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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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
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 PS360EVB 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.

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.

III. OVEN SPECIFICATIONS

A. Dimensions

<table>
<thead>
<tr>
<th>Overall Height</th>
<th>PS310</th>
<th>PS314</th>
<th>PS360/360Q/360S</th>
<th>PS360Tandem</th>
<th>PS360WB</th>
<th>PS360WB Tandem</th>
<th>PS360EWB</th>
<th>PS360WB70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower oven, 45-1/2’</td>
<td>45-1/2’</td>
<td>45-1/2’</td>
<td>45-1/2’</td>
<td>45-1/2’</td>
<td>45-1/2’</td>
<td>45-1/2’</td>
<td>45-1/2’</td>
<td>45-1/2’</td>
</tr>
<tr>
<td>with top &amp; legs 1143mm</td>
<td>1143mm</td>
<td>1143mm</td>
<td>1143mm</td>
<td>1143mm</td>
<td>1143mm</td>
<td>1143mm</td>
<td>1143mm</td>
<td>1143mm</td>
</tr>
<tr>
<td>Upper oven, 64-1/2’</td>
<td>64-1/2’</td>
<td>64-1/2’</td>
<td>64-1/2’</td>
<td>64-1/2’</td>
<td>64-1/2’</td>
<td>64-1/2’</td>
<td>64-1/2’</td>
<td>64-1/2’</td>
</tr>
<tr>
<td>with stand and top 1638mm</td>
<td>1638mm</td>
<td>1638mm</td>
<td>1638mm</td>
<td>1638mm</td>
<td>1638mm</td>
<td>1638mm</td>
<td>1638mm</td>
<td>1638mm</td>
</tr>
<tr>
<td>Double oven 82-1/4’</td>
<td>82-1/4’</td>
<td>82-1/4’</td>
<td>82-1/4’</td>
<td>82-1/4’</td>
<td>82-1/4’</td>
<td>82-1/4’</td>
<td>82-1/4’</td>
<td>82-1/4’</td>
</tr>
<tr>
<td>(two-stack) 2089mm</td>
<td>2089mm</td>
<td>2089mm</td>
<td>2089mm</td>
<td>2089mm</td>
<td>2089mm</td>
<td>2089mm</td>
<td>2089mm</td>
<td>2089mm</td>
</tr>
</tbody>
</table>

Overall Depth

| inc. rear shrouds and front window 39’ | 991mm | 991mm | 47’ | 914mm | 47’ | 1194mm | 1194mm | 55’ |
| inc. rear shrouds (no window) 36’ | 914mm | 914mm | 44’ | 1118mm | 44’ | 1118mm | 1118mm | 52’ |

Overall Length

| 90-1/2’ | 2299mm | 1797mm* | 90-1/2’ | 3670mm | 2299mm | 3670mm | 2299mm | 2692mm |

* NOTE: The PS314 and PS360Q dimensions do not include the optional end trays.

Conveyor Width

| Single Belt 24’ | 610mm | 610mm | 32’ | 813mm | 32’ | 813mm | 1016mm | 1016mm |
| Split Belt, identical width 2x15’ | 2x15’ | 2x15’ | 483mm | 483mm | 533mm | 533mm |
| Split Belt, unequal width 1x13’/330mm | 1x13’/330mm | 1x14’7/56mm | 1x13’3/30mm |

Recommended Minimum Clearances

| Rear of oven (inc. rear shrouds) to wall 1’ | 25mm | 25mm | 25mm | 25mm | 25mm | 25mm | 25mm | 25mm |
| Conveyor extension to wall (both ends) 1’ | 0mm | 0mm | 0mm | 0mm | 0mm | 0mm | 0mm | 0mm |
B. General specifications (per oven cavity)

<table>
<thead>
<tr>
<th></th>
<th>PS310</th>
<th>PS314</th>
<th>PS360/360Q/360S</th>
<th>PS360WB</th>
<th>PS360EWB</th>
<th>PS360WB70</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight</strong></td>
<td>1165 lbs./529kg</td>
<td>1165 lbs./529kg</td>
<td>1285 lbs./583kg</td>
<td>1485 lbs./674kg</td>
<td>1620 lbs./733kg</td>
<td>1825 lbs./829kg</td>
</tr>
<tr>
<td><strong>Shipping Weight</strong></td>
<td>1241 lbs./563kg</td>
<td>1241 lbs./563kg</td>
<td>1360 lbs./617kg</td>
<td>1560 lbs./708kg</td>
<td>1695 lbs./767kg</td>
<td>1900 lbs./863kg</td>
</tr>
<tr>
<td><strong>Shipping Carton Vol.</strong></td>
<td>105 ft.³/2.98m³</td>
<td>105 ft.³/2.98m³</td>
<td>106 ft.³/3.00m³</td>
<td>129 ft.³/3.65m³</td>
<td>129 ft.³/3.65m³</td>
<td>164 ft.³/4.65m³</td>
</tr>
</tbody>
</table>

**Rated Heat Input**

<table>
<thead>
<tr>
<th></th>
<th>Gas</th>
<th>Electric</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>135,000 BTU</strong></td>
<td>34,020kcal, 40kw/hr.</td>
<td>34,020kcal, 40kw/hr.</td>
</tr>
<tr>
<td><strong>170,000 BTU</strong></td>
<td>42,840kcal, 50kw/hr.</td>
<td>44,100kcal, 52kw/hr.</td>
</tr>
<tr>
<td><strong>175,000 BTU</strong></td>
<td>44,100kcal, 52kw/hr.</td>
<td>44,100kcal, 52kw/hr.</td>
</tr>
</tbody>
</table>

**Max. Operating Temp.** 550°F/288°C

**Air Blowers**

2 blowers at 1550 ft.³/(43.9m³)/min. at 1700 RPM, 0.88"/2.2cm water static pressure

**Air Jet Velocity (avg.)** 2600 ft./min. (1320cm/sec.)

**Warmup Time**

15 minutes

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

<table>
<thead>
<tr>
<th></th>
<th>Main Orifice I.D.</th>
<th>Pilot Orifice I.D.</th>
<th>Bypass Orifice I.D.</th>
<th>Supply (inlet) pressure</th>
<th>Manifold pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PS310</strong></td>
<td>0.219&quot; 5.56mm</td>
<td>0.250&quot; 6.35mm</td>
<td>0.028&quot; 0.71mm</td>
<td>6-12&quot; W.C.</td>
<td>3-1/2&quot; W.C.</td>
</tr>
<tr>
<td><strong>PS314</strong></td>
<td>0.219&quot; 5.56mm</td>
<td>0.250&quot; 6.35mm</td>
<td>0.028&quot; 0.71mm</td>
<td>6-12&quot; W.C.</td>
<td>3-1/2&quot; W.C.</td>
</tr>
<tr>
<td><strong>PS360/360Q/360S</strong></td>
<td>0.219&quot; 5.56mm</td>
<td>0.250&quot; 6.35mm</td>
<td>0.028&quot; 0.71mm</td>
<td>6-12&quot; W.C.</td>
<td>3-1/2&quot; W.C.</td>
</tr>
<tr>
<td><strong>PS360WB</strong></td>
<td>0.250&quot; 6.35mm</td>
<td>0.028&quot; 0.71mm</td>
<td>0.065&quot;#53 drill 14.9-29.9mbar</td>
<td>8.7mbar</td>
<td></td>
</tr>
<tr>
<td><strong>PS360EWB</strong></td>
<td>0.250&quot; 6.35mm</td>
<td>0.028&quot; 0.71mm</td>
<td>0.065&quot;#53 drill 14.9-29.9mbar</td>
<td>8.7mbar</td>
<td></td>
</tr>
<tr>
<td><strong>PS360WB70</strong></td>
<td>0.250&quot; 6.35mm</td>
<td>0.028&quot; 0.71mm</td>
<td>0.065&quot;#53 drill 14.9-29.9mbar</td>
<td>8.7mbar</td>
<td></td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th></th>
<th>Main Blower Voltage</th>
<th>Control Circuit Voltage</th>
<th>Phase</th>
<th>Freq.</th>
<th>Current Draw</th>
<th>Poles</th>
<th>Wires</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PS310/314/360/360Q/360S/360WB</strong></td>
<td>200-240V</td>
<td>120V</td>
<td>1 Ph</td>
<td>60 Hz</td>
<td>10A</td>
<td>3 Pole</td>
<td>4 Wire (2 hot, 1 neut, 1 gnd)</td>
</tr>
<tr>
<td><strong>PS310/314/360/360Q/360S/360WB</strong></td>
<td>200-240V (export)</td>
<td>120V (transformer)</td>
<td>1 Ph</td>
<td>50/60 Hz</td>
<td>10A</td>
<td>2 Pole</td>
<td>3 Wire (2 hot, 1 gnd)</td>
</tr>
<tr>
<td><strong>PS310/314/360/360Q/360S/360WB</strong></td>
<td>200-220V</td>
<td>120V (transformer)</td>
<td>1 Ph</td>
<td>50/60 Hz</td>
<td>10A</td>
<td>2 Pole</td>
<td>3 Wire (2 hot, 1 gnd)</td>
</tr>
<tr>
<td><strong>PS360EWB/EB70</strong></td>
<td>208-240V</td>
<td>120V (transformer)</td>
<td>1 Ph</td>
<td>60 Hz</td>
<td>12A</td>
<td>2 Pole</td>
<td>3 wire (2 hot, 1 gnd)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>Main Blower Voltage</th>
<th>Control Circuit Voltage</th>
<th>Phase</th>
<th>Freq.</th>
<th>Current Draw</th>
<th>kw Rating</th>
<th>Poles</th>
<th>Wires</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>208-240V</strong> (with 3 Ph blower motors)</td>
<td>120V</td>
<td>3 Ph</td>
<td>60 Hz</td>
<td>67.3A at 208V</td>
<td>26.0 kW at 208V</td>
<td>4 Pole</td>
<td>5 Wire (3 hot, 1 neut, 1 gnd)</td>
<td></td>
</tr>
<tr>
<td><strong>208-240V</strong> (with 1 Ph blower motors)</td>
<td>120V</td>
<td>3 Ph</td>
<td>60 Hz</td>
<td>67.3A at 208V</td>
<td>26.0 kW at 208V</td>
<td>4 Pole</td>
<td>5 Wire (3 hot, 1 neut, 1 gnd)</td>
<td></td>
</tr>
<tr>
<td><strong>208-240V</strong> (with 1 Ph blower motors)</td>
<td>120V</td>
<td>3 Ph</td>
<td>60 Hz</td>
<td>67.3A at 208V</td>
<td>26.0 kW at 208V</td>
<td>4 Pole</td>
<td>5 Wire (3 hot, 1 neut, 1 gnd)</td>
<td></td>
</tr>
<tr>
<td><strong>240V</strong> (export)</td>
<td>120V (transformer)</td>
<td>3 Ph</td>
<td>50/60 Hz</td>
<td>58.4A</td>
<td>26.0 kW</td>
<td>3 Pole</td>
<td>4 Wire (3 hot, 1 gnd)</td>
<td></td>
</tr>
<tr>
<td><strong>380V</strong> (export)</td>
<td>120V (transformer)</td>
<td>3 Ph</td>
<td>50/60 Hz</td>
<td>36.8A</td>
<td>24.3 kW</td>
<td>3 Pole</td>
<td>4 Wire (3 hot, 1 gnd)</td>
<td></td>
</tr>
<tr>
<td><strong>480V</strong> (export)</td>
<td>120V (transformer)</td>
<td>3 Ph</td>
<td>50/60 Hz</td>
<td>33.8A</td>
<td>24.3 kW</td>
<td>3 Pole</td>
<td>4 Wire (3 hot, 1 gnd)</td>
<td></td>
</tr>
</tbody>
</table>

**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)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Part Number</th>
<th>Lower Oven w/o Top</th>
<th>Lower Oven w/Top</th>
<th>Upper Oven</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Legs, adjustable</td>
<td>22450-0028</td>
<td>4</td>
<td>4</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Caster, Swivel (with stud)</td>
<td>37115-0102</td>
<td>4*</td>
<td>4*</td>
<td>4*</td>
</tr>
<tr>
<td>3a</td>
<td>Conveyor End Stop - PS310/314</td>
<td>35000-1099</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3b</td>
<td>Conveyor End Stop - PS360/360S &lt;br&gt;• Single Belt</td>
<td>35000-1103</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• Split Belt</td>
<td>35509</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3c</td>
<td>Conveyor End Stop - PS360Q</td>
<td>37000-0524</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3d</td>
<td>Conveyor End Stop - PS360WB/PS360WB (Single or Split Belt)</td>
<td>36526</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• Single Belt</td>
<td>35900-0370</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>• Split Belt: 2x21&quot;/533mm belts</td>
<td>35900-0370</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>• Split Belt: 1x14'/356mm belt + 1x28'/711mm belt</td>
<td>35000-1099</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Attachment Plate, upper oven</td>
<td>35122-0049</td>
<td>--</td>
<td>--</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Thermocouple</td>
<td>33812-1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Screw, #10-32 x 3/8&quot;</td>
<td>21256-0008</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>Cable Clamp</td>
<td>27276-0001</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Screw, #2PT 10-16 x 3/4&quot; HWH</td>
<td>21292-0001</td>
<td>2</td>
<td>2</td>
<td>14</td>
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<tr>
<td>9</td>
<td>Owner’s Operating and Installation Manual</td>
<td>41823</td>
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<td>Authorized Service Agency Listing</td>
<td>1002040</td>
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</tr>
</tbody>
</table>

**NOTE**<br>* 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

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Part Number</th>
<th>Lower Oven w/o Top</th>
<th>Lower Oven w/Top</th>
<th>Upper Oven</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Screw, #10-32 x 3/8&quot;</td>
<td>21256-0008</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Screw, #2PT 10-16 x 3/4&quot; HWH</td>
<td>21292-0001</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>Gas hose, flexible</td>
<td>22361-0001</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>12a</td>
<td>Flue vent, 14&quot; (356mm)</td>
<td>30773</td>
<td>--</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>12b</td>
<td>Flue vent, 29-1/2&quot; (749mm)</td>
<td>30759</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>12c</td>
<td>Flue vent, 50&quot; (1270mm)</td>
<td>30758</td>
<td>1</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Part Number</th>
<th>Tandem Oven</th>
<th>Double (2-stack) Tandem Oven</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Machinery Compartment Trim Strip</td>
<td>35000-1454</td>
<td>1</td>
<td>2</td>
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<tr>
<td></td>
<td>Front Gasket Spacer</td>
<td>35000-1456</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Rear Gasket Spacer</td>
<td>35000-1457</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Baking Chamber Gasket and Frame - PS360</td>
<td>37200-0013</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Baking Chamber Gasket and Frame - PS360WB</td>
<td>32483</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
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.
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.
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.

NOTE: The Sealing Gasket Assembly may be pre-mounted to EITHER of the oven cavities.
4. 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.

5. Push the ovens together. Check that the mounting bolts, alignment plate, and sealing gasket are all properly aligned. See Figure 2-10.

6. 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.

7. Attach the front trim strip between the two ovens, as shown in Figure 2-11.

8. Replace the rear axial cooling fans. See Figure 2-8.
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.

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.
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.
SECTION 2 - INSTALLATION

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!

**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.

**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.
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).

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.

Figure 2-26 - Gas Burner and Piping Assembly

Model PS360EWB Only

NOTE: PS360EWB ovens use a modulating gas valve instead of a high flame solenoid valve and low flame bypass line.
SECTION 3 - OPERATION

I. LOCATION AND DESCRIPTION OF CONTROLS

Fig. 3-1 - Control Panel

All ovens except PS360EWB and PS360WB70

PS360E WB 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).


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 \( \bigcirc \)) switch to the "ON" (or "I") position.

3. Turn the "CONVEYOR" (or \( \bigcirc \)) 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 setpoint.

6. Turn the "HEAT" (or \( \bigcirc \)) 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 \( \bigcirc \) 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 setpoint temperature.

B. DAILY SHUTDOWN PROCEDURE

1. Turn the "HEAT" (or \( \bigcirc \)) and "BLOWER" (or \( \bigcirc \)) 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 \( \bigcirc \)) 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" (or \( \bigcirc \)), "BLOWER" (or \( \bigcirc \)), and "CONVEYOR" (or \( \bigcirc \)) switches to the "OFF" (or "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

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

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

OVERTEMP Light
Lights when the oven temperature is greater than 650°F (343°C). Refer to Quick Reference: Troubleshooting in this section.

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

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

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

"HEAT ON" Light
Lights when the burner is in operation. Note that on all ovens EXCEPT the PS360E WB, this light cycles on and off during normal operation.

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

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

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

Service Key
For use by service personnel only.
### Quick Reference: Troubleshooting

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overtemp</strong></td>
<td>The oven temperature exceeded 650°F (343°C), and the burner was automatically shut down.</td>
<td>• Follow the procedures under Daily Shutdown Procedures in this section to shut down the oven. Contact your Middleby Marshall Authorized Service Agent to determine and correct the cause of the condition to prevent damage to the oven.</td>
</tr>
<tr>
<td><strong>Oven will not turn on at all</strong></td>
<td>Electrical power may not be reaching the oven, or the controls may be set incorrectly.</td>
<td>• Check that the circuit breaker/fused disconnect is turned on. • Check that the &quot;BLOWER&quot; (or 🌬️) Switch is in the &quot;ON&quot; (or &quot;I&quot;) position. The burner cannot engage until the blowers are in operation.</td>
</tr>
<tr>
<td><strong>Oven shuts down shortly after it is turned on</strong></td>
<td>The gas burner did not light within 90 seconds of turning the &quot;HEAT&quot; (or ☀️) Switch to the &quot;ON&quot; (or &quot;I&quot;) position. This automatically engages a safety lockout mode.</td>
<td>• Turn the &quot;HEAT&quot; (or ☀️), &quot;BLOWER&quot; (or 🌬️), and &quot;CONVEYOR&quot; (or ⚙️) switches to the &quot;OFF&quot; (or &quot;O&quot;) position. • Wait for AT LEAST FIVE MINUTES before restarting the oven. • Repeat the Daily Startup procedure.</td>
</tr>
<tr>
<td><strong>Set</strong></td>
<td>The oven did not reach 200°F (93°C) within 15 minutes of startup, and the oven has stopped heating.</td>
<td>• Turn the &quot;HEAT&quot; (or ☀️), &quot;BLOWER&quot; (or 🌬️), and &quot;CONVEYOR&quot; (or ⚙️) switches to the &quot;OFF&quot; (or &quot;O&quot;) position. • Wait for AT LEAST FIVE MINUTES before restarting the oven. • Repeat the Daily Startup procedure.</td>
</tr>
<tr>
<td><strong>Oven will not heat</strong></td>
<td>Controls may be set incorrectly.</td>
<td>• Check that the Set Point is correctly set. • Check that both the &quot;BLOWER&quot; (or 🌬️) and &quot;HEAT&quot; (or ☀️) Switches are in the &quot;ON&quot; (or &quot;I&quot;) position. • If the oven still will not heat, turn the &quot;HEAT&quot; (or ☀️), &quot;BLOWER&quot; (or 🌬️), and &quot;CONVEYOR&quot; (or ⚙️) switches to the &quot;OFF&quot; (or &quot;O&quot;) position. • Wait for AT LEAST FIVE MINUTES before restarting the oven. • Repeat the Daily Startup procedure. Check that the Set Point is above 200°F (93°C).</td>
</tr>
<tr>
<td><strong>Oven is operating, but little or no air is blowing from air fingers</strong></td>
<td>Air fingers may have been reassembled incorrectly after cleaning.</td>
<td>• Turn the oven off, and allow it to cool. Disconnect electrical power to the oven. • Refer to Section 4, Maintenance, for instructions on reassembling the air fingers.</td>
</tr>
<tr>
<td><strong>Conveyor moves with a jerky motion, or will not move at all</strong></td>
<td>Conveyor may be jammed on an object in the oven, or conveyor belt or drive chain tension may be incorrect.</td>
<td>• Turn the oven off, and allow it to cool. Disconnect electrical power to the oven. • Check if the conveyor is blocked by an object inside the oven. • Refer to Section 4, Maintenance, for instructions on checking the conveyor and drive chain tension.</td>
</tr>
<tr>
<td><strong>Food products are overcooked or undercooked.</strong></td>
<td>Controls may be set incorrectly.</td>
<td>• Check that the set temperature and bake time settings are correct.</td>
</tr>
</tbody>
</table>

*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.

NOTE
ANY replacement parts that require access to the interior of the oven may ONLY be replaced by a Middleby Marshall Authorized Service Agent.

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
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 PS360E WB and PS360WB70

Figure 4-2 - Cooling Fan/Vent Locations: PS360E WB

Figure 4-3 - Cooling Fan/Vent Locations: PS360WB70
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.
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.
V. KEY SPARE PARTS KIT - Available separately. See Figure 4-9.

A. Key Spare Parts Kit components (all ovens)

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

B. Additional Key Spare Parts Kit components for gas ovens

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Kit, Ignition Module</td>
<td>42810-0114</td>
</tr>
<tr>
<td>10a</td>
<td>Burner Blower/Motor Assembly</td>
<td>27170-0011</td>
</tr>
<tr>
<td>10b</td>
<td>Burner Blower/Motor Assembly (PS360EWB, WB70)</td>
<td>38811</td>
</tr>
<tr>
<td>11</td>
<td>Solenoid Valve (All ovens EXCEPT PS360EWB)</td>
<td>28091-0017</td>
</tr>
<tr>
<td>12</td>
<td>Modulating Valve (PS360EWB)</td>
<td>32570</td>
</tr>
<tr>
<td>13</td>
<td>Amplifier, Modulating Valve (PS360EWB)</td>
<td>31651</td>
</tr>
<tr>
<td>14</td>
<td>Air Switch (PS360EWB, WB70)</td>
<td>32102</td>
</tr>
</tbody>
</table>

**IMPORTANT**

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