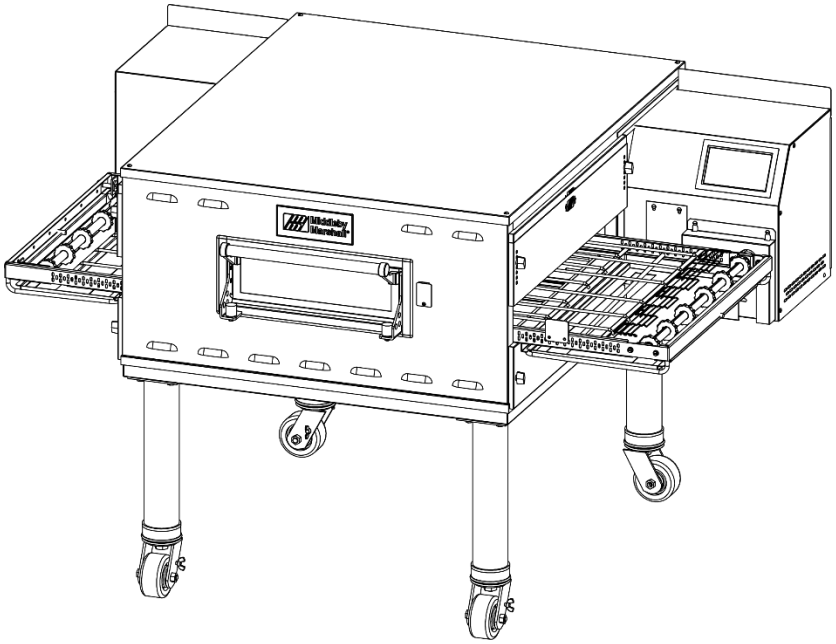
PS640 Series
Electric and Gas Oven
Domestic & Standard Export

P/N: 79060
Revision B
July 25th, 2023
ENGLISH



PS640 Series Electric and Gas Ovens

Model:

- PS640E Electric
- PS640G Gas

Combinations:

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

OWNER'S OPERATING AND INSTALLATION MANUAL

for Domestic & Standard Export Ovens

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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 function and operation of the oven.

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

Ovens are shipped from the factory configured for use with Natural gas. If permitted by local, national and international codes, at the time of installation the oven may be converted to Propane gas operation. This conversion requires the use of a Gas Conversion Kit that is supplied with the oven. For CE-approved ovens, the conversion is described in the *Installation* section of this manual. For domestic and standard export ovens, instructions are included in the Gas Conversion Kit.

It is recommended to obtain a service contract with a Middleby Authorized Service Company (ASC).

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.

WARNING

DO NOT SPRAY AEROSOLS IN THE VICINITY OF THIS APPLIANCE WHILE IT IS IN OPERATION.

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.

MESURE DE SÉCURITÉ

NE PAS ENTREPOSER NI UTILISER D'ESSENCE NI AUTRES VAPEURS OU LIQUIDES INFLAMMABLES À PROXIMITÉ DE CET APPAREIL OU DE TOUT AUTRE APPAREIL!

AVERTISSEMENT: L'INSTALLATION, LE RÉGLAGE, LA MODIFICATION, LA RÉPARATION OU L'ENTRETIEN INCORRECTS DE CET APPAREIL PEUVENT CAUSER DES DOMMAGES MATÉRIELS, DES BLESSURES OU LA MORT. LIRE ATTENTIVEMENT LES INSTRUCTIONS D'INSTALLATION, DE FONCTIONNEMENT ET D'ENTRETIEN AVANT DE PROCÉDER À SON INSTALLATION OU ENTRETIEN.

IMPORTANT

An oven electrical wiring diagram is located in this manual and 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 AUTHORIZED SERVICE COMPANY TO INSTALL AND PERFORM MAINTENANCE AND REPAIRS AND IF NECESSARY TO CONVERT EQUIPMENT FOR USE WITH OTHER GASES. AN AUTHORIZED SERVICE COMPANY DIRECTORY IS SUPPLIED WITH YOUR OVEN AND AVAILABLE HERE: WWW.MIDDLEBY-MARSHALL.COM

NOTICE

Using 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 authorized installer.

NOTICE

THE EQUIPMENT IS ONLY FOR PROFESSIONAL USE AND SHALL BE USED BY QUALIFIED PERSONNEL.

RETAIN THIS MANUAL FOR FUTURE REFERENCE

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Model No. _____ Serial No. _____ Installation Date_____

MIDDLEBY MARSHALL
NO QUIBBLE LIMITED WARRANTY
(U.S.A. ONLY)

MIDDLEBY MARSHALL HEREINAFTER REFERRED TO AS "THE SELLER", WARRANTS EQUIPMENT MANUFACTURED BY IT TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR WHICH IT IS RESPONSIBLE. THE SELLER'S OBLIGATION UNDER THIS WARRANTY SHALL BE LIMITED TO REPLACING OR REPAIRING AT SELLER'S OPTION, WITHOUT CHARGE, ANY PART FOUND TO BE DEFECTIVE AND ANY LABOR AND MATERIAL EXPENSE INCURRED BY SELLER IN REPAIRING OR REPLACING SUCH PART. SUCH WARRANTY SHALL BE LIMITED TO THE ORIGINAL PURCHASER ONLY AND SHALL BE EFFECTIVE FOR A PERIOD OF ONE YEAR FROM DATE OF ORIGINAL INSTALLATION OR 18 MONTHS FROM DATE OF PURCHASE, WHICHEVER IS EARLIER, PROVIDED THAT TERMS OF PAYMENT HAVE BEEN FULLY MET.

This warranty is valid only if the equipment is installed, started, and demonstrated under the supervision of a factory-authorized installer.

Abuse, acts of God, belt jams, cleaning, customer abuse, insufficient utilities, lubrication, maintenance, non-oven related issues, preventative maintenance, or normal maintenance function including adjustment of airflow, burners, conveyor components, door mechanisms, microswitches, pilot burners, thermostats, and replacement of bushings, light bulbs, fuses, indicating lights and wear points, are not covered by this **no quibble limited warranty.**

Seller shall be responsible only for repair or replacement of defective parts performed by Seller's authorized service personnel. Authorized service companies are located in principal cities throughout the contiguous United States, Alaska, and Hawaii. This warranty is valid in the 50 United States and is void elsewhere unless the product is purchased through Middleby International with warranty adder included.

The foregoing warranty is exclusive and in lieu of all other warranties, expressed or implied. There are no implied warranties of merchantability or of fitness for a particular purpose.

The foregoing shall be the Seller's sole and exclusive obligation and Buyer's sole and exclusive remedy for any action, including breach of contract or negligence. In no event shall Seller be liable for a sum in excess of the purchase price of the item. Seller shall not be liable for any prospective or lost profits of the buyer.

This warranty is effective on Middleby Marshall equipment sold on, or after January 1st, 2007.

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MIDDLEBY MARSHALL
OVEN LIMITED WARRANTY
(Non U.S.A.)

The Seller warrants equipment manufactured by it to be free from defects in material and workmanship for which it is responsible. The Seller's obligation under this warranty shall be limited to replacing or repairing, at Seller's option, without charge, F.O.B. Seller's factory, any part found defective and any labor and material expense incurred by Seller in repairing or replacing such part. Such warranty is limited to a period of one year from the date of original installation or 15 months from date of shipment from Seller's factory, whichever is earlier, provided that terms of payment have been fully met. All labor shall be performed during regular working hours. Overtime premium will be charged to the Buyer.

This warranty is not valid unless equipment is installed, started, and demonstrated under the supervision of a factory-authorized installer.

Normal maintenance functions including lubrication, adjustment of airflow, thermostats, door mechanisms, microswitches, burners and pilot burners, and replacement of light bulbs, fuses, and indicating lights, are not covered by warranty.

Any repair or replacement of defective parts shall be performed by Seller's authorized service personnel. Seller shall not be responsible for any costs incurred if the work is performed by anyone other than the Seller's authorized service personnel.

When returning any part under warranty, the part must be intact and complete, without evidence of misuse or abuse, freight prepaid.

Seller shall not be liable for any consequential damages of any kind which occurs during the course of installation of equipment, or which results from the use or misuse by Buyer, its employees, or others, of the equipment supplied hereunder, at Buyer's sole and exclusive remedy against Seller for any breach of the foregoing warranty or otherwise shall be for the repair or replacement of the equipment or parts thereof affected by such breach.

The foregoing warranty shall be valid and binding upon Seller if and only if Buyer loads, operates and maintains the equipment supplied hereunder in accordance with the instruction manual provided to Buyer. Seller does not guarantee the process of manufacture by Buyer or quality of product to be produced by the equipment supplied hereunder and Seller shall not be liable for any prospective or lost profits of Buyer.

The foregoing shall be Seller's sole and exclusive obligation and Buyer's sole and exclusive remedy for any action, whether in breach of contract or negligence. In no event shall Seller be liable for a sum in excess of the purchase price of the item.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER, SPECIFICALLY THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Middleby Cooking Systems Group • 1400 Toastmaster Drive • Elgin, IL 60120 • (847) 741-3300 • FAX (847) 429-7508
www.middleby-marshall.com

SECTION 1 - DESCRIPTION

I. OVEN USES

The PS640 Series Continuous Batch WOW Conveyor Ovens can be used to bake, cook, crisp, dry, heat, or finish a wide variety of products, such as catering, pastries, pizza, pizza-type products, cookies, sandwiches, and other items.

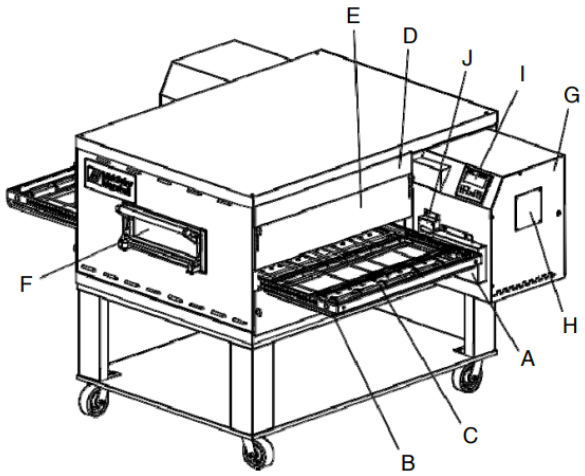


Figure 1-1

II. OVEN COMPONENTS – See Figure 1-1

A. Conveyor Drive Motor (inside cabinet)
Moves the Conveyor Belting (65756).

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

C. Conveyor
Moves the food product through the oven.

D. End Plugs
Allow access to the oven's interior.

E. Eyebrows
Can be adjusted to various heights to lessen heat loss to the environment (72709).

F. Window (Optional)
Allows the user to access the food products within the baking chamber, or place product into the oven for shorter bake times (51054).

G. Control Cabinet Doors
Allow access to the oven's control components. No user serviceable parts are located within these cabinets.

H. Serial Plate
Provides specifications for the oven pertinent to installation, operation and maintenance. Refer to Section 2, Installation for details.

I. Control Panel (User Interface)
Allows user to adjust temperature, bake time, and top and bottom air flow. Also provides diagnostic messages for oven operation.

J. Photo Sensor (Optional)
Puts oven into the Baking Mode when the beam is interrupted by product being placed on the belt (72209).

K. Door Photo Sensor (Optional)
Puts oven into the Baking Mode when the beam is interrupted by the front window being opened to insert product.

L. Circuit Breaker Resets
Permits resetting breakers inside control cabinet without opening control door or directly touching the circuit breakers.

M. Burner or Heater (inside left control cabinet)
Heat recirculating air within the plenum and oven cavity.

N. Blowers (not shown)
Move heated air that recirculates through the oven cavity.

O. Fingers (inside oven cavity)
Direct air in controlled fashion to the product being baked through a highly specialized pattern arrangement of extruded holes. See Standard Finger Arrangement (73555).

III. OVEN SPECIFICATIONS – PS640E

Table 1-1: Dimensions	***Single Oven***	***Double Oven***	***Triple Oven***
Overall Height	48.2" (1219 mm)	62.75" (1575 mm)	78.69" (1981 mm)
Overall Depth	60" (1524 mm)	60" (1524 mm)	60" (1524 mm)
Overall Length	76.5" (1930 mm)	76.5" (1930 mm)	76.5" (1930 mm)
Conveyor Width – Belt width is 32" (813 mm)	33.5" (838 mm)	33.5" (838 mm)	33.5" (838 mm)

Recommended Minimum Clearances	
Rear of Oven to Wall	0" (0 mm)
Right Side of Oven to Wall	0" (0 mm)
Left Side of Oven to Wall	0" (0 mm)

Table 1-2: General Specifications	**PS640E**		
Weight	1100 lbs. (499 kg)	2,200 lbs. (998 kg)	3,300 lbs (1,497 kg)
Rated Heat Input (per oven cavity)	27.0 kW (97.2MJ/h)		
Maximum Operation Temperature	600°F (315°C)		
Air Blowers	2 at 1,900 rpm		
Warm-up Time	15 minutes to 500°F		

Table 1-3: Electrical Specifications

Main Blower & Element Voltage	Control Circuit Voltage	Phase	Frequency	Current Draw	Poles	Wires
208 VAC	24 VDC	3φ	50/60 Hz	85 Amps	3	4 Wire 3 hot, 1 ground
240 VAC	24 VDC	3φ	50/60 Hz	75 Amps	3	4 Wire 3 hot, 1 ground
380 VAC	24 VDC	3φ	50/60 Hz	51 Amps	3	5 Wire 3 hot, 1 neutral, 1 ground

Table 1-4: Heater Amperage

		Average Amps			
Voltage	**kW**	L1	L2	L3	N
208 VAC	27.0	85	85	75	N/A
240 VAC	27.0	75	75	65	N/A
380 VAC	27.0	51	41	41	10

NOTE

Wiring Diagrams are contained in Section 5 of this Manual and are also located inside the oven control compartment. Additional electrical information is provided on the oven's serial plate.

IV. OVEN SPECIFICATIONS – PS640G

Table 1-1: Dimensions	*Single Oven*	*Double Oven*	*Triple Oven*
Overall Height	48.2" (1219 mm)	62.75" (1575 mm)	78.69" (1981 mm)
Overall Depth	60" (1524 mm)	60" (1524 mm)	60" (1524 mm)
Overall Length	76.5" (1930 mm)	76.5" (1930 mm)	76.5" (1930 mm)
Conveyor Width – Belt width is 32" (813 mm)	33.5" (838 mm)	33.5" (838 mm)	33.5" (838 mm)

Recommended Minimum Clearances	
Rear of Oven to Wall	0" (0 mm)
Right Side of Oven to Wall	0" (0 mm)
Left Side of Oven to Wall	0" (0 mm)

Table 1-2: General Specifications	**PS640G**		
Weight	1,100 lbs. (499 kg)	2,200 lbs (998 kg)	3,300 lbs (1,497 kg)
Rated Heat Input (per oven cavity)	99,000BTU/hr (24,964kcal/hr, 29.0kW, 104MJ/hr)		
Maximum Operation Temperature	600°F (315°C)		
Air Blowers	2 at 1,900 rpm		
Warm-up Time	15-20 minutes to 500°F		

Table 1-3: Electrical Specifications

Main Blower Voltage	Control Circuit Voltage	Phase	Frequency	Current Draw	Poles	Wires
208/240 VAC, 3φ	24 VDC	1φ	50/60 Hz	11-9.6 Amps	2	3 Wire – L1, L2/N & GRND

Circuit breaker 20 Amp minimum or per local code. Each oven to be installed on individual branch circuit.

Table 1-4: Gas Orifice and Pressure Specifications

Gas Type	Main Orifice Diameter	Inlet Pressure	Manifold Pressure	Bypass Pressure
Natural Gas	0.1065" (2.70 mm)	6-8" W.C. (1.5 – 2.0 kPa)	3.5" W.C. at manifold (0.87 kPa)	0.35-0.4" W.C. (0.09-0.10 kPa)
Propane/ULPG	0.067" (#31 drill) (1.702 mm)	12-14" W.C. (3.0-3.5 kPa)	10" W.C. at manifold (2.49 kPa)	0.9-1.0" W.C. (0.22-0.25 kPa)

GAS ORIFICE AND PRESSURE SPECIFICATIONS (PER OVEN CAVITY) – CE OVENS

		Supply (Inlet) Pressure							
Gas Type	*Main Orifice dia.*	*IT,PT,ES,SE, UK,CH,IT,AT, DK,FI* I_{2H}	*NL* I_{2L}	*DE* I_{2E}	*BE,FR* I_{2E+}	*SE,CH,AT,DK, FI,DE,NL* $I_{3B/P}$	*BE,IE,IT,PT, ES,UK* I_{3+}	*Orifice (Manifold) Pressure*	*Rated Heat Input*
G20	0.120″ (3.05 mm)	20 mbar	--	20 mbar	20 mbar	--	--	11.21 mbar	22.36 kW-hr.
G25	0.120″ (3.05 mm)	--	25 mbar	--	--	--	--	16.19 mbar	22.36 kW-hr.
G30	0.075″ (1.9 mm)	--	--	--	--	29 or 50 mbar	28-30, 37 or 50 mbar	26.2 mbar	22.59 kW-hr.

NOTE

Wiring Diagrams are contained in Section 5 of this Manual and are also located inside the oven control compartment. Additional electrical information is provided on the oven's serial plate.

THIS MANUAL MUST BE KEPT FOR FUTURE REFERENCE

SECTION 2 - INSTALLATION

I. GENERAL

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*
- *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 even (level) non-flammable flooring and any adjacent walls must not be flammable. Recommended minimum clearances are specified in Section 1, Description of this manual.*

WARNING – Do not obstruct the flow of ventilation air to and from the oven. There must be no obstruction 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: *To reduce the risk of fire, the appliance is to be mounted on floors of non-combustible construction with noncombustible flooring and surface finish and with no combustible material against the underside thereof, or on noncombustible slabs or arches having no combustible material against the underside thereof, such construction shall in all cases extend not less than 12 inches (304 mm) beyond the equipment on all sides.*

CAUTION: *For additional installation information, 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 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 to any applicable local, national, and/or international codes. These codes supersede the requirements and guidelines provided in this manual.

NOTE: In the USA, the oven installation must conform to local codes. In the absence of local codes, gas oven installations must conform to the National Fuel Gas Installation Code, ANSI Z223.1. Gas and electric ovens, when installed, must be electrically grounded in accordance with local codes, or in the absence of local codes, with the Natural Electric Code (NEC), or ANSI/NFPA 70.

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

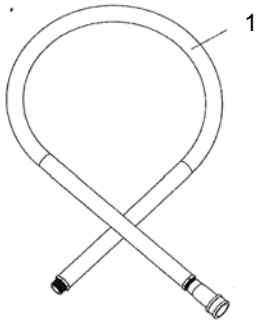
NOTE: In Australia, the oven installation must conform to AS/NZ5601 and carry local Authority or any other relevant statutory regulations.

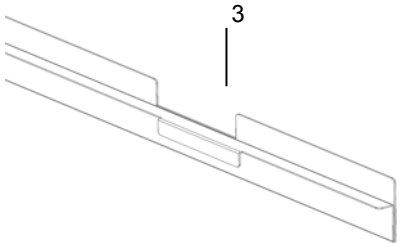
II. PS640 OVEN INSTALLATION – BASE/TOP KITS & EQUIPMENT

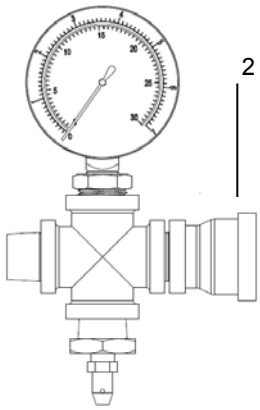
TYPE OF INSTALLATION	PS640 Installation Kit	Single Oven Kit Base w/ 15" Legs, Casters & Top	Double Oven Kit Base w/ 6" Legs, Casters & Top	Triple Oven Kit Base, Casters & Top
PS640E Single Oven	61824	One (1) PN 66957	--	--
PS640E Double Oven	61824	--	One (1) PN 66958	--
PS640E Triple Oven	61824	--	--	One (1) PN 66164
PS640G Single Gas Oven	61033	One (1) PN 66957	--	--
PS640G Double Gas	61033	--	One (1) PN 66958	--
PS640G Triple Gas	61033	--	--	One (1) PN 66164

LOOSE PARTS & KITS FOR PS640 SERIES OVEN
INSTALLATION KITS (PN 61824-E & 61033-G)

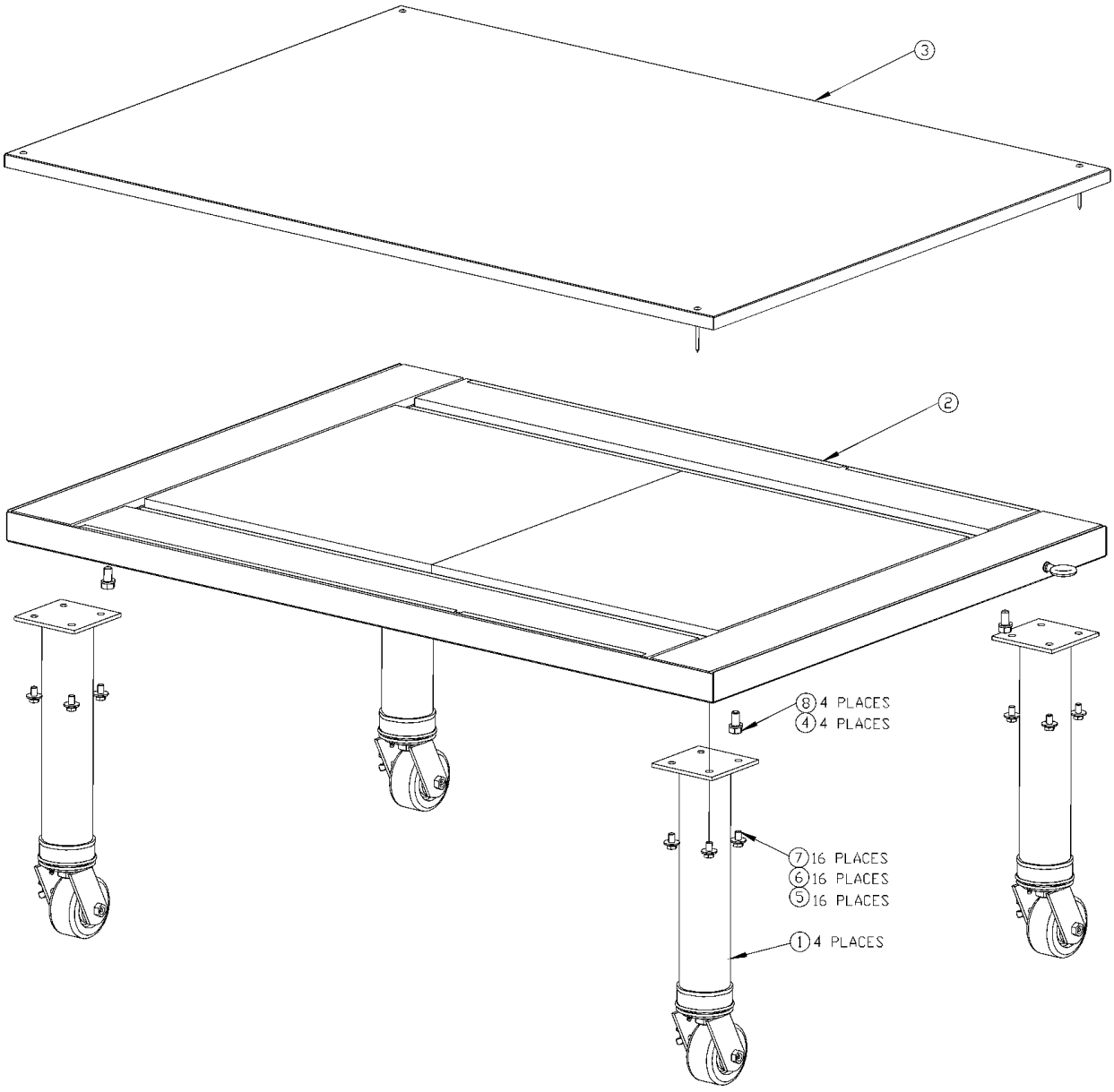
GAS OR ELECTRIC	ITEM NUMBER	PART NUMBER	DESCRIPTION	QTY
Gas	1	22361-0001	Flexible Gas Hose 3/4”	1
Gas	2	72782	TAP AND ADAPTER	1
Both	3	72835	Conveyor End Stop	1
Both	not shown	61823	Conveyor Exit Rear Stop	1
Both	not shown	51054	Glass Door & Handle Assy	1
Both	not shown	76335	Crumb Pans	2
Gas	not shown	62307	Manual Ball Gas Valve	1





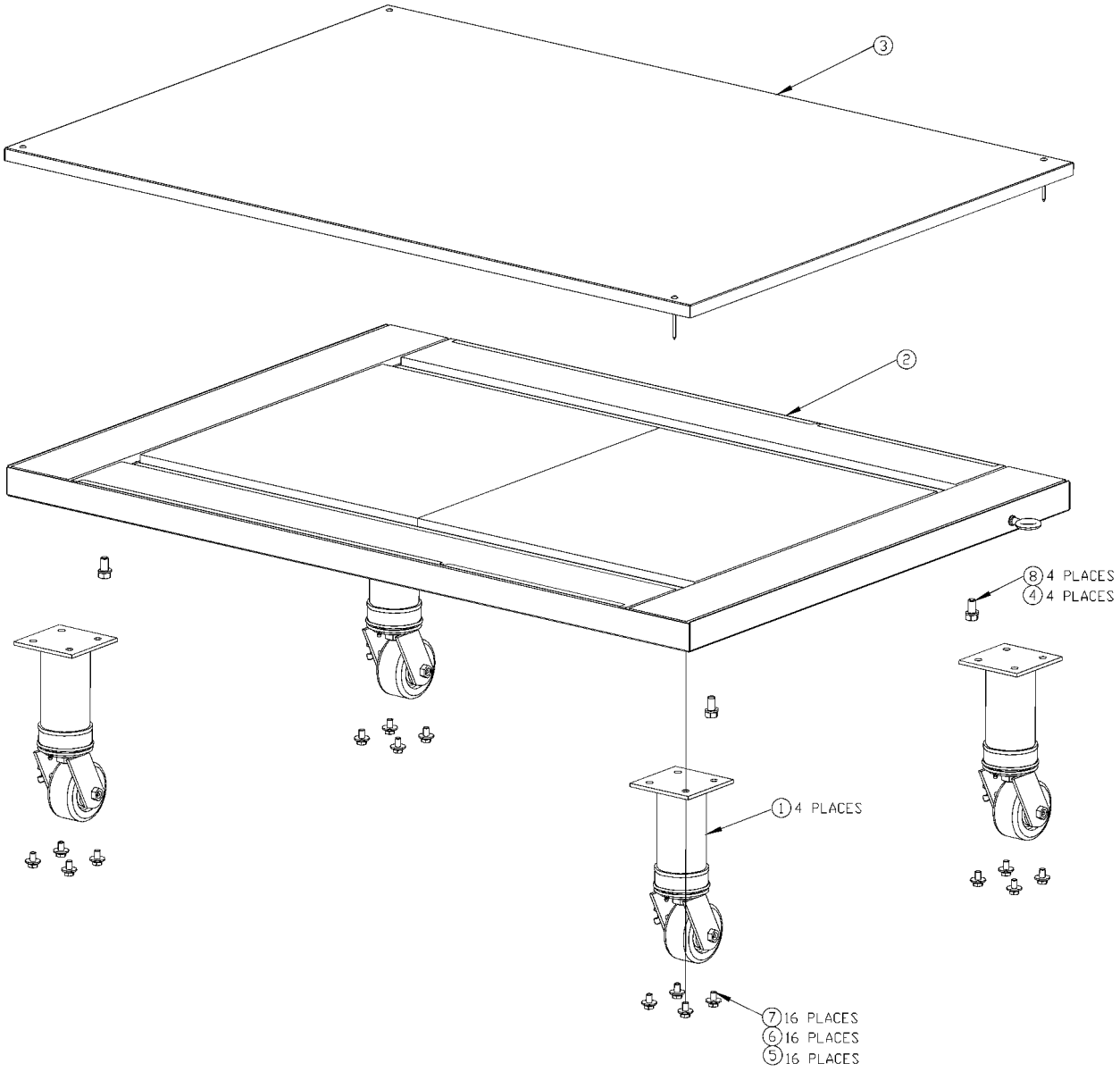


A. P/N: 66957 – SINGLE OVEN BASE & TOP KIT



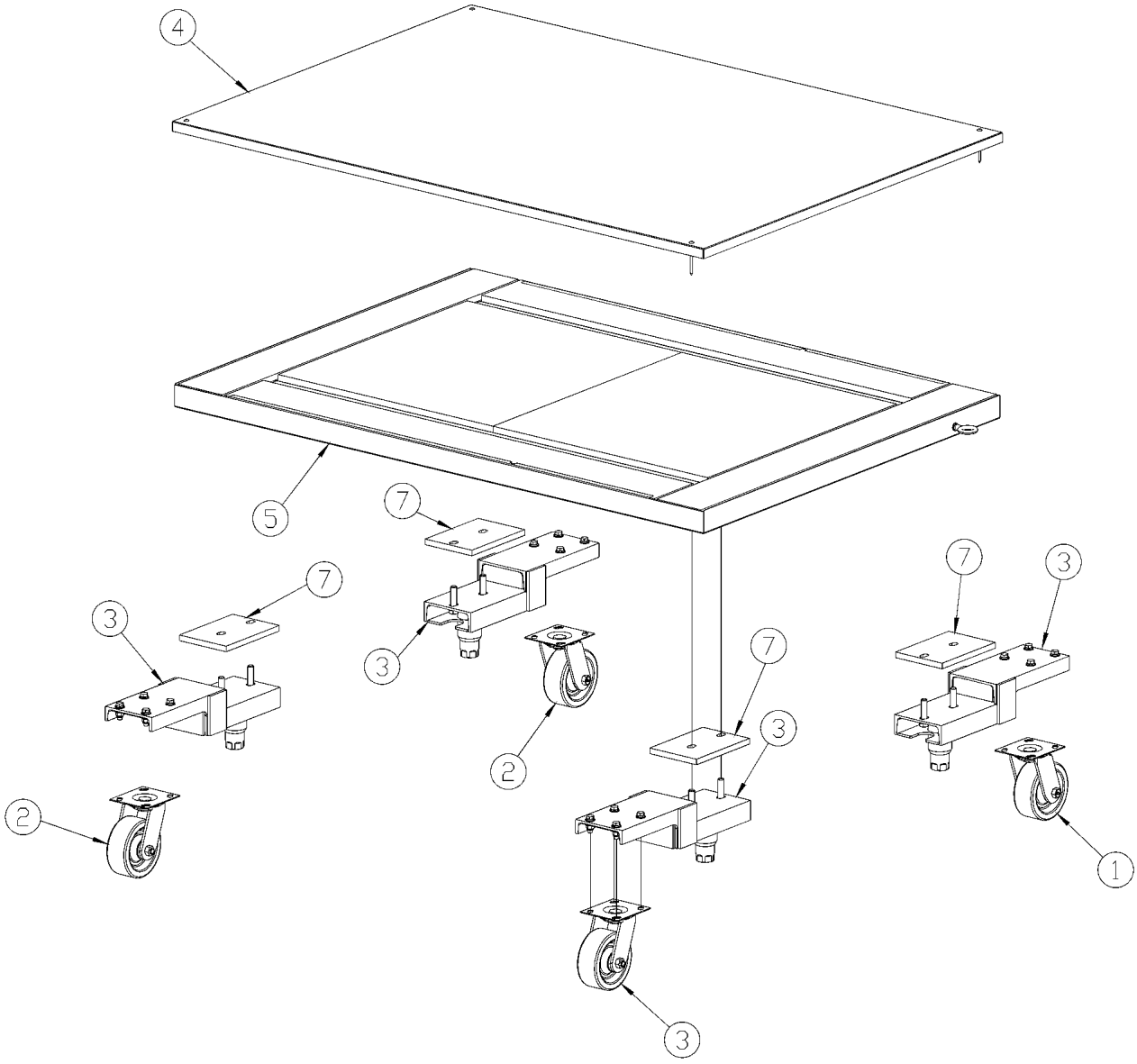
ITEM	QTY	PART NO.	DESCRIPTION
1	4	66948	LEG, 15" COMMON TUBE
2	1	66159	ASSY, BASE COMMON LEG PS640
3	1	59673	ASSY, COVER
4	4	21422-0016	WASHER, LOCK PT 1/2 SPLIT
5	16	21422-0001	WASHER, LOCK SPLIT 3/8 ZP
6	16	21411-0002	WASHER, FLAT PL 3/8
7	16	1513D8805	SCR, HH 3/8-16X3/4-NP
8	4	2001045	SCR, CAP HX HD 1/2-13X1 ZP

B. P/N: 66958 – DOUBLE OVEN BASE & TOP KIT



ITEM	QTY	PART NO.	DESCRIPTION
1	4	66946	LEG, 6" COMMON TUBE
2	1	66159	ASSY, BASE COMMON LEG PS640
3	1	59673	ASSY, COVER
4	4	21422-0016	WASHER, LOCK PT 1/2 SPLIT
5	16	21422-0001	WASHER, LOCK SPLIT 3/8 ZP
6	16	21411-0002	WASHER, FLAT PL 3/8
7	16	1513D8805	SCR, HH 3/8-16X3/4-NP
8	4	2001045	SCR, CAP HX HD 1/2-13X1 ZP

C. P/N: 66164 – TRIPLE OVEN BASE & TOP KIT



ITEM	QTY	PART NO.	DESCRIPTION
1	2	22290-0009	CASTER, SWVL W/BRAKE FLAT PLATE
2	2	22290-0010	CASTER, SWVL FLAT PLATE
3	4	61783	ASSY, QUAD OUTRIGGER PS536
4	1	59673	ASSY, COVER
5	1	66159	ASSY, BASE COMMON LEG PS640
6	1	22450-0228	DEVICE, RESTRAINING (NOT SHOWN) (REF)
7	4	61782	PLATE, SPACER 1/2"

III. PS640 OVEN LAYOUTS

A. Single Oven

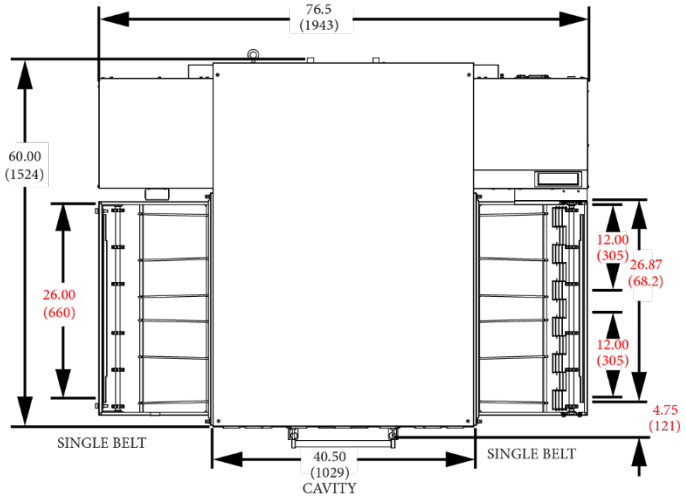
Middleby Marshall®
CONVEYORS OF EXCELLENCE

Electrically Heated Conveyor Oven

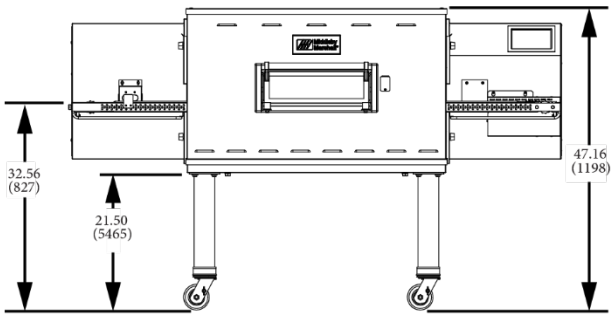
NOTE: Height dimensions are shown for standard leg extensions. Customer-specific leg extensions will affect these dimensions.

NOTE: All units are shown with casters. CE-approved ovens use 6"/152mm adjustable feet instead of casters

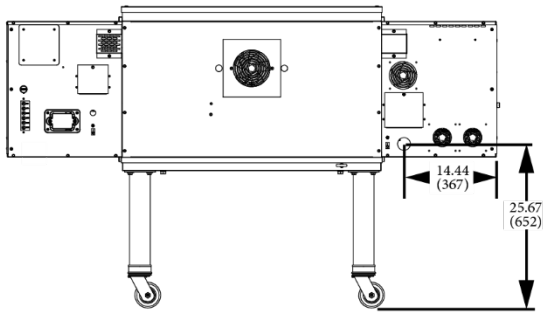
PS640E-1



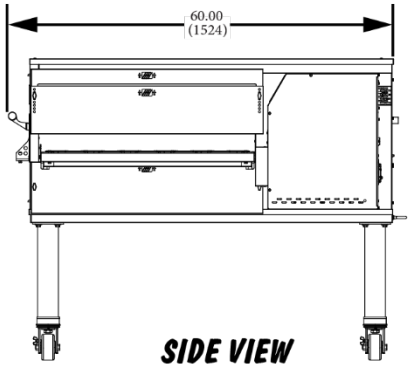
TOP VIEW



FRONT VIEW



BACK VIEW



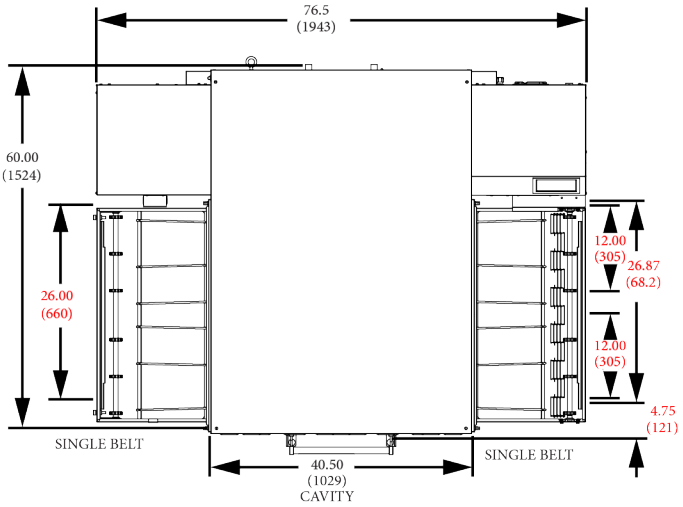
SIDE VIEW

Middleby Marshall®
CONVEYORS OF EXCELLENCE

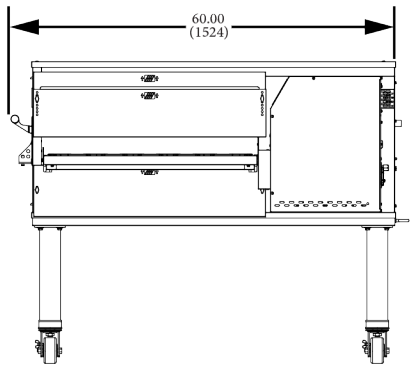
PS640G Series
Direct Gas Fired Conveyor Oven

NOTE: *Drawings show ovens equipped with casters.*

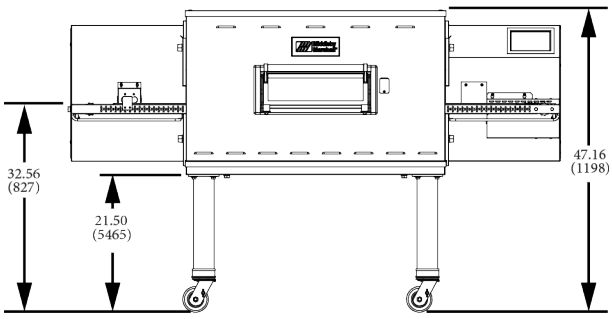
PS640G Single Oven



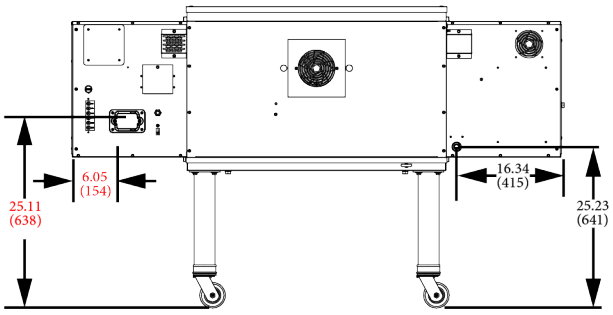
TOP VIEW



SIDE VIEW



FRONT VIEW



BACK VIEW

B. Double and Triple Oven

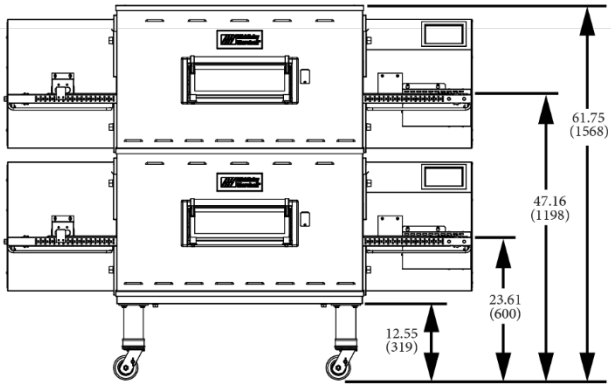
Middleby Marshall®
CONVEYORS OF EXCELLENCE

Electrically Heated Conveyor Oven

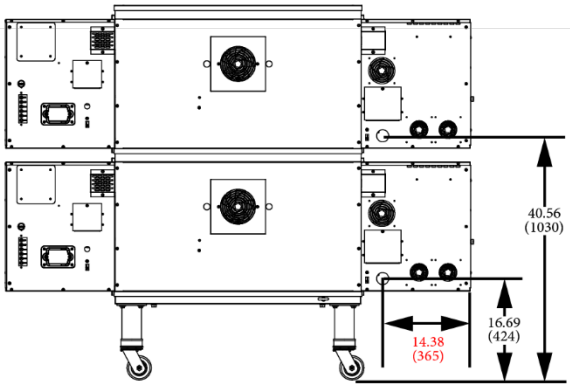
NOTE: Height dimensions are shown for standard leg extensions. Customer-specific leg extensions will affect these dimensions.

NOTE: All units are shown with casters. CE-approved ovens use 6"/152mm adjustable feet instead of casters

PS640E-2

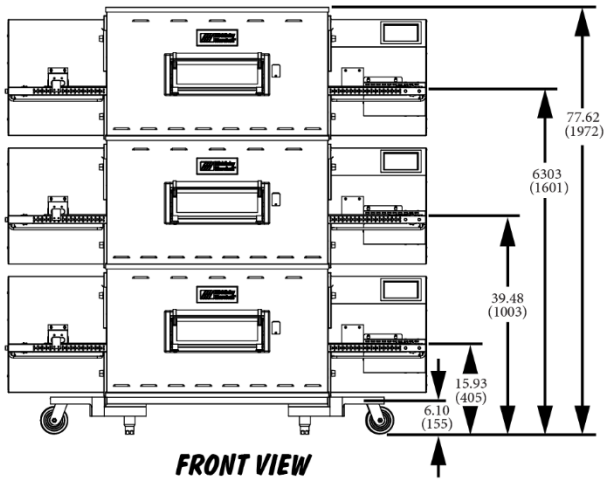


FRONT VIEW

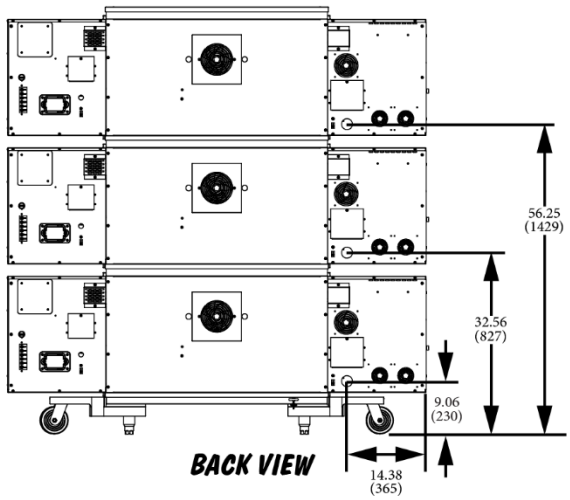


BACK VIEW

PS640E-3



FRONT VIEW



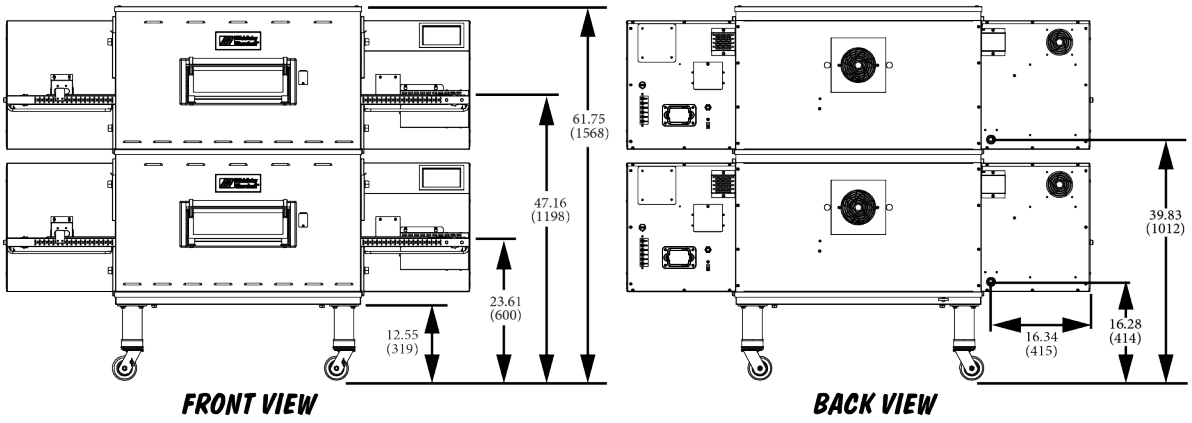
BACK VIEW

Middleby Marshall®
CONVEYORS OF EXCELLENCE

PS640G Series
Direct Gas Fired Conveyor Oven

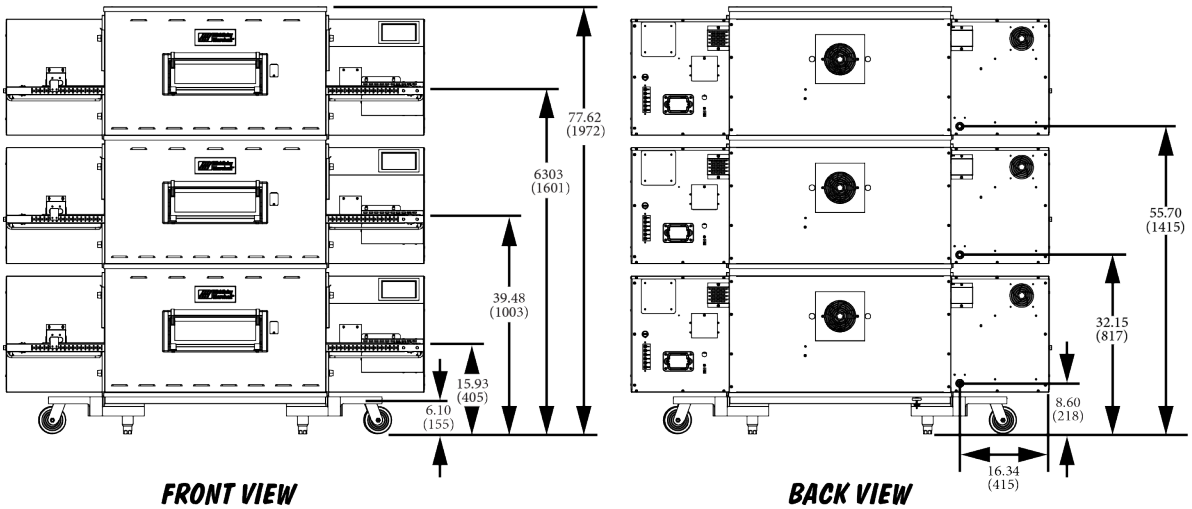
NOTE: *Drawings show ovens equipped with casters.*

PS640-2 Double Oven



FRONT VIEW BACK VIEW

PS640-3 Triple Oven



FRONT VIEW BACK VIEW

IV. VENTILATION SYSTEM

IMPORTANT

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

MOUNTING SUCH EQUIPMENT ON THE OVEN MAY:

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

A. Requirements

CAUTION: *Gas oven installations REQUIRE a mechanically driven ventilation system with electrical 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 2-5 ARE RECOMMENDATIONS ONLY. LOCAL, NATIONAL, AND INTERNATIONAL CODES MUST BE FOLLOWED WHEN INSTALLING THE VENTILATION SYSTEM. ANY APPLICABLE CODES SUPERSEDE THE RECOMMENDATIONS SHOWN IN THIS MANUAL. IN AUSTRALIA, COMPLIANCE TO REGULATIONS
AS/NZS 5601 IS MANDATORY.

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

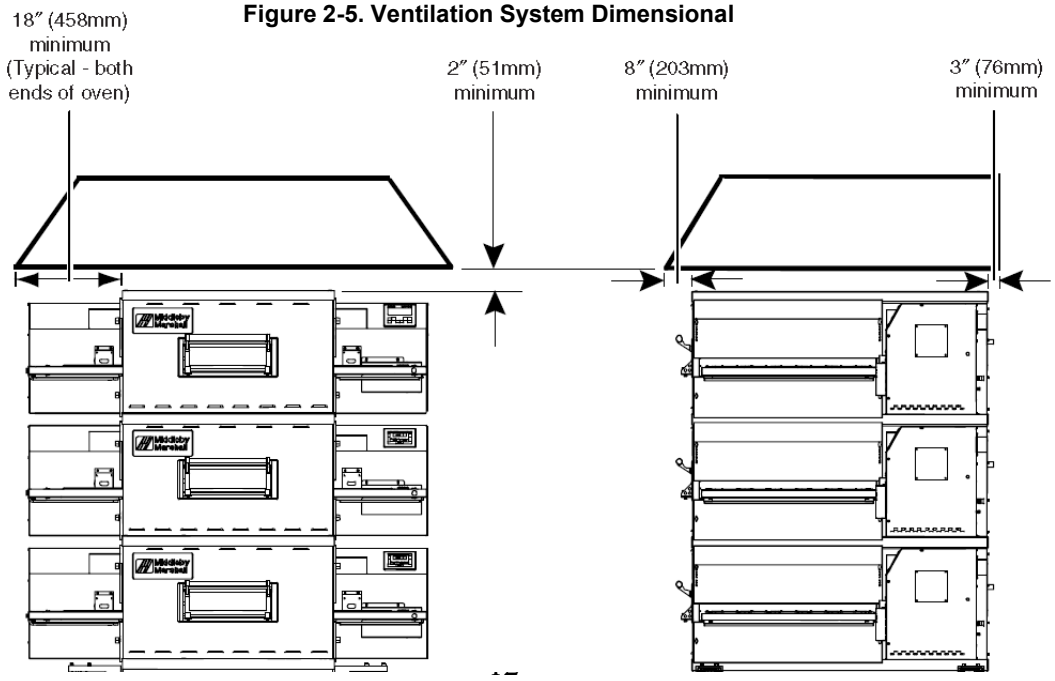
To avoid negative pressure condition in the kitchen area, return air must be brought back to replenish the air that was exhausted. A negative pressure in the kitchen can cause heat related problems to the oven components as if there was no ventilation at all. The best method of supplying return air is through the heating, ventilation and air conditioning (HVAC) systems. 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 fromextreme 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. Pooroven baking performance will result.

C. Other Ventilation Concerns

1. Special locations, conditions, or problems may require the services of a ventilation engineer or specialist.
2. Inadequate ventilation can inhibit oven performance.
3. 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.

Figure 2-5. Ventilation System Dimensional



V. ASSEMBLY

A. Top Panel and Base Pad Assembly

1. Install the four leg extensions onto the base pad using the 3/8"-16 x 1" screws, 3/8" flat washers and 3/8" lock washers supplied in the Base Pad Kit. See Figure 2-6. Check that the finished sides of each leg extension face OUTWARDS. One rear leg should be attached using three 3/8"-16 x 1" screws and the 3/4" eyebolt, as shown in Figure 2-6. This eyebolt acts as the anchor point for the restraint cable assembly (see Part C, Restraint Cable Installation).

2. If your oven is equipped with the lower shelf, position it in place as shown in Figure 2-6. Check that the lip on the shelf faces DOWN. Seal joint between leg and shelf with NSF listed silicone.

3. Install one caster onto each leg extension, as shown in figure 2-7. Use the 3/8"-16 x 1" screws, 3/8" flat washers, and 3/8" lock washers supplied in the Installation Kit. The locking casters should be installed at the FRONT of the oven. The non-locking casters should be installed at the REAR of the oven.

4. Install the lower oven cavity onto the base pad. See Figure 2-7.

5. For single ovens ONLY:

   Install the top panel using the screws included in the Base Pad Kit, as shown in Figure 2-8. Then, skip ahead to Part C, Restraint Cable Installation.

   For double or triple ovens:

   Continue on to Part B, Stacking. Note that the top panel should NOT be installed for double and triple ovens until after stacking the oven cavities.

Fig 2-6. Leg Extension and Casters Installation

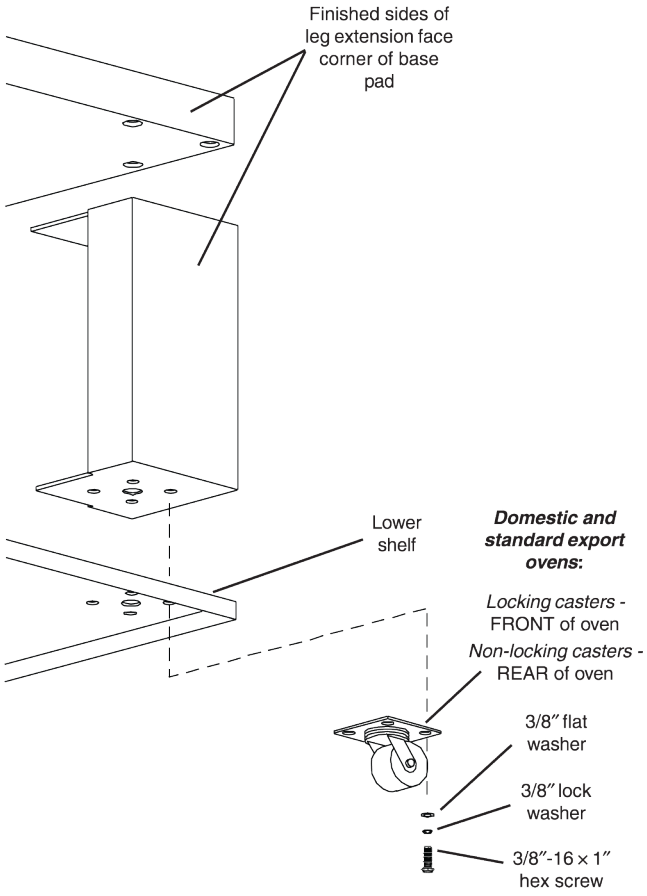


Figure 2-7. Base Pad Installation

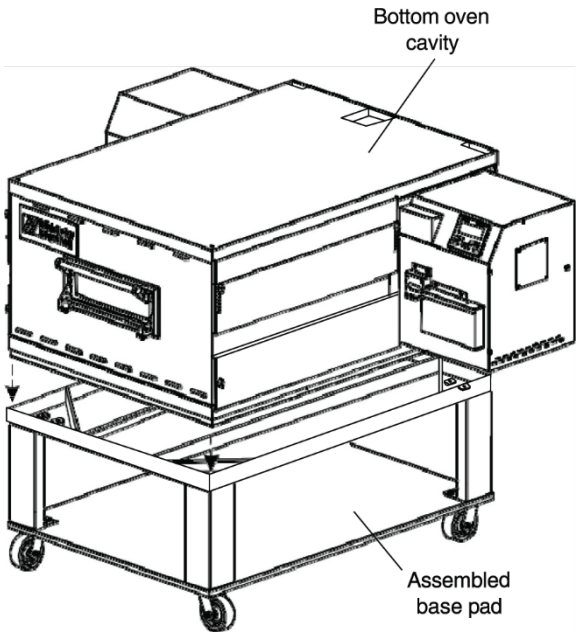
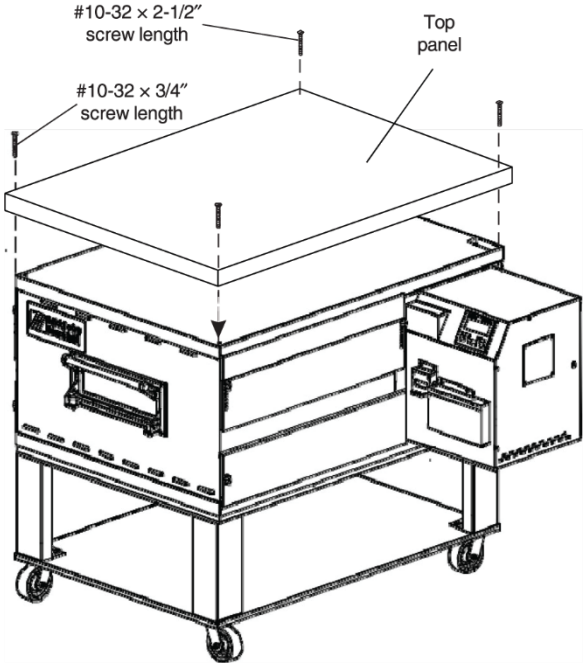


Figure 2-8. Top Panel Installation



NOTE: DO NOT install top panel onto double or triple ovens until AFTER stacking the oven cavities. See Part B, Stacking.

B. Stacking

For single ovens, skip ahead to Part C, Restraint Cable Installation.

IMPORTANT

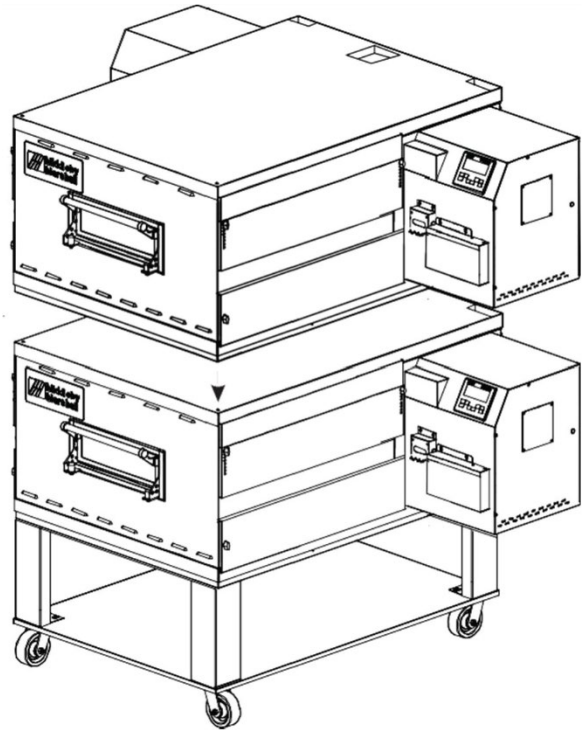
Middleby Marshall STRONGLY RECOMMENDS that the PS640 Gas oven cavities be stacked by AUTHORIZED PERSONNEL.

Contact your Middleby Marshall Authorized Service Agent for complete stacking instructions.

1. Stack an oven cavity on top of the lower oven. Check the following:
   - ☐ All four sides of the lower lip (on the bottom edge of the oven cavity) overlap the top of the lower oven.
   - ☐ The oven is level.
   - ☐ The oven is firmly seated.

   See Figure 2-9.
2. For triple ovens, repeat Step 1 to install the top oven cavity.
3. Install the top panel using the screws included in the base pad kit, as shown in Figure 2-10.

Figure 2-9. Stacking



C. Restraint Cable Installation

Because the oven is equipped with casters, a restraint cable assembly must be installed to limit the movement of the appliance without depending upon the connector and the quick disconnect device or its associated piping. One end of the cable is anchored to the eyebolt on the rear surface of the oven's base pad, while the other is anchored to the wall. See Figure 2-11.

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

Figure 2-10. Top Panel Installation

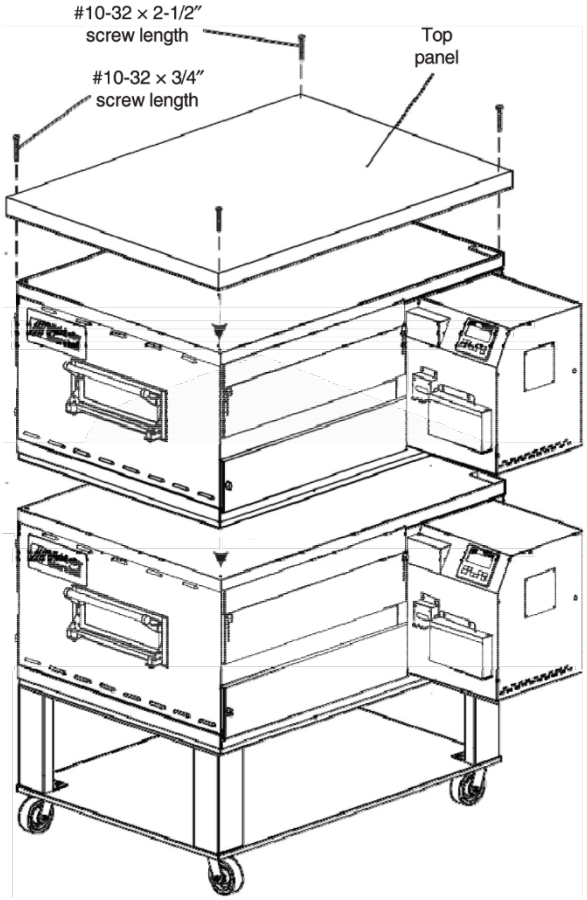
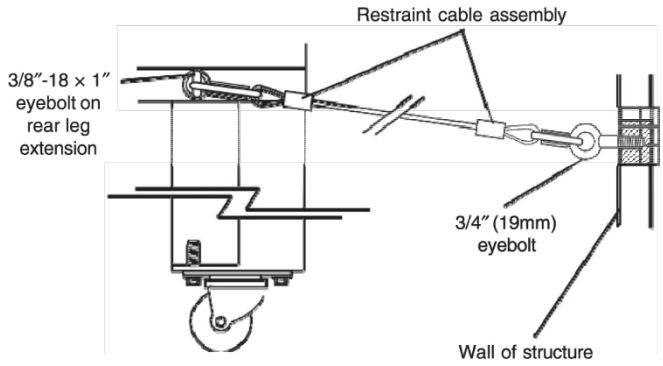


Figure 2-11. Installing the Restraint Cable



D. Conveyor Installation

1. Unfold the conveyor as shown in Figure 2-12. Then begin to slide the conveyor into the end of the oven. The conveyor can only be installed from the side of the oven where the drive motors are located.
2. Continue moving the conveyor into the oven until the frame protrudes equally from each end of the oven. Check that the crumb tray supports located on the underside of the conveyor frame rest firmly against the lower end plugs, as shown in Figure 2-13.
3. When the conveyor is positioned properly, check for freedom of movement of the conveyor belt by pulling it for about 2 to 3 feet (0.6 to 1.0 m) with your fingers. The drive and idler shafts must rotate smoothly, and the belt must move freely without rubbing on the inside of the oven. If not, then re-align the belting.
4. Check the tension of the conveyor belt as shown in Figure 2-14. The belt should lift about 1" (25 mm). ***DONOT OVER TIGHTEN THE CONVEYOR BELT.***

   NOTE: If necessary, the belt tension can be adjustedby turning the conveyor adjustment screws, located atthe idler (non-control) end of the conveyor. See Figure 2-14.

Figure 2-12. Conveyor Installation

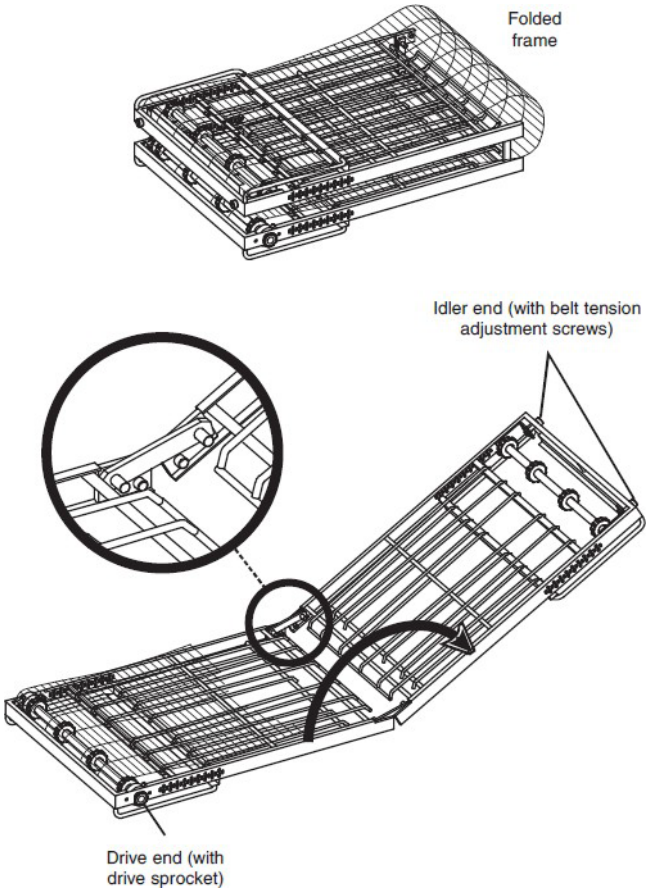


Figure 2-13

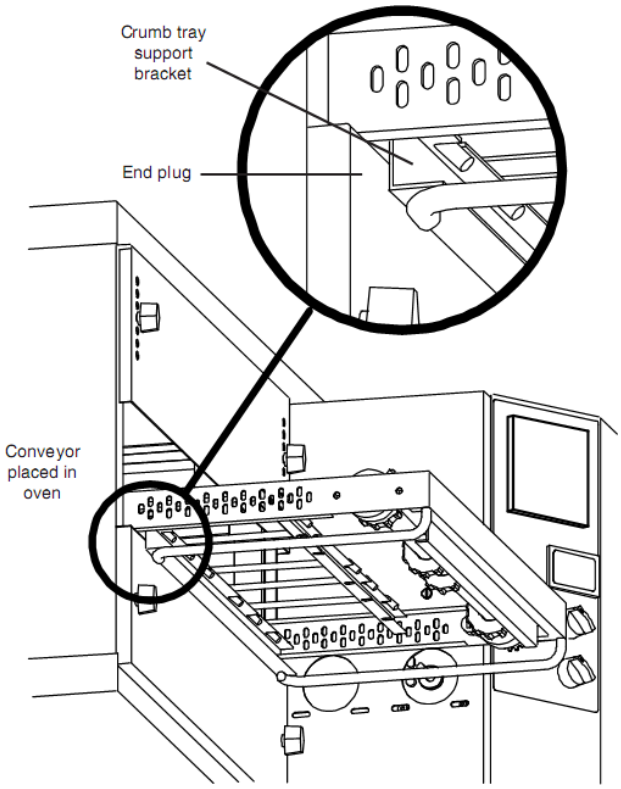
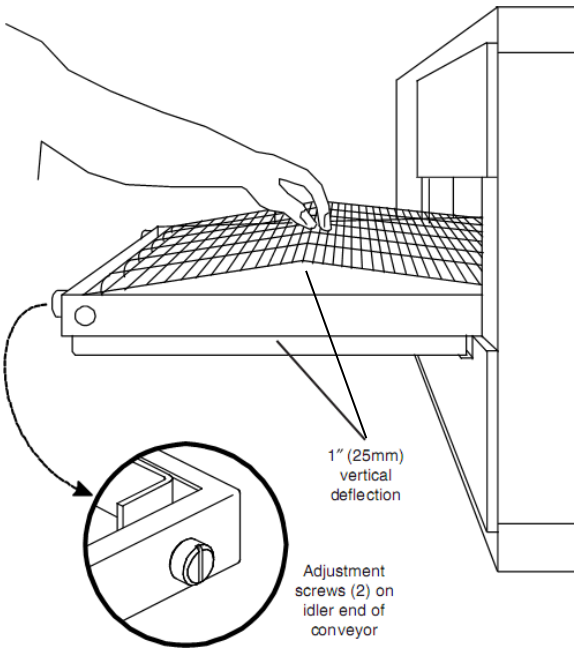


Figure 2-14. Conveyor Belt Tension

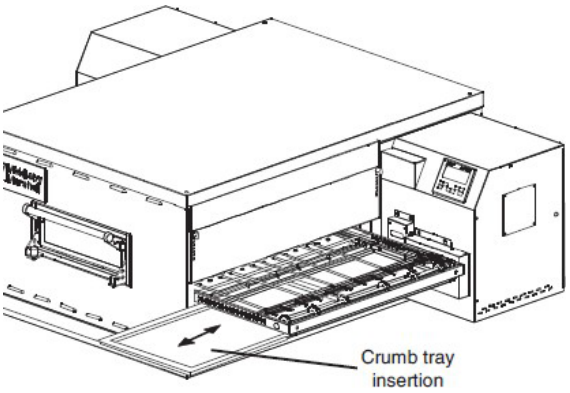


5. If it is necessary to add or remove conveyor links to achieve the correct tension, OR if it is necessary to reverse the conveyor belt for correct orientation, the belt will need to be removed from the conveyor frame. If this is necessary, perform the following procedure:
    - Remove the conveyor assembly from the oven and place it flat on the floor.
    - Remove the master links using long-nose pliers. Then, roll up the belt along the length of the conveyor frame.
    - Add or remove belt links as necessary to achieve the correct belt tension.
    - Replace the belt on the conveyor frame. Check that the smooth side of the conveyor belt faces UP.
    - Connect the inside master links.
    - Connect the outside master links. Note that the outside master links each have an open hook on one side. This hook aligns with the hooks along the sides of the other conveyor links.
    - Replace the conveyor into the oven.

E. Final Assembly

1. Install the crumb trays underneath the conveyor as shown in Figure 2-15.

Figure 2-15. Crumb Trays



CAUTION:

Shock hazard in compartment's electrical filters is electrically alive.

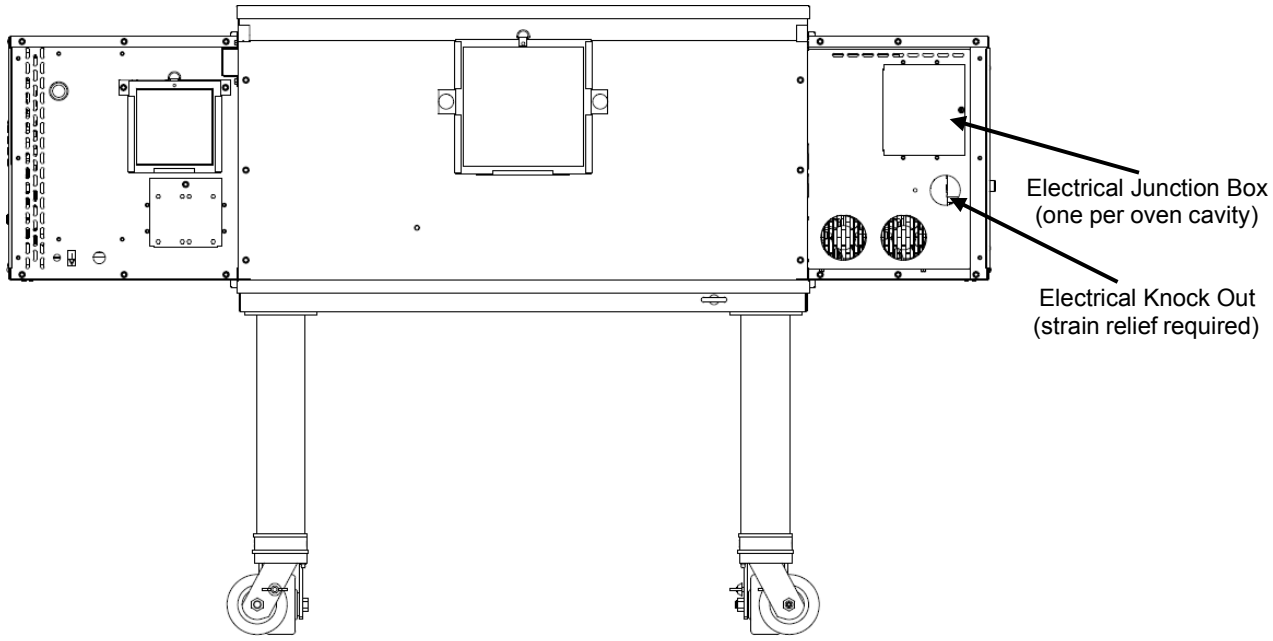
VI. ELECTRICAL SUPPLY

CAUTION: **Authorized Installation 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, CSA C22.2; the Australian Code AG601; or other applicable regulations.

NOTE: The electric supply connection must meet all nationaland local electrical code requirements.

Figure 2-16. Utility Connections Locations for Electrically Heated Oven



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 supplyline for each oven cavity. It is recommended that the 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 of the oven. Electrical specifications are also listed on the oven's serial plate and in Table 1-3, Electrical Specifications (in Section 1, Description).

The oven requires a ground connection to the oven ground screw. For gas ovens, the screw is located in the electrical junction box (see Figure 2-16). If necessary, have the electrician supply the ground wire. Do NOT use the wiring conduit or other piping for ground connections.

Incoming electrical power lines are fed through the strain- relief fitting, shown in Figure 2-16. The electrical supply connections are made inside the electrical junction box. 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 electrical power to the oven when the Machinery Compartment Access Panel is opened, OR when the rear panel is removed.

Connection

Refer to the wiring diagram inside the machinery compartment of the oven to determine the correct connections for the electrical supply lines. Connect thesupply as indicated on the wiring diagram.

CAUTION:



The terms of the oven's warranty require all start-ups, conversions and service work to beperformed by a Middleby Marshall AuthorizedService Company.

Power requirements for electrically heated ovens are usually 208-240 VAC, 3-phase, 4-wire (3 hot, 1 ground), although ovens built for export can have power requirements of 380 VAC. (These ovens have a 5-wire system.) A 2" (51 mm) diameter cutout/hole in the back of the machinery compartment provides access for the electrical supply connections. Using flexible cable(s) for the electrical power supply conductors requires a 2" (51 mm) strain-relief fitting (not furnished) to enable safe access to the terminal block from which oven power is distributed.

The supply conductors must be of the size and material (copper) recommended to provide the current required; (refer to the data plate for the ampere specifications). The electric current rating for each conductor supplying a PS640E-Series Oven must comply to local and national codes.

Typical specifications for each PS640E-Series Oven are 208V or 240V, 3-phase, 4-wire, 27 kW. A PS640E Series Double Oven installation would require two service connections, one for each oven; the 27 kW power consumption also doubles for such an installation to 54 kW.

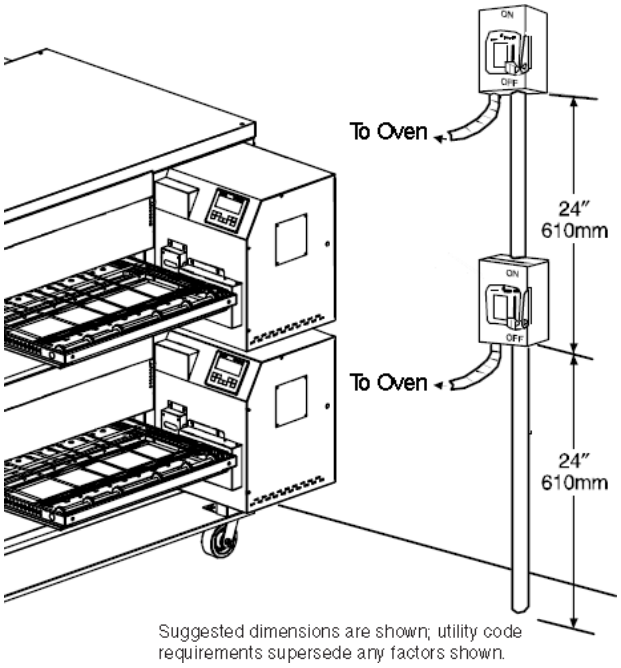
The 208V or 240 VAC electrically heated oven uses two legs of the supplied power to provide 208V or 240 VAC power for the oven control circuitry.

ELECTRIC SUPPLY TO BE PROVIDED BY CUSTOMER

WARNING
DO NOT USE CONDUIT FOR GROUND CONNECTION.

CAUTION
IT IS RECOMMENDED THAT THE OVEN BE PLACED UNDER A VENTILATION HOOD FOR ADEQUATE AIR SUPPLY AND VENTILATION.

ELECTRIC SUPPLY TO BE PROVIDED BY CUSTOMER



Typical PS640-Series Oven Installation

CIRCUIT BREAKER
Separate circuit breaker with lockout/tagout electrical shutofffor each oven. Wire each oven separately. 120 Amp circuit breaker for 208 / 100 Amp circuit breaker for 240V, or 70 Amp circuit breaker for 380-480V.

ELECTRICAL SPECIFICATIONS

DOMESTIC: 208V main blower motors and elements, 3 Phase, 85 Amp draw, 50/60 Hz, 208-240V control circuit, 3 pole, 4 wire system per oven (3 hot, 1 ground).
Do NOT use conduit for ground.

-or-

DOMESTIC: 240V main blower motors and elements, 3 Phase, 75 Amp draw, 50/60 Hz, 208-240V control circuit, 3 pole, 4 wire system per oven (3 hot, 1 ground).
Do NOT use conduit for ground.

-or-

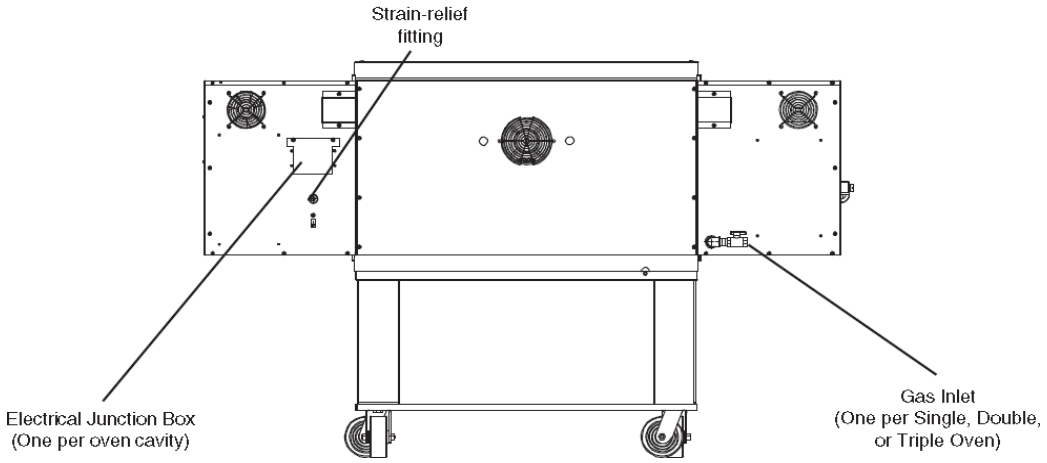
EXPORT: 380V elements, 3 Phase, 51 Amp draw, 50/60 Hz, 208-240V control circuit and main blower motor, 4 pole, 5 wire system per oven (3 hot, 1 neutral, 1 ground).
Do NOT use conduit for ground.

ELECTRICAL RATING
27.0 Kw/hr.

SUPPLY WIRE
Supply wire size must be in accordance with the National Electrical Code (current edition) and must be in compliance with local codes.
NOTE: The electrical terminal connection marked “MP” located inside the control compartment is designated for the blue (neutral) wire to the oven. See the electrical wiring diagram/schematics in Section 5 of this manual.

SUGGESTED
If space permits, service should be located near the control console end of the oven(s) to allow convenient access to safety switches.

Figure 2-17. Utility Connection Locations for Gas Ovens



VII. GAS SUPPLY

CAUTION: *DURING PRESSURE TESTING NOTE ALL OF THE FOLLOWING:*

1. The oven and its individual shutoff valve must be disconnected from the gas supply piping system duringany 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 during any pressure testing of the gas supply piping system at test pressure equal to or less than 1/2 psi (3.45 kPa).
3. If incoming pressure is over 14" W.C. (35 mbar), a separate regulator MUST be installed in the line BEFORE the individual shutoff valve for the oven.

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

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

A. Gas Utility Rough-In Recommendations

The following system specifications are STRONGLY RECOMMENDED. Deviating from these recommendationsmay affect the baking performance of the oven.

Gas Meter

- One or two cavities: 750 CFH meter
- Three oven cavities: 1200 CFH meter

Gas Line

- DEDICATED GAS LINE from the gas meter to the oven
- 2" (50.8 mm) pipe for Natural gas
- 2" (50.8 mm) pipe for Propane gas
- Maximum length: 200' (61 m). Each 90° elbowequals seven additional feet (2.13 m) of pipe.

B. Connection

Check the oven's gas supply requirements before making the gas utility connections. Gas supply requirements are listed on the oven's serial plate and in Table 1-4. Gas Orifice and Pressure Specifications (in Section 1, Description).

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

Refer to the instructions in the gas hose package (included in the Installation Kit) before connecting the gas line. One gas line connection method is shown in Figure 2-18; however, compliance with the applicable standards and regulations is mandatory.

Inlet and regulated gas pressure readings can be taken using a digital manometer at the tap location shown in Figure 2-19. Figure 2-19 shows the burner assembly and Figure 2-21 shows the gas valve.

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

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/CSA 6.16 (in U.S.A.), as well as a quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI Z21.41/CSA 6.9 (in U.S.A.).

C. Gas Conversion

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

CAUTION: The terms of the oven's warranty require all startups, conversions, and service work to be performed by a Middleby Authorized ServiceAgent.

B. Connection

Check the oven's gas supply requirements before making the gas utility connection. Gas supply requirement are listed on the oven's serial plate and in Table 1-4. Gas Orifice and Pressure Specifications (in Section 1, Description).

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

Refer to the instructions in the gas hose package (included in the Installation Kit) before connecting the gas line. One gas line connection method is shown in Figure 2-18; however, compliance with the applicable standards and regulations is mandatory.

Inlet, regulated, and pilot gas pressure readings can be taken using a digital tube manometer at the tap location shown in Figure 2-19. Figure 2-19 shows the burner assembly and Figure 2-21 shows the gas valve.

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.

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.), 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.).

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 Gas Conversion Kit for the specific oven model.

CAUTION: *The terms of the oven's warranty require all start-ups, conversions and service work to be performed by a Middleby Authorized Service Agent.*

D. PS640 Propane Conversion

Two items have to be changed, to change the oven to LP:

1. Replace main orifices.
2. Adjust main gas regulator per instructions below.

Disconnect the manifold union closest to the main burner, and remove the manifold assembly (four screws). Slide out the manifold assembly (leaving the ignition and sense wires connected). Replace the main orifices.

Replace the main orifices on the manifold assemblies with the LP units, and replace the manifold assembly. Reconnect the union.

E. Adjusting the Maximum Pressure Setting

1. Disconnect pressure feedback connection (if appcable).
2. Connect a suitable pressure gauge to pipe line or to outlet pressure tap of gas control concerned, to measure burner pressure (measuring point must be as near to burner as possible).

Figure 2-18. Flexible Gas Hose Installation

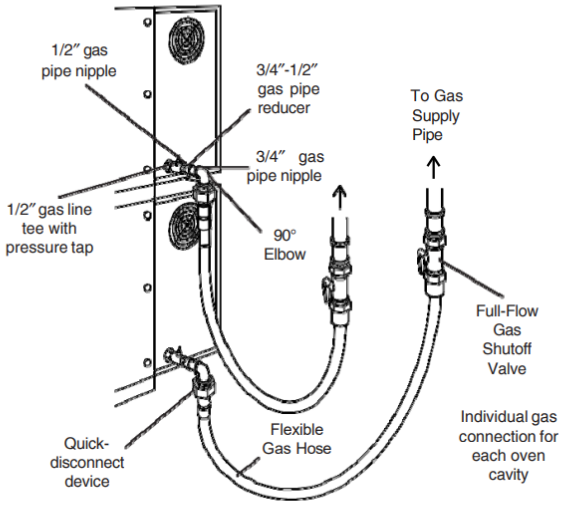
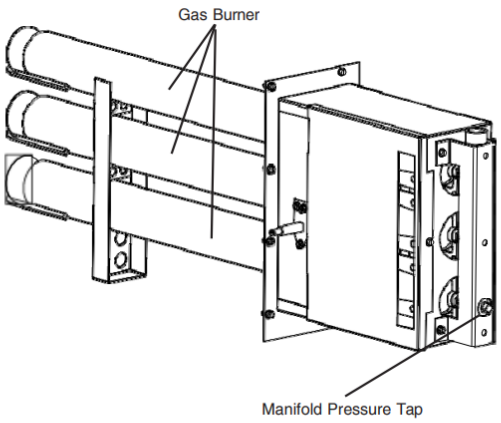


Figure 2-19. Gas Burner Assembly



3. Make sure that the appliance is in operation and the Moduplus® coil is energized with maximum current.
4. If maximum rate pressure needs adjustment, use an 8 mm wrench to turn adjustment screw for maximum pressure setting (clockwise to increase or counter-clockwise to decrease pressure), until the desired maximum outlet pressure is obtained.
5. Disconnect electrical connection of the Moduplus®.
6. Check minimum pressure setting and readjust if necessary. (See Adjusting Minimum Pressure Setting for proper adjusting procedure.)
7. Reconnect pressure feedback connection (if appcable).
8. If minimum and maximum pressures are set, wire the Moduplus® in circuit.
9. Close pressure tap screw.

Figure 2-20. Burner Assembly

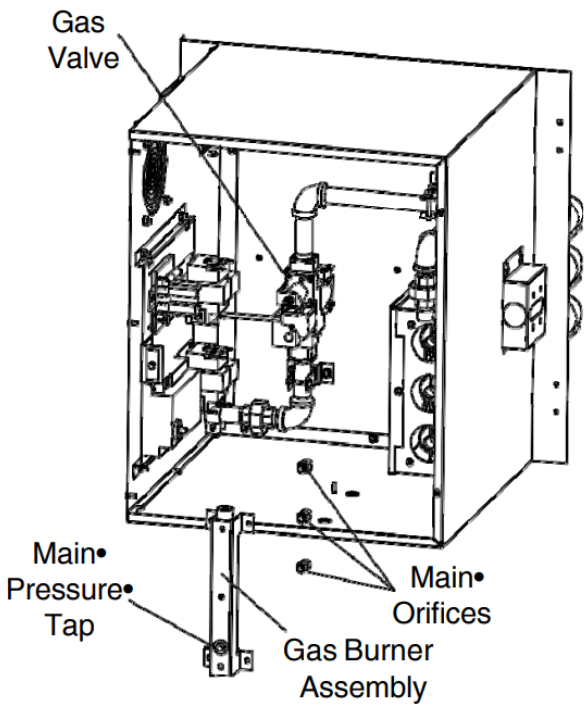
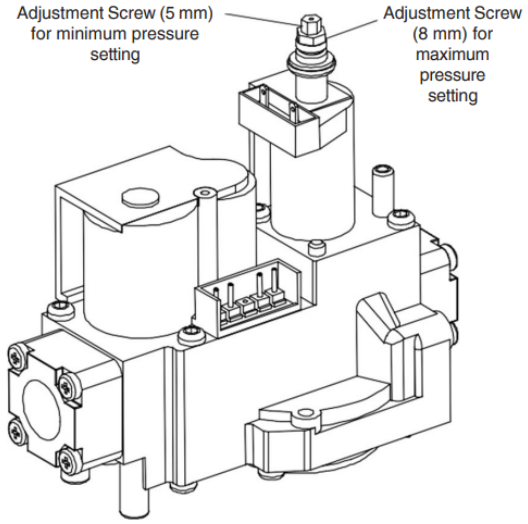


Figure 2-21. Gas Valve



F. Adjusting the Minimum Pressure Setting

1. Disconnect pressure feedback connection (if appcable).
2. Connect a suitable pressure gauge to pipe line or to outlet pressure tap of gas control concerned, to measure burner pressure (measuring point must be as near to burner as possible).
3. Disconnect electrical connection of the Moduplus®.
4. Energize operator, set control in operation and wait until an outlet pressure is recorded on pressure gauge.
5. If minimum rate pressure needs adjustment, use an 8 mm wrench to turn adjustment screw for minimum pressure setting (clockwise to increase or counter-clockwise to decrease pressure), until the desired minimum outlet pressure is obtained.
6. Check if main burner lights easily and reliable at minimum pressure.
7. Reconnect pressure feedback connection (if appcable).
8. Close pressure tap screw.

G. Checkout

After any adjustment, set appliance in operation and observe through a component cycle to ensure that burner system components function correctly.

NOTE: The installer **MUST** verify oven operation prior to putting oven into service.

H. Maintenance

It is recommended to check yearly the minimum and the maximum setting and readjust them if necessary.

SECTION 3 – OPERATION

I. DESCRIPTION OF CONTROLS – User Interface

The PS640 oven control performs a variety of functions, including:

Temperature control

Belt speed control

Blower speed setting

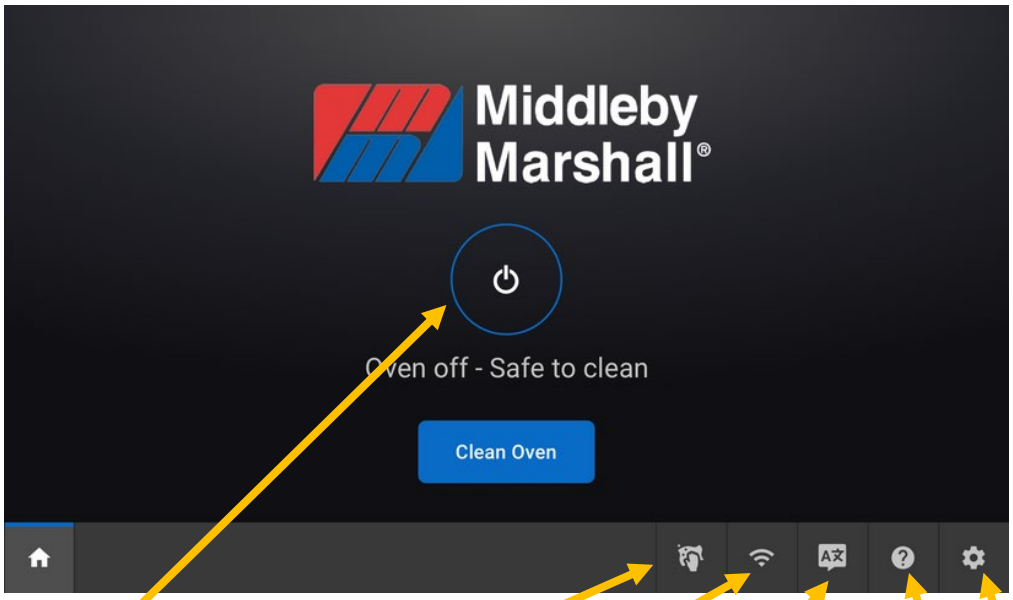
Energy management

Oven diagnostics and system testing

Conveyor speed calibration (Service use only)

The oven control will have power delivered to it and initialize when the oven is connected to the power supply. Upon initialization, the control will display a splash screen consisting of a white background with MIDDLEBY MARSHALL text. The application will then load, showing the main off splash screen.

A. Standby/Splash Screen



POWER BUTTON:
Press to initiate oven startup.

CLEAN SCREEN: Locks screen for 5 seconds to allow screen cleaning.

WIFI: Displays WiFi Status (if WiFi is connected).

LANGUAGE: Allows language selection (if enabled).

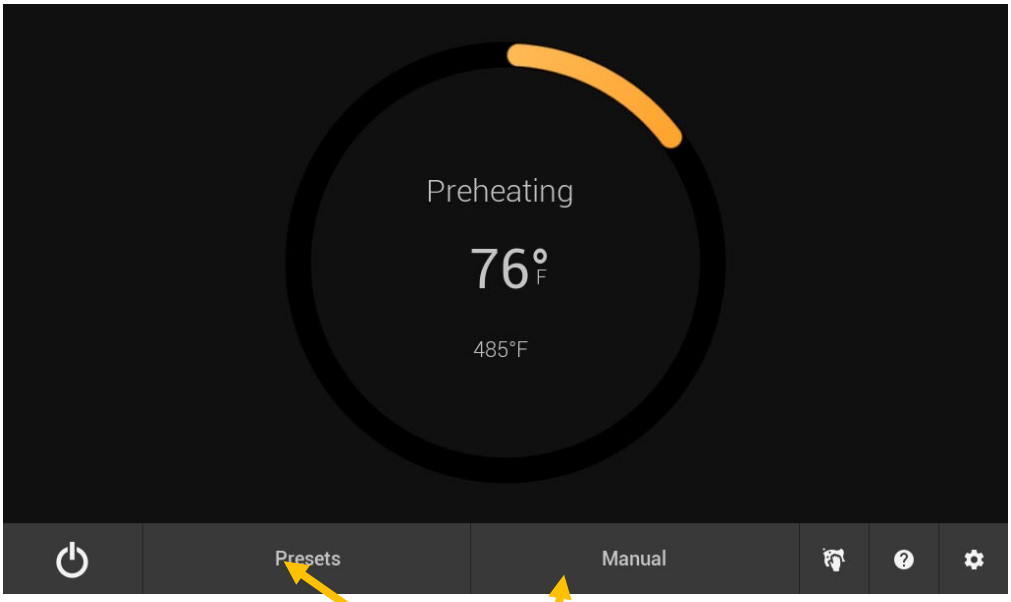
HELP: Shows help documents.

SETTINGS: Allows access to settings for Managers and Service Agents

.

B. Preheat Screen

Displays preheat status, allows access to oven settings by selecting PRESETS or MANUAL tab and shows preheat progress.



PRESETS: Press to switch to presets screen.
MANUAL: Press to switch to manual cooking screen.

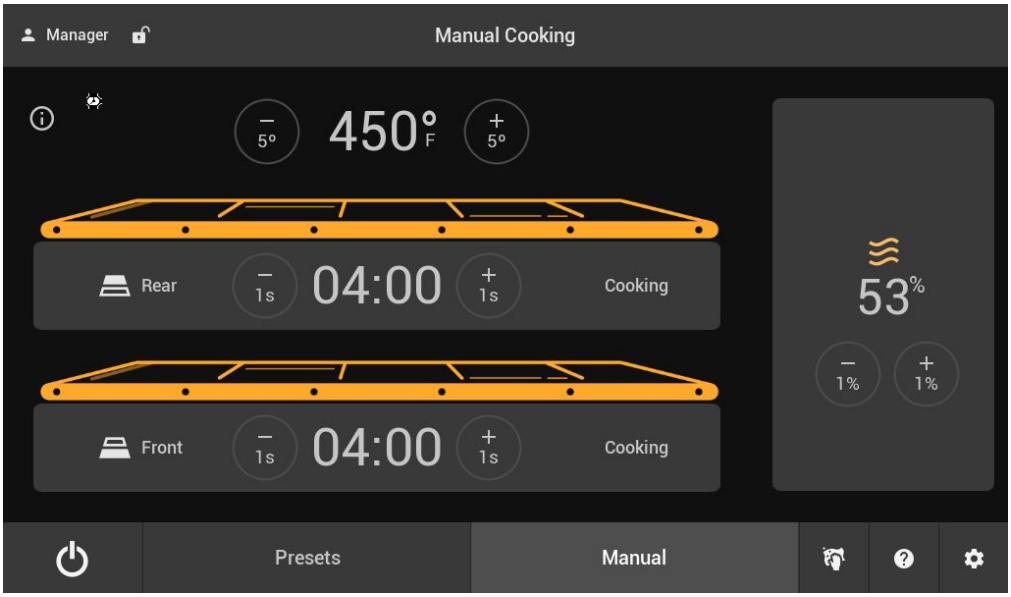
C. Manual Cooking

In this screen you can change:

Temperature in 5 degree intervals between 300°F and 600°F

Belt times in 1 second intervals

When logged in as manager, blower speed by 1 percent intervals between 25% and 100%.



D. Preset Cooking

This screen allows the application of presets.

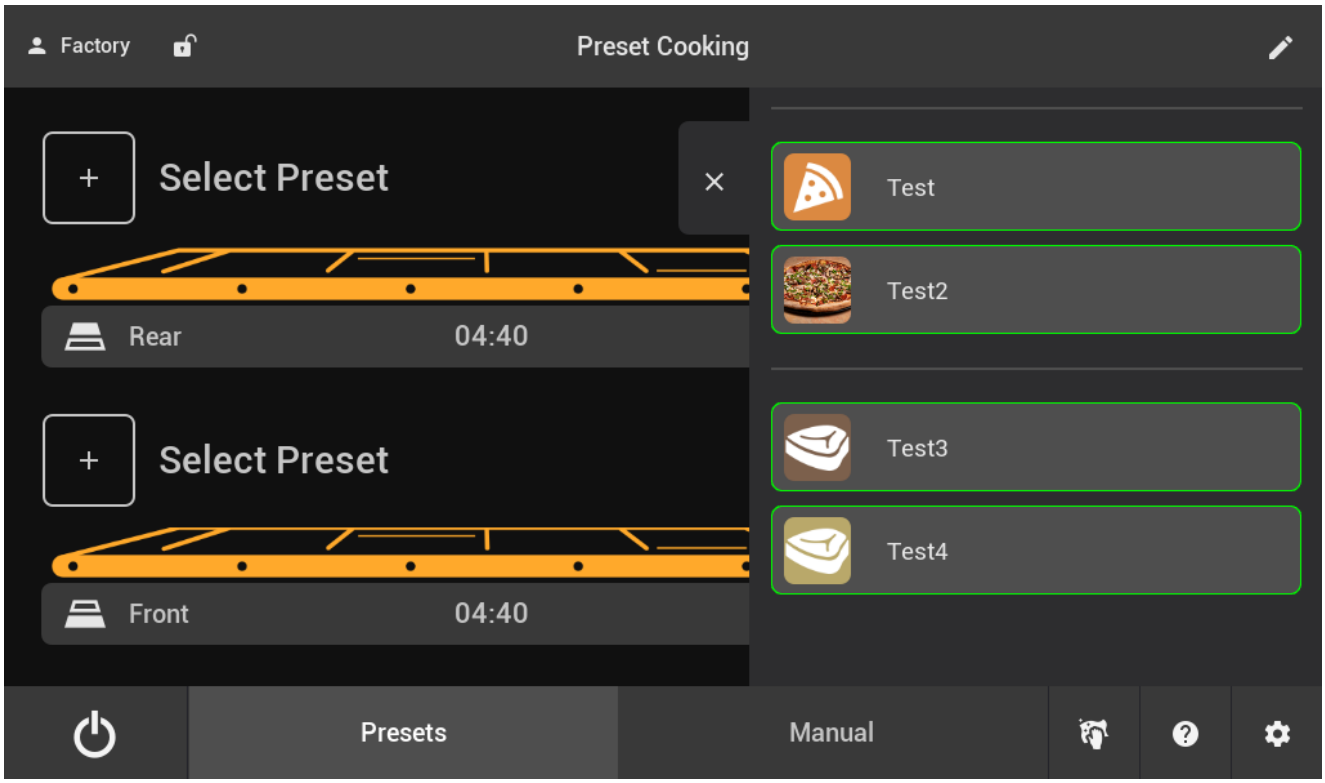
Presets may be created and edited by pressing the pencil icon in the top right of the screen. Alternatively, they may be accessed in the manager section of the settings screens.

Each preset contains three settings: Temperature, blower percentage, and a single belt time.

A preset must be applied to each belt in the oven. For single belt ovens, a single preset is applied. For split belt ovens, two presets must be applied, but the presets must have matching cavity settings (temperature and blower percent settings). The same preset can be applied to both belts.

To apply a preset to a belt, press the “plus” button above the desired belt and a list of available presets will be shown on the right side of the control. Presets that match the current cavity settings will be grouped together at the top of the list and shown in green. Other presets will also be grouped based on common cavity settings and will be shown in orange.

If a preset is selected that does not match the current cavity settings, a warning will appear on screen. You may either “Cancel” the selection or “Continue” to accept the new cavity settings. If the cavity settings are changed, any presets that are not compatible will be de-selected.



When selecting a preset, presets that match the current cavity settings will be at the top and outlined in green. Other presets will be highlighted in orange. Attempting to apply a preset that does not match the current cavity settings will show a warning. Accepting the warning will apply the preset and de-select the preset from the other belt. The user may switch to the manual screen and change settings, which will de-select the presets as well. Presets may be created and edited with the pencil icon, or in the manager section of the settings screens.

II. NORMAL OPERATION

A. Daily Start-up Procedure

To start the oven, press the power button. The display will transition to the preheat screen. The blower will begin and the blower proving switch will engage, permitting the heat circuit relay to engage. The gas ignition module will begin its cycle and ignite the burner.

B. Adjusting the Temperature – Manual Mode

To adjust the set temperature, press the "+5" or "-5" button next to the set temperature to adjust the temperature in five degree increments (in Celsius, the temperature increment is one degree). Larger adjustments can be made by pressing and holding the desired button.

C. Adjusting the Belt Time – Manual Mode

To adjust the belt time, press the "+1" or "-1" button next to the belt time to adjust the time in one second increments. Larger adjustments can be made by pressing and holding the desired button.

D. Adjusting Settings – Preset Mode

To adjust the oven settings, a preset must be applied to each belt. If there are no presets that match the desired oven settings, a preset must be created, or manual mode must be used.

E. Daily Shutdown Procedure (Turning the Oven Off)

To turn the oven OFF, press and hold the power button for ~1 second. This will bring up a confirmation dialogue. Press "Cancel" to return to the previous mode or press "Confirm" to proceed. If the oven is below 200°F cool down temperature, then the display will return to the STANDBY screen. If the oven is above 200°F, the display will show "COOLDOWN" and the blowers will run at a preset cool down speed until the oven temperature falls below 200°F at which point the oven will go to the STANDBY mode. If the sleep mode timer is enabled, the screen will enter sleep mode after a set period of time. In sleep mode, the screen will dim. The oven will stay in this condition until it is started again, with no outputs energized.

III. PROGRAMMING INSTRUCTIONS (MANAGER MODE)

A. Changing Baking Blower Speeds (Manual)

To change the ENTRANCE and/or EXIT blower speeds in manual mode:

1. Enter the SETTINGS page by pressing the gear icon in the bottom right corner of the screen.
2. Log in as manager (default passcode 8648) and return to the MANUAL screen.
3. The blowers will now have + and – buttons next to them. Press and hold the desired button until the desired blower speeds are set.

B. Changing Energy Mode Status

The photoeye operation can be overridden and baking mode can be continually engaged by disabling the energy mode. Energy use will be considerably higher without the energy saving mode.

Enter the SETTINGS screen and log in as manager. Under the "General" settings screen, scroll down to the "Photoeye Enabled" entry. Press the button to the right of the entry to disable the photoeye. The selector will change from green to grey.

C. System Setup

Additional system settings can be modified in the settings screen, accessed from the gear icon in the bottom right. Without logging in, only oven details are visible. After logging in as manager, there are four categories available: General, Belt Settings, Blower Settings, and Oven Details.

General Settings Options

- Audio Feedback Enabled: Enables audio feedback, especially for alerts.
- Beep on Button Press: Enables a beep when a button is pressed (audio feedback must be enabled).
- Language: Allows language selection.
- Language Icon View: Inserts a language icon in the bottom row that can be used to change the language.
- Display Brightness: Change the brightness of the screen.
- Date/Time: Set the date and time for improved oven monitoring.
- Sleep Mode Timer Enabled: Enables sleep mode (dimmed screen in Standby).
- Sleep Mode Timer: Change the amount of time the oven remains in Standby before sleep mode is enabled.
- Photoeye Enabled: Enables or disables the photoeye. If the photoeye is disabled, the blowers will run at "bake" speeds at all times.
- Photoeye Delay: Determines how long the photoeye must be broken before the bake mode is triggered.
- Temperature Units: Switch between Fahrenheit and Celsius.
- Operating Temperature: Allows restricting the operating temperature between the defaults of 300°F-600°F.
- Temperature Display Timeout: Determines how long "actuals" will be displayed when the info button is pressed. Set to "0" to disable actual temperature display.
- Manager Passcode: Allows the manager to customize the manager passcode.

Belt Settings Options

- Tweak Speed Percentage: Speed up or slow down the belt speed by up to 15% to fix small discrepancies in timing due to belt age

Blower Settings

- Blower Status: See blower speed (if rotation sensor equipped) and status of sensor (open/closed).
- Cooldown HZ: Set blower speeds during cooldown. Higher speeds produce more noise and use more power but cool down the oven faster.

Oven Details

- View oven details such as customer name, oven serial number, and software versions.

D. Energy Management Information

The PS640 oven reduces energy usage in two ways over most competitive ovens:

Modulating gas control (Energy Management System)

BAKING / IDLE mode control (Energy Saving Mode)

The modulating gas valve within the oven controls pressure of the delivered gas to the burners to increase or reduce the energy input as needed to maintain temperature instead of cycling a gas valve on and off. This is a most efficient and accurate way of controlling the temperature and eliminates the heat losses associated with the ON/OFF cycling control.

The PS640 oven, like other Middleby ovens, has an idle mode that places the blower at a reduced speed during non-baking periods. Reducing the blower speed reduces the volume of air requiring heating and thus reduces energy usage during these non-baking times. A photoeye sensor at the entrance side of the baking chamber detects when food is placed on the belt and brings the oven up to the higher (baking) blower speed, increasing the amount of convection / impingement air needed to cook products faster. When the product passes the photoeye, the controller begins a preset timed period that ensures the product will pass fully through the oven before the oven returns to the IDLE mode. With this energy management system, the oven provides the increased convection / impingement heat transfer into the products needed for fast, even baking, without the energy penalty during non-baking times. This functionality is fully automatic and requires no user interaction.

NOTES:

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 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.***
2. ***If the restraint cable was disconnected to clean orservice the oven, reconnect it at this time.***
3. ***Reconnect the gas supply.***
4. ***Reconnect the electrical supply.***
5. ***Turn on the full-flow gas safety valve. Test the gas line connections for leaks using approved leak test substance or thick soap suds.***
6. ***Turn on the electric supply circuit breaker(s).***
7. ***Perform the normal startup procedure.***

WARNING

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

CAUTION

NEVER use a water hose or pressurized steam-cleaning equipment when cleaning this oven. To avoid saturating the oven insulation, DO NOT use excessive amounts of water. DO NOT use a caustic oven cleaner, which can damage the 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 ALL of the cooling fan grills and vent openings with a stiff nylon brush. Refer to Figure 4-1 for the location of the grills and vents.

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

D. Check that all cooling fans are operating properly.

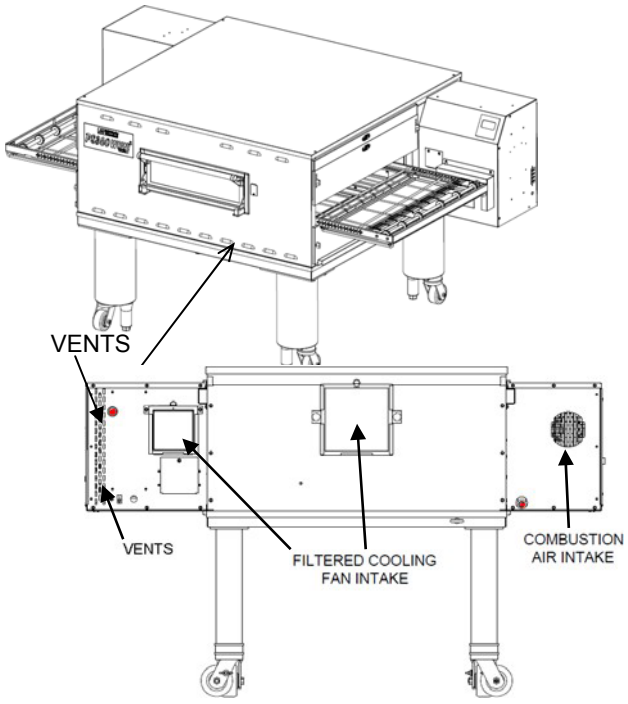
CAUTION: *If a cooling fan is not operating correctly, it must bereplaced IMMEDIATELY. Operating the oven without adequate cooling can seriously damage theoven's internal components*

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 and brush the crumbs off the conveyor as it moves.

F. Remove and clean the crumb trays. If necessary, refer to Figure 2-16 (in Section 2, Installation) when replacing the crumb trays into the oven.

G. Clean the window in place.

Figure 4-1. Cooling Vents and Grills



II. MAINTENANCE – MONTHLY

NOTE*:* When removing the conveyor, refer to Figure 2-12 (in Section 2, Installation).

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

B. Remove the crumb trays 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. Remove the drive chain from the conveyor sprocket.

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

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

F. Slide the air fingers and blank plates out of the oven, as shown in Figure 4-2. AS EACH FINGER OR PLATE IS REMOVED, WRITE A "LOCATION CODE" ON IT WITH A MARKER to make sure it can be reinstalled correctly.

Example of markings:

Top Row ➔	**T1**	**T2**	**T3**	**T4**
Bottom Row ➔	**B1**	**B2**	**B3**	**B4**

G. Disassemble the air fingers as shown in Figure 4-3. AS EACH FINGER IS DISASSEMBLED, WRITE THE "LOCATION CODE" FOR THE FINGER ON ALL THREE OF ITS PIECES. This will help to correctly reassemble 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 codes" as a guide.

J. Replace the end plugs on the oven.

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

L. Reattach the drive chain.

M. Check the tension of the conveyor belt as shown in Figure 2-14 (in Section 2, Installation). The belt should lift 1" (25.4 mm) DO NOT OVERTIGHTEN THE CONVEYOR BELT. If necessary, the belt tension can be adjusted by turning the conveyor adjustment screws, located at the idler (left) end of the conveyor

N. Replace the crumb trays.

Figure 4-2. Removing Air Fingers and Plates

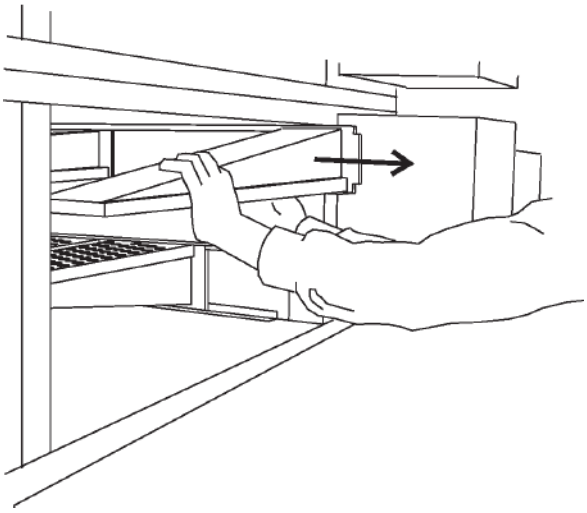
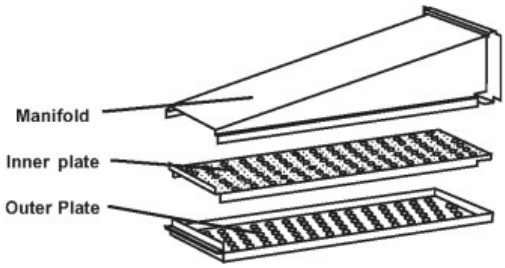
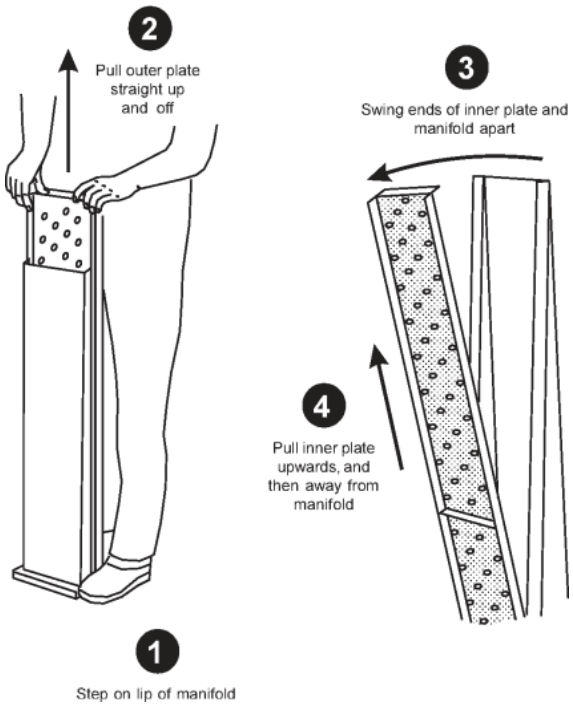


Figure 4-3. Disassembling the Air Fingers





III. MAINTENANCE – EVERY 6 MONTHS

A. The Six-Month Maintenance should be carried out by a qualified Middleby authorized service agent or by Middleby authorized personnel.

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

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

D. Vacuum all of the blower mounts and their surrounding compartments using a shop vacuum.

E. Tighten all electrical terminal screws

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

G. Split Belt Disassembly and Cleaning

1. Refer to Part D, Conveyor Installation, in the Installation section of this manual. Then, remove the following components from the oven:
   - Conveyor end stop
   - Crumb trays
   - Chain cover
   - Drive chains
   - End plugs
   - Conveyor assembly
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 4-4.
4. Remove the idler shaft assembly from the conveyor.
5. Pull apart the two sections of the idler shaft.
6. Clean the shafts thoroughly using a rag. Lubricate both the extended shaft and the interior of the hollow shaft using a light food-grade lubricant. DO NOT lubricate the shafts using WD-40 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.
8. 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 4-4.
9. Replace the conveyor adjustment screws as shown in Figure 4-4. To allow the conveyor belt to be reinstalled later, do not tighten the screws at this time.
10. Loosen the set screw on both of the conveyor drive sprockets. Remove the sprockets from the shaft.
11. Check the conveyor configuration as follows: **High-speed conveyors** are equipped with large flange bearings at both ends of the shaft, as shown in Figure 4-5. For these conveyors, remove the two screws that hold each bearing to the conveyor frame. With the screws removed, lift the end of the shaft at the front of the oven, and pull the entire assembly free of the conveyor frame.

    Standard conveyors are equipped with bronze bushings mounted on spacers at both ends of the shaft, as shown in Figure 4-5. For these conveyors, remove the two screws that hold the bracket to the conveyor frame. With the screws removed, lift the end of the shaft at the front of the oven and pull the entire assembly free of the conveyor frame. The brackets will be removed along with the drive shaft assembly.
12. Disassemble and lubricate the two sections of the drive shaft as described for the idler shaft, Step 6.
13. Before reassembling the shafts into the conveyor frame, check that they are oriented properly.
14. Reassemble the drive shaft into the conveyor. Make sure that the bronze washer is in place between the two sections of the shaft. See Figure 4-6.
15. Replace the drive sprockets. Reassemble the belts and master links onto the conveyor.
16. Reinstall the end plugs and conveyor onto the oven. Reattach the drive chains. Replace the chain cover.
17. Check the tension of the conveyor belt as shown in Figure 2-14 (in Section 2, Installation). The belt should lift about 1" (25 mm). If necessary, adjust the belt tension by turning the conveyor adjustment screws.
18. Replace all components onto the oven.

Figure 4-4. Disassembling the Idler Shaft

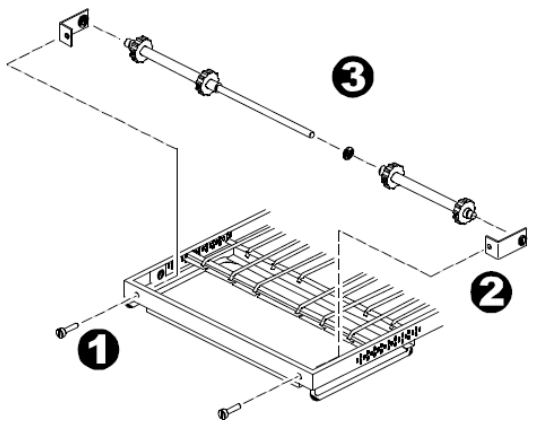


Figure 4-5. Drive Shaft Configurations

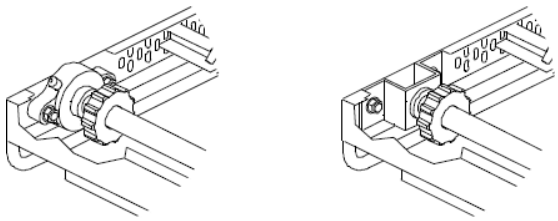
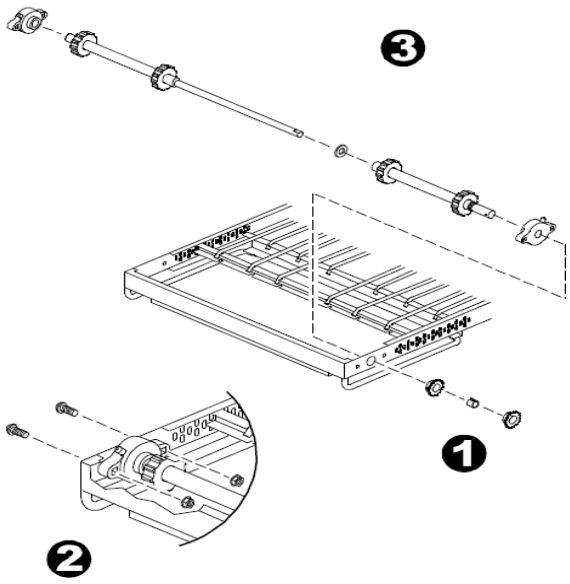
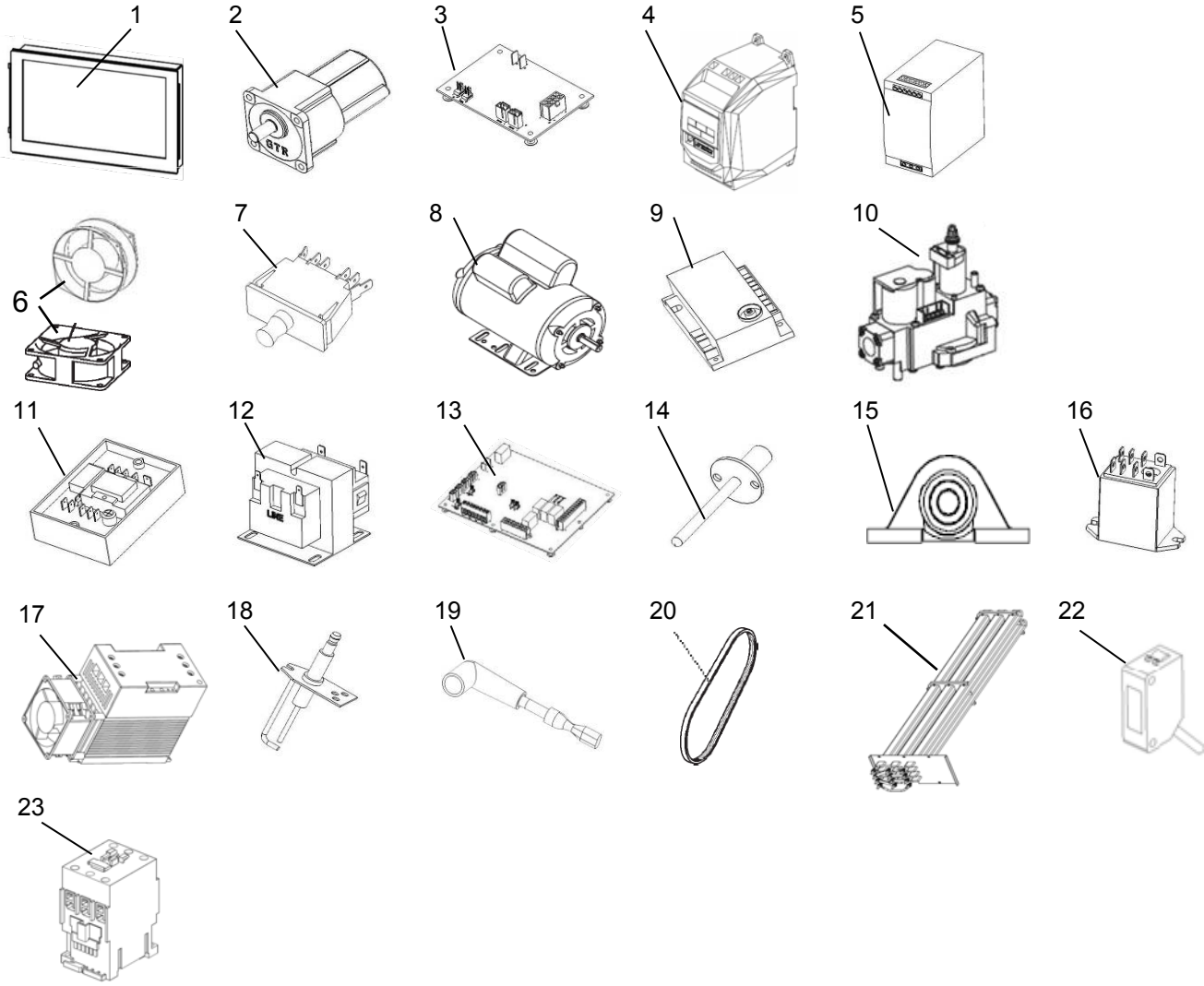


Figure 4-6. Disassembling the drive shaft



IV. PS640E & G OVEN KEY SPARE PARTS



V. PS640E & G OVEN KEY SPARE PARTS

ITEM	QTY	P/N	DESCRIPTION
1	1	79324	Digital Display, Programmed
2	1	74106	Motor, Conveyor Drive (74106)
3	1	77277	Conveyor Control Board
4	1	74097	VFD Inverter, 2 HP (230 VAC Input)
5	1	76979	Power Supply, 24 VDC, 60W
6a	1	65061	Small Cooling Fan for Right Control Compartment
6b	1	51399	Large Cooling Fan for Center Rear of Oven
n/s	1	77393	Small Cooling Fan Filter (5" square)
7	2	63909/63910	Door Switches, Interlock / Momentary
8	1	57288	Blower Motor, 2 HP
9	1	62285	Ignition Module (Gas Only)
10	1	60679	Modulating Gas Valve (Gas Only)
11	1	33983	Hi Limit Thermostat
n/s	1	78814	High Limit Reset Button
12	1	32108	Transformer, 240 primary / 24 secondary
13a	1	77275	I/O Board
13b	1	77276	Relay Board
14	1	33984	Thermocouple (2 per oven)
15	1	64106	Bearing, Dodge 5/8
16	1	60952	Relay, DPDT 208-240 VAC Coil
17a	2	76289	208/240V SS Power Controllers
17b	1	76289	380/416V SS Power Controllers
18	1	71037	Single Rod Igniter
19	1	62282	Ignition Cable
n/s	2	66330	Blower Shaft
20	1	59668	Blower Belt
21a	1	60750	Heater, 27 kW, 208 VAC Specific
21b	1	74125	Heater, 27 kW, 240 VAC Specific
21c	1	73656	Heater, 27 kW, 380 VAC Specific
22	1	74857	Photoeye (optional)
n/s	1	75207	Photoeye Lens (optional)
23	1	44549	Contactor (Electric Only)

SECTION 5 - TROUBLESHOOTING

I. Troubeshooting Guide

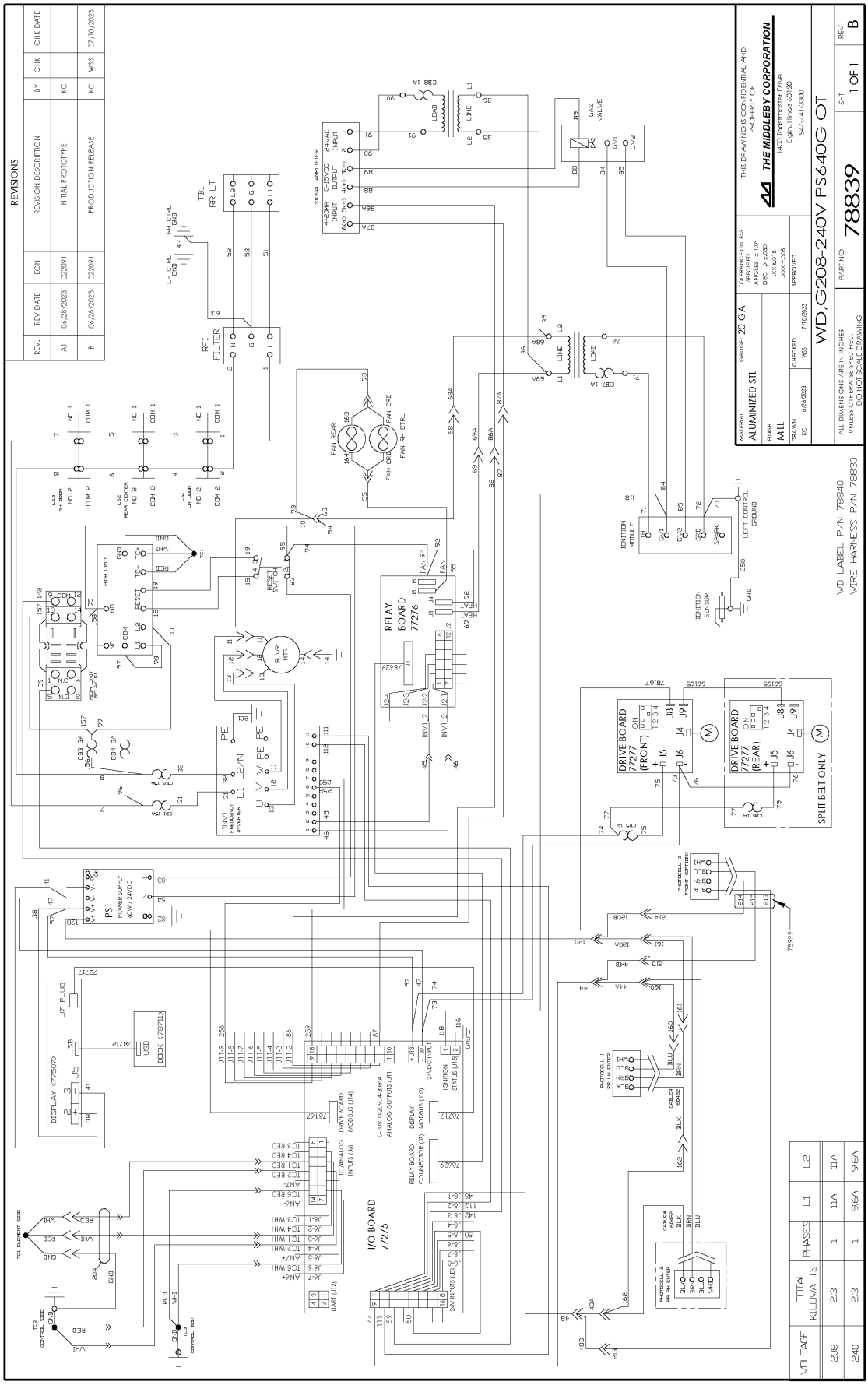
SYMPTOM	POSSIBLE CAUSES	SOLUTIONS
Nothing displayed on controller	1. Power not connected. 2. Main breaker not on. 3. Control circuit breaker tripped.	1. Check plug at wall. 2. Check main breaker. 3. Check control breaker.
Control display is dim.	1. Control is in SLEEP mode. 2. Display Brightness is set low.	1. No problem – the control backlight dims. when the oven is not turned on for use – Press I/O button. 2. Navigate to general settings and increase screen brightness.
Oven not baking properly	1. Settings have been changed. 2. Debris in oven or blowers. 3. Improper finger arrangement. 4. Kitchen airflow conditions affecting the bake.	1. Confirm correct values (time & temperature). 2. Empty drip pans/clean oven. 3. Check for proper finger settings. 4. Eliminate air cross-currents.
Conveyor noticeably running at the wrong speed	1. Time settings have been changed. 2. Drive sprocket(s) loose.	1. Confirm correct values and correct control settings. 2. Tighten drive shaft set screws.
Conveyor not moving	1. Something has jammed the conveyor. 2. Circuit breaker (behind control panel) has tripped. 3. Chain, sprocket, or set screw has come loose.	1. Turn power off. Locate and remove jammed item. 2. Check conveyor for jamming and Reset the circuit breaker on right side control door. 3. With power OFF, remove chain cover, tighten set screws, replace chain onto sprockets, and replace chain cover.
“BAKING” indication goes on and off in upper left corner of the control display	Oven is cycling normally. BAKING indication comes on upon triggering the photo eye.	No problem – the timed baking cycle automatically starts when product breaks the photo eye beam and stops after product leaves the baking chamber.
Oven does not enter BAKING mode when product is placed on the belt	Photo eye not sensing / working.	Navigate to General Settings and disable photoeye. Oven will now run in BAKING mode all the time. Call service to schedule repair.
Baked product comes out underdone	1. Settings have been changed. 2. Photo eye not working. Check to see if BAKING appears on display when photo eye beam is interrupted.	1. Check blower settings (log in as manager to modify). 2. Disable Photoeye, Oven will remain in BAKING mode.

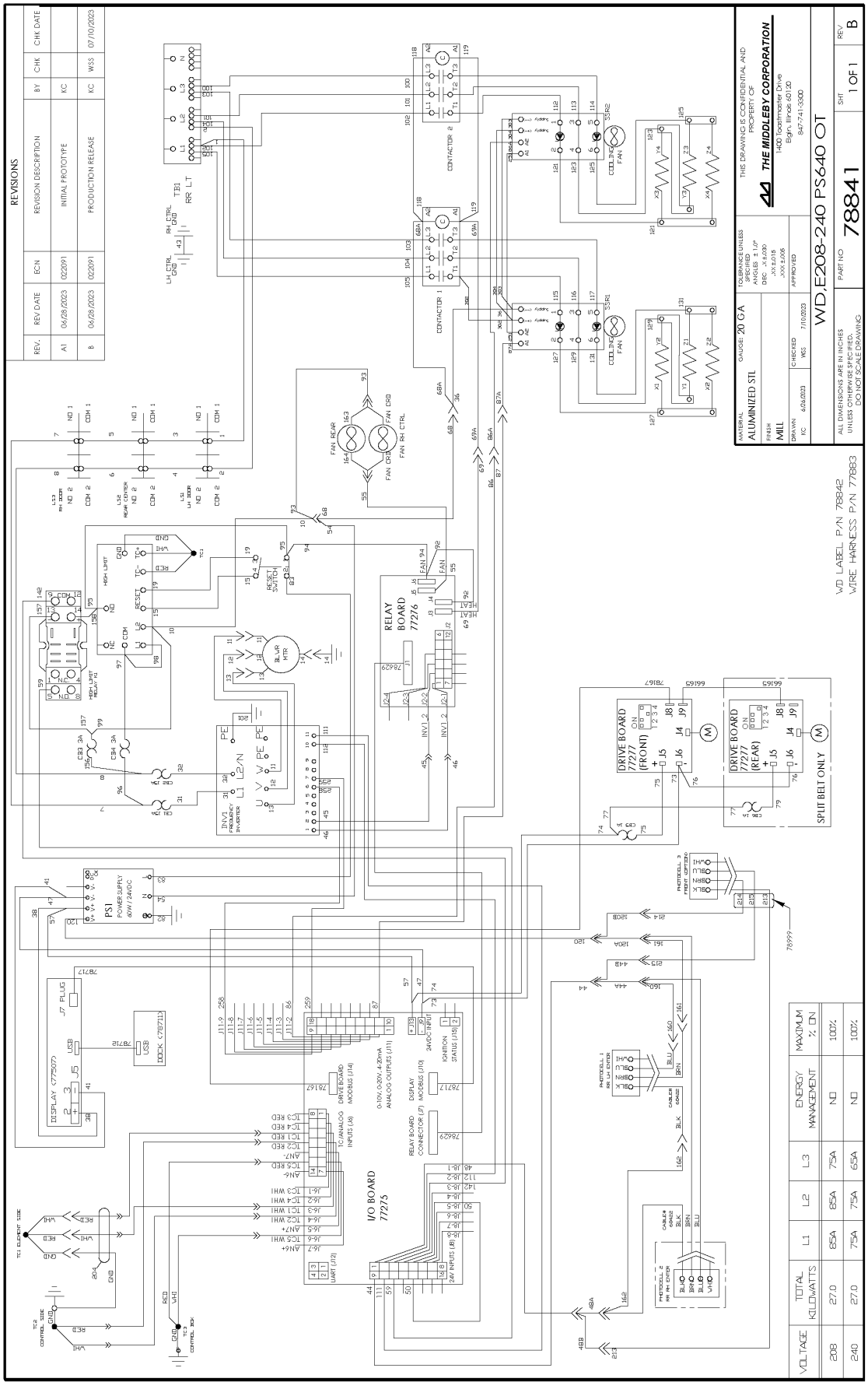
II. Alerts, Errors & Remedies

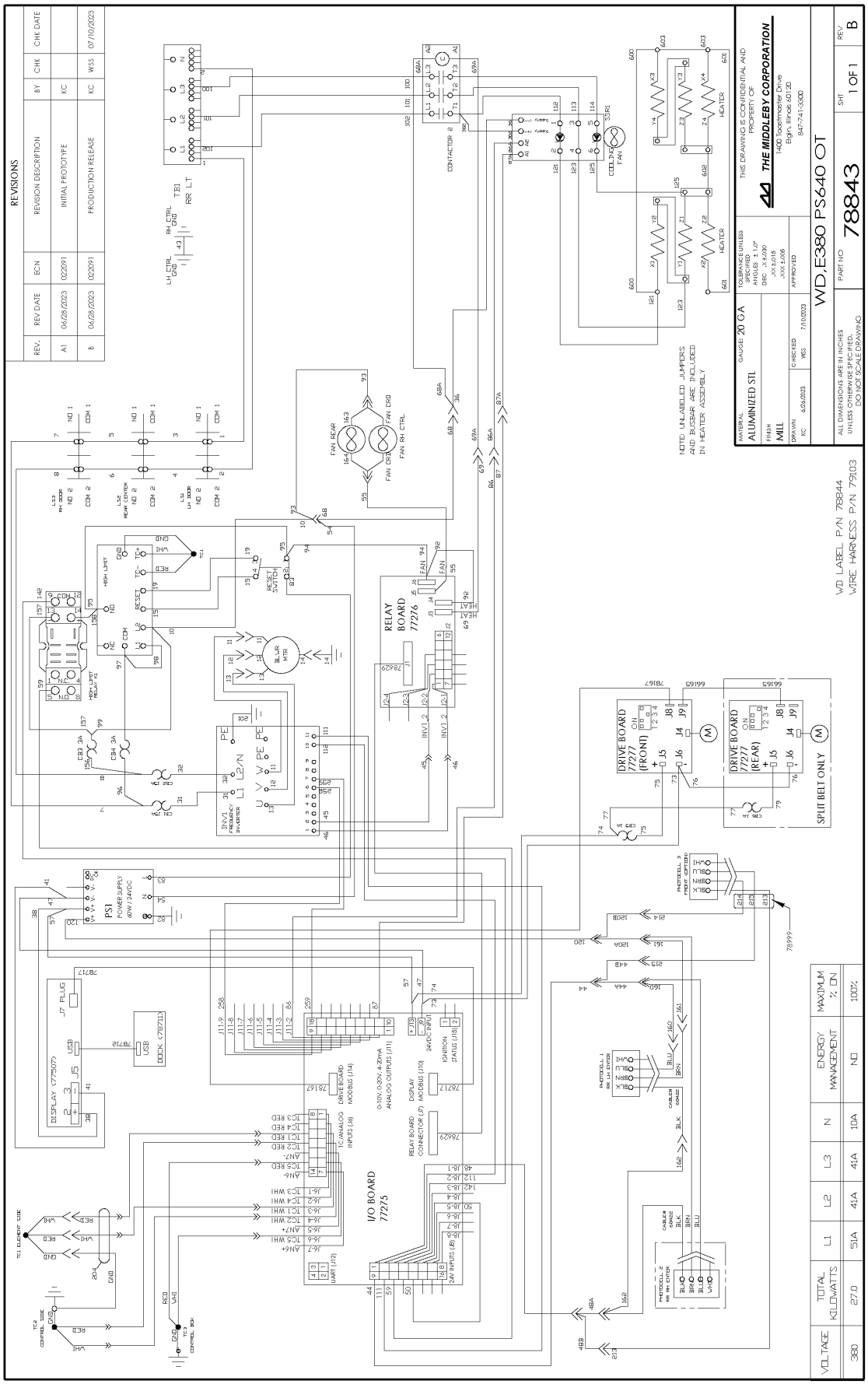
SYMPTOM	POSSIBLE CAUSE	REMEDY
PROBE # OPEN shown on display and audible alarm sounds	Temperature Probe number # is open.	Press “Dismiss” and resume operation. Control will compensate for lost probe. Call the Hot Line.
FRONT BELT STALLED BACK BELT STALLED shown on display	Belt was overloaded and control shut down the belt.	Press “Dismiss.” Check belt for cause of jamming. FOLLOW ON-SCREEN PROMPTS.
FRONT BELT COMM LOST or BACK BELT COMM LOST shown on display	Circuit breaker to conveyor motor drive board is tripped. Oven will continue operation with single belt in operation.	Press “Dismiss.” Check belt for cause of jamming, reset breaker, re-start oven. If unsuccessful, call for service.
MAIN SENSOR OPEN shown on display and audible alarm sounds	Switch proving that the blowers are operating is not closed. Error caused either by switch itself or by one or more blowers not operating.	Press “Dismiss.” Unplug oven and plug in again. Restart oven. If unsuccessful, call service for immediate repair.
HEATING ERROR shown on display and audible alarm sounds	The oven has failed to preheat in the expected time period (30 minutes), gas supply or burner issue is occurring, or the oven was interrupted while heating up.	Press “Dismiss.” Turn oven off and back on again. If unsuccessful and error reoccurs, call for service.
ALL PROBES OPEN shown on display (audible alarm sounds)	All thermocouple probes have failed and are open.	Press “Dismiss.” Call service for immediate repair.
I/O COMM LOST shown on display	Communication between the display (user interface) and the I/O board has occurred.	Press “Dismiss.” Call service for immediate repair.
RESET IGNITION shown on display	Oven burner failed to light / stays lit. 1. Gas not turned on to oven. 2. Gas Pressure too low. 3. Burner has stopped running.	Press “Dismiss.” FOLLOW ON-SCREEN PROMPTS. Turn oven off and back on again to clear the notification and relight.

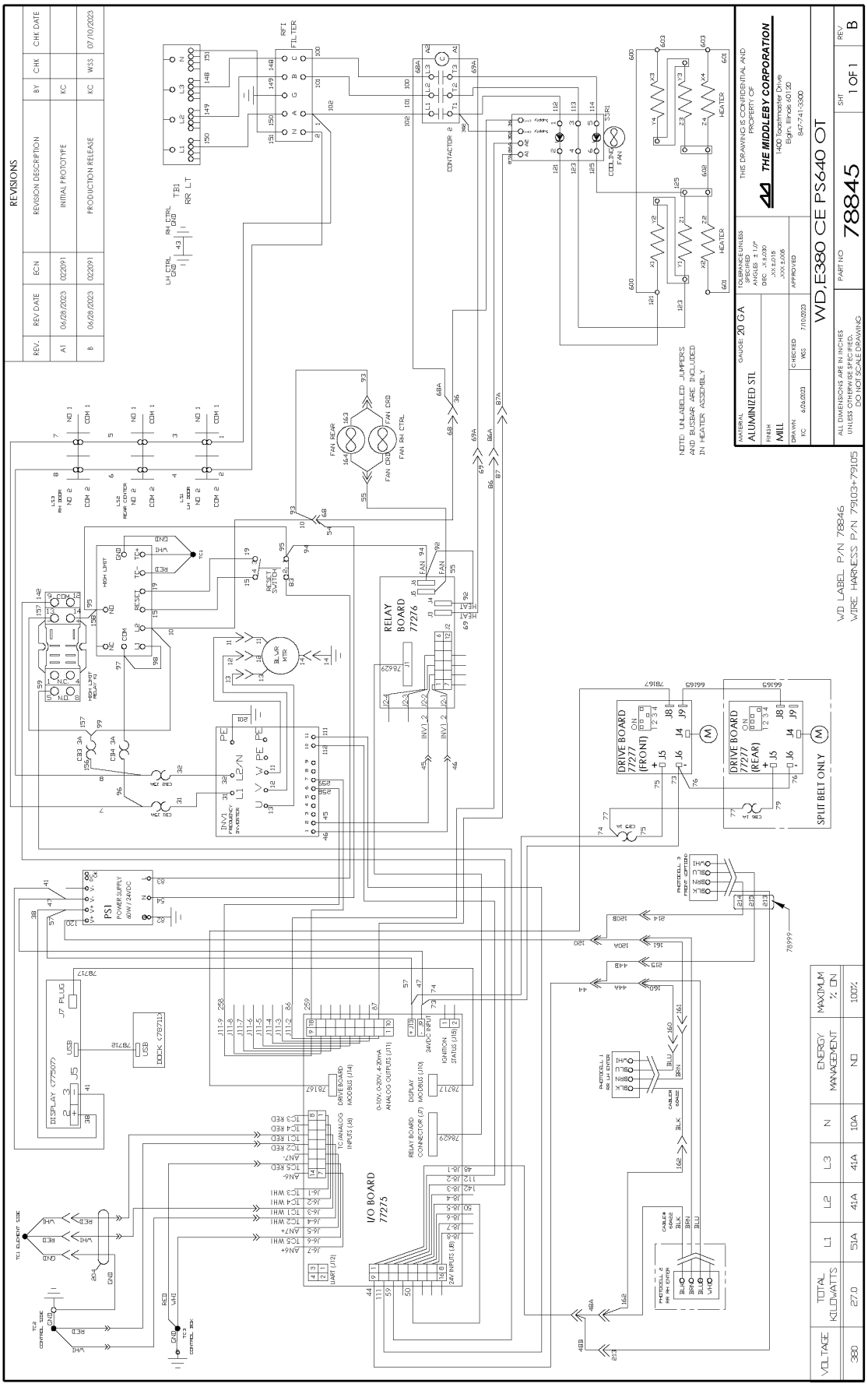
NOTE: If the remedial measures above do not successfully resolve the issue, or the issue is not listed above, contact the Middleby Marshall Customer Care Center at **+1-847-429-7852**.

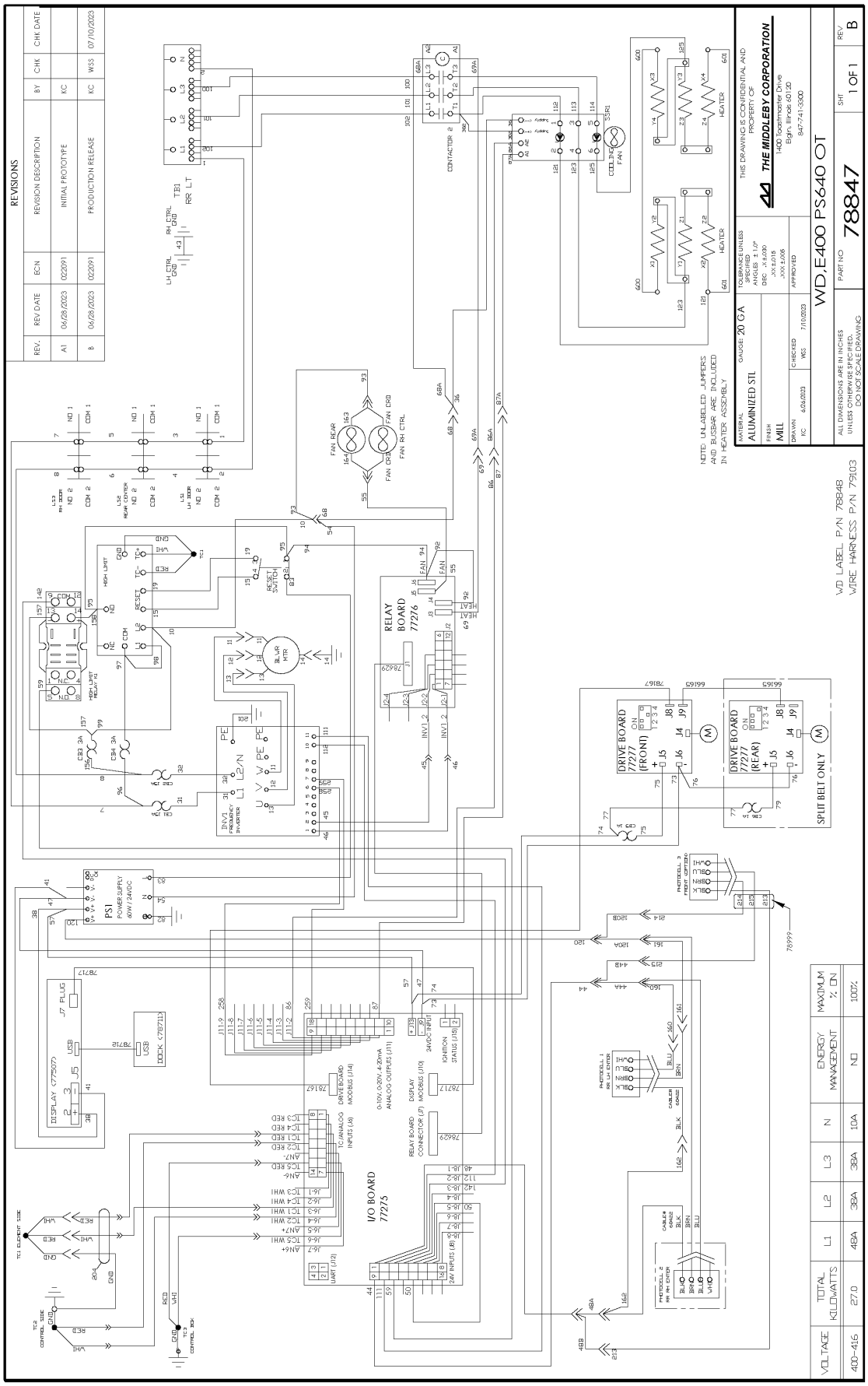
SECTION 6 - WIRING DIAGRAMS



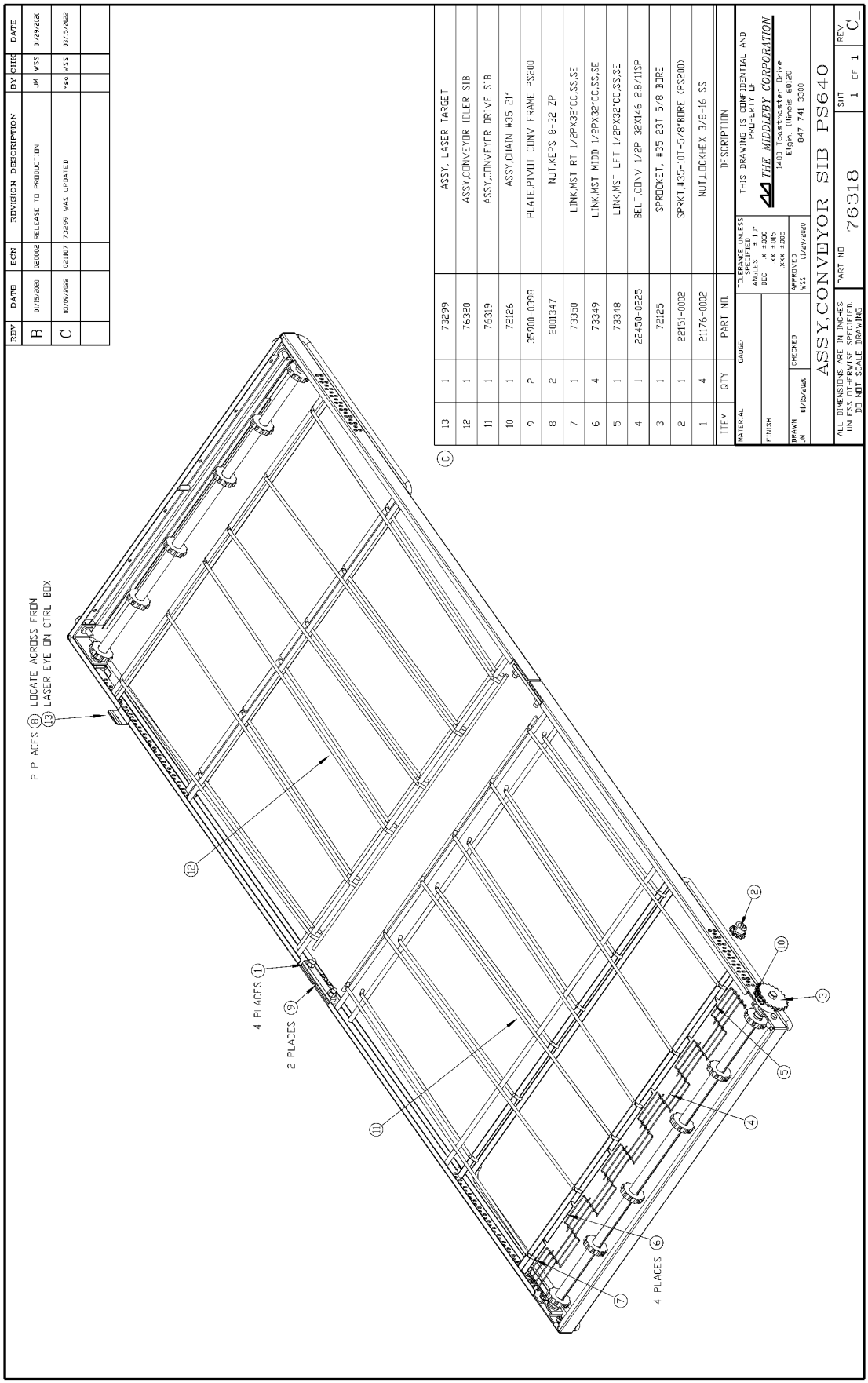

REVISIONS
REV. | REV DATE | ECN | REVISION DESCRIPTION | BY | CHK | CHK DATE
A1 | 04/28/2023 | 022091 | INITIAL PROTOTYPE | KC | |
B | 04/28/2023 | 022091 | PRODUCTION RELEASE | KC | WSS | 07/10/2023
THIS DRAWING IS CONFIDENTIAL AND PROPERTY OF
THE MIDDLEBY CORPORATION
1400 Toastmaster Drive
Elgin, Illinois 60120
847-741-3300
MATERIAL
ALUMINIZED STL
GAUGE: 20 GA
FINISH
MILL
DRAWN
KC
6/06/2023
CHECKED
WSS
7/10/2023
APPROVED
TOLERANCES UNLESS SPECIFIED
ANGLES ± 1/2°
DEC .X ±.030
.XX ±.018
.XXX ±.005
WD,E208-240 PS640 OT
PART NO.
78841
SHT
1 OF 1
REV
B
ALL DIMENSIONS ARE IN INCHES
UNLESS OTHERWISE SPECIFIED.
DO NOT SCALE DRAWING
WD LABEL P/N 78842
WIRE HARNESS P/N 77883
VOLTAGE | TOTAL KILOWATTS | L1 | L2 | L3 | ENERGY MANAGEMENT | MAXIMUM % ON
208 | 27.0 | 65A | 85A | 75A | NO | 100%
240 | 27.0 | 75A | 75A | 65A | NO | 100%
I/O BOARD 77275
RELAY BOARD 77276
DRIVE BOARD 77277 (FRONT)
DRIVE BOARD 77277 (REAR)
SPLIT BELT ONLY
DISPLAY 77507?
POWER SUPPLY 60W / 24VDC
CONTACTOR 1
CONTACTOR 2
FAN REAR
FAN RH CTRL
FAN LH CTRL
RR L-T
HEAT
FAN
BLWR MTR
RESET SWITCH
HIGH LIMIT
INV1 FREQUENCY INVERTER
J7 PLUG
DOCK 77827?
DRIVE BOARD MODBUS (J14)
DISPLAY MODBUS (J17)
IGNITION STATUS (J15)
TC ANALOG INPUTS (J6)
UART (J12)
24V INPUTS (J8)
0-10V, 0-20V, 4-20mA ANALOG OUTPUTS (J11)
RELAY BOARD CONNECTOR (J7)
24VDC INPUT
PHOTOCELL 1 BELT LOADED
PHOTOCELL 2 RH RH ENTER
PHOTOCELL 3 FRONT CONVEYOR
COOLING FAN
78829
78717
78167
78187
66165
78999


REVISIONS
REV. | REV DATE | ECN | REVISION DESCRIPTION | BY | CHK | CHK DATE
A1 | 04/28/2023 | 022091 | INITIAL PROTOTYPE | KC | |
B | 06/28/2023 | 022091 | PRODUCTION RELEASE | KC | WSS | 07/10/2023
THIS DRAWING IS CONFIDENTIAL AND PROPERTY OF
THE MIDDLEBY CORPORATION
1400 Toastmaster Drive
Elgin, Illinois 60120
847-741-3300
MATERIAL: ALUMINIZED STL GAUGE: 20 GA
FINISH: MILL
DRAWN: KC 6/26/2023
CHECKED: WSS 7/10/2023
APPROVED
TOLERANCE UNLESS SPECIFIED: ANGLES ± 1/2° DEC .X ±.030 .XX ±.010 .XXX ±.005
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. DO NOT SCALE DRAWING
PART NO. 78843
WD,E380 PS640 OT
SHT 1 OF 1
REV B
WD LABEL P/N 78844
WIRE HARNESS P/N 79103
I/O BOARD 77275
RELAY BOARD 77276
DRIVE BOARD 77277 (FRONT)
DRIVE BOARD 77277 (REAR)
SPLIT BELT ONLY
POWER SUPPLY 60W / 24VDC
DISPLAY
DOCK
FAN REAR
FAN CTRL
FAN RH CTRL
HEATER
CONTACTOR 2
COOLING FAN
HIGH LIMIT
RESET SWITCH
BLWR MTR
INV1 FREQUENCY INVERTER
TC1 ELEMENT SIDE
TC2 CONTROL SIDE
TC3 CONTROL SIDE
LH CTRL GND
RH CTRL GND
TB1 RR LT
LS1 LH DOOR
LS2 REAR CENTER
LS3 RH DOOR
VOLTAGE | TOTAL KILOWATTS | L1 | L2 | L3 | N | ENERGY MANAGEMENT | MAXIMUM % ON
380 | 27.0 | 51A | 41A | 41A | 10A | NO | 100%

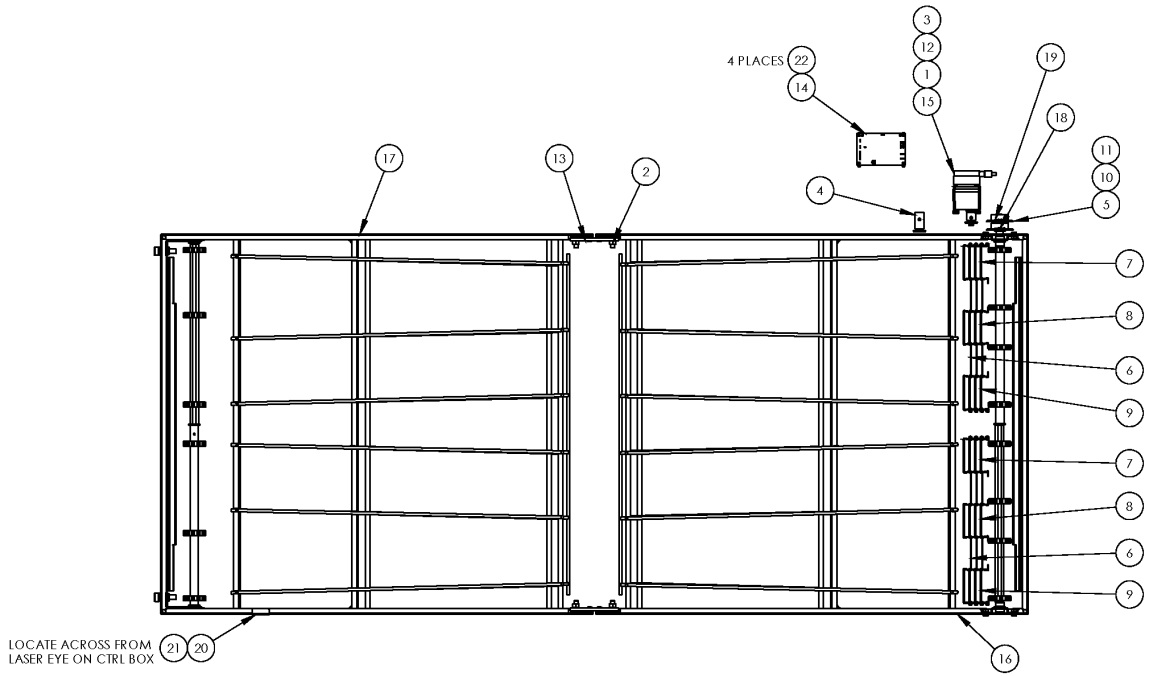

REVISIONS
REV. | REV DATE | ECN | REVISION DESCRIPTION | BY | CHK | CHK DATE
A1 | 04/28/2023 | 022091 | INITIAL PROTOTYPE | KC | |
B | 06/28/2023 | 022091 | PRODUCTION RELEASE | KC | WSS | 07/10/2023
THE MIDDLEBY CORPORATION
1400 Toastmaster Drive
Elgin, Illinois 60120
847-741-3300
WD,E380 CE PS640 OT
PART NO. 78845
SHT 1 OF 1
REV B
MATERIAL ALUMINIZED STL
GAUGE 20 GA
FINISH MILL
DRAWN KC 4/26/2023
CHECKED MS 7/10/2023
APPROVED
TOLERANCE UNLESS SPECIFIED ANGLES ± 1/2° DEC .X ±.030 .XX ±.010 .XXX ±.005
THIS DRAWING IS CONFIDENTIAL AND PROPERTY OF
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. DO NOT SCALE DRAWING
NOTE: UNLABELED JUMPERS AND BUSBAR ARE INCLUDED IN HEATER ASSEMBLY
WD LABEL P/N 78846
WIRE HARNESS P/N 79103+79105
I/O BOARD 77275
RELAY BOARD 77276
DRIVE BOARD 77277 (FRONT)
DRIVE BOARD 77277 (REAR)
SPLIT BELT ONLY
POWER SUPPLY 60W / 24VDC
DISPLAY
CONTACTOR 2
FILTER
HEATER
FAN
COOLING FAN
VOLTAGE 380
TOTAL KILOWATTS 27.0
L1 51A
L2 41A
L3 41A
N 10A
ENERGY MANAGEMENT ND
MAXIMUM % ON 100%

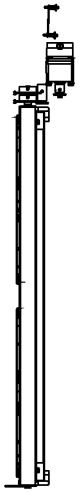

REVISIONS
REV. | REV DATE | ECN | REVISION DESCRIPTION | BY | CHK | CHK DATE
A1 | 04/28/2023 | 022091 | INITIAL PROTOTYPE | KC | | 07/10/2023
B | 04/28/2023 | 022091 | PRODUCTION RELEASE | KC | WSS |
THIS DRAWING IS CONFIDENTIAL AND PROPERTY OF
THE MIDDLEBY CORPORATION
1400 Toastmaster Drive
Elgin, Illinois 60120
847-741-3300
WD,E400 PS640 OT
PART NO. 78847
SHT 1 OF 1
REV B
MATERIAL: ALUMINIZED STL
GAUGE: 20 GA
FINISH: MILL
DRAWN KC 4/24/2023
CHECKED WSS 7/10/2023
APPROVED
TOLERANCE UNLESS SPECIFIED: ANGLES ± 1/2° DEC .X ±.030 .XX ±.010 .XXX ±.005
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. DO NOT SCALE DRAWING
NOTE: UNLABELED JUMPERS AND BUSBAR ARE INCLUDED IN HEATER ASSEMBLY
WD LABEL P/N 78848
WIRE HARNESS P/N 79103
VOLTAGE: 400-416
TOTAL KILOWATTS: 27.0
L1: 48A
L2: 38A
L3: 38A
N: 10A
ENERGY MANAGEMENT: NO
MAXIMUM % ON: 100%
I/O BOARD 77275
RELAY BOARD 77276
DRIVE BOARD 77277 (FRONT)
DRIVE BOARD 77277 (REAR)
SPLIT BELT ONLY
DISPLAY 77507?
POWER SUPPLY 60W / 24VDC
PS1
INV1 FREQUENCY INVERTER
BLWR MTR
HEATER
CONTACTOR 2
COOLING FAN
FAN REAR
FAN RH CTRL
FAN RH CTRL GND
LH CTRL GND
RESET SWITCH
HIGH LIMIT
TC1 ELEMENT SIDE
TC2 CONTROL SIDE
TC3 CONTROL SIDE
DISPLAY
DOCK 77871?
RELAY BOARD CONNECTOR (J7)
DISPLAY MODBUS (J10)
DRIVE BOARD MODBUS (J14)
0-10V, 0-20mA, 4-20mA ANALOG OUTPUTS (J11)
24VDC INPUT
IGNITION STATUS (J15)
TC/ANALOG INPUTS (J6)
UART (J12)
24V INPUTS (J8)
PROTOCELL 1 RH EXIT
PROTOCELL 2 RH RH ENTER
PROTOCELL 3 RIGHT CENTER
CABLE 40AWG
CABLE 22AWG
LS1 LH DOOR
LS2 REAR CENTER
LS3 RH DOOR
TB1 RR LT
J7 PLUG
USB
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SECTION 7 - ASSEMBLY DRAWINGS



REVISIONS						
REV.	REV DATE	ECN	REVISION DESCRIPTION	BY	CHK	CHK DATE
A1	06/28/2023	022091	INITIAL PROTOTYPE	KC		
B	6/28/2023	022091	PRODUCTION RELEASE	KC	WSS	07/10/2023

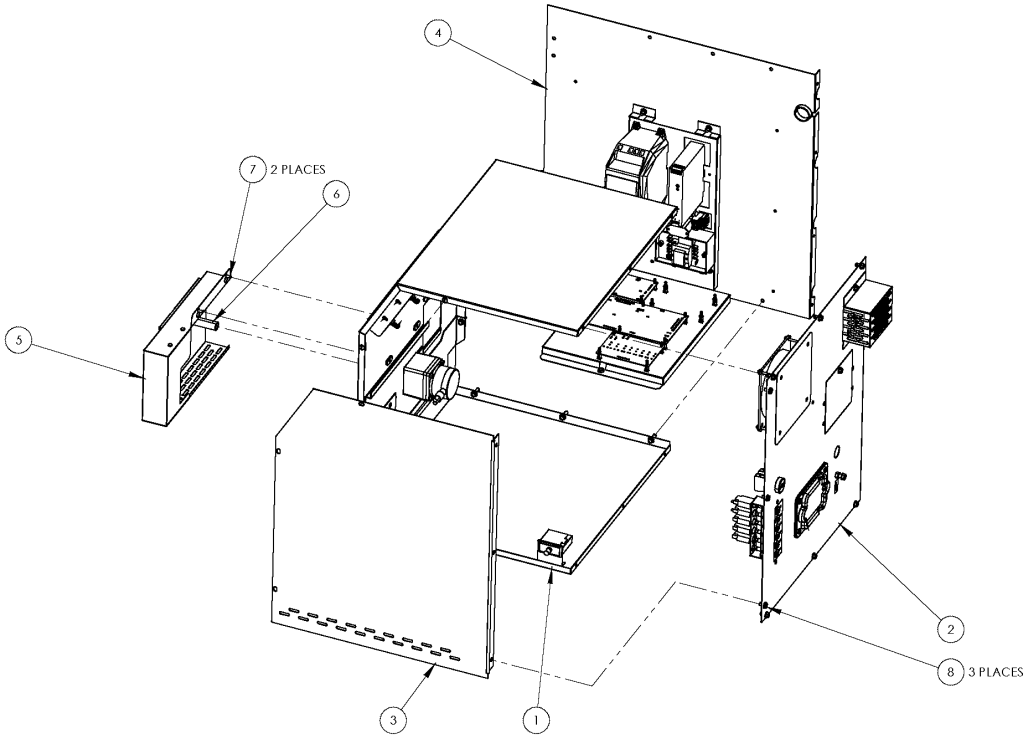




ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
12	4	21426-0002	WASHER,LOCK SS 1/4	24	1	78869	WIRESET,SPLIT BELT ONETOUCH
11	1	35900-0023	BUSH,SPROCKET-FRONT DRIVE	23	1	66165	CABLE,MTR BD 7" PS636 (NOT SHOWN)
10	1	35000-1531	SPACER,NYLON (360SB)	22	4	74301	STANDOFF,PCS-8 NYLON
9	2	73350	LINK,MST RT 1/2PX32"CC,SS,SE	21	2	2001347	NUT,KEPS 8-32 ZP
8	2	73349	LINK,MST MIDD 1/2PX32"CC,SS,SE	20	1	73299	ASSY, LASER TARGET
7	2	73348	LINK,MST LFT 1/2PX32"CC,SS,SE	19	1	60998	ASSY,CHAIN ROLLER #25 X 14
6	2	22450-0226	BELT,CONV WIRE SS 15	18	1	60996	ASSY,CHAIN ROLLER #25 X 21
5	2	74120	SPRKT, #25 28T 5/8 B	17	1	76331	ASSY,CONVEYOR IDLER SPB
4	1	74119	SPRKT, #25 12T 10MM B X 1.7L	16	1	76330	ASSY,CONVEYOR DRIVE SPB
3	1	74118	SPRKT, #25 12T 10MM B X 1.0L	15	1	74106	MOTOR,GEAR 1:200 25W TELCO
2	4	21176-0002	NUT,LOCKHEX SS 3/8-16	14	1	77277	BOARD,DRIVE
1	4	55486	SCR,HEX HEAD 1/4-20X 3/4 SS	13	2	35900-0398	PLATE,PIVOT CONV FRAME PS200

MATERIAL	GAUGE:	TOLERANCE UNLESS SPECIFIED ANGLES ± 1.0° DEC .X ±.030 .XX ±.015 .XXX ±.006	THIS DRAWING IS CONFIDENTIAL AND PROPERTY OF THE MIDDLEBY CORPORATION 1400 Toastmaster Drive Elgin, Illinois 60120 847-741-3300
FINISH		APPROVED	
DRAWN KC 5/19/2023	CHECKED WSS 7/10/2023		
ASSY,CONVEYOR 16/16 X 40 OT			
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. DO NOT SCALE DRAWING	PART NO 78873	SHT 1 OF 1	REV B

REVISIONS						
REV.	REV DATE	ECN	REVISION DESCRIPTION	BY	CHK	CHK DATE
A1	06/28/2023	022091	INITIAL PROTOTYPE	KC		
B	6/28/2023	022091	PRODUCTION RELEASE	KC	WSS	07/10/2023



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
8	3	2000203	SCR,MS SL HX W/HD 10-32X3/8 SS
7	2	2000105	SCR,MS SLT TRHD 8-32X3/8 18-8
6	1	72325	ADAPTER,MOTOR SHAFT
5	1	59638	ASSY,CHAIN COVER
4	1	77405	ASSY,PANEL RH
3	1	77419	WLDMT,CTRL DOOR/HINGE
2	1	77410	ASSY,CTRL REAR RH
1	1	77401	ASSY,CTRL BOX RH

MATERIAL | GAUGE:
FINISH
DRAWN KC 1/12/2023 | CHECKED WSS 7/10/2023
TOLERANCE UNLESS SPECIFIED
ANGLES ± 1.0°
DEC .X ±.030
.XX ±.018
.XXX ±.005
APPROVED

THIS DRAWING IS CONFIDENTIAL AND PROPERTY OF

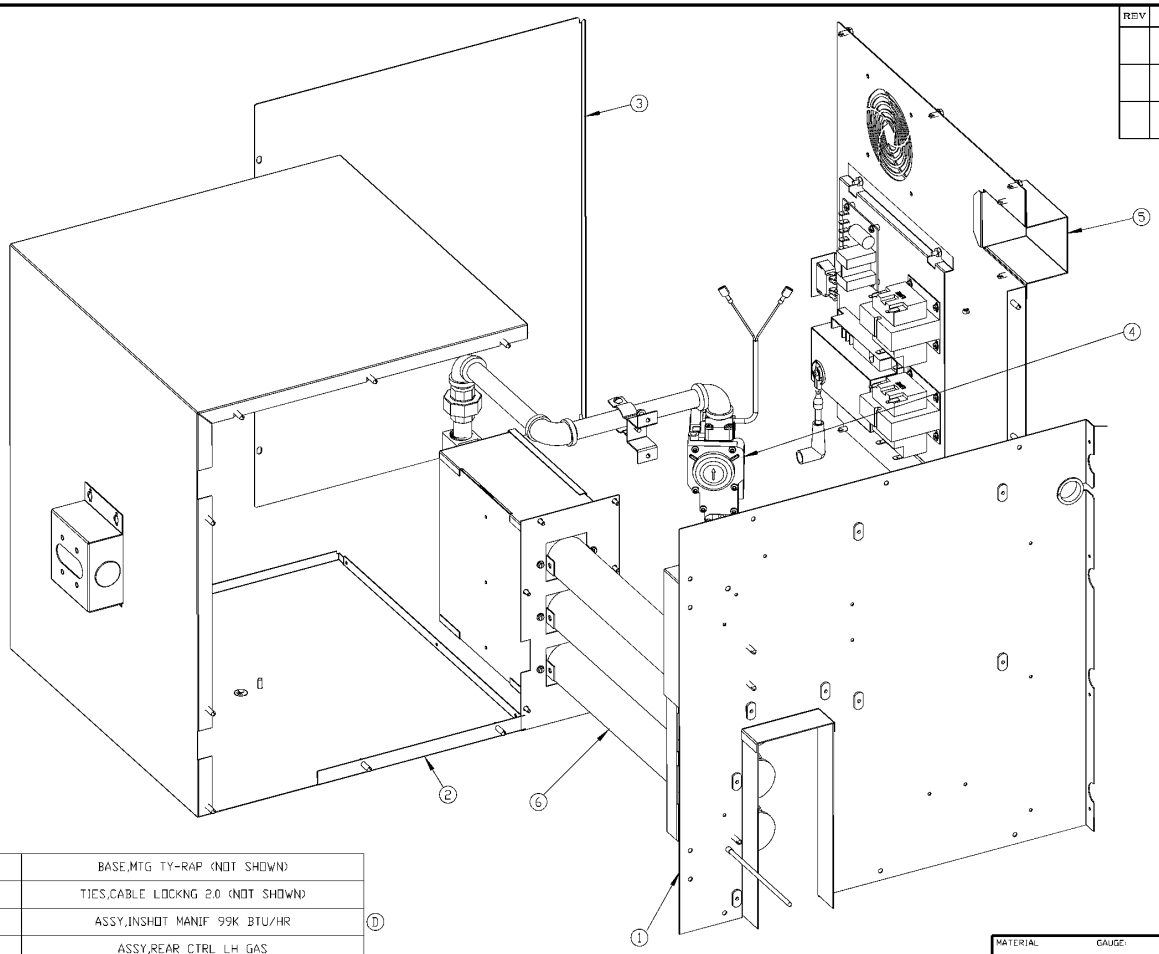
THE MIDDLEBY CORPORATION
1400 Toastmaster Drive
Elgin, Illinois 60120
847-741-3300

ASSY,CTRL RH

ALL DIMENSIONS ARE IN INCHES
UNLESS OTHERWISE SPECIFIED,
DO NOT SCALE DRAWING

PART NO 77400 | SHT 1 OF 1 | REV B

REV	DATE	ECN	REVISION DESCRIPTION	BY	CHK	DATE



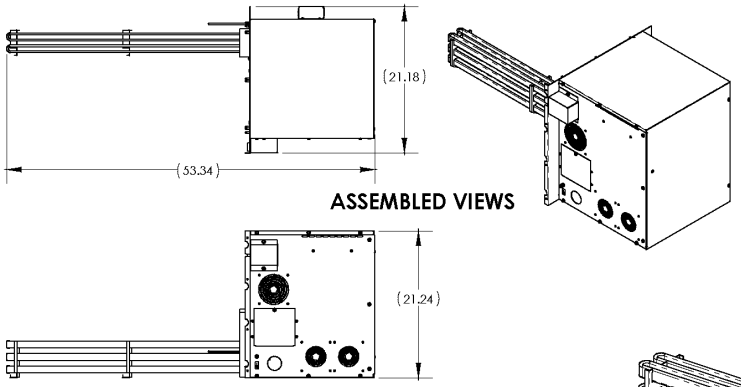
ITEM	QTY	PART NO.	DESCRIPTION	
8	5	3002682	BASE,MTG TY-RAP (NOT SHOWN)	
7	5	27311-0003	TIES,CABLE LOCKNG 2.0 (NOT SHOWN)	
6	1	71049	ASSY,INSHOT MANIF 99K BTU/HR	(D)
5	1	60693	ASSY,REAR CTRL LH GAS	
4	1	71050	ASSY,GAS TRAIN HNYWL	
3	1	78224	DOOR,CTRL LH 40 SERIES	(G)
2	1	78223	ASSY,CTRL BOX LH 640/740/840	(C)(E)(G)
1	1	59393	ASSY,PLT DTR LH	

MATERIAL GAUGE:		TOLERANCE UNLESS SPECIFIED ANGLES ± 1.0° DEC .X ±.030 .XX ±.015 XXX ±.005	THIS DRAWING IS CONFIDENTIAL AND PROPERTY OF THE MIDDLEBY CORPORATION 1400 Toastmaster Drive Elgin, Illinois 60120 847-741-3300
FINISH			
DRAWN MM 11/21/2014	CHECKED RVC 04/16/2015	APPROVED WSS 04/21/2015	

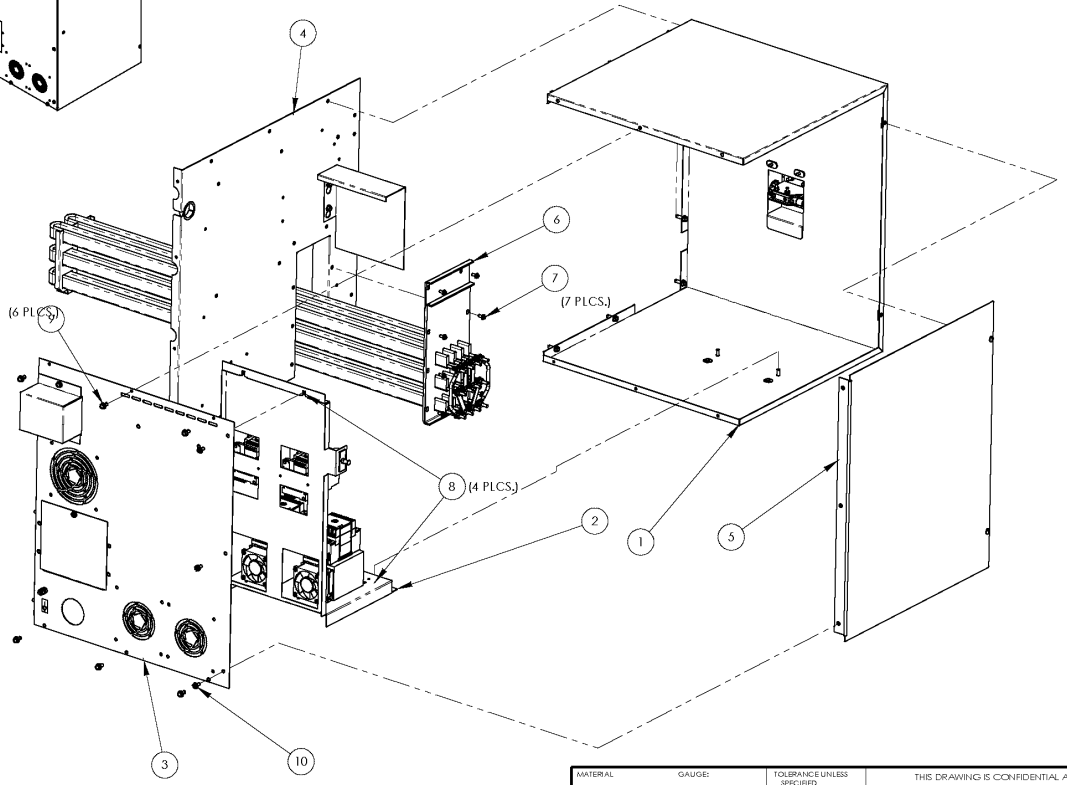
ASSY,CTRL LH 640/740/840G L-R

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. DO NOT SCALE DRAWING.	PART NO 71048	SHT 1 OF 1 / REV G_

REV.	REV DATE	ECN	REVISION DESCRIPTION	BY	CHK	CHK DATE
A1	06/28/2023	022091	INITIAL PROTOTYPE	KC		



ASSEMBLED VIEWS



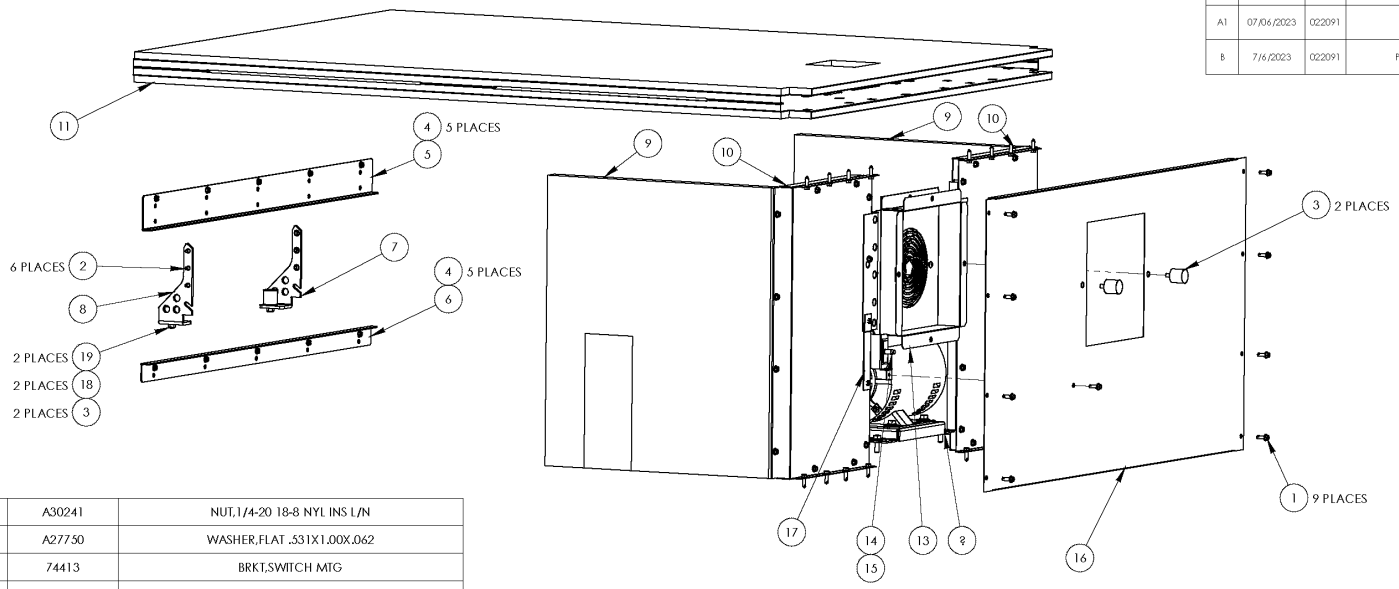
ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
10	3	2000203	SCR,MS SL HX W/HD 10-32X3/8 SS
9	6	2000852	SCR,TEKS HWH 10-16X1/2 ZP
8	4	2001371	NUT,KEPS 10-32 ZP
7	7	44661	SCR,REG HWH 8-32X3/8 NP
6	1	60750	KIT,HTG ELEMENT 208V 27KW
5	1	59609	WLDMT,CTRL DOOR LH
4	1	59393	ASSY,PLT OTR LH
3	1	60152	ASSY,CTRL BACK LH
2	1	78177	ASSY,CTRL RR COMP 208-380 VE
1	1	59395	ASSY,CTRL BOX LH 640/740/840

MATERIAL	GAUGE:	TOLERANCE UNLESS SPECIFIED ANGLES ± 1.0° DEC .X ±.030 .XX ±.018 .XXX ±.005	THIS DRAWING IS CONFIDENTIAL AND PROPERTY OF THE MIDDLEBY CORPORATION 1400 Toastmaster Drive Elgin, Illinois 60120 847-741-3300
FINISH			
DRAWN KC 5/16/2023	CHECKED	APPROVED	

ASSY,CTRL LH 208V

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED, DO NOT SCALE DRAWING	PART NO 78856	SHT 1 OF 1	REV A1

REVISIONS						
REV.	REV DATE	ECN	REVISION DESCRIPTION	BY	CHK	CHK DATE
A1	07/06/2023	022091	INITIAL PROTOTYPE	KC		
B	7/6/2023	022091	PRODUCTION RELEASE	KC	WSS	07/10/2023



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
19	2	A30241	NUT,1/4-20 18-8 NYL INS L/N
18	2	A27750	WASHER,FLAT .531X1.00X.062
17	1	74413	BRKT,SWITCH MTG
16	1	74412	PANEL,REAR OUTER
15	1	68333	INSUL, DOOR SW
14	1	63910	SWITCH,MOMENTARY 12A NO2P
13	1	60733	ASSY,BACK COVER/FAN
12	1	79126	ASSY,BLOWER COMP
11	1	59648	ASSY,ROOF
10	2	59438	ASSY,BACK WALL
9	2	59427	INSUL,REAR SIDE
8	1	58567	BRKT,WINDOW HINGE RT
7	1	58566	BRKT,WINDOW HINGE LT
6	1	50547	SUPPORT,LWR FINGER PS540
5	1	50531	SUPPORT,UPR FINGER PS540
4	10	50281	SCR,#12X1/2 SL HX W/HD T/S ZC
3	4	30927	BUMPER,WINDOW PS570S
2	6	3023A8811	SCR,FHMS 8-32X1/2 NP
1	9	21296-0005	SCR,HX WSHHD 12-14X3/4 SS BSD

MATERIAL GAUGE:
FINISH
DRAWN KC 7/6/2023
CHECKED WSS 7/10/2023
TOLERANCE UNLESS SPECIFIED
ANGLES ± 1.0°
DEC .X ±.030
.XX ±.018
.XXX ±.006
APPROVED

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1400 Toastmaster Drive
Elgin, Illinois 60120
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ASSY,PARTS FINAL

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DO NOT SCALE DRAWING

PART NO 79127

SHT 1 OF 1

REV B

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.

NOTICE

ALL parts replacement and appliance servicing should be performed by Your Middleby Marshall Authorized Service Agent. Service that is performed by parties other than Your Middleby Marshall Authorized Service Agent may void your warranty.

NOTICE

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

NOTICE

Middleby Marshall reserves the right to change specifications at any time.

CFESA

Commercial Food Equipment Service Association

Middleby is proud to support the Commercial Food Equipment Service Association (CFESA). We recognize and applaud CFESA's ongoing efforts to improve the quality of technical service in the industry.

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