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# PS300 Series Gas and Electric Ovens

## Models:

- PS360-U, PS360-L Gas
- PS360-U, PS360-L Electric
- PS360WB-U, PS360WB-L Gas

## Combinations:

- Single Oven
- Double Oven (Two-Stack)

## OWNER'S OPERATING AND INSTALLATION MANUAL

for European export ovens

	Single Oven		Double Oven	
	PS360	PS360WB	PS360	PS360WB
Rated Heat Input Gas Ovens	40kW	50kW	2x40kW	2x50kW
Rated Heat Input Electric Ovens	26kW	–	2x26kW	–
Heating Zones	1 controlled heat zone		2 controlled heat zones	

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**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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# 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.

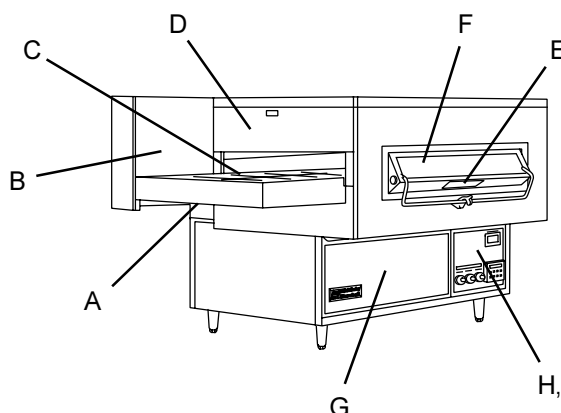
## II. OVEN COMPONENTS - see Figure 1-1.

- 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.
- F. **Window:** 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. No user-servicable parts are located in the control compartment.
- I. **Control Panel:** Location of the operating controls for the oven.

Not Shown:

- 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.
- L. **Gas Burner (gas ovens) or Heating Elements (electric ovens):** 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.

Figure 1-1 - Oven Components



## III. OVEN SPECIFICATIONS

Table 1-1: Dimensions

	PS360U, PS360L	PS360WB-U, PS360WB-L
<b>Overall Height</b>		
Lower oven, with top and legs	1143mm	1143mm
Upper oven, with stand and top	1638mm	1638mm
Double oven (two-stack)	2089mm	2089mm
<b>Overall Depth (including rear shrouds and front window)</b>		
	1194mm	1397mm
<b>Overall Length</b>		
	2299mm	2299mm
<b>Conveyor Width, Single Belt Ovens</b>		
	813mm	1016mm
<b>Conveyor Width, Split Belt Ovens</b>		
	2 x 381mm	2 x 483mm
<b>Recommended Minimum Clearances</b>		
Rear of oven (inc. rear shrouds) to wall	25mm	25mm
Conveyor extension to wall (both ends)	0mm	0mm

Table 1-2: General specifications (per oven cavity)

	PS360U, PS360L Gas	PS360-U, PS360-L Electric	PS360WB-U, PS360WB-L Gas
<b>Weight</b>	583kg	583kg	674kg
<b>Shipping Weight</b>	617kg	617kg	708kg
<b>Shipping Carton Vol.</b>	3.00m <sup>3</sup>	3.00m <sup>3</sup>	3.65m <sup>3</sup>
<b>Rated Heat Input</b>	34,020kcal, 40kW	26kW	42,840kcal, 50kW
<b>Max. Operating Temp.</b>	< ----- 288°C ----- >		
<b>Air Blowers</b>	< ----- 2 blowers at 43.9m <sup>3</sup> /min. at 1700 RPM, ----- > 2.2cm water static pressure		
<b>Air Jet Velocity (avg.)</b>	< ----- 1320cm/sec. ----- >		
<b>Warmup Time</b>	< ----- 15 minutes ----- >		

**Table 1-3: Electrical specifications (per oven cavity)**

Oven Model	Main Blower Voltage	Control Circuit Voltage	Phase	Freq.	Current Draw *	Poles	Wires
Gas Ovens	220-230V	120V (transformer)	1 Ph	50 Hz	8A	2 Pole	3 Wire (1 hot, 1 neut, 1 grd)
Electric Ovens	380-400V	120V (transformer)	1 Ph	50 Hz	39A	2 Pole	5 Wire (3 hot, 1 neut, 1 grd)

\* 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.

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

**Table 1-4: Gas orifice and pressure specifications (per oven cavity)**

Gas Type	Main Orifice dia.	Pilot Orifice dia.	Bypass Orifice dia.	Supply (inlet) Pressure (mbar)					Orifice pressure (mbar)	Rated Heat Input	Supply Volume	Gas Flow
				IE,IT, PT,ES, GB    <sub>2H3+</sub>	DE    <sub>2ELL3BP</sub>	NL    <sub>2L3BP</sub>	BE,FR    <sub>2E+3+</sub>	AT,CH, DK,FI, SE    <sub>2H3BP</sub>				
<b>PS360U, PS360L</b>												
Natural, G20	5.50mm	0.635mm	1.65mm	20	20	--	20-25	20	6.8	40kw	4.2m <sup>3</sup> /h	70.0 ℓ/min
Natural, G25	5.50mm	0.635mm	1.65mm	--	20	25	--	--	10.5	40kw	4.2m <sup>3</sup> /h	81.7 ℓ/min
Natural, G20, G25	4.50mm	0.635mm	1.50mm	20	20	25	20-25	20	6.8-10.5	40kw	4.2-4.9m <sup>3</sup> /h	70.0-81.7 ℓ/min
Liquid, G30	2.70mm	0.381mm	0.85mm	29-37	--	28-30	29-37	50	*	40kw	3.1kg/h	--
Liquid, G30, G31	3.10mm	0.381mm	0.95mm	--	50	30	--	50	*	40kw	3.1kg/h	--
<b>PS360WB-U, PS360WB-L</b>												
Natural, G20	6.30mm	0.635mm	2.30mm	20	20	--	20-25	20	6.8	50kw	5.3m <sup>3</sup> /h	88.0 ℓ/min
Natural, G25	6.30mm	0.635mm	2.30mm	--	20	25	--	--	10.5	50kw	6.1m <sup>3</sup> /h	102.4 ℓ/min
Natural, G20, G25	5.40mm	0.635mm	2.00mm	20	20	25	20-25	20	6.8-10.5	50kw	5.3-6.1m <sup>3</sup> /h	88.0-102.4 ℓ/min
Liquid, G30	3.10mm	0.381mm	1.40mm	29-37	--	28-30	29-37	50	*	50kw	3.9kg/h	--
Liquid, G30, G31	3.50mm	0.381mm	1.40mm	--	50	30	--	50	*	50kw	3.9kg/h	--

\* Pressure regulator (governor) not in operation, system at supply (inlet) pressure.

Orifice pressures apply to 15°C, 1.013mbar dry gas.

## 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**

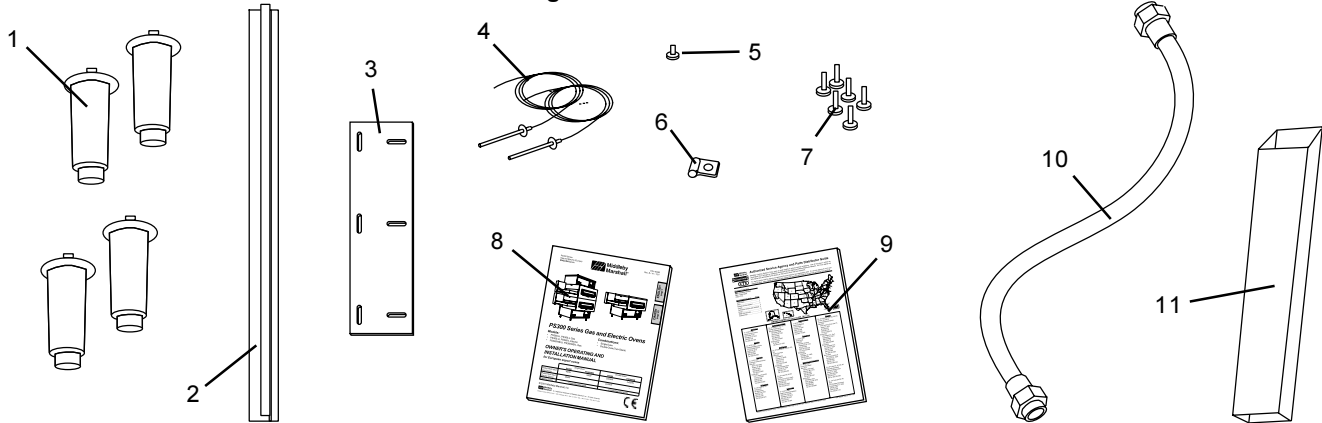
An electrical wiring diagram for the oven is located inside the machinery compartment.

**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.

## I. INSTALLATION KIT

Fig. 2-1 - Installation Kit



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

Item	Description	Part Number	Lower Oven w/o Top	Lower Oven w/Top	Upper Oven
1	Legs, adjustable	22450-0028	4	4	--
2a	Conveyor End Stop - PS360/360S				
	• Single Belt	35000-1103	1	1	1
	• Split Belt	35509	2	2	2
2b	Conveyor End Stop - PS360WB (Single or Split Belt)	36526	1	1	1
3	Attachment Plate, upper oven	35122-0049	--	--	2
4	Thermocouple	33812-1	2	2	2
5	Screw, #10-32 x 3/8"	21256-0008	2	2	2
6	Cable Clamp	27276-0001	1	1	1
7	Screw, #2PT 10-16 x 3/4" HWH	21292-0001	2	2	14
8	Owner's Operating and Installation Manual	46486	1	1	1
9	Authorized Service Agency Listing	1002040	1	1	1

## B. Additional installation kit components for gas ovens

Item	Description	Part Number	Lower Oven w/o Top	Lower Oven w/Top	Upper Oven
5	Screw, #10-32 x 3/8"	21256-0008	1	1	1
7	Screw, #2PT 10-16 x 3/4" HWH	21292-0001	2	2	2
10	Gas hose, flexible	22361-0001	1	1	1
11a	Flue vent, 14" (356mm)	30773	--	1	--
11b	Flue vent, 29-1/2" (749mm)	30759	--	--	1
11c	Flue vent, 50" (1270mm)	30758	1	--	--

## 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

##### CAUTION

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

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 ARE RECOMMENDATIONS ONLY. LOCAL, NATIONAL, AND INTERNATIONAL 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.

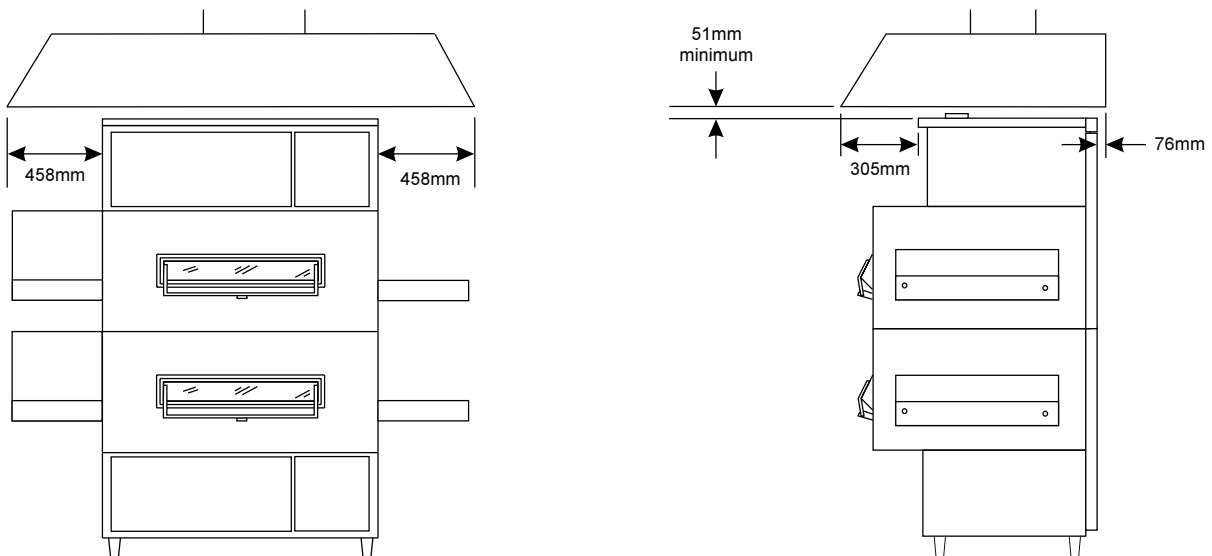
To avoid a negative pressure condition in the kitchen area, return air must be brought back to replenish the air that was exhausted. A negative pressure in the kitchen can cause heat-related problems to the oven components as if there were no ventilation at all. The best method of supplying return air 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. Caster Removal

After moving the ovens in to the installation location, remove the casters attached to each oven cavity. These casters are provided for pre-installation movement **ONLY**.

#### B. Stacking

If the installation will include upper ovens mounted atop lower ovens, stack the oven cavities.

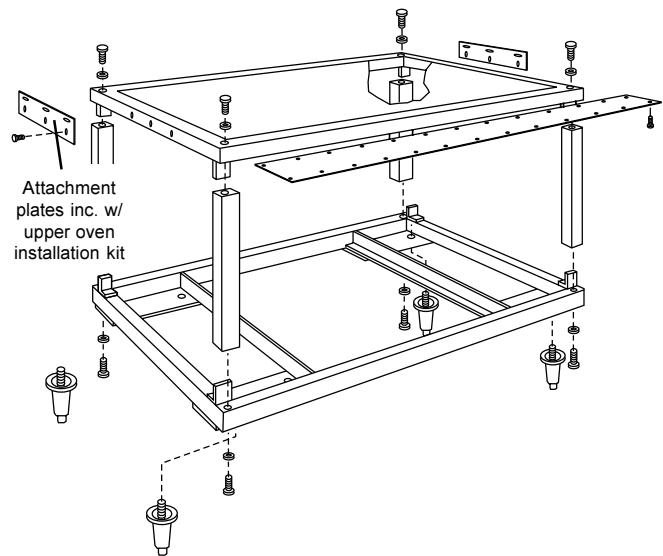
#### C. Stands

If the installation includes ovens that are to be mounted on stands, assemble the ovens to the stands at this time. An exploded view of the stand is shown in Figure 2-3.

#### D. 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.

Figure 2-3 - Exploded View, Oven Stand



### 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 2-4 - Thermocouple Installation Locations

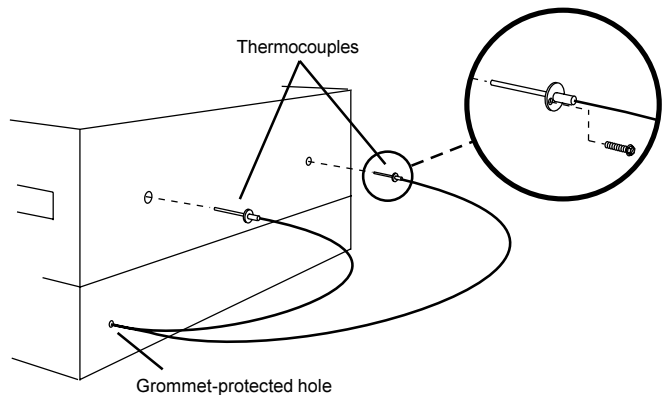


Figure 2-5 - Placing the Thermocouple Leads

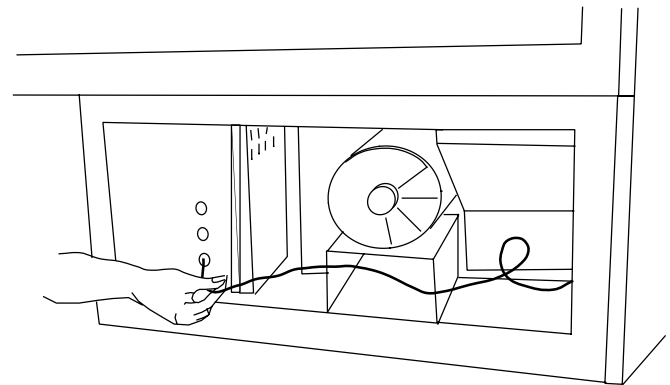
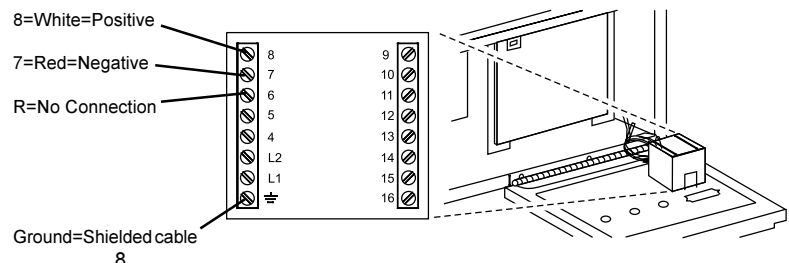


Figure 2-6 - Thermocouple Lead Connections





## V. CONVEYOR INSTALLATION

### NOTE

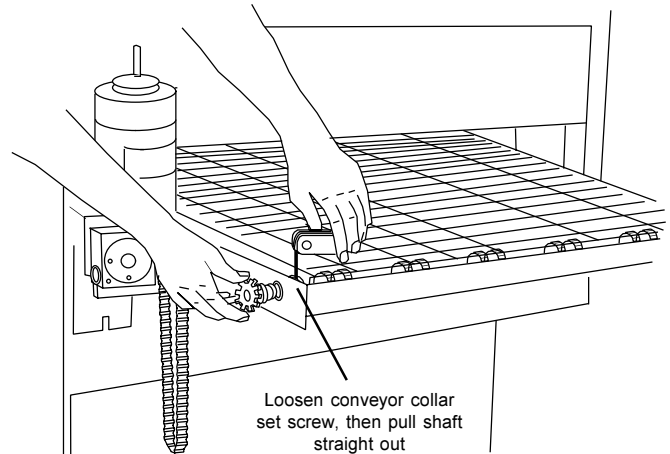
Split belt conveyors can only be installed from the end of the oven *with* the drive motor.

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 2-7. Then, pull the sprocket assembly straight out.

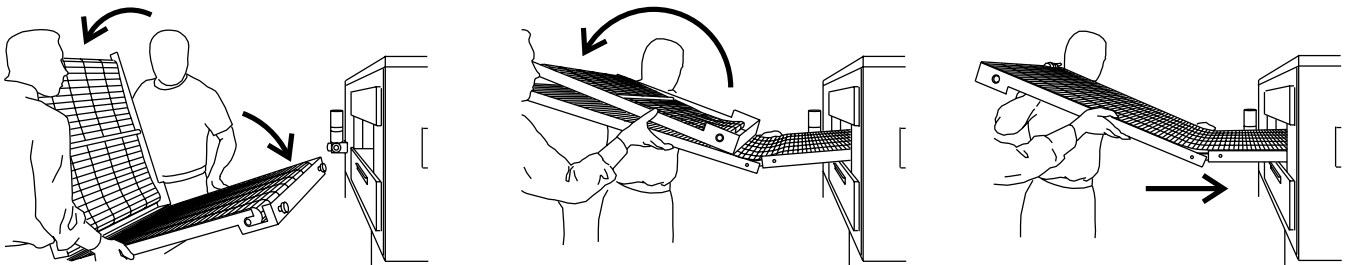
1. Lift the conveyor and position it in the oven as shown in Figure 2-8.

Figure 2-7 - Removing the Conveyor Drive Sprocket



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Figure 2-8 - Inserting the Conveyor



2. Continue moving the conveyor into the oven until the frame protrudes equally from each end of the oven (about 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 2-9.

### NOTE:

Each oven has retainer clips on the bottom of the conveyor frame, as shown in Figure 2-9. The clips are only located on the left (drive) side of the frame.

4. When the conveyor is positioned properly, check for freedom of movement of the conveyor belt by pulling it for about 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 2-7.

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 2-10. 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.

Figure 2-9 - Conveyor retainers

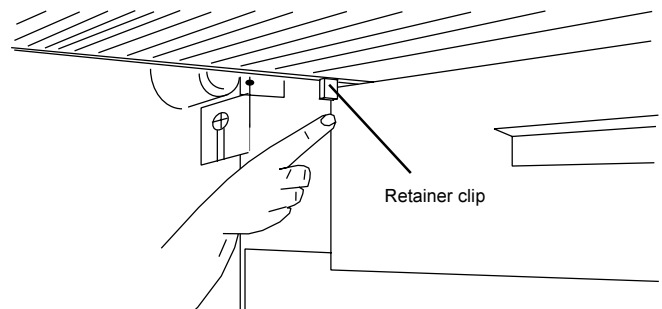
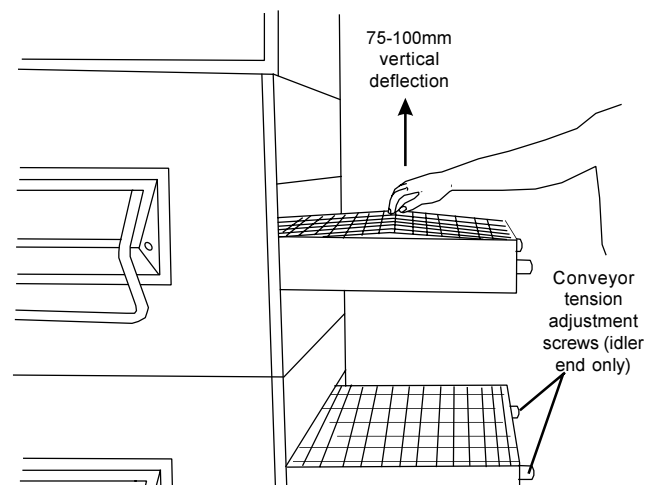


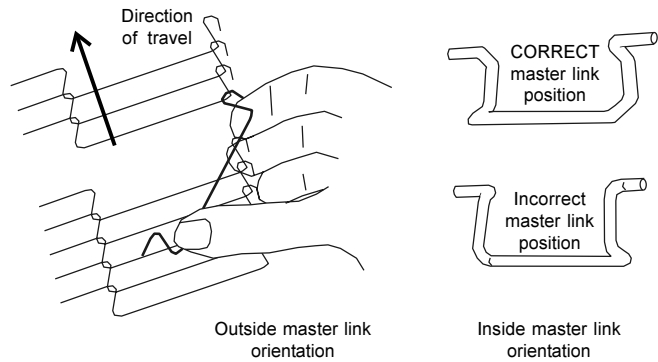
Figure 2-10 - Checking the conveyor tension



## SECTION 2-INSTALLATION

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 60 to 90 cm with your fingers. The conveyor must move freely.
  - f. Return to Step 8, above, to re-check the belt tension.

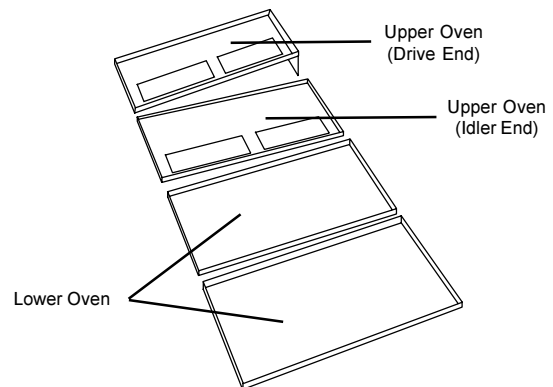
**Figure 2-11 - Conveyor and Master Link Orientation**



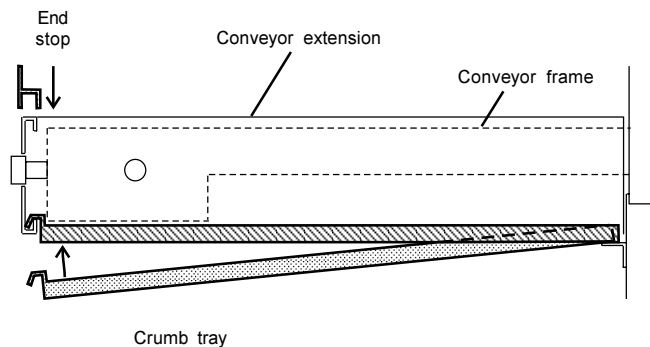
## VI. FINAL ASSEMBLY

1. Assemble the end plugs and motor housing onto the oven.
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.
3. Refer to Figure 2-12 for the correct location of each crumb tray. Then, install the crumb trays underneath the conveyor as shown in Figure 2-13. 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 2-13.
5. Adjust the bottom section of the legs so that the oven is level.

**Figure 2-12 - Crumb tray positions**



**Figure 2-13 - Crumb trays, extensions, and end stop**



## VII. 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 Figure 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!**

## VIII. 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. Additional Information - Gas Ovens

All electric supply connections are made via the electrical junction box on the rear of the oven, shown in Figure 2-14. 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 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 electrical junction box.

### 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.


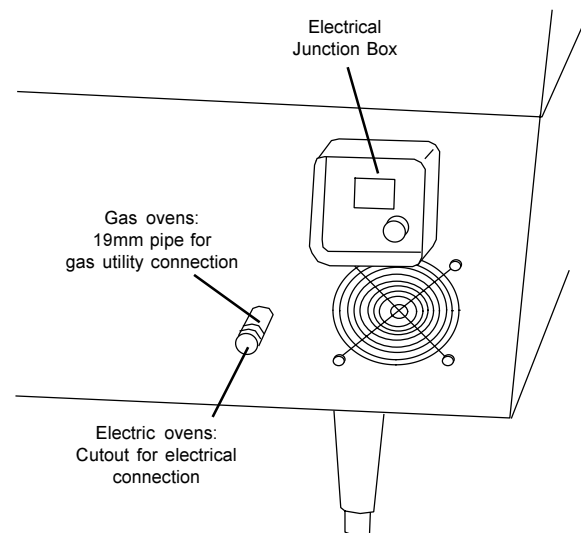
If required by national or local codes, connect an equipotential ground wire to the lug next to the  symbol. The equipotential ground connection must meet all applicable national and local code requirements.

Figure 2-14 - Utility Connection Locations



SECTION 2-INSTALLATION

**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: 354 l/sec meter
- Three or four oven cavities: 566 l/sec meter

**Gas Line**

- DEDICATED LINE from the gas meter to the oven
- 50.8mm pipe for natural gas
- 38.1mm pipe for propane
- Maximum length: 61m. Each 90° elbow equals 2.13m of pipe.

**B. 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.

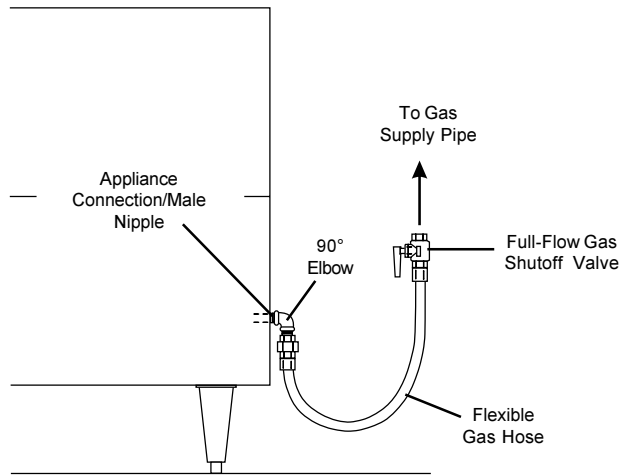
**NOTE:** The gas supply connection should be according to applicable ISO 228-1 or ISO 7-1 recommendations. All aspects of the gas supply connection must comply with current IEC/CEE requirements and with all applicable local, national, and international codes.

Check the oven's gas supply requirements before making the gas utility connection. Gas supply requirements are listed on the oven's serial plate.

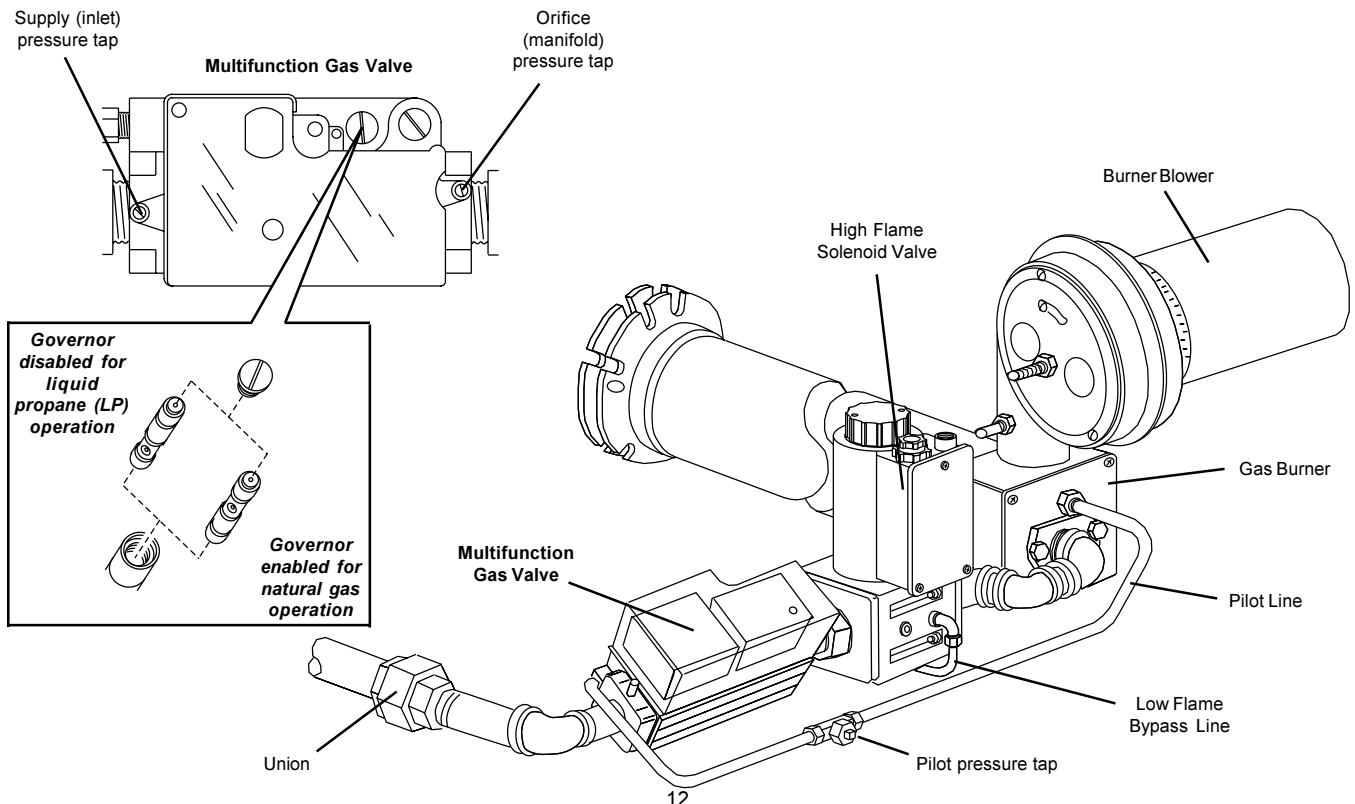
Check the serial plate to determine the type of gas to be used with the oven. Check that the gas type indicated matches the local supply at the installation. If the gas type on the serial plate does NOT match the local supply, directions for converting the oven for use with other gases are described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

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**



### C. 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 the *Gas Orifices and Pressure Specifications* table, near the beginning of this Section. If necessary, replace the orifices. Refer to Part D, Replacing the Gas Orifices.

The orifice (manifold) pressure should be adjusted to the value shown in the *Gas Orifices and Pressure Specifications* table for the specific gas type and location.

#### 1. For Use with Natural Gas

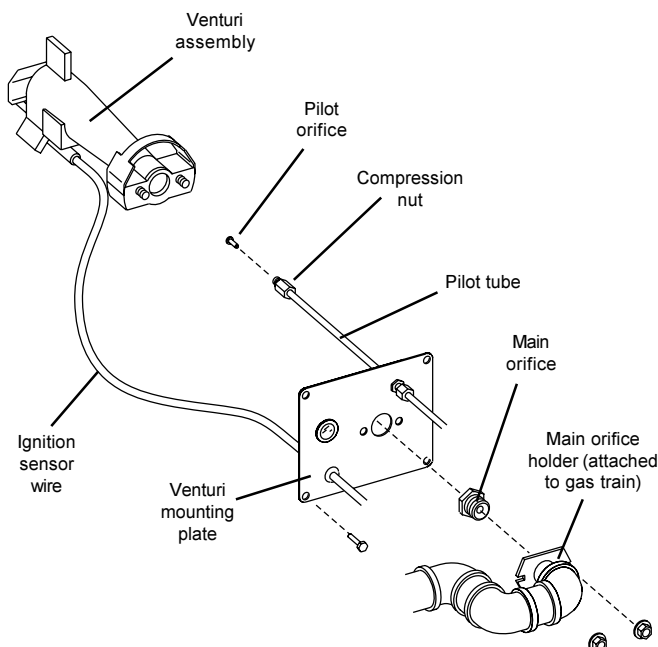
The actual heat input to the oven must match the rated heat input. The input to the burner can be determined using the orifice (manifold) pressure data or by the volume supplied using the gas meter. Both of these procedures are described in Part F, Adjusting the Orifice (Manifold) Pressure and Heat Input.

If the measured input does not correspond with the rated input (shown in the *Gas Orifices and Pressure Specifications* table), 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, the converter in the multifunction gas valve must be removed, and then replaced INVERTED from its former position. See Figure 2-16. Inverting the converter will disable the governor. This step is only required if the supply pressure is below 50mbar.

Figure 2-17 - Replacing the Main and Pilot Orifices



### D. Replacing the Gas Orifices (if so required)

#### 1. Replacing the Main Orifice

- Check that the main gas supply valve and the circuit breaker/fused disconnect are in the OFF ("O") position.
- Open the union in the gas supply line. The union is shown in Figure 2-16, on the previous page.
- 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.
- Remove the two 1/2" nuts that secure the gas train to the venturi mounting plate.
- Remove the main orifice using an 11/16" wrench.
- Install the new orifice.

#### 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.

- 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.
- Remove the pilot orifice.
- Slip the new pilot orifice into the pilot tube.
- 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.
- Gently tighten the nut one complete turn with a wrench. **DO NOT OVERTIGHTEN THE COMPRESSION NUT.**

#### 3. Replacing the Bypass (Low Flame) Orifice

- Refer to Figure 2-16. Note the locations of the 1/2" hex compression nuts that hold the bypass line in place. Loosen the compression nuts using a 1/2" wrench.
- Remove the bypass tube. Then, remove the bypass orifice from the tube.
- Slip the new orifice into the bypass tube.
- Replace the tube onto its fittings on the solenoid valve. While holding the tube in place, slide the compression nuts back into place and engage the threads. Tighten the nut to a snug fit with your fingers.
- Gently tighten the nuts one complete turn with a wrench. **DO NOT OVERTIGHTEN THE COMPRESSION NUTS.**
- 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.

## SECTION 2-INSTALLATION

**E. Checking the Gas Supply (Inlet) Pressure**

1. Remove the supply (inlet) pressure cap screw from the multifunction gas valve. Attach a manometer to the stud.
2. Depress the machinery compartment safety switch 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 and 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, and replace the cap screw onto the multifunction gas valve.
7. Compare the measured supply (inlet) pressure to the nominal pressures shown in the *Gas Orifices and Pressure Specifications* table.

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.

**F. 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. Remove the regulated (manifold) pressure cap screw from the multifunction gas valve. Attach a manometer to the stud.
- c. Remove the cap screw from the pressure adjustment screw (governor) on the multifunction gas valve.
- d. Depress the machinery compartment safety switch 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 and 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 the *Gas Orifices and Pressure Specifications* table. 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 the cap screws onto the multifunction gas valve.

**2. Volumetric Method**

- a. Determine the time of 0.1m<sup>3</sup> (100 liters) of gas usage as follows.

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

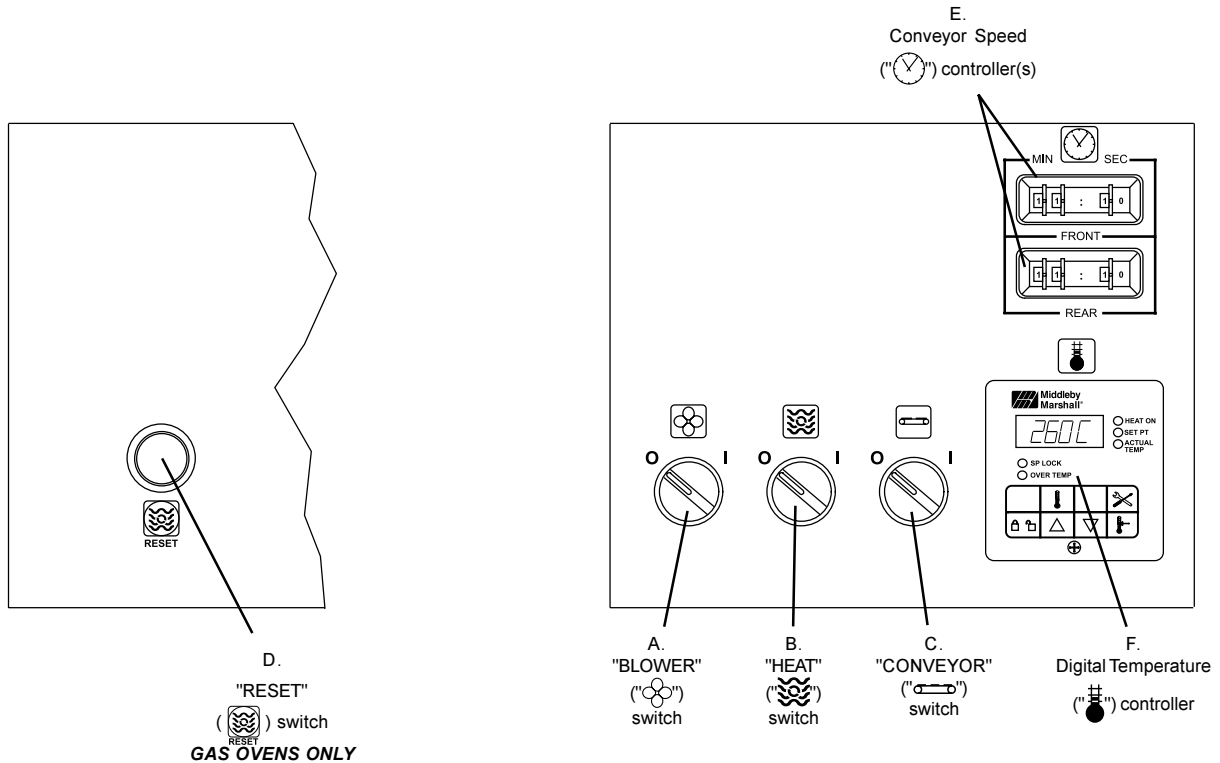
$$\text{Time (in minutes) of 0.1m}^3\text{ of gas usage} = \frac{6}{\text{Consumption}}$$

- b. Check that the main gas supply valve and the circuit breaker/fused disconnect are in the OFF ("O") position.
- c. Remove the cap screw from the pressure adjustment screw (governor) on the multifunction gas valve.
- d. Depress the machinery compartment safety switch 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 and 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 0.1m<sup>3</sup> 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 the *Gas Orifices and Pressure Specifications* table.
- i. Switch the oven off. Close the main gas supply valve, and switch the circuit breaker/fused disconnect to the OFF ("O") position. Replace the cap screw onto the multifunction gas valve.








# SECTION 3 - OPERATION

## I. LOCATION AND DESCRIPTION OF CONTROLS

Fig. 3-1 - Control Panel




ENGLISH

- 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 Temperature Controller control the activation of the burner or heating elements.
- NOT SHOWN:**
- G. 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

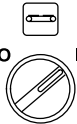
### A. DAILY STARTUP PROCEDURE



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

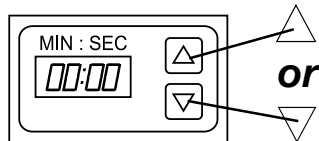
2. Turn the "BLOWER" () switch to the "ON" ("I") position.



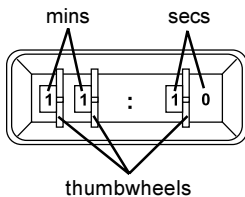
3. Turn the "CONVEYOR" () switch to the "ON" ("I") position.



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

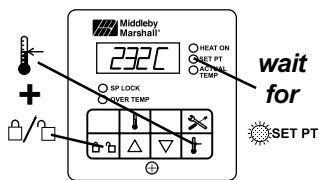


Some ovens may be equipped with a thumbwheel speed controller. For these ovens, turn the three thumbwheels to change the displayed bake time.

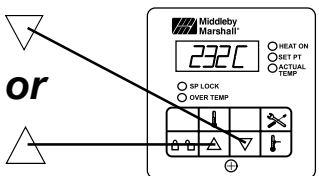



5. Adjust the temperature controller to a desired set temperature, if necessary.

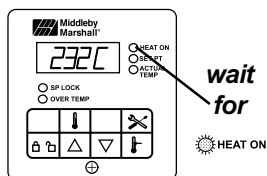
- Press the Set Point and Unlock keys at the same time. Wait for the "SET PT" light to turn on.





- Press the Up Arrow and Down Arrow Keys as necessary to adjust the set-point.







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




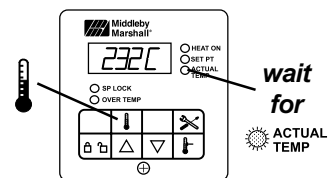
7. (Gas ovens only) If the "RESET" () switch illuminates, the gas burner did not light. Press the "RESET" () switch (repeatedly if necessary) to attempt to light the burner.



**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. Wait for AT LEAST FIVE MINUTES. Then, repeat the Daily Startup procedure.



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 232°C in approximately 5 minutes.

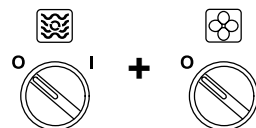
8. (Optional) Press the Temperature () key to show the Actual Temperature in the display, and wait for the "ACTUAL TEMP" light to turn on. This allows you to monitor the oven temperature as it rises to the setpoint.




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" () 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.

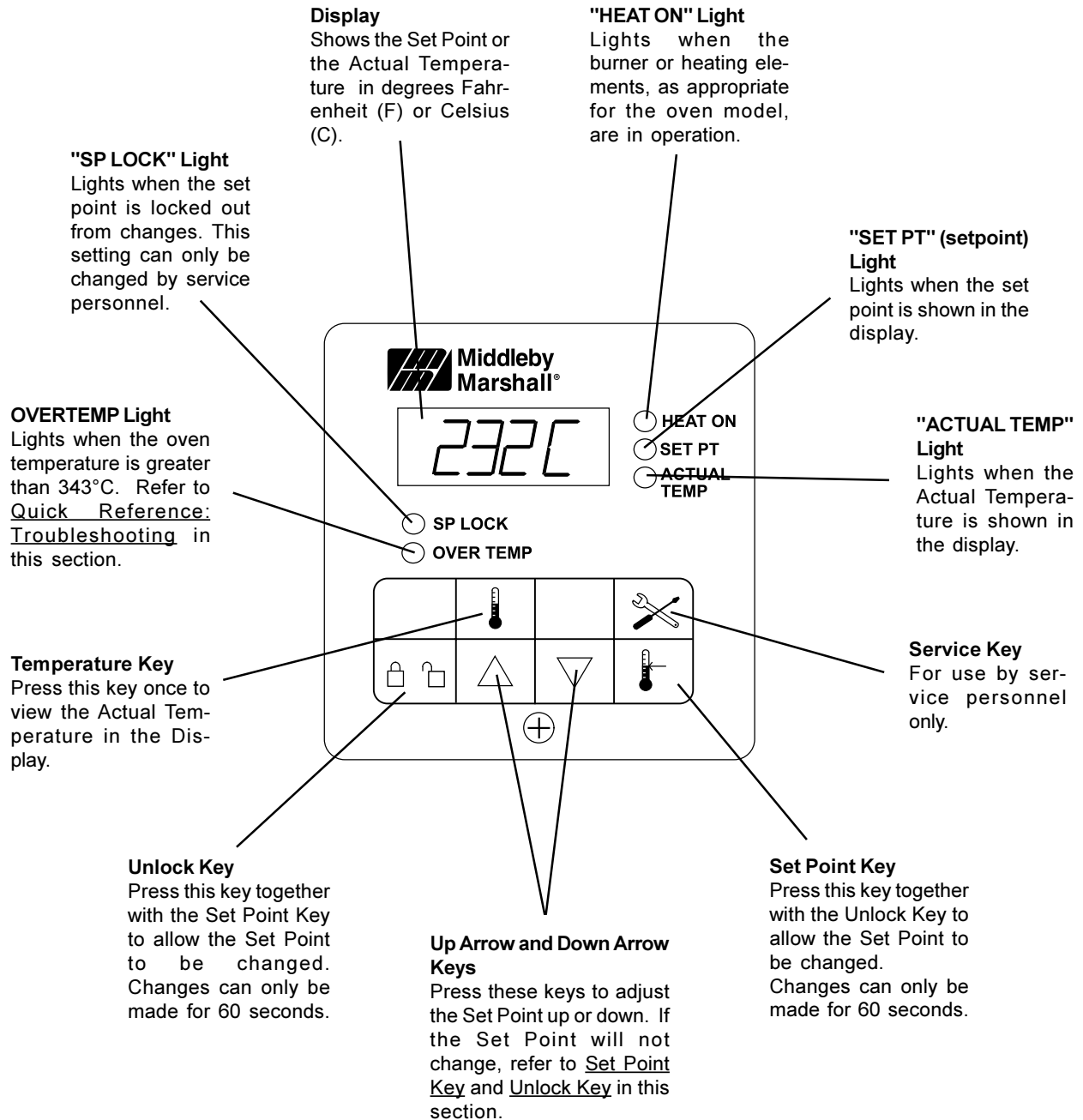
### CAUTION

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



## IV. QUICK REFERENCE: TROUBLESHOOTING

ENGLISH

SYMPTOM	PROBLEM	SOLUTION
 <b>OVERTEMP</b> <i>light is lit, food product is undercooked</i>	The oven temperature exceeded 343°C, and the burner or heating elements were automatically shut down.	<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> </ul>
<i>Oven will not turn on at all</i>	Electrical power may not be reaching the oven, or the controls may be set incorrectly.	<ul style="list-style-type: none"> <li>Check that the circuit breaker/fused disconnect is turned on.</li> <li>Check that the "BLOWER"  Switch is in the "ON" ("I") position. The burner cannot engage until the blowers are in operation.</li> </ul>
"RESET"  switch is illuminated, oven will not heat <i>(gas ovens only)</i>	The gas burner did not light within 90 seconds of turning the "HEAT"  Switch to the "ON" ("I") position.	<ul style="list-style-type: none"> <li>Press the "RESET"  switch (repeatedly if necessary) to attempt to light the burner.</li> <li>If the burner does not light within 15 minutes, the oven will enter a safety lockout mode that disables the "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.</li> </ul>
 <i>appears in display, oven is not heating</i>	The oven did not reach 93°C within 15 minutes of startup, and the oven has stopped heating.	<ul style="list-style-type: none"> <li>Turn the "HEAT" , "BLOWER" , and "CONVEYOR"  switches to the "OFF" ("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>	Controls may be set incorrectly.	<ul style="list-style-type: none"> <li>Check that the Set Point is correctly set.</li> <li>Check that both the "BLOWER"  and "HEAT"  Switches are in the "ON" ("I") position.</li> <li>If the oven still will not heat, turn the "HEAT" , "BLOWER" , and "CONVEYOR"  switches to the "OFF" ("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 93°C.</li> </ul>
<i>Oven is operating, but little or no air is blowing from air fingers</i>	Air fingers may have been reassembled incorrectly after cleaning.	<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>	Conveyor may be jammed on an object in the oven, or conveyor belt or drive chain tension may be incorrect.	<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>	Controls may be set incorrectly.	<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 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

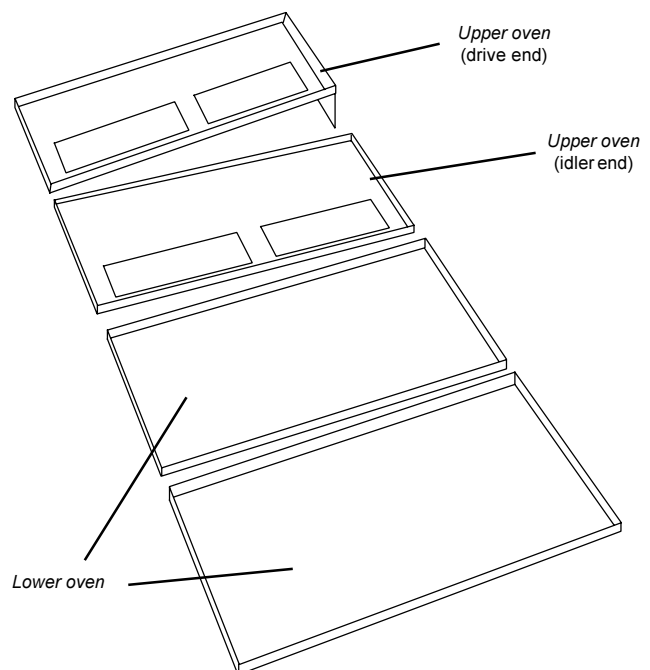
- A. Check that the oven is cool and the power is disconnected, as described in the warning at the beginning of this Section.
- B. Clean the outside of the oven with a soft cloth and mild detergent.
- C. Clean ALL of the cooling fan grills and vent openings with a stiff nylon brush.
- D. Check that ALL 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 Figure 4-1.
- G. Clean the window in place.

Figure 4-1 - Crumb trays



**II. MAINTENANCE - MONTHLY**

- 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, drive motor shroud, and conveyor extension covers 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.

**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 4-2. Then, pull the sprocket assembly straight out.*

- D. Slide the conveyor out of the oven, folding it as it is removed. See Figure 4-3.
- E. Remove the end plugs from the oven.
- F. 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:

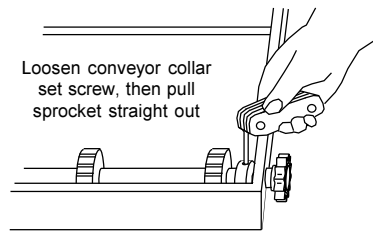
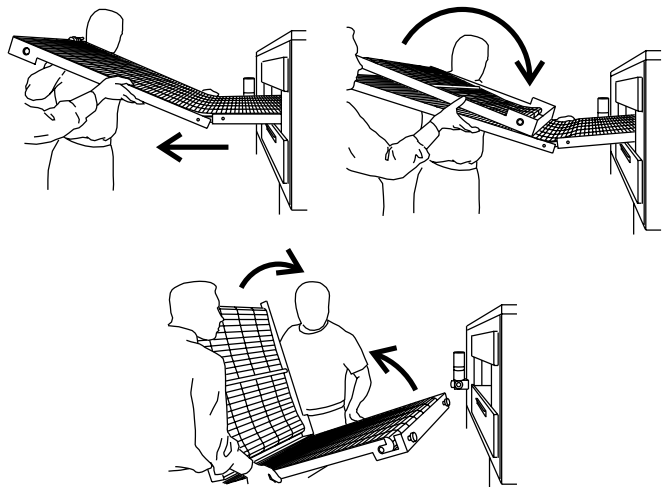
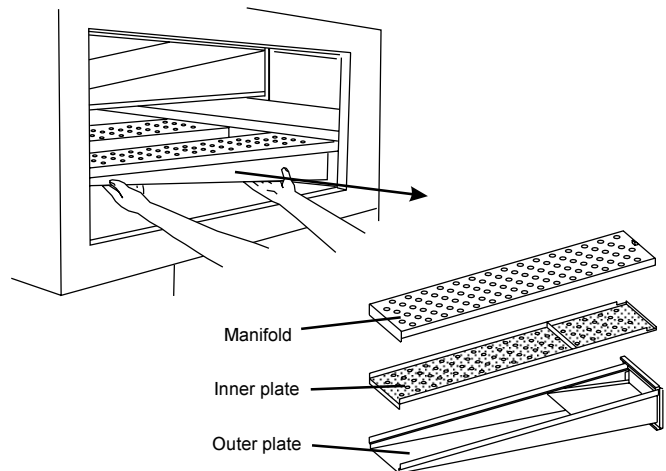
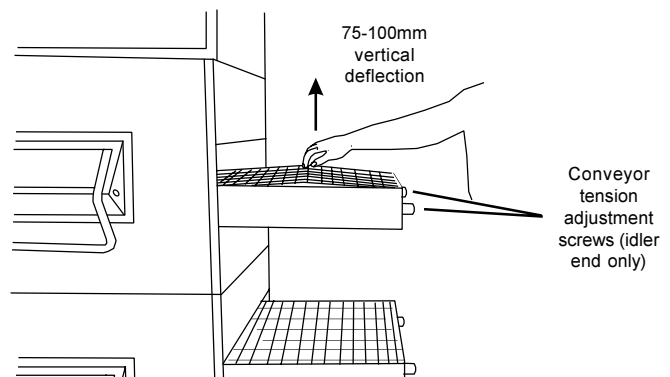
(Top Row)	<b>T1</b>	<b>T2</b>	<b>T3</b>	<b>T4</b>	<b>T5</b>	<b>T6</b>
(Bottom Row)	<b>B1</b>	<b>B2</b>	<b>B3</b>	<b>B4</b>	<b>B5</b>	<b>B6</b>

- 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 4-5. 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 conveyor extension covers, drive motor shroud, and crumb trays.

**Figure 4-2 - Removing the Conveyor Drive Sprocket****Figure 4-3 - Removing the Conveyor****Figure 4-4 - Removing Air Fingers and Plates****Figure 4-5 - Checking the conveyor tension**

### 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**

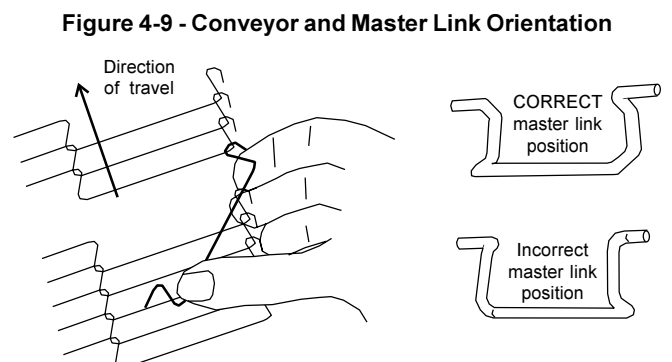
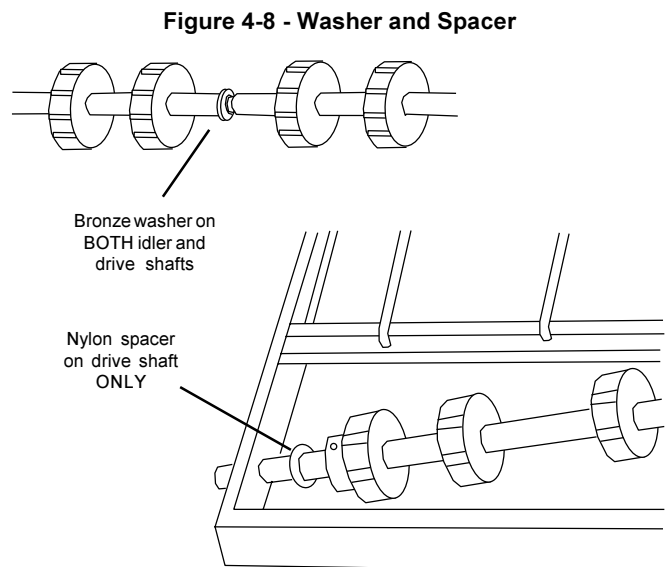
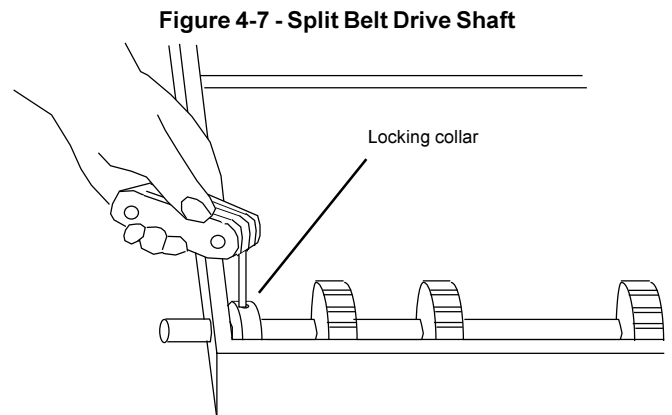
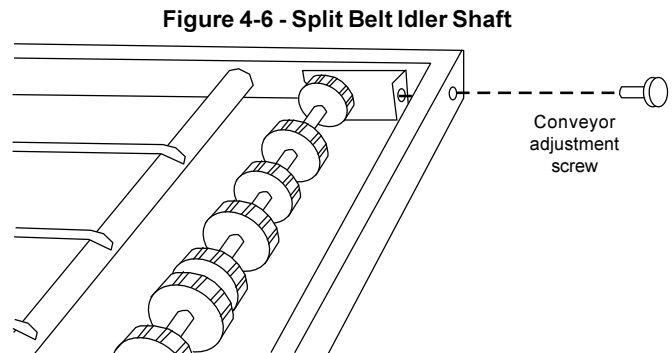
For split belt ovens ONLY, disassemble, clean and lubricate the conveyor shaft components as described below.

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 4-6.
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 an FDA-approved 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 4-8.
8. Replace the conveyor adjustment screws as shown in Figure 4-6. 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 4-7.
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, 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. Check that the smooth side of the conveyor belt faces UP, and that the belt and master links are oriented as shown in Figure 4-9.
15. Reassemble the conveyor, motor shroud and conveyor extensions onto the oven.
16. Check the tension of the conveyor belt as shown in Figure 4-5. The belt should lift between 75-100mm. If necessary, adjust the belt tension by turning the conveyor adjustment screws.



**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 1/4" (6.4mm) 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.

**V. KEY SPARE PARTS KIT - Available separately. See Figure 4-10.**

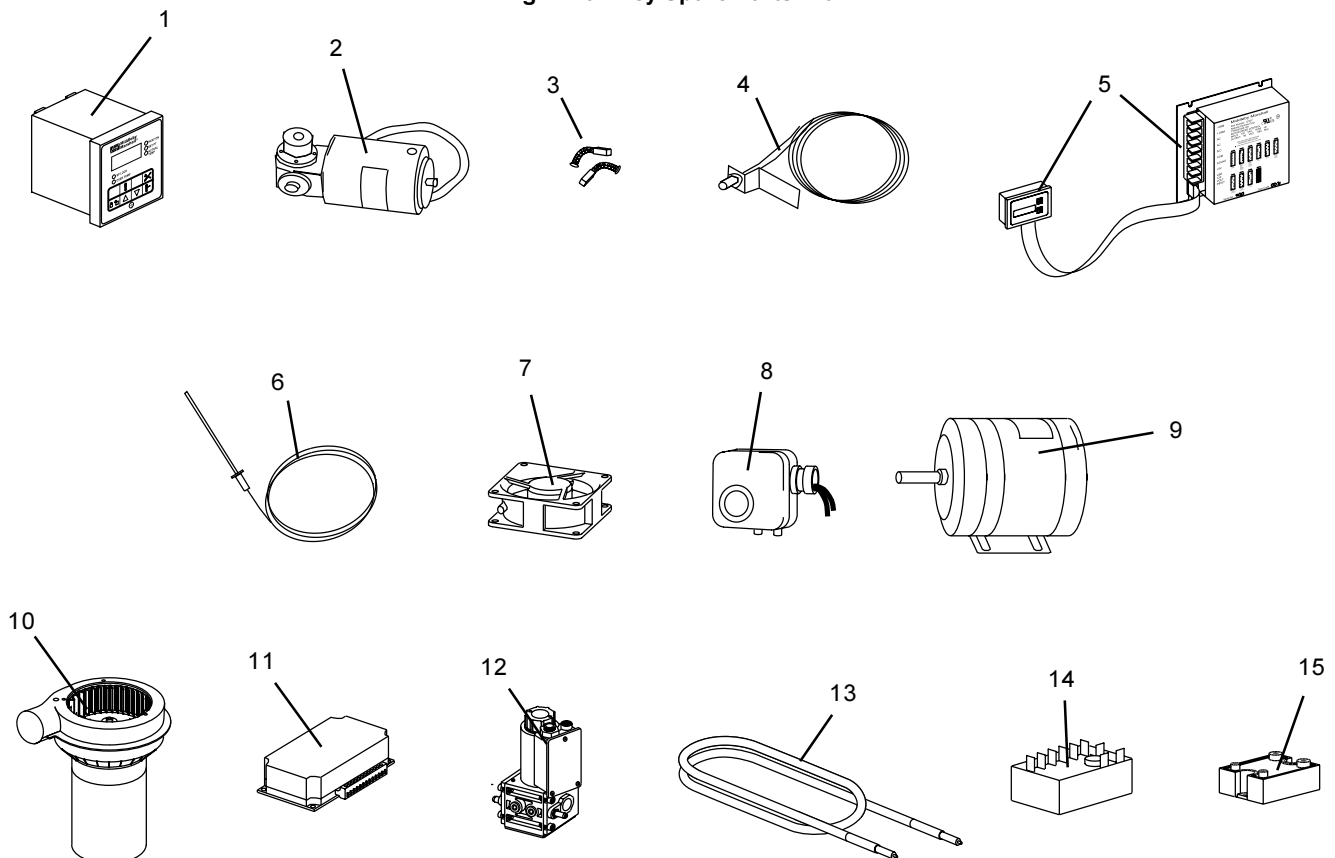
Item	Part No.	Description
1	36939	Kit, Digital Temperature Controller
2	27384-0008	Motor, Conveyor Drive
3	22450-0052	Brushes, Drive Motor
4	27170-0263	Assembly, Pickup, Conveyor Drive
5	37337	Kit, Conveyor Speed Controller
6	33984	Kit, Thermocouple
7	27392-0002	Fan, Cooling
8	35625	Kit, Air Switch
9a	27381-0023	Motor, Blower, PS360U and PS360L Gas and Electric Ovens, 1/3 HP
9b	31432	Motor, Blower, PS360WB-U and PS360WB-L Gas Ovens, 1 HP

**GAS OVENS ONLY:**

10	27170-0287	Assembly, Burner Blower and Motor
11	35825	Kit, Ignition Module
12a	37770	Kit, High Flame Solenoid Valve, 220V
12b	37851	Kit, High Flame Solenoid Valve, 120V (for ovens with external transformers)

**ELECTRIC OVENS ONLY:**

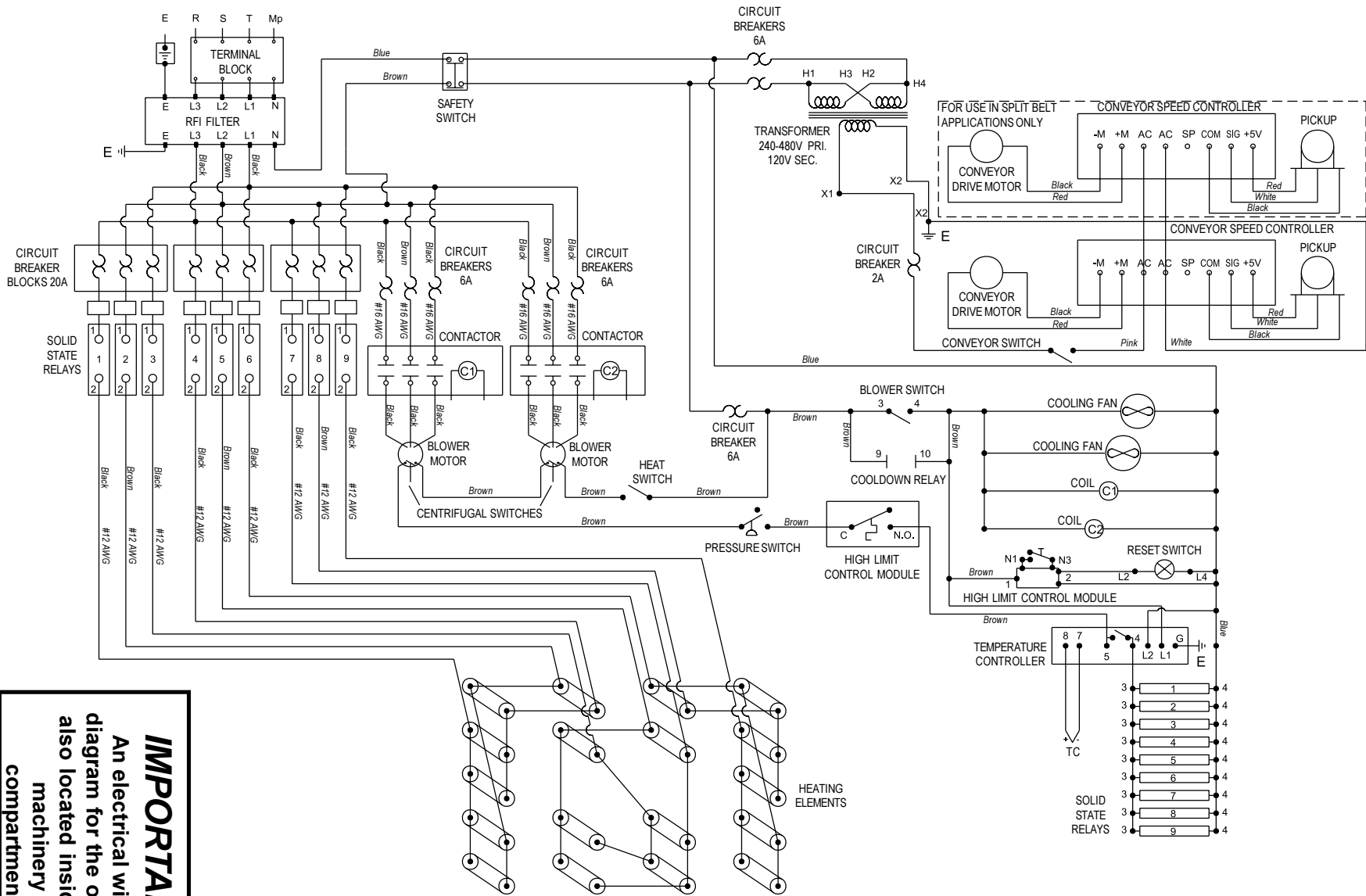
13	27374-0003	Heating Element, 380-400V / 1.35-1.5 kW
14	33983	Module, High Limit Control, 240V
15	31463	Relay, Solid State

**Fig. 4-10 - Key Spare Parts Kit**

# SECTION 5 - ELECTRICAL WIRING DIAGRAMS

Fig. 5-1

Wiring Diagram, PS360-U/L Electric Oven, 380-400V, 50 Hz, 1 Ph



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

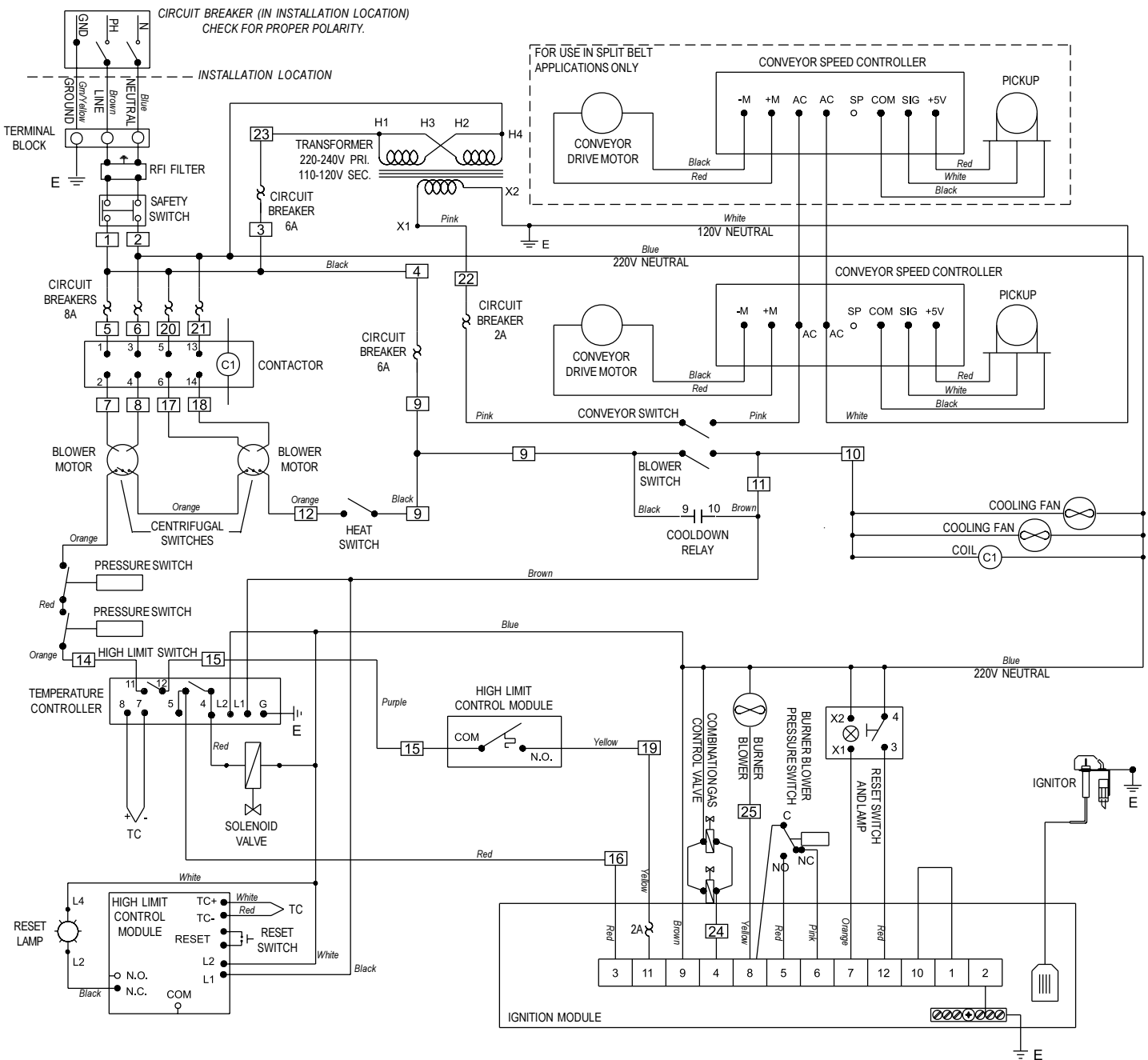
**ENGLISH**

Fig. 5-2

Wiring Diagram, PS360-U/L or PS360WB-U/L Gas Oven, 220-230V, 50 Hz, 1 Ph

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page 1

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side 25



**IMPORTANT**

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

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