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# PS300 Series Gas and Electric Ovens

## Models:

- PS310
- PS314
- PS360/360Q/360S
- PS360WB
- PS360EWB
- PS360WB70

## Combinations:

- Single Lower Oven
- Single Upper Oven on Stand
- Double Oven (Two-Stack)
- Tandem Oven
- Double (Two-Stack) Tandem Oven

# OWNER'S OPERATING & INSTALLATION MANUAL

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



**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 requires the installation of the appropriate Middleby Marshall Gas Conversion Kit by an Authorized Service Agent.

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 or control 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 IN YOUR INSTALLATION KIT.

**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

PS300 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.

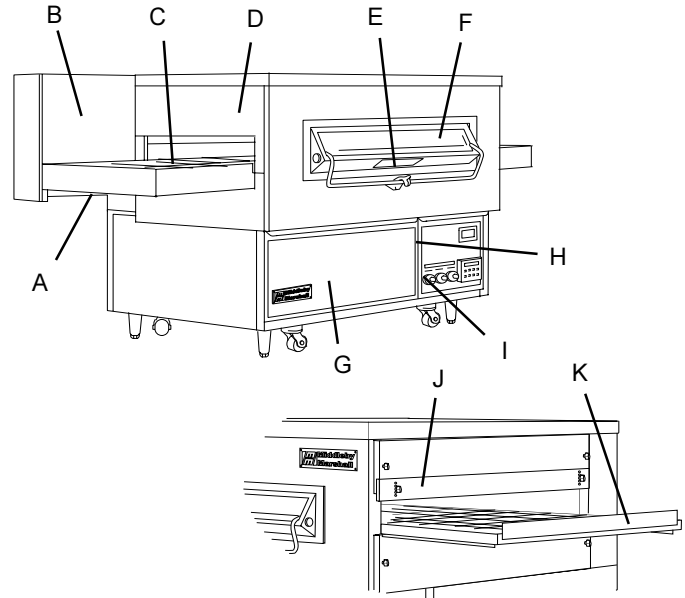
- A. **Crumb Pans:** Catch crumbs and other material that drop through the conveyor belt. One crumb pan is located underneath each end of the conveyor.
- B. **Conveyor Drive Motor:** Moves the conveyor.
- C. **Conveyor:** Moves the food product through the oven.
- D. **End Plugs:** Allow access to the oven's interior.
- E. **Serial Plate:** Provides specifications for the oven that affect installation and operation. Refer to Section 2, Installation, for details.
- F. **Window (on ovens so equipped):** Allows the user to see and access food products inside the baking chamber.
- G. **Machinery Compartment Access Panel:** Allows access to the oven's interior components. No user-servicable parts are located in the machinery compartment.
- H. **Control Compartment Access Panel:** Allows access to the control components. This panel is combined with the Machinery Compartment Access Panel on PS360EWB and WB70 ovens. No user-servicable parts are located in the control compartment.
- I. **Control Panel:** Location of the operating controls for the oven. Refer to Section 3, Operation, for details.
- J. **Eyebrows (on ovens so equipped):** Can be adjusted to various heights to prevent heat loss into the environment.

- K. **Conveyor End Stop:** Prevents food products from falling off the end of the moving conveyor.

Not Shown:

- L. **Gas Burner:** Heats air, which is then projected to the air fingers by the blowers.
- M. **Blowers:** Fans that project hot air from the burner to the air fingers.
- N. **Air Fingers:** Project streams of hot air onto the food product.

Fig. 1-1 - Oven Components



## III. OVEN SPECIFICATIONS

A. Dimensions	PS310	PS314	PS360/360Q/360S	PS360Tandem	PS360WB	PS360WB Tandem	PS360EWB	PS360WB70
<b>Overall Height</b>								
Lower oven, with top & legs	45-1/2" 1143mm	45-1/2" 1143mm	45-1/2" 1143mm	45-1/2" 1143mm	45-1/2" 1143mm	45-1/2" 1143mm	45-1/2" 1143mm	45-1/2" 1143mm
Upper oven, with stand and top	64-1/2" 1638mm	64-1/2" 1638mm	64-1/2" 1638mm	64-1/2" 1638mm	64-1/2" 1638mm	64-1/2" 1638mm	64-1/2" 1638mm	64-1/2" 1638mm
Double oven (two-stack)	82-1/4" 2089mm	82-1/4" 2089mm	82-1/4" 2089mm	82-1/4" 2089mm	82-1/4" 2089mm	82-1/4" 2089mm	82-1/4" 2089mm	82-1/4" 2089mm
<b>Overall Depth</b>								
inc. rear shrouds and front window	39" 991mm	39" 991mm	47" 1194mm	47" 1194mm	55" 1397mm	55" 1397mm	60" 1524mm	55" 1397mm
inc. rear shrouds (no window)	36" 914mm	36" 914mm	44" 1118mm	44" 1118mm	52" 1321mm	52" 1321mm	-	-
<b>Overall Length</b>								
	90-1/2" 2299mm	70-3/4"* 1797mm*	90-1/2"* 2299mm*	144-1/2" 3670mm	90-1/2" 2299mm	144-1/2" 3670mm	90-1/2" 2299mm	106" 2692mm
* NOTE: The PS314 and PS360Q dimensions do NOT include the optional end trays.								
<b>Conveyor Width</b>								
Single Belt	24" 610mm	24" 610mm	32" 813mm	32" 813mm	40" 1016mm	40" 1016mm	44" 1118mm	40" 1016mm
Split Belt, identical width	-	-	2x15" 381mm	2x15" 381mm	2x19" 483mm	2x19" 483mm	2x21" 533mm	2x19" 483mm
Split Belt, unequal width	-	-	-	-	1x13"/330mm AND 1x26"/660mm	1x13"/330mm AND 1x26"/660mm	1x14"/356mm AND 1x28"/711mm	1x13"/330mm AND 1x26"/660mm
<b>Recommended Minimum Clearances</b>								
Rear of oven (inc. rear shrouds) to wall	1" 25mm	1" 25mm	1" 25mm	1" 25mm	1" 25mm	1" 25mm	1" 25mm	1" 25mm
Conveyor extension to wall (both ends)	0" 0mm	0" 0mm	0" 0mm	0" 0mm	0" 0mm	0" 0mm	0" 0mm	0" 0mm

**B. General specifications (per oven cavity)**

	<i>PS310</i>	<i>PS314</i>	<i>PS360/360Q/360S</i>	<i>PS360WB</i>	<i>PS360EWB</i>	<i>PS360WB70</i>
<b>Weight</b>	1165 lbs./529kg	1165 lbs./529kg	1285 lbs./583kg	1485 lbs./674kg	1620 lbs./733kg	1825 lbs./829kg
<b>Shipping Weight</b>	1241 lbs./563kg	1241 lbs./563kg	1360 lbs./617kg	1560 lbs./708kg	1695 lbs./767kg	1900 lbs./863kg
<b>Shipping Carton Vol.</b>	105 ft. <sup>3</sup> /2.98m <sup>3</sup>	105 ft. <sup>3</sup> /2.98m <sup>3</sup>	106 ft. <sup>3</sup> /3.00m <sup>3</sup>	129 ft. <sup>3</sup> /3.65m <sup>3</sup>	129 ft. <sup>3</sup> /3.65m <sup>3</sup>	164 ft. <sup>3</sup> /4.65m <sup>3</sup>
<b>Rated Heat Input</b>						
Gas	135,000 BTU 34,020kcal, 40kw/hr.	135,000 BTU 34,020kcal, 40kw/hr.	135,000 BTU 34,020kcal, 40kw/hr.	170,000 BTU 42,840kcal, 50kw/hr.	175,000 BTU 44,100kcal, 52kw/hr.	175,000 BTU 44,100kcal, 52kw/hr.
Electric	26kw/hr.	26kw/hr.	26kw/hr.	--	--	--
<b>Max. Operating Temp.</b>	----- 550°F/288°C ----->					
<b>Air Blowers</b>	----- 2 blowers at 1550 ft. <sup>3</sup> (43.9m <sup>3</sup> )/min. at 1700 RPM, 0.88"/2.2cm water static pressure ----->					
<b>Air Jet Velocity (avg.)</b>	----- 2600 ft./min. (1320cm/sec.) ----->					
<b>Warmup Time</b>	----- 15 minutes ----->					

**C. Gas orifice and pressure specifications - for gas-fired ovens (per oven cavity)**

	<b>Main Orifice I.D.</b>						<b>Pilot Orifice I.D.</b>	<b>Bypass Orifice I.D. *</b>	<b>Supply (inlet) pressure</b>	<b>Manifold pressure</b>
	<i>PS310</i>	<i>PS314</i>	<i>PS360/360Q/360S</i>	<i>PS360WB</i>	<i>PS360EWB</i>	<i>PS360WB70</i>				
<b>Natural Gas</b>	0.219" 5.56mm	0.219" 5.56mm	0.219" 5.56mm	0.250" 6.35mm	0.250" 6.35mm	0.250" 6.35mm	0.028" 0.71mm	0.065"/#53 drill 1.65mm	6-12" W.C. 14.9-29.9mbar	3-1/2" W.C. 8.7mbar
<b>Propane</b>	0.134" 3.40mm	0.134" 3.40mm	0.134" 3.40mm	0.152" 3.86mm	0.165" 4.19mm	0.165" 4.19mm	0.018" 0.46mm	0.034"/#62 drill 0.86mm	11-14" W.C. 27.4-34.9mbar	10" W.C. 24.9mbar

\* NOTE: The PS360EWB gas oven does not use a bypass orifice.

**D. Electrical specifications - for gas-fired ovens (per oven cavity)**

	<b>Main Blower Voltage</b>	<b>Control Circuit Voltage</b>	<b>Phase</b>	<b>Freq.</b>	<b>Current Draw</b>	<b>Poles</b>	<b>Wires</b>
<b>PS310/314/360/360Q/360S/360WB</b>	208-240V	120V	1 Ph	60 Hz	10A	3 Pole	4 Wire (2 hot, 1 neut, 1 gnd)
	208-240V (export)	120V (transformer)	1 Ph	50/60 Hz	10A	2 Pole	3 Wire (2 hot, 1 gnd)
	200-220V (export)	120V (transformer)	1 Ph	50/60 Hz	10A	2 Pole	3 Wire (2 hot, 1 gnd)
<b>PS360EWB/WB70</b>	208-240V	120V conveyor speed controller (transformer); all other control circuits as per line (208-240V)	1 Ph	60 Hz	12A	2 Pole	3 wire (2 hot, 1 gnd)

**E. Electrical specifications - for electrically-heated ovens (per oven cavity)**

	<b>Main Blower Voltage</b>	<b>Control Circuit Voltage</b>	<b>Phase</b>	<b>Freq.</b>	<b>Current Draw</b>	<b>kW Rating</b>	<b>Poles</b>	<b>Wires</b>
	208-240V (with 3 Ph blower motors)	120V	3 Ph	60 Hz	67.3A at 208V 58.4A at 240V	26.0 kW at 208V 26.0 kW at 240V	4 Pole	5 Wire (3 hot, 1 neut, 1 gnd)
	208-240V (with 1 Ph blower motors)	120V	3 Ph	60 Hz	67.3A at 208V 58.4A at 240V	26.0 kW at 208V 26.0 kW at 240V	4 Pole	5 Wire (3 hot, 1 neut, 1 gnd)
	200-220V (export)	120V (transformer)	3 Ph	50/60 Hz	67.3A at 208V 53.5A at 220V	24.3 kW at 208V 20.4 kW at 220V	3 Pole	4 Wire (3 hot, 1 gnd)
	240V (export)	120V (transformer)	3 Ph	50/60 Hz	58.4A	26.0 kW	3 Pole	4 Wire (3 hot, 1 gnd)
	380V (export)	120V (transformer)	3 Ph	50/60 Hz	36.8A	24.3 kW	3 Pole	4 Wire (3 hot, 1 gnd)
	400-416V (export)	120V (transformer)	3 Ph	50/60 Hz	33.8A	24.3 kW	3 Pole	4 Wire (3 hot, 1 gnd)
	480V	120V (transformer)	3 Ph	60 Hz	29.2A	26.0 kW	3 Pole	4 Wire (3 hot, 1 gnd)

**IMPORTANT**

Additional electrical information is provided on the oven's serial plate, and on the wiring diagram inside the machinery compartment.

## 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.

### CAUTION

For additional installation information, refer to the following documents:  
*PS360 Pre-Installation Procedures Manual* (Middleby Marshall P/N 88210-0024)  
*PS360 Installation Manual* (Middleby Marshall P/N 88210-0025)  
Or, contact your local Authorized Service Agent.

### 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 or control 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.*

### NOTE

*In U.S.A., the oven installation must conform with local codes, or in the absence of local codes, with the National Fuel Gas Code, ANSI Z223.1. The oven, when installed, must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code (NEC), or ANSI/NFPA70.*

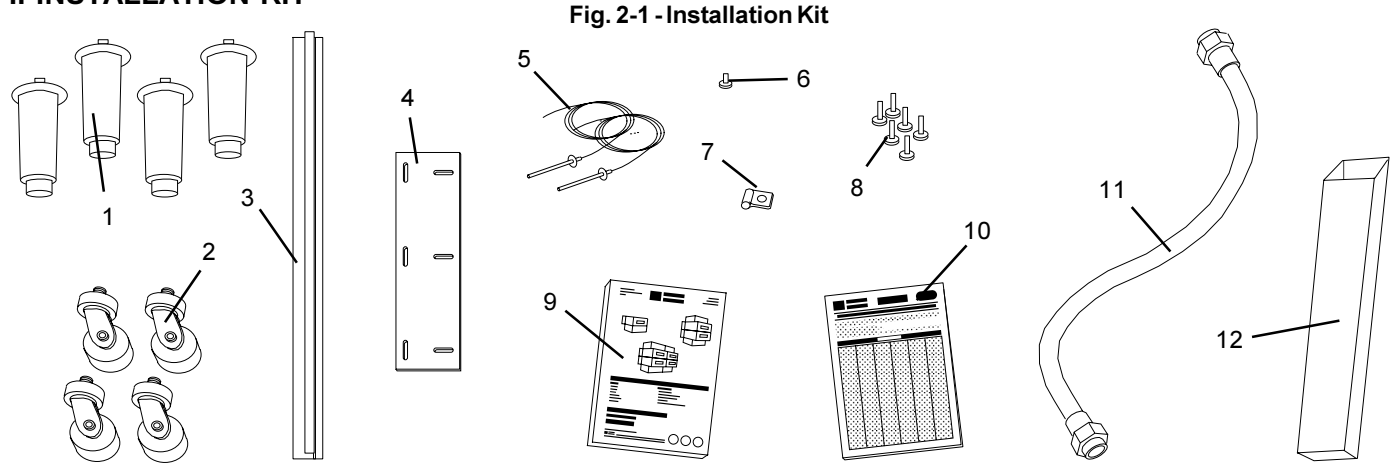
### NOTE

*In Canada, the oven installation must conform with local codes, or in the absence of local codes, with the Natural Gas Installation Code, CAN/CGA-B149.1, or the Propane Gas Installation Code, CAN/CGA-B149.2, as applicable. The oven, when installed, must be electrically grounded in accordance with local codes, or in the absence of local codes, with the Canadian Electrical Code CSA, C22.2, as applicable.*

### NOTE

*For Australian installation, the oven installation must conform with AGA Code, AG601, and with any requirements of the appropriate statutory authority.*

## I. INSTALLATION KIT



## A. Installation kit components (one kit required per cavity)

Item	Description	PartNumber	LowerOvenw/oTop	LowerOvenw/Top	UpperOven
1	Legs, adjustable	22450-0028	4	4	--
2*	Caster, Swivel (with stud)	37115-0102	4*	4*	4*
3a	Conveyor End Stop - PS310/314	35000-1099	1	1	1
3b	Conveyor End Stop - PS360/360S				
	• Single Belt	35000-1103	1	1	1
	• Split Belt	35509	2	2	2
3c	Conveyor End Stop - PS360Q	37000-0524	1	1	1
3c	Conveyor End Stop - PS360WB/WB70 (Single or Split Belt)	36526	1	1	1
3d	Conveyor End Stop - PS360EWB				
	• Single Belt	35900-0370	2	2	2
	• Split Belt: 2x21"/533mm belts	35900-0370	2	2	2
	• Split Belt: 1x14"/356mm belt +	35509	1	1	1
	1x28"/711mm belt	35000-1099	1	1	1
4	Attachment Plate, upper oven	35122-0049	--	--	2
5	Thermocouple	33812-1	2	2	2
6	Screw, #10-32 x 3/8"	21256-0008	2	2	2
7	Cable Clamp	27276-0001	1	1	1
8	Screw, #2PT 10-16 x 3/4" HWH	21292-0001	2	2	14
9	Owner's Operating and Installation Manual	41823	1	1	1
10	Authorized Service Agency Listing	1002040	1	1	1

## NOTE

\* The 4 swivel casters (Item 2) are pre-attached to each oven cavity for ease of movement during installation.

## B. Additional installation kit components for gas ovens

Item	Description	PartNumber	LowerOvenw/oTop	LowerOvenw/Top	UpperOven
6	Screw, #10-32 x 3/8"	21256-0008	1	1	1
8	Screw, #2PT 10-16 x 3/4" HWH	21292-0001	2	2	2
11	Gas hose, flexible	22361-0001	1	1	1
12a	Flue vent, 14" (356mm)	30773	--	1	--
12b	Flue vent, 29-1/2" (749mm)	30759	--	--	1
12c	Flue vent, 50" (1270mm)	30758	1	--	--

## C. Additional installation kit components for tandem ovens (not shown)

Item	Description	PartNumber	TandemOven	Double(2-stack)TandemOven
--	Machinery Compartment Trim Strip	35000-1454	1	2
--	Front Gasket Spacer	35000-1456	2	4
--	Rear Gasket Spacer	35000-1457	2	4
--	Baking Chamber Gasket and Frame - PS360	37200-0013	1	2
--	Baking Chamber Gasket and Frame - PS360WB	32483	1	2

## II. 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**

- A mechanically driven ventilation system is REQUIRED for gas oven installations.
- A mechanically driven ventilation system is STRONGLY RECOMMENDED for electric oven installations.

**PROPER VENTILATION OF THE OVEN IS THE RESPONSIBILITY OF THE OWNER.**

## B. Recommendations

NOTE THAT THE HOOD DIMENSIONS SHOWN IN FIGURE 2-2 ARE RECOMMENDATIONS ONLY. LOCAL AND NATIONAL CODES MUST BE FOLLOWED WHEN INSTALLING THE VENTILATION SYSTEM. ANY APPLICABLE LOCAL AND NATIONAL 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.

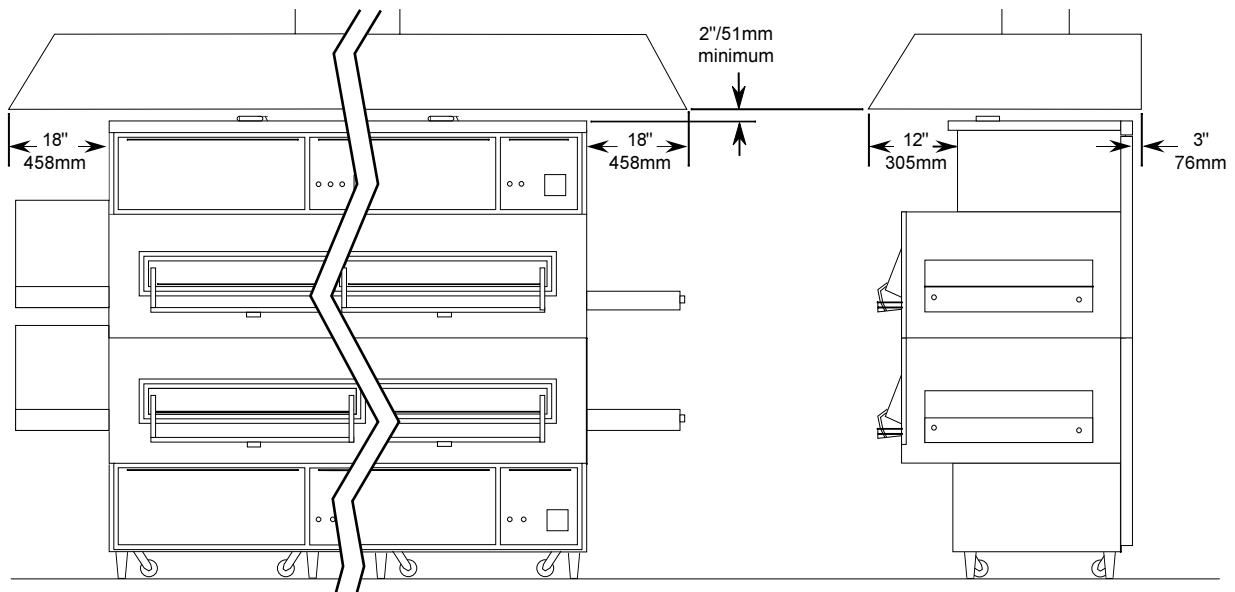
To avoid a negative pressure condition in the kitchen area, return air must be brought back to replenish the air that was exhausted. A negative pressure in the kitchen can cause heat-related problems to the oven components as if there were no ventilation at all. The best method of supplying return air 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 must not 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. 2-2 - Ventilation System





### III. ASSEMBLY

#### A. Stacking

If the installation will include upper ovens mounted atop lower ovens:

1. Remove the casters (pre-attached to each oven cavity) from the upper ovens.
2. Stack the oven cavities. If necessary, refer to the [Installation Manual for Model PS310/360 Ovens](#) (Middleby P/N 88210-0025).

#### B. Stands

If the installation includes ovens that are to be mounted on stands:

- Remove the casters (pre-attached to each oven cavity) and install them on the stands as shown in Figure 2-3.
- Assemble the ovens to the stands. An exploded view of the stand is shown in Figure 2-3.

#### C. Flue Vent(s)

For gas ovens, attach one flue vent to the rear wall of each oven cavity. Use one #10-16 x 3/8" and two #10-32 x 3/4" screws for each flue vent. These screws are provided in the Installation Kit.

### IV. THERMOCOUPLE INSTALLATION

1. Install one thermocouple sensing bulb into each of the two holes in the rear panel of the oven, as shown in Figure 2-4. Fasten each thermocouple in place using one of the #10-32 x 3/8" screws supplied in the Installation Kit.
2. Thread BOTH sets of thermocouple leads through the grommet and into the machinery compartment, as shown in Figure 2-4.
3. Remove the right-side access panel of the machinery compartment.
4. Thread the thermocouple leads through the side of the machinery compartment as shown in Figure 2-5, and into the electrical box (at the right-front of the machinery compartment).
5. Connect BOTH sets of thermocouple leads to the temperature controller as shown in Figure 2-6. Note that the two thermocouples are now tied together at the temperature controller.
6. Replace the right-side panel of the machinery compartment.
7. Repeat Steps 1-6 for any other oven cavities in the installation.

Figure 2-3 - Exploded View, Oven Stand

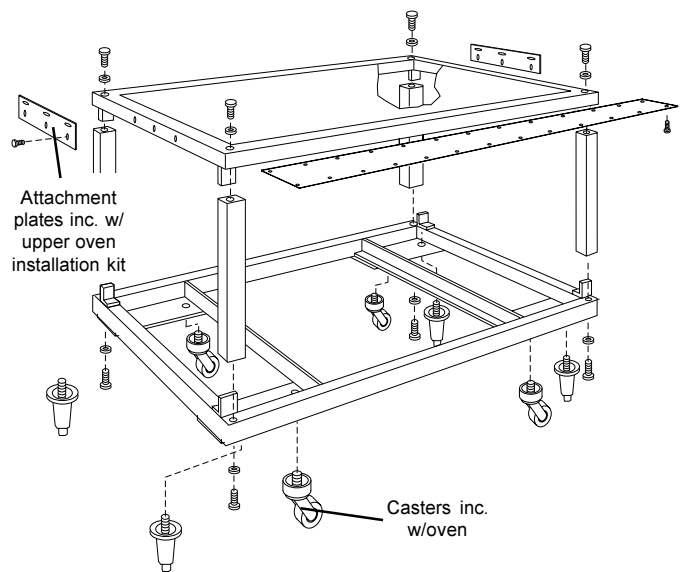


Figure 2-4 - Thermocouple Installation Locations

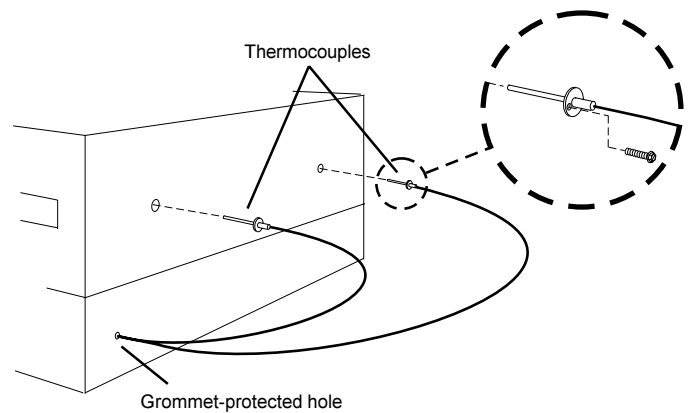


Figure 2-5 - Placing the Thermocouple Leads

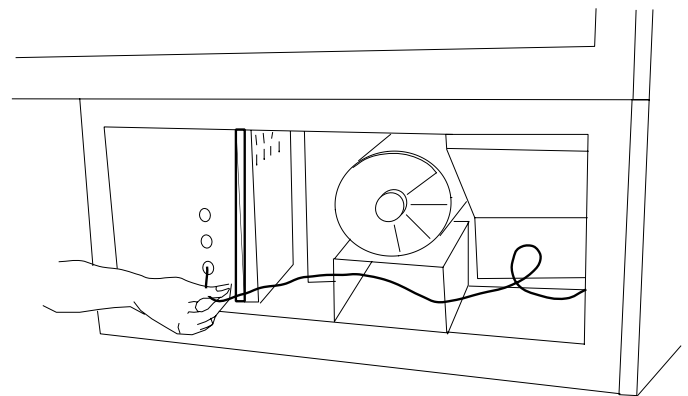
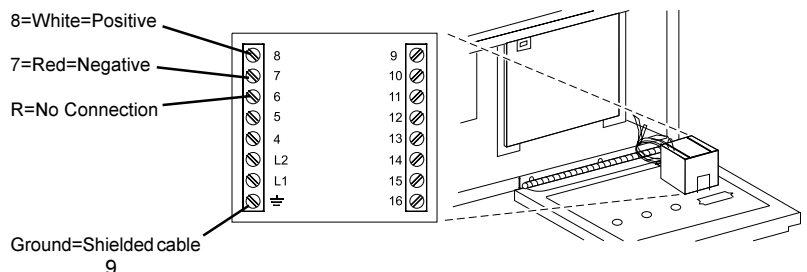


Figure 2-6 - Thermocouple Lead Connections



## V. TANDEM OVEN ASSEMBLY

### NOTE

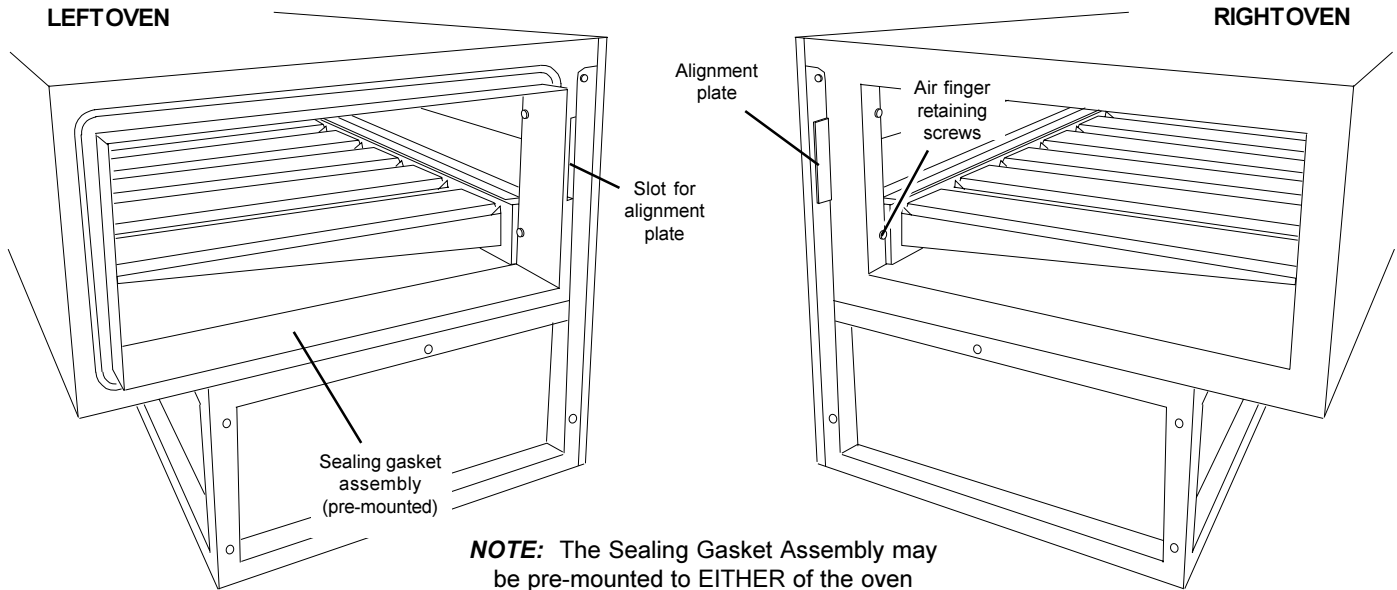
For non-tandem oven installations, skip ahead to Section VI, Conveyor Installation.

1. Determine the proper position of the ovens by referring to Figure 2-7. Then, move the ovens to their approximate final locations.

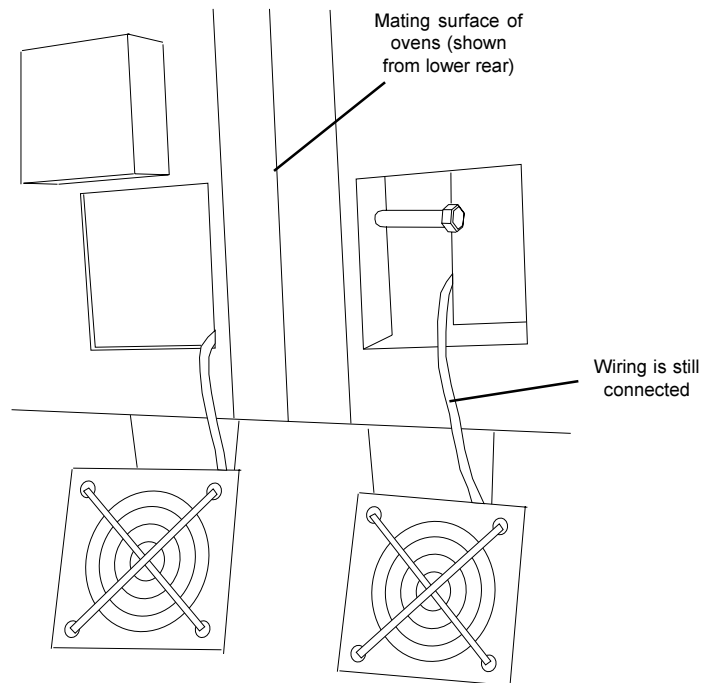
2. Check that the top and bottom air finger retaining screws are present *on all mating ends* of the oven sections. See Figure 2-7. The screws prevent the air fingers from sliding in between the oven sections.

3. Remove the rear axial cooling fans that are adjacent to the mating sides of the ovens. The fans may either be completely disconnected, or left attached by their wiring as shown in Figure 2-8.

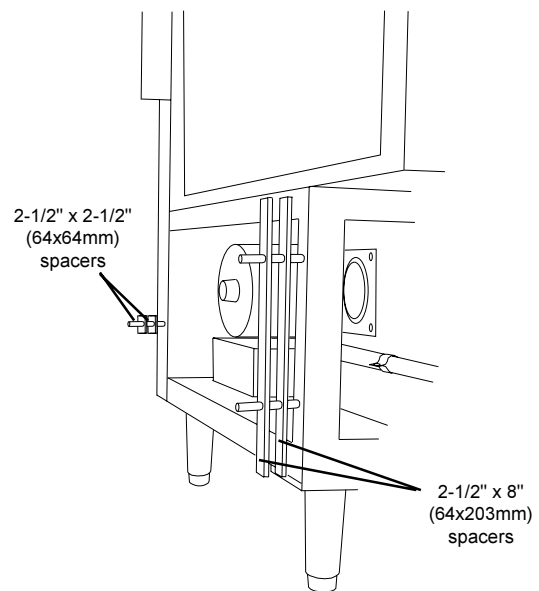
**Figure 2-7**  
Oven Positioning and Alignment



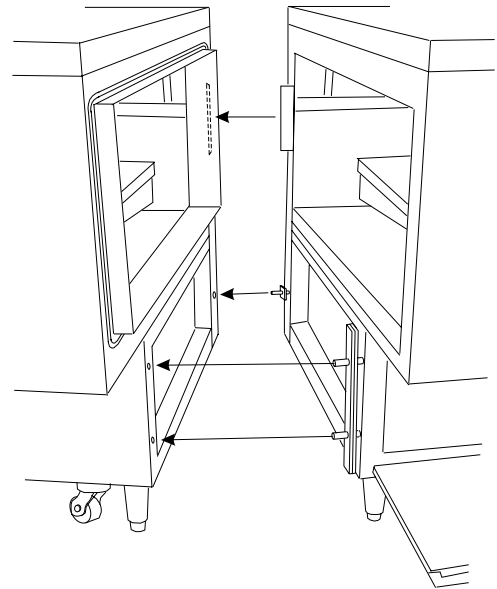
**Figure 2-8 - Cooling Fan Removal**



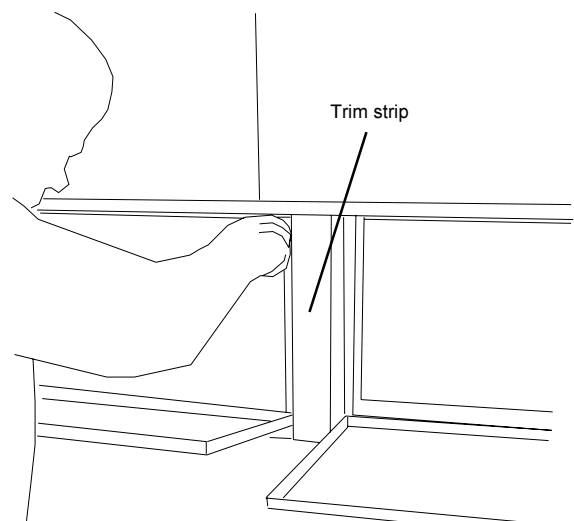
- Insert three of the supplied 1/2 x 5" bolts through the holes in the frame of the right oven, pointing outward as shown in Figure 2-9. Then, slide the spacers into place on the bolts.

**Figure 2-9 - Bolts and Spacers**

- Push the ovens together. Check that the mounting bolts, alignment plate, and sealing gasket are all properly aligned. See Figure 2-10.
- Tighten all of the attaching bolts. Check that the mating edges of the ovens align properly. If gaps appear between the tops of the ovens, it will be necessary to loosen the connecting bolts and realign the ovens.

**Figure 2-10 - Aligning the Sections**

- Attach the front trim strip between the two ovens, as shown in Figure 2-11.
- Replace the rear axial cooling fans. See Figure 2-8.

**Figure 2-11 - Trim Strip Installation**

## VI. CONVEYOR INSTALLATION

Refer to either Step A or Step B in this section, as appropriate, to install the conveyor and belt.

### A. Installing the Conveyor - All ovens EXCEPT Tandem models

#### NOTE

*Split belt conveyors can only be installed from the end of the oven with 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 without the drive motor, the drive sprocket assembly must be removed.*

*To remove the drive sprocket (if necessary), loosen the set screw on the conveyor collar as shown in Figure 2-12. Then, pull the sprocket assembly straight out.*

1. Lift the conveyor and position it in the oven as shown in Figure 2-13.

Figure 2-12 - Removing the Conveyor Drive Sprocket

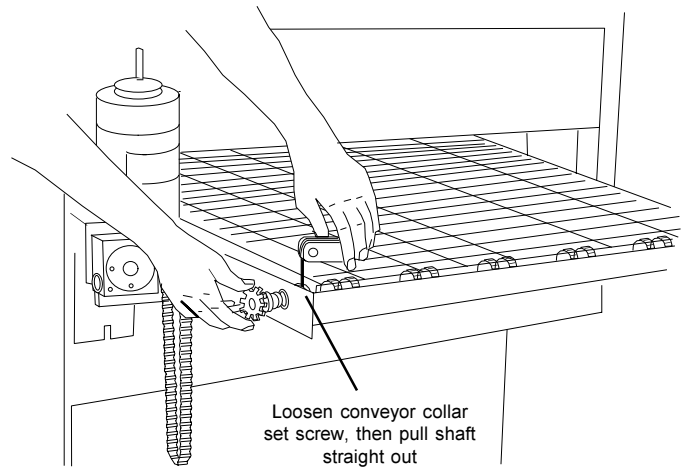
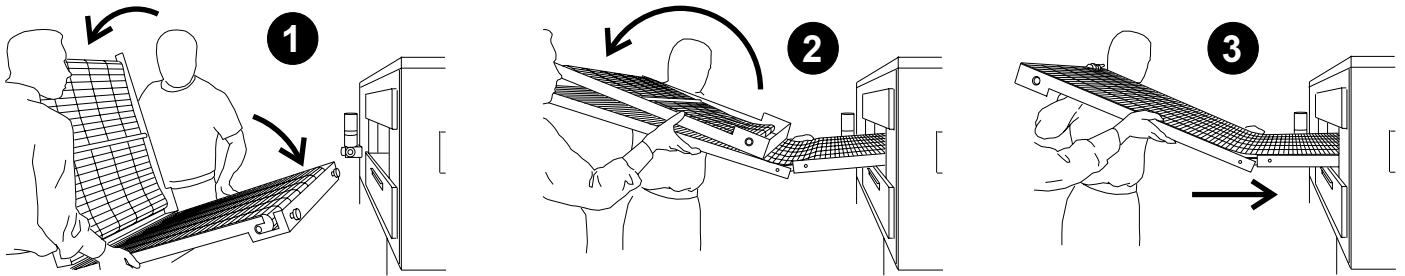


Figure 2-13 - Inserting the Conveyor



2. Continue moving the conveyor into the oven until the frame protrudes equally from each end of the oven (about 18"/457mm).
3. Check that the retainers located on the underside of the conveyor frame rest firmly against the lower end plug, as shown in Figure 2-14.

#### NOTE:

*PS360EWB ovens have a retainer bracket that extends the full width of the conveyor frame on both ends of the frame. All other ovens have retainer clips as shown in Figure 2-14, located on the drive (left) side of the frame only.*

4. When the conveyor is positioned properly, check for freedom of movement of the conveyor belt by pulling it for about 2-3 feet (60 to 90 cm) 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. The drive motor and sprocket are shown in Figure 2-12.
7. Install the conveyor drive motor cover and tighten its hanger screw (on the rear wall of the oven).
8. Check the tension of the conveyor belt as shown in Figure 2-15. The belt should lift between 3-4" (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 2-15.*

Figure 2-14 - Conveyor retainers

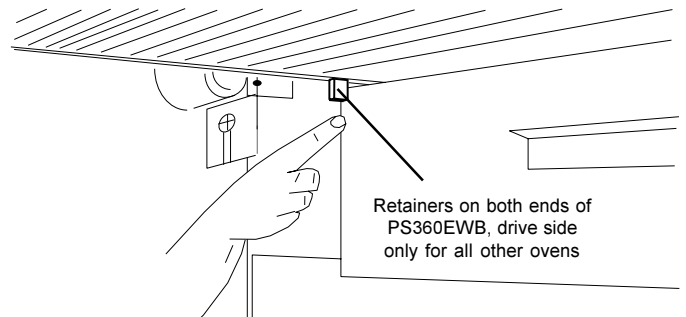
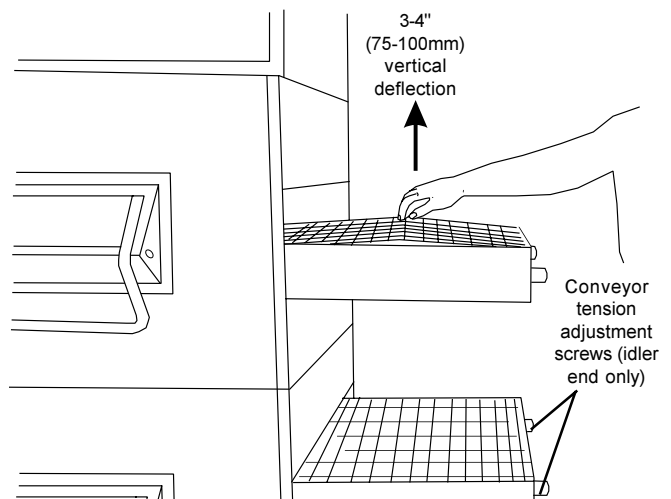


Figure 2-15 - Checking the conveyor tension



**B. Installing the Conveyor and Belt - Tandem oven models****NOTE**

For non-tandem oven installations, skip ahead to Section VII, Final Assembly.

1. Insert the conveyor frame into the oven as follows:  
Slide one hinged conveyor frame section into each end of the oven. The two sections butt against each other at the gap between the two oven sections. See Figure 2-17.

**IMPORTANT**

Be sure that the drive section of the conveyor frame is at the same end of the oven as the conveyor drive motor.

2. Slide the conveyor belt through the support rods underneath the frame, and thread it through the oven. Then, reach through the oven window and pull the free end of the belt through the oven so that it lies atop the conveyor frame.

After the belt has been pulled through the oven, check the following:

- The conveyor belt links must be oriented as shown in Figure 2-18.
  - The smooth side of the conveyor belt must face UP.
3. Connect the inside master links. Check that the links are oriented as shown in Figure 2-18.
  4. 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 2-19.
  5. Check for freedom of movement of the conveyor belt by pulling it for about 2-3 feet (60 to 90 cm) with your fingers. The conveyor must move freely.
  6. Check the tension of the conveyor belt as shown in Figure 2-15 (on the previous page). The belt should lift between 3-4" (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.
  7. **LOOSELY** attach the conveyor drive motor to the end wall of the oven. Refer to Figure 2-12 (for ovens with standard conveyor frames) or Figure 2-20 (for ovens with heavy-duty conveyor frames).
  8. Assemble the conveyor drive chain in place on the motor and conveyor drive sprockets.
  9. Position the motor to adjust the deflection of the drive chain to 3/4" (19mm). **DO NOT OVERTIGHTEN THE DRIVE CHAIN.** Then, tighten the bolts to hold the motor in place.

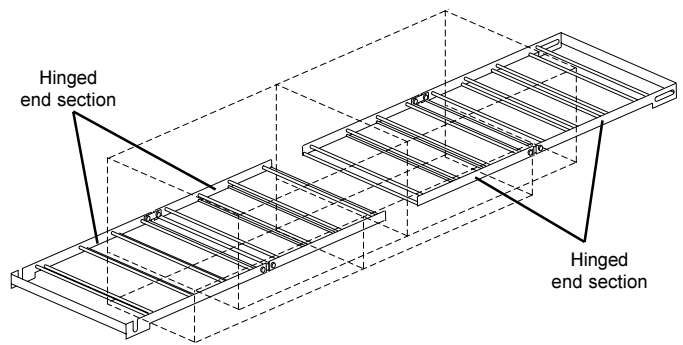
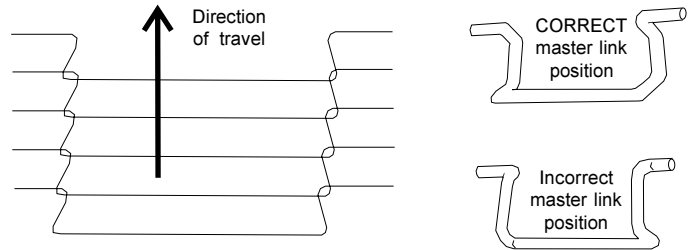
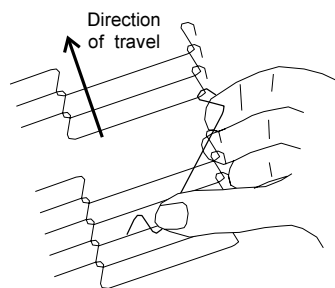
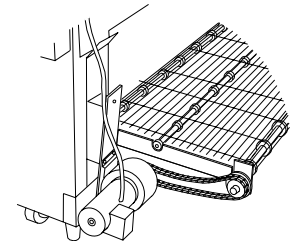
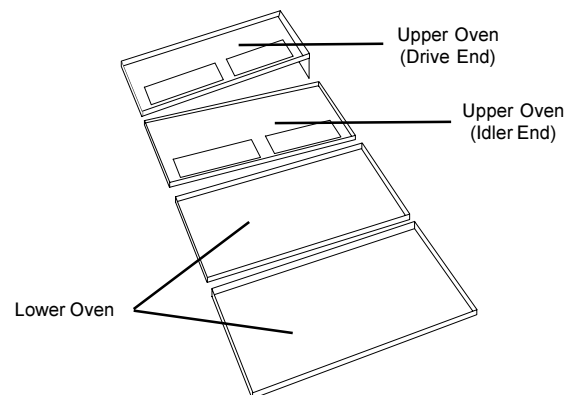
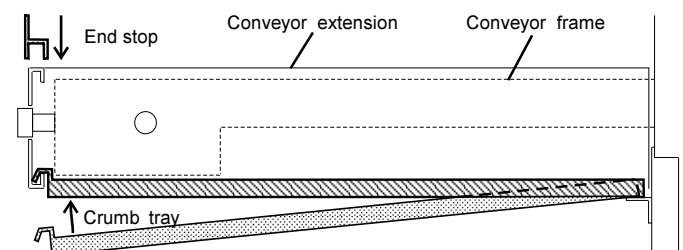
**VII. FINAL ASSEMBLY**

1. Assemble the end plugs and motor housing onto the oven. These components are shown in Figure 1-1 (on Page 1).
2. Slide the conveyor extensions over the ends of the conveyor frame. Be sure that the extension with the drive sprocket opening is placed on the drive end.

**NOTE**

The PS360EWB oven does not use conveyor extensions.

3. Refer to Figure 2-21 for the correct location of each crumb tray. Then, install the crumb trays underneath the conveyor as shown in Figure 2-22. First, place the inside edge of the tray onto the bracket attached to the end plug. Then, swing the outside edge of the tray up and into place.
4. Press the end stop down over the edge of the conveyor extension at the exit end of the oven. See Figure 2-22.
5. After the oven is moved to its final location, adjust the bottom section of the legs so that the oven is level and the casters do not touch the floor.

**Figure 2-17 - Tandem Conveyor Installation****Figure 2-18 - Conveyor and Inside Master Link Orientation****Figure 2-19 - Outside Master Link Orientation****Figure 2-20 - Drive Motor for Tandem Oven Heavy-Duty Conveyor Frame****Figure 2-21 - Crumb tray positions****Figure 2-22 - Crumb trays, extensions, and end stop**

## VIII. ELECTRICAL SUPPLY (all ovens)

**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:** The electric supply installation must satisfy the requirements of the appropriate statutory authority, such as the National Electrical Code (NEC), ANSI/NFPA70, (U.S.A.); the Canadian Electrical Code, CSA C22.2; the Australian Code AG601; or other applicable regulations.

**NOTE:** The electric supply connection must meet all national and local electrical code requirements.

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 2-23.

A fused disconnect switch or a main circuit breaker (customer furnished) **MUST** be installed in the electric supply line for each oven cavity. It is recommended that this switch/circuit breaker have lockout/tagout capability.

The supply conductors must be of the size and material (copper) recommended. Refer to the wiring diagram inside the machinery compartment or control compartment of the oven. Electrical specifications are also listed on the oven's serial plate (Figure 2-23) and in the [Electrical Specifications](#) table (on Page 5).

The oven requires a ground connection to the oven ground screw located in the electrical junction box. (The box is shown in Figure 2-24.) If necessary, have the electrician supply the ground wire. **Do NOT use the wiring conduit or other piping for ground connections!**

Figure 2-23 - Oven Serial Plate

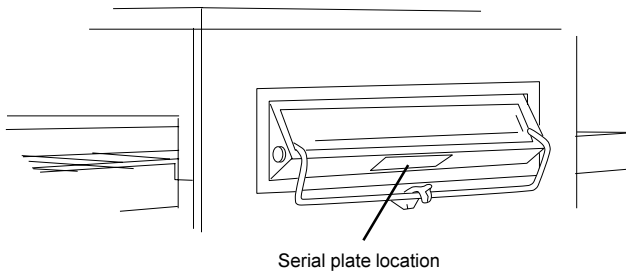
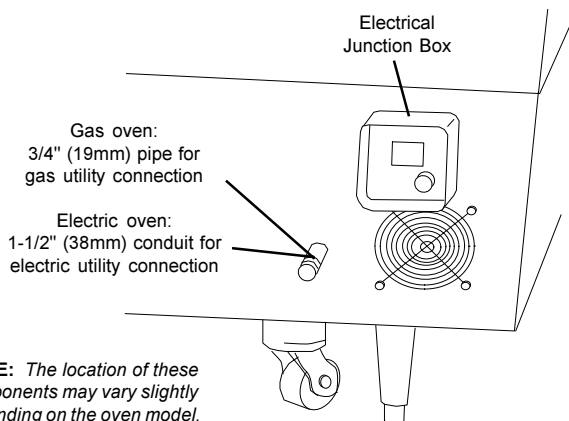


Figure 2-24 - Utility Connection Locations



**NOTE:** The location of these components may vary slightly depending on the oven model.

**CAUTION**

Before connecting incoming power to the oven, measure the voltage of each input leg to neutral. The expected voltage is approximately 120V. ANY voltage reading exceeding 130V indicates that the supply has a "high" leg. **CONNECTING A "HIGH" LEG TO THE OVEN VOIDS ALL OVEN WARRANTIES.** Connecting a "high" leg to the black lead of the oven can severely damage the oven's electrical and electronic components.

**CAUTION**

**DO NOT CONNECT BLACK WIRE TO HIGH LEG.  
VOLTAGE OF THE BLACK AND WHITE WIRES MUST  
BE NO HIGHER THAN 130 VAC.**

**A. Additional Information - Electric Ovens**

For electric ovens, a 1-1/4" (32mm) dia. cutout in the back wall of the machinery compartment provides access for the electrical supply connections. Using flexible cables for the electric power supply conductors requires a 1-1/4" (32mm) strain-relief fitting (not furnished with the oven) to enable safe access to the terminal block from which power is distributed to the oven.

**B. Additional Information - Gas Ovens**

All gas oven electric supply connections are made via the electrical junction box on the rear of the oven, shown in Figure 2-24. The power lines then connect to the oven circuits through the Machinery Compartment Access Panel Safety Switch. This switch interrupts electric power to the oven when the Machinery Compartment Access Panel is opened.

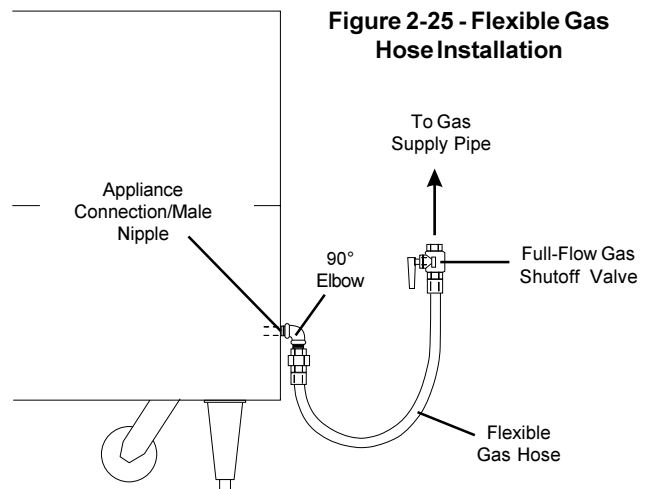
**C. Additional Information - Ovens with External Transformers (export versions)**

Position the transformer on the rear wall of the oven, on the same side as the control compartment, as space permits. Fasten it in place using the supplied mounting hardware.

**D. Connection**

Refer to the wiring diagram inside the machinery compartment or control compartment of the oven to determine the correct connections for the electrical supply lines. Connect the supply as indicated on the wiring diagram. Be sure to connect the electrical supply ground wire to the oven ground screw located in the junction box on the rear of the oven.

Figure 2-25 - Flexible Gas Hose Installation



## IX. GAS SUPPLY (gas ovens only)

**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 1/2 psi (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 1/2 psi (3.45 kPa).

3. If incoming pressure is over 14" W.C. (35mbar), 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. Gas Utility Rough-In Recommendations**

The following gas system specifications are **STRONGLY RECOMMENDED**. Deviating from these recommendations may affect the baking performance of the oven.

**Gas Meter**

- One or two oven cavities: 750 cfh meter
- Three or four oven cavities: 1200 cfh meter

**Gas Line**

- DEDICATED LINE from the gas meter to the oven
- 2" (50.8mm) pipe for natural gas
- 1-1/2" (38.1mm) pipe for propane
- Maximum length: 200' (61m). Each 90° elbow equals 7' (2.13m) of pipe.

**B. Connection**

Check the oven's gas supply requirements before making the gas utility connection. Gas supply requirements are listed on the oven's serial plate (Figure 2-23) and in the Gas Orifice and Pressure Specifications table (Page 5 of this manual).

Check the serial plate to determine the type of gas (Propane or Natural) to be used with the oven.

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 2-25; however, compliance with the applicable standards and regulations is mandatory.

Inlet, regulated, and pilot gas pressure readings can be taken using a "U" tube manometer at the tap locations shown in Figure 2-26.

**NOTE**

The installation must conform with local codes or in the absence of local codes, with the National Fuel Gas Code, ANSI Z223.1-latest edition.

In Australia, the installation must conform with AGA Code AG601 and with any requirements of the appropriate statutory authority.

**CANADIAN:**

CAN/CGA-B 149.1 Natural Gas Installation Code

CAN/CGA-B 149.2 Propane Installation Code

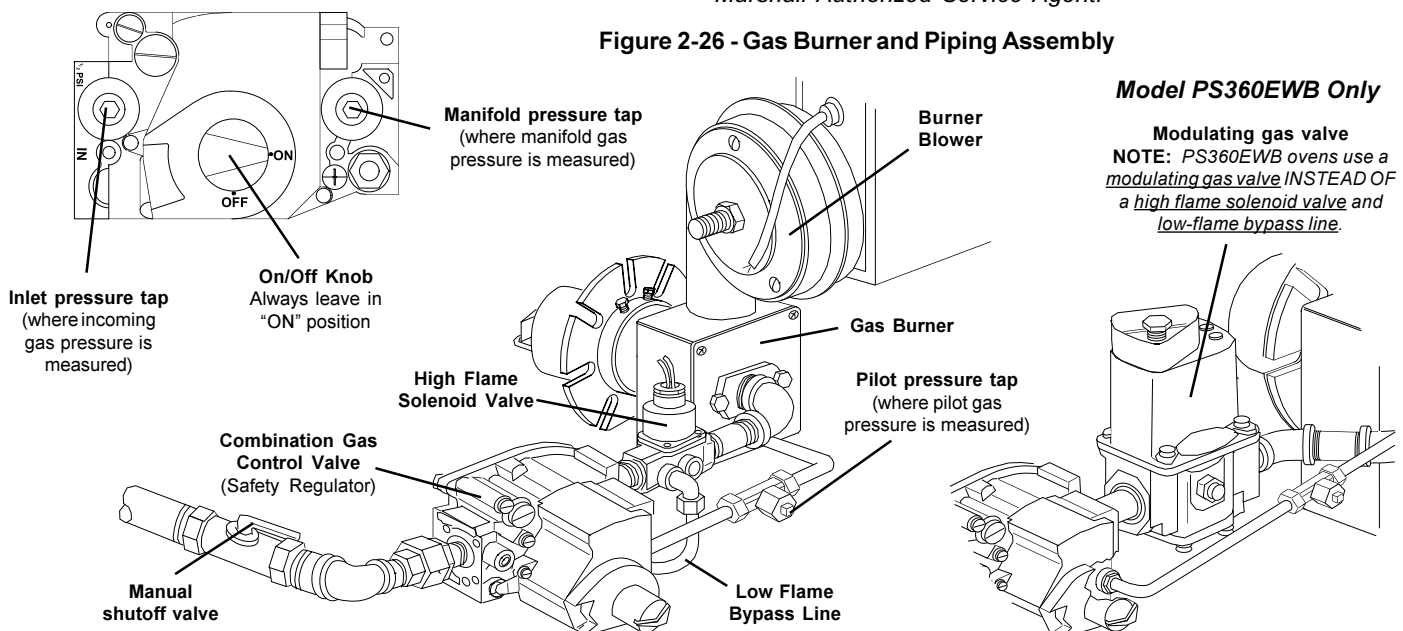
Certain safety code requirements exist for the installation of gas ovens; refer to the beginning of Section 2 for a list of the installation standards. In addition, because the oven is equipped with casters, the gas line connection shall be made with a connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69 (in U.S.A.), or, if applicable, Connectors for Movable Gas Appliances, CAN/CGA-6.16 (in Canada), as well as a quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI Z21.41 (in U.S.A.), or, if applicable, Quick-Disconnect Devices for Use With Gas Fuel, CAN1-6.9 (in Canada).

**C. Gas Conversion**

Where permitted by local and national codes, it is possible to convert ovens from natural to propane gas, or from propane to natural gas. Use the appropriate Middleby Marshall Gas Conversion Kit for the specific oven model.

**WARNING**

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.



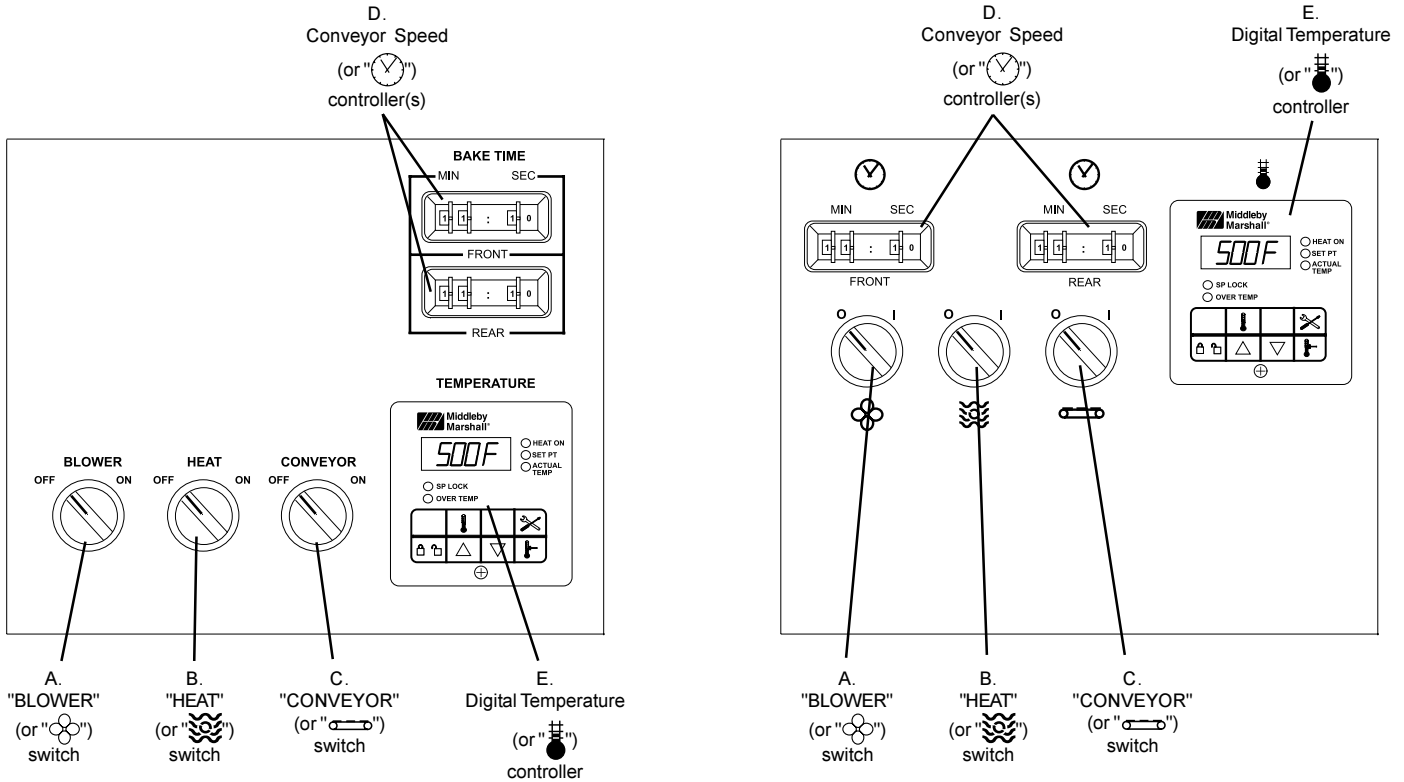
# SECTION 3 - OPERATION






## I. LOCATION AND DESCRIPTION OF CONTROLS

Fig. 3-1 - Control Panel

All ovens except PS360EWB and PS360WB70

PS360EWB and PS360WB70 only



- 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 gas burner to light. Activation of the gas burner is determined by the settings on the Digital Temperature Controller.
- C.  **"CONVEYOR" Switch:** Turns the conveyor drive motor on and off. For tandem and double tandem ovens, this switch is present only on the left oven section(s).
- D.  **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." For tandem and double tandem ovens, this control is present only on the left oven section(s).
- E.  **Digital Temperature Controller:** Continuously monitors the oven temperature. Settings on the Digital Temperature Controller control the activation of the gas burner.

NOT SHOWN:


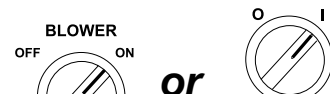
- F. **Machinery Compartment Access Panel Safety Switch:** Disconnects electrical power to the controls and the blowers when the machinery compartment access panel is opened. The panel should only be opened by authorized service personnel.


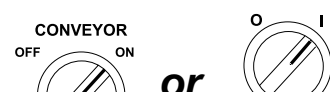


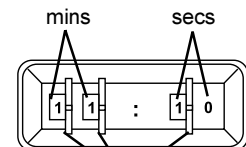
## II. NORMAL OPERATION - STEP-BY-STEP

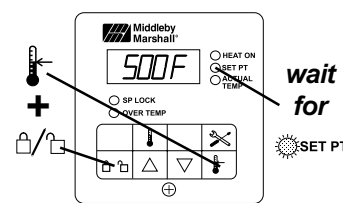
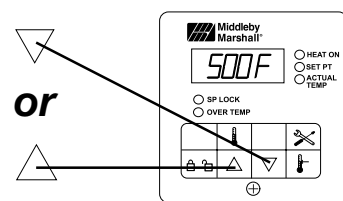
### A. DAILY STARTUP PROCEDURE


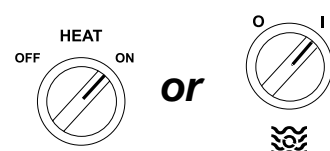
1. Check that the circuit breaker/fused disconnect is in the on position. If the oven is equipped with a window, check that the window is closed.

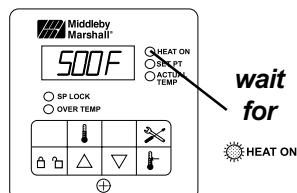
2. Turn the "BLOWER" (or ) switch to the "ON" (or "I") position.
 

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


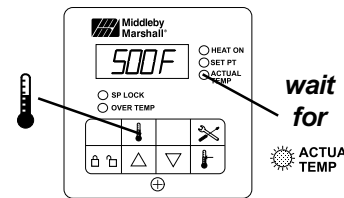
4. If necessary, adjust the conveyor speed setting by turning the three thumbwheels to change the displayed bake time.
 

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 set-point.
 

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



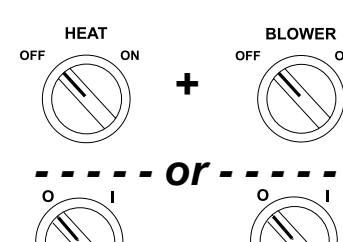



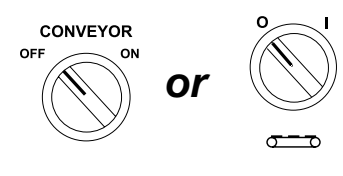
7. Wait for the oven to heat to the setpoint temperature. Higher setpoint temperatures will require a longer wait. The oven can reach a temperature of 500°F (232°C) in approximately 5 minutes.

8. (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.
 

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

### B. DAILY SHUTDOWN PROCEDURE




1. Turn the "HEAT" (or ) and "BLOWER" (or ) switches to the "OFF" (or "O") position. Note that the blowers will remain in operation until the oven has cooled to below 200°F (93°C).
 

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

3. If the oven is equipped with a window, 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.

### IMPORTANT

On gas ovens, if the "HEAT ON" light will not illuminate, OR if the oven does not heat, the gas burner may not have lit. 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.

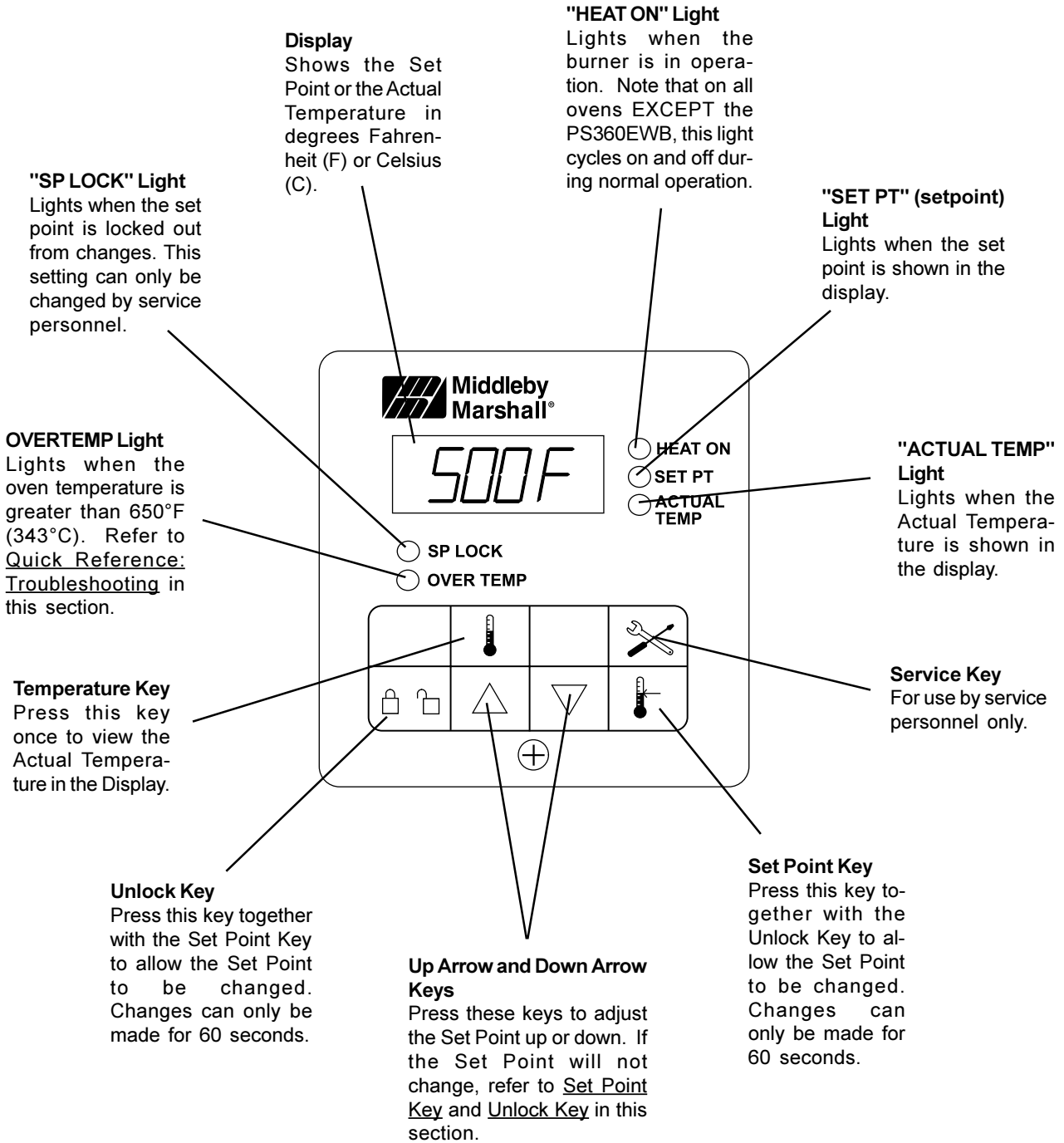
### CAUTION

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
















**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



## V. QUICK REFERENCE: TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION
 <b>OVERTEMP</b> <i>light is lit, food product is undercooked</i>  <i>Oven will not turn on at all</i>	<p>The oven temperature exceeded 650°F (343°C), and the burner was automatically shut down.</p> <p>Electrical power may not be reaching the oven, or the controls may be set incorrectly.</p>	<ul style="list-style-type: none"> <li>Follow the procedures under <a href="#">Daily Shutdown Procedures</a> 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.</li> <li>Check that the circuit breaker/fused disconnect is turned on.</li> <li>Check that the "BLOWER" (or ) Switch is in the "ON" (or "I") position. The burner cannot engage until the blowers are in operation.</li> </ul>
<i>Oven shuts down shortly after it is turned on</i>	<p>The gas burner did not light within 90 seconds of turning the "HEAT" (or ) Switch to the "ON" (or "I") position. This automatically engages a safety lockout mode.</p>	<ul style="list-style-type: none"> <li>Turn the "HEAT" (or ), "BLOWER" (or ), and "CONVEYOR" (or ) switches to the "OFF" (or "O") position.</li> <li>Wait for AT LEAST FIVE MINUTES before restarting the oven.</li> <li>Repeat the Daily Startup procedure.</li> </ul>
 <i>appears in display, oven is not heating</i>	<p>The oven did not reach 200°F (93°C) within 15 minutes of startup, and the oven has stopped heating.</p>	<ul style="list-style-type: none"> <li>Turn the "HEAT" (or ), "BLOWER" (or ), and "CONVEYOR" (or ) switches to the "OFF" (or "O") position.</li> <li>Wait for AT LEAST FIVE MINUTES before restarting the oven.</li> <li>Repeat the Daily Startup procedure.</li> </ul>
<i>Oven will not heat</i>	<p>Controls may be set incorrectly.</p>	<ul style="list-style-type: none"> <li>Check that the Set Point is correctly set.</li> <li>Check that both the "BLOWER" (or ) and "HEAT" (or ) Switches are in the "ON" (or "I") position.</li> <li>If the oven still will not heat, turn the "HEAT" (or ), "BLOWER" (or ), and "CONVEYOR" (or ) switches to the "OFF" (or "O") position.</li> <li>Wait for AT LEAST FIVE MINUTES before restarting the oven.</li> <li>Repeat the Daily Startup procedure. Check that the Set Point is above 200°F (93°C).</li> </ul>
<i>Oven is operating, but little or no air is blowing from air fingers</i>	<p>Air fingers may have been reassembled incorrectly after cleaning.</p>	<ul style="list-style-type: none"> <li>Turn the oven off, and allow it to cool. Disconnect electrical power to the oven.</li> <li>Refer to Section 4, <a href="#">Maintenance</a>, for instructions on reassembling the air fingers.</li> </ul>
<i>Conveyor moves with a jerky motion, or will not move at all</i>	<p>Conveyor may be jammed on an object in the oven, or conveyor belt or drive chain tension may be incorrect.</p>	<ul style="list-style-type: none"> <li>Turn the oven off, and allow it to cool. Disconnect electrical power to the oven.</li> <li>Check if the conveyor is blocked by an object inside the oven.</li> <li>Refer to Section 4, <a href="#">Maintenance</a>, for instructions on checking the conveyor and drive chain tension.</li> </ul>
<i>Food products are overcooked or undercooked.</i>	<p>Controls may be set incorrectly.</p>	<ul style="list-style-type: none"> <li>Check that the set temperature and bake time settings are correct.</li> </ul>

**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

### 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 the 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. Reconnect the gas supply.
3. Reconnect the electrical supply.
4. 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 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.

### NOTE

It is 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**

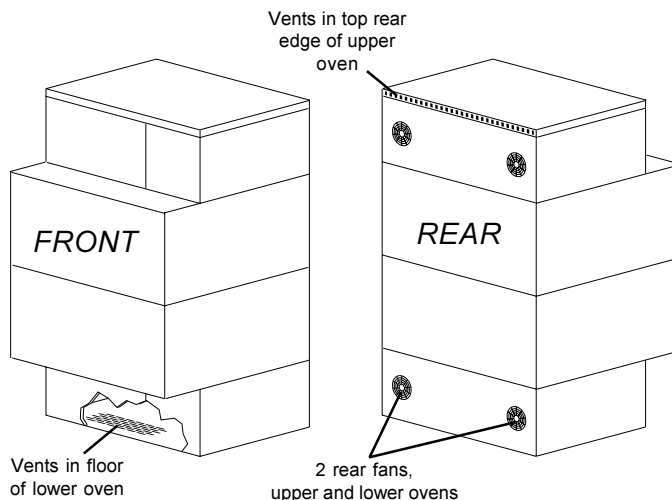
- A. Check that the oven is cool and the power is disconnected, as described in the warning on Page 20.
- B. Clean the outside of the oven with a soft cloth and mild detergent.
- C. Clean ALL of the cooling fan grills and vent openings with a stiff nylon brush. Refer to Figures 4-1, 4-2, and 4-3 for the locations of the grills and vents.
- D. Check that ALL cooling fans are operating properly.

**CAUTION**

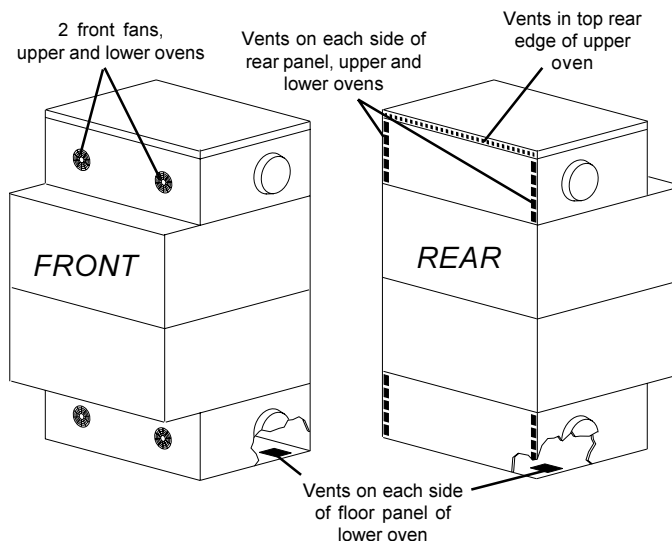
If a cooling fan is not operating correctly, it must be replaced IMMEDIATELY. Operating the oven without adequate cooling can seriously damage the oven's internal components.

- E. 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.
- F. Remove and clean the crumb trays. Be sure to replace the trays in the same positions from which they were removed, because they are NOT identical. Refer to the drawings on Page 10 in the [Installation](#) section.
- G. OVENS EQUIPPED WITH WINDOWS ONLY: Clean the window in place.

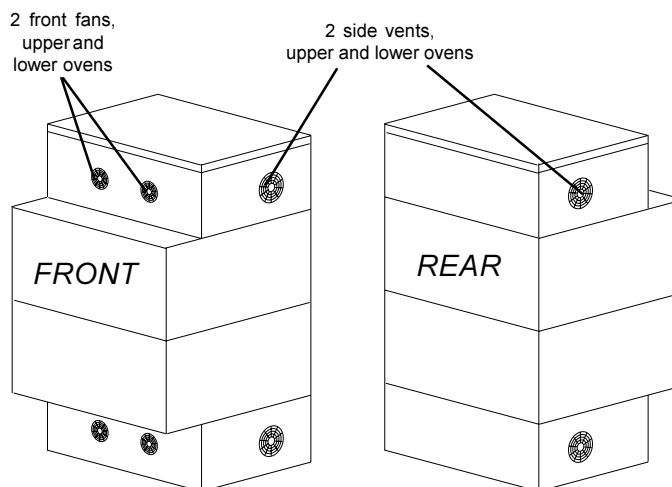
**Figure 4-1 - Cooling Fan/Vent Locations:  
All ovens except PS360EWB and PS360WB70**



**Figure 4-2 - Cooling Fan/Vent Locations: PS360EWB**



**Figure 4-3 - Cooling Fan/Vent Locations: PS360WB70**



**ENGLISH**

## II. MAINTENANCE - MONTHLY

### NOTE

When removing the conveyor, refer to the drawings on Pages 12-13 in the *Installation* section.

- A. Check that the oven is cool and the power is disconnected, as described in the warning on Page 20.
- B. Remove the drive motor shroud and conveyor extension covers from the oven. Disconnect the drive chain from the sprocket on the drive shaft of the conveyor.
- C. Slide the conveyor out of the oven.

### 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, the drive sprocket assembly must be removed.

To remove the drive sprocket (if necessary), loosen the set screw on the conveyor collar as shown in Figure 2-12 (on Page 12). Then, pull the sprocket assembly straight out.

- D. Remove the end plugs from the oven. The end plugs are shown in Figure 1-1, on Page 4 of this Manual.
- E. Slide the air fingers and blank plates out of the oven, as shown in Figure 4-4. 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

- F. Disassemble the air fingers as shown in Figure 4-5. 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.

- G. 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 on Page 20 for cleaning precautions.
- H. Reassemble the air fingers. Then, replace them in the oven, using the "location code" as a guide.
- I. Replace the end plugs on the oven.
- J. Reassemble the conveyor into the oven. If the drive sprocket was removed when installing the conveyor, replace it at this time.
- K. Reattach the drive chain.
- L. Check the tension of the conveyor belt as shown in Figure 2-15 (on Page 12). The belt should lift between 3-4" (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.
- M. Replace the drive motor shroud and the conveyor extensions.

Figure 4-4 - Removing Air Fingers and Plates

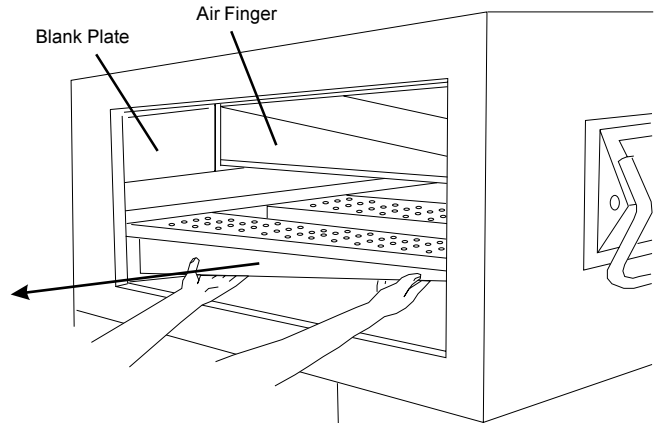
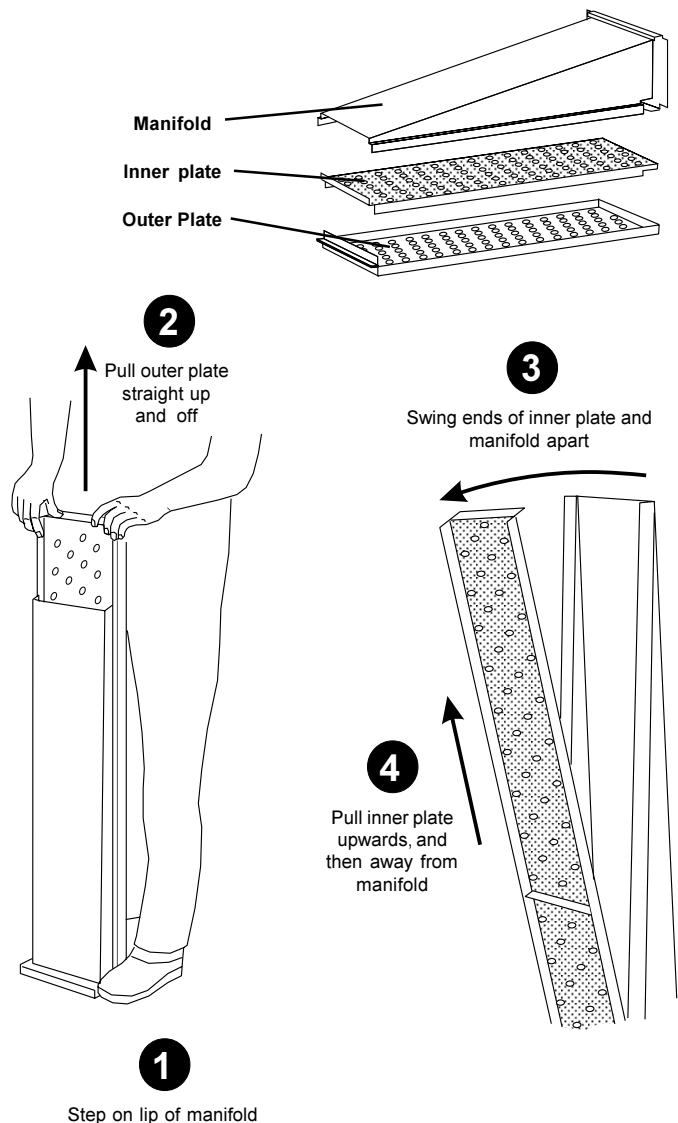


Figure 4-5 - Disassembling the Air Fingers



### III. MAINTENANCE - EVERY 3 MONTHS

- A. Check that the oven is cool and the power is disconnected, as described in the warning on Page 20.
- B. Vacuum both of the blower motors, and their surrounding compartments, using a shop vacuum.
- C. Tighten all electrical control terminal screws.
- D. 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 4-6.
  4. For PS360EWB and PS360WB70 ovens, remove the socket head screw as shown in the inset drawing. Then, loosen the locking collar set screw. Push the shaft assembly toward the locking collar until it is free.
  5. Remove the idler shaft assembly from the conveyor.
  6. 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.*

7. 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.
8. Reassemble the idler shaft into the conveyor. For all ovens except the PS360EWB and PS360WB70, make sure that the bronze washer is in place between the two sections of the shaft. See Figure 4-8.
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 4-7. For PS360EWB and PS360WB70 ovens, remove the socket head screw shown in the inset drawing.
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 4-8. Also, for all ovens except the PS360EWB and PS360WB70, 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.

### IV. MAINTENANCE - EVERY 6 MONTHS

- A. Check that the oven is cool and the power is disconnected, as described in the warning on Page 20.
- B. Check for excessive wear on the conveyor drive motor brushes. The brushes should be replaced if they have worn to less than 1/4" (6.4mm) in length.
- C. Clean and inspect the burner nozzle and electrode assembly.
- D. Check (and clean, if necessary) the oven venting system, including the flue.
- E. Check the conveyor drive shaft bushings and spacers. Replace the components if they are worn.

Figure 4-6 - Split Belt Idler Shaft

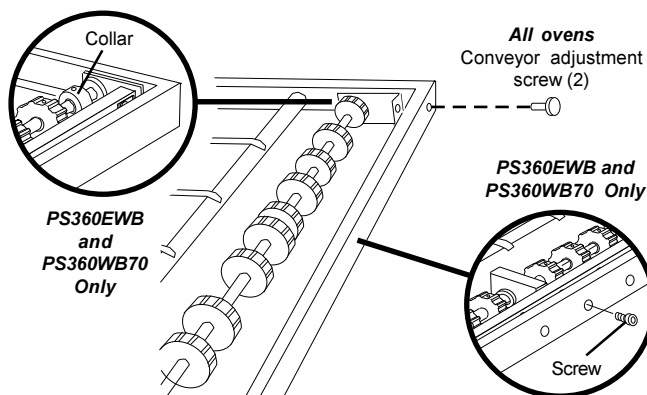


Figure 4-7 - Split Belt Drive Shaft

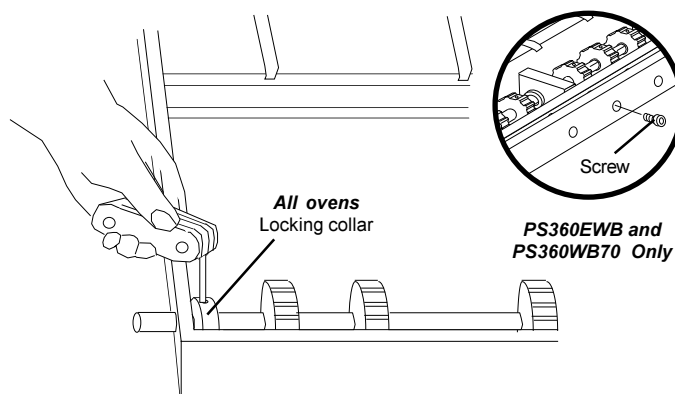
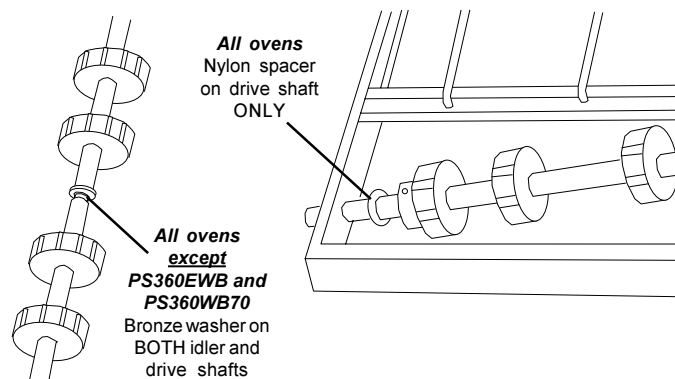


Figure 4-8 - Washers and Spacer



**V. KEY SPARE PARTS KIT - Available separately. See Figure 4-9.**

**A. Key Spare Parts Kit components (all ovens)**

Item	Description	PartNumber
1	Kit, Digital Temperature Controller	36939
2	Conveyor Drive Motor	27384-0008
3	Brushes, Conveyor Drive Motor	22450-0052
4	Kit, Conveyor Speed Controller	42810-0133
5	Conveyor Control Pickup Assembly	27170-0263
6	Thermocouple	33984
7a	Cooling Fan (PS310, 314, 360, 360Q, 360S, 360WB)	27392-0002
7b	Cooling Fan (PS360EWB, WB70)	36451
8a	Blwr Mtr, 1 Ph, 1/3 HP (PS310, 314, 360, 360S)	27381-0023
8b	Blower Motor, 3 Ph, 1/3 HP (PS310, 314, 360)	27381-0024
8c	Blower Motor, 1 Ph, 1/4 HP (PS360Q)	27381-0054
8d	Blower Motor, 1 Ph, 1/2 HP (PS360WB)	27381-0075
8e	Blower Motor, 1 Ph, 1 HP (PS360EWB, WB70)	31432

**B. Additional Key Spare Parts Kit components for gas ovens**

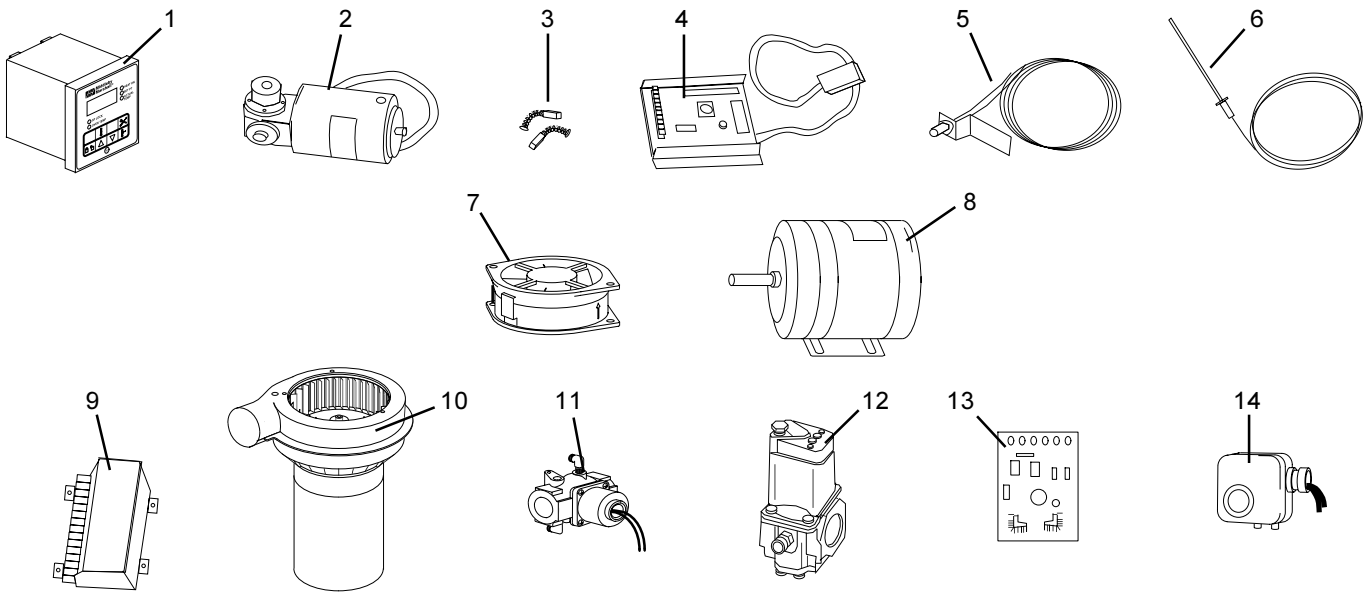
Item	Description	PartNumber
9	Kit, Ignition Module	42810-0114
10a	Burner Blower/Motor Assembly (PS310, 314, 360, 360Q, 360S, 360WB)	27170-0011
10b	Burner Blower/Motor Assembly (PS360EWB, WB70)	38811
11	Solenoid Valve (All ovens EXCEPT PS360EWB)	28091-0017
12	Modulating Valve (PS360EWB)	32570
13	Amplifier, Modulating Valve (PS360EWB)	31651
14	Air Switch (PS360EWB, WB70)	32102

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**Fig. 4-9 - Key Spare Parts Kit**



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

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