

ALTO SHAAM®

COMBITHERM®

**COMBINATION
OVEN/STEAMERS**

**GAS
ML SERIES**

**INSTALLATION
SERVICE**

AND

MAINTENANCE



W164 N9221 Water Street • P.O. Box 450 • Menomonee Falls, Wisconsin 53052-0450 • U.S.A.

PHONE: (262)251-3800 (800)558-8744 U.S.A./CANADA • FAX: (262)251-7067 (800)329-8744 U.S.A. (262)251-1907 INTL

www.alto-shaam.com

COMBITHERM ALTO SHAAM® GAS

INSTALLATION, SERVICE AND MAINTENANCE MANUAL

COMBITHERM GAS MODELS 6•10ML, 7•14ML, 10•10ML, 10•20ML, 12•18ML & 20•20ML

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.

NOTE: Instructions obtained from the local gas supplier, indicating procedures to be followed in the event that the user smells gas, must be posted in a prominent location.



The information contained in this manual is important for the proper installation, use and maintenance of this oven. Please read carefully and retain for future reference. Improper connection of this appliance will nullify all warranties.

CAUTION

The Alto-Shaam Gas Combitherm oven/steamer has a specification plate affixed to the left-hand side panel of the oven. The plate includes electrical and gas connection specifications and should be reviewed prior to service.

MANUEL D'INSTALLATION, DE MISE EN ROUTE ET D'ENTRETIEN MODELES :

COMBITHERM FOUR/CONVECTION VAPEUR 6•10ML, 7•14ML, 10•10ML, 10•20ML, 12•18ML & 20•20ML GAS

ADVERTISSEMENT

Ne pas entreposer ni utiliser de l'essence ni d'autres vapeurs ou liquides inflammables dans le voisinage de cet appareil, ni de tout autre appareil.

ADVERTISSEMENT

Une installation, un ajustement, une altération, un service ou un entretien non conforme aux normes peut causer des dommages à la propriété, des blessures ou la mort. Lisez attentivement les directives d'installation, d'opération et d'entretien avant de faire l'installation ou l'entretien de cet équipement.

NOTE: En dernier recours, les instructions provenant du fournisseur local de gaz doivent être mises en évidence de manière à indiquer les procédures à suivre au cas où l'utilisateur sentirait le gaz.

MISE EN GARDE

Les informations contenues dans ce manuel sont importantes pour l'installation, l'utilisation et l'entretien de ce four. S'il vous plaît lisez-le très attentivement et conservez-le. La non-application de ces consignes annule toutes garanties.



MISE EN GARDE

ALTO-SHAAM, INC.®

P.O. BOX 450, W164 N9221 WATER STREET
MENOMONEE FALLS, WI 53052-0450, USA

MODEL <input type="text"/>	SERIAL NO. <input type="text"/>
GAS TYPE <input type="text"/>	MANIFOLD GAS PRESSURE <input type="text"/> IN. W.C.
INPUT RATE <input type="text"/>	BTU/HR
ELECTRICAL: 110-120V, 60 Hz, 1 PH <input type="text"/> AMP <input type="text"/> WATTS	
MINIMUM CLEARANCES FOR COMBUSTIBLE AND NON-COMBUSTIBLES	
CONSTRUCTION: LEFT= 4 INCHES / RIGHT = 1 INCH / REAR = 1 INCH	
FOR USE ONLY ON NON-COMBUSTIBLE FLOORS	DOIT ETRE UTILISE SEULEMENT SUR DES PLANCHERS INCOMBUSTIBLES
FOR INSTALLATION UNDER VENTILATION HOOD ONLY	POUR UNE INSTALLATION SOUS UNE HOTTE D'EVACUATION SEULEMENT
INTENDED FOR OTHER THAN HOUSEHOLD USE	DESTINE A UN USAGE AUTRE QUE DOMESTIQUE

Contact the factory if any servicing assistance is required. Remember to provide the model number and serial number of the oven which can be found on this oven nameplate.

GAS-FIRED



ANS Z83.11-CSA 1.8-2002



ANSI/NSF4

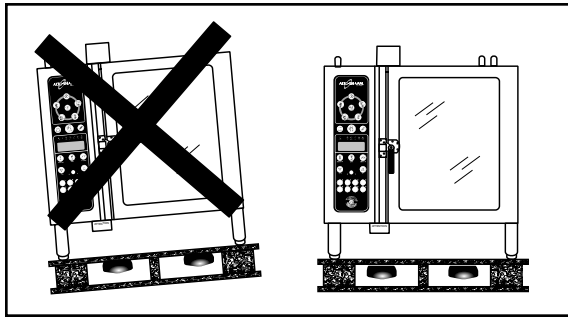
<p><u>1.0</u> INSTALLATION</p> <p><u>1.1</u> Receiving & Transportation1</p> <p><u>1.2</u> Basic Installation Site Requirements . . .1</p> <p><u>1.3</u> Ventilation Requirements2</p> <p><u>1.4</u> Positioning On Site2</p> <p><u>1.5</u> Installation Codes & Standards2</p> <p><u>1.6</u> Installation Requirements3</p> <p><u>1.7</u> Air Supply Requirements4</p> <p><u>1.8</u> Assembly Requirements4</p> <p> <u>1.8.1</u> Exhaust Gas Flue Diverter4</p> <p> <u>1.8.2</u> Sound Absorber4</p> <p> <u>1.8.3</u> Hand Shower Holder4</p> <p> <u>1.8.4</u> Drip Tray4</p> <p> <u>1.8.5</u> Roll-In Cart (TROLLEY) Guide Rails . . .5</p> <p><u>1.9</u> Electrical Connection5</p> <p><u>1.10</u> Water Supply6</p> <p><u>1.11</u> Water Drainage6</p> <p><u>1.12</u> Gas Connection Requirements7</p> <p><u>1.13</u> Gas Type and Pressure7</p> <p><u>1.14</u> Gas Connection7</p> <p><u>1.15</u> Leak Testing8</p> <p><u>1.16</u> Fuel Interlock System8</p> <p><u>1.17</u> Gas Exhaust8</p> <p><u>1.18</u> Gas Pressure Chart9</p> <p><u>1.19</u> Gas Flame Patterns9</p> <p><u>1.20</u> Burner Pilot Adjustment10</p> <p> <u>1.20.1</u> Checking Pressure10</p> <p> <u>1.20.2</u> Adjust Pilot Burner10</p> <p> <u>1.20.3</u> Manifold Pressure Adjustment . . .10</p> <p> <u>1.20.4</u> Ignition & Burner Check10</p> <p> <u>1.20.5</u> Verify Sequence of Operation . . .10</p> <p><u>1.21</u> Sequence of Operation11</p> <p><u>1.22</u> Stacking Combitherm Connections .12</p> <p><u>1.23</u> Post Installation Check List13</p> <p><u>1.24</u> Emergency Operation14</p>	<p><u>2.0</u> CONTROL PANEL IDENTIFICATION . . .15</p> <p> 16</p> <p><u>2.1</u> Safety Precautions17</p> <p><u>2.2</u> Preventive Maintenance18</p> <p><u>2.3</u> Routine Cleaning Requirements . . .18</p> <p><u>2.4</u> DAILY CLEANING</p> <p> <u>2.4.1</u> Cleaning Instructions19</p> <p> <u>2.4.2</u> Automatic Cleaning Program .20</p> <p><u>2.5</u> MONTHLY CLEANING</p> <p> <u>2.5.1</u> Water Intake Filter Cleaning21</p> <p> <u>2.5.2</u> Drain Pipe Cleaning21</p> <p> <u>2.5.3</u> Flue Outlet Cleaning21</p> <p> <u>2.5.4</u> Fan Cleaning22</p> <p><u>2.6</u> Roll-In Cart/Food Trolley Cleaning . .23</p> <p><u>2.7</u> Daily Gasket Cleaning23</p> <hr/> <p><u>3.0</u> SERVICE SECTION</p> <p><u>3.1</u> Combitherm Service Record24</p> <p><u>3.2</u> Combitherm Gas</p> <p> <u>3.2.1</u> Exterior Component Identification . .25</p> <p> <u>3.2.2</u> Operating Schematic25</p> <p> <u>3.2.3</u> Plumbing System25</p> <p><u>3.3</u> Service Views — LEFT-SIDE PANEL</p> <p> Models 6•10, 7•14, 10•10, 10•20, 12.1826</p> <p> Motor Contactor & Protection Switches . . .27</p> <p><u>3.4</u> Service Views— LEFT-SIDE PANEL</p> <p> Model 20•2028</p> <p> Motor Contactor & Protection Switches . . .29</p> <p><u>3.5</u> Troubleshooting30</p> <p> 31</p> <p><u>3.6</u> Combitherm Gas Parts List32</p> <p> 34</p> <p> Wiring Diagrams35-36</p> <hr/> <p> Transportation & Damage Claims37</p> <p> Limited Warranty37</p>
---	---

ALTO SHAAM® COMBITHERM® GAS INSTALLATION

1.1 RECEIVING & TRANSPORTATION

Upon receipt of the Combitherm combination oven/ steamer, check the exterior of the shipping carton for any physical damage that could result in damage to the contents. If the oven was not received from the carrier in an upright position, there is a stronger possibility of concealed damage. Remove the carton or uncrate the unit carefully and inspect for any transit damage. Immediately report any damage to the delivering freight carrier.

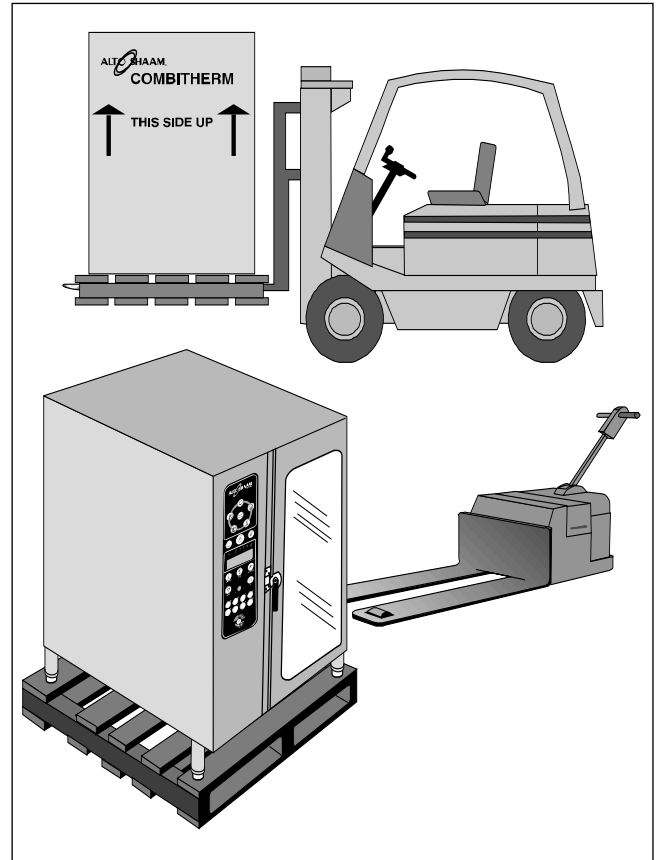
The oven must remain on the pallet while being moved to the installation site by fork lift or pallet lift truck.



Note the dimensions required for doorways and aisles for access of the oven and pallet to the installation

site. Transport the oven in an upright and level position only. *Do not tilt the oven.*

With the oven on the original pallet, remove the carton and all packaging materials. Open the oven door and remove all documents and other materials from the oven interior. Remove the roll-in cart if so equipped.



PALLETIZED DIMENSIONS

MODEL	WIDTH		DEPTH		HEIGHT W/PALLET	
6•10 _{ML} GAS	42"	(1067mm)	35"	(889mm)	42"	(1067mm)
10•10 _{ML} GAS	42"	(1067mm)	35"	(889mm)	48"	(1219mm)
7•14 _{ML} GAS	45"	(1143mm)	51"	(1295mm)	68"	(1727mm)
10•20 _{ML} GAS	51"	(1295mm)	49"	(1245mm)	65"	(1651mm)
12•18 _{ML} GAS	51"	(1295mm)	49"	(1245mm)	65"	(1651mm)
20•20 _{ML} GAS	58"	(1473mm)	44"	(1118mm)	85"	(2159mm)

1.2 BASIC INSTALLATION SITE REQUIREMENTS

HOOD INSTALLATION IS REQUIRED

- Installation surface must be level.
- Do not install adjacent to flammable surfaces.
- Deep fat fryers or similar heat producing equipment must not be installed in the immediate vicinity of the hand shower.
- The installation surface *must* be non-combustible (unable to burn).

The oven must remain on the pallet while being moved to the installation site with fork lift or pallet lift truck.

COMBITHERM® GAS INSTALLATION

1.3 VENTILATION REQUIREMENTS

A steam ventilation hood is mandatory for the operation of the oven. The ventilation hood must be installed in accordance with local building codes for steam exhaust and must protrude 12-inches to 20-inches (300mm to 500mm) over the front side of the oven. A grease filter must be located in the protruding area of the hood. Grease filters should be thoroughly cleaned on a regular basis following manufacturer's instructions. Ventilation hoods must ensure an adequate amount of incoming air during operation and must be operated whenever the combination oven/steamer is used in order to avoid the accumulation of condensation in the hood area. See the section titled Gas Exhaust.

1.4 POSITIONING ON SITE

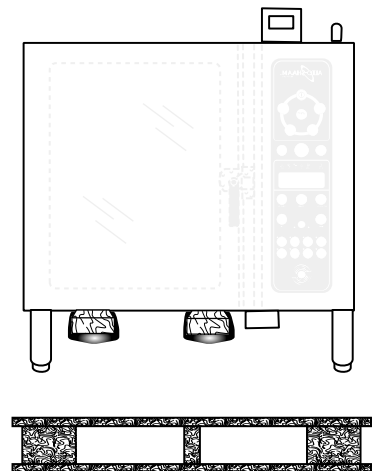
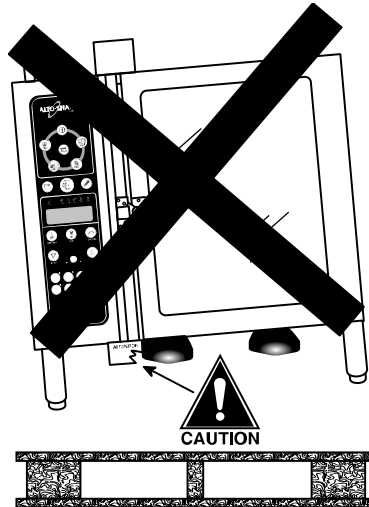
Lift the oven from the pallet with a fork lift or pallet lift truck positioned at the front of the oven. For damage protection, the use of two wooden boards, placed between the bottom of the oven and the lifting forks, is strongly recommended.

Stand the oven in a level position. Use the adjustable feet to overcome an uneven floor and ensure that the unit is level.

It is strongly recommended that table top models be mounted on a factory supplied stand or a stand that is stable, open, level, and non-combustible. Recommended height is 23-inches (584mm).

Adjust the height of floor models for smooth access of the trolley or cart. Ensure that the unit is level, right-to-left and back-to-front. When positioning the oven, observe the minimum space allocation requirements shown.

To insure proper operation, the installation of this oven must be completed by qualified technicians in accordance with the instructions provided in this manual. Failure to follow the instructions provided may result in damage to the oven, building, or cause personal injury to personnel.



**OBSERVE ATTENTION LABEL
ON OVEN FOR
AREA TO AVOID
WITH LIFTING FORK.**

MODEL	NET WEIGHT
6•10 _{ML} GAS	377 lb (171 kg)
10•10 _{ML} GAS	490 lb (222 kg)
7•14 _{ML} GAS	528 lb (239 kg)
10•20 _{ML} GAS	573 lb (260 kg)
12•18 _{ML} GAS	666 lb (302 kg)
20•20 _{ML} GAS	838 lb (380 kg)

1.5 INSTALLATION CODES & STANDARDS

The following codes and standards are required for installation of this oven:

**AIR SUPPLY, ELECTRICAL CONNECTIONS, WATER CONNECTIONS,
GAS CONNECTIONS, GAS EXHAUST, AND WASTE WATER DISCHARGE.**



Installation must comply with local codes required for gas appliances. In the absence of local codes, installation must comply with the National Fuel Gas Code, ANSI Z223.1 (latest edition). In Canada, the appropriate code is the Natural Gas Installation Code, CAN/CGA-B149.1 or the Propane Installation Code, CAN/CGA-B. Adherence to code by a qualified installer is essential for the following: Gas Plumbing, Gas Appliance Installation, Commercial Cooking Ventilation, Water and Plumbing, and OSHA Regulations. The installation surface must be heat resistant and non-combustible (unable to burn). See your local codes or the National Fuel Gas Code for the definition of combustible and non-combustible construction.

COMBITHERM® GAS INSTALLATION

1.6 INSTALLATION REQUIREMENTS

The installation surface *must* be non-combustible (unable to burn).

- ⇒ Do not install oven adjacent to flammable surfaces. Strictly observe all local fire safety regulations.
- ⇒ In order to ensure proper ventilation, a minimum distance of at least 6-inches (152mm) must be kept from the control panel side [LEFT] of the oven and any adjoining surfaces.



In addition to ventilation requirements, additional clearance is needed for service access. A minimum distance of 18-inches (457mm) is strongly recommended. If adequate service clearance is not provided, it will be necessary to disconnect the gas, water, and drain to move the oven with a fork lift for service access. Charges in connection with inadequate service access is not covered under warranty.

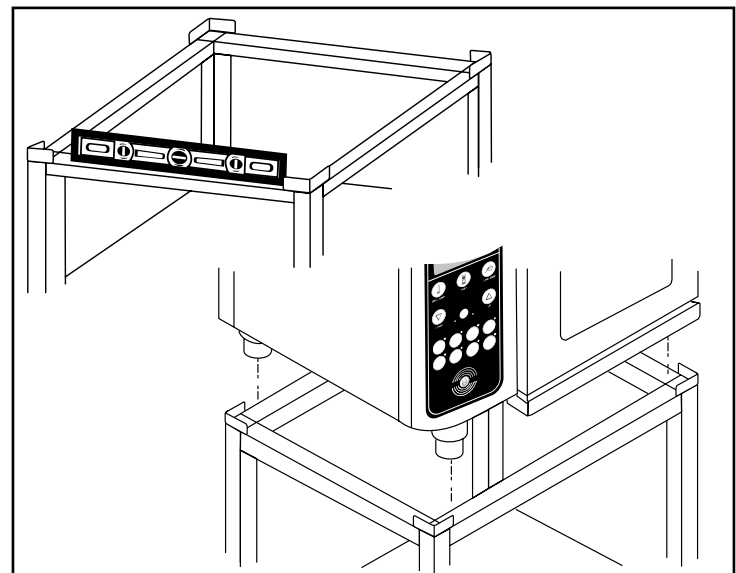
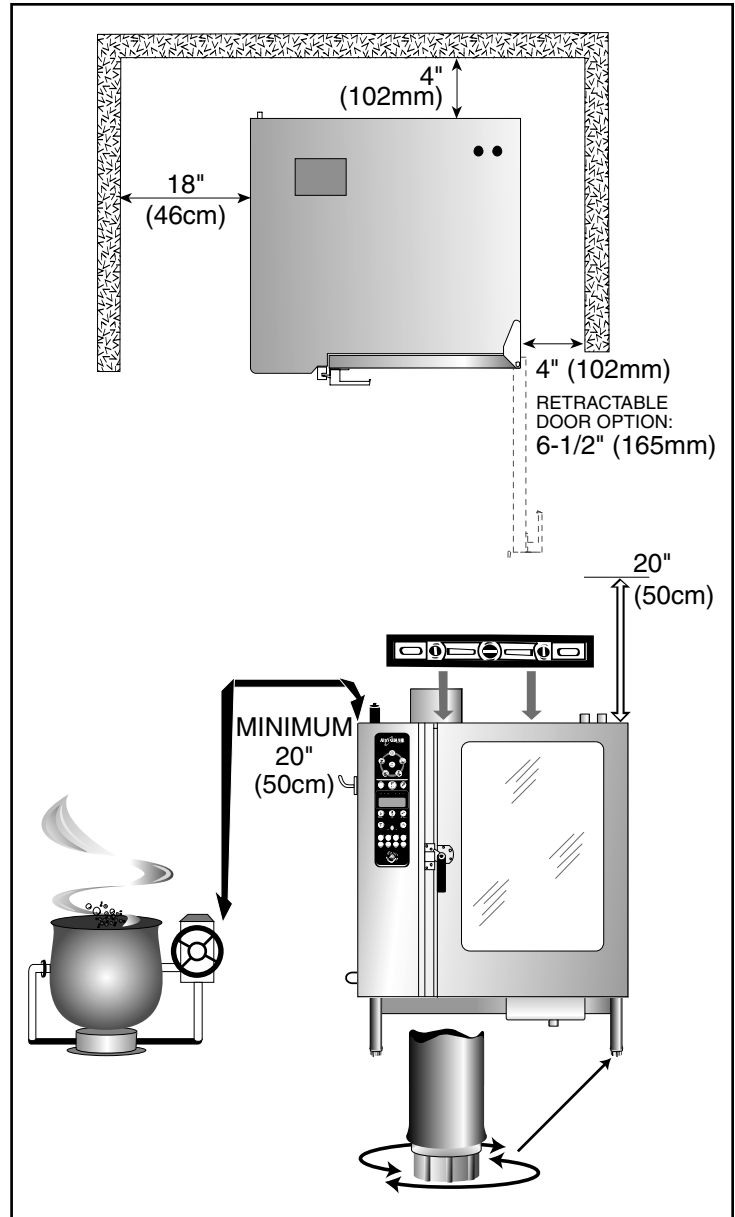
- ⇒ Allow a minimum of 4-inches (102mm) from the right side of the oven to allow the door to open to at least a 90° angle. Fully opened, the door will extend up to a 225° angle. If the oven is furnished with the retractable door option, allow a minimum clearance of 6-1/2-inches (16cm).
- ⇒ Allow a minimum clearance of 4-inches (102mm) from the back of the oven for plumbing connections.
- ⇒ Allow a 20-inch (50cm) clearance at the top of the oven for free air movement and for the steam vent(s) located at the top [RIGHT-REAR].
- ⇒ Do not install the oven adjacent to heat producing equipment such as fryers, broilers, etc. Heat from such appliances may cause damage to the controls of the Combitherm. Minimum clearance recommended: 20-inches (50cm).

Place the Combitherm oven on a stable, **LEVEL** horizontal surface. For counter-top models, the oven stand must be level. In addition, the overall height of the oven should be positioned so the operating controls and shelves may be conveniently reached from the front.

ALL INSTALLATION INSTRUCTIONS AND REQUIREMENTS MUST BE STRICTLY OBSERVED.





IMPROPER CONNECTION OF THIS APPLIANCE NULLIFIES ALL WARRANTIES.



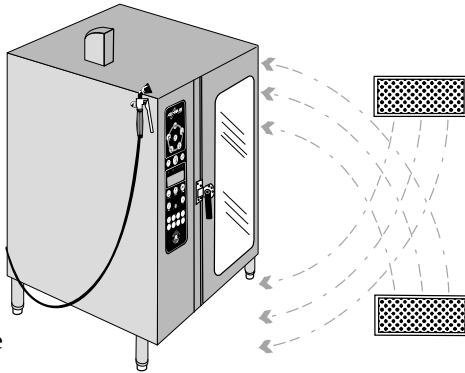
COMBITHERM® GAS INSTALLATION



1.7 AIR SUPPLY REQUIREMENTS

Installation of this oven must include a provision for an adequate flow of fresh air for gas combustion. This requirement must be observed by the installer as well as the operator. The bottom of the oven provides air supply access for gas combustion and must be kept clear at all times.

 CAUTION	OPERATOR CAUTION	 CAUTION
Make certain the area around the bottom of the oven is kept clear of obstructions to allow a continuous supply of fresh air for gas combustion.		

Make certain the oven installation maintains adequate air ventilation to provide cooling for electrical and gas components. The area around the oven should be clear of any obstructions which might retard the flow of cooling air. Failure to observe this caution may result in damage to the control components and will void the warranty.



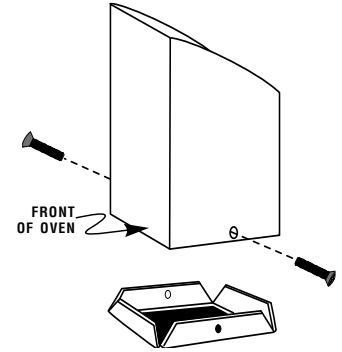
 CAUTION	OPERATOR CAUTION	 CAUTION
Do not use circulating fans on the floor. Floor fans will cause the loss of pilot flame and will affect burner operation.		

Local and the National Fuel Gas Code provide rules for determining the amount of fresh air necessary for combustion and ventilation of commercial cooking appliances. The codes will help determine if additional outside air may be necessary to meet health and safety regulations.

1.8 ASSEMBLY REQUIREMENTS

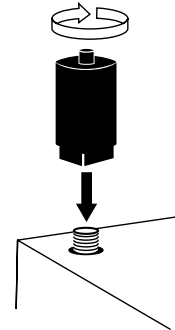
1.8.1 EXHAUST GAS FLUE DIVERTER

Install the diverter as shown on the drawing. Make certain the wire screen is in place before attaching with the screws provided with the diverter.



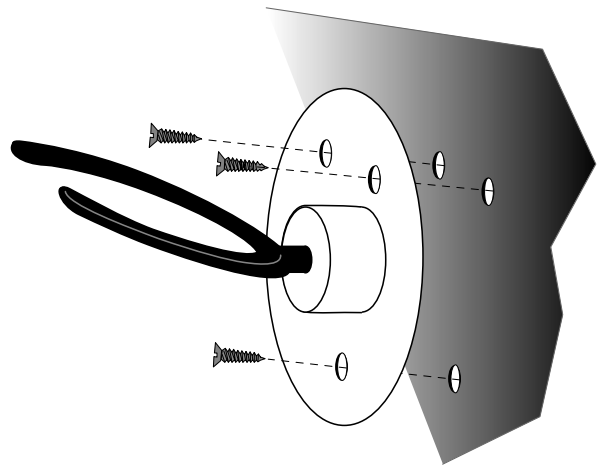
1.8.2 SOUND ABSORBER

Screw the sound absorber on the threaded nipple located at the top of the oven on the back, left-hand side.



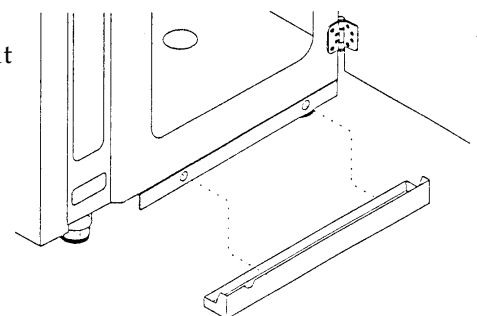
1.8.3 HAND SHOWER HOLDER

Fasten the hand shower holder in the holes provided on the oven using the three (3) screws packaged with the holder.



1.8.4 DRIP TRAY

Hang the drip tray at the front of the oven as indicated on the drawing.



COMBITHERM® GAS INSTALLATION

1.8 ASSEMBLY REQUIREMENTS

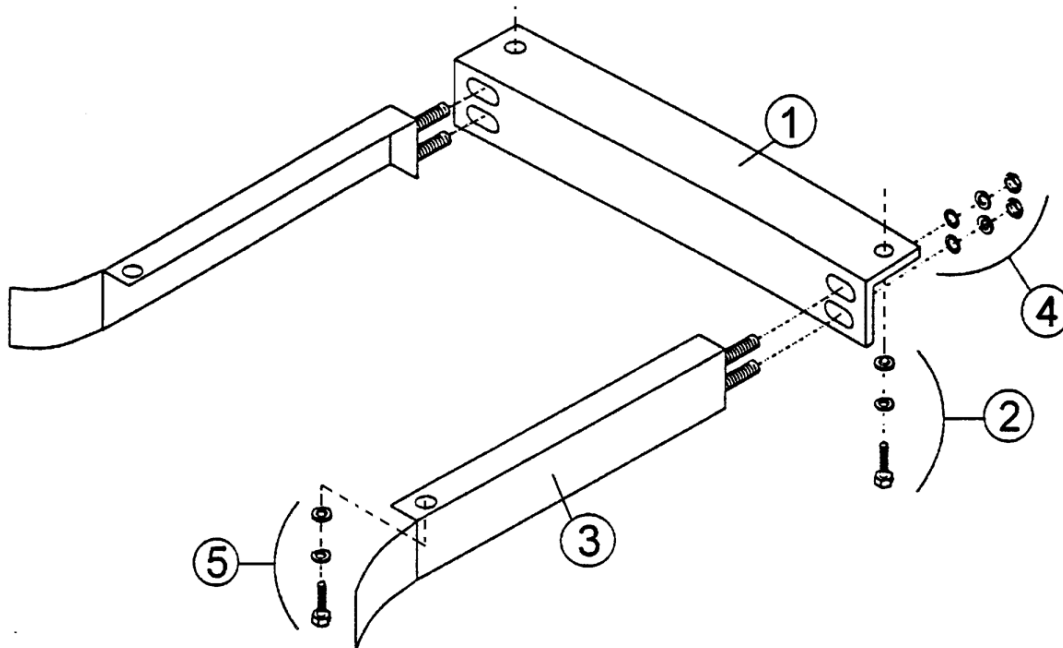
1.8.5 ROLL-IN CART (TROLLEY) GUIDE RAILS

(ON CART EQUIPPED MODELS)

Mount REAR SUPPORT ① on the bottom of the oven toward the back. Fasten each end of the REAR SUPPORT with a WASHER, LOCK WASHER, and BOLT ②. Align each GUIDE RAIL ③ with the slotted holes located at the front of the REAR SUPPORT. Loosely fasten each GUIDE RAIL from the back of the REAR SUPPORT with a WASHER, LOCK WASHER, and NUT ④.

Do not tighten GUIDE RAIL fasteners. Attach the front end of each GUIDE RAIL to the oven base with a WASHER, LOCK WASHER, and BOLT ⑤.

Push the roll-in cart (trolley) into the oven, center the cart right-to-left, and close the oven door. From the rear of the oven, slide both guide rails toward the center of the oven until they make contact with the roll-in cart. Lock the GUIDE RAILS into position by tightening both NUTS ④ at the back of the REAR SUPPORT ①. At the front of the oven, make certain contact has been made between the oven and the cart along the total width of the oven to create a complete seal. When a full seal has been determined, recheck each connection to make certain it has been fully tightened.



1.9 ELECTRICAL CONNECTION

Ensure the power supply matches the electrical specification located on the oven data plate. Gas models shipped within the United States and Canada are typically rated 110-120V, 60Hz, 1Ph and include an electrical cord. Fuses are located behind the left side panel.

Installation of electrical connections and wiring must be made by a *licensed electrical contractor*. The oven must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70 (latest edition). In Canada, electrical connections must comply with the Canadian Electrical Code, CSA C22.1.

ACCESSING CONTROL AREA

Access the electrical control system through the left side panel of the oven.



MAKE CERTAIN TO DISCONNECT POWER AND ENSURE THE GAS SUPPLY IS SHUT OFF BEFORE REMOVING THE LEFT SIDE PANEL.

An electrical diagram is affixed inside the left-hand side control area. A copy of the electrical diagram is also located at the back of this manual. Service or changes must be done by a licensed electrical contractor and in accordance with local codes and regulations.

COMBITHERM® GAS INSTALLATION

1.10 WATER SUPPLY



CONNECT TO POTABLE (DRINKABLE) COLD WATER ONLY

WATER PRESSURE REQUIREMENTS:

MINIMUM 30 PSI (2 BAR)

MAXIMUM 90 PSI (6 BAR)

Flush the water line at the installation site before connecting the oven to the water supply. A shut-off valve and approved back-flow preventer must be installed when connecting the oven to the cold water

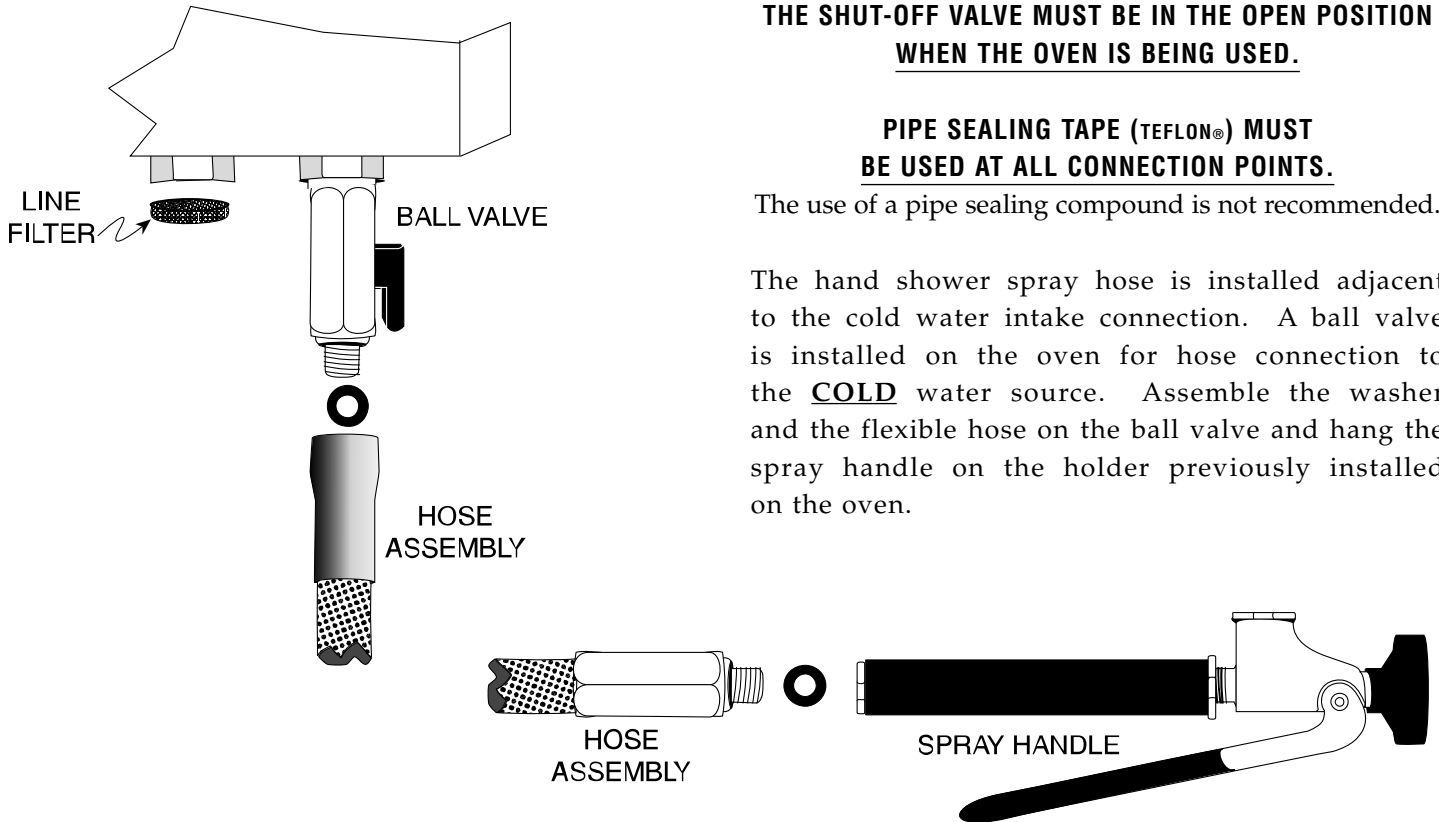
intake. The water supply line must be a minimum of 3/4-inch (NPT) (19mm). A hose connector is supplied for flexible hose connection to the **COLD** water source. A water filtration system is recommended if the water supply is between 7 and 9 grains of hardness. If water tests over 14 grains of hardness, the installation of a water softener is strongly recommended.

THE SHUT-OFF VALVE MUST BE IN THE OPEN POSITION WHEN THE OVEN IS BEING USED.

PIPE SEALING TAPE (TEFLON®) MUST BE USED AT ALL CONNECTION POINTS.

The use of a pipe sealing compound is not recommended.

The hand shower spray hose is installed adjacent to the cold water intake connection. A ball valve is installed on the oven for hose connection to the **COLD** water source. Assemble the washer and the flexible hose on the ball valve and hang the spray handle on the holder previously installed on the oven.



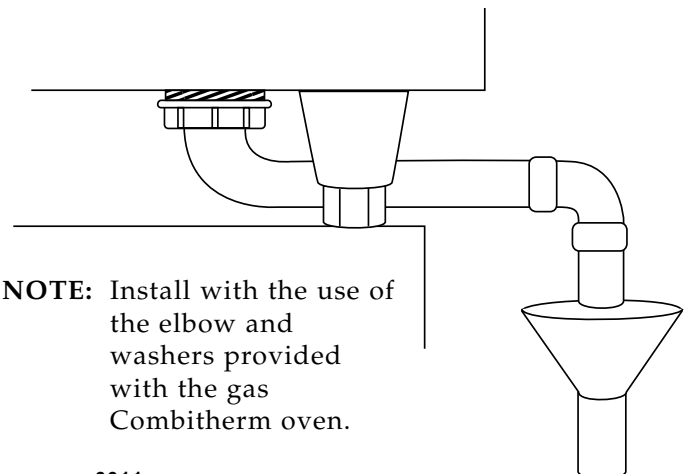
1.11 WATER DRAINAGE

The oven must discharge through an indirect waste pipe by means of an air gap. The drain thread is 1-1/4-inch (32mm) NPT. A union is required. Install a 1-1/4-inch (32mm) diameter drain line. The drain line must always be a positive gradient away from the oven and not more than 12-inches (305mm) before an air gap.

NOTE: In the U.S.A., this equipment is to be installed to comply with the Basic Plumbing Code of the Building Officials and Code Administrators International, Inc. [BOCA], and the Food Service Sanitation Manual of the Food & Drug Administration [FDA].

If several units are to be connected to one drain pipe, the dimensions of the pipe must be sufficient to allow an unobstructed water drain system.

**AVERAGE DRAIN WATER TEMPERATURE
149°F (65°C)**



NOTE: Install with the use of the elbow and washers provided with the gas Combitherm oven.

COMBITHERM® GAS INSTALLATION

1.12 GAS CONNECTION REQUIREMENTS

Installation of this oven must be completed by a qualified installer familiar with the local codes and regulations governing the installation of commercial gas appliances.

Installation must be in accordance with local codes, and in the absence of local codes, with the National Fuel Gas Code ANSI Z223.1 (latest edition). In Canada, the appropriate code is the Natural Gas Installation Code, CAN/CGA-B149.1 or the Propane Installation Code, CAN/CGA-B.

1.13 GAS TYPE AND PRESSURE

Check the oven nameplate information to determine if the oven was manufactured for use with natural or propane gas. Make certain the gas supply matches the nameplate information.

Check the oven nameplate to determine the gas manifold pressure for the oven. The minimum supply pressure to the oven must exceed this value by at least 1" w.c. It is recommended that the supply pressure be between 5" w.c. and 14" w.c. for natural gas, and 11" w.c. and 14" w.c. for propane.

1.14 GAS CONNECTION

The minimum size requirement for gas piping or a flexible connector is $\frac{3}{4}$ -inch (19mm). For long runs of gas piping, the pipe diameter must conform to the tables in the National Fuel Gas Code, ANSI/NFPA Z223.1.

A listed gas shut-off valve must be installed upstream of the appliance to shut off the gas supply during servicing. The shut-off valve should be accessible with the appliance in the normal installation position.

If the oven or the oven stand is supplied with casters, gas connection must be made with a flexible connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69; or in Canada, Connectors for Movable Gas Appliances, CAN/CGA-6.16-M87. When using a flexible connector, a quick disconnect device must be used to comply with the Standard for Quick-Disconnect Devices for Gas Fuels, ANSI Z21.41; or in Canada, Quick Disconnect Devices for Use with Gas Fuels, CAN1-6.9.

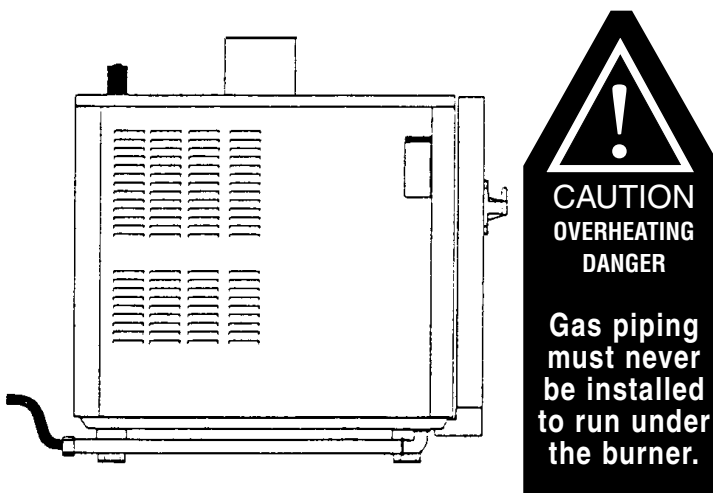
When a quick disconnect device and flexible connector are used, a restraining device must be installed to limit the movement of the appliance and prevent damage to the connector or quick disconnect. An example of a restraining device would consist of a 2000 pound test, stainless steel cable, attached to a structural member of the kitchen wall behind the oven. The means of attachment should consist of a quick connect snap so that the oven can be disconnected when the appliance must be moved away from the wall.

An alternate gas supply inlet may be required for installation sites with elevations at 3,000 feet (914m) above sea level. Please check with the factory.

Should conversion to the opposite fuel be desired, conversion parts must be ordered from the factory. *Conversion must be completed by a qualified service person only.* Always remember to reflect the conversion on the oven's nameplate.

The other end of the cable should be permanently attached to the rear frame of the oven. The cable should be of sufficient length so that no strain is ever placed on the flexible gas connector in the event of accidental movement of the oven without properly disconnecting the gas connector. The flexible connector should be routed to form a downward "U" loop between the building gas supply and the permanent attachment at the rear of the oven.

The routing of the flexible connector must not be made under the oven. Oven temperatures achieved during operation are too hot for safe operation. Gas piping should be installed from the point of gas connection at the bottom, front of the oven to the back of the oven where the flexible connector may be safely used. See the illustration for the recommended placement.



COMBITHERM® GAS INSTALLATION

1.15 LEAK TESTING

If a pressure leak test above 1/2 psi is to be performed on the building supply gas piping, the shut-off gas valve and oven inlet gas supply line must be disconnected from the building supply piping before conducting the pressure test. Failure to do so may result in damage to the manual gas valve, gas components in the oven, or both.

If any gas leak tests are to be conducted at pressures equal to or below 1/2 psi, the manual gas shut-off valve upstream of the oven must be turned off before conducting the tests.

Leak testing of the internal oven piping system was conducted before shipping the oven from the factory. If additional testing is needed, it should only be conducted at normal gas supply pressures. If the testing is performed using combustible gas in the piping, the leak checking should be done with a soap solution (bubble checking).

The use of an electronic combustible gas leak detector is helpful, however, this type of detector can be oversensitive. Electronic detectors may indicate false leaks from other sources which would not be detected when checking with a liquid solution to verify a no-hazard gas connection.

**NEVER CHECK FOR LEAKS
USING AN OPEN FLAME.**



When starting the oven after initial installation, the gas lines must be free of air. It may take up to 30 minutes to eliminate all air from the lines. If, after this time there is no pilot, call for factory assistance.

1.16 FUEL INTERLOCK SYSTEM

Local codes may require the fuel supply to the oven be interlocked to the ventilation hood. If that is the case, a separate, electrically operated gas valve must be installed in the gas line. Valve selection is at the discretion of the installer, however, the valve must be recognized by the authority which has jurisdiction.

1.17 GAS EXHAUST

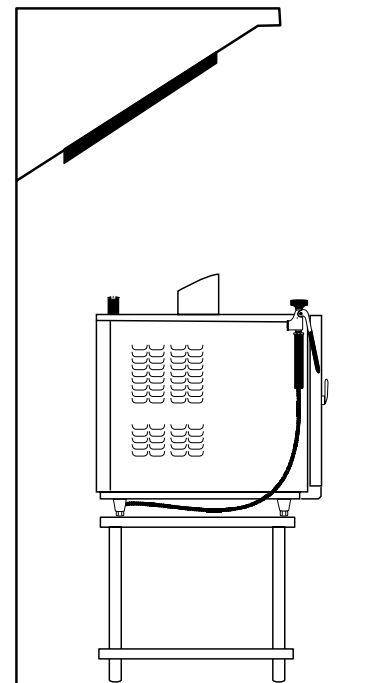
The oven is not designed for direct connection to a chimney vent system or for direct connection to a horizontal exhaust system.

The oven must be installed under a ventilation hood listed to ANSI/UL 705 (latest edition), and the installation must be completed in accordance with the ANSI/NFPA 96-1987, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.

The oven is supplied with a flue diverter which must be installed on the oven prior to installation. *See Assembly Requirements toward the front of this manual.*



Oven operators should be instructed with regard to the hazards of placing any material on top of the oven that would obstruct the flow of flue products out the opening of the flue diverter. Operators should also be instructed with regard to the hazards of hot flue gases and that any material or items placed on top of, or in front of the flue deflector could be damaged or cause a fire hazard.



COMBITHERM® GAS INSTALLATION

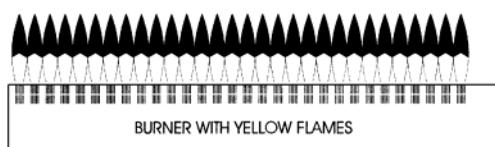
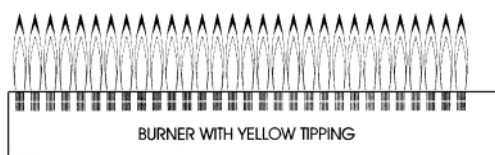
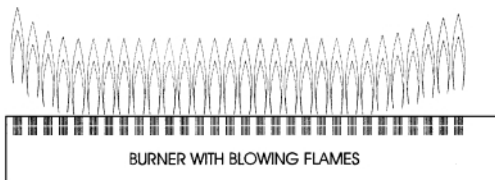
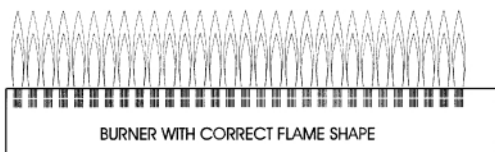
1.18 GAS PRESSURE CHART

The gas valve, pilot burner and nozzles for the main burner have been fitted according to the gas type specified on the name plate. Technical specifications for the gas system are as follows:

Combitherm ML Gas Model	6•10	7•14	10•10 12•18	10•20	20•20
Natural Gas ←					
Connected pressure rating	7 in. W.C.	7 in. W.C.	7 in. W.C.	7 in. W.C.	7 in. W.C.
Min. connected pressure	5 in. W.C.	5 in. W.C.	5 in. W.C.	5 in. W.C.	5 in. W.C.
Max. connected pressure	14 in. W.C.	14 in. W.C.	14 in. W.C.	14 in. W.C.	14 in. W.C.
Nozzle pilot burner	—	—	—	—	—
Nozzle burner	220	315	280	400	400
Manifold pressure	3.5 in. W.C.	3.5 in. W.C.	3.5 in. W.C.	3.5 in. W.C.	3.5 in. W.C.
Gas Consumption	45 cu.ft/hr	81.9 cu.ft/hr	67 cu.ft/hr	112 cu.ft/hr	168.1 cu.ft/hr
Gross thermal output	45,500 Btu/hr	82,000 Btu/hr	68,000 Btu/hr	113,000 Btu/hr	170,000 Btu/hr
Propane Gas ←					
Connected pressure rating	11 in. W.C.	11 in. W.C.	11 in. W.C.	11 in. W.C.	11 in. W.C.
Min. connected pressure	11 in. W.C.	11 in. W.C.	11 in. W.C.	11 in. W.C.	11 in. W.C.
Max. connected pressure	14 in. W.C.	14 in. W.C.	14 in. W.C.	14 in. W.C.	14 in. W.C.
Nozzle pilot burner	—	—	—	—	—
Nozzle burner	135	190	170	220	220
Manifold pressure	10 in. W.C.	10 in. W.C.	10 in. W.C.	10 in. W.C.	10 in. W.C.
Gas Consumption	17.7 cu.ft/hr	32.9 cu.ft/hr	26.5 cu.ft/hr	44.1 cu.ft/hr	66.5 cu.ft/hr
Gross thermal output	45,500 Btu/hr	82,000 Btu/hr	68,000 Btu/hr	113,000 Btu/hr	170,000 Btu/hr

1.19 GAS FLAME PATTERNS

When starting the oven after initial installation, the gas lines must be free of air. It may take up to 30 minutes to eliminate all air from the lines. If, after this time there is no pilot, call for factory assistance.



After the installation is complete, the oven must be test fired to ensure that the system is operating properly. Follow the operating instructions located in the cooking guide furnished with the oven. Under most circumstances, initial operation will be the only installer check necessary.

The flame pattern under both hot and cold conditions should be stable on all burner ports. There should be no lifting or blowing after 15 seconds of operation. Gas Combitherm ovens are not equipped with air shutter adjustment on the burners. If the flame pattern does not match correct pattern shown, contact the factory for further directions.

Make certain the electric igniter lights the pilot burner quickly. The main burner should light within 4 seconds, without problems and should light smoothly with no harsh noise. When the oven is COLD, cycle the oven ON and OFF five times to verify proper operation. Allow the oven to heat for 5 minutes and repeat the process.

Check the flame pattern on the burners. The flames should be blue in color with little or no yellow in the flame. Some yellow tipping is normal with propane gas models, however, there should be no indication any yellow tipping will produce soot on the combustion chamber walls, pilot, or main burner.

COMBITHERM® GAS INSTALLATION

1.20 BURNER PILOT ADJUSTMENTS

Combitherm gas ovens are equipped with intermittent pilot-based operation and are fitted with a Honeywell gas valve. The gas valve has a built-in pressure regulator and a hot surface intermittent pilot ignition control for safe operation. The valve has a step open feature (standard) for natural gas operation. For propane, a full open feature is standard. Explanation of the gas valve is shown in the illustration.

1.20.1 CHECKING PRESSURE

- Turn gas connection OFF. Open gas inlet pressure connection cap and unscrew the tap. Connect pressure gauge at pressure tap. Read pressure.
- If pressure measured is higher or lower than that specified in the Pressure Table located in this manual, **DO NOT PROCEED WITH INITIAL OPERATION.**
- Remove pressure gauge, screw in the tap, and close with protective cap.



1.20.2 ADJUST PILOT BURNER

The pilot burner assembly installed in the oven is tested prior to shipment and does not require any adjustment. If adjustment is desired, the following instructions are to be **completed by a qualified technician only.**

- Turn main power switch ON and switch the ignition control switch on the gas valve to the ON position.
- Set temperature and timer and press the START/STOP key. Follow oven operational instructions.
- The pilot flame should be lit and blue in color with very little or no yellow tipping.

1.20.3 MANIFOLD PRESSURE ADJUSTMENT

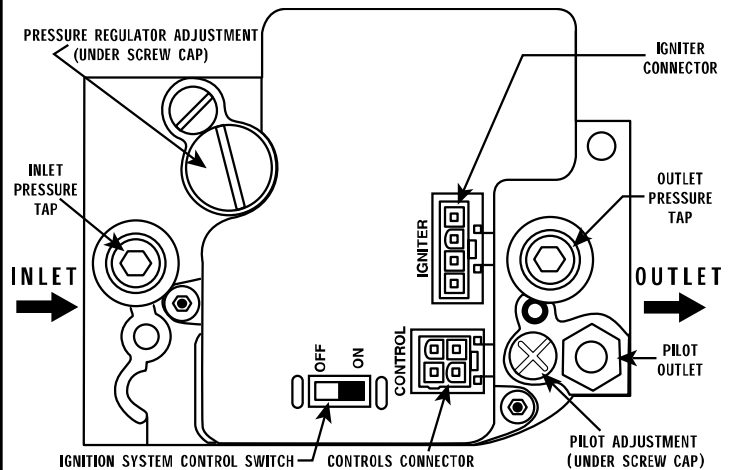
The gas valve has a built-in pressure regulator and regulates the manifold pressure according to specifications presented in the Pressure Table in this manual. The valve requires no adjustment; however, if adjustment is desired, a **qualified technician only** should follow the instructions shown below.

- Turn power and gas supply OFF.
- Remove protective cap from outlet gas/manifold gas tap. Unscrew, connect pressure gauge.
- Turn main power switch ON, and switch the ignition control switch on the gas valve to ON position.
- Select a program, set temperature and timer, and press the START/STOP key. Follow the oven operational instructions.
- The gas valve will open and the main burner flame should be established.
- Measure manifold pressure. If it requires adjustment, open the cap on the pressure regulator and adjust the screw for increased or decreased gas pressure.

DO NOT SET THE REGULATOR TO ANY OTHER SETTING OTHER THAN TO THE DATA SPECIFIED IN THE PRESSURE CHART IN THIS MANUAL.

- Turn the gas valve OFF or to the PILOT position.
- Close pressure regulator and manifold/outlet gas tap with protective caps.

NOTE: If this procedure is not clearly understood, **DO NOT** perform any changes. Call the factory for assistance.



1.20.4 IGNITION & BURNER CHECK

After the installation is complete the oven needs to be test fired to ensure that the system is operating properly. Follow the operating instructions located in the cooking guide furnished with the oven. Under most circumstances, initial operation will be the only installer check necessary.

The flame pattern under both hot and cold conditions should be stable on all burner ports. There should be no lifting or blowing after 15 seconds of operation. Gas Combitherm ovens are not equipped with air shutter adjustment on the burners. If the flame pattern does not match correct pattern shown, contact the factory for further directions.

Make certain the electric igniter lights the pilot burner quickly. The main burner should light within 4 seconds, without problems and should light smoothly with no harsh noise. When the oven is COLD, cycle the oven ON and OFF five times to verify proper operation. Allow the oven to heat for 5 minutes and repeat the process.

Check the flame pattern on the burners. The flames should be blue in color with little or no yellow in the flame. Some yellow tipping is normal with propane gas models, however, there should be no indication any yellow tipping will produce soot on the combustion chamber walls, pilot, or main burner.

1.20.5 VERIFY SEQUENCE OF OPERATION

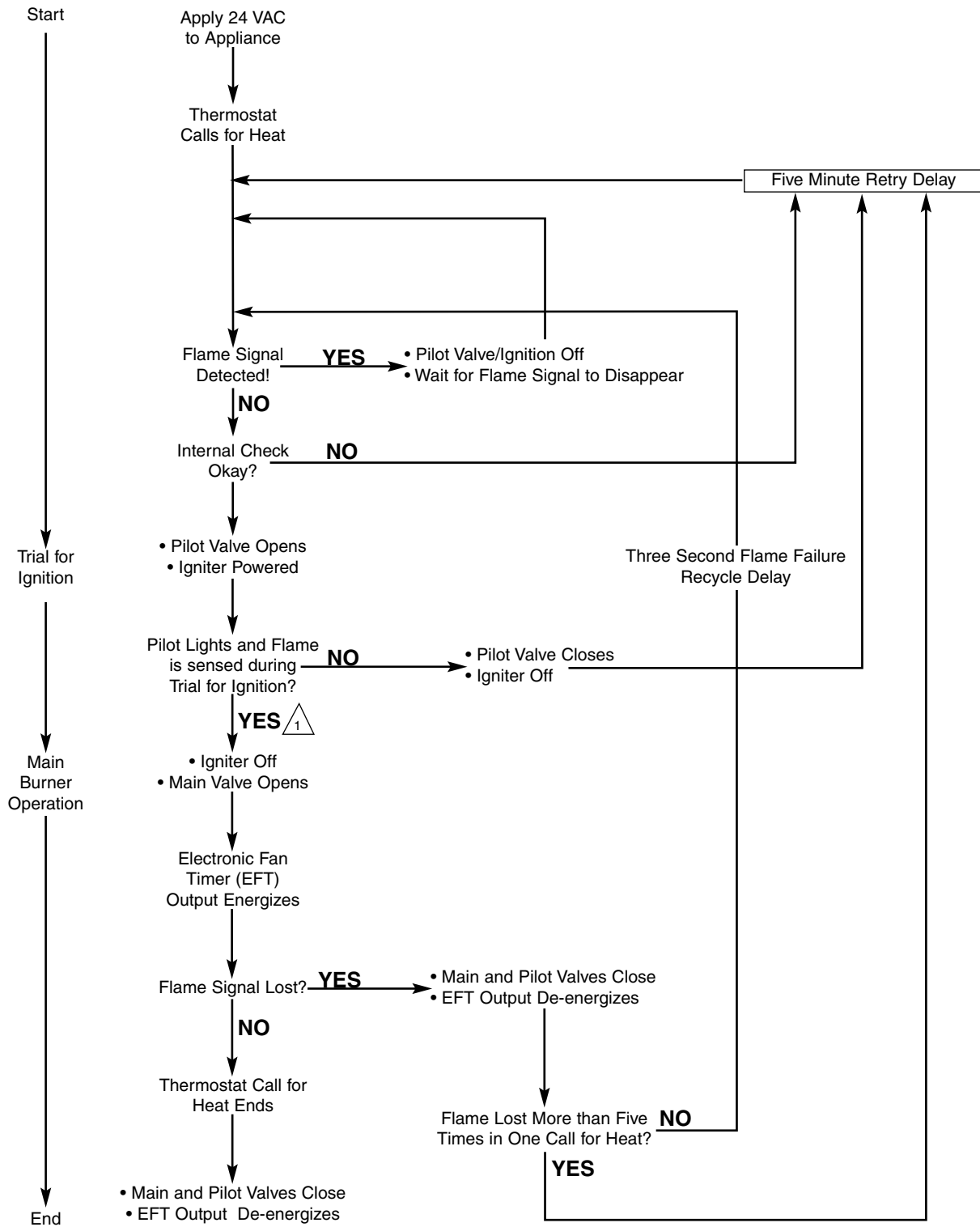
The Gas Combitherm is fitted with an intermittent pilot and a Honeywell gas valve, which provides automatic pilot ignition and main burner ignition. The ignition control system will routinely undergo three ignition trials (for pilot burner ignition) before identifying an ignition failure to timeout. The normal sequence of operation is illustrated on the following page of this manual.


When starting the oven after initial installation, the gas lines must be free of air. It may take up to 30 minutes to do this. If, after this time there is no pilot, call for factory assistance.

COMBITHERM® GAS INSTALLATION

1.21 SEQUENCE OF OPERATION

Honeywell SmartValve™ System



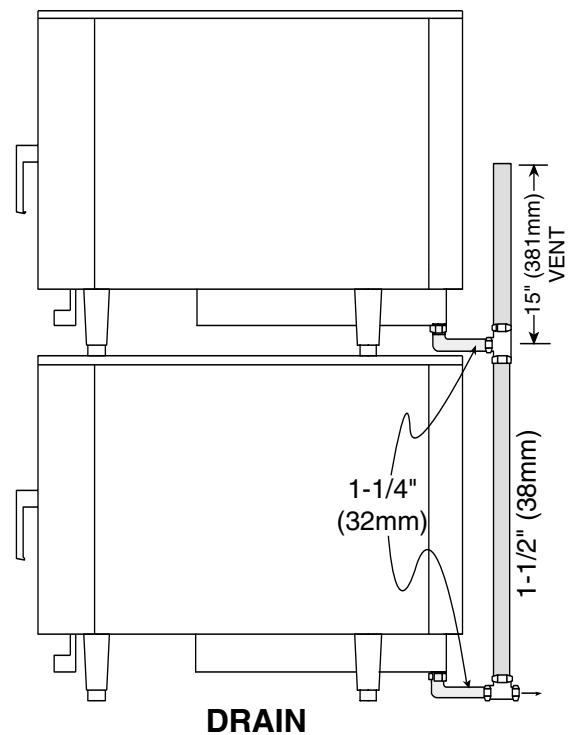
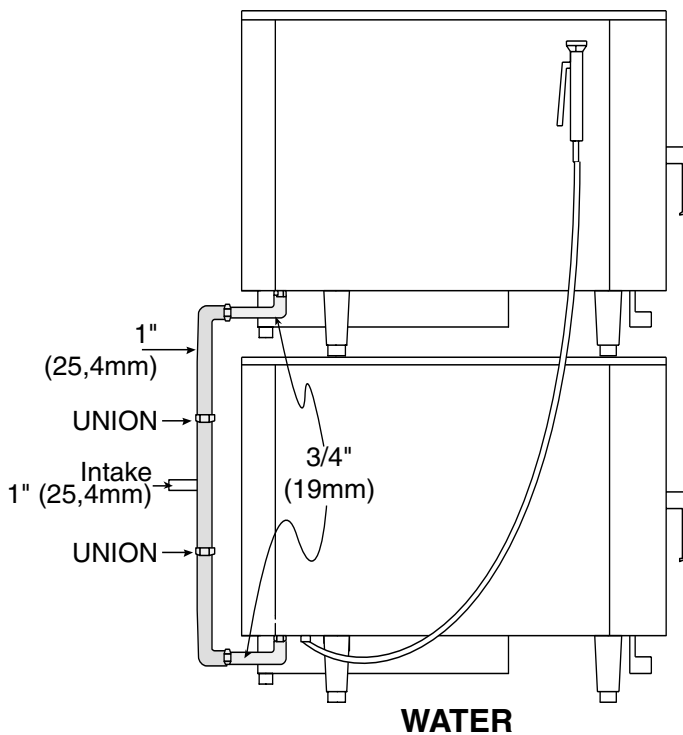
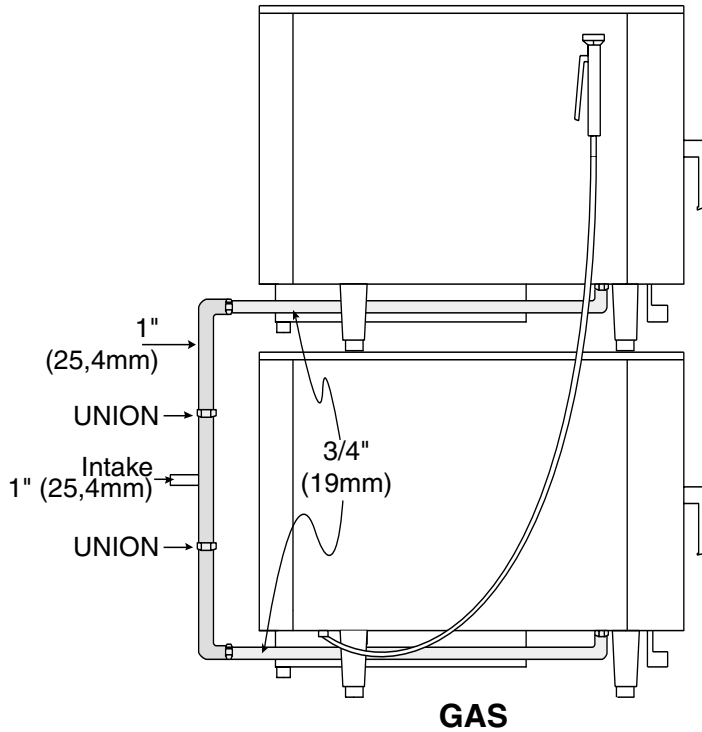
 Igniter will turn off about 30 seconds into the trial for ignition if the pilot flame has not lit. It will turn back on for the final 30 seconds of the 90 second trial for ignition. The pilot valve will be energized during the entire trial for ignition. This is normal operation for this gas ignition system.

COMBITHERM® GAS INSTALLATION

1.22 STACKING COMBITHERM CONNECTIONS

Stacking Combitherm ovens require two (2) water connections, two (2) drain connections, and two (2) gas connections.

IF LOCAL CODE ALLOWS, the gas, water, and drain may be manifolded as long as the size of the water inlet is increased to 1-inch (25,4mm) and the drains include an external vent. The drawing illustrates one suggested method of a manifold installation.



COMBITHERM® GAS INSTALLATION

1.23 POST-INSTALLATION CHECK LIST

In order for this oven to operate properly, installation must conform with the instructions provided in this manual. Following full installation the following list is provided as a final check to help assure conformance.

INSTALLER REQUIREMENTS	INITIALS/DATE
<input type="checkbox"/> Bottom of oven has been checked for damage due to improper positioning on site.	
<input type="checkbox"/> Proper clearances have been allowed at the top of the oven and from all adjacent surfaces with allowance of free air access to all vents.	
<input type="checkbox"/> Clearance has been provided at the left of the oven for service access.	
<input type="checkbox"/> A minimum distance of 20-inches (1/2 meter) has been provided between the oven and any heat producing equipment such as fryers, broilers, etc.	
<input type="checkbox"/> The oven has been leveled on a stable surface.	
<input type="checkbox"/> The oven has been connected to COLD water on a single water connection.	
<input type="checkbox"/> Incoming water pressure is between a minimum of 30 PSI (2 BAR) and a maximum of 90 PSI (6 BAR).	
<input type="checkbox"/> A water conditioner is highly recommended, especially if the water hardness is NOT pH5 and 9. Contact factory for assistance.	
<input type="checkbox"/> Installation of drain is at a minimum of 1-1/4" (32mm) with a positive descending slope.	
<input type="checkbox"/> 2" (51mm) air gap at drain is free of obstructions.	

INSTRUCTIONS TO OWNER/OPERATOR	INITIALS/DATE
<input type="checkbox"/> Owner/operator has been instructed on the importance of cleaning the oven along with proper cleaning procedures, and daily cleaning of the interior.	
<input type="checkbox"/> Owner/operator has been advised to use authorized Combitherm oven cleaner only.	
<input type="checkbox"/> Owner/operator has been informed of the safety warnings located in the operation guide including the warning not to handle pans containing liquid or semi liquid products positioned above eye level of the operator.	



Damage directly attributed to improper set up, installation, or cleaning can invalidate warranty claims.

1.24 EMERGENCY OPERATION

In the event of an error code, operation of the Combitherm can be continued on a limited basis for a short duration. Cooking times may be longer than normal operation and close monitoring of the cooking process is recommended. Contact an authorized service agency immediately if the problem cannot be rectified with simple steps in the troubleshooting guidelines located in this manual. Error conditions under which continued operation can be conducted are indicated by YES in the chart shown below.

When the oven malfunctions, an error code will appear in the display.

 PRESS THE START/STOP KEY TO ACKNOWLEDGE THE ERROR.
The keys for the usable operational modes will begin to flash and can be operated normally.

  SELECT AND PRESS ONE OF THE COOKING MODES INDICATED.
The oven control will only respond to the oven mode keys flashing.

SET THE OVEN CONTROLS AS IF OPERATING UNDER NORMAL CIRCUMSTANCES.
Depending on the error code involved, oven function, such as temperature range, may be limited.

 PRESS THE START/STOP KEY TO BEGIN THE COOKING PROCESS.

 PRESS THE START/STOP KEY WHEN THE TIMER EXPIRES.

WHEN THE OVEN FAULT IS CORRECTED, THE COMBITHERM WILL RETURN TO NORMAL OPERATION.

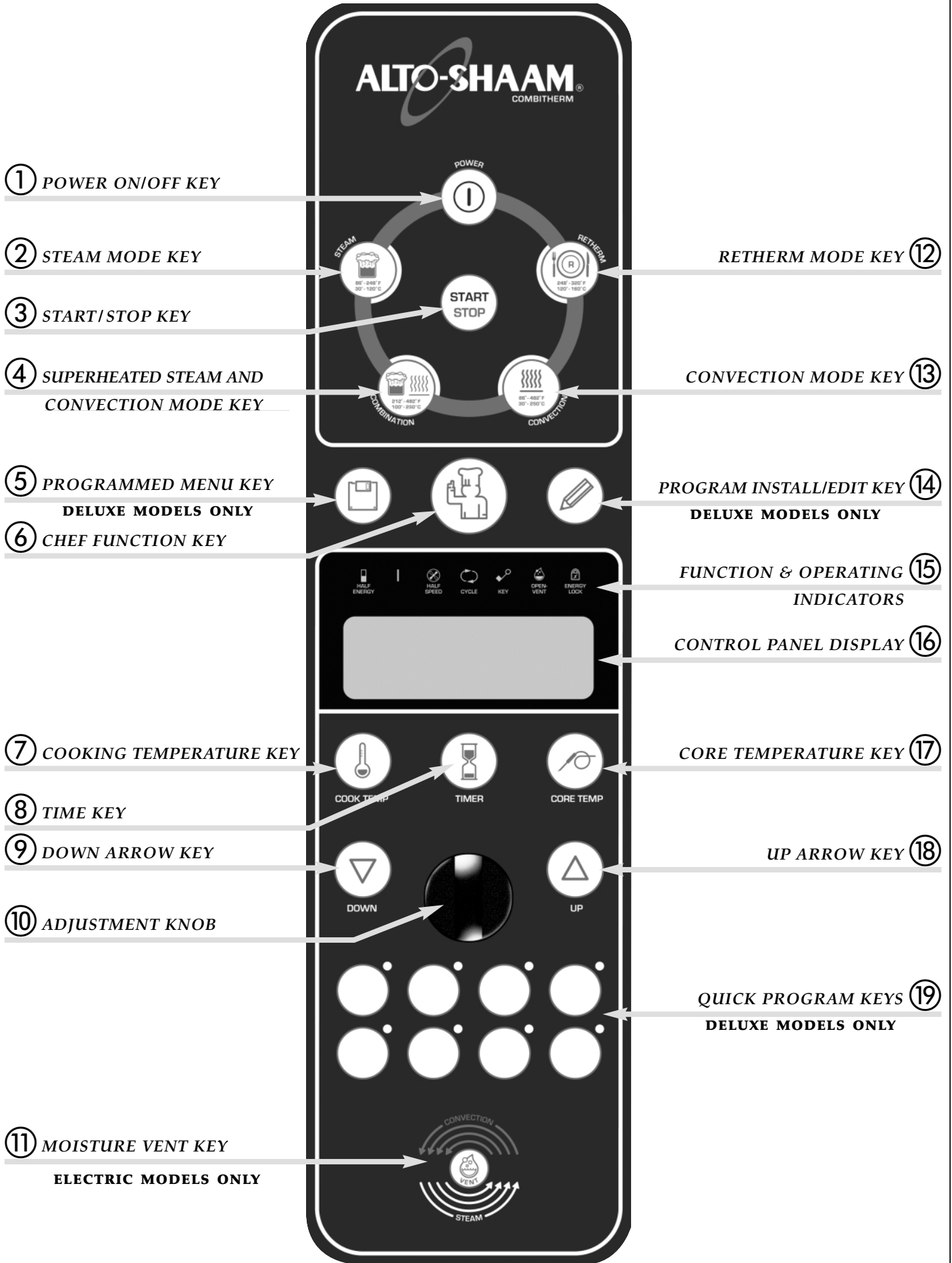
ERROR CODE	DISPLAY MESSAGE	GAS	ELECTRIC	STEAM ¹ MODE	SUPERHEATED STEAM MODE	CONVECTION MODE	RETERM MODE	DELTA-T MODE
E01	Low water level	YES	YES	NO	NO	up to 356°F (180°C)	NO	YES
E02	EL-temperature too high CONTROL COMPARTMENT TEMP	YES	YES	YES	Up to 284°F (140°C)	Up to 284°F (140°C)	Up to 284°F (140°C)	Up to 284°F (140°C)
E03	Fan Fault BLOWER FAN	NO	YES	Up to 212°F (100°C)	NO	NO	NO	NO
E04	EL-fan fault CONTROL COOLING FAN	NO	YES	YES	Up to 284°F (140°C)	Up to 284°F (140°C)	Up to 284°F (140°C)	Up to 284°F (140°C)
E05	Gas fault	YES	NO	YES	YES	YES	YES	YES
E15	Condenser oven temperature HIGH CONDENSATE TANK TEMP	YES	YES	NO	NO	Up to 356°F (180°C)	NO	YES
E21	Oven probe error TEMPERATURE PROBE	NO	YES	212°F only (100°C)	NO	NO	NO	NO
E22	CTC error TEMPERATURE PROBE	YES	YES	YES	YES	YES	YES	YES
E23	SG-probe error STEAM GENERATOR PROBE B4	YES	YES	YES	YES	YES	YES	YES
E24	Bypass probe error	NO	YES	Up to 210°F (99°C)	NO	YES	NO	YES
E25	Condenser probe error B3 PROBE	NO	YES	YES ²	Up to 356°F ² (180°C)	Up to 356°F ² (180°C)	Up to 356°F ² (180°C)	YES ²
E26	SG probe error STEAM GENERATOR PROBE	NO	YES	YES	YES	YES	YES	YES
E23 & E26	SG probe error ³ STEAM GENERATOR PROBE B4	NO	YES	YES ³	YES ³	YES ³	NO	YES ³
E33	SG heat error STEAM GENERATOR ELEMENT	NO	YES	YES	YES	YES	YES	YES
E34	Steam Generator pump error	NO	YES	YES	YES	YES	YES	YES
E81	Program memory error	YES	YES	YES	YES	YES	YES	YES
E83	Algorithm error	YES	YES	YES	YES	YES	YES	YES
E89	12C error	YES	YES	YES	YES	YES	YES	YES

¹ Cooking time increases significantly. Food on the upper shelves is finished first

² Water injection into the condenser is activated for the entire cooking mode (high water consumption).

³ When error codes E23 and E26 appear simultaneously, steam generator does not preheat.

2.0 CONTROL PANEL IDENTIFICATION

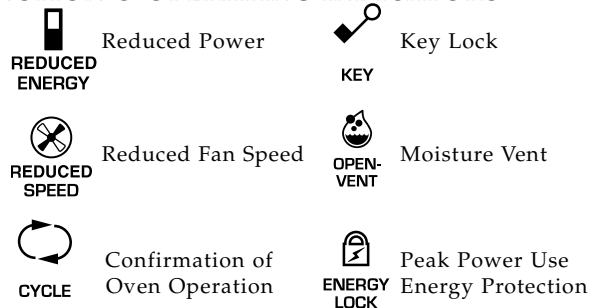


2.0 CONTROL PANEL IDENTIFICATION

- ① **POWER ON/OFF KEY**
 Activates power to the oven and automatically fills the steam generator with water which will heat to a stand-by mode temperature of 150°F (65°C). The steam generator flush is also activated by pressing this key.
- ② **STEAM MODE KEY**
 The oven will operate in the steam mode at a temperature range of 86°F to 248°F (30°C to 120°C).
- Automatic steaming at 212°F (100°C). **FACTORY-SET DEFAULT.**
 - Quick steaming between 213°F and 248°F (101°C and 120°C).
 - Low Temperature Steaming between 86°F and 211°F (30°C and 99°C).
- ③ **START/STOP KEY**
 Initiates all cooking mode functions and programmed procedures stored in memory. Stops an activated cooking mode or programmed procedure currently in progress, and exits Chef function key.
- ④ **SUPERHEATED STEAM AND CONVECTION MODE KEY**
 Selection key for the combination steam and convection cooking mode which can be set within a temperature range of 212°F to 482°F (100°C and 250°C).
- ⑤ **PROGRAMMED MENU KEY**
 Shows a list menu in display ⑯ of all stored cooking programs and is also used to exit the list menu display. **DELUXE MODELS ONLY.**
- ⑥ **CHEF FUNCTION KEY**
 Used to select programmed menu functions, various auxiliary functions, and several chef help instructions.
- ⑦ **COOKING TEMPERATURE KEY**
 Used to set the required cooking temperature, to recall the set cooking temperature, or to check the actual oven temperature in conjunction with the down arrow key ⑨, the up arrow key ⑱ or the adjustment knob ⑩.
- ⑧ **TIME KEY**
 Used to set the required cooking time or recall the set cooking time in conjunction with the down arrow key ⑨, the up arrow key ⑱ or the adjustment knob ⑩.
- ⑨ **DOWN ARROW KEY**
 Used to decrease displayed cook temperature ⑦, time ⑧, or core temperature ⑰ and as a scrolling key for programming functions.

- ⑩ **ADJUSTMENT KNOB**
 Serves the same function as the up and down arrow keys to increase or decrease the displayed cook temperature ⑦, time ⑧, or core temperature ⑰.
- ⑪ **MOISTURE VENT KEY** **ELECTRIC MODELS ONLY**
 Immediately vents steam and condensate from the oven compartment while cooking in the Convection mode ⑬ or in the Superheated Steam and Convection mode ④.
- ⑫ **RETHERM MODE KEY**
 Food rethermalization or reheating mode will operate with automatic steam injection at a temperature range of 248°F and 320°F (120°C and 160°C).
- ⑬ **CONVECTION MODE KEY**
 Selection key for convection cooking without steam at a temperature range of 86°F to 482°F (30°C and 250°C).
- ⑭ **PROGRAM INSTALL AND EDIT KEY**
 Used to create, change, duplicate, and delete programmed menus. **DELUXE MODELS ONLY.**

⑮ FUNCTION & OPERATING INDICATORS



⑯ CONTROL PANEL DISPLAY

- ⑰ **CORE TEMPERATURE KEY**
 Used to set the required internal product temperature, to recall the internal product temperature set by the operator, or to display the current internal temperature of the product in conjunction with the down arrow key ⑨, the up arrow key ⑱ or the adjustment knob ⑩.
- ⑱ **UP ARROW KEY**
 Used to increase displayed cook temperature ⑦, time ⑧, or core temperature ⑰ and as a scrolling key for programming functions.
- ⑲ **QUICK PROGRAM KEYS**
 Immediate access to frequently used operator set programs including cooking modes, cleaning, and other oven functions. **DELUXE MODELS ONLY.**

2.1 IMPORTANT SAFETY PRECAUTIONS



CAUTION

STEAM

For safe release of the cooking compartment steam, initially open the door approximately 2" (50mm) only. Stand behind the door as the hot steam is released.

DO NOT USE THE ATTACHED HAND-HELD HOSE TO SPRAY ANYTHING OTHER THAN THE INTERIOR OF THE COMBITHERM OVEN COMPARTMENT. AT NO TIME SHOULD THE EXTERIOR OF THE OVEN BE STEAM CLEANED, HOSED-DOWN WITH THE HAND-SPRAYER, FLOODED WITH WATER, OR FLOODED WITH LIQUID SOLUTION OF ANY KIND.

DO NOT USE THE SPRAY HOSE IN A HOT COOKING COMPARTMENT. ALLOW THE OVEN TO COOL TO A MINIMUM OF 150°F (66°C).

DO NOT USE HIGH PRESSURE WATER CLEANING METHODS ON THE INTERIOR OR EXTERIOR OF THE COMBITHERM OVEN.

DO NOT HANDLE PANS CONTAINING LIQUID OR SEMI LIQUID PRODUCTS POSITIONED ABOVE EYE LEVEL OF THE OPERATOR. SUCH PRODUCTS CAN SCALD AND CAUSE SERIOUS INJURY.

USE AUTHORIZED COMBITHERM LIQUID OVEN CLEANER ONLY.

UNAUTHORIZED CLEANING AGENTS MAY DISCOLOR OR HARM INTERIOR SURFACES OF THE OVEN. READ AND UNDERSTAND LABEL AND MATERIAL SAFETY DATA SHEET BEFORE USING THE OVEN CLEANER.

FOR OPERATOR SAFETY

NOTE AND OBSERVE ALL SAFETY PRECAUTIONS LOCATED THROUGHOUT THIS MANUAL.

2.2 Preventive Maintenance

In addition to the routine cleaning and maintenance procedures, there are several additional steps to be taken for both sanitation purposes and to keep the oven running at top operating efficiency. These additional safeguards will help prevent inconvenient down time and costly repairs.

- DO NOT DISPOSE OF GREASE, FAT, OR SOLID WASTE DOWN THE OVEN DRAIN. Fats and solids will eventually coagulate in the drain system, causing blockage.
- MAKE CERTAIN THE DRAIN SCREEN IS ALWAYS IN PLACE. REMOVE ANY SOLID WASTE MATERIAL FROM THE DRAIN SCREEN BEFORE IT ENTERS THE DRAIN SYSTEM. The routine removal of solids from the drain screen will help prevent blockage.
- USE THE AUTHORIZED COMBITHERM OVEN CLEANER ONLY. The use of unauthorized cleaning agents may discolor or harm the interior surfaces of the oven.
- TO PROLONG THE LIFE OF THE DOOR GASKET, REMOVE AND CLEAN THIS ITEM DAILY. The acids and related compounds found in fat, particularly chicken fat, will weaken the composition of the gasket unless cleaned on a daily basis.
- TO ADDITIONALLY PROTECT GASKET LIFE, ALLOW OVEN DOOR TO REMAIN SLIGHTLY OPEN AT THE END OF THE PRODUCTION DAY. An open door will relieve the pressure on the door gasket.
- ROUTINELY CLEAN DOOR HINGES. Open oven door to relieve tension. Clean all parts of the hinge.

2.3 Routine Cleaning Requirements

DAILY OVEN CLEANING

To be performed at the end of each production day or between production shifts.

MONTHLY CLEANING

WATER INTAKE FILTER CLEANING
CLEANING THE DRAIN PIPE
CLEANING THE FLUE OUTLET
FAN CLEANING

DAILY GASKET CLEANING

It is important to prolong the life of the oven gasket by cleaning this item on a daily basis. Routine cleaning will help protect the composition of the gasket from deterioration caused by acidic foods. After allowing the oven to cool, remove pull-out gasket and wash in hot, soapy water. Do not place in the dishwasher.



Always replace the gasket before cleaning the oven interior or operating the oven.

COMBITHERM® CLEANING & MAINTENANCE



RUBBER GLOVES AND PROTECTIVE EYE WEAR
MUST BE WORN WHEN USING THE OVEN CLEANER.

USE AUTHORIZED COMBITHERM LIQUID OVEN CLEANER ONLY.

Unauthorized cleaning agents may discolor or harm interior surfaces of the oven. Read and understand label and material safety data sheet before using the oven cleaner.

Causes severe burns. Do not get in eyes, on skin, or on clothing. Do not wear contacts. Harmful or fatal if swallowed. Do not breathe mist. Use in well ventilated area. Keep out of reach of children. Do not use on aluminum. Do not mix with anything but water.

THOROUGHLY RINSE EMPTY CONTAINER WITH WATER AND SAFELY DISCARD.

2.4 DAILY OVEN CLEANING



DO NOT SPRAY CLEANER INTO A HOT OVEN. ALLOW THE OVEN TO COOL TO 150°F (66°C).

The temperature in the display indicates the air temperature inside the oven compartment and not the interior walls of the oven. Always make certain to allow the oven walls to cool to a minimum of 150°F (60°C) before spraying the compartment with oven cleaner.

2.4.1

1. Remove all food scraps and residue from the oven drain ⑥.

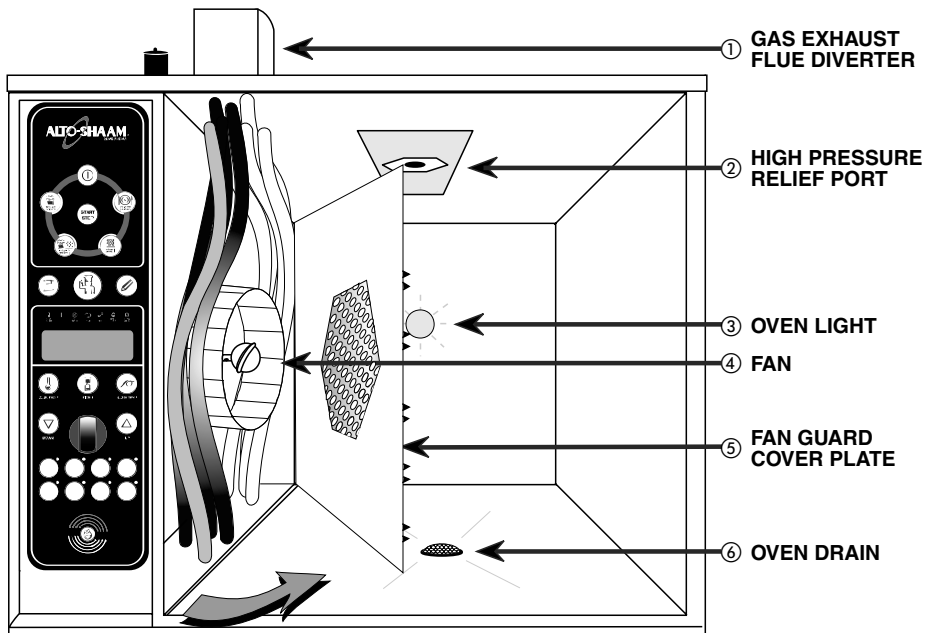
2. Wearing safety glasses and rubber gloves, remove the drain screen and spray Combitherm liquid oven cleaner directly into the drain pipe ⑥. Replace the drain screen.

3. Generously spray the interior oven surfaces with an even coat of Combitherm Liquid Oven Cleaner. Spray all built-in components, shelves, side racks, and pans.

4. Once a week, loosen the thumb screw(s) and swing Fan Guard Cover Plate ⑤ toward the back of the oven. Spray the back of the Fan Guard Cover Plate, the oven fan, and the left-hand side of the oven. Close the swing out Cover Plate ⑤. Lock the cover into place and tighten thumb screw(s).

5. Insert the Combitherm Liquid Oven Cleaner spray nozzle directly into the High Pressure Relief Port ② and spray several times.


6. Securely close the oven door.




COMBITHERM® CLEANING & MAINTENANCE

2.4.2 AUTOMATIC CLEANING PROGRAM

The Combitherm automatic cleaning function selects the proper temperature for each step of the cleaning process.

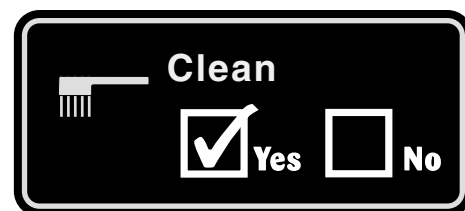
With the oven power  on:


 PRESS THE CHEF FUNCTION KEY.

➡ Rotate the adjustment knob until the clean symbol  is highlighted in the display.

 PRESS THE CHEF FUNCTION KEY.

➡ Press the up Δ and down ∇ arrow keys or rotate the adjustment knob to select YES for the automatic cleaning function.




 PRESS THE CHEF FUNCTION KEY TO CONFIRM THE SETTING AND START THE CLEANING PROGRAM.

THE OVEN WILL BEGIN A 20 MINUTE, 2-STEP CLEANING CYCLE.

- 10 minutes at 86°F (30°C) to allow the cleaning agent to work
- 10 minutes at full steam temperature of 212°F (100°C) to clean the oven

FOR DELUXE OVENS WITH A PROGRAMMED MENU KEY

FOLLOW STEPS 1 THROUGH 6 ON THE PRECEDING PAGE.





With the oven power  on:

 PRESS THE PROGRAMMED MENU KEY.

➡ Rotate the adjustment knob to program 250 = CLEAN.

 PRESS THE START KEY.

DELUXE MODELS CAN ALSO BE CLEANED AS SHOWN IN THE PREVIOUS INSTRUCTIONS.

7. When the buzzer signals the end of the cleaning process, press the start/stop key  to deactivate the audible signal or open the oven door.
8. With the door open, use the hand held hose and direct a stream of water into the High Pressure Relief Port  to rinse away oven cleaner residue.
9. Rinse the interior and all sprayed components with the hand-held hose. Make certain to thoroughly rinse all surfaces to remove any cleaning solution residue. Use a non-abrasive cleaning pad for any problem areas.
10. Loosen the thumb screw(s) and swing Fan Guard Cover Plate  toward the back of the oven. Thoroughly rinse the back of the Fan Guard Cover Plate, the oven fan, and the left-hand side of the oven. Close the swing out Cover Plate . Lock the cover into place and tighten thumb screw(s).

LEAVE DOOR SLIGHTLY OPEN AFTER CLEANING

COMBITHERM® CLEANING & MAINTENANCE

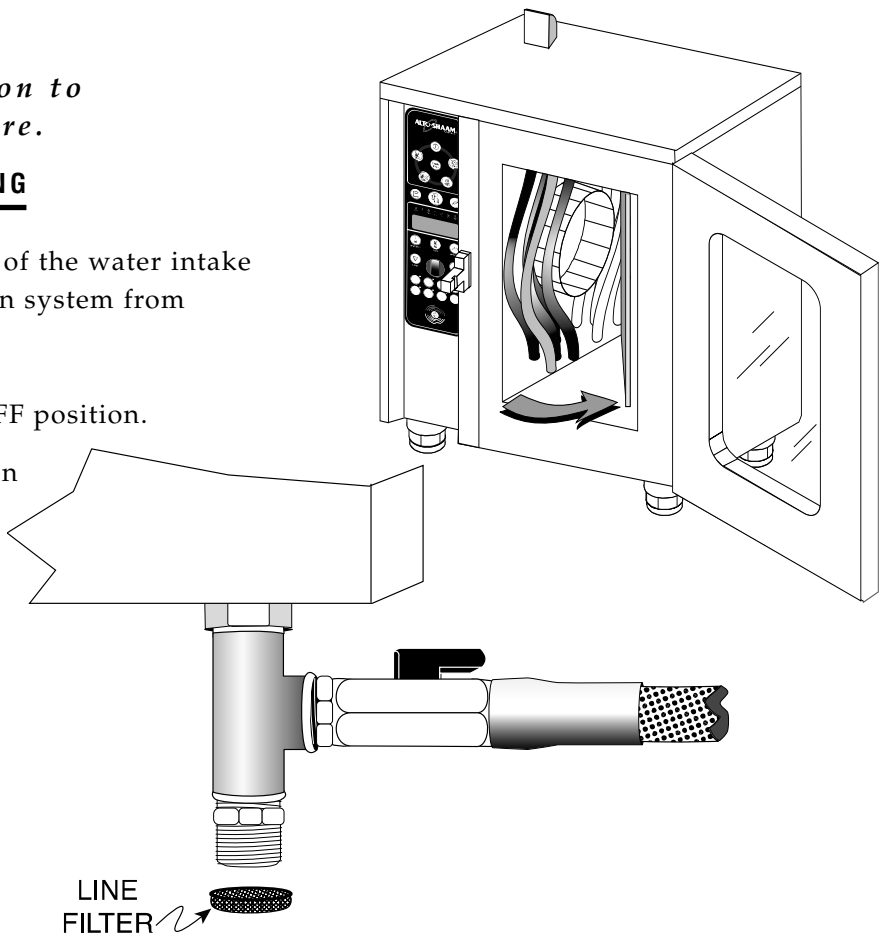
2.5 Monthly Cleaning — GAS

Perform once a month in addition to the daily oven cleaning procedure.

2.5.1 WATER INTAKE FILTER CLEANING

Monthly cleaning of the filter at the front of the water intake connection will prevent the water injection system from becoming blocked.

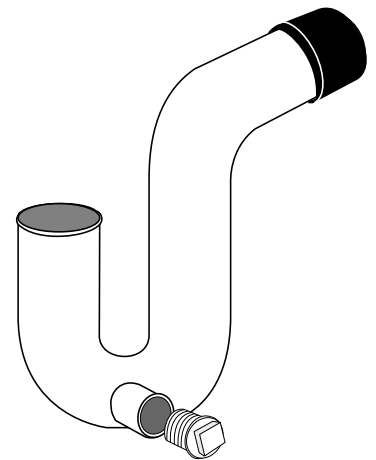
1. Press the oven power switch to the OFF position.
2. Disconnect the water intake connection located below the oven.
3. Remove the line filter and clean thoroughly.
4. Replace the line filter and reconnect the water.
5. Press the oven power switch to the ON position and check to make certain the water intake connection does not leak.



2.5.2 CLEANING THE DRAIN PIPE

Fats and solids will eventually coagulate in the drain system, causing blockage. Consequently, water will back-up into the interior oven compartment, resulting in an oven that is inoperable. Monthly cleaning of the oven drain will prevent the drain from becoming blocked.

1. Press the oven power switch to the OFF position.
2. Locate the drain outlet below the oven and remove the drain plug with a wrench.
3. Thoroughly dislodge and remove the accumulated deposits through the drain plug outlet or through the drain opening at the bottom of the oven interior. Rinse out the open drain with the hand-held hose.
4. Replace the drain plug and tighten securely with a wrench.
5. Press the oven power switch to the ON position and check to make certain the drain does not leak.



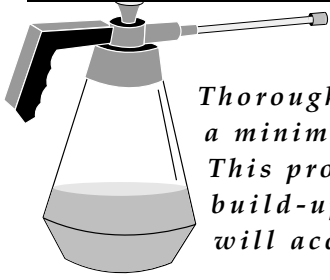
2.5.3 CLEANING THE FLUE OUTLET



Inspect the flue diverter assembly located on the top of the oven on a monthly basis. Remove accumulated dirt and debris.

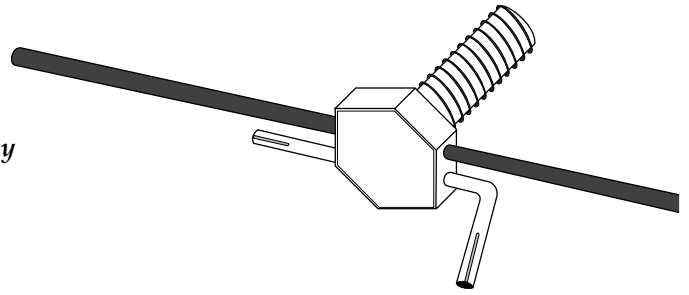
**KEEP THE OVEN EXHAUST OUTLET CLEAR
OF ALL OBJECTS THAT COULD OBSTRUCT
THE FLOW OF COMBUSTION GASES.**

COMBITHERM® CLEANING & MAINTENANCE

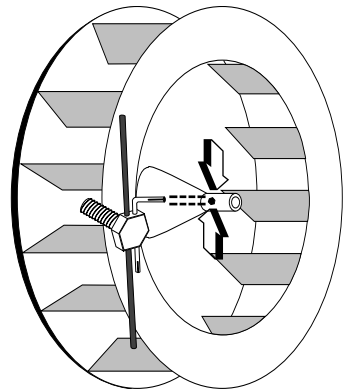
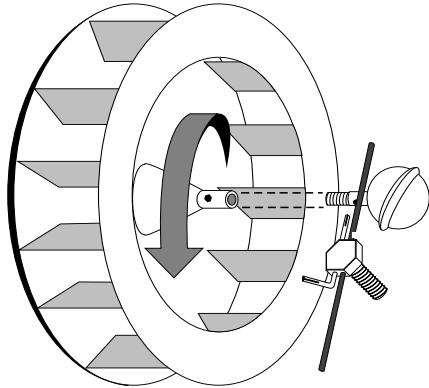


Monthly Cleaning

Thoroughly clean the fan at a minimum of once every six months. This procedure will remove the heavy build-up of grease which will accumulate on the oven fan.

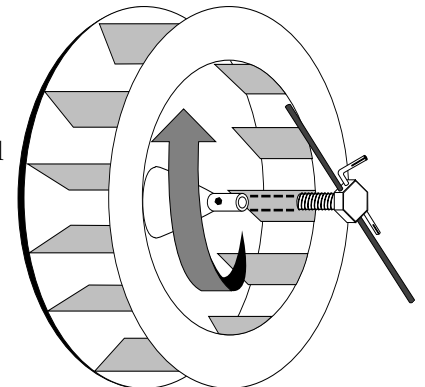


2.5.4 FAN CLEANING

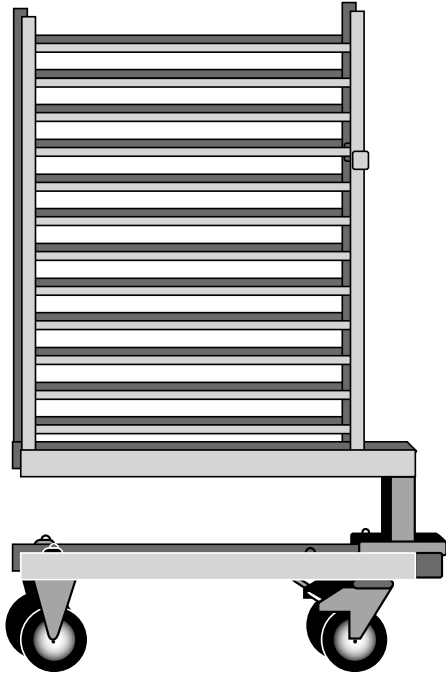


A Fan Service Tool is included with each Combitherm shipment. This tool must be used for both disassembling and reassembling the fan whenever a thorough cleaning is required.

1. Press the oven power switch to the OFF position.
2. Remove the oven shelves and side rack shelf supports.
3. Loosen the fasteners holding the fan guard door and swing the door to the fully open position.
4. While holding the fan wheel in place, insert the shaft attachment of the Fan Service Tool through the hole in the ball-shaped water diffuser and rotate counter-clockwise to completely remove the diffuser.
5. Loosen the two hexagon socket bolts located on either side of the central wheel hub with the allen-wrench attachment of the Fan Service Tool.
6. Insert the bolt attachment of the Fan Service Tool into the central wheel hub and turn clockwise until the wheel is completely disengaged from the mounting shaft.
7. Place the fan and the ball-shaped water diffuser in the bottom of the oven compartment. *Wearing safety glasses and rubber gloves*, spray these items, the walls of the heat exchanger compartment, the pipes and the back side of the fan-guard door with Combitherm liquid oven cleaner and let stand for approximately 5 minutes.
8. Thoroughly rinse all sprayed components with the hand-held hose to remove all detergent residue.
9. Dry the fan mounting shaft. Place the fan wheel on the mounting shaft and lightly tap into place.
10. Tighten the two hexagon socket bolts located on either side of the central wheel hub with the allen-wrench attachment of the Fan Service Tool.
11. Screw the ball-shaped water diffuser into the central wheel hub and firmly tighten by hand.
12. Attach the fan guard door with the four screws and replace the side rack shelf supports and the oven shelves.



2.6 ROLL-IN CART/FOOD TROLLEY CLEANING (ON EQUIPPED MODELS)



1. Remove food trolley to a cart wash area. Trolleys may be cleaned using any mild cleaning detergent and warm water.
2. Hand wipe all framing, slides, drip pan, and base. Thoroughly clean debris from the casters. A spray hose can be used for easier cart cleaning.
3. Remove detergent solution with warm water.
4. Wipe or spray with a sanitizing solution designed for use on metal and vinyl food contact surfaces.
5. Allow trolley to air dry.

As an alternative, trolleys can be sprayed with Combitherm liquid oven cleaner while inside the oven. Allow the trolley to remain in the oven through the normal cleaning cycle, followed by steps 2 through 5 above.

2.7 DAILY GASKET CLEANING

It is important to prolong the life of the oven gasket by cleaning this item on a daily basis. Routine cleaning will help protect the composition of the gasket from deterioration caused by acidic foods. After allowing the oven to cool, remove pull-out gasket and wash in hot, soapy water. *Do not* place in the dishwasher.



Always replace the gasket before cleaning the oven interior or operating the oven.



3.0 COMBITHERM® GAS SERVICE SECTION

3.1 COMBITHERM SERVICE

Alto-Shaam urges the user to maintain a record of service performed on the Combitherm Gas Oven/Steamer.

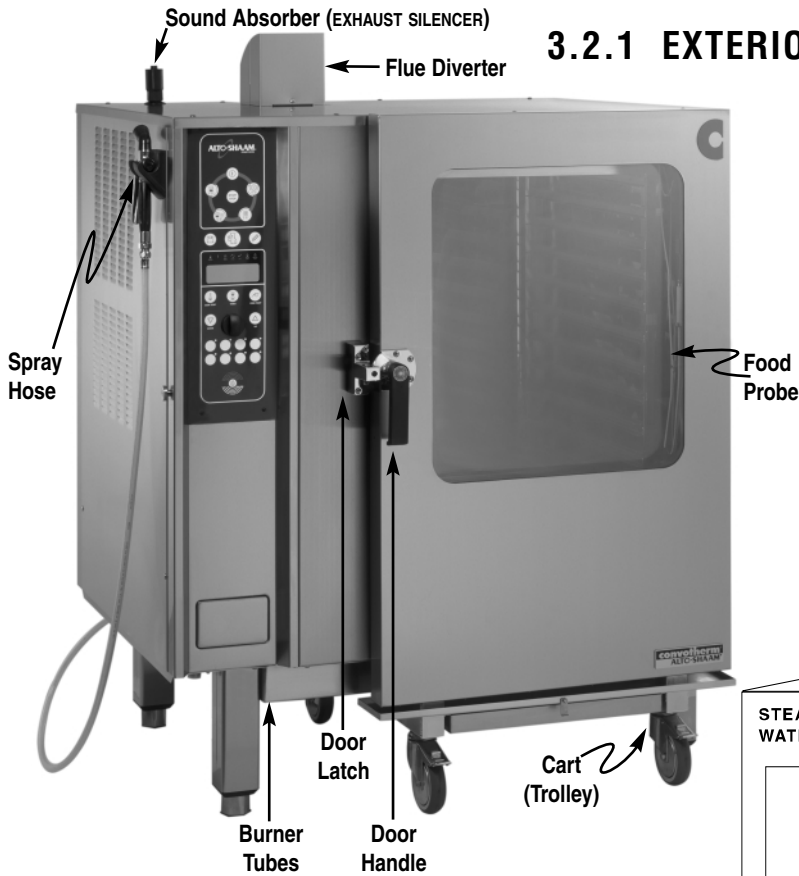
Model: _____ **Serial No:** _____ **Gas Type:** _____

DATE	PROBLEM DETECTED	CORRECTION PERFORMED

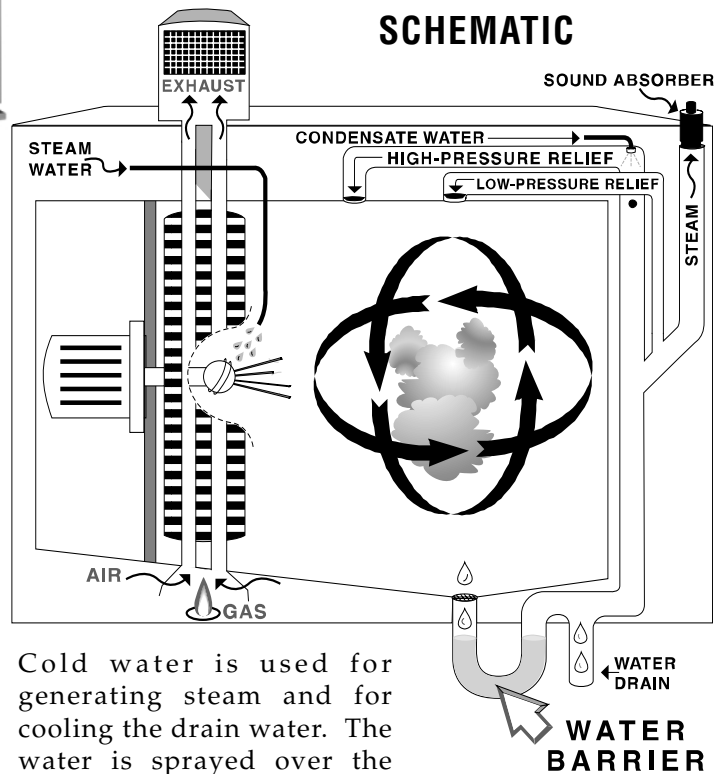
COMBITHERM® GAS SERVICE SECTION

3.2 COMBITHERM GAS

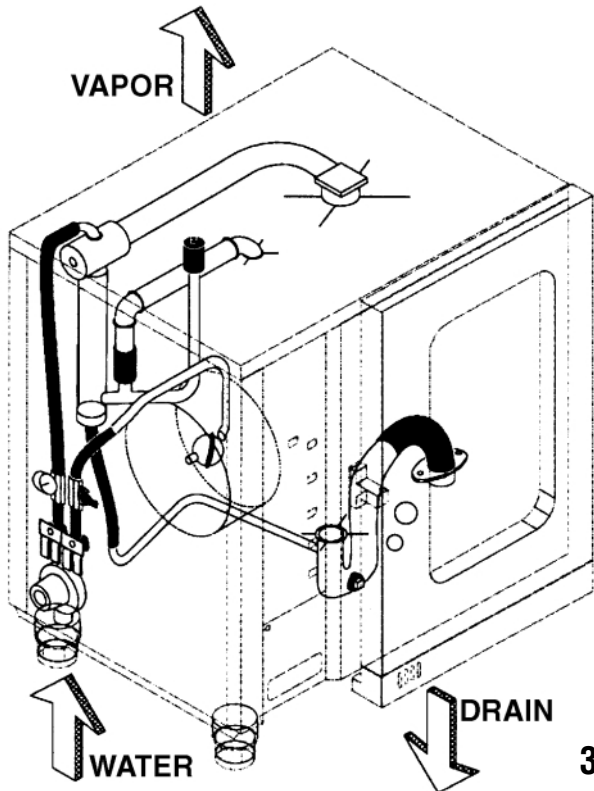
3.2.1 EXTERIOR COMPONENTS



3.2.2 OPERATING SCHEMATIC



Cold water is used for generating steam and for cooling the drain water. The water is sprayed over the hottest area of the oven and is converted into steam. Steam is blown into the oven by means of a fan wheel.

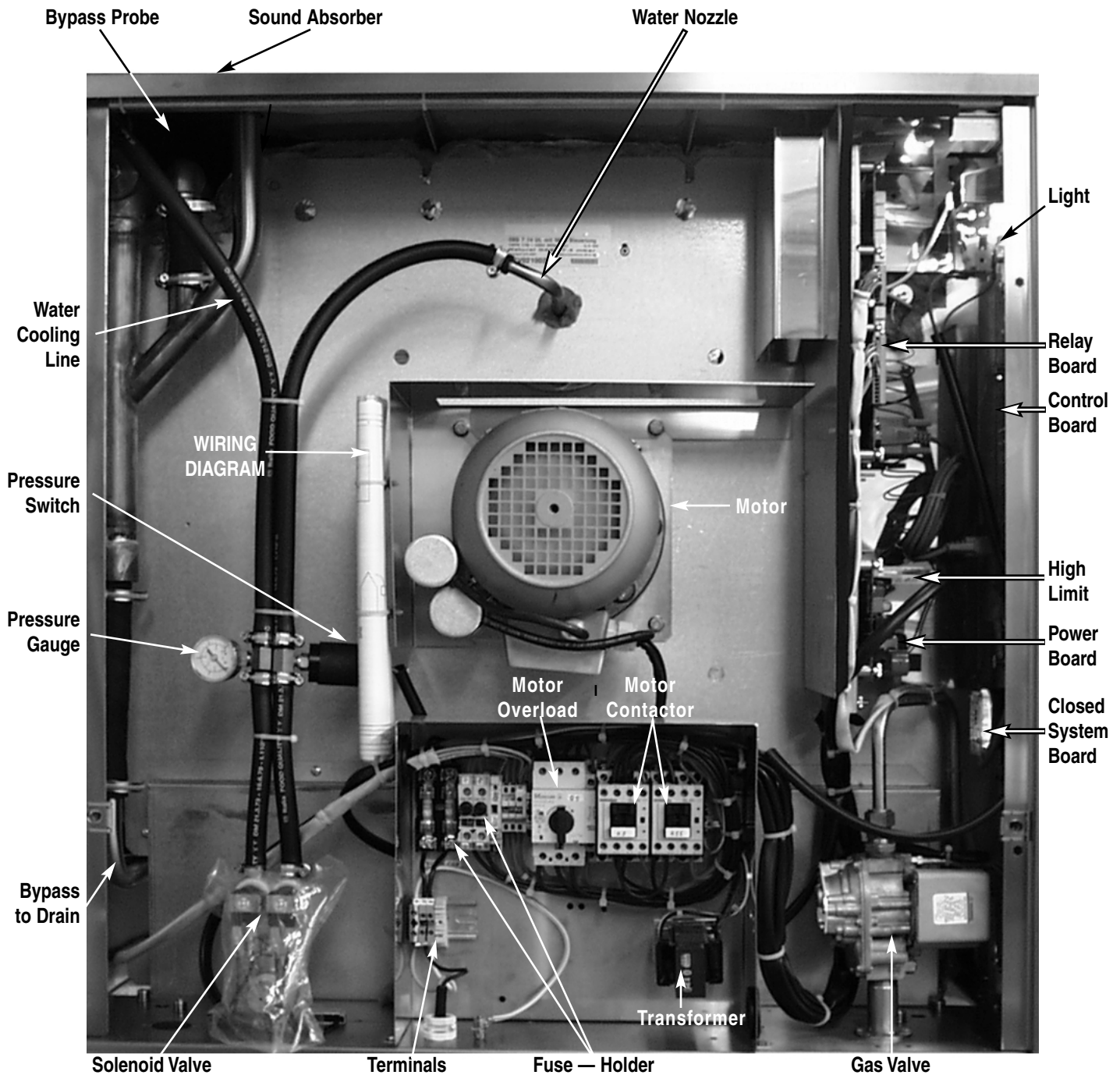


3.2.3 PLUMBING SYSTEM

COMBITHERM® GAS SERVICE SECTION

3.3 SERVICE VIEW: Left Side Panel Components

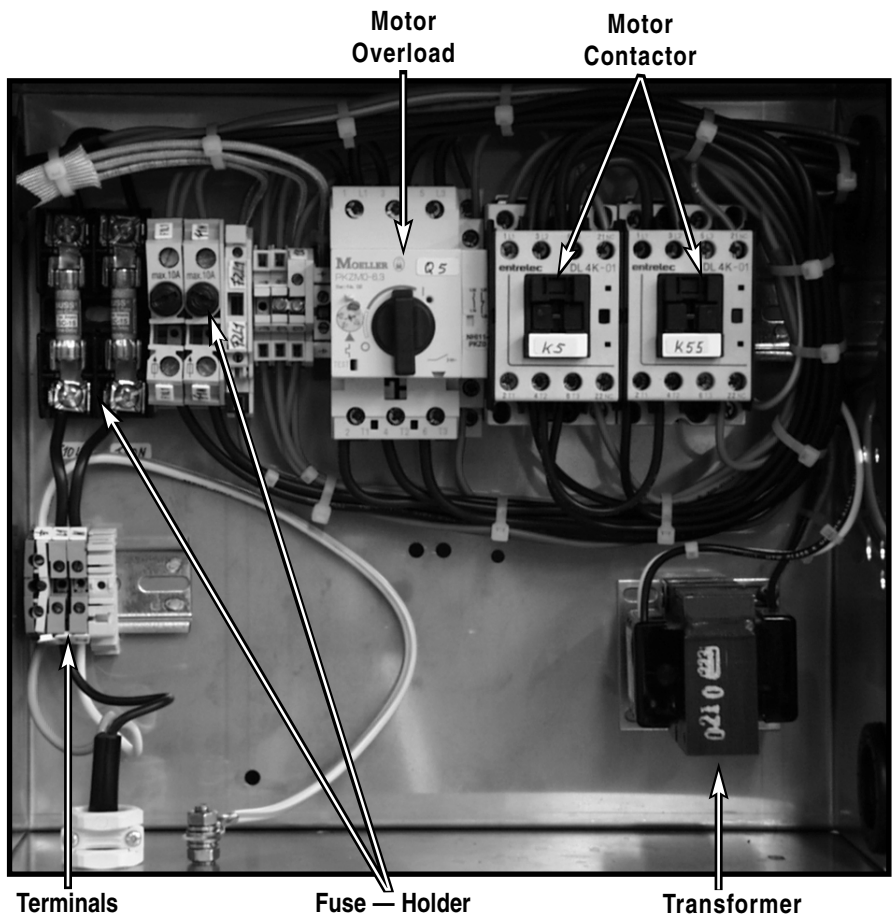
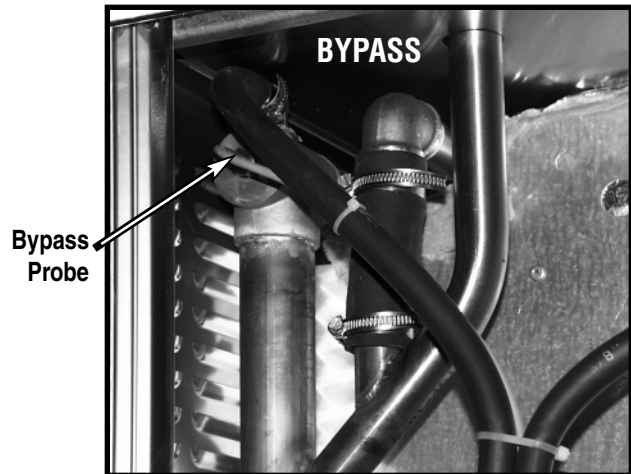
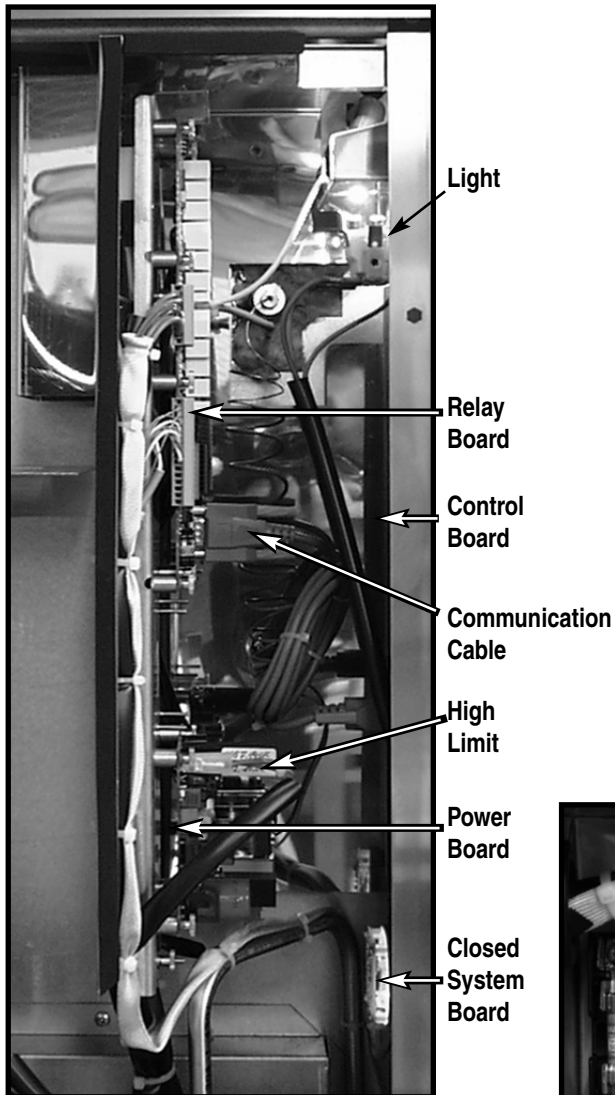
Combitherm Gas Models 6•10ML, 7•14ML, 10•10ML, 10•20ML and 12•18ML



COMBITHERM® GAS SERVICE SECTION

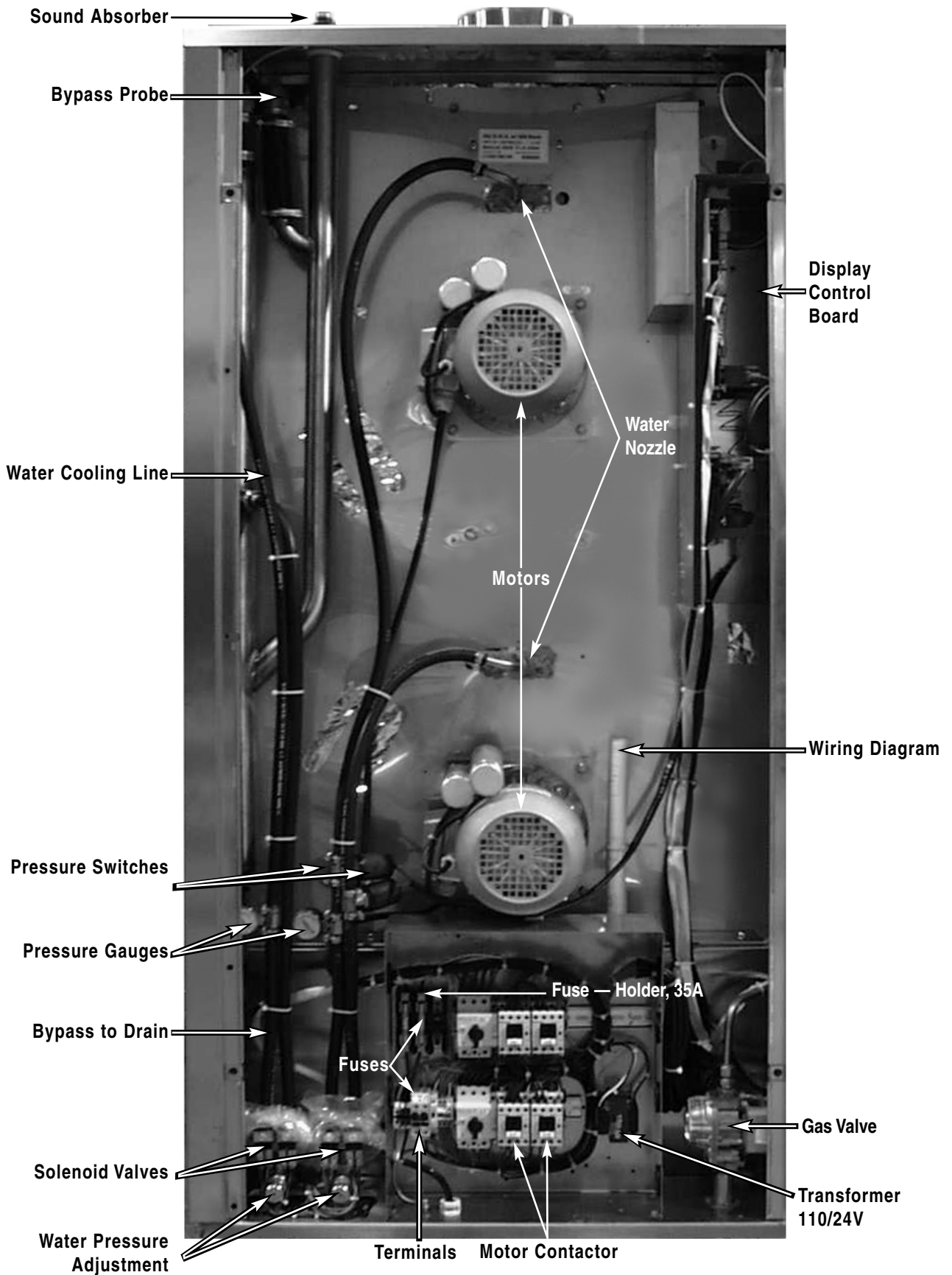
3.3 SERVICE VIEW: Motor Contactor & Protection Switches

Combitherm Gas Models 6•10ML, 7•14ML, 10•10ML, 10•20ML and 12•18ML



COMBITHERM® GAS SERVICE SECTION

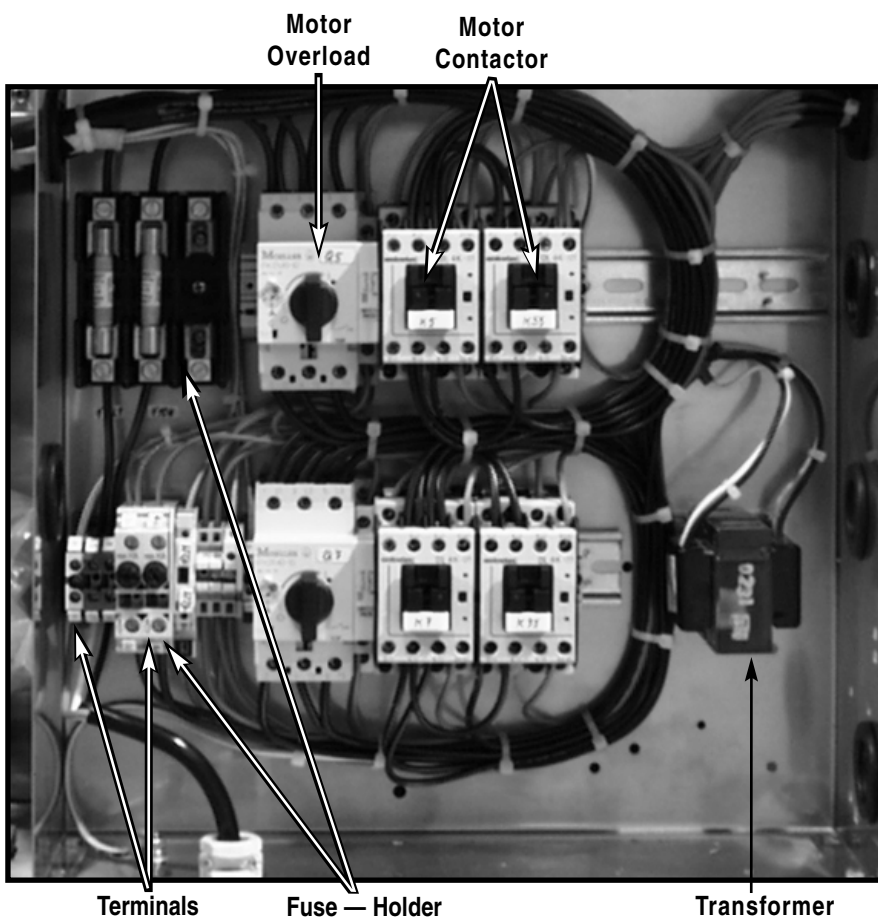
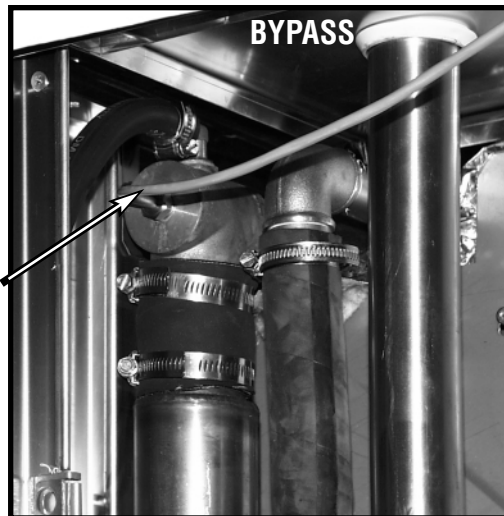
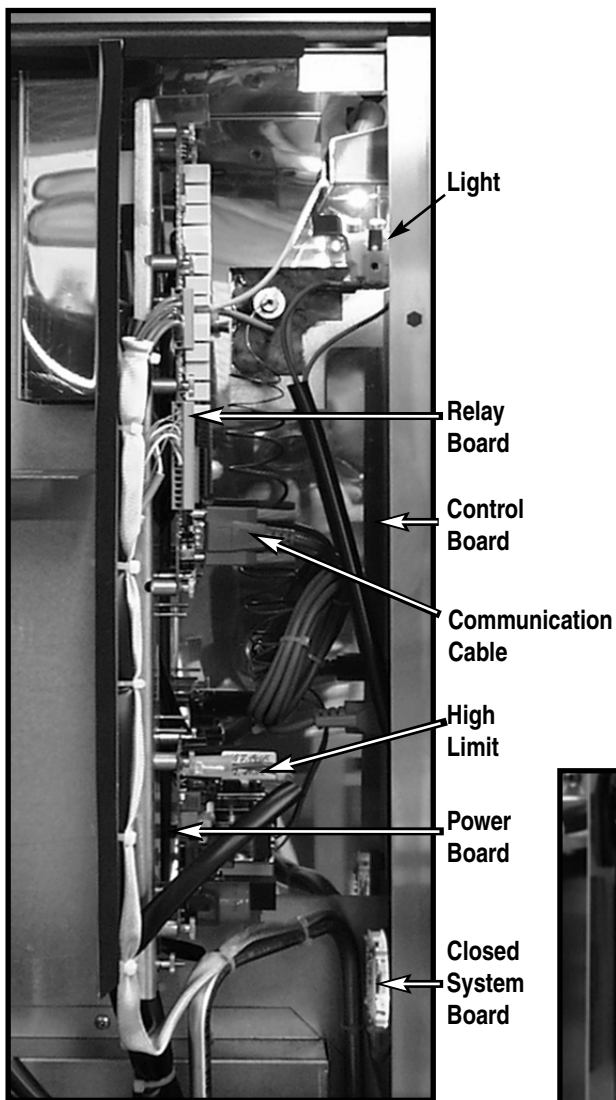
3.4 SERVICE VIEW: Left Side Panel Components Combitherm Gas Model 20•20ML



COMBITHERM® GAS SERVICE SECTION

3.4 SERVICE VIEW: Motor Contactor & Protection Switches

Combitherm Gas Model 20•20ML



3.5 TROUBLESHOOTING

In the event of a Combitherm malfunction during operation, an error code and message will appear in the display to assist in finding a rapid solution to the problem. The following is a list of all error codes which includes the cause along with a possible solution.

ERROR CODE	DESCRIPTION OF ERROR	POSSIBLE CAUSE/REMEDY
E01	Low water level: Sufficient water level in steam generator has not been reached with 3 minutes.	Water tap is closed. Filter in solenoid valve or water connection is clogged. Water level probe is calcified or defective. Solenoid valve Y1 is defective. Pressure loop is calcified. Steam generator drain cap is not water tight.
E01	Low water level: Water pressure is under 11 PSI (0.7 bar) after the solenoid valve is opened for 5 seconds.	Water tap is closed. Filter in solenoid valve or water connection is clogged. Solenoid valve Y1 is defective.
E02	Excessive temperature in service area: An additional fan will engage at a temperature of 113°F (45°C) and the error message will occur at a service area temperature of 176°F (80°C).	Auxiliary 12 V fan does not turn on due to defective thermostat or contactor. Ventilation vents are blocked due to inefficient distance from wall at installation site. Minimum distance to equipment such as fryers, grills, kettles, etc. has not been maintained.
E03	Fan motor shuts down from a tripped internal PTC.	A phase from the main power supply is missing. The fan motor is defective. Power phase reversed causing fan to run in reverse. A fuse is tripped.
E03	Motor shuts down fan.	Trip circuit has been set too low. Direction of motor rotation is wrong. A phase is missing from the main power supply. The motor protection switch is defective. Power phase reversed causing fan to run in reverse. The fan motor is defective.
E04	Auxiliary 120 fan motor not running.	Auxiliary fan is defective. Defective wiring or loose connection to auxiliary fan.
E11	Oven probe (N6 thermocouple) measures a temperature in excess of 572°F (300°C).	Convection contactors are burned and no longer disengage. Motor not operating due to two defective F10 fuses.
E13	Steam generator probe (B4 thermocouple) measures a temperature in excess of 248°F (120°C).	Calcification in steam generator. Water level probe is grounded causing immersion elements to energize.
E15	Condenser probe (B3 thermocouple) measures a temperature in excess of 212°F (100°C).	Water tap is closed. Oven is connected to warm water supply. Inlet filter on solenoid valve is dirty. Condenser cooling solenoid valve or solenoid valve coil is defective.

3.5 TROUBLESHOOTING

ERROR CODE	DESCRIPTION OF ERROR	POSSIBLE CAUSE/REMEDY
E23	Steam generator probe (B4 thermocouple) is interrupted.	Probe connection is bad at X6 on the control module. Steam generator probe (B4) is defective. Bad probe connection.
E25	Condenser probe (B3 thermocouple) is interrupted.	Probe connection is bad at X6 on the control module. Condenser probe (B3) is interrupted or defective. Bad probe connection.
E26	Safety temperature probe (N8 thermocouple) is interrupted.	Probe connection is bad at X6 on the control module. STB steam generator probe (N8) is interrupted or defective. Bad probe connection.
E27	STB (N8 thermocouple) measures a temperature in excess of 266°F (130°C).	Calcification in steam generator. Water level probe is grounded causing immersion elements to energize.
E33	Steam generator probe (B3) fails to measure increase in temperature to 41°F (5°C) within a 3 minute period of time.	Immersion heater defective. Heater contactors defective. B3 probe calcified.
E34	Steam generator pump malfunction.	Pump (M4) defective. Pump blocked or dirty. Ground short on water level probe due to calcification. Fill opening in water settling area of level probe is calcified.
E80	ID (identity) error.	The electronic control cannot differentiate between gas or electric operation and disconnects all circuit connections. Contact problem on X3 connection.
E95	Software error.	Communication problem between software and hardware. Incompatibility between software and hardware.



Alto-Shaam has established a twenty-four hour emergency service call center to offer immediate customer access to a local authorized service agency outside of standard business hours. The emergency service access is provided exclusively for Alto-Shaam equipment and is available throughout the United States through the use of Alto-Shaam's toll-free number. Emergency service access is available seven days a week including holidays.

3.6 - Parts List • Combitherm ML Gas

PART DESCRIPTION	6•10MLGAS	7•14MLGAS	10•10MLGAS	10•20MLGAS	12•18MLGAS	20•20MLGAS
Board, Closed System	BA-33733	BA-33733	BA-33733	BA-33733	BA-33733	BA-33733
Board, Communication	BA-33738	BA-33738	BA-33738	BA-33738	BA-33738	BA-33738
Board, Control	BA-33732	BA-33732	BA-33732	BA-33732	BA-33732	BA-33732
Board, Fastening Nut	NU-25095	NU-25095	NU-25095	NU-25095	NU-25095	NU-25095
Board, Program Module	BA-33742	BA-33742	BA-33742	BA-33742	BA-33742	BA-33742
Board, Power Supply	BA-33737	BA-33737	BA-33737	BA-33737	BA-33737	BA-33737
Board, Relay	BA-33736	BA-33736	BA-33736	BA-33736	BA-33736	BA-33736
Board, Spacer	BU-25094	BU-25094	BU-25094	BU-25094	BU-25094	BU-25094
Burner, Gas Orifice (NATURAL GAS)	BN-23606	BN-23860	BN-23608	BN-23610	BN-23610	BN-23610
Burner, Gas Orifice (PROPANE GAS)	BN-23607	BN-23861	BN-23609	BN-23611	BN-23611	BN-23611
Cable, Board Connection	CB-33750	CB-33750	CB-33750	CB-33750	CB-33750	CB-33750
Cable, Ribbon	CB-33750	CB-33750	CB-33750	CB-33750	CB-33750	CB-33750
Connector, x1	TM-33747	TM-33747	TM-33747	TM-33747	TM-33747	TM-33747
Connector, x2	TM-33748	TM-33748	TM-33748	TM-33748	TM-33748	TM-33748
Connector, x3	TM-33749	TM-33749	TM-33749	TM-33749	TM-33749	TM-33749
Connector, x5	CR-33739	CR-33739	CR-33739	CR-33739	CR-33739	CR-33739
Connector, x6	TM-33773	TM-33773	TM-33773	TM-33773	TM-33773	TM-33773
Connector, x7	TM-33774	TM-33774	TM-33774	TM-33774	TM-33774	TM-33774
Connector, x11/x12	CR-33743	CR-33743	CR-33743	CR-33743	CR-33743	CR-33743
Connector, Ground	CR-33295	CR-33295	CR-33295	CR-33295	CR-33295	CR-33295
Contact, 22 Amp	CN-33402	CN-33402	CN-33402	CN-33402	CN-33402	CN-33402
Door (MINUS HANDLE AND GASKET)	DR-25626	DR-25628	DR-25627	DR-25629	DR-25630	DR-25631
Door, Drip Tray	PN-23594	PN-23867	PN-23594	N/A	PN-23866	N/A
Door, Handle	HD-2934	HD-2934	HD-2934	HD-2934	HD-2934	HD-2934
Door Hinge	HG-25618	HG-25618	HG-25618	HG-25617	HG-25617	HG-25617
Door, Latch	LT-2935	LT-2935	LT-2935	LT-2935	LT-2935	LT-2935
Door, Latch Dowel	CT-22551	CT-22551	CT-22551	CT-22551	CT-22551	CT-22551
Door, Interlock Switch	SW-33275	SW-33275	SW-33275	SW-33275	SW-33275	SW-33275
Door, Magnet	MA-23859	MA-23859	MA-23859	MA-23859	MA-23859	MA-23859
Door, Magnet Cover	MA-24643	MA-24643	MA-24643	MA-24643	MA-24643	MA-24643
Drain, Rubber Elbow	EB-25755	EB-25755	EB-25755	EB-25755	EB-25755	EB-25755
Drain, Screen	DA-2943	DA-2943	DA-2943	DA-2943	DA-2943	DA-2943
Drain, Hookup Kit for Gas	DR-24485	DR-24485	DR-24485	DR-24485	DR-24485	DR-24485
Drip Tray, Trolley	N/A	N/A	N/A	PN-24642	PN-24642	PN-24642
Exhaust Silencer	PB-23600	PB-23600	PB-23600	PB-23600	PB-23600	PB-33851
Fan, Two-Speed Motor	MO-33263	MO-33263	MO-33263	MO-33853	MO-33853	MO-33854
Fan, Wheel	WH-33433	WH-33434	WH-33434	WH-33435	WH-33435	WH-33436
Fan, Wheel Removal Tool	FA-23701	FA-23701	FA-23701	FA-23701	FA-23701	FA-23701
Flue Diverter, Exhaust Gas	PP-23601	PP-23602	PP-23601	PP-23602	PP-23602	PP-23602
Fuse, 0.25 Amp	FU-3673	FU-3673	FU-3673	FU-3673	FU-3673	FU-3673

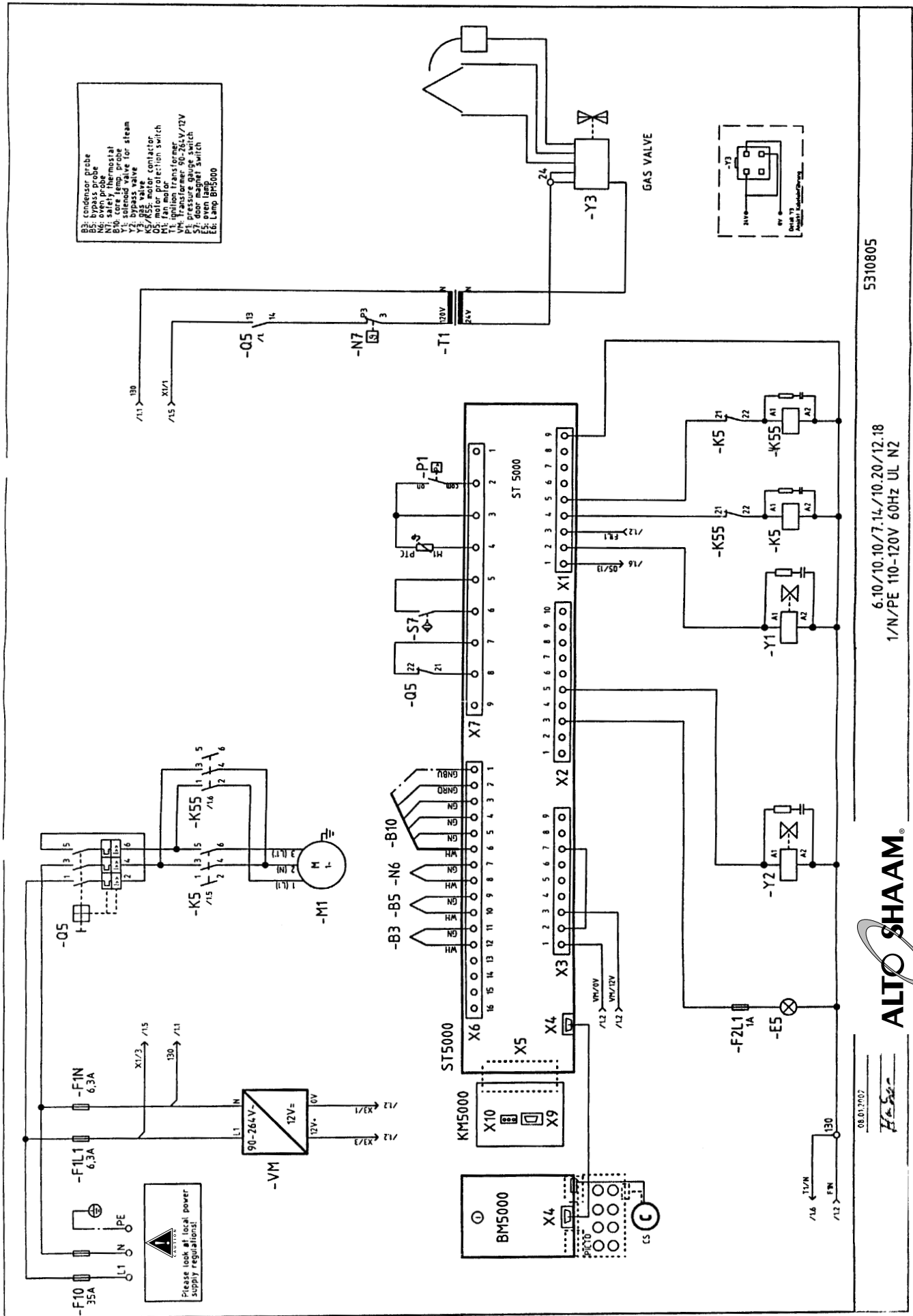
3.6 - Parts List • Combitherm ML Gas

PART DESCRIPTION	6•10MLGAS	7•14MLGAS	10•10MLGAS	10•20MLGAS	12•18MLGAS	20•20MLGAS
Fuse, 2 Amp	FU-3774	FU-3774	FU-3774	FU-3774	FU-3774	FU-3774
Fuse Holder, 2 Amp	FU-3772	FU-3772	FU-3772	FU-3772	FU-3772	FU-3772
Fuse, 6.3 Amp	FU-33451	FU-33451	FU-33451	FU-33451	FU-33451	FU-33451
Fuse Holder, 6.3 Amp	FU-33756	FU-33756	FU-33756	FU-33756	FU-33756	FU-33756
Fuse, 15 Amp	FU-3775	FU-3775	FU-3775	FU-3775	FU-3775	N/A
Fuse Holder, 15 Amp	FU-3842	FU-3842	FU-3842	FU-3842	FU-3842	N/A
Fuse, 35 Amp	N/A	N/A	N/A	N/A	N/A	FU-33127
Fuse Holder, 35 Amp	N/A	N/A	N/A	N/A	N/A	FU-33039
Gasket, Door	GS-23591	GS-23856	GS-23592	GS-25658	GS-23858	GS-25624
Gasket, Trolley	N/A	N/A	N/A	GS-24371	GS-24371	GS-24371
Gasket, Trolley Upper Seal (OLD)	N/A	N/A	N/A	GS-24474	N/A	GS-24474
Gasket, Trolley Lower Seal (OLD)	N/A	N/A	N/A	GS-24475	GS-24475	GS-24474
Gasket, Window	GS-24464	GS-24467	GS-24465	N/A	N/A	N/A
Gasket, Inner Window	N/A	N/A	N/A	N/A	GS22163	N/A
Gasket, Outer Window	N/A	N/A	N/A	N/A	GS-22252	N/A
Gauge, Pressure	PB-24726	PB-24726	PB-24726	PB-24726	PB-24726	PB-24726
Glass, Double Window	GL-25616	GL-26009	GL-25614	N/A	GL-25615	N/A
Glass, Inner Door	N/A	N/A	N/A	DR-25622	N/A	DR-25623
HAND SHOWER ASSEMBLY						
Hand Shower (FULL ASSEMBLY)	PB-24483	PB-24484	PB-24483	PB-24484	PB-24484	PB-24484
Hose, Assembly	PB-23922	PB-23922	PB-23922	PB-24066	PB-24066	PB-24066
Hose, Spray Handle	PB-23920	PB-23920	PB-23920	PB-23920	PB-23920	PB-23920
Hose, Spray Nozzle	PB-23919	PB-23919	PB-23919	PB-23919	PB-23919	PB-23919
Hose, Ball Valve	VA-22684	VA-22684	VA-22684	VA-22684	VA-22684	VA-22684
Hose, Washer	WS-22334	WS-22334	WS-22334	WS-22334	WS-22334	WS-22334
Hose, Water Intake	HO-24482	HO-24482	HO-24482	HO-24482	HO-24482	HO-24482
Intake Line Filter, 1/2" (12,7mm)	FI-2946	FI-2946	FI-2946	FI-2946	FI-2946	FI-2946
Hose, Gas Line (WITH QUICK CONNECT)	CR-33543	CR-33543	CR-33543	CR-33543	CR-33543	CR-33543
Knob, Lower	KN-33734	KN-33734	KN-33734	KN-33734	KN-33734	KN-33734
Knob, Spacer	SP-25097	SP-25097	SP-25097	SP-25097	SP-25097	SP-25097
Knob, Upper	KN-33735	KN-33735	KN-33735	KN-33735	KN-33735	KN-33735
Latch, Inner Door	N/A	N/A	N/A	LT-25620	N/A	LT-25620
Leg, Attachment	N/A	N/A	N/A	LG-24633	LG-24633	LG-24633
Leg, Leveler Insert	N/A	N/A	N/A	LG-24632	LG_24632	LG-24632
Leg Insert (COMPLETE)	N/A	N/A	N/A	LG-25625	LG-25625	LG-25625
Light, Bulb	LP-33274	LP-33274	LP-33274	LP-33274	LP-33274	LP-33274
Light, Glass Cover	GL-24461	GL-24461	GL-24461	GL-24461	GL-24461	GL-24461
Light, Seal	SA-24757	SA-24757	SA-24757	SA-24757	SA-24757	SA-24757
Light, Socket	RP-3986	RP-3986	RP-3986	RP-3986	RP-3986	RP-3986
Motor, Cover (LEFT SIDE SERVICE PANEL)	PE-23603	PE-23604	PE-23604	PE-23605	PE-23605	N/A
Motor, Handle Cover	PL-22607	PL-22607	PL-22607	PL-22607	PL-22607	PL-22607

3.6 - Parts List • Combitherm ML Gas

PART DESCRIPTION	6•10MLGAS	7•14MLGAS	10•10MLGAS	10•20MLGAS	12•18MLGAS	20•20MLGAS
Motor, Mounting Box	BX-24473	BX-24473	BX-24473	BX-24473	BX-24473	BX-24473
Motor, Seal Kit	SA-24097	SA-24097	SA-24097	SA-24097	SA-24097	SA-24097
Motor, Stuffing Box Cap	CP-24472	CP-24472	CP-24472	CP-24472	CP-24472	CP-24472
Panel, Cover (RIGHT SIDE)	PE-25647	PE-25649	PE-25648	PE-25650	PE-25650	PE-25651
Panel, Control Overlay (DELUXE MODEL)	PE-25323	PE-25323	PE-25323	PE-25323	PE-25323	PE-25323
Panel, Control Overlay (STANDARD MODEL)	PE-25322	PE-25322	PE-25322	PE-25322	PE-25322	PE-25322
Panel, Quick Program Icons (DELUXE MODEL)	PE-25345	PE-25345	PE-25345	PE-25345	PE-25345	PE-25345
Panel, Direction	PE-25637	PE-25639	PE-25638	PE-25640	PE-25640	PE-25641
Panel, Fasten Screw Suction	SC-24481	SC-24481	SC-24481	SC-24481	SC-24481	SC-24481
Panel, Pivot Screw Suction	SC-24480	SC-24480	SC-24480	SC-24480	SC-24480	SC-24480
Pilot Orifice (NATURAL GAS)	BN-23776	BN-23776	BN-23776	BN-23776	BN-23776	BN-23776
Pilot Orifice (PROPANE GAS)	BN-23777	BN-23777	BN-23777	BN-23777	BN-23777	BN-23777
Pilot Assembly HSI* (NATURAL GAS)	BN-33371	BN-33371	BN-33371	BN-33371	BN-33371	BN-33371
Pilot Assembly HSI* (PROPANE GAS)	BN-33372	BN-33372	BN-33372	BN-33372	BN-33372	BN-33372
Pipe, Cooling Elbow	EB-24590	EB-24590	EB-24590	EB-24590	EB-24590	EB-24590
Probe, Bypass	PR-33848	PR-33848	PR-33848	PR-33848	PR-33848	PR-33848
Probe, Oven	PR-33850	PR-33850	PR-33850	PR-33850	PR-33850	PR-33850
Probe, Product	PR-33746	PR-33746	PR-33746	PR-33746	PR-33746	PR-33746
Probe Seal, Product	SA-22320	SA-22320	SA-22320	SA-22320	SA-22320	SA-22320
Probe Seal, Product	SA-22321	SA-22321	SA-22321	SA-22321	SA-22321	SA-22321
Probe Seal, Product	SA-22322	SA-22322	SA-22322	SA-22322	SA-22322	SA-22322
Side Racks, Left	SR-25344	SR-25613	SR-23586	N/A	N/A	N/A
Side Racks, Right	SR-25343	SR-25612	SR-24549	N/A	N/A	N/A
Side Racks, Left and Right	N/A	N/A	N/A	N/A	SR-23850	N/A
Switch, Motor Protection, 6.3A	SW-33856	SW-33856	SW-33556	N/A	N/A	N/A
Switch, Motor Protection, 10A	N/A	N/A	N/A	N/A	N/A	SW-33855
Switch, Motor Protection, 16A	N/A	N/A	N/A	SW-33857	SW-33857	N/A
Switch, Pressure	SW-33280	SW-33280	SW-33280	SW-33280	SW-33280	SW-33280
Switch, Pressure Connect Nozzle	PB-24738	PB-24738	PB-24738	N/A	N/A	N/A
Tape, Sealing	GS-23622	GS-23622	GS-23622	GS-23622	GS-23622	GS-23622
Thermostat, Safety	TT-33325	TT-33325	TT-33325	TT-33325	TT-33325	TT-33325
Transformer, 120/240V	TN-33282	TN-33282	TN-33282	TN-33282	TN-33282	TN-33282
Trolley, Roll-in (COMPLETE CART)	N/A	N/A	N/A	CT-25333	CT-23361	CT-25334
Trolley, Side Seals, 4-inch (102mm)	N/A	N/A	N/A	GS-24370	GS-24370	GS-24370
Trolley Guide	N/A	N/A	N/A	GI-24479	GI-24479	GI-24478
Tube, Injection (FOR DIRECTION PA)	PB-25652	PB-25654	PB-25653	PB-25655	PB-25655	PB-25656
Valve, Low Pressure Relief	VA-24469	VA-24469	VA-24469	VA-24469	VA-24469	VA-24469
Valve, Over Pressure Relief	VA-24470	VA-24470	VA-24470	VA-24470	VA-24470	VA-24470
Valve HSI, * Natural Gas	VA-33369	VA-33369	VA-33369	VA-33369	VA-33369	VA-33369
Valve HSI, * Propane Gas	VA-33370	VA-33370	VA-33370	VA-33370	VA-33370	VA-33370
Valve, Water Solenoid	VA-33283	VA-33283	VA-33283	VA-33283	VA-33283	VA-33283
Water Diffuser	PB-23692	PB-23692	PB-23692	PB-23692	PB-23692	PB-25632

*HSI = Hot Surface Ignition (Intermittent Pilot)



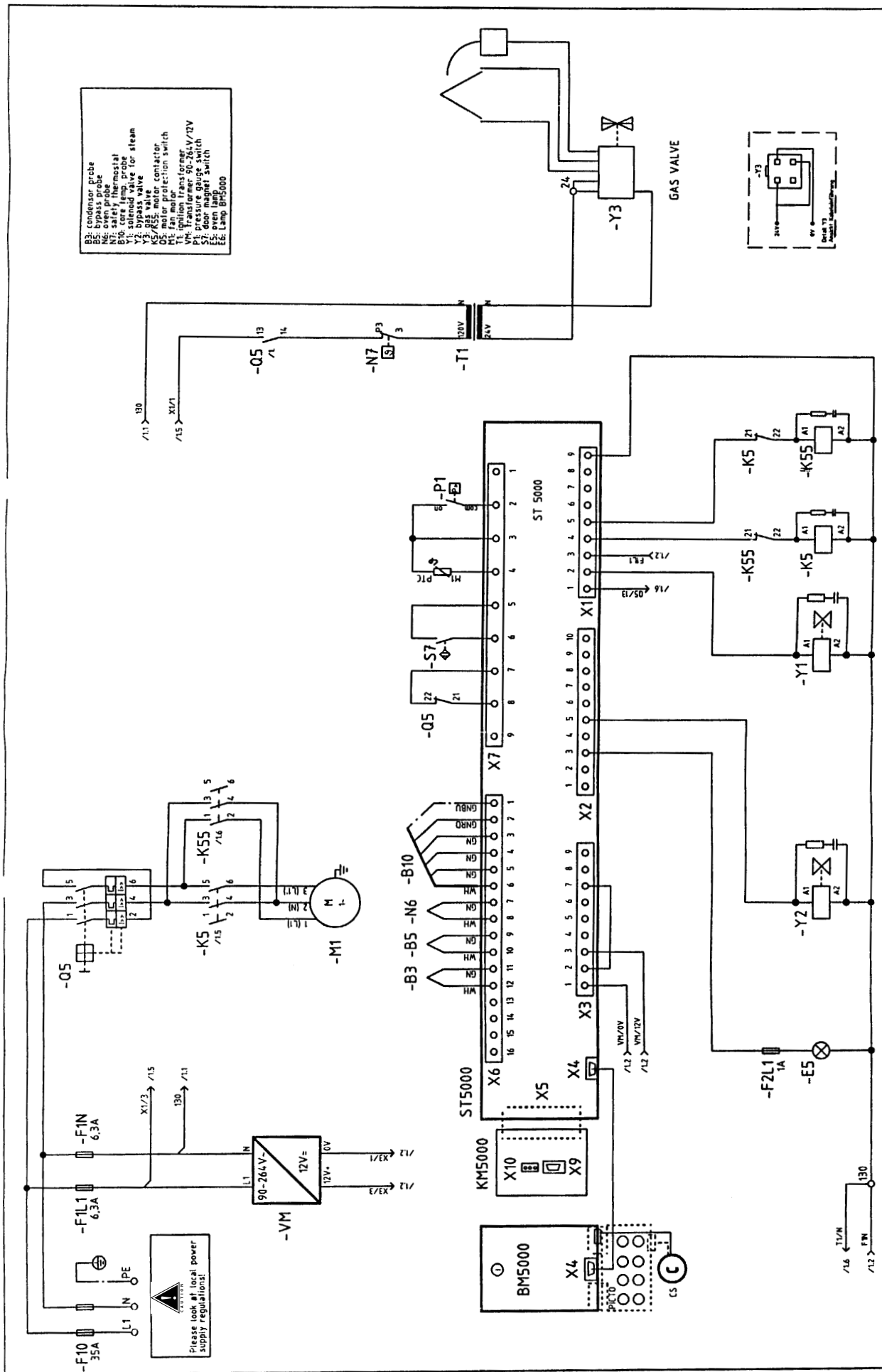
5310805

6.10/10.10/7.14/10.20/12.18
1/N/PE 110-120V 60Hz UL N2



08.01.2007

H-52-



- B3: condenser probe
- K5: bypass probe
- N7: safety thermostat
- P1: core temp. probe
- P2: bypass valve for steam
- Y3: bypass valve
- K5/K55: motor contactor
- M1: fan motor
- P3: fan motor protection switch
- T1: ignition transformer
- P1: Transformer, 90-264V/12V
- P2: Transformer, 90-264V/24V
- E5: even lamp
- E6: Lamp BHS000

5310805

6.10/10.10/7.14/10.20/12.18
1/N/PE 110-120V 60Hz UL N2



08.01.7607

H&S

TRANSPORTATION DAMAGE and CLAIMS

ALTO SHAAM LIMITED WARRANTY



All Alto-Shaam equipment is sold F.O.B. shipping point, and when accepted by the carrier, such shipments become the property of the consignee.

Should damage occur in shipment, it is a matter between the carrier and the consignee. In such cases, the carrier is assumed to be responsible for the safe delivery of the merchandise, unless negligence can be established on the part of the shipper.

1. Make an immediate inspection while the equipment is still in the truck or immediately after it is moved to the receiving area. Do not wait until after the material is moved to a storage area.
2. Do not sign a delivery receipt or a freight bill until you have made a proper count and inspection of all merchandise received.
3. Note all damage to packages directly on the carrier's delivery receipt.
4. Make certain the driver signs this receipt. If he refuses to sign, make a notation of this refusal on the receipt.
5. If the driver refuses to allow inspection, write the following on the delivery receipt:

*Driver refuses to allow inspection
of containers for visible damage.*

6. Telephone the carrier's office immediately upon finding damage and request an inspection. Mail a written confirmation of the time, date, and the person called.
7. Save any packages and packing material for further inspection by the carrier.
8. Promptly file a written claim with the carrier and attach copies of all supporting paperwork.

We will continue our policy of assisting our customers in collecting claims which have been properly filed and actively pursued. We cannot, however, file any damage claims for you, assume the responsibility of any claims, nor accept deductions in payment for such claims.

Alto-Shaam, Inc. warrants to the original purchaser that any original part that is found to be defective in material or workmanship will, at our option, subject to provisions hereinafter stated, be replaced with a new or rebuilt part.

The labor warranty remains in effect one (1) year from installation or fifteen (15) months from the shipping date, whichever occurs first.

The parts warranty remains in effect one (1) year from installation or fifteen (15) months from the shipping date, whichever occurs first.

Exceptions to the one year part warranty period are as listed:

- A. Halo Heat cook/hold ovens include a five (5) year parts warranty on the heating element. Labor will be covered under the terms of the standard warranty period of one (1) year or fifteen (15) months.
- B. Alto-Shaam Quickchillers include a five (5) year parts warranty on the refrigeration compressor. Labor will be covered under the terms of the standard warranty period of one (1) year or fifteen (15) months.

This warranty does not apply to:

1. Calibration.
2. Replacement of light bulbs and/or the replacement of display case glass due to damage of any kind.
3. Equipment damage caused by accident, shipping, improper installation or alteration.
4. Equipment used under conditions of abuse, misuse, carelessness or abnormal conditions.
5. Any losses or damage resulting from malfunction, including loss of product or consequential or incidental damages of any kind.
6. Equipment modified in any manner from original model, substitution of parts other than factory authorized parts, removal of any parts including legs, or addition of any parts.

This warranty is exclusive and is in lieu of all other warranties, expressed or implied, including the implied warranties of merchantability and fitness for purpose. In no event shall the Company be liable for loss of use, loss of revenue, or loss of product or profit, or for indirect or consequential damages. This warranty is in lieu of all other warranties expressed or implied and Alto-Shaam, Inc. neither assumes or authorizes any persons to assume for it any other obligation or liability in connection with Alto-Shaam equipment.

ALTO-SHAAM, INC.

Warranty effective January 1, 2000

RECORD THE MODEL AND SERIAL NUMBER OF THE OVEN FOR EASY REFERENCE. ALWAYS REFER TO BOTH MODEL AND SERIAL NUMBER IN ANY CONTACT WITH ALTO-SHAAM REGARDING THE OVEN.

Model Number: _____

Date Installed: _____

Voltage: _____

Purchased From: _____

Serial Number: _____

W164 N9221 Water Street • P.O. Box 450 • Menomonee Falls, Wisconsin 53052-0450 • U.S.A.

PHONE: 262.251.3800

FAX: 262.251.7067 • 800.329.8744 U.S.A./CANADA

WEBSITE:

800.558.8744 U.S.A./CANADA

262.251.1907 INTERNATIONAL

www.alto-shaam.com