Middleby Marshall®
A MIDDLEBY COMPANY

OWNER'S OPERATING & INSTALLATION MANUAL

X70G/X55G-Series Gas Ovens
Models X70G & X55G

Combinations:

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



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P/N 77538 rev B

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.

Middleby Marshall suggests a service contract with a Middleby Authorized Service Agent (ASA).

DEFINITIONS

DANGER

INDICATES A HAZARDOUS SITUATION THAT, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.

WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates situations not related to physical injury that, if not avoided, could cause damage to the machine or surrounding property and could affect warranty coverage.

IMPORTANT

Includes other information required by the operator or installer.

WARNING

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

- ***Children should be supervised to ensure that they do not play with the appliance.***
- ***Cleaning and user maintenance shall not be made by children without supervision.***

RETAIN THIS MANUAL FOR FUTURE REFERENCE

WARNING

In a prominent location, post 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.

WARNING

For your safety, do not store or use gasoline or other flammable vapors and 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, operation, and maintenance instructions thoroughly before installing or servicing the equipment.

IMPORTANT

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

IMPORTANT

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

NOTICE

Contact your Middleby Authorized Service Agent to install and perform maintenance and repairs and if necessary to convert equipment for use with other gases. An authorized service agency directory is supplied with your oven and available here: https://middlebymarshall.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 certified installer.

NOTICE

The equipment is only for professional use and shall be used by qualified personnel.

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 warranty**.

Seller shall be responsible only for repairs or replacements of defective parts performed by Seller's authorized service personnel. Authorized service agencies 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 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 occur during the course of installation of equipment, or which result from the use or misuse by Buyer, its employees or others of the equipment supplied hereunder. 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.

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SECTION 1
DESCRIPTION

I. MODEL IDENTIFICATION

X70G/X55G-Series gas ovens can be used to bake and/or cook a wide variety of food products, such as pizza, pizza-type products, cookies, sandwiches, and others. The X70G/X55G-Series gas ovens may be used either as a single oven or stacked for use as double or triple ovens.

Oven Features

Middleby Marshall continuous batch conveyor ovens bake both faster and at a lower temperature than other ovens. Patented vertical columns of hot air move heat aerodynamically instead of using high temperatures. This patented system complements customers' unique products, especially fresh dough product, providing continuous proofing and dough development throughout the baking cycle. The X70G/X55G-Series gas ovens design evolves the technology of the PS500 and 600 series models into a more operationally functional unit for the production and high-volume restaurant environment.

The X70G/X55G-Series *WOW!*^{2} oven features an Energy Management System (EMS) that automatically reduces gas consumption. The keypad display is pre-programmed into an energy saving mode. Automatic "energy eye" saves gas when no product is in the oven.

Oven Sizes

- X70G - 106.1" (2,692mm) Overall Length
- X55G - 90.78" (2,305.8mm) Overall Length

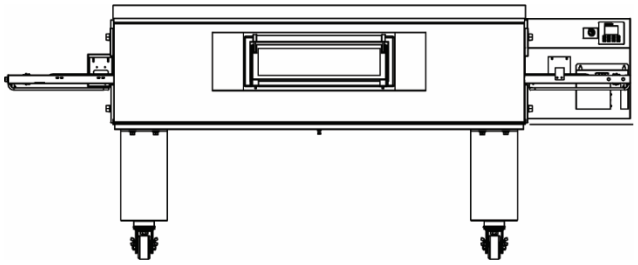


Figure 1. X70G Single Oven

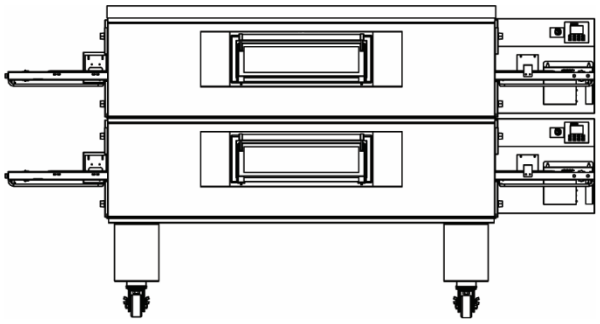


Figure 2. X70G Double Oven

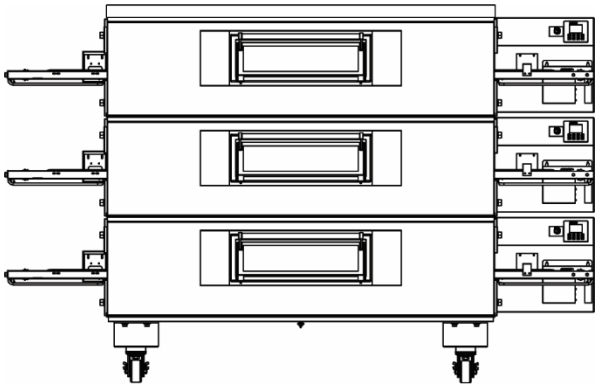


Figure 3. X70G Triple Oven

II. X70G/X55G SERIES SPECIFICATIONS

RECOMMENDED MINIMUM CLEARANCES

	Rear of Oven to Wall	*Control end of Conveyor to Wall*	*Non-control end of Conveyor to Wall*
Domestic and std. export	6" 152mm	6" 152mm	6" 152mm

X70G/X55G SERIES OVEN SPECIFICATIONS

Dimensions	*Single Oven*	*Double Oven*	*Triple Oven*
Overall Height	43.25" (1,131mm)	56.27" (1,575mm)	68.31" (1,753mm)
Overall Depth	59.14" (1,690mm)	59.14" (1,690mm)	59.14" (1,690mm)
Overall Length			
X70	106.1" (2,692mm)	106.1" (2,692mm)	106.1" (2,692mm)
X55	90.78" (2,305.8mm)	90.78" (2,305.8mm)	90.78" (2,305.8mm)
Conveyor Width	32" (813mm)	32" (813mm)	32" (813mm)

General Specifications

Weight	1,750lbs.(795kg)	3,500lbs. (1,589kg)	5,250lbs. (2,384kg)
Rated Heat Input (per oven cavity)			
X70	160,000 BTU/Hr/Oven (168.8 MJ)		
X55	140,000 BTU/Hr/Oven (147.7 MJ)		
Maximum Operation Temperature	600°F / 315°C		
Air Blowers	Two blowers: 40 Hz Minimum and 90 Hz Maximum (see finger configuration)		
Warm-up Time	20 minutes		

X70G/X55G SERIES ELECTRICAL SPECIFICATIONS

Main Blower Voltage	*Control Circuit Voltage*	*Phase*	*Frequency*	*Current Draw**	*Poles*	*Wires*
208-240VAC	24VDC	1	50/60 Hz	12 Amps	2	3 Wire (2 hot, 1 ground)

** The current draw ratings shown above are maximum values for normal operation, amperage draw will be less than the listed value.*

***NOTE:** Each oven includes a 6 ft cord with NEMA# L6-20P plug. Customer to provide NEMA# L6-20R receptacle.*

X70G/X55G SERIES GAS SUPPLY SPECIFICATIONS

Gas Type	*Inlet Pressure***	*Manifold Pressure*	*Main Orifice Diameter***	*Fixed Bypass Orifices***
Natural				
X70	8-12" W.C. (20-30 mbar)	3.5" W.C. (8.7 mbar)	0.1654" (4.2mm) Dia. P/N 77494	#46 Drill – 0.081" (2.057mm) Dia. P/N 49951
X55	8-12" W.C. (20-30 mbar)	3.5" W.C. (8.7 mbar)	#24 Drill – 0.152" (3.86mm) Dia. P/N 76978	#46 Drill – 0.081" (2.057mm) Dia. P/N 49951
Propane				
X70	8-12" W.C. (20-30 mbar)	6.0" W.C. (14.9 mbar)	#32 Drill – 0.116" (2.95mm) Dia. P/N 77493	#53 Drill – 0.059" (1.49mm) Dia. P/N 22174-0006
X55	8-12" W.C. (20-30 mbar)	6.0" W.C. (14.9 mbar)	#36 Drill – 0.1065" (2.7mm) Dia. P/N 77272	#53 Drill – 0.059" (1.49mm) Dia. P/N 22174-0006

*** The gas supply pressures and orifice sizes shown are for ovens installed in North America. The required gas supply pressures and orifice sizes of ovens installed in other locations are dependent on the local gas type and on all applicable local codes.*

NOTE: Wiring Diagrams are contained in Section 6 of this manual and are also located inside the oven at the bottom of the Control Panel. Additional electrical information is provided on the oven's serial plate.

This Manual Must Be Kept For Future Reference.

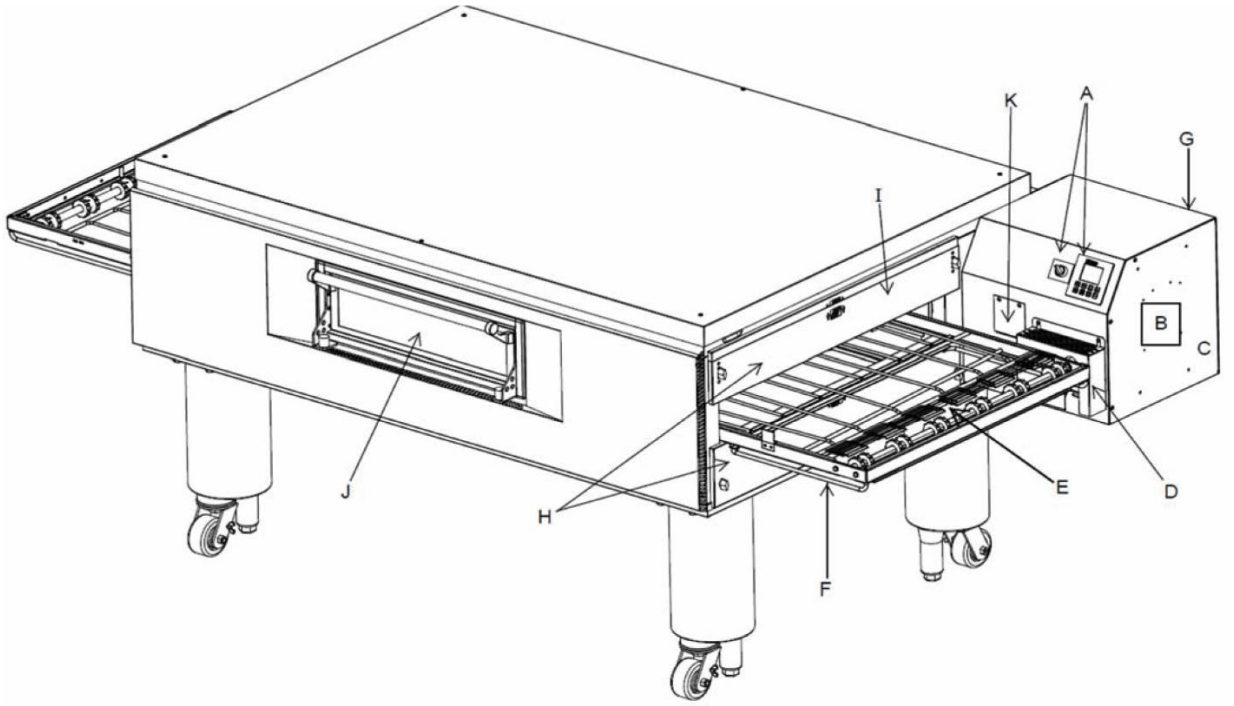


Figure 4. X70G/X55G Series Oven Component Locations

III. COMPONENT FUNCTION

A. On/Off Switch & Control Panel (User Interface)

On/Off switch allows the operator to completely power off the oven. Control panel allows operator to adjust bake time and temperature as well as entrance side and exit side air flow. Also provides diagnostic messages for oven operation.

B. Serial Data Plate

Provides specifications for the oven that affect installation and operation.

C. Reset Circuit Breakers

Resets the circuit in the event of overload.

D. Conveyor Drive Motor

Moves the conveyor (located inside right rear control cabinet).

E. Conveyor

Moves the food product through the oven.

F. Crumb Pans

Catches crumbs and other materials that drop through the conveyor belt(s). One crumb pan is located at each end of the lower unit's conveyor belt.

G. High Limit Reset Button

On rear of control box.

H. End Plugs

Allows access to the oven's interior baking chamber.

I. Air Curtains or Eyebrows

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

J. Window

Allows the user to access food products inside the baking chamber.

K. Photo Cell or Electronic Eye

Allows the oven to enter and exit Energy Savings Mode.

L. Main Blowers (not shown)

Project hot air from burner (not shown) to and thru the air fingers.

M. Air Impingement Fingers (not shown)

Direct air in controlled fashion to the product being baked through a patterned arrangement of extruded nozzles (inside cavity above and below conveyor).

NOTES:

SECTION 2
INSTALLATION

WARNING

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

• Perform a gas leak test.

• Test for correct air supply, particularly to the burner blower.

• Test for proper combustion and gas supply.

• Check that the ventilation system is in operation.

WARNING

Keep the appliance area free and clear of combustibles.

WARNING

The X70 units require 6" (152mm) clearance on all sides.

WARNING

The oven must be installed on an even (level) non-flammable flooring and any adjacent walls must not be flammable. Recommended minimum clearances are specified in the Description section of this manual.

WARNING

Do not obstruct the flow of ventilation air to and from your 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 noncombustible 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 (304mm) beyond the equipment on all sides.

NOTICE

For additional installation information, contact your local Authorized Service Agent.

NOTICE

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

IMPORTANT

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, 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 with 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 National Electrical 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.

CAUTION

It is recommended that the oven be placed under a ventilation hood for adequate air supply and ventilation.

I. UNLOADING AND ROUGH-IN

Your Middleby Marshall X70G/PX55G-Series Oven is shipped partially assembled. It will arrive in a carton on a crate.

The crate and carton must be examined before signing the Bill of Lading. Report any visible damage to the transport company, and check for the proper number of crates. If apparent damage is found, make arrangements to file a claim against the carrier. Surface Interstate Commerce Regulations (U.S.A.) require that the claim must be initiated by the consignee within 10 days from the date that the shipment is received.

X70G/PX55G OVEN INSTALLATION REQUIRED KITS AND EQUIPMENT

	Gas Oven Installation Kit P/N 77594	*Single or Double Oven Option Base w/15" Legs, Casters & Top Kit P/N 76771 for X70G P/N 77086 for X55G*	*Single or Double Oven Option Base w/10" Legs, Casters & Top Kit P/N 77609 for X70G P/N 77613 for X55G*	*Triple Oven Option Base w/Casters & Top Kit P/N 77610 for X70G P/N 77614 for X55G*
X70G-1 / X55G-1	1	1		
X70G-2 / X55G-2	2		1	
X70G-3 / X55G-3	3			1

PARTS LIST FOR SERIES X70G/X55G-Series GAS OVEN INSTALLATION KIT
Single Oven Requires One P/N 77594
(Two required for double oven)
(Three required for triple oven)

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	22361-0001	FLEXIBLE GAS HOSE
2	1	22450-0130	BAG, POLY 4 MIL 9" X 12" with MINI GRIP
3	1	23115-0010	GAS 3/4 BALL “FP” T HANDLE VALVE
4	1	42612	SUPPLEMENT SERVICE AGENCY LIST KIT
5	1	47430	CARTON 10 X 10 X 36
6	1	61823	BACK SIDE CONV EXT STOP
7	1	72782	TAP & ADAPTER ASSY
8	1	72835	EXTRUDED 29.25" END STOP

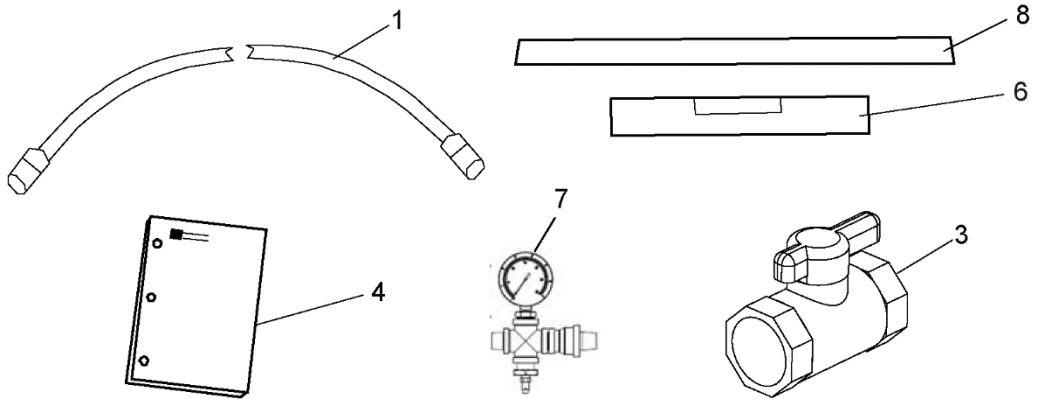


Figure 5. X70G/X55G-Series Gas Oven Installation Parts

PARTS LIST FOR SINGLE and DOUBLE X70G OVEN BASE/TOP KIT with 15" LEGS P/N: 76771

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	76772	BASE ASSEMBLY (X70 Series)
2	1	77470	COVER ASSEMBLY/CORNER BRACE with SCREWS
3	4	61828	15" LEG WELDMENT
4	4	74319	6" CASTER with BRAKE & 4" WHEEL
5	4	22450-0028	6" ADJUSTABLE LEVELING LEG with 3/4" STUD
6	16	21416-0003	WASHER, FLAT 1/2 SS
7	16	2001045	SCREW, CAP HEX HEAD 1/2-13 x 1 ZP
8	16	21426-0004	WASHER, LOCK 1/2 SS
9	1	31239	NUT, HEX FLANGE LOCKING 5/16-18
10	1	61832	SCREW, HEX 5/16-18 1-1/2"

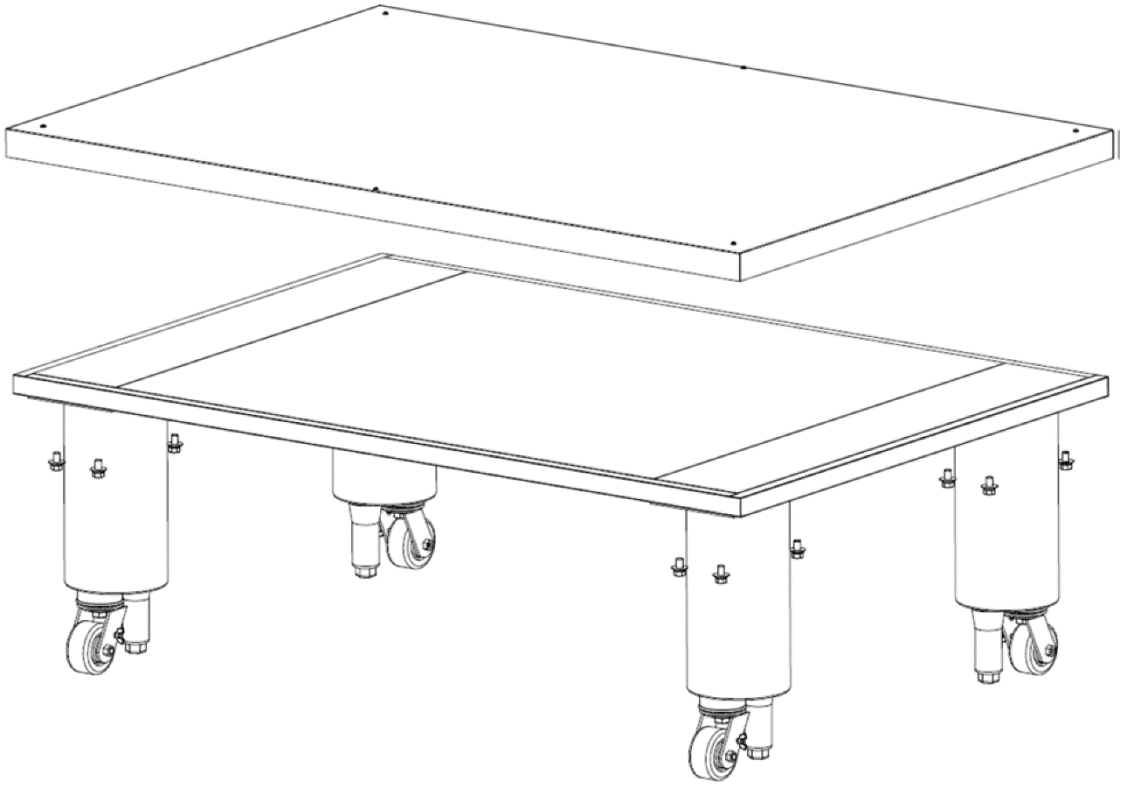


Figure 6. Single and Double X70G Oven Base with 15" Legs/Top Kit P/N: 76771

PARTS LIST FOR SINGLE and DOUBLE X55G OVEN BASE/TOP KIT with 15" LEGS P/N: 77086

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	22450-0228	RESTRAINING DEVICE
2	1	77088	BASE ASSEMBLY (X55 Series)
3	1	77492	COVER ASSEMBLY/CORNER BRACE
4	4	61828	15" LEG WELDMENT
5	4	74319	CASTER STUD with BRAKE & 4" WHEEL
6	4	22450-0028	6" ADJUSTABLE LEVELING LEG with 3/4" STUD
7	16	21416-0003	WASHER, FLAT 1/2 SS
8	16	2001045	SCREW, CAP HEX HEAD 1/2-13 x 1 ZP
9	16	21426-0004	WASHER, LOCK 1/2 SS
10	1	31239	NUT, HEX FLANGE LOCKING 5/16-18
11	1	61832	SCREW, HEX 5/16-18 1-1/2"

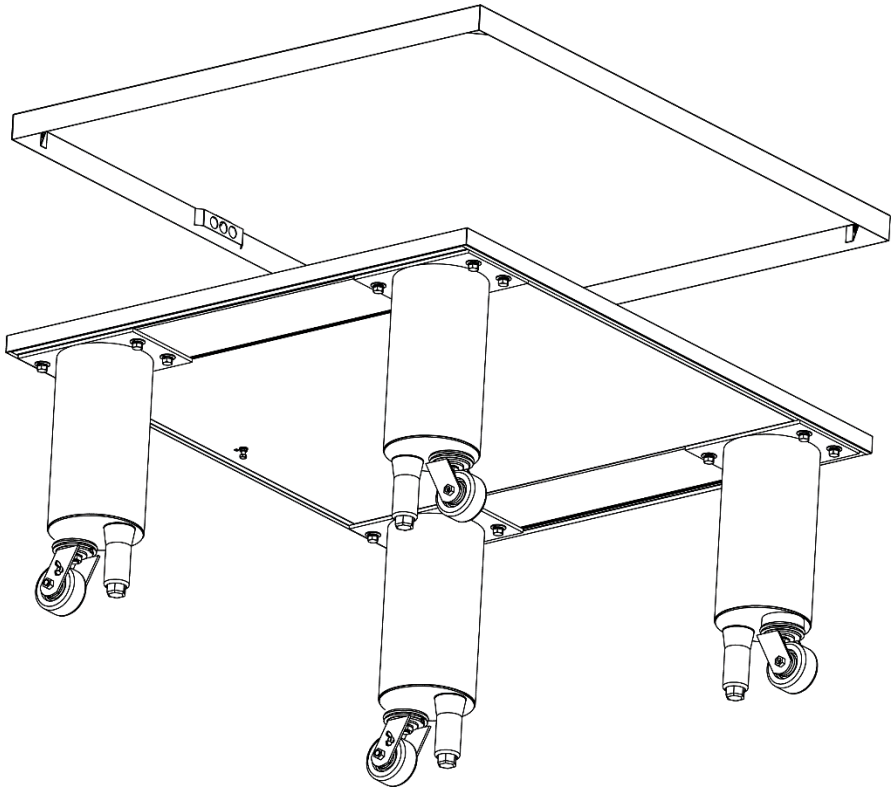


Figure 7. Single and Double X55G Oven Base with 15" Legs/Top Kit P/N: 77086

PARTS LIST FOR SINGLE and DOUBLE X70G OVEN BASE/TOP KIT with 10" LEGS P/N: 77609

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	76772	BASE ASSEMBLY (X70 Series)
2	1	77470	COVER ASSEMBLY/CORNER BRACE
3	4	70049	10" LEG WELDMENT PS360G
4	4	74319	CASTER with BRAKE & 4" WHEEL
5	4	22450-0028	6" ADJUSTABLE LEVELING LEG with 3/4" STUD
6	16	21416-0003	WASHER, FLAT 1/2 SS
7	16	2001045	SCREWS CAP HX HD 1/2-13X1 ZP
8	16	21426-0004	WASHER, LOCK 1/2 SS
9	1	31239	NUT, HEX FLANGE LOCKING 5/16-18
10	1	61832	SCREW, HEX 5/16-18 1-1/2"

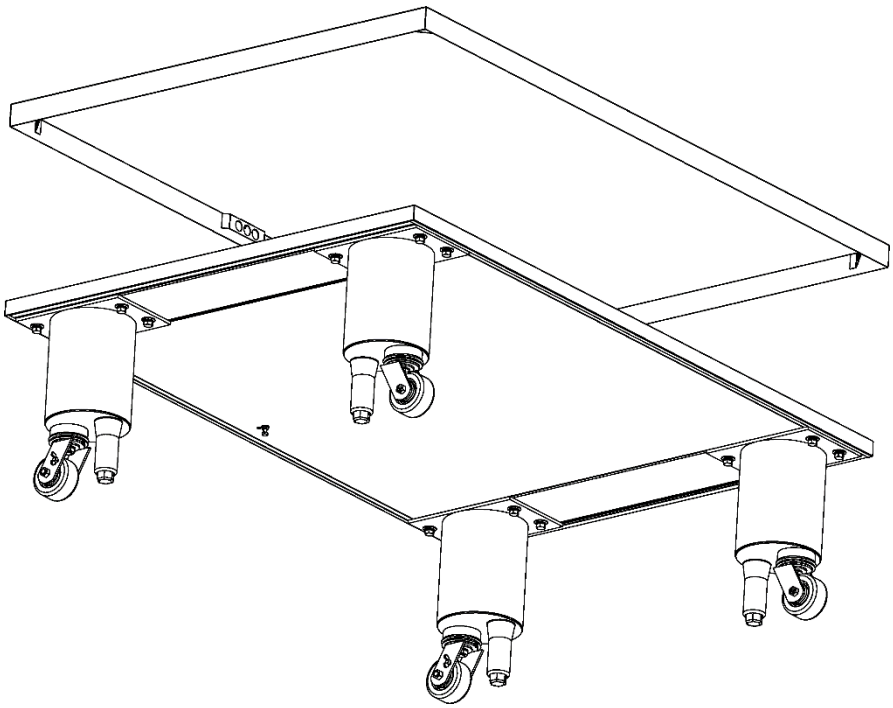


Figure 8. Single and Double X70G Oven Base with 10" Legs/Top Kit P/N: 77609

PARTS LIST FOR SINGLE and DOUBLE X55G OVEN BASE/TOP KIT with 10" LEGS P/N: 77613

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	22450-0228	RETRAINING DEVICE
2	1	77088	BASE ASSEMBLY (X55 Series)
3	1	77492	COVER ASSEMBLY TOP/CORNER BRACE
4	4	70049	10" LEG WELDMENT PS360G
5	4	74319	CASTER with BRAKE & 4" WHEEL
6	4	22450-0028	6" ADJUSTABLE LEVELING LEG with 3/4" STUD
7	16	21416-0003	WASHER, FLAT 1/2 SS
8	16	2001045	SCREWS CAP HX HD 1/2-13X1 ZP
9	16	21426-0004	WASHER, LOCK 1/2 SS
10	1	31239	NUT, HEX FLANGE LOCKING 5/16-18
11	1	61832	SCREW, HEX 5/16-18 1-1/2"

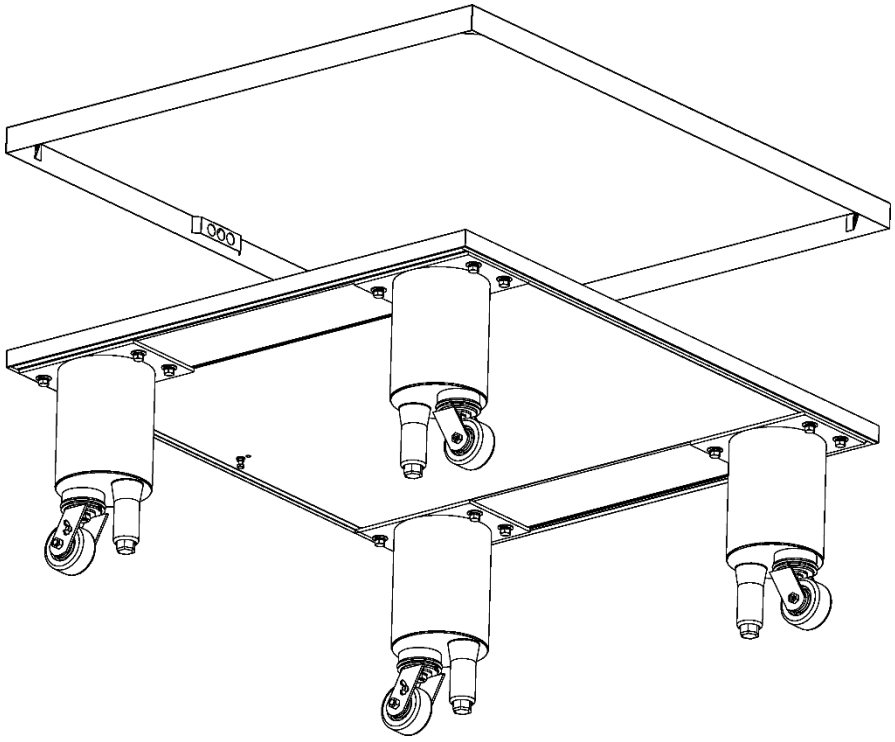


Figure 9. Single and Double X55G Oven Base with 10" Legs/Top Kit P/N: 77613

PARTS LIST FOR TRIPLE X70G OVEN BASE/TOP KIT P/N: 77610

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	76772	BASE ASSEMBLY (X70 Series)
2	1	77470	COVER TOP ASSEMBLY/CORNER BRACE
3	4	70060	LEVELING CASTER (1650 LBS)
4	16	21416-0003	WASHER, FLAT 1/2 SS
5	16	2001045	SCREWS CAP HX HD 1/2-13X1 ZP
6	16	21426-0004	WASHER, LOCK 1/2 SS
7	1	31239	NUT, HEX FLANGE LOCKING 5/16-18
8	1	61832	SCREW, HEX 5/16-18 1-1/2"

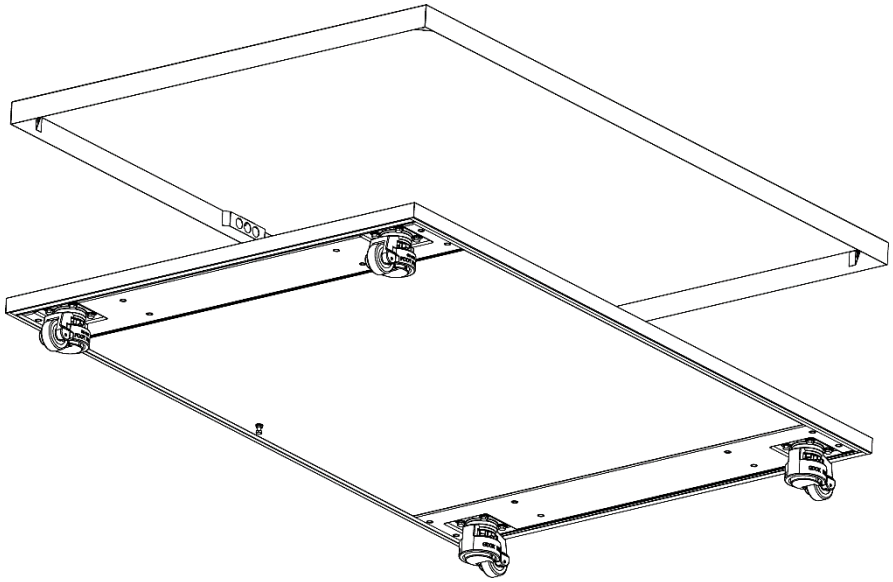


Figure 10. Triple X70G Oven Base/Top Kit P/N: 77610

PARTS LIST FOR TRIPLE X55G OVEN BASE/TOP KIT P/N: 77614

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	22450-0228	RESTRAINING DEVICE
2	1	77088	BASE ASSEMBLY (X55 Series)
3	1	77492	COVER TOP ASSEMBLY/CORNER BRACE
4	4	70060	LEVELING CASTER (1650 LBS)
5	16	A27721	WASHER, LOCK 3/8
6	16	220373	SCREWS CAP HX HD 3/8-16X1 18-8
7	16	21416-0001	WASHER, FLAT 3/8 18-8
8	1	61832	SCREW HEX 5/16-18 1-1/2"
9	1	31239	NUT, HEX FLANGE LOCKING 5/16-18

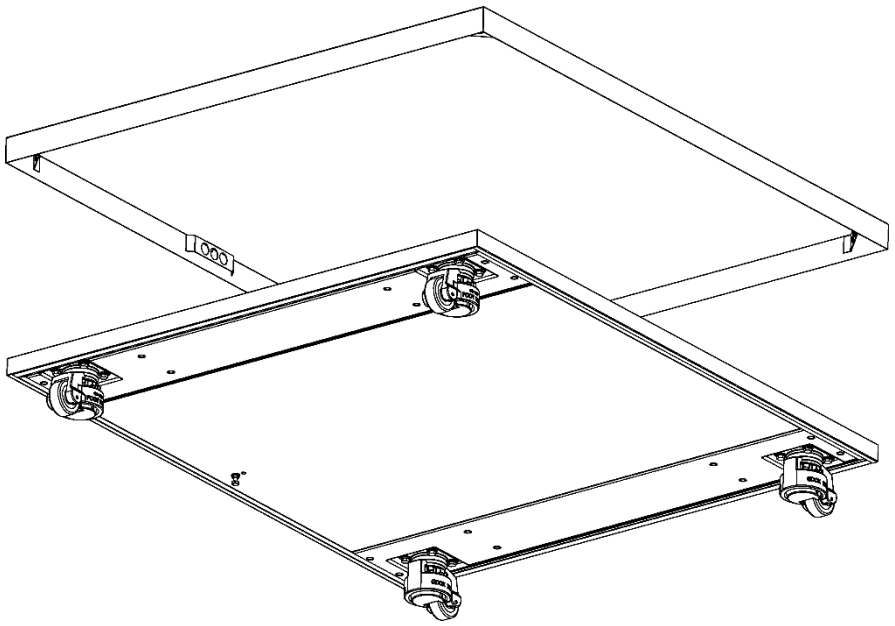


Figure 11. Triple X55G Oven Base/Top Kit P/N: 77614

UTILITY ROUGH-IN FOR X70G/X55G-SERIES OVENS

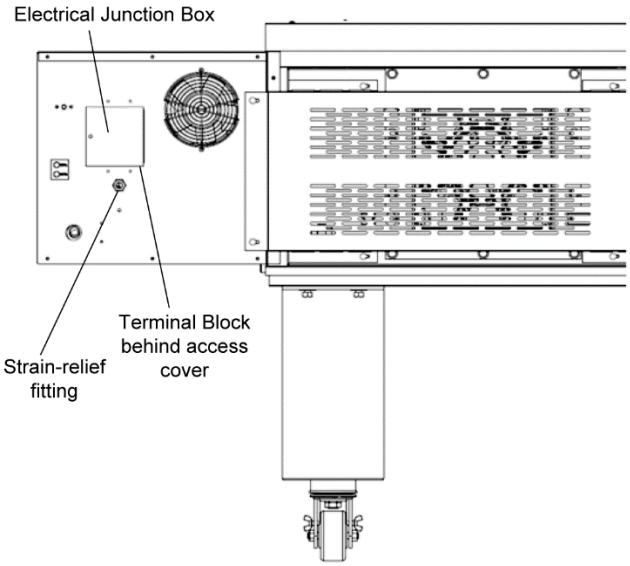


Figure 12. Utility Connection Locations for Gas Ovens

WARNING

Do not use conduit or gas line for ground connection.

CAUTION

It is recommended that the oven be placed under a ventilation hood for adequate air supply and ventilation.

IMPORTANT

Electric supply to be provided by customer.

WARNING

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.

ELECTRICAL SUPPLY

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 national and local electrical code requirements.

Check the oven serial plate before making any electric supply connections. Electric supply connections must agree with data on the oven serial plate. The location of the serial plate is shown in Figure 4 (in Section 1).

A fused disconnect switch or a main circuit breaker (customer furnished) MUST be installed in the electric supply line for each oven cavity. It is recommended that 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 X70G/X55G Series Specifications in Section 1.

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 12). 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 12. 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.



Figure 13. Gas Piping Requirements

ITEM NO.	DESCRIPTION	Nat Gas	LP
1	GAS SUPPLY PIPE	2"	2"
2	TEE	2" x 1-1/4"	2" x 1-1/4"
3	DRIP LEG	2"	2"
4	CAP	2"	2"
5	NIPPLE	1-1/4"	1-1/4"
6	FULL-FLOW SHUTOFF VALVE	1-1/4"	1-1/4"
7	NIPPLE	1-1/4"	1-1/4"
8	1-1/4" REGULATOR DYNAMIC READING	8"-12" W.C.	8"-12" W.C.
**9	OVEN HOSE (PS770)	1-1/4"	1-1/4"
10	TEE 1-1/2" x 1-1/2" x 1/2"	1-1/2" x 1-1/2" x 1/2"	1-1/2" x 1-1/2" x 1/2"
11	REDUCING BUSHING 1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"
12	GAS SUPPLY PIPE	2-1/2"	2-1/2"
13	REDUCING BUSHING 1-1/4" x 2-1/2"	1-1/4" x 2-1/2"	1-1/4" x 2-1/2"
METER	DUAL	AL-800	
	TRIPLE	AL-1200	

Supplied by Middleby (all other parts supplied by customer)
Piping length – maximum 200' (61m)
2 PSI systems use the same components, except the meter size may be an AL-630 for double stack applications, unless otherwise approved by Middleby engineering.

GAS SUPPLY

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

Gas Meter

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

Gas Line

DEDICATED LINE from the gas meter to the oven

- 2" (50.8mm) pipe for natural gas
- 2" (50.8mm) pipe for propane
- Maximum length: 200' (61m). Each 90° elbow equals 7' (2.13m) of pipe.

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 X70G/X55G Series Specifications in Section 1.

Check the serial plate to determine the type of gas (Propane or Natural) to be used with the oven. See Gas Conversion under Gas Connection for converting oven to propane.

NOTICE

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 may:

- Void agency certifications
- Restrict service access
- Lead to increased service expenses for the owner

II. VENTILATION GUIDELINES

NOTICE

Proper ventilation of the oven is the responsibility of the owner.

A. Requirements

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

B. Recommendations

NOTE THAT THE HOOD DIMENSIONS SHOWN IN Figure 14 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 AS5601/AG601 IS MANDATORY.

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

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

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

C. Other Ventilation Concerns

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

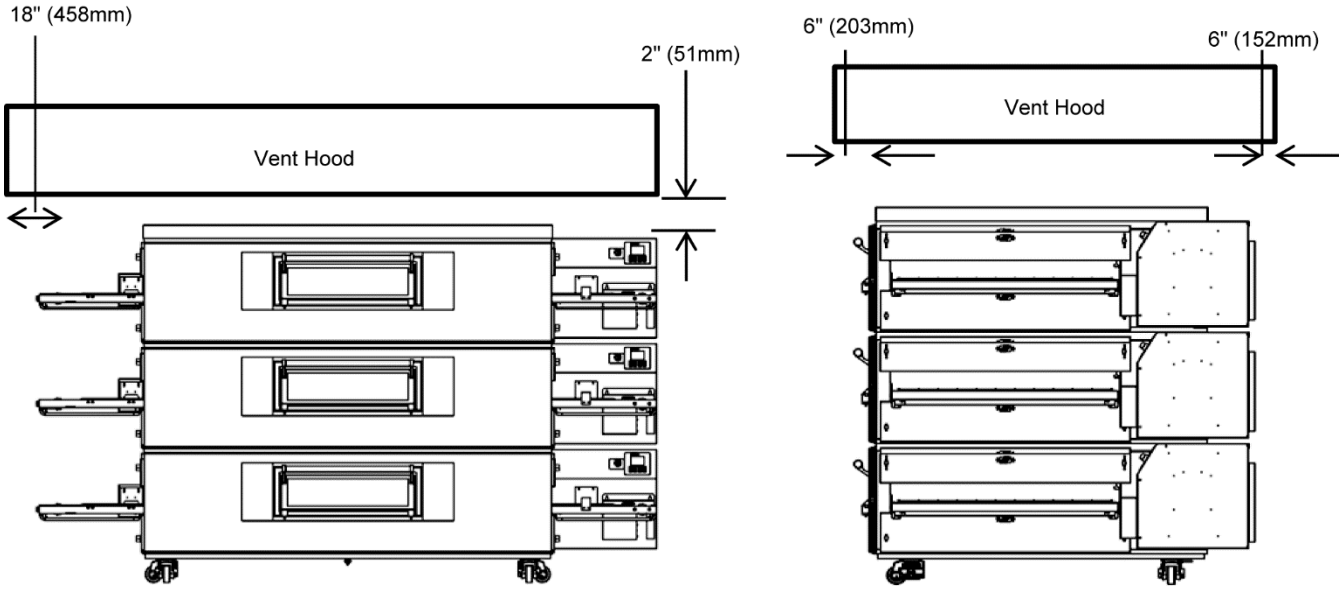


Figure 14. Ventilation System

III. ASSEMBLY

A. Base Pad and Leg Assembly

1. Install the four leg extensions onto the base pad using the 1/2"-13 x 1-1/4" hex screws, 1/2" flat washers and 1/2" lock washers supplied in the base pad kit. See Figure 15. Check that the orientation of the adjustable 6" leg holes in the leg bottom is consistent (all to the inside or all to the outside). The adjustable leg mounting hole is closer to the edge of the leg than the caster mounting hole. Install the spring clip for the oven restraining cable to the hole in the bottom middle of the base pad. This clip will attach to the restraint cable that keeps the oven from moving too far when installed on casters.

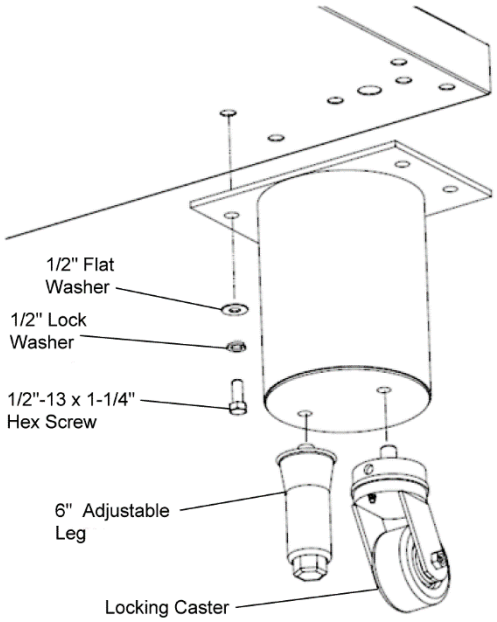


Figure 15. Leg Extension and Caster Installation

2. Install one caster and one adjustable 6" leg onto each leg extension and tighten securely in place.
3. Orient the base pad assembly such that the restraining clip is in the rear. Install the lower oven cavity onto the base pad. See Figure 16.

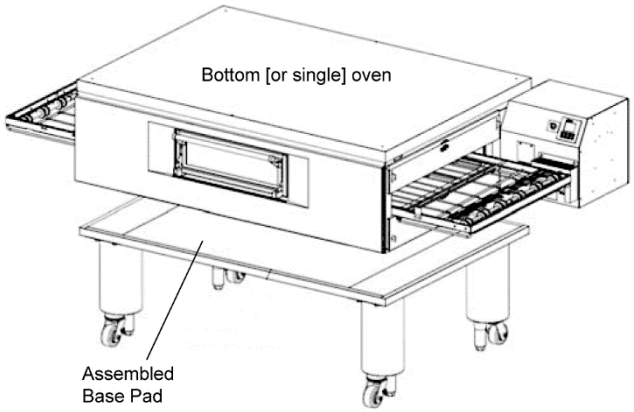


Figure 16. Base Pad Installation

4. For single ovens ONLY:

   Install the top panels using the screws included in the base pad kit, as shown in Figure 17. Then, skip ahead to Part C, Restraint Cable Installation.

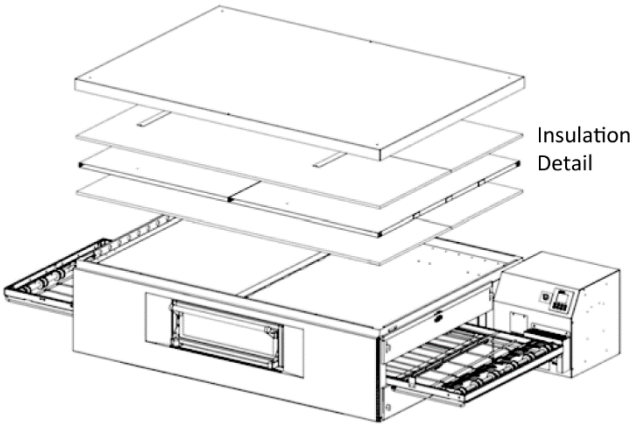


Figure 17. Top Panel Installation

For double or triple ovens:

The Oven Top Panel Assembly is already installed on the designated TOP oven. Continue on to Part B, Stacking.

NOTICE

When adding a third oven cavity, DO NOT install top panel onto the triple ovens until AFTER re-stacking the oven cavities. See Part B, Stacking.

B. Stacking

NOTICE

Middleby Marshall STRONGLY RECOMMENDS that the X70G/X55G oven cavities be stacked only by AUTHORIZED PERSONNEL.

NOTICE

DO NOT stack X70G/X55G ovens underneath or between PS770/PS570 oven units.

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:
   - The lower oven and base pad assembly is level.
   - Insulation is installed on the top of lower oven.
   - The gasket material on the control boxes is in proper position.
   - All four sides of the lower lip (bottom edge of the oven cavity) overlap the top of the lower oven.
   - The oven is firmly seated.
   - The top insulation layer is installed smoothly and fully covering the metal panel.

See Figure 18.

2. For triple ovens, repeat Step 1 to install the top oven cavity. DO NOT stack X70G/X55G ovens between PS770/PS570 oven units.
3. Install the top panel using the screws included in the kit, as shown in Figure 17 and Figure 18.

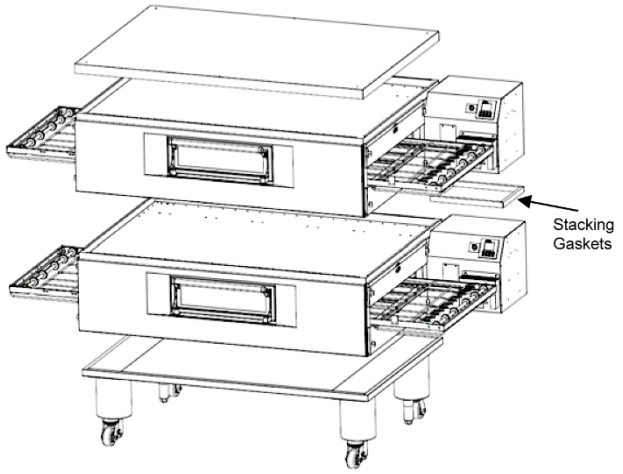


Figure 18. Stacking Order

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 snap clip on the underside of the base pad while the other is anchored to the wall. See Figure 19.

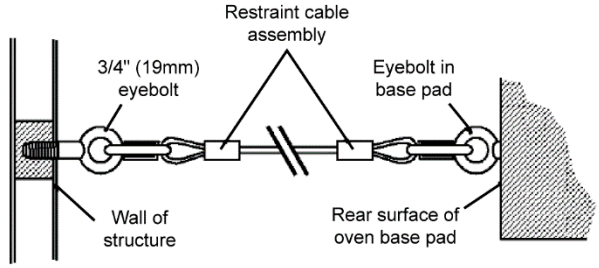


Figure 19. Installing the Restraint Cable

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

The restraint cable is connected to the spring snap located at the back-center of the base underside. The 3/4" eyebolt must be anchored to the wall or floor to attach the other end of the restraint cable.

D. Conveyor Installation

1. Unfold the conveyor as shown in Figure 20. 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.

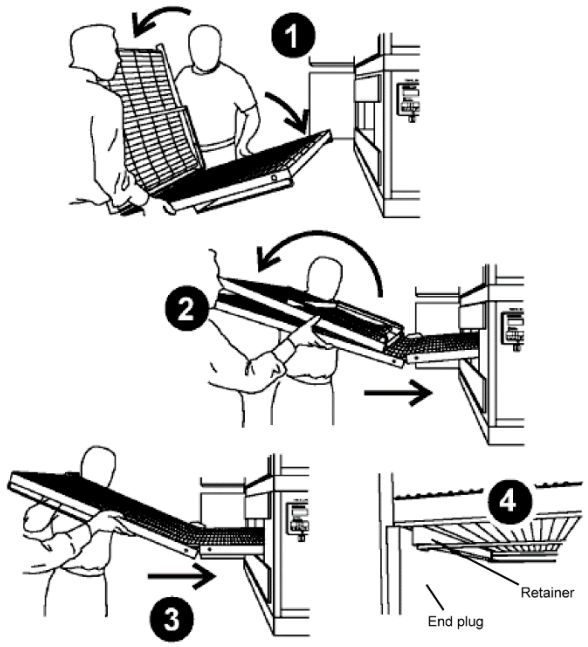


Figure 20. Conveyor Installation

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 21.
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 1.0m) 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.
4. Check the tension of the conveyor belt as shown in Figure 22. The belt should lift about 1" (25mm) **DO NOT OVER TIGHTEN THE CONVEYOR BELT.**

NOTE: If necessary, the belt tension can be adjusted by turning the conveyor adjustment screws, located at the idler (non-control) end of the conveyor. See Figure 22.

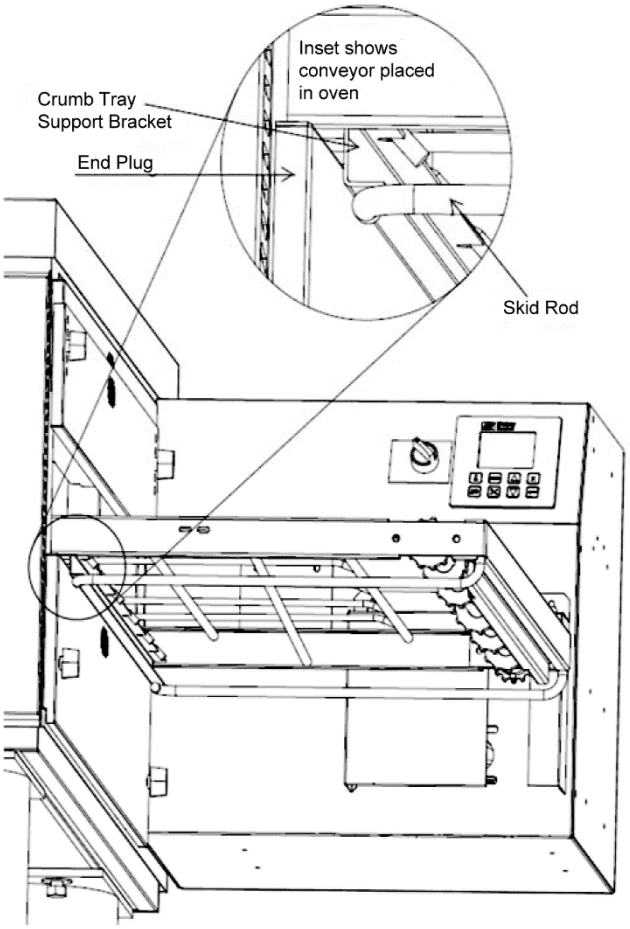


Figure 21. Secure Conveyor Frame

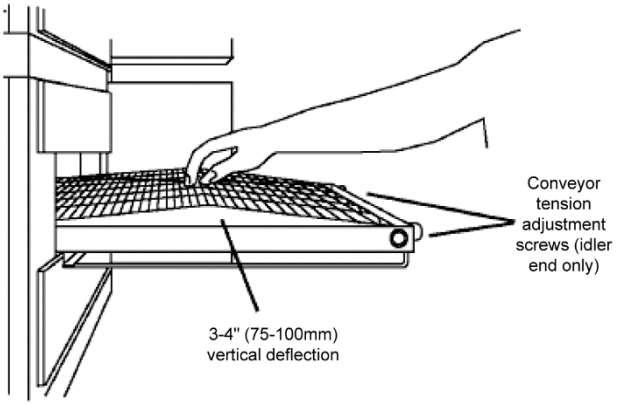


Figure 22. Conveyor Belt Tension

5. If it is necessary to add or remove conveyor links to achieve the correct tension, then the belt may need to be removed from the conveyor frame. If this is necessary, then perform the following procedure:
   a. Remove the conveyor assembly from the oven and place it flat on the floor.

b. Remove the master links using long-nose pliers. Then, roll up the belt along the length of the conveyor frame.
c. Add or remove belt links as necessary to achieve the correct belt tension.
d. Replace the belt on the conveyor frame. Check that the conveyor belt links are oriented as shown in Figure 23, and that the smooth side of the conveyor belt faces UP.
e. Connect the inside master links. Check that the links are oriented as shown in Figure 23.
f. 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. See Figure 23.
g. Install the conveyor into the oven. See steps 1–4.

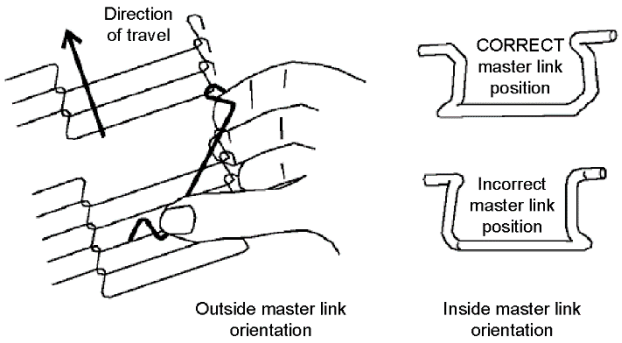


Figure 23. Conveyor and Master Link Orientation

E. Final Assembly

1. Install the crumb trays underneath the conveyor as shown in Figure 24.

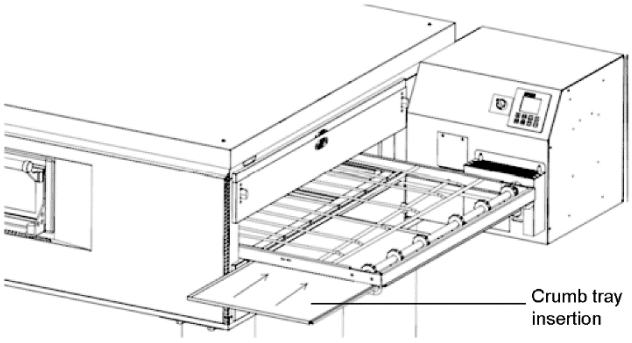


Figure 24. Crumb Trays

F. Conveyor Belt Reversal

Conveyor belt reversal consists of two steps:

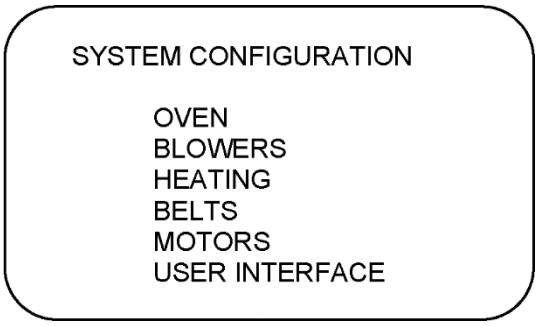
1. Resetting the conveyor gear-motor direction through the User Interface.
2. Switching the photo sensor to the new entrance.

RESETTING DIRECTION

1. Enter SYSTEM CONFIGURATION menu.

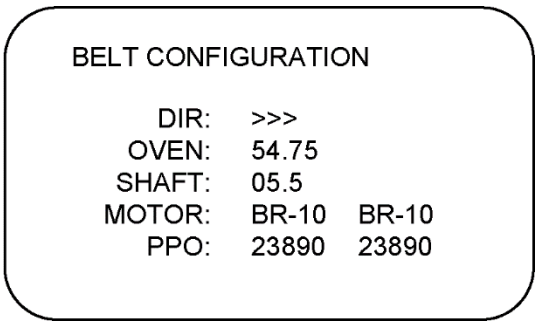
   Press  key. “PASSWORD” will appear on the screen.

   Press  and . The screen should appear as below.



2. Arrow down to BELTS menu (flashing). Press .

   Screen will appear as below:



   DIR: should be flashing. Press  then press arrow up to change direction. Press  to accept the direction change.

3. Press  to leave the BELTS menu.

4. Press X again to leave the SYSTEM CONFIGURATION menu.

SWITCHING PHOTO SENSOR

CAUTION

Disconnect power by employing proper OSHA Lock-Out Tag-Out procedure before switching Photo Eye.

1. Open the access door and disconnect the yellow electrical connector fitting to the photo eye assembly.
2. Remove the two screws securing the photo eye assembly to the control box.
3. Remove the four nuts securing the photo eye to the housing.
4. Rotate the photo eye 180 degrees and affix the photo eye with the four nuts.
5. Replace the photo eye assembly in the opposite control box by securing the photo eye assembly in position.
6. Reconnect the yellow electrical connector fitting to the photo eye assembly.
7. Replace the photo eye cover on the opposite control box, where the photo eye assembly was removed.
8. Apply power to the unit.
9. Adjust the photo eye height by loosening the two screws securing the photo eye assembly and sliding the photo eye assembly either up or down, such that the beam is approximately 1/4 inch above the belt.

NOTE: This is MUCH easier in reduced light.

IV. ELECTRICAL CONNECTION

Each oven comes with a six foot power cord and a NEMA L6-20P twist lock plug and L6-20R twist lock receptacle. Refer to the wiring diagram inside the machinery compartment of the oven to determine the correct connections for the electrical supply lines. Connect the supply as indicated on the wiring diagram. Power connections are located under access cover.

NOTICE

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

V. GAS CONNECTION

CAUTION

DURING PRESSURE TESTING NOTE THE FOLLOWING:

1. The oven and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressure in excess of 1/2 psi (3.45kPa).

2. The oven must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressure equal to or less than 1/2 psi (3.45kPa).

3. If incoming pressure is over 14" W.C. (35mbar), a separate regulator MUST be installed in the line BEFORE the individual shutoff valve for the oven.

NOTICE

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.

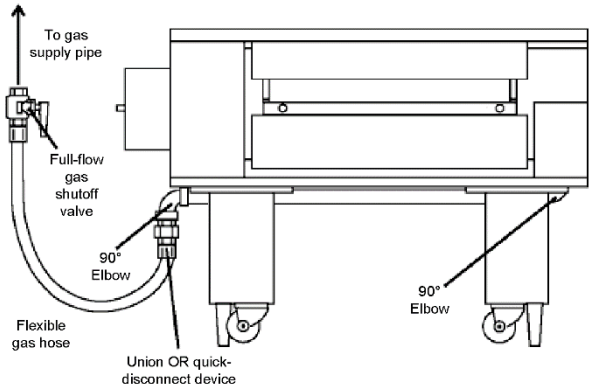


Figure 25. Flexible Gas Hose Installation

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 25; 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 28, which also shows the gas train and burner assembly.

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.).

A. 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.

NOTICE

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

B. X70G/X55G Propane Conversion Kit 77601

Three (3) tasks must be performed to change the oven to operate on Liquid Propane gas:

- Replace main orifices (Figure 26)
- Replace the bypass orifice (Figure 27)
- Adjust manifold gas pressure

1. Disconnect the burner 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).

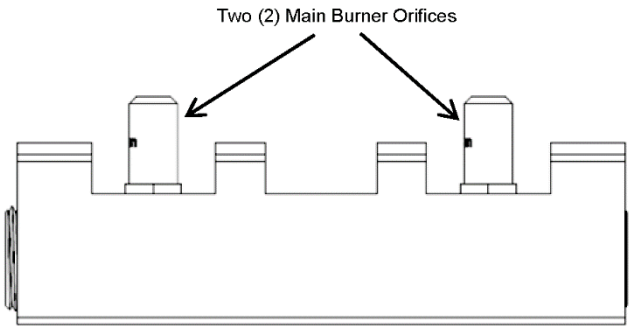


Figure 26. Burner Manifold

2. Replace the main orifices (Figure 26) on the manifold assemblies with the supplied LP orifices and replace the manifold assembly. Reconnect and secure the union. Check for leaks.
3. Loosen the brass compression fittings at each end of the fixed orificed by-pass tubing. Remove the by-pass tubing from the gas train (Figure 28). Remove the mushroom spud orifice from the by-pass tubing (Figure 27) and replace with the supplied LP by-pass orifice. Remount the by-pass tubing assembly and tighten all the fittings. Check for leaks.

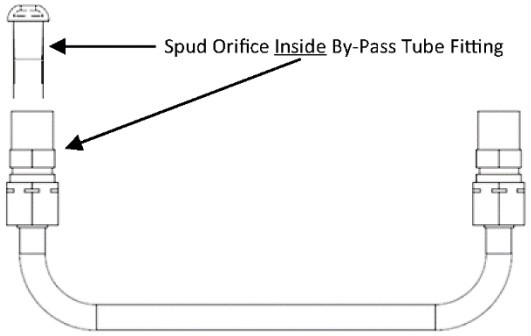


Figure 27. Bypass Orifice Inside Tube

4. Remove the existing spring from the gas valve and insert the spring supplied in the conversion kit into the gas valve. The proper pressure setting for propane gas is 6" W.C. (1.49 kPa). Re-establish the main gas supply and again check for any gas leaks.

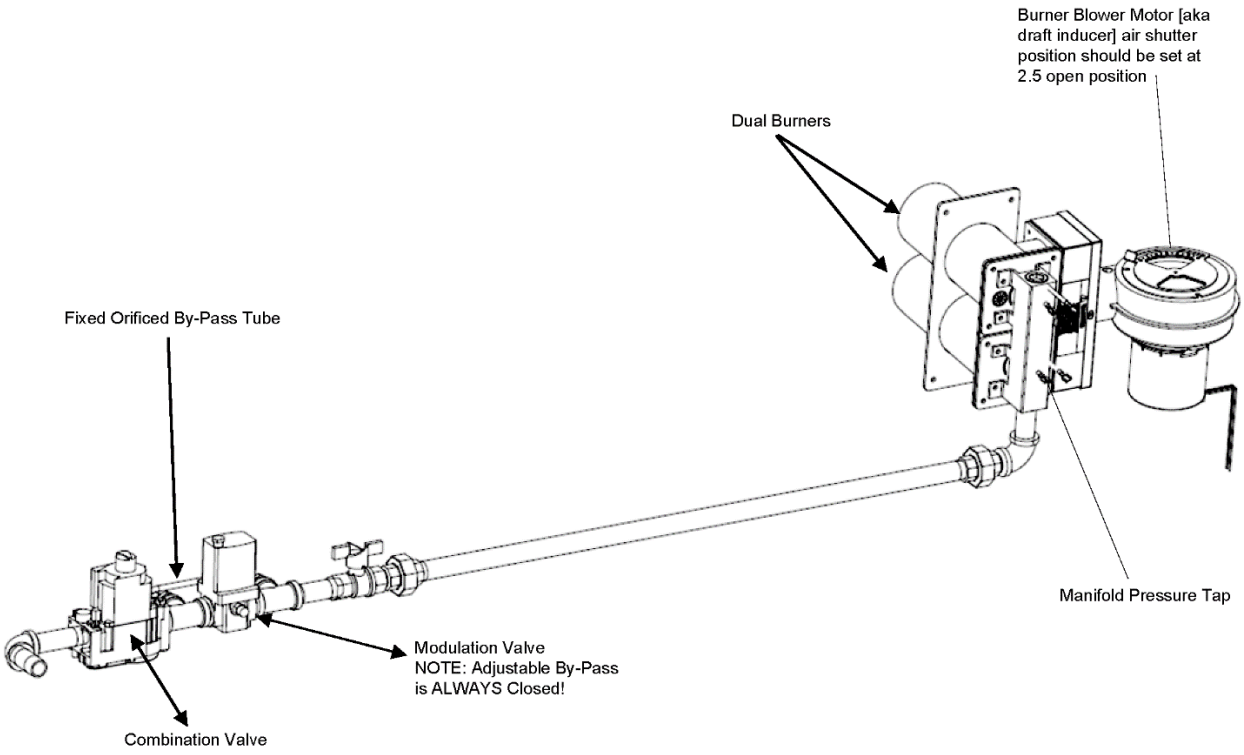


Figure 28. Gas Train and Burner Assembly

SECTION 3
OPERATION

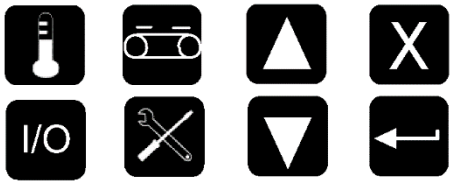
I. DESCRIPTION OF CONTROLS – USER INTERFACE

The X70/X55 oven control performs a variety of functions, including:

- Temperature control
- Belt speed control
- Entrance / Exit 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 briefly display its “WOW OVEN” splash screen, then proceed through a 30-second count down and into the OFF mode.

A. Control Keys





“ON/OFF” key:

- Quick press brings oven to active, ON mode.
- Pressing and holding will put oven into OFF mode. If the temperature is over 200°F the blowers will remain on until the oven temperature drops below 200°F.



“TEMPERATURE” key:

- Quick press displays actual temperature.
- Pressing and holding until display flashes allows a change to set temperature.



“BELT” Key:

- Quick press displays alternate front and back belt speeds.
- Pressing and holding until display flashes allows a change to belt speed.



“UP/DOWN” keys:

- Press up or down to change number values or change parameter.



“TOOLS” Key:

- Press (when off) to enter “Setup” or “test” screens.



“CANCEL” Key:

- Quick press cancels last action and returns to last screen or operation.
- Press and hold to shut oven off.



“RETURN” Key:

- Press (when off) to start oven.
- Press (when on) to enter and save a changed parameter value.

B. Display Features

STATUS INDICATOR:
"BAKING" appears when the oven is in baking mode. No text here indicates that the oven is in IDLE mode.

SETPOINT:
Set point (baking) temperature is displayed here.



AN ERROR HAS OCCURRED:
The Error Log is for Service Access Only

HEAT STATUS:
Alternating display indicates: "HEAT" – heat relay is energized "30%" – "percent of heat" signal from the control to the gas valve.

ACTUAL TEMPERATURE:
Actual temperature of the oven is displayed here. If it is not displayed, pressing the TEMPERATURE key momentarily will show the actual temperature for 15 seconds.

BELT DISPLAYED:
"F" indicates FRONT belt time is being displayed. "B" indicates that the BACK belt time is being displayed. If no letter appears the belt times are identical.

BELT SPEED:
Displays time in minutes and seconds that it takes for the belt to travel the length of the baking chamber.

II. NORMAL OPERATION

A. Daily Start-up Procedure

To start the oven, first turn the ON/OFF rotary power switch to the ON position, wait for the screen to illuminate and boot up (30-second count-down). Then press the I/O button. The oven will start and the operating display will appear on the screen. The blowers will begin and the blower proving switches will engage, permitting the heat circuit relay to engage. The gas ignition dual module will begin its cycle and ignite the dual power burners.

B. Adjusting the Temperature

To adjust the set temperature, press and hold the button until the set temperature display flashes. Press the or arrow until the desired set temperature is displayed. Press the button to set and save the new temperature value. If button is not pressed, the new temperature will be present only until the oven is turned OFF. The

previously used set temperature will appear when the oven is turned ON again.

C. Adjusting the Belt Time

To adjust the belt time, press and hold the button until the belt time display flashes. Press the or button until the desired belt time is displayed. Press the button to set and save the new time value. If the button is not pressed, the new time will be present only until the oven is turned OFF. The previously used belt time will appear when the oven is turned ON again.

D. Daily Shutdown Procedure (Turning the Oven Off)

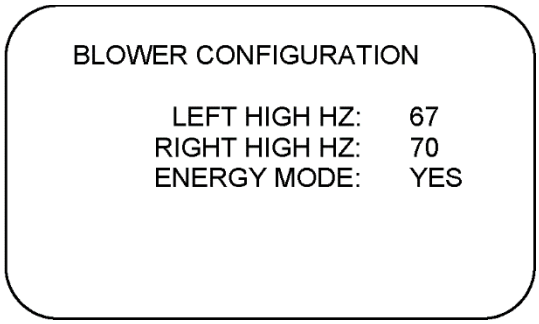
To turn the oven OFF, turn the ON/OFF rotary switch to the OFF position. If the oven is below 200°F cool down temperature, then the display will go blank. If the oven is above 200°F, the display will show “COOL DOWN” and the blowers will run at a preset cool down speed until the oven temperature fails below 200°F at which point the oven will go to the OFF mode. In the OFF mode, the screen will display the “WOW OVEN” screen for a one minute period after which the screen backlight will shut off. The oven will stay in this condition until it is started again, with no outputs energized.

III. PROGRAMMING INSTRUCTIONS (MANAGERS MODE)

A. Changing Baking Blower Speeds (Run Mode)

To change the ENTRANCE and/or EXIT blower speeds without turning the oven OFF:

1. Enter the BLOWER CONFIGURATION Screen. Press and hold key until “PASSWORD” appears on the screen. Press and . The screen should appear as below.



2. Press until LEFT HIGH HZ is flashing. Press to change LEFT HIGH HZ. Press or to display the desired value. Press to accept the new value. Follow same procedure for the RIGHT HIGH HZ value if required.
   - MINIMUM HZ VALUE: 40 Hz
   - MAXIMUM HZ VALUE: 90 Hz

B. Changing Energy Mode Status (Run Mode)

If the photo eye should ever fail to operate, baking mode can be continually engaged by disabling the energy mode. A service call should be made in the interim, as energy use will be considerably higher without the energy mode.

Press until ENERGY MODE is flashing. Press . Status of energy mode will be flashing (i.e., YES or NO). Press to change status to desired state. Press to accept status change. Press to leave the BLOWER CONFIGURATION screen.

C. System Setup

Enter SYSTEM SETUP menu (Can only be done in OFF mode).

Four control system values can be changed that relate to the user interface for the daily oven operator:

1. Actual temperature display always on or off
2. Set temperature lock on or off
3. Belt time lock on or off
4. Degrees Celsius shown, or default degrees Fahrenheit.

Press  key. “PASSWORD” will appear on the screen.

Press  and . The screen should appear as below.

SYSTEM SETUP

SHOW TEMP ALWAYS:	YES
SET TEMP LOCKED:	NO
SET TIME LOCKED:	NO
CELSIUS:	NO

Press  until the item you want to change is flashing, then press . Now press  until the setting you desire is displayed, then press . Press  to leave the SYSTEM SETUP menu. Press  to return to operating mode.

D. Energy Management Information



The X70/X55 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 X70/X55 oven, like other Middleby WOW ovens, has an idle mode that places the blowers 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 photo eye 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 photo eye, 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.

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 or service 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 substances or thick soap suds.
6. Turn on the electric supply circuit breaker(s).
7. Perform the normal start-up procedure.

WARNING

Possibility of injury from rotating parts and electrical shock exist 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 ON/OFF switch, I/O switch, or any other circuit of the oven switched on.

NOTICE

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.

NOTICE

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.

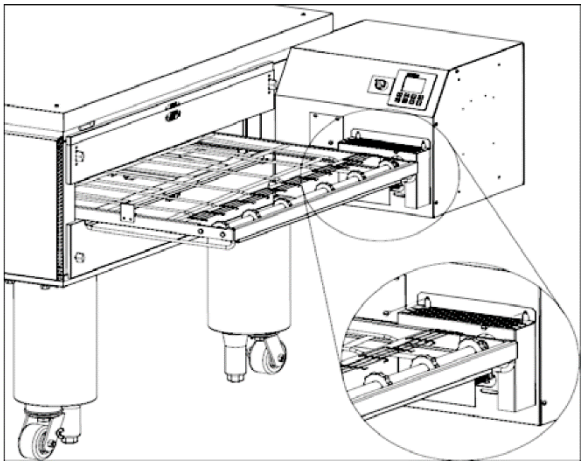
I. MAINTENANCE - DAILY

1. Check that the oven is cool and the power is disconnected, as described in the warning at the beginning of this section.
2. Clean the filters.
3. Clean the outside of the oven with a soft cloth and mild detergent.
4. 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.
5. Remove and clean the crumb trays. If necessary, refer to Figure 24 (in Section 2, Installation) when installing the crumb trays into the oven.
6. Remove and empty the drip pan.
7. Clean the window in place.

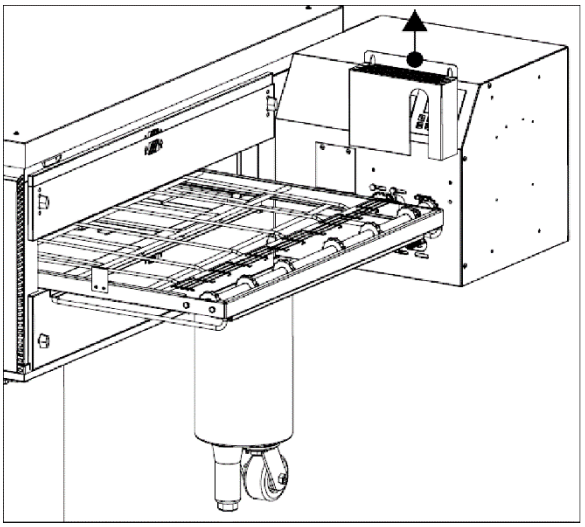
II. MAINTENANCE - MONTHLY

1. Check that the oven is cool, and the power is disconnected as described in the warning at the beginning of this section.
2. Remove the crumb trays from the oven.

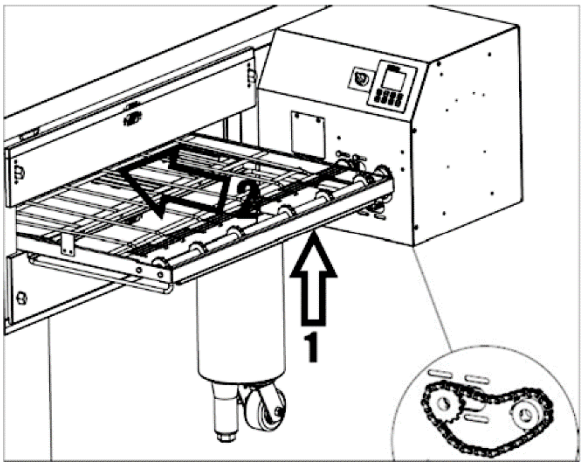
3. Loosen chain guard.



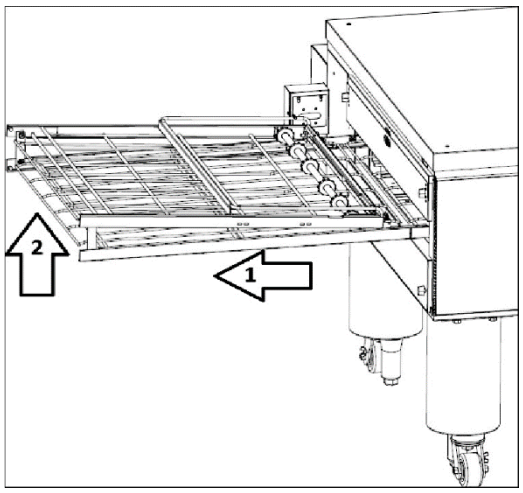
4. Slide the chain guard up.



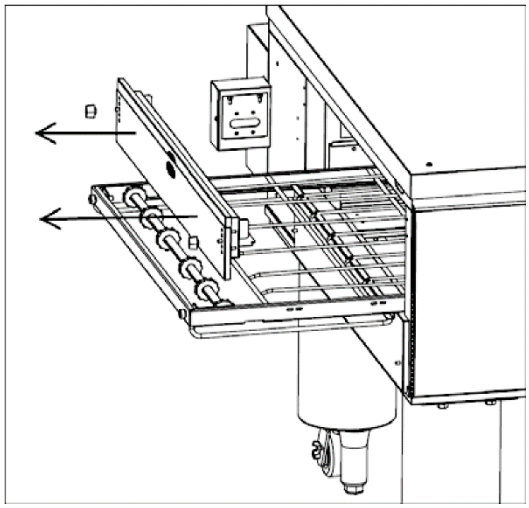
5. Lift the drive end of the conveyor slightly (1) and push it forward into the oven (2). This removes the tension from the drive chain (inset). Remove the drive chain from the conveyor sprocket.



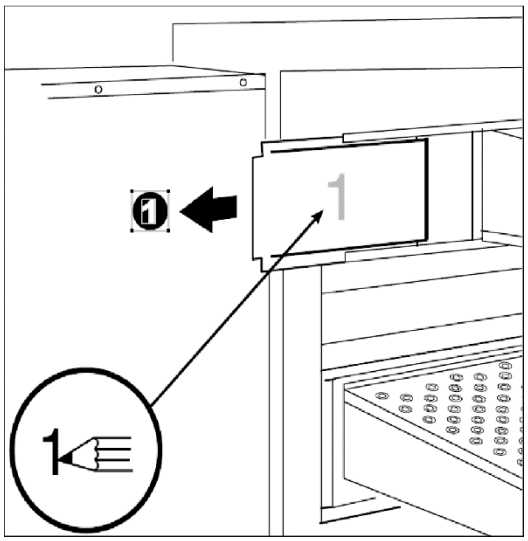
6. Slide the conveyor out of the oven, folding it as it is removed.



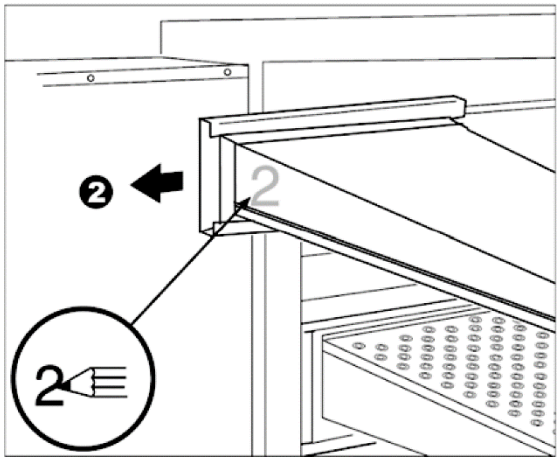
7. Remove the end plugs from the oven.



8. Slide the blanks and air fingers out of the oven.



9. AS EACH BLANK PLATE OR AIR FINGER 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**

10. Remove, empty, and clean the drip pans.

11. Disassemble the air fingers as shown in Figure 29. AS EACH FINGER IS DISASSEMBLED, WRITE THE “LOCATION CODE” FOR THE FINGER ON ALL THREE OF ITS PIECES. This will help you in correctly reassembling the air fingers.

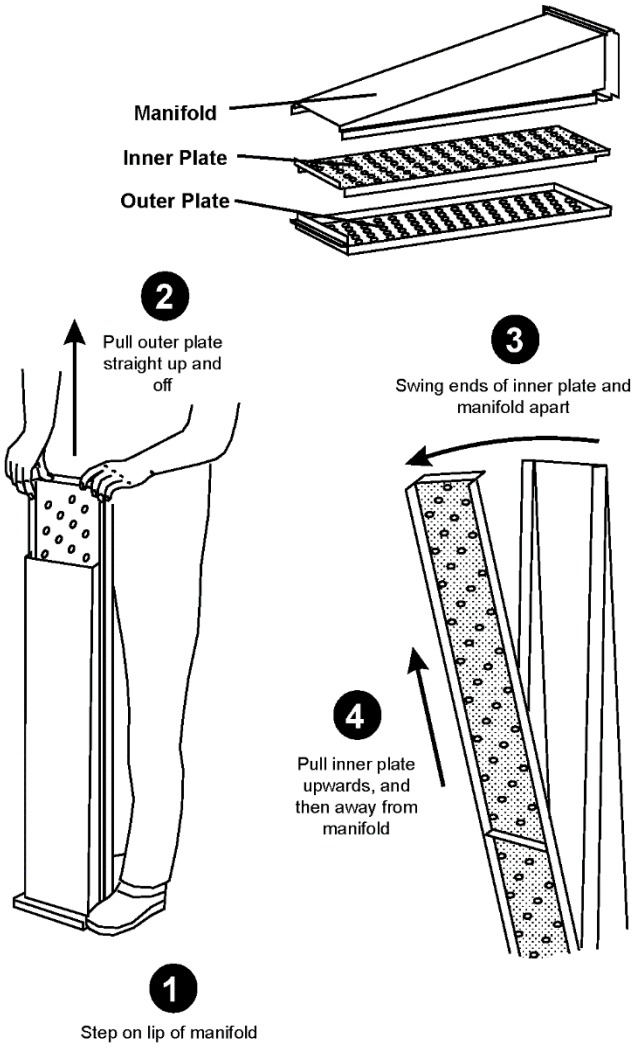
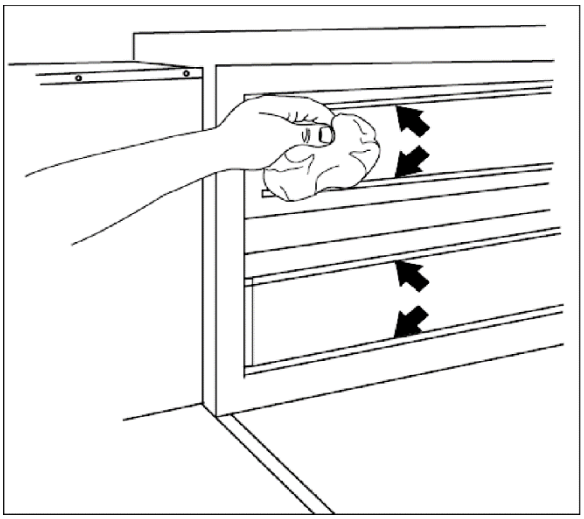


Figure 29. Disassembling the Air Fingers

CAUTION

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

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



13. Reinsert the clean drip pans.
14. Reassemble the air fingers. Then install them in the oven, using the “location codes” as a guide.
15. Install the end plugs on the oven.
16. Reassemble the conveyor into the oven. If the drive sprocket was removed when installing the conveyor, install it at this time.
17. Reattach the drive chain.
18. Check the tension of the conveyor belt as shown in Figure 23 (in Section 2, Installation). The belt should lift between 3" and 4" (76-101mm). 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.
19. Install the crumb trays.

III. MAINTENANCE - EVERY 3 MONTHS

1. Check that the oven is cool and the power is disconnected, as described in the warning at the beginning of this Section.
2. Vacuum both of the blower mounts, and their surrounding compartments, using a shop vacuum.
3. Tighten all electrical terminal screws.
4. Conveyor Belt Disassembly and Cleaning
   a. 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
   b. 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.
   c. Remove the two conveyor adjustment screws from the idler end of the conveyor frame, as shown in Figure 30.
   d. Remove the idler shaft assembly from the conveyor.
   e. Clean the shafts thoroughly using a rag.
   f. Before reassembling the shafts into the conveyor frame, check that they are oriented properly and assess the condition of the bronze bushing, replacing if worn or questionable.

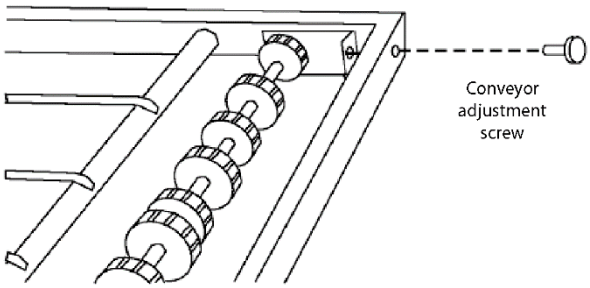


Figure 30. Disassembling the Idler Shaft

   g. Reassemble the idler shaft into the conveyor. Make sure that the bronze bushing is in proper position. See Figure 30.
   h. Replace the conveyor adjustment screws as shown in Figure 30. To allow the conveyor belt to be reinstalled later, do not tighten the screws at this time.
   i. Loosen the set screws on the conveyor drive sprocket. Then, remove the sprocket from the shaft.
   j. Check the conveyor configuration as follows: High-speed conveyors are equipped with large flange bearings at the drive end of the shaft. 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.
   k. Idler conveyor side is equipped with bronze bushings mounted on spacers at the idler end of the shaft. 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.

l. Before reassembling the shafts into the conveyor frame, check that they are oriented properly.
m. Reassemble the drive shaft into the conveyor. See Figure 30.
n. Reinstall the drive sprocket. Reassemble the belts and master links onto the conveyor.
o. Reinstall the end plugs and conveyor onto the oven. Reattach the drive chain. Install the chain cover.
p. Check the tension of the conveyor belt as shown in Figure 23 (in Section 2, Installation). The belt should lift about 3" and 4" (76-101mm). If necessary, adjust the belt tension by turning the conveyor adjustment screws.
q. Reinstall all components onto the oven.

IV. MAINTENANCE - EVERY 6 MONTHS

1. Check that the oven is cool, the power is disconnected, and the gas is turned off, as described in the warning at the beginning of this Section.
2. Follow the 3 month maintenance procedure.
3. For gas ovens, inspect and clean the burner nozzle and the spark electrode assembly.
4. Check the conveyor bushings and spacers. Replace the components if they are worn.
5. Inspect the condition of the blower belts.

V. KEY SPARE PARTS

Replacement parts can be purchased from your Middleby Marshall Authorized Parts Distributor (See Figure 31).

X70G/X55G-SERIES GAS OVEN KEY SPARE PARTS (Figure 31)

ITEM	PART NO.	ENGLISH DESCRIPTION	QUANTITY
1	74106	Motor, Conveyor Drive	1
2	74081	Conveyor Control Board	1
3	74097	Inverter, 2 HP (230V Input)	1
4	76979	Power Supply, 24VDC, 120W	1
5	71421	Rotation Sensor, Hamlin (1 per motor)	1
6	76118	Blower Motor, 1 HP Havantic	1
7	54727	Dual Ignition Module	1
8	59450	Modulating Gas Valve	1
9	76986	Hi Limit Thermostat	1
10	32108	Transformer, 240 primary / 24 secondary	1
11a,b	73057	Main I/O Board and Digital Display	1
12	33812-11	8-1/2" Thermocouple, Grounded (4 per oven)	4
13	72209	Photo Sensor	1
14	71771	Relay, DPDT 24VDC Coil	1
15	77615	Blower Wheel Kit, CW & CCW, includes puller	1
16	69855	Igniter, Single Rod	1
17	77422	Ignition Cables, Wireset, X70/X55 = 60"	1
18	69854	Flame Sensor	1
19	77436	Burner Blower Assy	1
20	54724	Main Combination Gas Valve	1
21	76022	ON/OFF Rotary Switch Assy, Universal	1
n/s	76455	Protective Lens Kit for Photo Sensor (Eye) Assy	1

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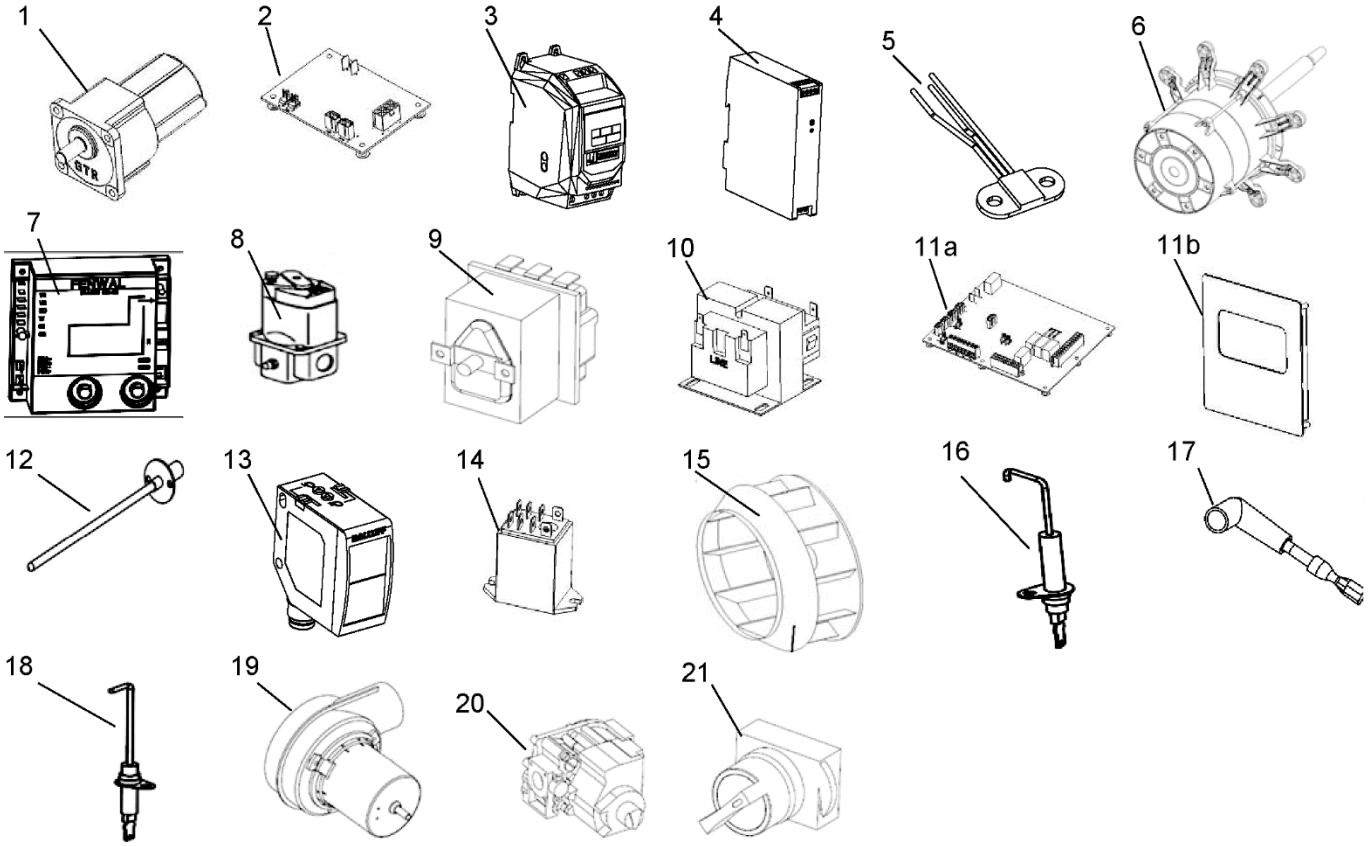


Figure 31.

NOTES

SECTION 5
TROUBLESHOOTING

I. TROUBESHOOTING GUIDE

SYMPTOM	POSSIBLE CAUSES	SOLUTIONS
Nothing displayed on controller	1. Main Switch is OFF. 2. High Limit has tripped. 3. Power not connected. 4. Main breaker not on. 5. Control circuit breaker tripped.	1. Turn on main power switch. 2. Turn power OFF to reset. 3. Check plug at wall. 4. Check main breaker. 5. Check control breaker.
Control display is dim and the WOW OVEN image can be seen	Control is in OFF/STANDBY mode.	No problem – the control backlight turns off when the oven is not turned on for use – Press I/O button.
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.	Enter BLOWER CONFIGURATION menu (manager access) and turn Energy Mode to OFF. 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.	Enter BLOWER CONFIGURATION menu (manager access) and then: 1. Check blower settings. 2. Turn Energy Mode to OFF, Oven will remain in BAKING mode.

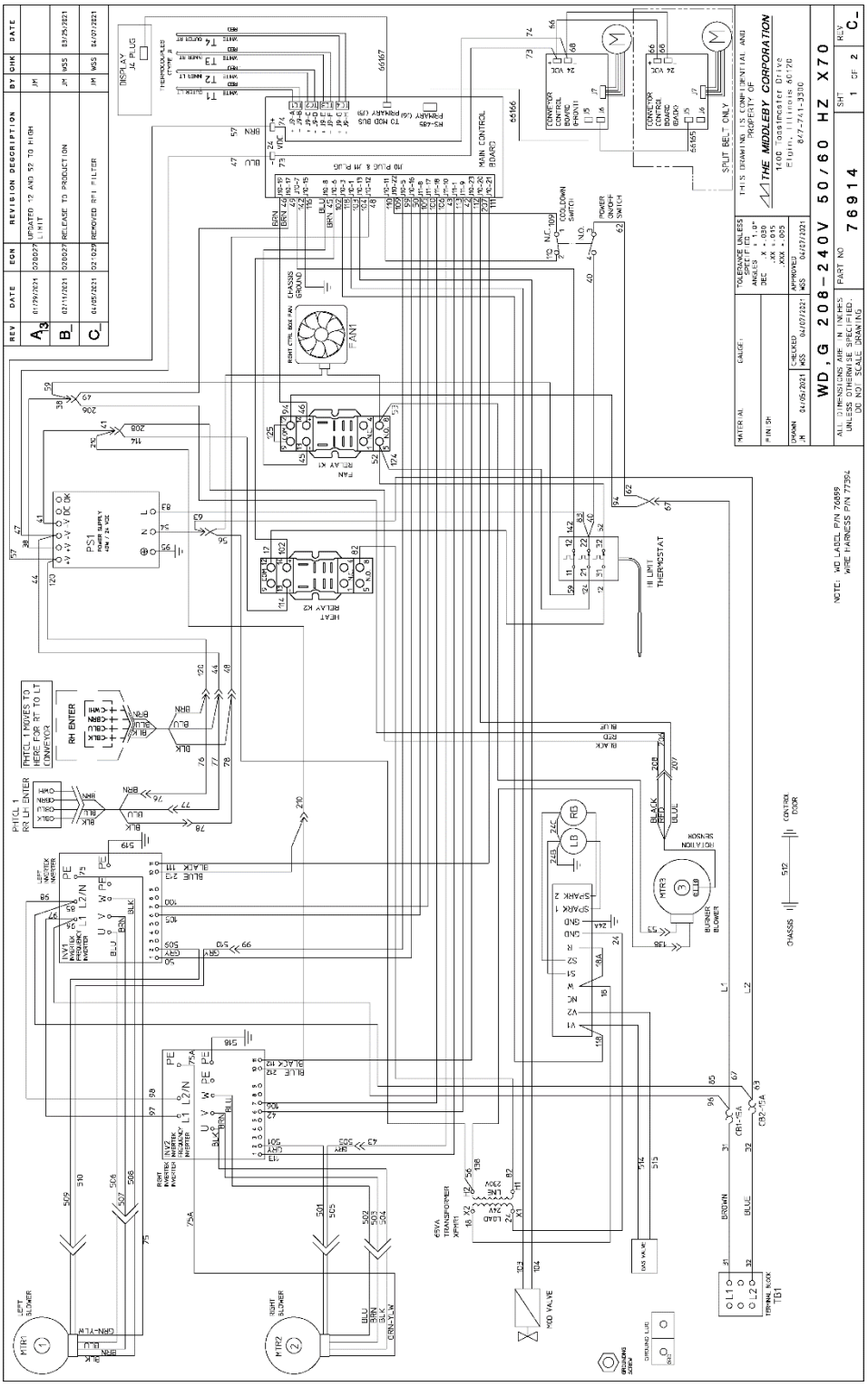
II. ALERTS, ERRORS & REMEDIES

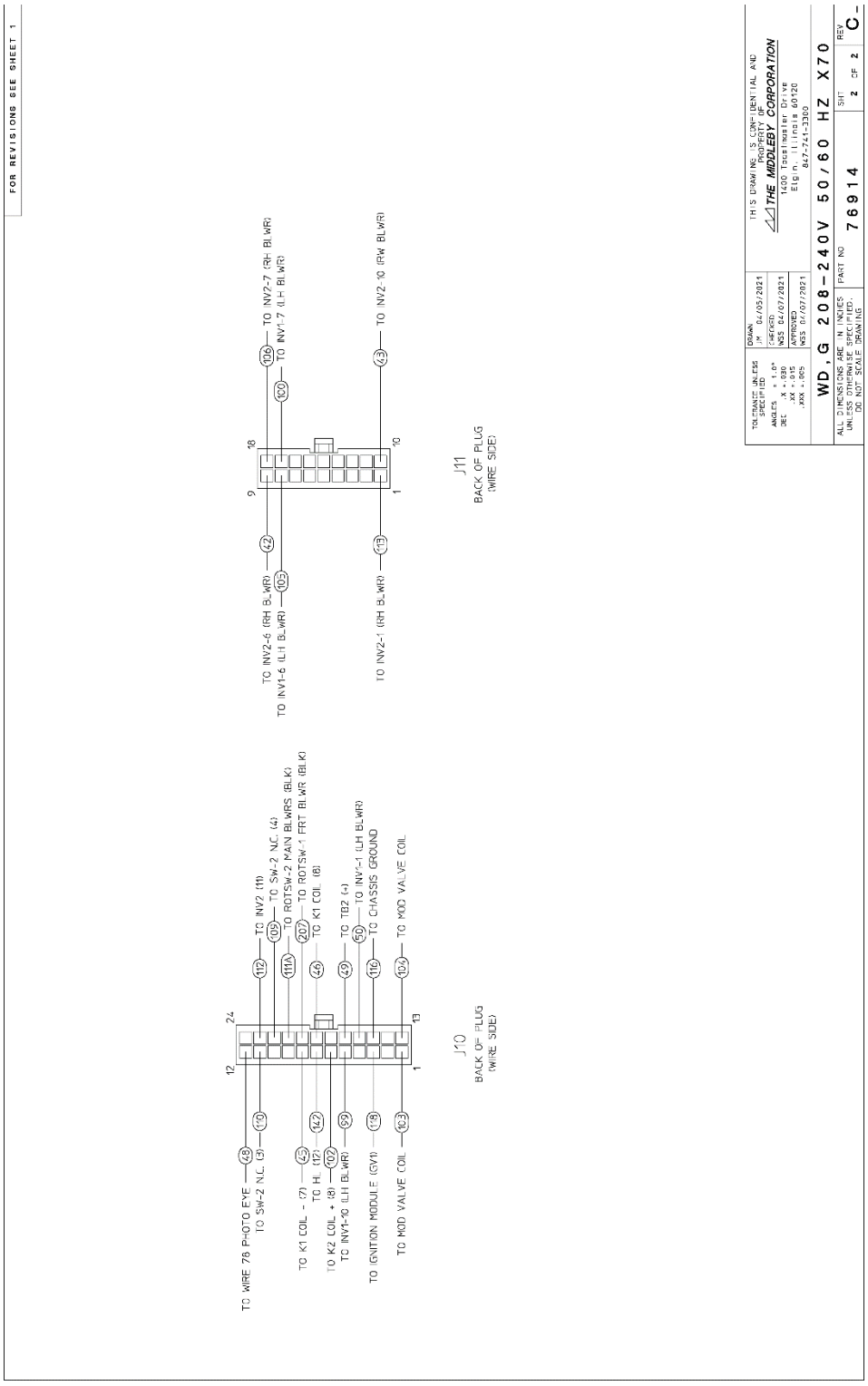
SYMPTOM	POSSIBLE CAUSE	REMEDY
PROBE # OPEN shown on display and audible alarm sounds	Temperature Probe number # is open.	Press enter key  and resume operation. Control will compensate for lost probe. Call the Hot Line.
FRONT BELT STALLED BACK BELT STALLED shown on display	Belt was overloaded and control shut down the belt.	Press enter key . 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 enter key . Check belt for cause of jamming, reset breaker, re-start oven. If unsuccessful, call for service.
FRONT BL SW NOT CLOSED or BACK BL SW NOT CLOSED 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 enter key . 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 enter key . Turn oven off and back on again. If unsuccessful and error reoccurs, call for service.
PROBES OPEN shown on display (audible alarm sounds)	All thermocouple probes have failed and are open.	Press enter key . Call service for immediate repair.
I/O COMM LOST	Communication between the display (user interface) and the I/O board has occurred.	Press enter key . Call service for immediate repair.
RESET IGNITION or IGNITION LOCKOUT 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 enter key . 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**.

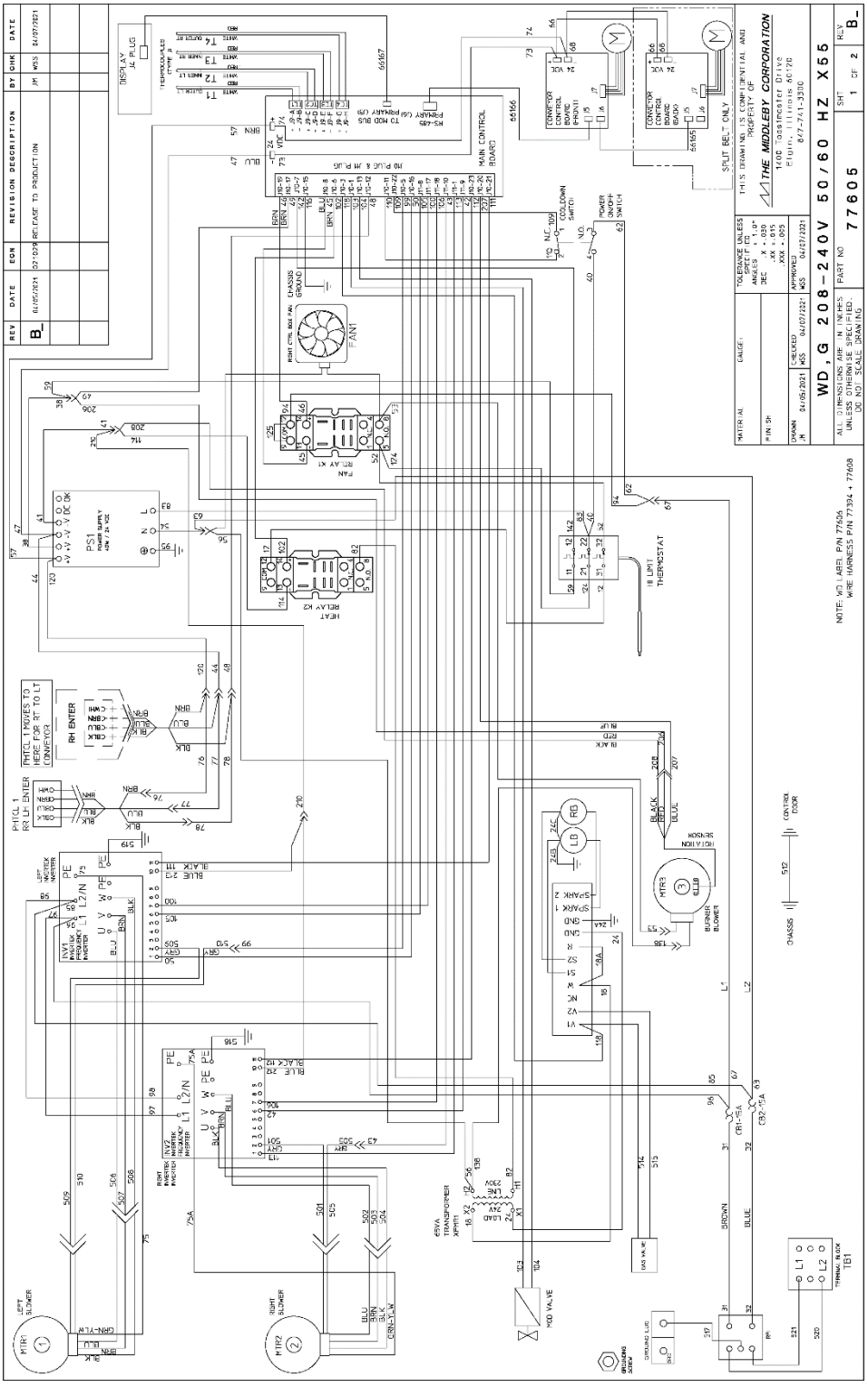
SECTION 6
ELECTRICAL SCHEMATICS

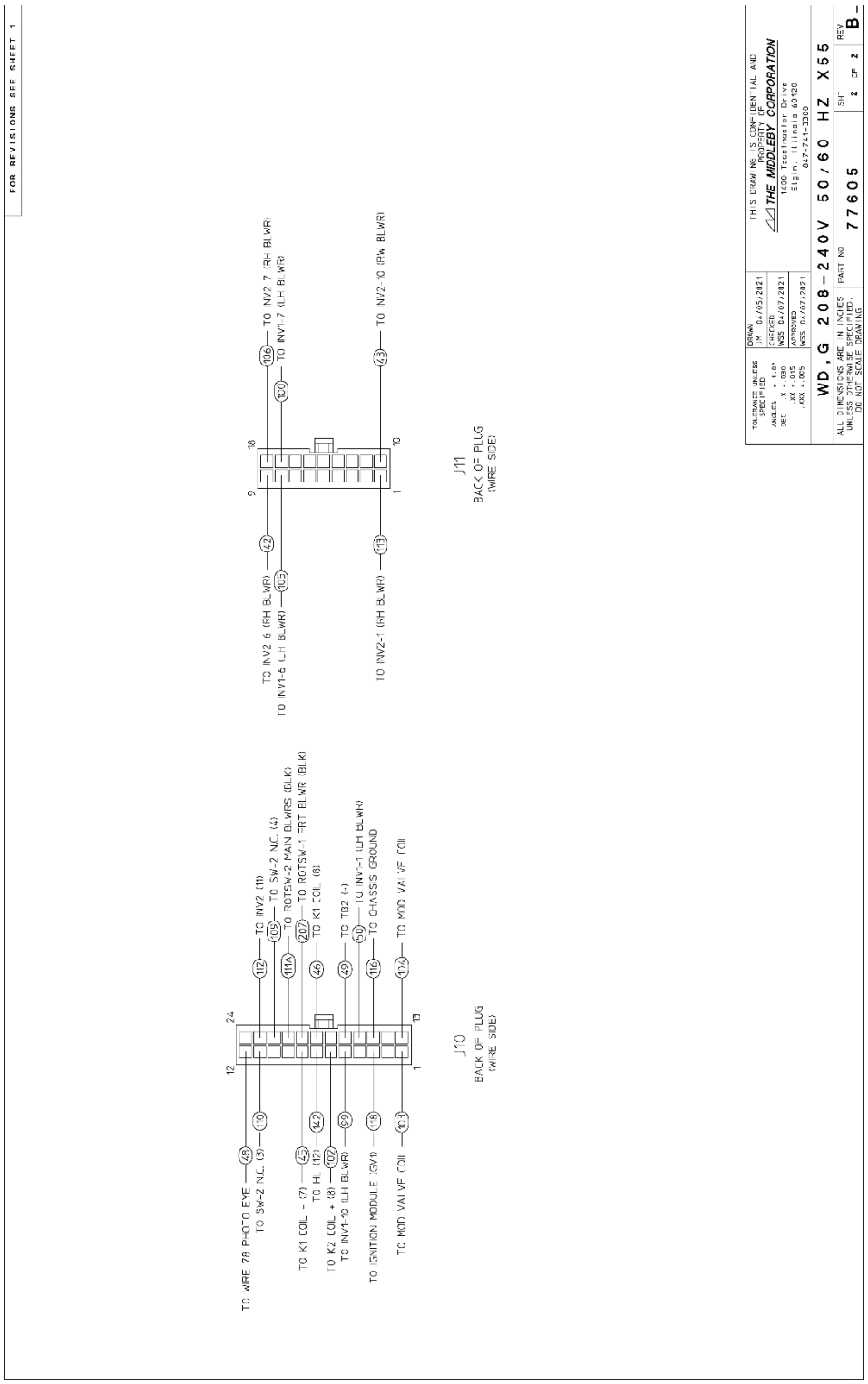
Wiring Diagram, G208-240 AC 50/60 Hz X70 • 76914 REV C




FOR REVISIONS SEE SHEET 1
TO WIRE 78 PHOTO EYE
TO SW-2 N.C. (3)
TO K1 COIL - (7)
TO H. (12)
TO K2 COIL + (8)
TO INV1-10 (LH BLWR)
TO IGNITION MODULE (GV1)
TO MOD VALVE COIL
TO INV2 (11)
TO SW-2 N.C. (4)
TO ROTSW-2 MAIN BLWRS (BLK)
TO ROTSW-1 FRT BLWR (BLK)
TO K1 COIL (8)
TO TB2 (+)
TO INV2-1 (LH BLWR)
TO CHASSIS GROUND
TO MOD VALVE COIL
J10
BACK OF PLUG
(WIRE SIDE)
TO INV2-6 (RH BLWR)
TO INV1-6 (LH BLWR)
TO INV2-1 (RH BLWR)
TO INV2-7 (RH BLWR)
TO INV1-7 (LH BLWR)
TO INV2-10 (RW BLWR)
J11
BACK OF PLUG
(WIRE SIDE)
TOLERANCE UNLESS SPECIFIED
ANGLES ± 1.0°
DEC .X ± .030
.XX ± .015
.XXX ± .005
DRAWN JM 04/05/2021
CHECKED KSS 04/07/2021
APPROVED KSS 04/07/2021
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847-741-3300
WD,G 208-240V 50/60 HZ X70
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PART NO 76914
SHT 2 OF 2
REV C

Wiring Diagram, G208-240 AC 50/60 Hz X55 • 77605 REV B




FOR REVISIONS SEE SHEET 1
TO WIRE 78 PHOTO EYE
TO SW-2 N.C. (3)
TO K1 COIL - (7)
TO H. (12)
TO K2 COIL + (8)
TO INV1-10 (LH BLWR)
TO IGNITION MODULE (GV1)
TO MOD VALVE COIL
TO INV2 (11)
TO SW-2 N.C. (4)
TO ROTSW-2 MAIN BLWRS (BLK)
TO ROTSW-1 FRT BLWR (BLK)
TO K1 COIL (8)
TO TB2 (+)
TO INV1-1 (LH BLWR)
TO CHASSIS GROUND
TO MOD VALVE COIL
J10
BACK OF PLUG
(WIRE SIDE)
TO INV2-6 (RH BLWR)
TO INV1-6 (LH BLWR)
TO INV2-7 (RH BLWR)
TO INV1-7 (LH BLWR)
TO INV2-1 (RH BLWR)
TO INV2-10 (RW BLWR)
J11
BACK OF PLUG
(WIRE SIDE)
TOLERANCE UNLESS SPECIFIED
ANGLES ± 1.0°
DEC .X ± .030
.XX ± .015
.XXX ± .005
DRAWN JM 04/05/2021
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PART NO 77605
SHT 2 OF 2
REV B

NOTES

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

During the warranty period, ALL parts replacement and 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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