front side of the oven.
- Install the adjustable feet into the holes on the underside of the outrigger assembly.

3. Install the base pad onto the lower oven cavity. Check that the eyebolt welded onto the pad faces the rear of the oven.

4. Stack the oven cavities. If necessary, refer to the instructional videotape provided with the Stacking Lift Kit (P/N 30580).

B. Restraint Cable Installation

Because the oven is equipped with casters, a restraint cable assembly must be installed to limit the movement of the appliance without depending on the connector and the quick disconnect device or its associated piping. One end of the cable is anchored to the eyebolt on the rear surface of the oven's base pad, while the other is anchored to the wall. See Figure 2-7.

After connecting the restraint cable, move the oven to its final location. Adjust the bottom (hex) sections of the feet so that the casters are off the floor. For quad ovens, lock the two front casters.

C. Conveyor Installation

NOTE
Split belt conveyors can only be installed from the end of the oven <u>with</u> the drive motor.

Single-belt conveyor assemblies may be inserted into either end of the oven. If it is to be installed from the end of the oven <u>without</u> the drive motor, the drive sprocket assembly must be removed.

Figure 2-4 - Legs and Casters - Standard

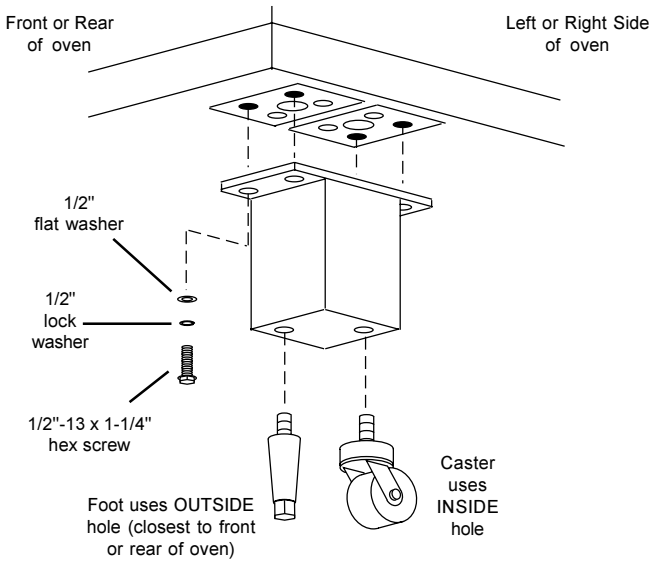


Figure 2-5 - Legs and Casters for Triple Oven Without Leg Extensions

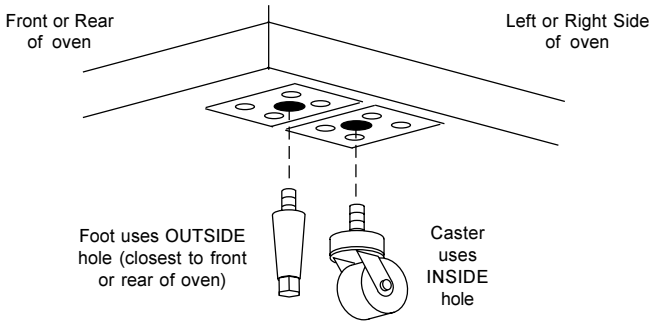
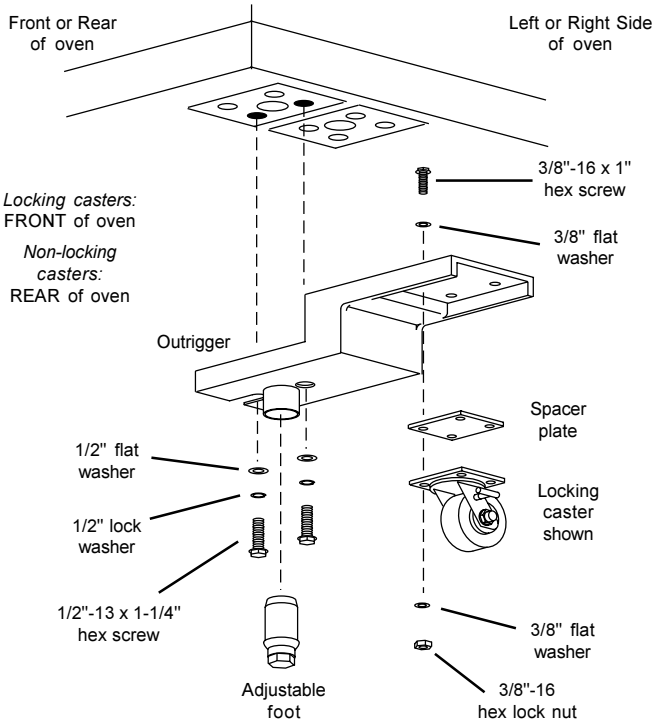


Figure 2-6 - Legs and Casters for Quad Oven



To remove the drive sprocket (if necessary), loosen the set screw on the conveyor collar as shown in Figure 2-8. Then, pull the sprocket assembly straight out.

1. Lift the conveyor and position it in the oven as shown in Figure 2-9.
2. Continue moving the conveyor into the oven until the frame protrudes equally from each end of the oven (about 0.46m).
3. Check that the retainers located on the underside of the conveyor frame rest firmly against the lower end plugs, as shown in Figure 2-9.
4. When the conveyor is positioned properly, check for freedom of movement of the conveyor belt by pulling it for about 0.75-1.00m with your fingers. The conveyor must move freely.
5. If the drive sprocket was removed when installing the conveyor, replace it at this time.
6. Install the drive chain between the conveyor drive sprocket and the motor sprocket. To install the chain, it will be necessary to lift the drive end of the conveyor slightly.
7. Install the conveyor drive motor cover.
8. Check the tension of the conveyor belt as shown in Figure 2-10. The belt should lift between 75-100mm. DO NOT OVERTIGHTEN THE CONVEYOR BELT.

   NOTE:
   If necessary, the belt tension can be adjusted by turning the conveyor adjustment screws, located at the idler (right) end of the conveyor. See Figure 2-10.
9. If necessary, links can be added to or removed from the conveyor belt to achieve the correct deflection of 75-100mm. If links must be removed from the belt, it can be reattached to the conveyor as follows:
   a. The conveyor belt links must be oriented as shown in Figure 2-11.
   b. The smooth side of the conveyor belt must face UP.
   c. Connect the inside master links. Check that the links are oriented as shown in Figure 2-11.
   d. Connect the outside master links. Note that the outside master links have right and left sides. The right-side master link has an open hook facing you, as shown in Figure 2-11.
   e. Check for freedom of movement of the conveyor belt by pulling it for about 0.75-1.00m with your fingers. The conveyor must move freely.
   f. Return to Step 8, above, to re-check the belt tension.

Figure 2-7 - Installing the Restraint Cable

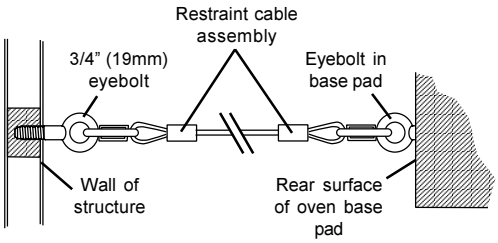


Figure 2-8 - Removing the Conveyor Drive Sprocket

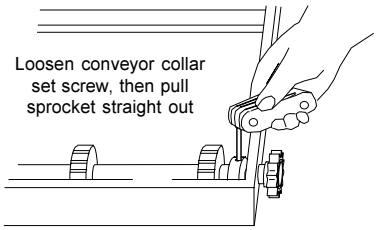


Figure 2-9 - Inserting the Conveyor

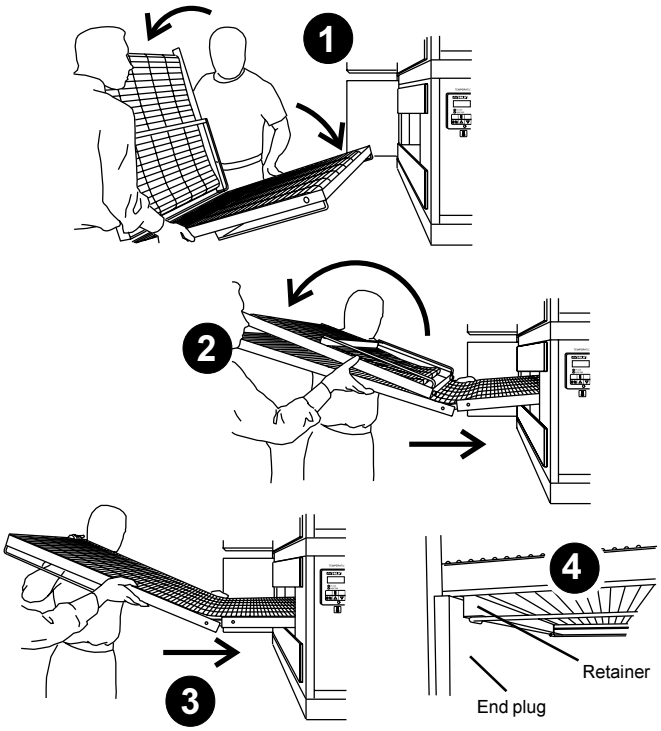


Figure 2-10 - Checking the conveyor tension

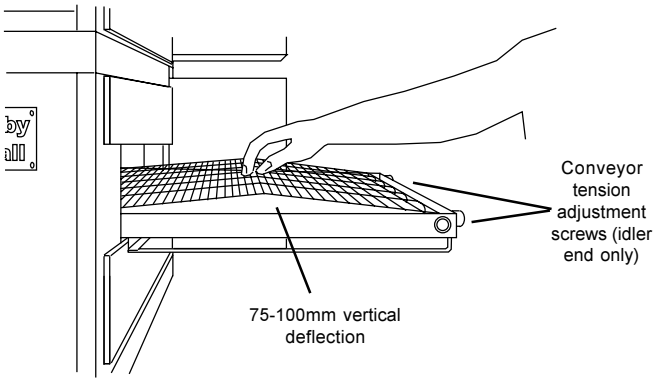
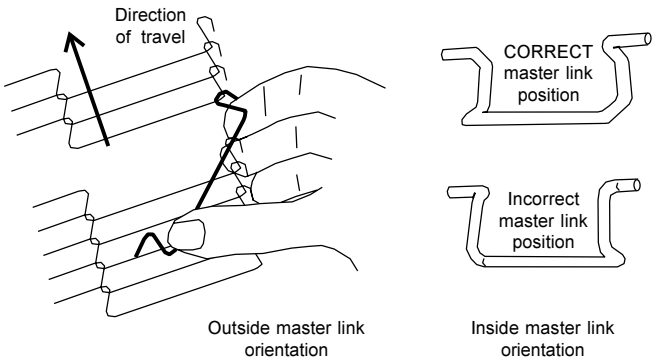


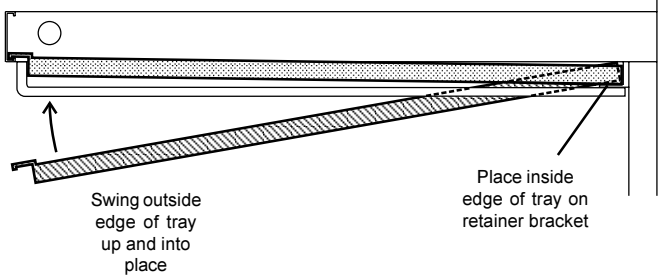
Figure 2-11 - Conveyor and Master Link Orientation



V. FINAL ASSEMBLY

1. Install the crumb trays underneath the conveyor as shown in Figure 2-12. First, place the inside edge of the tray onto the retainer (shown in Figure 2-9). Then, swing the outside edge of the tray up and into place.
2. Press the conveyor end stop and rear stop down over the edge of the conveyor frame. See Figure 1-1 (in Section 1, Description).

Figure 2-12 - Crumb trays



VI. ELECTRICAL SUPPLY

WARNING

Authorized supplier personnel normally accomplish the connections for the ventilation system, electric supply, and gas supply, as arranged by the customer. Following these connections, the factory-authorized installer can perform the initial startup of the oven.

NOTE: *All aspects of the electrical supply connection must comply with current IEC/CEE requirements and with all applicable local, national, and international codes.*

Check the oven serial plate before making any electric supply connections. Electric supply connections must agree with data on the oven serial plate. The location of the serial plate is shown in Figure 1-1 (in Section 1, Description).

A fused disconnect switch or a main circuit breaker (customer furnished) MUST be installed in the electric supply line for each oven cavity. The circuit breaker/disconnect must have 3mm contact gaps breaking all poles of the supply. It is recommended that this circuit breaker/disconnect have lockout/tagout capability.

The supply conductors are to be 90°C-rated copper wiring. Additional wiring information is shown on the wiring diagrams in Section 5, Electrical Wiring Diagrams and inside the machinery compartment of the oven.

The oven requires a ground connection to the oven ground screw located in the electrical junction box. (The box is shown in Figures 2-13 and 2-14.) The ground connection must comply with current IEC/CEE requirements and with all applicable local, national, and international codes. If necessary, have the electrician supply the ground wire. *Do NOT use the wiring conduit or other piping for ground connections!*

A. Additional Information - Gas Ovens

All electric supply connections are made via the electrical junction box on the rear of the oven, shown in Figure 2-13. The power lines then connect to the oven circuits through safety switches located inside the machinery compartment and each blower motor compartment. These switches interrupt electric power to the oven when the Machinery Compartment Access Panel is opened, OR when either of the blower or rear shrouds is removed.

B. Additional Information - Electric Ovens

A 51mm dia. cutout in the back wall of the machinery compartment provides access to the electrical supply connections. See Figure 2-14. The actual wiring connections are made at the terminal block located inside the side compartment of the oven.

Using flexible cables for the electric power supply conductors requires a 51mm strain-relief fitting (not furnished with the oven) to enable safe access to the terminal block.

Figure 2-13 - Utility Connection Locations for Gas Ovens

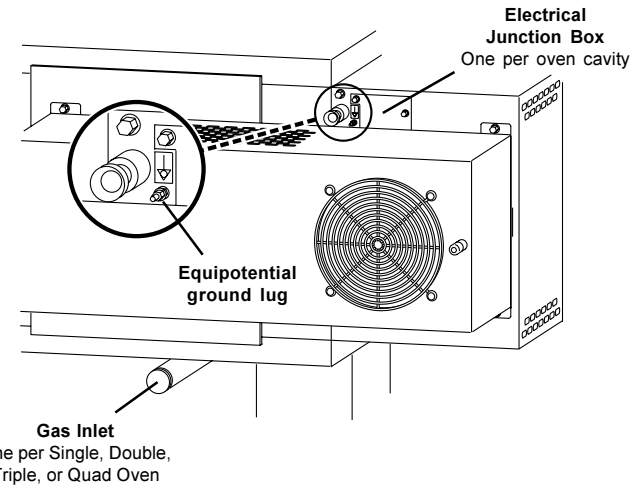
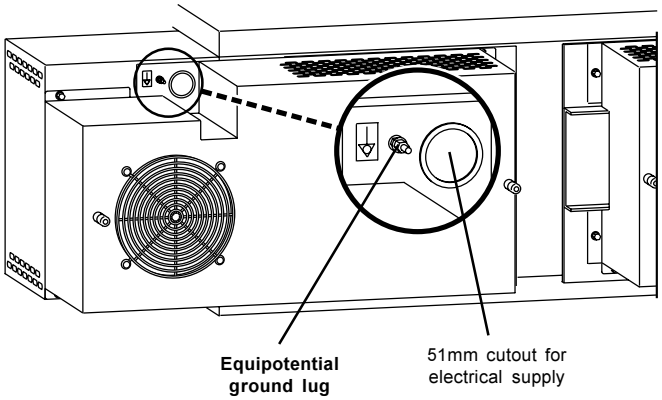


Figure 2-14 - Utility Connection Locations for Electric Ovens



C. Connection

Refer to the wiring diagram inside the machinery compartment, or in Section 5 of this Manual, to determine the correct connections for the electrical supply lines. Connect the supply as indicated on the wiring diagram.

If required by national or local codes, connect an equipotential ground wire to the lug next to the ⏚ symbol (shown in Figures 2-13 and 2-14). The equipotential ground connection must meet all applicable national and local code requirements.

VII. GAS SUPPLY

CAUTION

DURING PRESSURE TESTING NOTE ONE OF THE FOLLOWING:

1. The oven and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressure in excess of 3.45 kPa.

2. The oven must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressure equal to or less than 3.45 kPa.

3. If incoming pressure is over 50mbar, a separate regulator MUST be installed in the line BEFORE the individual shutoff valve for the oven.

WARNING: **To prevent damage to the control valve regulator during initial turn- on of gas, it is very important to open the manual shutoff valve very slowly.**

After the initial gas turn-on, the manual shutoff valve must remain open except during pressure testing as outlined in the above steps or when necessary during service maintenance.

A. Connection

WARNING

Some procedures in this section may require conversions, readjustments, or service on the oven's gas system. Before performing these procedures, check that the main gas supply valve and the circuit breaker/fused disconnect are in the OFF ("O") position. After completing these procedures, perform a gas leak test before operating the oven.

CAUTION

The terms of the oven's warranty require all start-ups, conversions and service work to be performed by a Middleby Marshall Authorized Service Agent. The installation, start-up and changes required when changing from one gas type to another can be performed ONLY by a certified professional.

NOTE: *The gas supply connection should be according to applicable ISO 228-1 or ISO 7-1 recommendations. All aspects of the gas supply connection must comply with current IEC/CEE requirements and with all applicable local, national, and international codes.*

Check the oven's gas supply requirements before making the gas utility connection. Gas supply requirements are listed on the oven's serial plate and in Table 1-5, Gas Orifice and Pressure Specifications (in Section 1, Description).

Check the serial plate to determine the type of gas to be used with the oven. Check that the gas type indicated matches the local supply at the installation. If the gas type on the serial plate does NOT match the local supply, directions for converting the oven for use with other gases are described in Part B, Preparation for Use with Various Gases, in this section.

One 90° elbow equals a 2.13m length of pipe. The recommended pipe sizes are larger than usually required to eliminate any operation problems. It is much less expensive to make the initial installment large enough to do the job rather than redoing the job later.

Refer to the instructions in the gas hose package (included in the Installation Kit) before connecting the gas line. One gas line connection method is shown in Figure 2-15; however, compliance with the applicable standards and regulations is mandatory.

Figure 2-15 - Flexible Gas Hose Installation

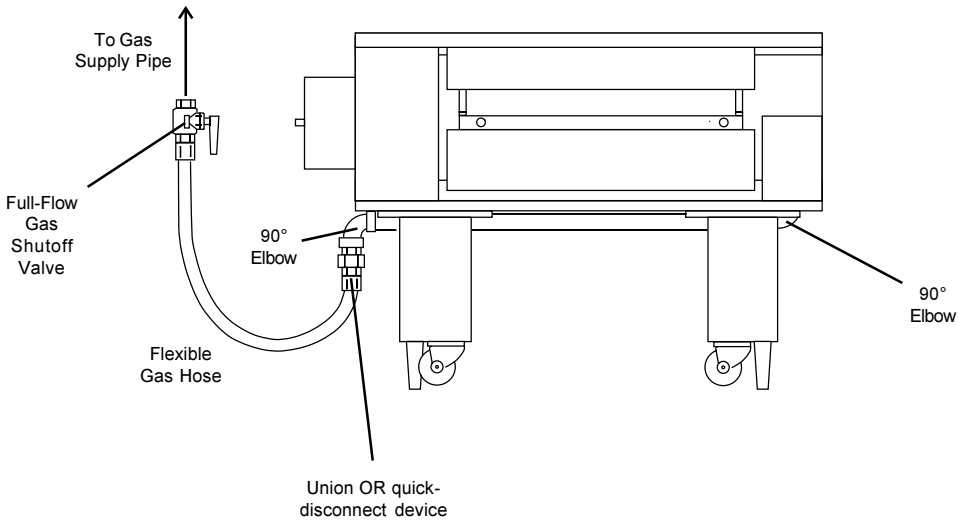
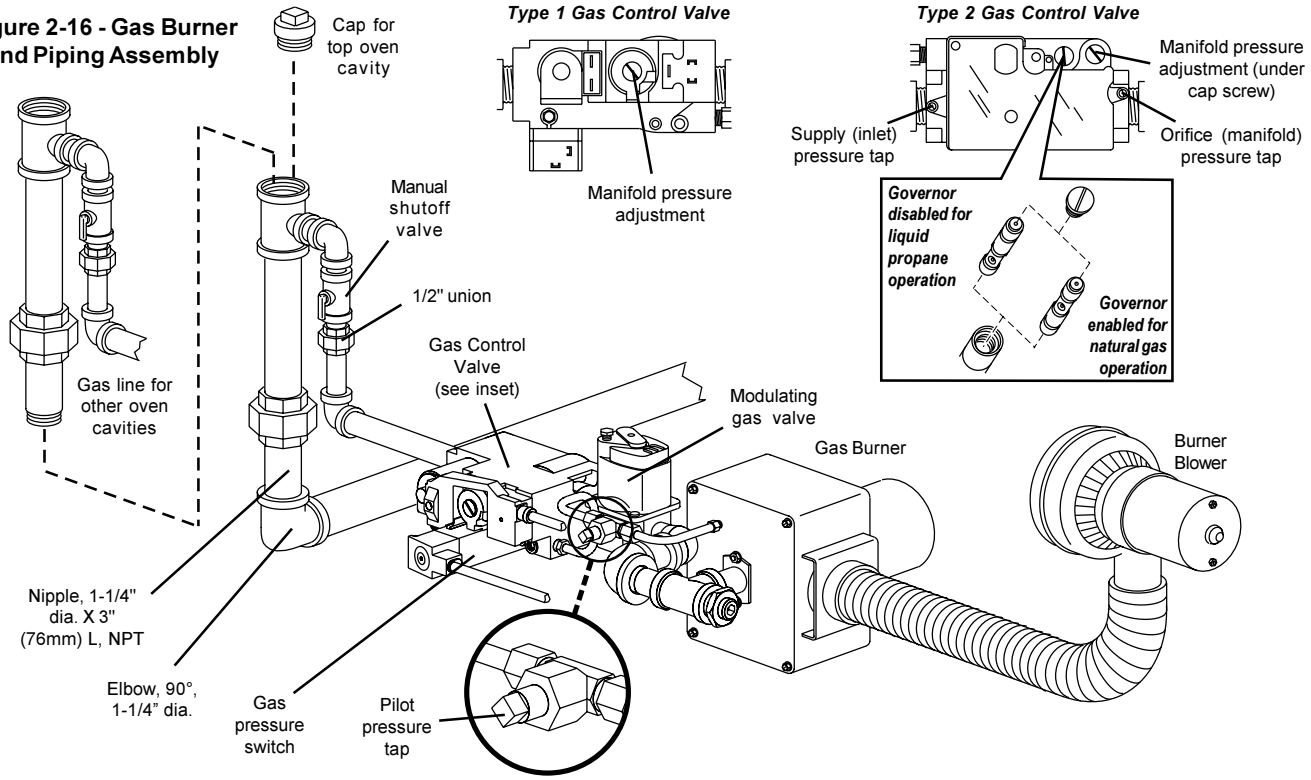


Figure 2-16 - Gas Burner and Piping Assembly



B. Preparation for Use with Various Gases

Before proceeding to set up the oven for a specific gas, check that the main gas supply valve and the circuit breaker/fused disconnect are in the OFF ("O") position.

The main and pilot orifices must match the sizes shown in Table 1-5. If necessary, replace the orifices. Refer to Part C, Replacing the Gas Orifices.

The orifice (manifold) pressure should be adjusted to the value shown in Table 1-5 (in the Description section) for the specific gas type and location.

1. *For Use with Natural Gas*

   The actual heat input to the oven must match the rated heat input. The input to the burner can be determined using the orifice (manifold) pressure data or by the volume supplied using the gas meter. Both of these procedures are described in Part E, Checking the Heat Input.

   If the measured input does not correspond with the rated input (shown in Table 1-5 in the Description section of this Manual), check first that the correct orifices are installed. If the orifices are correct, check and correct the supply and orifice pressures to obtain the correct input based on the gas meter reading.

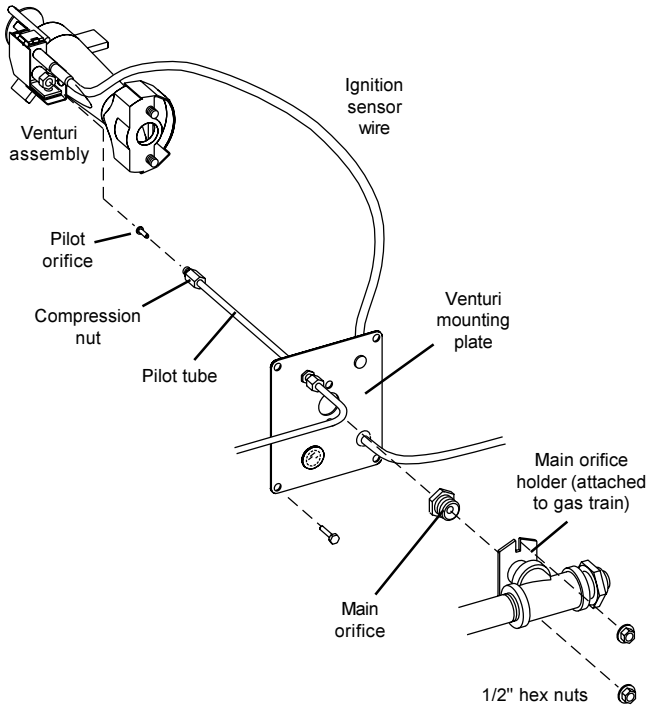
2. *For Use with Liquid Propane (LP) Gas*

   When using liquid gas with an oven equipped with a Type 2 gas control valve (see Figure 2-16), the converter in the multifunction gas valve must be removed, and then replaced INVERTED from its former position. Inverting the converter will disable the governor. This step is only required if the supply pressure is below 50mbar.

C. Replacing the Gas Orifices (if so required)

1. *Replacing the Main Orifice*
   a. Check that the main gas supply valve and the circuit breaker/fused disconnect are in the OFF ("O") position.
   b. Open the 1/2" union in the gas supply line. The union is located between the oven's manual shutoff valve and the multifunction gas valve. See Figure 2-16.
   c. Refer to Figure 2-17. Unscrew the four hex screws that hold the venturi mounting plate to the front of the burner. Remove the gas train/venturi assembly from the oven.
   d. Remove the two 1/2" nuts that secure the gas train to the venturi mounting plate.
   e. Remove the main orifice using an 11/16" wrench.
   f. Install the new orifice by following the above procedure in reverse order.

Figure 2-17 - Replacing the Main and Pilot Orifices



2. *Replacing the Pilot Orifice*

   NOTE: *All natural gases use the same size pilot orifice (0.635mm), as do all liquid propane (LP) gases (0.381mm). Because of this, it is not normally necessary to replace the pilot orifice unless converting the oven from natural to propane, or from propane to natural, operation.*

   a. Follow Steps a-d in Replacing the Main Orifice, above.
   b. Refer to Figure 2-17. Unscrew the pilot tube compression nut and slide it out of the way. Pull the tube from the fitting to expose the pilot orifice.
   c. Remove the pilot orifice.
   d. Slip the new pilot orifice into the pilot tube.
   e. Push the pilot tube back into place until it bottoms, and hold it in place. Slide the compression nut back into place and engage the threads. Tighten the nut to a snug fit with your fingers.
   f. Gently tighten the nut one complete turn with a wrench. DO NOT OVERTIGHTEN THE COMPRESSION NUT.
   g. Replace the gas train and venturi by following Steps a-d in Replacing the Main Orifice, above, in reverse order.

WARNING
After completing these procedures, perform a gas leak test before operating the oven.

D. Checking the Gas Supply (Inlet) Pressure

1. Attach a manometer to record the supply (inlet) pressure. For a Type 1 gas control valve (see Figure 2-16), you will need to check the supply pressure at the gas connection to the oven. For a Type 2 gas control valve, remove the supply (inlet) pressure cap screw and attach a manometer to the stud.
2. Depress the two machinery compartment safety switches to allow the oven to operate.
3. Open the main gas supply valve. Switch the circuit breaker/fused disconnect to the ON ("I") position.
4. Start the oven according the directions in the Operation section of this Manual. Adjust the temperature controller to the maximum setting (288°C).
5. Measure the supply (inlet) pressure.
6. Switch the oven off. Close the main gas supply valve, and switch the circuit breaker/fused disconnect to the OFF ("O") position. Remove the manometer. For a Type 2 gas control valve, replace the cap screw.
7. Compare the measured supply (inlet) pressure to the nominal pressures shown in Table 1-5 (in the Description section of this Manual).

If the supply pressure is lower or higher than the nominal pressure, the reason should be investigated and the gas supplier contacted.

For natural gas ovens, if the measured supply pressure is lower than 17mbar, or higher than 25mbar, contact the gas supplier. DO NOT OPERATE THE OVEN or adjust the oven controls.

E. Adjusting the Orifice (Manifold) Pressure and Heat Input

To use the orifice pressure method, you must know the specific gas type and quality used. If using the orifice pressure method, you should double-check the input using the volumetric method.

To use the volumetric method, you must know the heat value (HuB) of the gas used. This information is available from your gas supplier.

During these measurements, do not operate any other appliances that use the same gas meter as the oven.

1. *Orifice (Manifold) Pressure Method*

   a. Check that the main gas supply valve and the circuit breaker/fused disconnect are in the OFF ("O") position.
   b. Attach a manometer to record the regulated (manifold) pressure. For a Type 1 gas control valve, you will need to remove the cap from the open end of the gas line tee as the line enters the burner. For a Type 2 valve, you can connect the manometer to this location, or to the stud on the valve, shown in Figure 2-16 (underneath the cap screw).
   c. For a Type 2 gas control valve, remove the cap screw from the pressure adjustment screw (governor). The Type 1 valve does not have a cap screw.
   d. Depress the two machinery compartment safety switches to allow the oven to operate.
   e. Open the main gas supply valve. Switch the circuit breaker/fused disconnect to the ON ("I") position.
   f. Start the oven according the directions in the Operation section of this Manual. Adjust the temperature controller to the maximum setting (288°C).
   g. Adjust the pressure adjustment screw as necessary to match the correct pressure for the oven's specific gas type. Refer to Table 1-5 in the Description section of this Manual. Turning the adjustment screw clockwise increases the flow, while turning it counterclockwise reduces the flow.
   h. Switch the oven off. Close the main gas supply valve, and switch the circuit breaker/fused disconnect to the OFF ("O") position. Remove the manometer, and replace all cap screws and gas line caps.

2. *Volumetric Method*

   a. Determine the time of 0.1m³ (100 liters) of gas usage as follows.

$$\text{Consumption } (m^3/hr.) = \frac{\text{NB (Rated input in kW)}}{\text{HuB (Heat [Calorific] value of gas in kW/m3)}}$$

$$\text{Time (in minutes) of 0.1m3 of gas usage} = \frac{6}{\text{Consumption}}$$

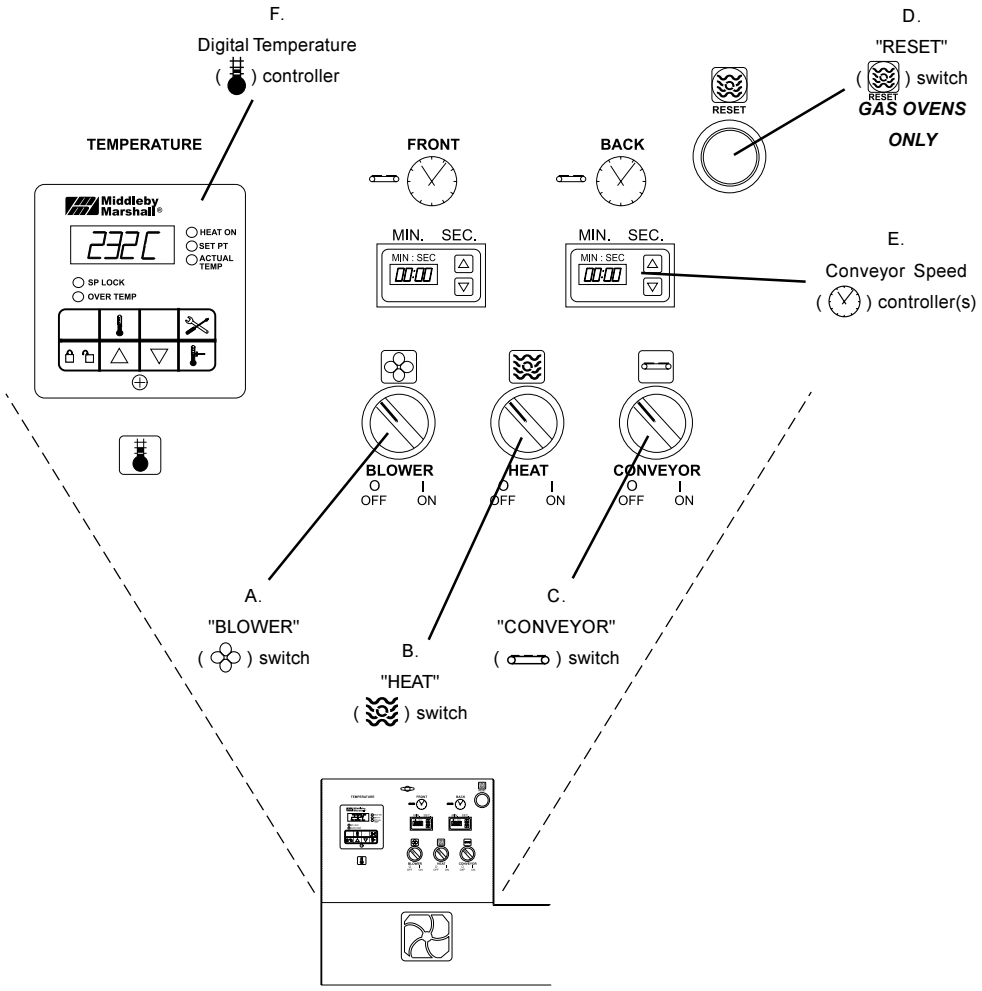
   b. Check that the main gas supply valve and the circuit breaker/fused disconnect are in the OFF ("O") position.
   c. For a Type 2 gas control valve, remove the cap screw from the pressure adjustment screw (governor). The Type 1 valve does not have a cap screw.
   d. Depress the two machinery compartment safety switches to allow the oven to operate.
   e. Open the main gas supply valve. Switch the circuit breaker/fused disconnect to the ON ("I") position.
   f. Start the oven according the directions in the Operation section of this Manual. Adjust the temperature controller to the maximum setting (288°C).
   g. Adjust the pressure adjustment screw as necessary to match the calculated volume using the time (in minutes) of 0.1m³ of gas usage. Turning the adjustment screw clockwise increases the flow, while turning it counterclockwise reduces the flow.
   h. Record the reading obtained from the gas meter and calculate the obtained gas flow. Compare this value to the information in Table 1-4 in the Description section of this Manual.
   i. Switch the oven off. Close the main gas supply valve, and switch the circuit breaker/fused disconnect to the OFF ("O") position. For a Type 2 gas valve, replace the cap screw.

SECTION 3 - OPERATION

I. LOCATION AND DESCRIPTION OF CONTROLS

ENGLISH

Fig. 3-1 - Control Panel



A. **"BLOWER" Switch:** Turns the blowers and cooling fans on and off. The HEAT Switch has no effect unless the BLOWER Switch is in the "ON" position.

B. **"HEAT" Switch:** Allows the burner or heating elements, as appropriate for the oven model, to activate. Activation is determined by the settings on the Digital Temperature Controller.

C. **"CONVEYOR" Switch:** Turns the conveyor drive motor on and off.

D. **"RESET" Switch:** Gas ovens only. Illuminates if the gas burner does not light. The switch can be pressed repeatedly to attempt to light the burner. If the burner does not light within 15 minutes, the "RESET" ( ) switch is locked out.

E. **Conveyor Speed Controller:** Adjusts and displays the bake time. Single-belt ovens have one controller. Split belt ovens have one controller for each conveyor belt, labeled "FRONT" and "BACK."

F. **Digital Temperature Controller:** Continuously monitors the oven temperature. Settings on the Digital Temperture Controller control the activation of the burner or heating elements.

NOT SHOWN:

G. **Machinery Compartment Access Panel Safety Switches:** Disconnect electrical power to the controls and the blowers when the machinery compartment access panel is opened. The panel should only be opened by authorized service personnel.

II. NORMAL OPERATION - STEP-BY-STEP

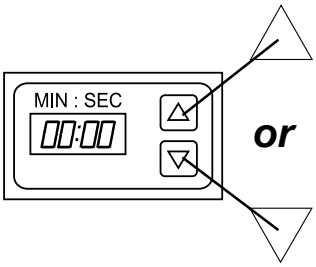
A. DAILY STARTUP PROCEDURE

1. Check that the circuit breaker/fused disconnect is in the on position. Check that the window is closed.

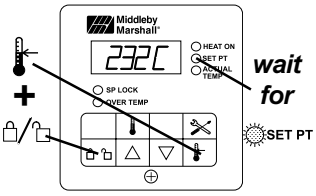
2. Turn the "BLOWER" ( ) switch to the “ON” ("I") position.

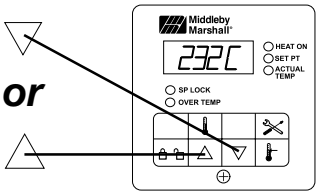
3. Turn the "CONVEYOR" ( ) switch to the “ON” ("I") position.

4. If necessary, adjust the conveyor speed setting by pressing the △ or ▽ pushbuttons on the conveyor speed controller to change the displayed bake time.

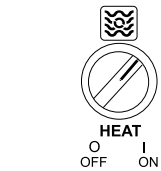


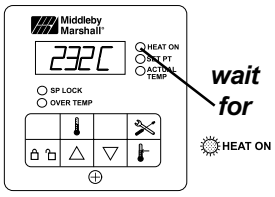
5. Adjust the temperature controller to a desired set temperature, if necessary.
   - Press the Set Point and Unlock keys at the same time. Wait for the "SET PT" light to turn on.
   - Press the Up Arrow and Down Arrow Keys as necessary to adjust the setpoint.





6. Turn the "HEAT" ( ) switch to the "ON" ("I") position, and wait for the "HEAT ON" light to turn on.



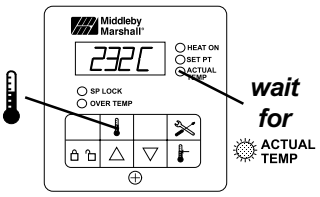


7. (Gas ovens only) If the "RESET" ( ) switch illuminates, the gas burner did not light. Press the "RESET" ( ) switch (repeatedly if necessary) to attempt to light the burner.

NOTE: *If the burner does not light within 15 minutes, the oven enters a safety lockout mode that disables the "RESET" ( ) switch. If this occurs, turn the "HEAT" ( ), "BLOWER" ( ), and "CONVEYOR" ( ) switches to the "OFF" ("O") position. <u>Wait for AT LEAST FIVE MINUTES.</u> Then, repeat the Daily Startup procedure.*

8. Wait for the oven to heat to the setpoint temperature. Higher setpoint temperatures will require a longer wait. The oven can reach a temperature of 232°C in approximately 5 minutes.

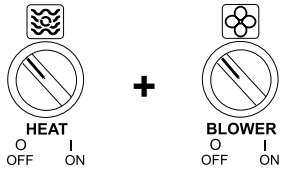
9. *(Optional)* Press the Temperature ( ) key to show the Actual Temperature in the display, and wait for the "ACTUAL TEMP" light to turn on. This allows you to monitor the oven temperature as it rises to the setpoint.



10. Allow the oven to preheat for 10 minutes after it has reached the set point temperature.

B. DAILY SHUTDOWN PROCEDURE

1. Turn the "HEAT" ( ) and "BLOWER" ( ) switches to the "OFF" ("O") position. Note that the blowers will remain in operation until the oven has cooled to below 93°C.



2. Make certain that there are no products left on the conveyor inside the oven. Turn the "CONVEYOR" ( ) switch to the "OFF" ("O") position.

3. Open the window to allow the oven to cool faster.

4. After the oven has cooled and the blowers have turned off, switch the circuit breaker/fused disconnect to the off position.

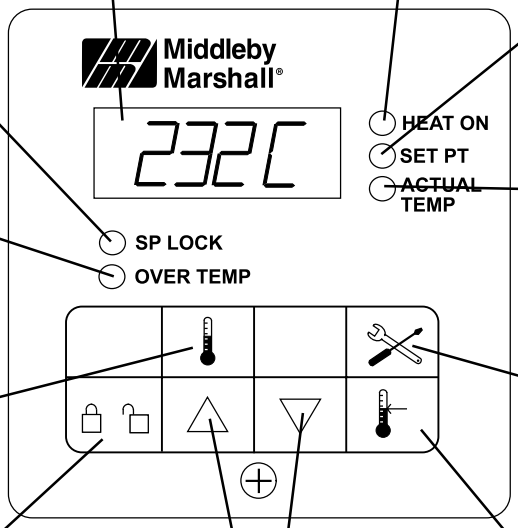
CAUTION

In case of power failure, turn all switches to the “OFF” ("O") position, open the oven window, and remove the product. After the power has been restored, perform the normal startup procedure.

On gas ovens, the burner will not operate and gas will not flow through the burner without electric power. No attempt should be made to operate the oven during a power failure.

III. QUICK REFERENCE: DIGITAL TEMPERATURE CONTROLLER

ENGLISH



Display
Shows the Set Point or the Actual Temperature in degrees Fahrenheit (F) or Celsius (C).

"HEAT ON" Light
Lights when the burner or heating elements, as appropriate for the oven model, are in operation.

"SP LOCK" Light
Lights when the set point is locked out from changes. This setting can only be changed by service personnel.

"SET PT" (setpoint) Light
Lights when the set point is shown in the display.

OVERTEMP Light
Lights when the oven temperature is greater than 343°C. Refer to Quick Reference: Troubleshooting in this section.

"ACTUAL TEMP" Light
Lights when the Actual Temperature is shown in the display.

Temperature Key
Press this key once to view the Actual Temperature in the Display.

Service Key
For use by service personnel only.

Unlock Key
Press this key together with the Set Point Key to allow the Set Point to be changed. Changes can only be made for 60 seconds.

Up Arrow and Down Arrow Keys
Press these keys to adjust the Set Point up or down. If the Set Point will not change, refer to Set Point Key and Unlock Key in this section.

Set Point Key
Press this key together with the Unlock Key to allow the Set Point to be changed.
Changes can only be made for 60 seconds.

IV. QUICK REFERENCE: TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION
OVERTEMP *light is lit, food product is undercooked*	The oven temperature exceeded 343°C, and the burner or heating elements were automatically shut down.	• Follow the procedures under Daily Shutdown Procedures in this section to shut down the oven. Contact your Middleby Marshall Authorized Service Agent to determine and correct the cause of the condition to prevent damage to the oven.
Oven will not turn on at all	Electrical power may not be reaching the oven, or the controls may be set incorrectly.	• Check that the circuit breaker/fused disconnect is turned on. • Check that the "BLOWER" Switch is in the “ON” ("I") position. The burner cannot engage until the blowers are in operation.
"RESET" (RESET) switch is illuminated, oven will not heat (gas ovens only)	The gas burner did not light within 90 seconds of turning the "HEAT" Switch to the “ON” ("I") position.	• Press the "RESET" (RESET) switch (repeatedly if necessary) to attempt to light the burner. • If the burner does not light within 15 minutes, the oven will enter a safety lockout mode that disables the "RESET" (RESET) switch. If this occurs, turn the "HEAT", "BLOWER", and "CONVEYOR" switches to the "OFF" ("O") position. Wait for AT LEAST FIVE MINUTES before restarting the oven. Then, repeat the Daily Startup procedure.
rSET *appears in display, oven is not heating*	The oven did not reach 93°C within 15 minutes of startup, and the oven has stopped heating.	• Turn the "HEAT", "BLOWER", and "CONVEYOR" switches to the "OFF" ("O") position. • Wait for AT LEAST FIVE MINUTES before restarting the oven. • Repeat the Daily Startup procedure.
Oven will not heat	Controls may be set incorrectly.	• Check that the Set Point is correctly set. • Check that both the "BLOWER" and "HEAT" Switches are in the “ON” ("I") position. • If the oven still will not heat,turn the "HEAT", "BLOWER", and "CONVEYOR" switches to the "OFF" ("O") position. • Wait for AT LEAST FIVE MINUTES before restarting the oven. • Repeat the Daily Startup procedure. Check that the Set Point is above 93°C.
Oven is operating, but little or no air is blowing from air fingers	Air fingers may have been reassembled incorrectly after cleaning.	• Turn the oven off, and allow it to cool. Disconnect electrical power to the oven. • Refer to Section 4, Maintenance, for instructions on reassembling the air fingers.
Conveyor moves with a jerky motion, or will not move at all	Conveyor may be jammed on an object in the oven, or conveyor belt or drive chain tension may be incorrect.	• Turn the oven off, and allow it to cool. Disconnect electrical power to the oven. • Check if the conveyor is blocked by an object inside the oven. • Refer to Section 4, Maintenance, for instructions on checking the conveyor and drive chain tension.
Food products are overcooked or undercooked.	Controls may be set incorrectly.	• Check that the set temperature and bake time settings are correct.

IF THESE STEPS FAIL TO RESOLVE THE PROBLEM, CONTACT YOUR LOCAL MIDDLEBY MARSHALL AUTHORIZED SERVICE AGENT. A SERVICE AGENCY DIRECTORY IS SUPPLIED WITH YOUR OVEN.

SECTION 4 - MAINTENANCE

ENGLISH

WARNING

Before ANY cleaning or servicing of the oven, perform the following procedure:

1. Switch off the oven and allow it to cool. Do NOT service the oven while it is warm.
2. Turn off the electric supply circuit breaker(s) and disconnect the electric supply to the oven.
3. If it is necessary to move a gas oven for cleaning or servicing, disconnect the gas supply connection before moving the oven.

When all cleaning and servicing is complete:

1. If the oven was moved for servicing, return the oven to its original location. Adjust the legs so that they are seated properly on the floor.
2. For gas ovens, reconnect the gas supply.
3. Reconnect the electrical supply.
4. For gas ovens, turn on the full-flow gas safety valve. Test the gas line connections for leaks using approved leak test substances or thick soap suds.
5. Turn on the electric supply circuit breaker(s).
6. Perform the normal startup procedure.

WARNING

Possibility of injury from moving parts and electrical shock exists in this oven. Switch off and lockout/tagout the electric supply BEFORE beginning to disassemble, clean, or service any oven. Never disassemble or clean an oven with the BLOWER switch or any other circuit of the oven switched on.

CAUTION

NEVER use a water hose, water jet, or pressurized steam-cleaning equipment when cleaning this oven. DO NOT use excessive amounts of water, to avoid saturating the oven insulation. DO NOT use a caustic oven cleaner, which can damage the aluminized bake chamber surfaces.

NOTE

ANY replacement parts that require access to the interior of the oven may ONLY be replaced by a Middleby Marshall Authorized Service Agent. It is also strongly recommended that the 3-Month Maintenance and 6-Month Maintenance procedures in this section be performed ONLY by a Middleby Marshall Authorized Service Agent.

I. MAINTENANCE - DAILY

A. Check that the oven is cool and the power is disconnected, as described in the warning at the beginning of this Section.

B. Clean the outside of the oven with a soft cloth and mild detergent.

C. Clean the front cooling fans, as follows:
- Snap off the protective grille, and wipe it clean with a cloth. See Figure 4-1.
- Remove the foam filter and inspect it. If it is dusty, shake it briskly. If dirt or grease is present on the filter, wash it in warm, soapy water. Rinse the filter, squeeze it to remove as much of the water as possible, and then set it aside to dry thoroughly before reinstallation.
- Once the filter is dry, reinstall the filter and grille.

D. Clean the motor shroud and rear grills using a stiff nylon brush. Refer to Figure 4-2 for the locations of the grills.

E. Check that ALL cooling fans are operating properly.

CAUTION

If a cooling fan is not operating correctly, it must be replaced IMMEDIATELY. Operating the oven without adequate cooling can damage the oven's internal components.

F. Clean the conveyor belts with a stiff nylon brush. This is more easily accomplished by allowing the conveyor to run while you stand at the exit end of the conveyor. Then, brush the crumbs off the conveyor as it moves.

G. Remove and clean the crumb trays. When reinstalling the trays, refer to Figure 2-12 (in Section 2, Installation).

H. Clean the window in place.

Figure 4-1 - Front Cooling Fans

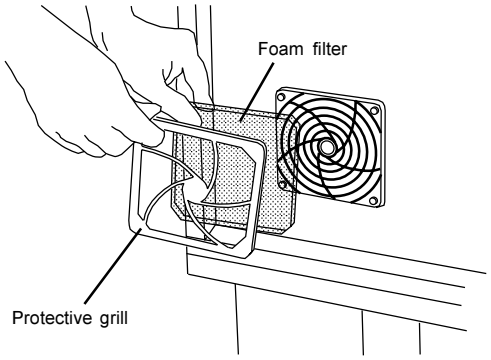
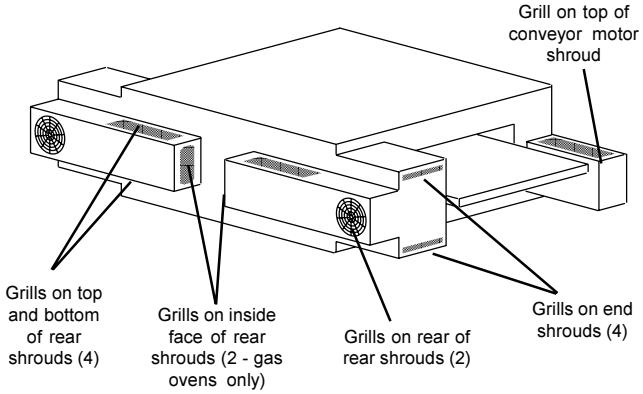


Figure 4-2 - Rear Grills and Motor Shroud Grill



II. MAINTENANCE - MONTHLY

NOTE

When removing the conveyor, refer to Figure 2-9 (in Section 2, Installation).

A. Check that the oven is cool and the power is disconnected, as described in the warning at the beginning of this Section.

B. Remove the crumb trays and drive motor shroud from the oven.

C. Lift the drive end of the conveyor slightly, and push it forward into the oven. This removes the tension from the drive chain. Then, remove the drive chain from the conveyor sprocket.

D. Slide the conveyor out of the oven, folding it as it is removed.

NOTE

Split belt conveyors can only be removed from the end of the oven with the drive motor.

Single-belt conveyor assemblies may be removed from either end of the oven. If it is to be removed from the end of the oven without the drive motor, remove the drive motor sprocket as described in the Conveyor Installation instructions (in Section 2, Installation).

E. Remove the end plugs from the oven. The end plugs are shown in Figure 1-1 (in Section 1, Description).

F. Slide the air fingers and blank plates out of the oven, as shown in Figure 4-3. AS EACH FINGER OR PLATE IS REMOVED, WRITE A "LOCATION CODE" ON IT WITH A MARKER to make sure that it can be reinstalled correctly.

Example of markings:

(Top Row)	**T1**	**T2**	**T3**	**T4**	**T5**	**T6**
(Bottom Row)	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**

G. Disassemble the air fingers as shown in Figure 4-4. AS EACH FINGER IS DISASSEMBLED, WRITE THE "LOCATION CODE" FOR THE FINGER ON ALL THREE OF ITS PIECES. This will help you in correctly reassembling the air fingers.

CAUTION

Incorrect reassembly of the air fingers will change the baking properties of the oven.

H. Clean the air finger components and the interior of the baking chamber using a vacuum cleaner and a damp cloth. Refer to the boxed warnings at the beginning of this Section for cleaning precautions.

I. Reassemble the air fingers. Then, replace them in the oven, using the "location code" as a guide.

J. Replace the end plugs on the oven.

K. Reassemble the conveyor into the oven. If the drive sprocket was removed when installing the conveyor, replace it at this time.

L. Reattach the drive chain.

M. Check the tension of the conveyor belt as shown in Figure 2-10 (in Section 2, Installation). The belt should lift between 75-100mm. DO NOT OVERTIGHTEN THE CONVEYOR BELT. If necessary, the belt tension can be adjusted by turning the conveyor adjustment screws, located at the idler (right) end of the conveyor.

N. Replace the crumb trays and drive motor shroud.

Figure 4-3 - Removing Air Fingers and Plates

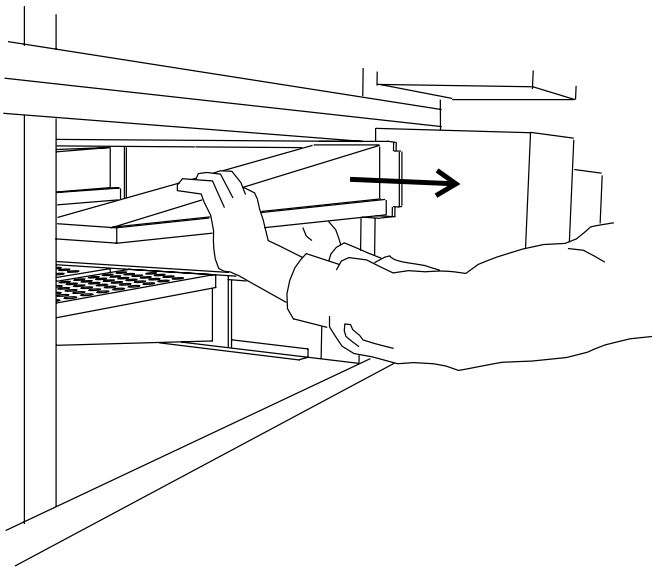
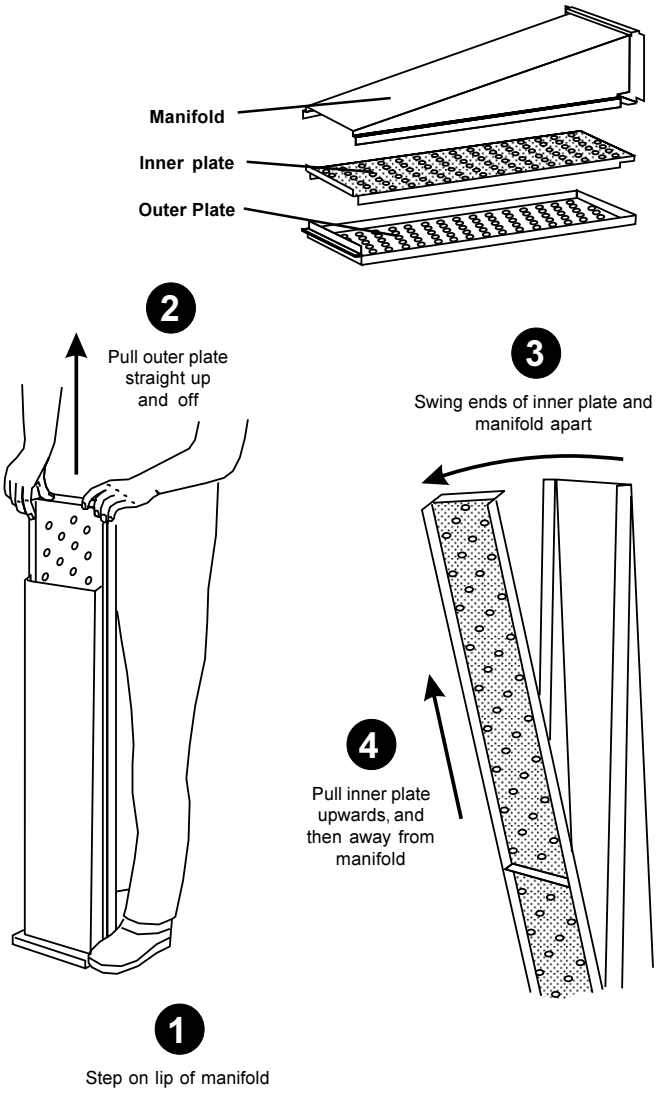


Figure 4-4 - Disassembling the Air Fingers



III. MAINTENANCE - EVERY 3 MONTHS

A. Check that the oven is cool and the power is disconnected, as described in the warning at the beginning of this Section.

B. Vacuum both of the blower motors, and their surrounding compartments, using a shop vacuum.

C. Tighten all electrical control terminal screws.

D. **Split Belt Disassembly and Cleaning**
For split belt ovens ONLY, disassemble, clean and lubricate the conveyor shaft components as described below.

1. Remove the motor shroud, conveyor extensions, and conveyor as described in Part II, Monthly Maintenance.
2. Remove the master links from each conveyor belt. Then, roll the belts up along the length of the conveyor to remove them from the frame.
3. Remove the two conveyor adjustment screws from the idler end of the conveyor frame, as shown in Figure 4-5.
4. Remove the idler shaft assembly from the conveyor.
5. Pull apart the two sections of the idler shaft. Clean the shafts thoroughly using a rag. Then, lubricate both the extended shaft and the interior of the hollow shaft using a light food-grade lubricant.

   CAUTION
   DO NOT lubricate the shafts using WD40 or a similar product. This can cause the shafts to wear rapidly.
6. Before reassembling the shafts into the conveyor frame, check that they are oriented properly. Remember that unequal-width split belt ovens should ALWAYS have the narrower belt at the front of the oven.
7. Reassemble the idler shaft into the conveyor. Make sure that the bronze washer is in place between the two sections of the shaft. See Figure 4-7.
8. Replace the conveyor adjustment screws as shown in Figure 4-5. To allow the conveyor belt to be reinstalled later, do not tighten the screws at this time.
9. Loosen the set screw on both of the conveyor drive sprockets. Then, remove the sprockets from the shaft.
10. Loosen the locking collar set screw, as shown in Figure 4-6.
11. Push the drive shaft to the right, then lift it free of the conveyor frame. Then, disassemble and lubricate the two sections of the drive shaft as described in Step 5.
12. Before reassembling the shafts into the conveyor frame, check that they are oriented properly. Remember that unequal-width split belt ovens should ALWAYS have the narrower belt at the front of the oven.
13. Reassemble the drive shaft into the conveyor. Check that the nylon spacer is in place, as shown in Figure 4-7. Also, check that the bronze washer is in place between the two sections of the shaft.
14. Replace the drive sprockets. Reassemble the belts and master links onto the conveyor, and replace the conveyor in the oven.
15. Reassemble the motor shroud and conveyor extensions onto the oven.
16. Check the tension of the conveyor belt as shown in Figure 2-10 (in Section 2, Installation). The belt should lift between 75-100mm. If necessary, adjust the belt tension by turning the conveyor adjustment screws.

Figure 4-5 - Split Belt Idler Shaft

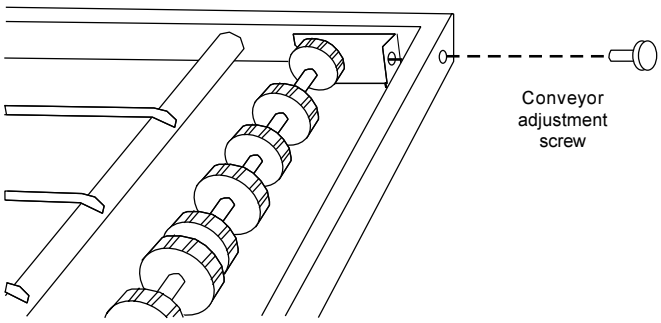


Figure 4-6 - Split Belt Drive Shaft

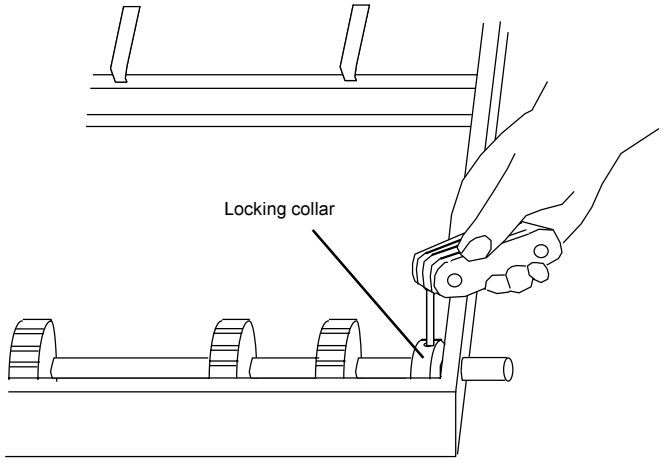
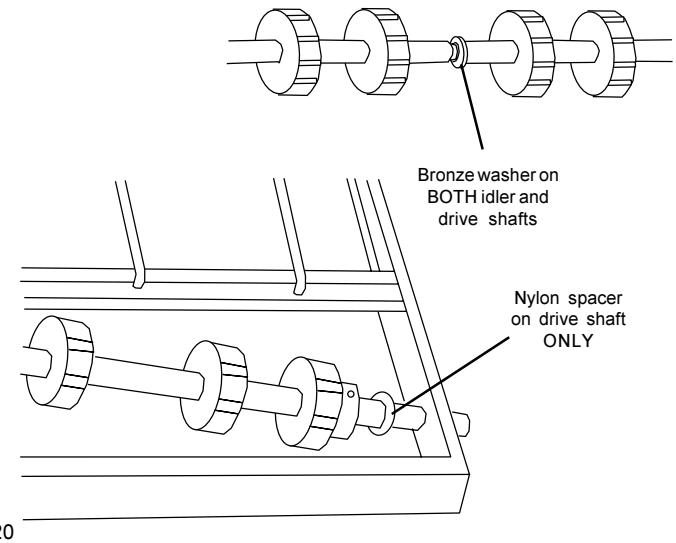


Figure 4-7 - Washer and Spacer



E. Blower Belts

1. To gain access to each blower belt compartment, remove the screws shown in Figure 4-8. Then, lift the rear shroud off its hangers.

   If access to the blower motors is required, remove the three mounting screws (two on the front of each shroud, one on the rear). Then, lift the end shroud straight up and off its hangers. The end shrouds can only be removed AFTER the rear shrouds have been removed.

2. Check each blower belt for at least 1" (25mm) deflection at the center, and for cracking or excessive wear. See Figure 4-9. Overtightening the belt will cause premature bearing failure and possible vibrations.

3. If necessary, adjust the tension of the belt by loosening the four motor mounting bolts. Reposition the motor as necessary until the correct deflection is reached, then tighten the motor mounting bolts.

F. Lubricating the Blower Fan Bearings

1. Use a grease gun to lubricate the main blower fan shaft bearings, as shown in Figure 4-10.

   When lubricating the bearings:

   - Use a high-quality NLGI #2, lithium soap grease with petroleum oil, such as Middleby P/N 17110-0015.
   - Add the grease slowly until a small bead of grease is present at the seals. AVOID OVERGREASING. Excessive greasing may cause harm to the bearing.

2. Manually turn the blower shaft by pulling on the belt to purge the grease.

3. Wipe off any excess grease on and around the bearings.

4. Replace the shrouds onto the oven.

NOTE
The oven will not operate unless ALL of the motor and rear shrouds are in place.

IV. MAINTENANCE - EVERY 6 MONTHS

A. Check that the oven is cool and the power is disconnected, as described in the warning at the beginning of this Section.

B. Check for excessive wear on the conveyor drive motor brushes. The brushes should be replaced if they have worn to less than 6mm in length. Be sure to replace the brushes in exactly the same position.

C. For gas ovens, clean and inspect the burner nozzle and electrode assembly.

D. Check (and clean, if necessary) the oven venting system.

E. Check the conveyor drive shaft bushings and spacers. Replace the components if they are worn.

Figure 4-8 - Rear Shrouds and Guard Plates

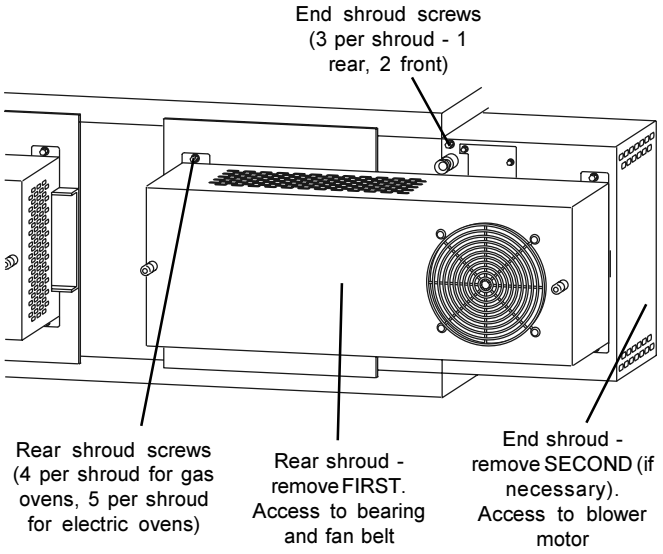


Figure 4-9 - Fan Belt Tension

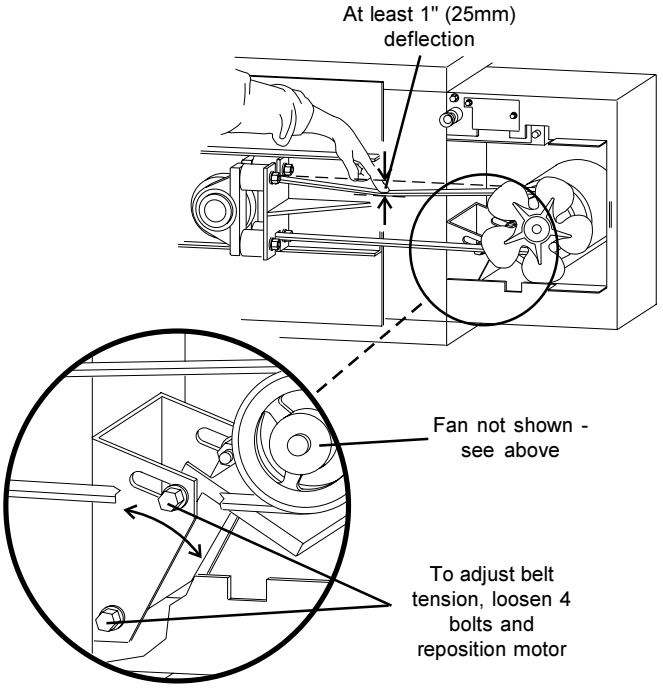
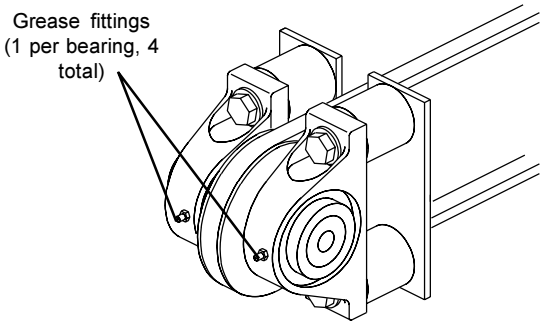


Figure 4-10 - Lubricating the Bearings



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V. KEY SPARE PARTS KIT - Available separately. See Figure 4-11.

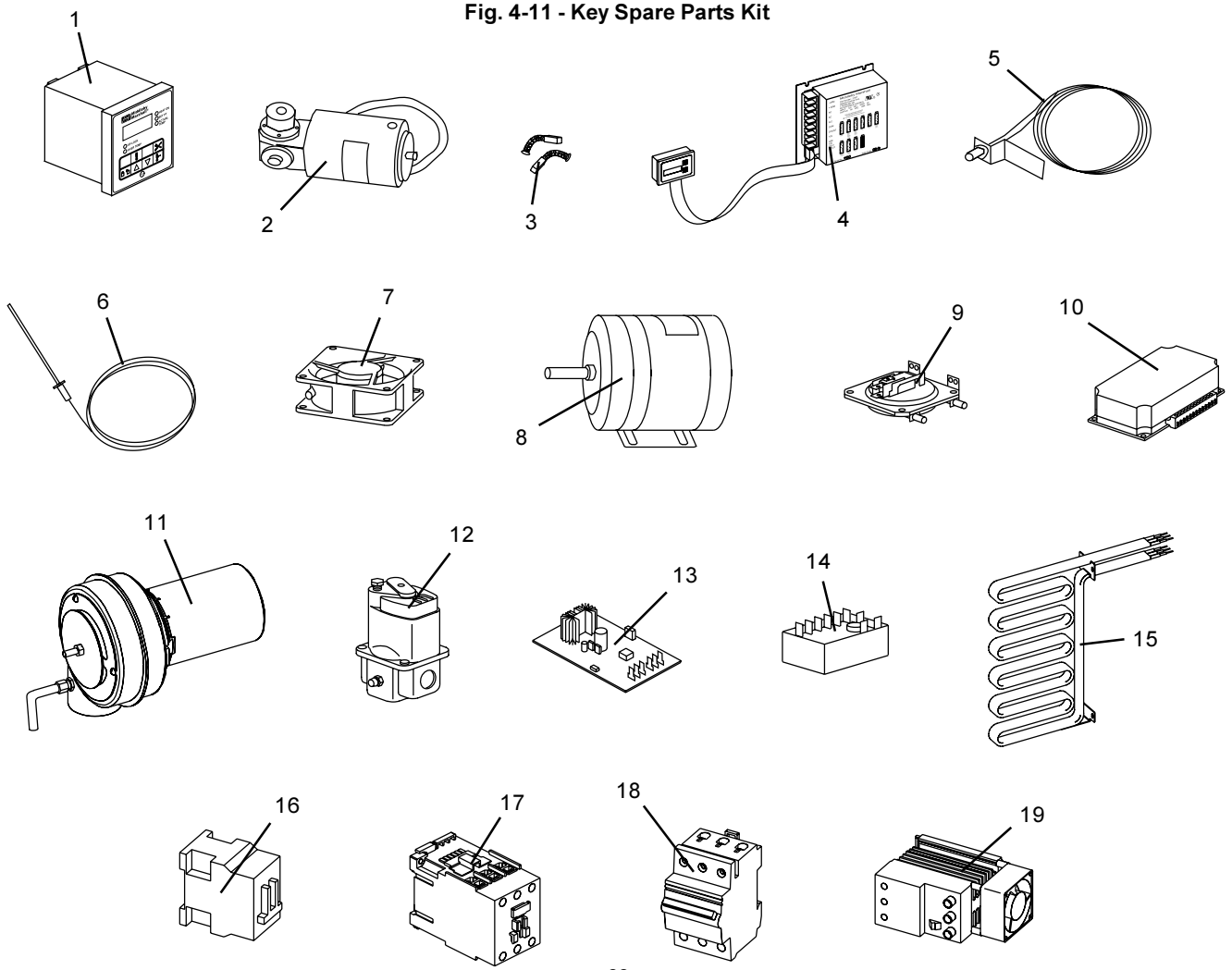
A. Gas Ovens

Item	Qty.	Part No.	Description
1	1	36939	Kit, Digital Temperature Controller
2	1	27384-0008	Motor, Conveyor Drive
3	2	22450-0052	Brushes, Drive Motor
4	1	37337	Kit, Conveyor Speed Controller
5	1	27170-0263	Assembly, Pickup, Conveyor Drive
6	1	33984	Kit, Thermocouple
7	1	97525	Fan, Cooling
8	1	27381-0069	Motor, Blower, 1 HP
9	1	39530	Air Switch
10	1	35825	Kit, Ignition Module
11	1	38811	Assembly, Burner Blower/Motor
12	1	41647	Valve, Modulating Gas, 1/2"
13	1	31651	Amplifier, Modulating Valve
14	1	33983	High limit control module, 240V

B. Electric Ovens

Item	Qty.	Part No.	Description
1	1	36939	Kit, Digital Temperature Controller
2	1	27384-0008	Motor, Conveyor Drive
3	2	22450-0052	Brushes, Drive Motor
4	1	37337	Kit, Conveyor Speed Controller
5	1	27170-0263	Assembly, Pickup, Conveyor Drive
6	1	33984	Kit, Thermocouple
7	1	97525	Fan, Cooling
8	1	27381-0069	Motor, Blower, 1 HP
14	1	33983	High limit control module, 240V
15	1	44526	Heating element, 380V
16	1	28041-0008	Contactor
17	1	44549	Contactor
18	1	35018	Circuit breaker block, 3-pole, 50A
19	1	44568	Controller

Fig. 4-11 - Key Spare Parts Kit



SECTION 5 - ELECTRICAL WIRING DIAGRAMS

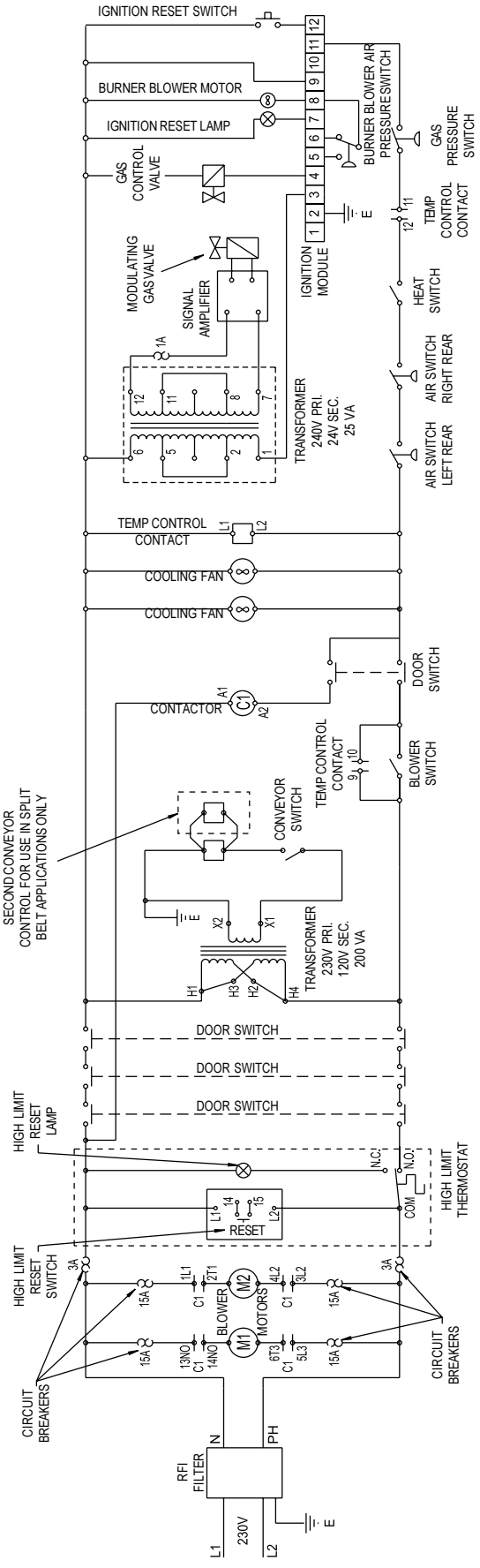


Fig. 5-1
Schematic, PS555G or PS570G Gas Oven, 230V, 50 Hz, 1 Ph

IMPORTANT

An electrical wiring diagram for the oven is also located inside the machinery compartment.

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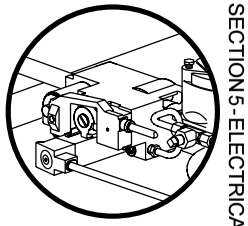
Fig. 5-2
Wiring Diagram, PS555G or PS570G Gas Oven with Type 1 Gas Valve, 230V, 50 Hz, 1 Ph



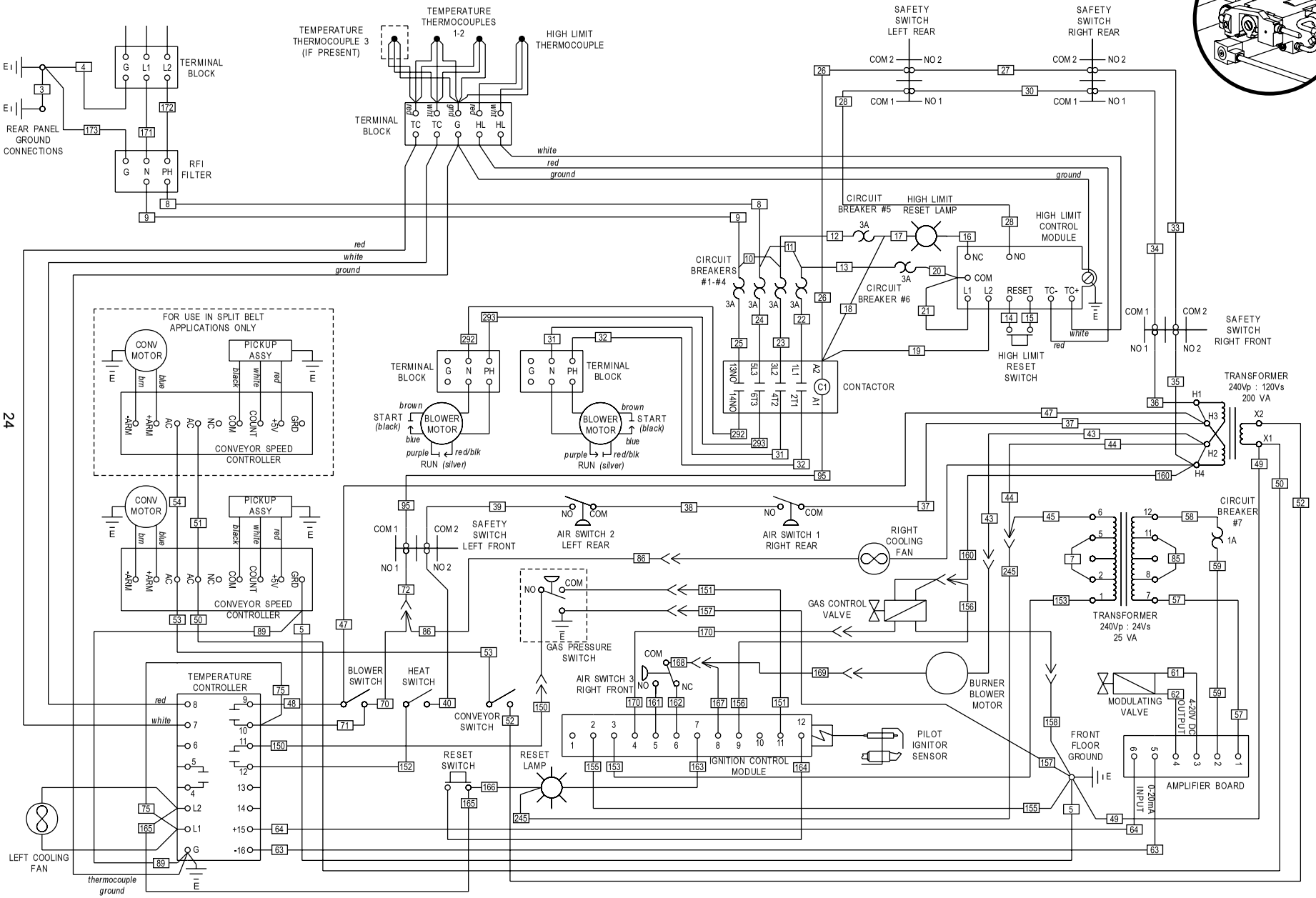
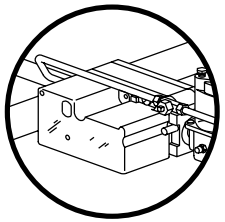
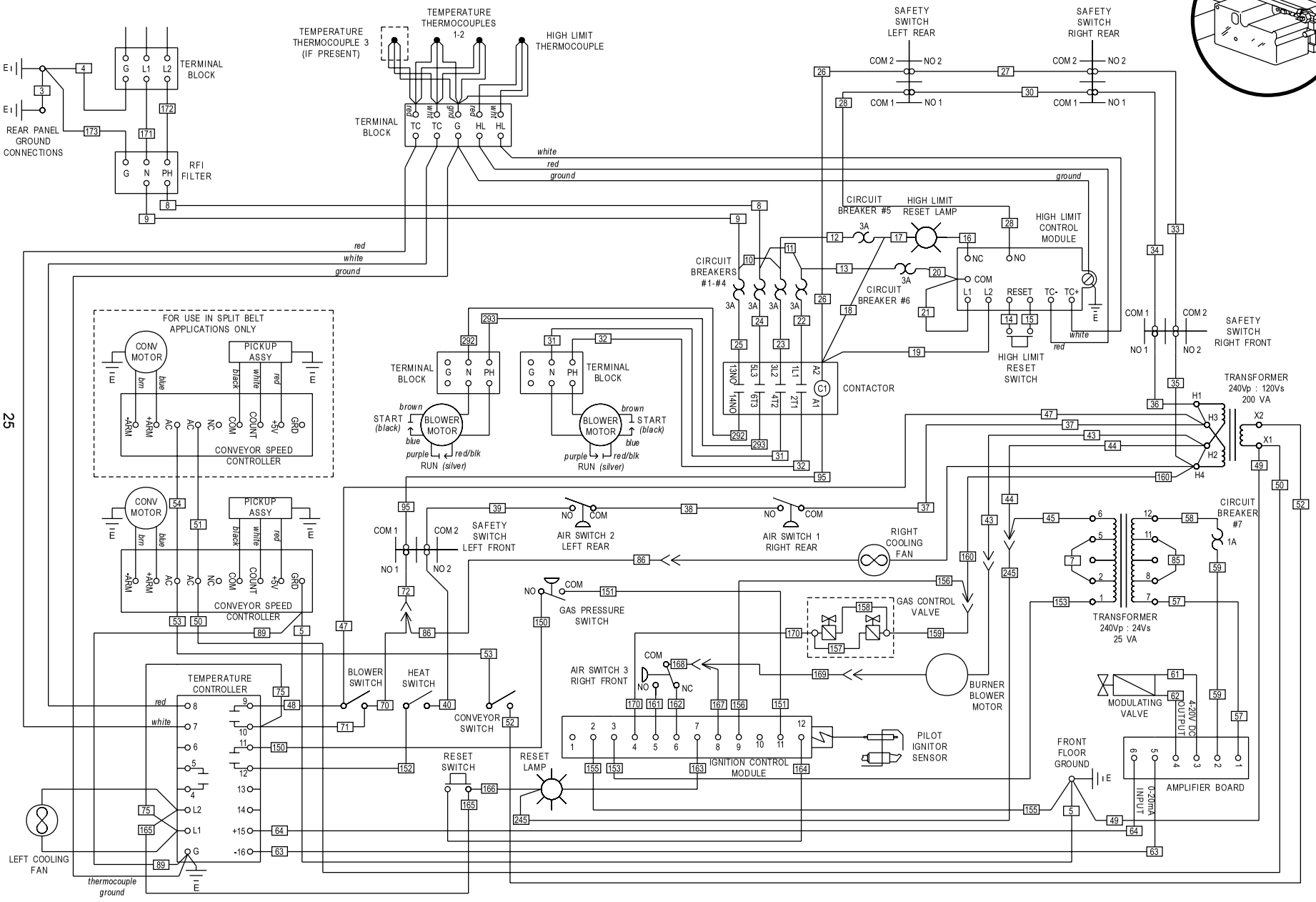


Fig. 5-3
Wiring Diagram, PS555G or PS570G Gas Oven with Type 2 Gas Valve, 230V, 50 Hz, 1 Ph





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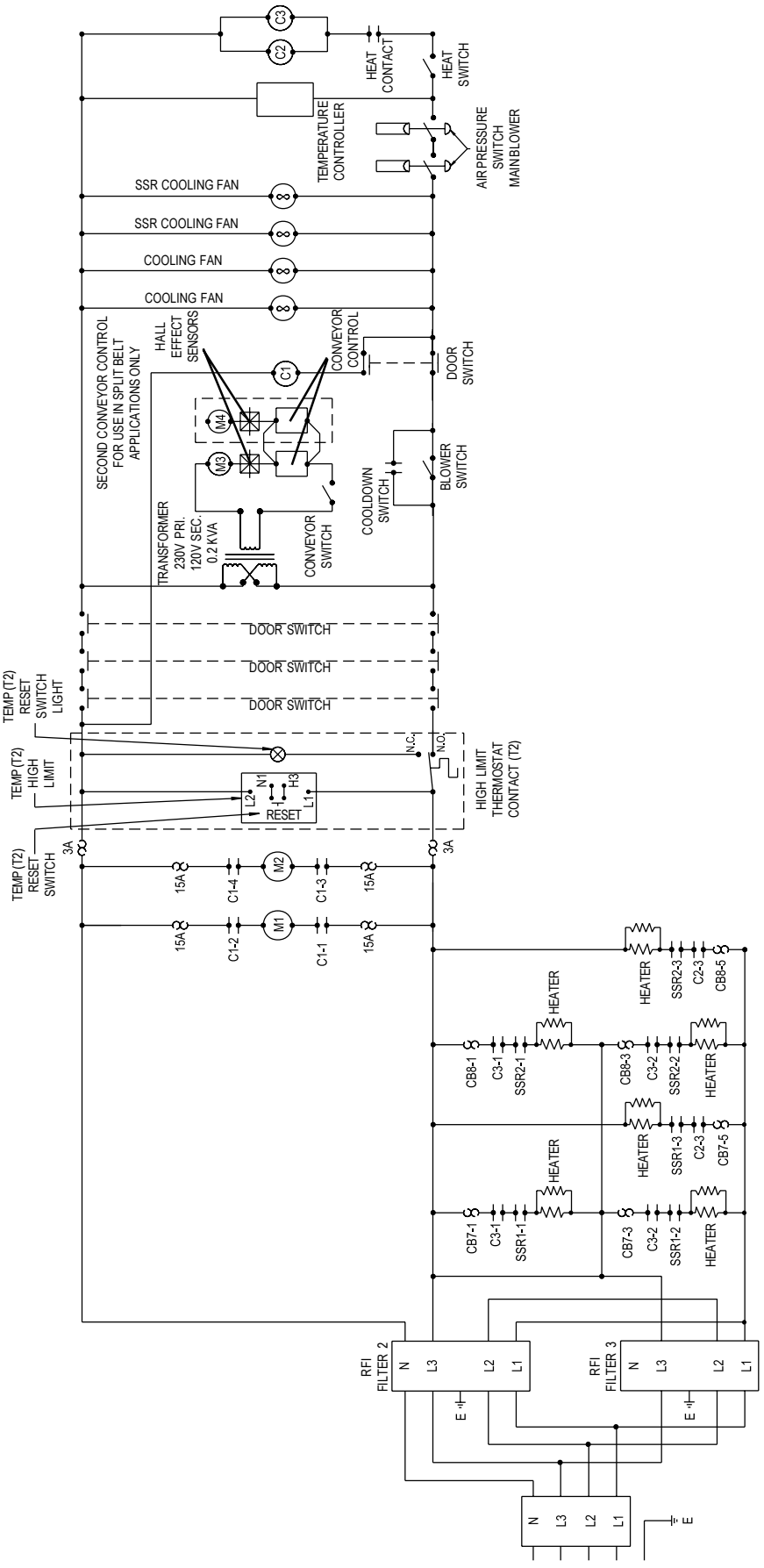
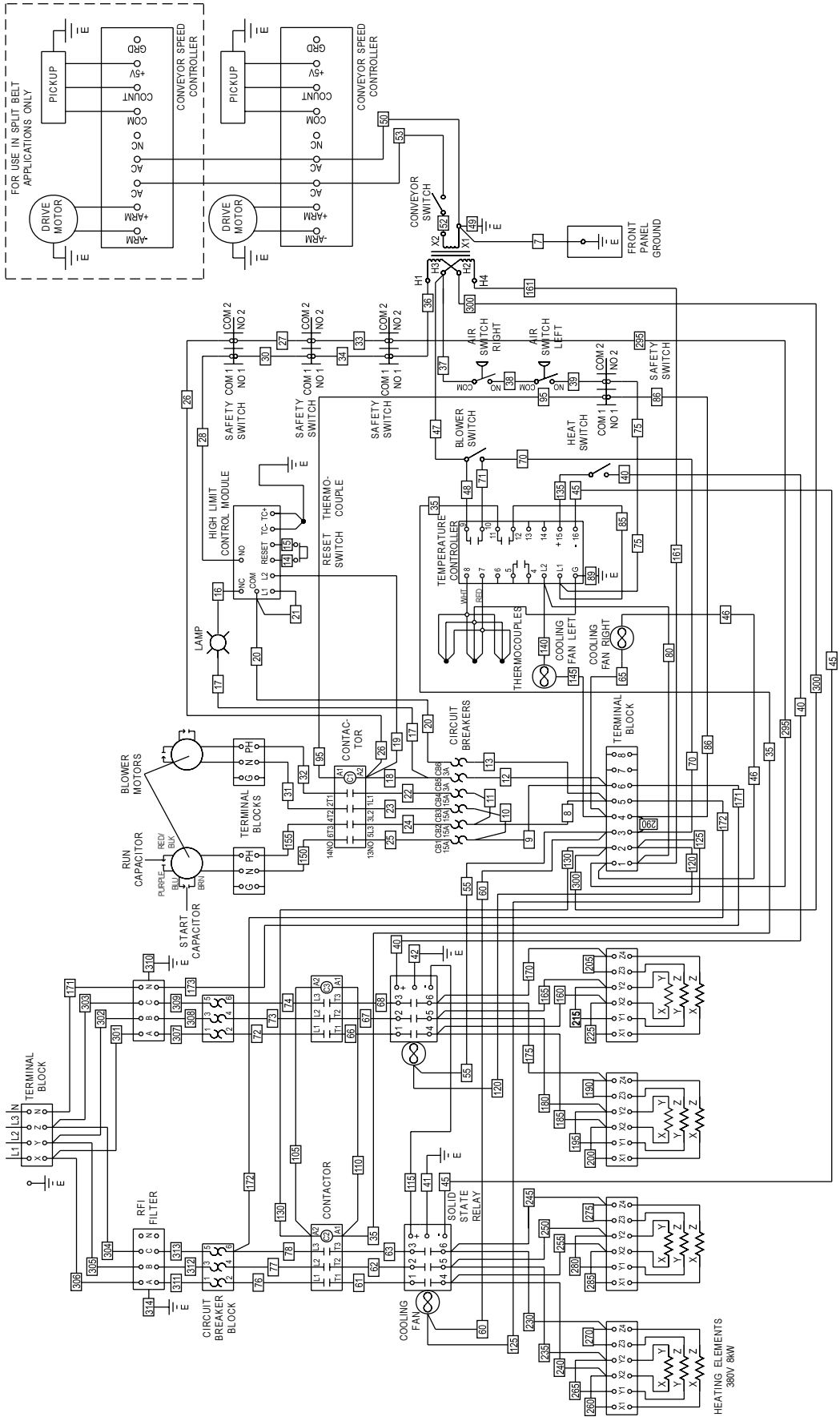


Fig. 5-4
Schematic, PS555E Electric Oven, 380V, 50 Hz, 3 Ph

IMPORTANT

An electrical wiring diagram for the oven is also located inside the machinery compartment.

Fig. 5-5
Wiring Diagram, PS555E Electric Oven, 380V, 50 Hz, 3 Ph



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