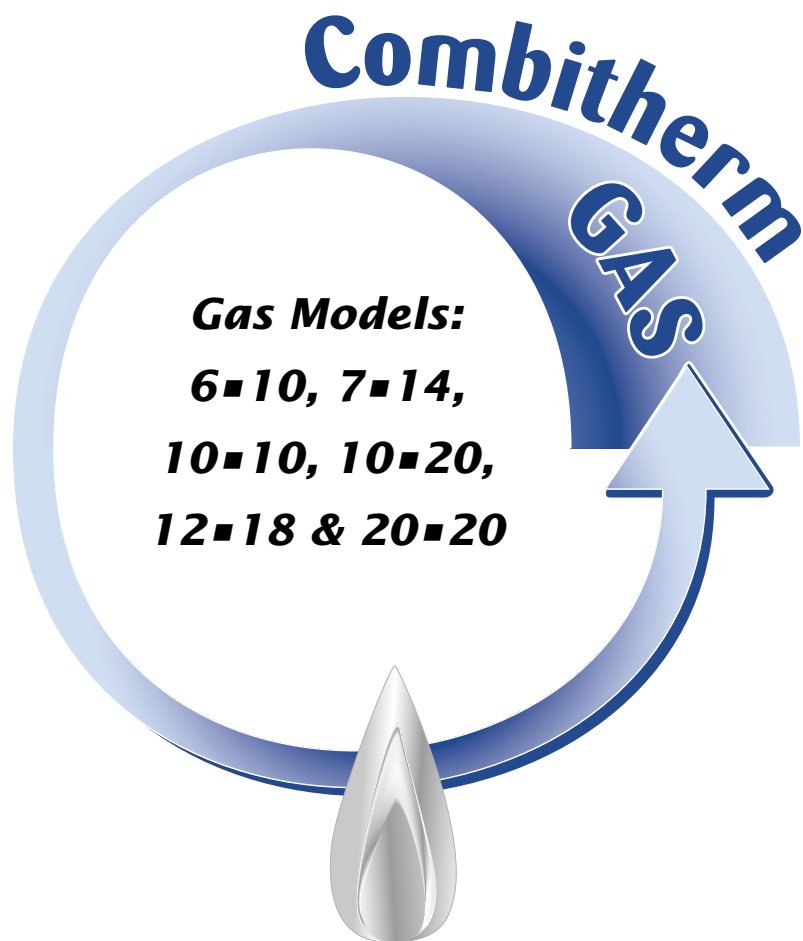


INSTALLATION, OPERATION and CARE MANUAL



Gas-Fired Combination Oven/Steamer

United States & Canada Models



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

PHONE: 262.251.3800

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ALTO SHAAM[®] GAS

COMBITHERM

INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTION MANUAL

MODELS

6•10, 7•14, 10•10, 10•20, 12•18 & 20•20 GAS

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:

In some prominent location, instructions obtained from the local gas supplier must be posted indicating procedures to be followed in the event that the user smells gas.

GAS FOOD SERVICE EQUIPMENT



ANS Z83.11.CGA 1.8-(1996) Food Service Equipment
ANS Z83.11.CGA 1.8-(1996) Manager Service Equipé



Underwriters Laboratories, Inc.[®]

CLASSIFIED

GAS-FIRED FOOD EQUIPMENT

ANS Z83.12 • CAN 1.10 (1994) - OVEN
ANS Z83.12 • CAN 1.10 (1994) - FOUR



NSF Std
No. 4 - 1996



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.



COMBITHERM FOUR/CONVECTION VAPEUR

MANUEL D'UTILISATION D'INSTALLATION, DE MISE EN ROUTE
ET D'ENTRETIEN POUR LES
MODELES SUIVANTS:

6•10, 7•14, 10•10, 10•20, 12•18 & 20•20 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.



GAS FOOD SERVICE EQUIPMENT

ANS Z83.11.CGA 1.8-(1996) Food Service Equip.
ANS Z83.11.CGA 1.8-(1996) Manager Service Equipé



Underwriters Laboratories, Inc.®

CLASSIFIED

GAS-FIRED FOOD EQUIPMENT

ANS Z83.12 • CAN 1.10 (1994) - OVEN
ANS Z83.12 • CAN 1.10 (1994) - FOUR



NSF Std
No. 4 - 1996



MIES 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-
app  de ces consignes annule toutes garanties.

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1.1 - DELIVERY/UNPACKING



Upon receipt of the Combitherm Gas combination oven/steamer, check the exterior of the shipping crate 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 strong possibility of concealed damage. Uncrate the unit carefully and inspect for any transit damage. Immediately report any damage to the delivery freight carrier. See *Transportation Damage and Claims* section located in this manual.

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



Check to ensure that all items have been received with each unit. Save all information and instructions packed inside the unit. Complete and return the warranty card to the factory as soon as possible to assure prompt service in the event of a warranty parts and labor claim.

Note that all claims for warranty must include the full model number and serial number of the unit.

1.2 - INSTALLATION REQUIREMENTS

In order to eliminate any operation problems and to insure proper operation, the installation of this oven must be done in accordance with the instructions given in this manual by a qualified installer. Failure to do so may cause damage to the oven and building, or cause personal injury to personnel.

The following requirements are needed for installation of the this oven: Air Supply, Electrical Connections, Water Connections, Gas Connections, Gas Exhaust, and Waste Water Discharge.

1.3 - CODES & STANDARDS

The gas appliance installation must be done 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. These codes must be adhered to by a qualified installer concerning: Gas Plumbing, Gas Appliance Installation, Commercial Cooking Ventilation, Water and Plumbing, and OSHA Regulations.

The installation surface must be heat resistant and non-combustible. See your local codes or the National Fuel Gas Code for the definition of combustible and non-combustible construction.

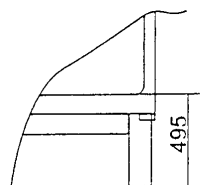
1.4 - UNIT PLACEMENT

Stand unit in level position. The adjustable feet can be used to overcome an uneven floor to ensure that the unit is level.

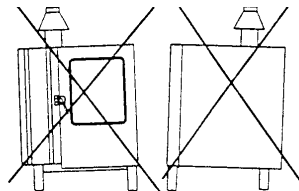
It is strongly recommended that table top models be on the original stand or one that is stable, open, level, and non-combustible. Recommended height is 23 inches (620mm).

Adapt the height of the floor models for easy "roll-in" of the trolley or cart. Ensure that the unit is level, right-to-left and back-to-front.

Note: Some units can be stacked on top of each other – but this process must be done at the factory



Correct positioning



Incorrect positioning

1.5 - CLEARANCES

Clearance to left side wall is 8 inches (203mm). Clearance to right side wall is 6 inches (152mm). Clearance to rear wall is 1 inch (25mm). These clearances apply whether the construction wall type is combustible or non-combustible.

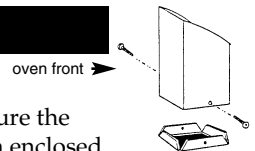
In order to provide sufficient clearance for service, 20 inches (508mm) must be allowed on the left-hand side of the unit. If this clearance cannot be provided, it will be necessary to disconnect the gas, water and drain connection in order to move the oven via a lift truck to gain access for servicing, and this will not be covered by warranty.

Do not install the oven within 20 inches (508mm) of another heat producing appliance such as a fryer, or open top range, etc., since the heat from these appliances may cause damage to the controls of this oven, and this will void the warranty.

1.6 - ASSEMBLY

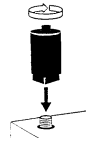
EXHAUST GAS/FLUE DIVERTER

Install the diverter piece as shown. Make sure the wire screen is in place before attaching with enclosed screws.



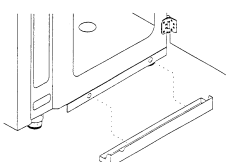
SOUND ABSORBER

Screw the sound absorber onto the threaded nipple on the top back left side of the oven.



DRIP TRAY

Fasten the drip tray support with two screws (if necessary) on Models 6•10 and 10•10. The drip tray can then be hung from the drip pan support.



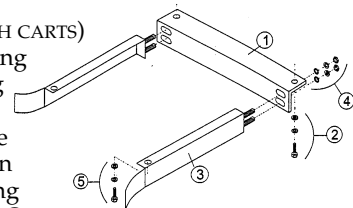
HAND SHOWER HOLDER

Remove the left side panel. Fasten the hand shower holder, using four nuts and washers. Replace the left side panel.



GUIDE RAILS (FOR OVENS WITH CARTS)

Mount the rear support ① using two bolts with washers and spring washers ② at the rear under the unit. Fit the guide rails ③ with the welded studs in the slotted holes in the rear support ① and fasten using nuts, washers and spring washers ④ from the back (do not tighten, leave loose). Then attach the rails at the front of the unit on the unit base using two bolts with washers and spring washers ⑤. Push the trolley into the unit; center it and close the door. Push the guide rails ③ at the rear so that they touch the cart. Tighten the nuts ④ so that the rails are locked in this position. Check to see that the seal between the oven and cart make a good contact over its total length.



1.7 - AIR SUPPLY

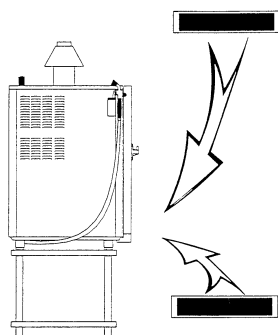
Installation of this oven must provide an adequate flow of fresh air for the combustion of the gas. The bottom of the oven is the area that is used for supplying air for combustion purposes. Instructions must be left with the user to keep this area clear of material which might block the flow of the combustion or ventilation air to the oven.

Make sure that the oven has plenty of ventilation air around it to provide cooling air for the 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 do so may result in

damage to the control components and will void the warranty.

Do not use circulating fans on the floor as this will cause the loss of pilot flame and affect burner operation.

Local codes and the National Fuel Gas Code give 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.



ELECTRICAL CONNECTIONS *continued...*

ACCESSING CONTROL AREA

To access the electrical/control system, make sure to disconnect power and ensure the gas supply is shut OFF before removing the left side panel.

The electrical diagram is affixed inside the left-hand side control area. A copy of the electrical diagram is shown 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.

1.8 - ELECTRICAL CONNECTIONS

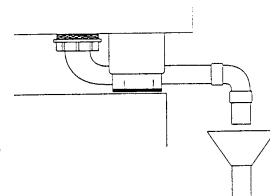
Ensure that the electrical supply matches the specification on the oven data plate. Gas models available for USA and Canada are typically rated for 110-120V, 60Hz, 1Ph. An electric cord is supplied and is ready to use. Fuses are located inside the unit at the left-hand side. The oven must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70 (latest edition) or in Canada with the Canadian Electrical Code, CSA C22.1. The installation of any wiring or electrical connections must be done by a licensed electrical contractor. *Continued.....above.*

1.10 - WASTE WATER DISCHARGE

The oven must discharge through an indirect waste pipe by means of air gap, i.e., vacuum break. If such piping is not provided, serious damage can occur to the unit and to the cooking product.

CONNECTION

Install the elbow provided. Make certain the washers provided are used. An illustrated example of water drainage for the Gas Combitherm is shown.



1.9 - WATER CONNECTION

The oven must be connected to a COLD water supply of potable (drinkable) quality.

The on-site water supply must have a shut-off valve. If local regulations require a back-flow preventer, have this installed.

Always observe local water regulations.

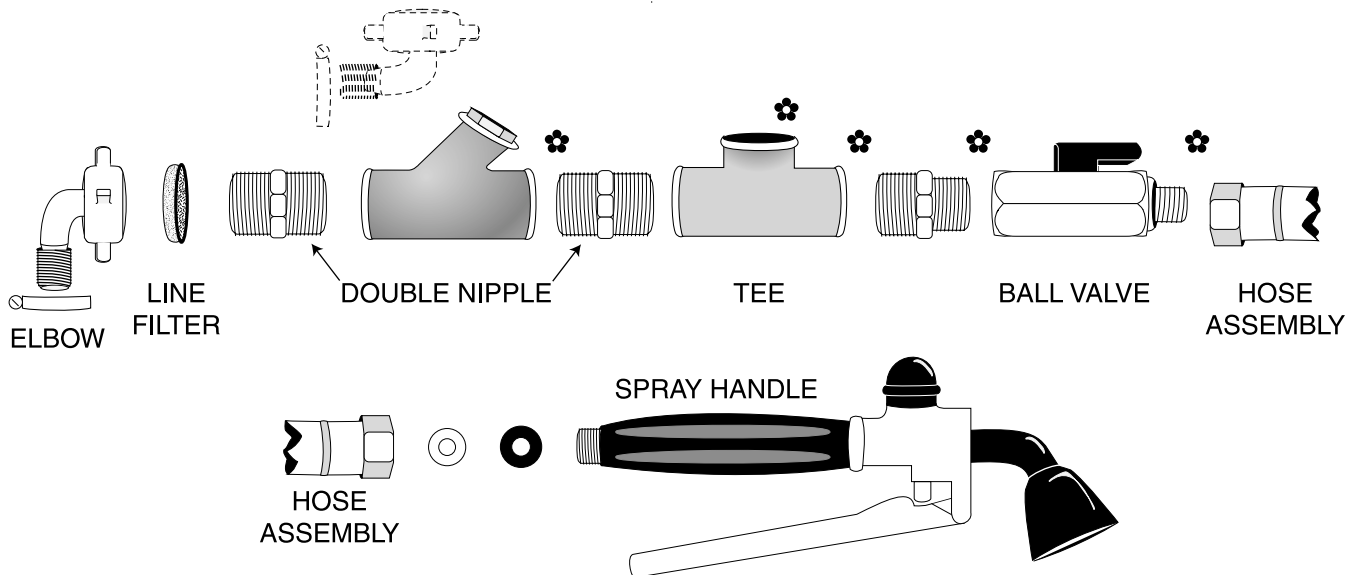
A water conditioner is highly recommended, especially if the water hardness is NOT pH5 and 9. Please contact the factory for assistance with a water conditioner.

The water pressure requirements are a minimum of 30 psi and a maximum of 120 psi. The connecting pipe is 3/4" and is under the unit.

ASSEMBLY

The water connection is installed in conjunction with the hand shower spray. In the illustration below, all connections indicated with the symbol * are to be assembled with teflon sealing tape.

- Screw T-piece onto the unit water supply inlet.
- Assemble double nipples and water tap, and hose.
- Slide O-ring over the threading from the hand shower.
- Screw together the hose, seal, and the hand shower.
- Hang the hand shower in its holder on the unit.
- Screw the hose and filter onto the cold water connection.
- Do not forget the filter!



1.11 - GAS CONNECTIONS

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

The installation must be done 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.

GAS TYPE & PRESSURE

Check the oven nameplate information to determine the type of gas the Combitherm Gas Oven/Steamer was manufactured for (natural or propane) and make sure the gas supply matches the nameplate information.

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

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

GAS CONNECTION

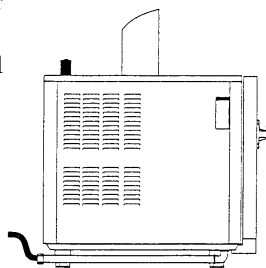
The minimum size of the gas piping or flexible connector is 1/2" except for the Model 20•20 which is 3/4". For long runs of gas piping, the pipe diameter must conform to the tables in the National Fuel Gas Code, ANSI/NFPA Z223.1.

A listed gas shut-off valve must be installed upstream of the appliance for shutting off the gas supply during servicing. This valve should be installed so that it is accessible with the appliance in its normally installed position.

If the oven or its stand is supplied with casters – the installation must be done 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 also be used that complies 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 used which will limit the movement of the appliance to prevent damage to the connector or quick disconnect. An example of such a system is to use 2000 pound test stainless steel cable attached to a structural member of the kitchen wall behind the oven. The attachment means should have a quick connect snap such that it can be disconnected when the appliance needs to be moved away from the wall. The other end of the cable should be permanently attached to the rear frame of the oven. The length of the cable should be such that no strain is ever placed upon the flexible gas connector if the appliance is accidentally moved without first disconnecting the gas connector.

The flexible connector should be routed so that it forms a downward "U" loop between the building gas supply and



where it attaches to the rear of the oven.

The routing of the flexible connector must not be done under the oven. The temperatures 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 used. See the illustration for the recommended procedure.

The gas piping must never be run under the burner—there is danger of overheating.



If a pressure leak test above 1/2 psi is to be done 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 and/or gas components in the oven.*

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).

NEVER CHECK FOR LEAKS USING AN OPEN FLAME.

The use of electronic combustible gas leak detectors is helpful, but they can be oversensitive.

They may find leaks that are not visible when checking with a liquid solution, and therefore, present no hazard.



When starting unit 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.

FUEL INTERLOCK SYSTEM

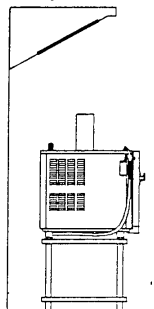
Local codes may require that the fuel supply to the oven be interlocked to the ventilation hood. If that is the case, a separate electrically operated gas valve must be installed in the gas line. The selection of the valve will be up to the installer, but the valve should be recognized by the authority having jurisdiction.

The oven is not for direct connection to a chimney vent system

1.12 - GAS EXHAUST

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 done 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 that must be installed on the oven prior to installation. *See Assembly at the front of this manual.* The operators of the oven should be instructed not to place any material on top of the oven that would obstruct the flow of flue products out the opening. They should also be instructed that the flue gases are hot, and that any material or items they place on top of, or in front of the flue deflector could be damaged or cause fire hazard.



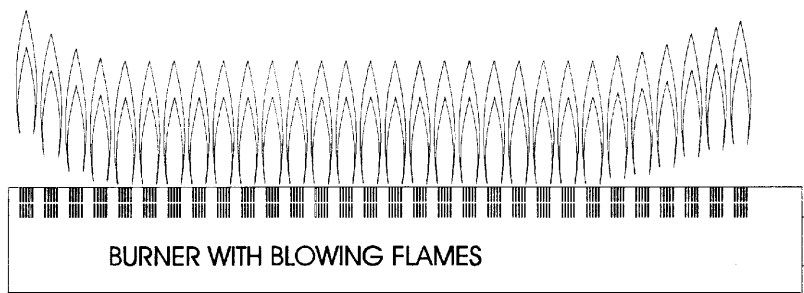
1.13 - PRESSURE CHART

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:

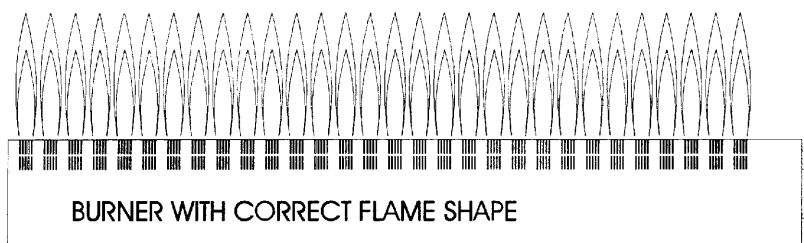
Combitherm Gas Model	6•10	7•14	10•10 12•18	10•20	20•20
Natural Gas 					
Connected pressure rating	7 in. W.C.	7 in. W.C.	7 in W.C.	7 in W.C.	7 in W.C.
Min. connected pressure	5 in. W.C.	5 in. W.C.	5 in. W.C.	5 in. W.C.	5 in. W.C.
Max. connected pressure	14 in. W.C.	14 in. W.C.	14 in. W.C.	14 in. W.C.	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 Btr/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 Btr/hr

1.14 - GAS FLAME PATTERNS

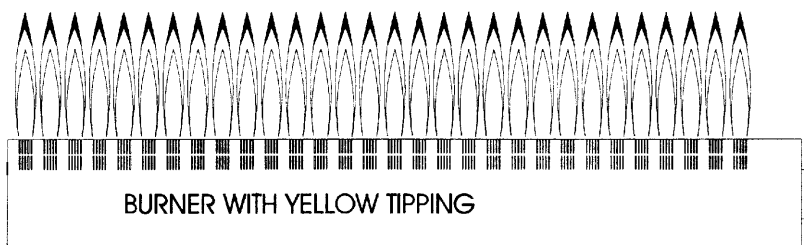
When starting the unit after initial installation, the gas lines must be free of air. It may take up to 30 minutes to do this. If, after this time there is no pilot, call for factory assistance.



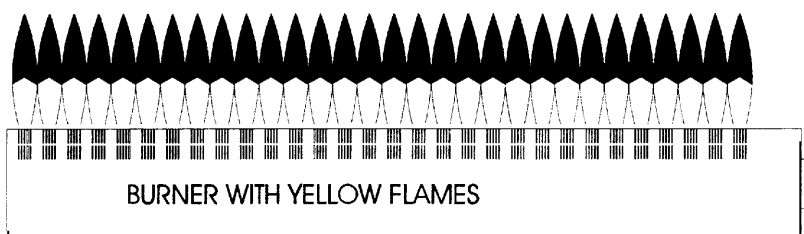
For all practical reasons this will be the only check necessary during initial operation by the installer. After the installation is complete the oven needs to be test fired to ensure that the system is operating properly. Follow the operating instructions posted on the front of the unit.



The flame pattern both under hot and cold conditions should be stable on all burner ports and there should be no lifting or blowing after 15 seconds of operation. There is no air shutter adjustment on these burners and if the flame pattern does not match that shown, contact the factory for further directions.



Make sure that the pilot burner is lighting quickly from the electric ignitor. Then make sure that the main burner is lighting quickly (within 4 seconds), smoothly (no harsh noise), and without any problems. While the oven is COLD, cycle the oven ON and OFF five times to make sure everything is working properly. Allow the unit to heat up 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. On propane gas some yellow tipping is normal, but there should be no indication that soot will form on the combustion chamber walls, pilot or main burner from the yellow tipping.

1.15 - INTERMITTENT PILOT - HONEYWELL

Units equipped with intermittent pilot-based operation 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.

Step #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.



Step #2 - ADJUST PILOT BURNER

The pilot burner assembly installed in your unit is tested prior to shipment and does not require any adjustment. If adjustment is desired, follow these instructions. This step must be performed by a qualified person only.

- Turn main power switch ON, and switch the ignition control switch on the gas valve to 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 no or very little yellow peaks.

Step #3 - MANIFOLD PRESSURE ADJUSTMENT

The gas valve has a built-in pressure regulator and regulates the manifold pressure according to specification presented in the Pressure Table in this manual. The valve requires no adjustment. However, if adjustment is desired, follow the instructions below.

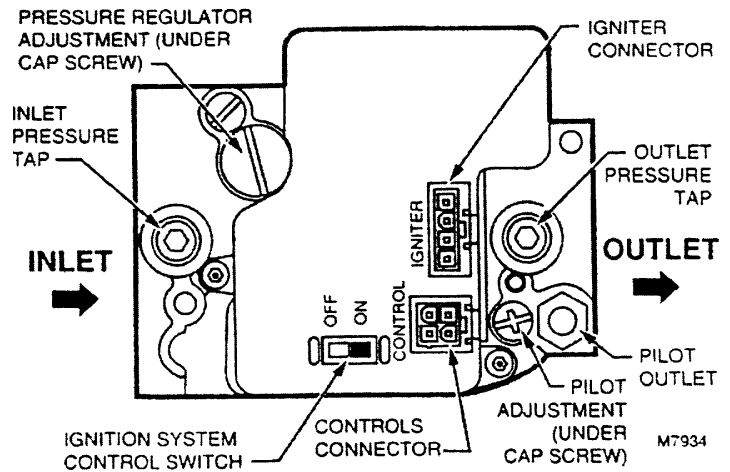
This must be performed by a qualified person only.

- 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 program, set temperature and timer, and press the START/STOP key. Follow 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 PILOT position.
- Close pressure regulator and manifold/outlet gas tap with protective caps.

NOTE: If you do not understand this procedure, do not perform any changes. Call the factory for assistance.



Step #4 - IGNITION & BURNER CHECK

For all practical reasons this will be the only check necessary during initial operation by the installer. After the installation is complete the oven needs to be test fired to ensure that the system is operating properly. Follow the operating instructions posted on the front of the unit.

The flame pattern both under hot and cold conditions should be stable on all burner ports and there should be no lifting or blowing after 15 seconds of operation. See the illustration in this manual for the proper flame pattern. There is no air shutter adjustment on these burners and if the flame pattern does not match that shown, contact the factory for further directions.

Make sure that the pilot burner is lighting quickly from the electric ignitor. Then make sure that the main burner is lighting quickly (within 4 seconds), smoothly (no harsh noise), and without any problems. While the oven is COLD, cycle the oven ON and OFF five times to make sure everything is working properly. Allow the unit to heat up for 5 minutes and repeat the process.

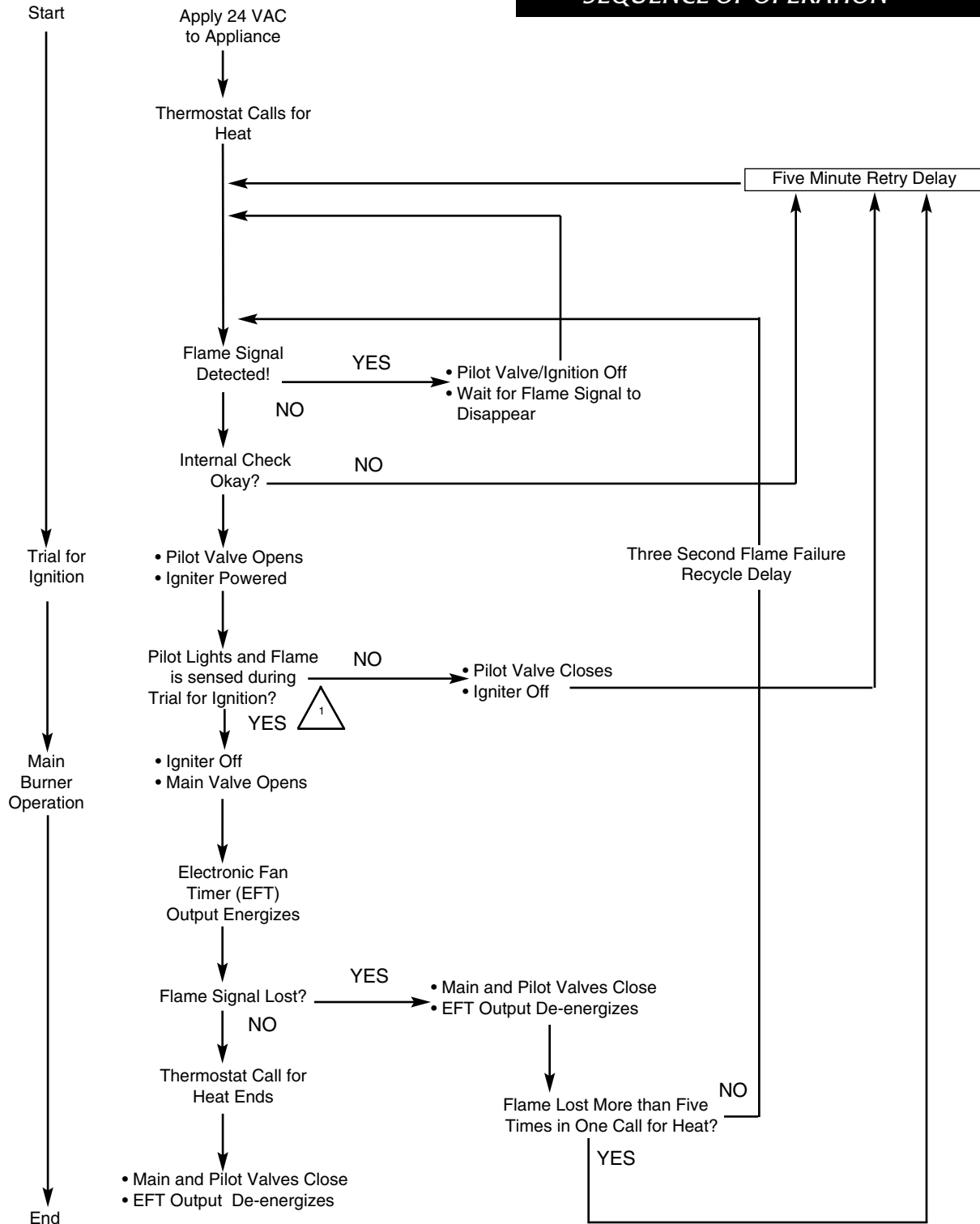
Check the flame pattern on the burners. The flames should be blue in color with little or no yellow in the flame. On propane gas some yellow tipping is normal, but there should be no indication that soot will form on the combustion chamber walls, pilot or main burner from the yellow tipping.

Step #5 - VERIFY SEQUENCE OF OPERATION

When the Gas Combitherm is fitted with an intermittent pilot and a Honeywell gas valve, the system is ready for 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 unit 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.

1.16 - Honeywell SmartValve™ SYSTEM SEQUENCE OF OPERATION



1 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.

1.17 - CONTINUOUS PILOT - SIT-NOVA

Units equipped with continuous pilot operation are fitted with the SIT-NOVA gas valve. The gas valve has a built-in pressure regulator and a thermo-electric 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.

Step #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.



Step #2 - ADJUST PILOT BURNER

The pilot burner assembly installed in your unit is tested prior to shipment and does not require any adjustment. If adjustment is desired, follow these instructions. This step must be performed by a qualified person only.

- Turn main power switch ON and turn the gas control knob to PILOT.
- Depress the knob for 30 seconds to establish the pilot flame.
- Verify that pilot flame is well positioned and surrounding the thermocouple.
- If the flame requires adjustment, open the pilot cap on the gas valve and adjust the screw to increase or decrease the gas flow to achieve the right flame.
- Close the pilot protective cap.

Step #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 Chart in this manual. The valve requires no adjustment. However, if adjustment is desired, follow the instructions below.

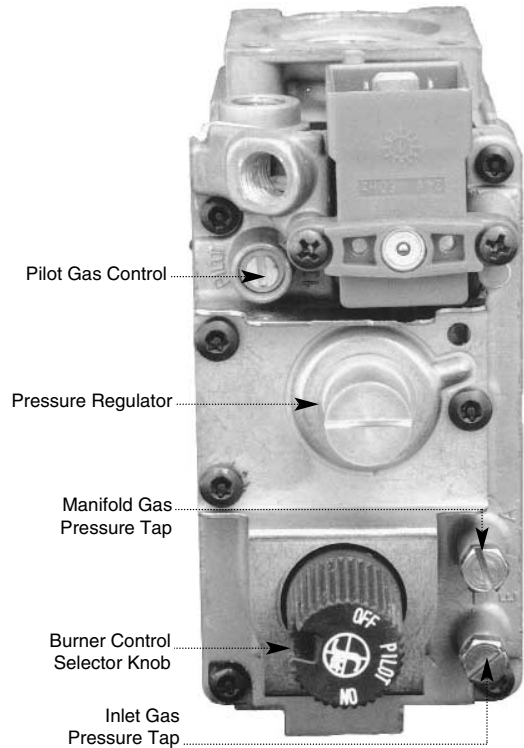
This must be performed by a qualified person only.

- 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 turn the gas control knob to ON.
- Select program, set temperature and timer, and press the START/STOP key. Follow 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 PILOT position.
- Close the pressure regulator and manifold/outlet gas tap with protective caps.

NOTE: If you do not understand this procedure, do not perform any changes. Call the factory for assistance.



Step #4 - IGNITION & BURNER CHECK

For all practical reasons this will be the only check necessary during initial operation by the installer. After the installation is complete the oven needs to be test fired to ensure that the system is operating properly. Follow the operating instructions posted on the front of the unit.

The flame pattern both under hot and cold conditions should be stable on all burner ports and there should be no lifting or blowing after 15 seconds of operation. See illustration in this manual for the proper flame pattern. There is no air shutter adjustment on these burners and if the flame pattern does not match that shown, contact the factory for further directions.

Make sure that the pilot burner is lighting quickly from the electric ignitor. Then make sure that the main burner is lighting quickly (within 4 seconds), smoothly (no harsh noise), and without any problems. While the oven is COLD, cycle the oven ON and OFF five times to make sure everything is working properly. Allow the unit to heat up 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. On propane gas some yellow tipping is normal, but there should be no indication that soot will form on the combustion chamber walls, pilot or main burner from the yellow tipping.

Step #5 - VERIFY SEQUENCE OF OPERATION

When the Gas Combitherm is fitted with a continuous pilot and a SIT-NOVA gas valve, the normal sequence of operation would essentially involve igniting the pilot and switching the gas valve to ON. The main burner would operate whenever there is demand for heat during an active program.

However, if the continuous pilot becomes extinguished due to interruption in gas supply or weak thermocouple signal, the sparking or ignition system would be activated immediately to re-ignite the pilot (the spark discharge noise can be heard). Follow the pilot and burner ignition steps.

1.18 - INSTALLATION CHECKLISTS

INSTALLATION INSPECTION

CHECK LIST

- ✓ Transport damage?
- ✓ No gas hose/tube under the burner?
- ✓ No flexible gas line or tubing under oven?
- ✓ Non-combustible installation floor?
- ✓ Minimum clearances around oven adhered to?
- ✓ Unit not adjacent to heat producing equipment?
- ✓ Service clearance available?
- ✓ Gas and exhaust installation according to regulations?
- ✓ Water softener/conditioner installed according to regulations?
- ✓ Water drainage according to instructions and regulations?
- ✓ Shelf rack slid in completely and fastened with safety latches?
- ✓ Installation/operation manual and cookbook close by?

USER/OPERATOR INSTRUCTIONS

CHECKLIST

- Never store any combustible material under, on top of, or beside this oven.
- Do not place any other heat producing appliances within 20 inches of this oven.
- Make sure the oven has plenty of ventilation air around it to provide cooling air for the electrical and gas components.
- Do not obstruct the flow of combustion and ventilation air around the oven.
- The bottom of the oven is the area that is used for supplying air for combustion purposes. Keep this area clear of material which could block the flow of air to the oven.
- Once a sufficient air supply has been established, do not reduce the size of the room, increase the sealing of window and outside doors, or close or remove air vents. Gas units use fresh air.
- Do not place any material on top of the oven that would obstruct the flow of flue products. Flue gases are hot and any material or items placed on top of, or in front of, the flue deflector could result in a fire.
- Before servicing or cleaning this oven, disconnect the electrical supply.
- All servicing and maintenance should be performed by a qualified service agent.
- Clean the oven on a routine basis.
- Do not store flammable items (shower hose, plastic waste cans, etc.) under the unit because of its excessive heat.
- A maintenance contract is highly recommended.

END OF THE DAY

CHECK LIST

- ✗ Turn the unit OFF.
- ✗ Follow local regulations; if required, extinguish the pilot.
- ✗ Leave the door ajar.

FUNCTION

CHECKLIST

- ✗ Turn main water inlet and gas supply ON.
- ✗ Switch unit power ON.
- ✗ All interior oven lights lit?
- ✗ Did pilot ignite correctly?
- ✗ Did burner ignite correctly?

OVEN USE EXPLANATION

CHECK LIST

Demonstrate

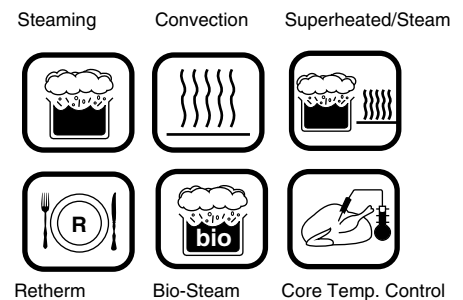
- ➔ how to light the pilot
- ➔ the removable drip tray
- ➔ the removable shelf rack with safety latches
- ➔ how the door magnet switch functions

SERVICE PANEL USE

CHECK LIST

Explain

- ♦ the indicators "no water" and "convection/steam"
- ♦ the cooking programs and settings
- ♦ the importance of preheating
- ♦ the handbook



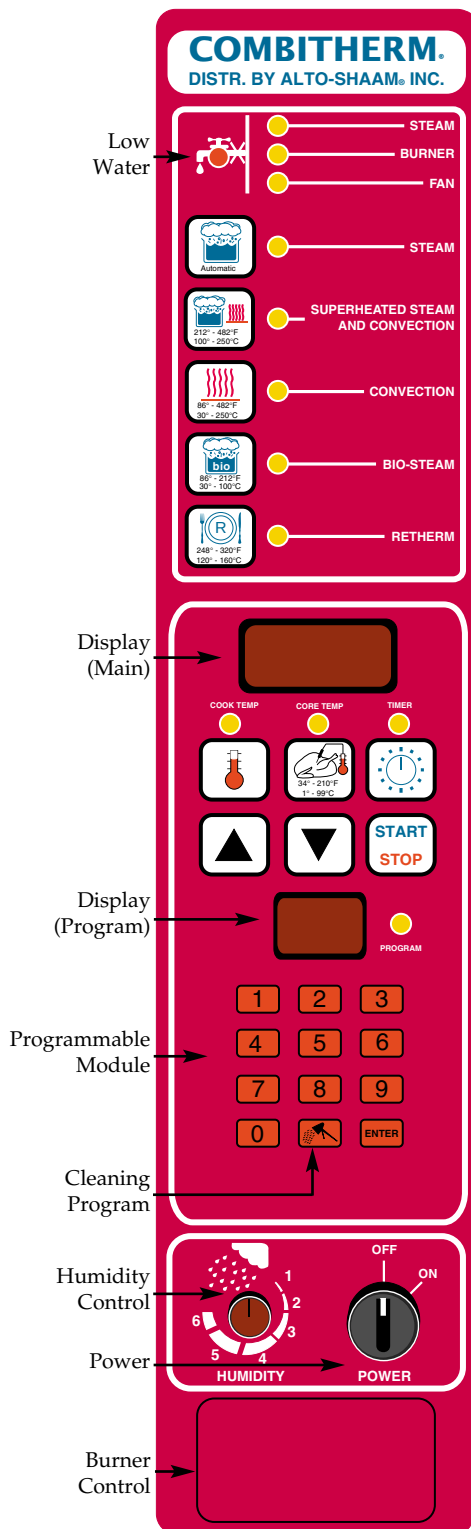
CLEANING

CHECK LIST

Explain or demonstrate

- ♦ the handshower
- ♦ the daily cleaning process
- ♦ the monthly cleaning process
- ♦ replacing the plug-in door gaskets
- ♦ cleaning agents are caustic, rinse the unit well

2.1 - OPERATION CONTROL PANEL DESIGN



CONTROL KEY

KEY DESCRIPTION

1. STEAMIndicator for steam generation status
2. BURNERIndicator for main burner operation
3. FANIndicator for motor/fan operation
4. LOW WATERIndicator for low water pressure or loss of water
5. STEAMProgram key for automatic steam cooking 212°F (100°C)
6. SUPERHEATED STEAM ...Program key for combination steam & CONVECTIONconvection cooking 212-482°F (100-250°C)
7. CONVECTIONProgram key for convection cooking 86-482°F (30-250°C)
8. BIO-STEAMProgram key for delicate steam cooking 86-212°F (30-100°C)
9. RETHERMProgram key for regenerating preplated food 212-482°F (100-250°C)
10. DISPLAY (MAIN)LED three digit display, indicates set and actual oven temperature, cook time. Program Module will display active program number.
11. COOK TEMP.Key to set oven cook temperature (F/C).
12. TIMERKey to set cook time (minutes).
13. CORE TEMP.Key to cook product by measuring product core temperature.
14. UP ARROWKey used to increase a selected temperature or time
15. DOWN ARROWKey used to decrease a selected temperature or time
16. START/STOPKey to start or stop a selected cooking time.
17. HUMIDITYKnob to select humidity level for Superheated Steam program and Retherm program cooking.
18. POWERElectric power switch
19. BURNER CONTROLGas burner control valve to control pilot and main burner (located behind the swing door)
20. PROGRAMMINGAccessory control: allows to program or presetting up to 99 MODULE cooking programs with a maximum of 5 steps each.

2.2 - SYSTEM • STATUS

(1) STEAM

Yellow: Indicates steam generation is in process.

(2) BURNER

Yellow: Activated when main burner is in operation.

(3) FAN

Yellow: Activated when motor/fan is in operation.

(4) LOW WATER

Red: Indicates when water supply line pressure is below the minimum supply pressure or when there is no water supply.

2.3 - PROGRAM • FUNCTION

The following programs are available for various cooking operations. When selection of a program is made, the indicator light will illuminate.



(5) STEAM PROGRAM

Automatic steam cooking and cleaning program. Oven operating temperature is preset to 212°F (100°C).

This function will steam a full or partial load of a single product. Several different products can be combined in a single load without transfer of flavors. When steaming multiple products, however, individual product cooking times must be taken into consideration. Full steam saturation is maintained automatically regardless of the type of product, quantity, or length of time necessary to steam.

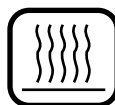


(6) SUPERHEATED STEAM & CONVECTION

Used for roasting, baking, braising. Temperature range is between 212°F -482°F (100°C-250°C). Steam injection level is controlled by HUMIDITY CONTROL (17).

This function will prove to be the most versatile and widely used program that this oven offers. Will produce the best possible results on widest variety of products – all within the shortest period of time. Also offers less product shrinkage and more moisture retention than standard convection ovens. Steam injection is controlled manually using the humidity control knob. In a balanced environment of moisture and heat, products retain their natural juices and flavor.

(7) CONVECTION



Selection key for convection only cooking. Used for grilling, baking, browning. Temperature range available is between 86°-482°F (30°-250°C).

(8) BIO STEAM



Cooks delicate products which require gentle steaming. Temperature range is between 86°-212°F (30°C-100°C). Steam injection level is controlled automatically.

The bio steam process gives the operator the capability to steam items such as pate, terrines, mouses, flans, and seafood. Delicate sausage casings will stay intact. This program also permits a gentle rethermalization (reheating) of vacuum packed foods, such as in the technique of sous-vide.



(9) RETHERM

Regenerates preplated meals or small food platters. Temperature range available is between 212°-482°F (100°-250°C). Steam injection level is controlled by HUMIDITY CONTROL (17).

Refrigerated meals from chillers are brought to serving temperature while preserving the overall quality of the meals. Rethermalization results in less food waste due to longer shelf life of the product under refrigeration while utilizing cook/chill technology. Reheating of plated meals can be accomplished on a per-order basis, ala carte, or in large volume for banquet service in conjunction with Alto-Shaam companion holding cabinets and interchangeable roll-in carts. This technology offers the advantage of food cost savings as well as saving in total labor costs.

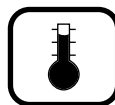
2.4 - DISPLAYS

(10) DIGITAL DISPLAY

A three digit LED main display indicates set oven or product core temperatures and cooking time. During normal operation, this display indicates remaining cook time in minutes. When a programming module is available, the main display can also indicate program number, if a selection is made. The main display also functions as an interactive screen for preset programming information.

2.5 - TEMPERATURE/TIME SETTING

(11) COOK TEMPERATURE



Used to set oven temperature for all programs with the exception of STEAM program. When selected, a LED above this selection key will be illuminated, and the main display will indicate the previous oven temperature selection made. By using UP arrow and/ or DOWN arrow keys, a new temperature can be set.

During normal operation for the DISPLAY to indicate actual oven temperature, press and hold the COOK TEMP key for 3 seconds. The actual oven temperature will be displayed as long as the COOK TEMP is held pressed.

(12) TIMER



Used to set cooking time. When selected, a LED above this selection key will be illuminated, and the main DISPLAY will indicate the previous selected time. By using the UP arrow and/ or DOWN arrow keys, a new cook time (1-199 min.) can be set.

During normal operation, remaining cook time is displayed. When the set time runs out, the main burner and motor is switched off and a loud buzzer is activated. The buzzer can be switched off by pressing any of the program keys (5-9) or the START/STOP key. Continuous time setting: Any of the cooking programs can be executed for infinite time. This is achieved by pressing and holding the TIMER key until "-----" is displayed.

(13) CORE TEMPERATURE



An alternative to timer operation. A cooking process can be controlled by means of product core temperature measurement. To set core temperature, press CORE TEMP key. The LED above this selection key will be illuminated, and the main display will indicate the previous core temperature selected.



(14)



(15) By using the **UP arrow and/or DOWN arrow** keys, a new temperature (34°-210°F or 1°-99°C) can be set.

During normal operation the display will indicate set core temperature for 3 seconds and will automatically switch to indicate actual product core temperature.

The cooking program will end when the product has reached the selected core temperature. The main burner and motor is automatically switched off and a loud buzzer is activated. The buzzer can be switched OFF by pressing any of the program keys (5-9) or the START/STOP key. When no key is pressed, the buzzer will turn off after 1-2 minutes.

NOTE: When operating with Core Temperature, the Timer cannot be set. If the Timer key (12) is pressed, the unit will switch from Core Temperature based operation to Timer based operation.



(16) START/STOP

Used to start or stop any of the programs (5-9) selected. A cook program or a preset program is started by pressing the START/STOP key.

When a program is started, System Status Indicator Lights (3, 2 and 1; or just 3 and 2) will be illuminated. Similarly, a selected program can be terminated any time by pressing START/STOP key.

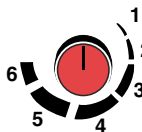
When a program is terminated, the System Status Indicator Lights will be switched off and the control system will retain in memory the last program, temperature, cook time/core temperature selected.

When a cooking program is in progress and if the program is interrupted without pressing the START/ STOP key by opening the oven door – the main burner, fan, and if applicable, steam generation, will be temporarily stopped. However, the timer will continue to run. When the door is closed again, the oven will automatically resume the program and will continue until the cook time runs out.

2.6 - HUMIDITY

This is active only with the SUPERHEATED STEAM & CONVECTION and RETHERM programs. With all other programs, humidity level is preset and cannot be changed.

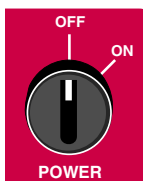
(17) HUMIDITY CONTROL



When SUPERHEATED STEAM & CONVECTION or RETHERM program is selected, turn the knob manually for humidity level ranging between a scale of 1 and 6. The steam level will be proportionately controlled over this scale.

If the control knob is set at the lowest possible setting (i.e., 0), no steam will be available, and the program will continue similar to a CONVECTION program. If a preset program is activated from the programming module, the moisture settings are not in memory, and the user has to manually choose the moisture level (if necessary).

2.7 - MAIN COMBITHERM CONTROLS



(18) POWER SWITCH

When activated, provides electric power for the system. When this knob is switched ON, the system and the control system in the Main Display screen will show two point/dots [. .]. This implies that the system is ready for program selection.

Concurrent with the energization, if the pilot burner is not ON, the spark generator will start to generate spark at the pilot burner with the SIT-NOVA valve.



(19) BURNER CONTROL - CONTINUOUS PILOT SIT-NOVA Valve

This burner control valve used with continuous pilot, located behind the swing door, controls the operation of the pilot and main burner. The valve is electrically operated, and the main burner can be activated only when the POWER is switched on.

To light the pilot burner, switch the Power ON, wait and listen to the spark discharge noise at the pilot burner.

Dial the BURNER CONTROL VALVE to PILOT position. Depress knob a maximum of 30 seconds and view through the peep hole for flame establishment. The peep hole is located at the lower level of the oven. As soon as the flame is established, the spark discharge noise will stop. At this point, continue to depress the knob for an additional 15 seconds.

If the flame is not established within 30 seconds, switch the POWER OFF and dial the BURNER CONTROL VALVE to OFF position. Wait for 5 minutes before attempting to relight the pilot burner.



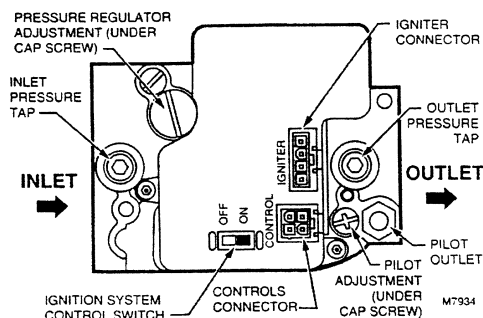
Once lit, the pilot burner will continue to be ON even if the electric POWER is switched OFF as long as the BURNER CONTROL VALVE is at its PILOT position. It is highly recommended to shut OFF the pilot burner and leave the gas valve on the OFF position at the end of the day.

To light the main burner, dial the BURNER CONTROL VALVE to ON. The burner operation (ON/OFF) will now be controlled by the program START/STOP key.

To turn the pilot and main burners OFF, turn the knob to OFF position. When the valve is at its OFF position, even if a program is started by pressing the START/STOP key, the System Status Light will never turn ON (yellow), indicating the main burner is not switched ON.

Similarly, if the pilot burner is not switched ON, even if a program is started by pressing the START/STOP key, the System Status Light will never turn ON (yellow) indicating the main burner is not switched ON.

2.8 - BASIC OPERATION



(19) BURNER CONTROL - INTERMITTENT PILOT HONEYWELL Valve

This burner control valve used with intermittent pilot, located behind the swing door, controls the operation of the pilot and main burner. The valve is electrically operated, and the main burner can be activated only when the POWER and the Gas Control Valve switch are ON.

The pilot burner is lit automatically when necessary and does not require user action.

The burner operation (ON/OFF) will be controlled by the program START/STOP key.

During normal operation, the electronic control will try three times to light the pilot/main burner. If ignition attempts fail, the control will automatically shut the gas OFF. If this occurs, verify the conditions are correct and switch OFF the Power to reset.



To turn the pilot and main burners OFF, switch the Power to OFF position. The intermittent pilot control system will operate without any user intervention and normally uses a "hands off" policy.

(20) PROGRAMMABLE CONTROL/MODULE

This accessory allows the user to preset or program the entire Combitherm operation. Thus, once programmed to cook certain product, say chicken, at the convenience of a single program key, the user can start and perform the entire program.

This module would allow the user to program in up to 99 preset programs, each program with a maximum of 5 steps. For example, program #1 could

contain the following sequence:

- Step #1 - Superheated Program at Temp. 250°F, time = 3 min.
- Step #2 - Superheated Program at Temp. 325°F, time = 22 min.
- Step #3 - Convection Program at Temp. 325°F, time = 4 min.
- Step #4 - Convection Program at Temp. 250°F, time = 4 min.
- Step #5 - Convection Program at Temp. 200°F, time = 2 min.

CLEANING PROGRAM

Each program module includes a built-in automatic cleaning program. This program is preset at the factory to facilitate the cleaning process at the end of the day. Explanation on how to use this feature is provided in the Maintenance Section of this manual.



GENERAL OPERATION • HELPFUL HINTS

- When using the hand sprayer, make sure the power switch is in the OFF position.
- Before using the hand sprayer, wait until the cooking compartment has cooled down to at least 122°F (50°C).
- Severe damage can occur if cold water is used on a hot oven.
- Never use the oven cleaner or the hand sprayer to clean the outer surface of the oven.
- Related products with similar cooking/baking guidelines (program, time, temperature) can be cooked together.

SAFETY PRECAUTIONS • STEAM

- During steaming, 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.
- Before opening the oven door, always press the STOP key and wait a few seconds to allow the fan to stop rotating.

OVEN START-UP

1. Make certain main gas and water supply and exhaust ventilation are ON.
2. Turn Power Selector switch ON.
3. Turn Burner Control knob to PILOT. Press knob inward for 30 seconds to light pilot burner (*only with units having Continuous Pilot - SIT-NOVA valve*).

NOTE: If pilot is not established, turn Power selector and Burner Control OFF and wait for 5 minutes before lighting.

4. For units with Intermittent Pilot (Honeywell Valve): No action is necessary.
5. For units with Continuous Pilot (SIT-NOVA Valve): Turn Burner Control knob to ON.

OVEN OPERATION

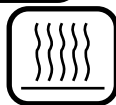
Step #1 - SELECT PROGRAM



STEAM
Steam • Clean



SUPERHEATED STEAM & CONVECTION
Roast • Bake • Brown



CONVECTION
Bake • Brown



BIO-STEAM
Delicate Steam



RETHEM
Reheat Plated Meals

Step #2 SET COOK TEMPERATURE

NOTE: Cook Temperature cannot be set in the Steam Program Mode.

To set temperature, push Cook Temp  key and use  or  keys to set a temperature within the range specified for the program mode selected.

Step #3 SET TIMER/CORE TEMPERATURE

TIMER

Push Timer  key and use  or  keys for selection of required cook time. If continuous time setting is desired, press Timer key until "----" is displayed.

CORE TEMPERATURE

As an alternative to timer operation, use this option in any program mode to cook by sensing internal product temperature.

- Insert probe in product.
- Press Core Temp  key and  or  keys to set the required internal product temperature.

Step #4 SET HUMIDITY LEVEL

Humidity setting can only be used in Superheated Steam and Retherm programs.

Turn the Humidity Control  dial to a setting between 1 and 6.

Step #5 PROGRAM START/STOP

Press  key to Start or Stop program.

The display will always indicate the remaining cook time.

To check oven temperatures, press Cook Temp  key for 3 seconds; the display will indicate actual temperature. At the end of the program, a buzzer will sound for a period of 70 seconds. The buzzer can be immediately deactivated by pressing any program key.

Step #6 SHUT-DOWN

After daily use, set the Burner Control  knob (with SIT-valve ONLY) and Power Selector switch to the "OFF" position.

Selector switch to the "OFF" position.

2.9 - ADVANCED COMBITHERM OPERATION

UNLOCKING AND LOCKING COOKING PROGRAMS

Use this feature to lock one or all of the five cooking programs to a preselected cook temperature and core temperature or cook time.

UNLOCKING A LOCK STATUS

- Switch POWER (18) knob "ON" and the main DISPLAY (10) will be steadily lit [. .], if locked. The buzzer may or may not be active. If the buzzer is active do not try to cancel.
- Simultaneously press the COOK TEMP (11) and the TIMER (12) keys. The DISPLAY (10) will indicate the locked status "Loc".
- To Unlock using the UP key (14) or DOWN key (15) select "unL" and press the START/STOP key (16), until the main DISPLAY (10) begins to flash [. .].

LOCKING PROGRAMS

- Select each of the five program keys (5-9).
- Set a desired cook temperature and/or core temperature or cook time using the keys (11-15) for each program and press START/STOP key (16) for each completed program.
- Switch POWER knob (18) OFF. After a few moments, switch POWER knob (18) back ON.
- Simultaneously press the COOK TEMP key (11) and the TIMER (12) keys. DISPLAY (10) will indicate "unL".
- Using the UP key (14) or DOWN key (15) select "Loc" and press the START/STOP key (16) until the main DISPLAY (10) becomes steadily lit [. .].

All the program parameters such as temperature, time or core temperature chosen for the various programs are now locked and cannot be changed until they are unlocked again.

OPERATING A LOCKED SYSTEM

Once one or more of the cooking programs are preset and locked, the user should be instructed to follow the operating procedure outlined below.

- Start the Combitherm system according to the procedure discussed in the Basic Operation Section 2.8.
- Select a locked cooking program by pressing the program selection key (5-9) and if desired, insert the Core Temperature Control Probe into the product.
- Press START/STOP key (16) to execute the locked program.

Changing programs while the locked system is in operation is only possible by pressing the START/STOP key (16) to leave one pro-gram and again to start the next. If a locked program is selected and if program choices keys such as COOK TEMP (11) or TIMER (12) or CORE TEMP (13) are pressed, set parameters will be displayed.

After the locked cooking time runs out or when cooking process is completed, the buzzer will sound and will switch the fan and burner off.

SWITCHING BETWEEN CELSIUS AND FAHRENHEIT TEMPERATURE SYSTEMS

Shut POWER (18) to the unit "OFF" and wait about 2 minutes. It is very important to wait for 2 minutes before you proceed further.

- Simultaneously press COOK TEMP key (11), TIMER key (12) and the START/STOP key (16) and switch the electric POWER switch (18) from "OFF" to "ON" position. The main DISPLAY (10) will read "S1" or similar service program number.
- Using the UP and/or DOWN key, choose the service program "S2" to change temperature systems. Press START when the main DISPLAY (10) reads "S2".
- The main DISPLAY (10) will either show a "0" or "1". Using the UP and/or DOWN arrow keys, choose 0 for Celsius (C) or 1 for Fahrenheit (F) temperature system.
- Press START/STOP key (16) to confirm the selection made. The controller is now ready for the chosen temperature system.

Do not choose any other service program or alter any other settings. This will result in changes to factory settings and could affect the performance of the Combitherm oven.

If your Combitherm oven is equipped with the programmable module (20), read and familiarize yourself with this section. The program module allows presetting or programming up to 99 cooking sequences into memory. Each program or cooking sequence can store up to 5 cook steps. The program module also includes a factory set auto cleaning program. This section describes how to program a cooking sequence and how to operate the oven using program numbers.

PROGRAMMING COOKING SEQUENCE(S) INTO MEMORY

Unit must be in UnLock Mode for this Procedure.

A. POWER-UP

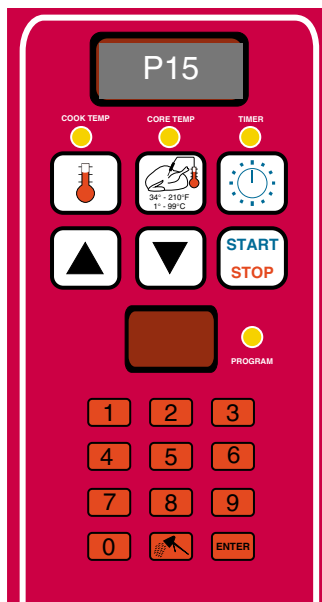
To program first power-up from the OFF state by turning the POWER (18) knob to ON. The main Display (1) should begin flashing two points/dots [. .]. If the dots are not flashing, you are in locked mode. Unlock and restart.

B. INITIATE PROGRAM MODE

Push UP and DOWN arrow keys simultaneously for approximately 5 seconds. The main Display (10) will show the last program number (e.g. 15). The LED by the program display will be lit and the program display will show the number of program steps for program number 15 e.g. 5.

C. SELECT NEW PROGRAM NUMBER

Choose a new program number that you desire for the cooking sequence you want to program. For example, to enter a cooking sequence for program number 1, press number 1 key.



The main DISPLAY (10) will show " P1 " and the program display will show 0 steps or the maximum number of steps previously entered. Now press the ENTER key at the program module. The main DISPLAY (10) will either go blank or show previously stored parameters. The program display will now show "1" for step number 1.

D. ENTER STEP 1 COOKING PARAMETERS

Press number 1 key choosing step 1. The main DISPLAY (10) will now be blank and the program display will show "1". Now select the cooking parameters, i.e., cook program (steam, combination, convection, etc.) temperature, time or core temperature. (*Review Basic Operation Procedures to understand how to enter specific temperature or time.*)

E. ENTER STEP 2/3/4/5 COOKING PARAMETERS

Press the next sequential step number (2/3/4/5) key. The main DISPLAY (10) will remain blank and the program display will show the chosen step number (2/3/4/5). Now select the cooking parameters, i.e., cook program (steam, combination, convection, etc.), temperature, time or core temperature.

NOTE: You can enter the steps only in a sequential order. Thus, you cannot enter 4 before 1/2/3 have been completed.

F. COMPLETE PROGRAMMING

After entering all the parameters for various steps, press ENTER and hold until you hear a "beep" from the buzzer. This indicates that the data is now stored in memory.

NOTE: You are still in program mode and the LED by the side of program display is still ON.

G. ENTER ANOTHER PROGRAM OR COOKING SEQUENCE

If you choose to enter another program sequence, you can do now. Follow the procedures B through F above.

H. EXIT PROGRAM MODE

Once all programming is completed, to exit the program mode, press START/STOP key. You will not hear the buzzer, however, you will notice that the main DISPLAY (10) will return to flashing dots [...], and the program display will turn blank.

Make a record of the program and post it in front of the oven. It is also recommended to lock the control for added protection (see Section 2.9 for locking procedure).

EDITING/DELETING A PROGRAM STEP

Unit must be in UnLock Mode for this Procedure.

If you want to edit or delete a previously entered program step, follow these procedures.

1. Initiate program mode, select the program number and select the program step to modify (repeat procedures A through D above).
2. EDIT: To make a change in the cooking parameters (temperature, time, etc.), select the parameter for that step and using the UP and/or DOWN key choose a different parameter.
3. DELETE: To delete a step, after choosing the step number, press START/STOP key. All parameters for the chosen step and the subsequent steps will now be deleted from memory.

Thus, if a program has 4 steps and you want to delete step number 3, this procedure will delete step number 3 and 4. If you want to re-enter a new step, you can perform this now.

4. Complete editing/deleting steps from other programs and exit the mode by following procedures F, G and H above.

COOKING/OPERATING WITH PROGRAMS

To operate the oven by selecting a program number, follow these procedures.

A. POWER-UP

To operate, first power-up from the OFF state by turning the POWER (18) knob to "ON". Make sure the oven is preheated to normal cooking temperature for the desired program (if required).

B. SELECT PROGRAM NUMBER

To select a specific program, press the program number key from the program module. For example to choose program number 32, press the 3 and 2 keys. The main DISPLAY (10) will now show the program "P..32", and the program display will show the number of steps for the program.

C. START PROGRAM

Press the START/STOP key after loading the oven. The program is now started and the control will now follow through the various steps until completion.

During operation, the main DISPLAY (10) by default will show the remaining cook time or core temperature for the step. The program display will show the active step number. If you want to find out the oven temperature anytime during the program operation, press the TEMP key and hold until the temperature is displayed at the main DISPLAY (10).

D. COMPLETE PROGRAM

When the program is completed, a buzzer is activated, and the unit will automatically shut the burner and fan. Remove product from the oven and press any key to deactivate the buzzer.

RECALL PROGRAM PARAMETERS

To recall and to review the program parameters of a previously entered program, without actually operating the oven, follow these procedures.

A. ENTER RECALL MODE

When the unit is powered-up, press the program key you want to review. (Make sure you are not in programming mode, i.e., the LED by the side of program module should not be lit.) For example, to review the program number 12, press 1 and 2 keys. The main DISPLAY (10) will now show the program number "P..12", and the program display will show the number of steps the program contains. Press the ENTER key to enter the recall mode.

B. REVIEW PROGRAM STEP

Choose the step you want to review. For example, if you want to review step number 3 of program 12, press 3. The main DISPLAY (10) will now show the step number 3 parameters, and the program display will show the chosen step number, i.e., 3. To find the cook temperature, press the

TEMP key, the main Display (10) will show the set temperature. To find the COOK TIME or CORE TEMP, press the appropriate key, and the display will show the set data.

C. EXIT RECALL MODE

After reviewing the various step parameters, to exit, press the ENTER key. You will now exit the recall mode.

IMPORTANT

PROGRAMMING MODULE should always be accessible by one or two individuals to prevent errors and damage. ALWAYS post the most up-to-date program card for the operators.

The control has built-in protection to prevent erasing of programs when you shut down power during power failure. When program operation or cooking is active, if power interruption occurs for less than 30 seconds, the control is designed to resume operation after interruption. If failure occurs for more than 30 seconds, the control will switch the program OFF.

2.10 - HELPFUL COOKING HINTS

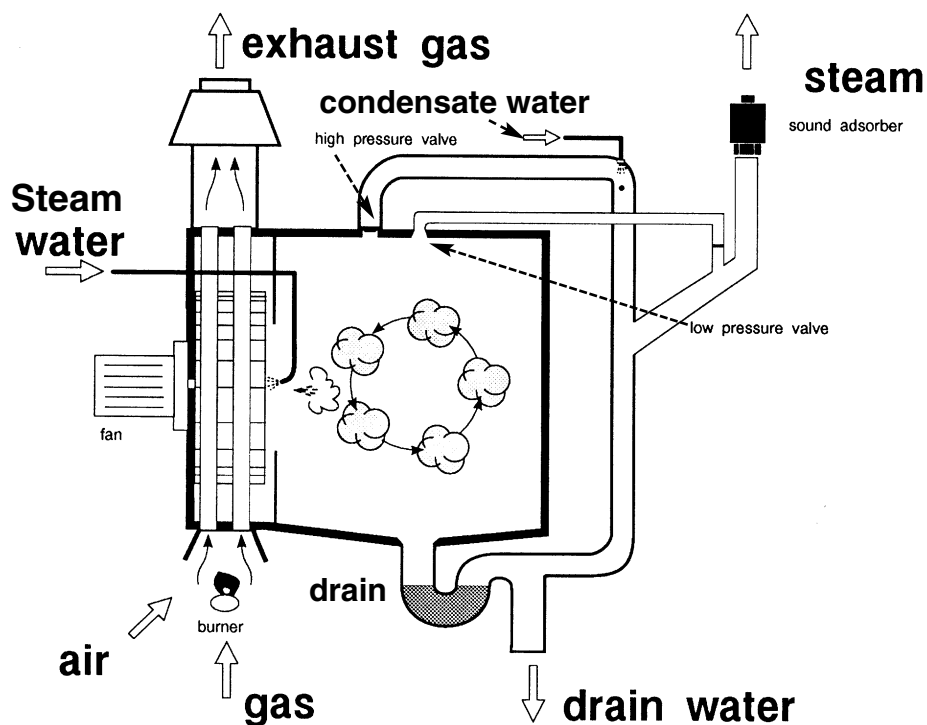
STEAM COOKING

- Steaming can be accomplished in either perforated or non-perforated pans.
- When using perforated pans, there will be a reduction in the time necessary to steam the product. To reduce steaming time, it is recommended that both potatoes and vegetables (without sauce) be steamed in perforated pans.
- For best results, the depth of the pan should not exceed 2-1/2" (65mm) for steaming vegetables 4" (100mm) for steaming potatoes.
- When steaming frozen vegetables, make certain the product is uniform in size.
- Separate ice-encased vegetables before steaming.
- For best results steaming long-grain rice, use one part rice to one part water.
- Vegetables should be seasoned after steaming.
- Because steaming preserves the natural flavor of the product, less seasoning may be needed.

CONVECTION COOKING

- When baking bread, do not use every shelf position. Use every other shelf position and distribute shelves evenly.
- Place cake and loaf pans directly on wire shelves.
- When cooking convenience snack foods, always place products of similar size and density on the same pan.

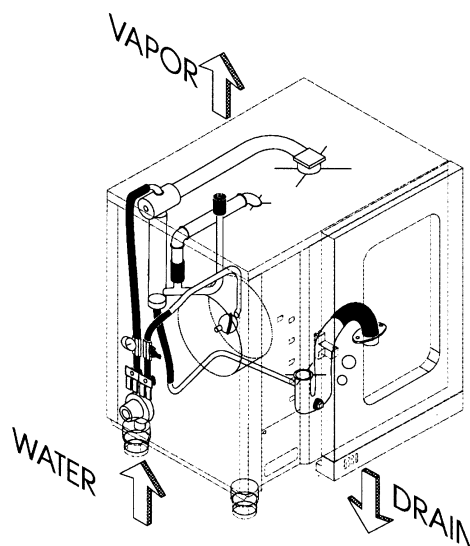
2.11 - Combitherm Gas Operation Schematic
Combitherm Gas Plumbing System



Water is used for generating steam and for cooling the drain water.

Steam is sprayed into the oven by means of a fan wheel.

The water is sprayed over the hottest area in the oven and is converted into steam.

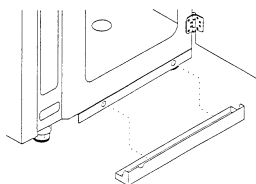


3.1 - DAILY CLEANING

Before performing daily cleaning, the main power switch must be turned off, and the unit must be allowed to cool down.

EMPTYING THE DRIP TRAY

Remove the drip tray, empty, and replace.
DO NOT EMPTY IN OVEN DRAIN.
The drip tray is dishwasher proof.



NEVER CLEAN THE OVEN WHEN IT IS HOT.
Do not spray the glass cover of the oven lamp with cold water if the oven has not cooled down to 122°F (50°C). Severe discoloration will occur on oven if cleaner is used on a hot oven. Cleaning agents are irritants. Protective glasses and gloves should be worn.

CLEANING THE OVEN CHAMBER

UNITS WITHOUT AUTOMATIC CLEAN CYCLE

- ➔ Allow oven to cool to approximately 120°F (49°C). If oven is cold, allow to preheat at 120°F for 10 minutes in Superheated Steam & Convection mode.
- ➔ Spray the Gas Combitherm oven cleaner (part no. [CE-24750](#)) inside the oven chamber including shelves and grids, etc. Close the door and allow the cleaner to work for 10 minutes.
- ➔ Afterward, run STEAM program for approximately 10 minutes.
- ➔ Using the hand shower, rinse down oven chamber, grids and shelves. Make sure to remove and clean behind suction panel.
- ➔ The tray rack, pans and accessories are also dishwasher proof.
- ➔ Using the hand shower, spray into the drain for a few seconds. Make sure to clean the drain screen.
- ➔ Using the hand spray, spray into the pipes in the ceiling of the oven for a few seconds.

UNITS WITH AUTOMATIC CLEAN CYCLE (PROVIDED WITH PROGRAM MODULE)

- ➔ Allow oven to cool to approximately 120°F (49°C). If oven is cold, allow to preheat to that temperature.
- ➔ Spray the Gas Combitherm oven cleaner (part no. [CE-24750](#)) inside the oven chamber including shelves and grids, etc.
- ➔ Close the door, and press the CLEAN PROGRAM Key; the main Display will show "CLn". Press the START/STOP key to start the automatic clean program.
- ➔ A buzzer will sound when the program is completed. Using the hand shower, spray into the drain for a few seconds. Make sure to clean the drain screen.
- ➔ Using the hand spray, spray into the pipes in the ceiling of the oven for a few seconds.

CLEANING THE OUTSIDE OF THE UNIT

Although the unit is splash proof, it is not waterproof. Therefore, do not point the hand shower or any other jet spray directly at the exterior of the unit. Use only cleaning agents specified for combination oven/steamers. Abrasive cleaning pads, such as steel wool should not be used. **After use or cleaning, do not close oven door. Leave door slightly ajar!** This will freshen the inside oven chamber and prolong the life of the door gasket.

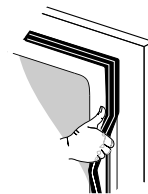
3.2 - WEEKLY CLEANING

HYGIENIC, PLUG-IN RUBBER GASKETS

In cases of heavy grease or grime build-up, the door gasket can be easily removed, without tools, for cleaning.

- ⇨ The gaskets must be at room temperature.
- ⇨ Use only a mild, non-abrasive liquid cleaner on the gaskets.

When the gasket is dry, plug easily into place by starting at the corners.



3.3 - MONTHLY CLEANING

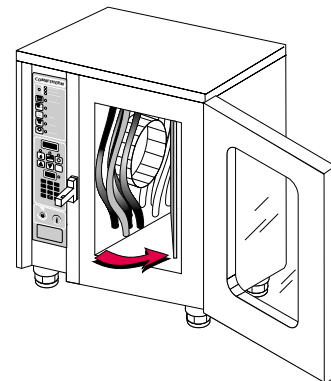
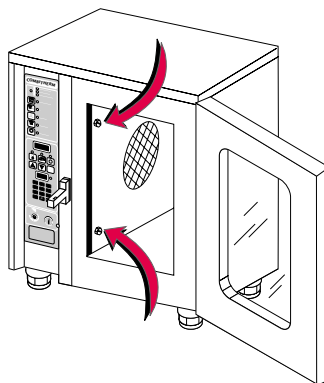
Before cleaning, shut off the gas supply, switch off the main power switch and allow the unit to cool down.

CLEANING THE COOKING CHAMBER



NEVER CLEAN THE OVEN WHEN IT IS HOT.
Do not spray the glass cover of the oven lamp with cold water if the oven has not cooled down to 122°F (50°C). Severe discoloration will occur on oven if cleaner is used on a hot oven. Cleaning agents are irritants. Protective glasses and gloves should be worn.

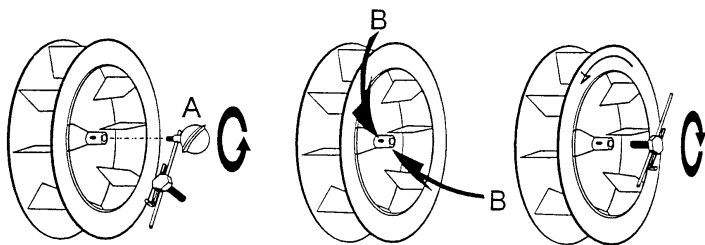
- ⇨ Switch unit OFF at the main power switch.
- ⇨ Remove shelf racks. Remove the shelf rack base.
- ⇨ Unscrew the two front screws (top and bottom) on the suction panel and swing open.
- ⇨ Spray the ventilation chamber, fan and pipe with the Gas Combitherm oven cleaning agent. Close door and allow to work approximately 5-10 minutes.
- ⇨ Afterward, rinse well using the hand shower.
- ⇨ Replace the suction panel. Replace the shelf racks.



DISASSEMBLING AND CLEANING THE FAN (FOR HEAVY GRIME BUILD-UP)

When there is a build-up of heavy grime or grease, the fan must be removed for a thorough cleaning. Take the following steps.

- ⇒ Switch the unit off at the main power switch.
- ⇒ Remove the shelf racks. Remove the side rack shelf supports.
- ⇒ Open the suction panel by unscrewing the two screws, and swing the panel open.
- ⇒ Holding the fan wheel, screw off the ball-shaped water diffuser using the special wrench supplied with the unit.
- ⇒ Loosen the two socket hexagon bolts (diagonally opposite) with the same wrench.
- ⇒ Screw the special wrench onto the hub of the fan wheel until the wheel "pops" out from the shaft.
- ⇒ Spray fan, ball-shaped water diffuser and pipes with the cleaning agent and let work for approximately 5 minutes.
- ⇒ Afterward, rinse well with the hand spray.

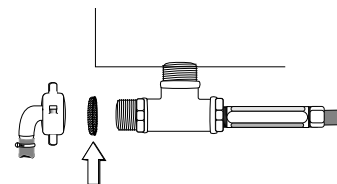


RE-ASSEMBLING THE FAN

- ⇒ Clean the motor shaft on the inside of the oven.
- ⇒ Set the fan wheel back on the motor shaft and tap lightly into place.
- ⇒ Screw on the ball-shaped water diffuser tightly.
- ⇒ Screw in tightly the two socket hexagon bolts (diagonally opposite) with the special wrench.
- ⇒ Replace the shelf racks and suction panel. Replace the shelf base and secure.
- ⇒ Switch unit ON.

CLEANING THE WATER CONNECTION

There is a filter screen in the water connection to prevent the water inlet from becoming blocked.

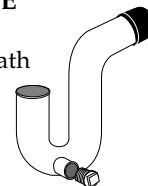


Clean this screen as follows:

- ⇒ Turn over power switch to the OFF position.
- ⇒ Disconnect the water connection located underneath the unit.
- ⇒ Remove and clean the filterscreen.
- ⇒ Replace the filter and re-connect the water.
- ⇒ Switch the unit ON and check for water leakage.

CLEANING THE DRAIN PIPE

The unit comes with a drain trap built-in underneath the unit as standard equipment.



To clean or unblock the drain trap, take the following steps.

- ⇒ Turn oven power switch to the OFF position.
- ⇒ Using a wrench, remove the drain plug.
- ⇒ Clean out deposits that accumulate in the trap.
- ⇒ Rinse out the open drain with the hand-held hose.
- ⇒ Replace the drain plug.
- ⇒ Switch the unit ON and check for water leakage.

CLEANING FLUE OUTLET

The exhaust outlet of the oven at all circumstances should be kept clear of objects that could obstruct the flow of combustion gases.

- ⇒ Inspect the flue diverter assembly, located on top of the unit.
- ⇒ Remove debris and dirt that may have accumulated.

ALTO SHAAH INC. ® P.O. BOX 456, WY164 N5221 WATER STREET MENOMONEE FALLS, WI 53052-0456, USA		
	GAS FOOD SERVICE EQUIPMENT ANS Z83.11.CGA 1.8-(1996) Food Service Equip. ANS Z83.11.CGA 1.8-(1996) Manger Service Equipé. MFTL	

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4.2 - TROUBLE SHOOTING

If problems are not listed here, please notify authorized customer service dealer.

PROBLEM	SOURCE	REMEDY
1. Uneven baking results	-Insufficient preheating	Refer to handbook
2. In the Superheated Steam program, cooking results are too dry	-Steam level is set too low -Water supply is interrupted	-Using the steam regulating knob, adjust the steam level -Check water supply and make necessary changes
3. Low water indicator is lit	-Debris in pressure switch orifice. No water: -Water inlet is shut off. -Water solenoid valve filter is clogged -Filter in the water supply connection is clogged	-Remove orifice and clean. -Open water inlet -Unclog filter - Unclog filter
4. Unit does not function after switching power ON	-Fuse blown -Power supply is not connected or is interrupted	-Check F1 and F4 on power control board. -Re-connect power supply
5. Oven light does not function, although the unit is functioning	-Bulb burned out -Fuse burned out	-Replace bulb -Check/replace F2 & F3 fuses on control board.
6. Temperature in oven does not increase during cooking	-Pilot is out -Core temp button is pushed; temp. is not set right	-Re-light pilot -Push temp button and set to proper temp.
7. Ignition spark does not function (Continuous Pilot)	-No voltage	- Turn unit on
8. Pilot flame lights but goes out when the pilot key is released (Continuous Pilot)	-Pilot key too quickly released -Thermocouple faulty	-Press pilot key approx. 15 seconds -Check and replace thermocouple
9. Pilot and main burner do not light (Intermittent Pilot)	-No gas -Damaged hot surface ignitor (HSI) -Damaged flame sensor	-Check for gas supply -Check for HSI, replace if no heating occurs -If HSI is ok, replace pilot burner
10. Water collecting in oven	-Drain is clogged -Trap is clogged	-Unclog drain -Unclog trap
11. "E10" on display	-Product probe defective	-Press Core Temp and Start/Stop keys simultaneously -Replace product probe
12. "E6" on display	-Oven probe defective	-Press Cook Temp and Start/Stop keys simultaneously -Replace oven temperature probe

PART DESCRIPTION	6•10	7•14	10•10	10•20	12•18	20•20
1. Side Racks, Left	SR-23585	SR-23848	SR-23586	N/A	SR-23850	N/A
2. Side Racks, Right	SR-24548	SR-23849	SR-24549	NA	Set	N/A
3. Roll-in Cart, Complete	N/A	N/A	N/A	CT-23361	CT-23361	CT-23815
4. Trolley Drip Pan	N/A	N/A	N/A	PN-24642		PN-24642
5. Trolley Gasket	N/A	N/A	N/A	GS-24371	GS-24371	GS-24371
6. Side Trolley Seals, 4"	N/A	N/A	N/A	N/A	N/A	GS-24370
7. Trolley Gasket Upper Seal, old	N/A	N/A	N/A	GS-24474	N/A	GS-24474
8. Trolley Gasket Lower Seal, old	N/A	N/A	N/A	GS-24475	N/A	GS-24474
9. Trolley Guide	N/A	N/A	N/A	GI-24479	GI-24479	GI-24478
10. Door Drip Tray	PN-23594	PN-23867	PN-23594	N/A	PN-23866	N/A
11. Door (no handle or gasket)	DR-23588	DR-23853	DR-23589	DR-23590	DR-23855	DR-23854
12. Door Handle	HD-2934	HD-2934	HD-2934	HD-2934	HD-2934	HD-2934
13. Door Latch	LT-2935	LT-2935	LT-2935	LT-2935	LT-2935	LT-2935
14. Door Latch Dowel	CT-22551	CT-22551	CT-22551	CT-22551	CT-22551	CT-22551
15. Door Interlock Switch	SW-33275	SW-33275	SW-33275	SW-33275	SW-33275	SW-33275
16. Door Magnet	MA-23859	MA-23859	MA-23859	MA-23859	MA-23859	MA-23859
17. Door Magnet Cover	MA-24643	MA-24643	MA-24643	MA-24643	MA-24643	MA-24643
18. Door Gasket	GS-23591	GS-23856	GS-23592	GS-2955	GS-23858	GS-23857
19. Door Hinge	HG-22192	HG-22192	HG-22192	HG-22850	HG-22850	HG-22850
20. Window Gasket	GS-24464	GS-24467	GS-24465	GS-24466	GS-24466	N/A
21. Window Gasket Outer Window	N/A	N/A	N/A	GS-24466	GS-24466	N/A
22. Light Socket	RP-3986	RP-3986	RP-3986	RP-3986	RP-3986	RP-3986
23. Glass Cover for Light	GL-24461	GL-24461	GL-24461	GL-24461	GL-24461	GL-24461
23. Light Seal	SA-24757	SA-24757	SA-24757	SA-24757	SA-24757	SA-24757
24. Light Bulb	LP-33274	LP-33274	LP-33274	LP-33274	LP-33274	LP-33274
25. Hand Held Shower, Complete	PB-24483	PB-24484	PB-24483	PB-24484	PB-24484	PB-24484
26. Hose Assembly	PB-23922	PB-23922	PB-23922	PB-24066	PB-24066	PB-24066
27. Spray Handle	PB-23920	PB-23920	PB-23920	PB-23920	PB-23920	PB-23920
28. Sprayer	PB-23919	PB-23919	PB-23919	PB-23919	PB-23919	PB-23919
29. Double Nipple	NP-22115	NP-22115	NP-22115	NP-22115	NP-22115	NP-22115
30. Tee	TE-22117	TE-22117	TE-22117	TE-22117	TE-22117	TE-22117
31. Ball Valve	VA-22684	VA-22684	VA-22684	VA-22684	VA-22684	VA-22684
32. Washer	WS-22334	WS-22334	WS-22334	WS-22334	WS-22334	WS-22334
33. Line Filter, 1/2"	FI-2946	FI-2946	FI-2946	FI-2946	FI-2946	FI-2946
34. Exhaust Silencer	PB-23600	PB-23600	PB-23600	PB-23600	PB-23600	Contact factory
35. Gas Hose w/Quick Connects	CR-33543	CR-33543	CR-33543	CR-33543	CR-33543	CR-33543
36. Burner Gas Orifice (Natural)	BN-23606	BN-23860	BN-23608	BN-23610	BN-23610	BN-23610
37. Burner Gas Orifice (Propane)	BN-23607	BN-23861	BN-23609	BN-23611	BN-23611	BN-23611
38. Pilot Orifice (Natural Gas)	BN-23776	BN-23776	BN-23776	BN-23776	BN-23776	BN-23776
39. Pilot Orifice (Propane Gas)	BN-23777	BN-23777	BN-23777	BN-23777	BN-23777	BN-23777
40. Pilot Assembly SIS (Natural)	BN-23533	BN-23533	BN-23533	BN-23533	BN-23533	BN-23533
41. Pilot Assembly SIS (Propane)	BN-23552	BN-23552	BN-23552	BN-23552	BN-23552	BN-23552
42. Pilot Assembly HSI (Natural)	BN-33371	BN-33371	BN-33371	BN-33371	BN-33371	BN-33371
43. Pilot Burner Orifice (Propane)	BN-23777	BN-23777	BN-23777	BN-23777	BN-23777	BN-23777
44. Flue Diverter Pipe	PP-23601	PP-23602	PP-23601	PP-23602	PP-23602	PP-23602
45. Spark Generator SIS	TN-33281	TN-33281	TN-33281	TN-33281	TN-33281	TN-33281
46. Spark Electrode SIS	BN-33284	BN-33284	BN-33284	BN-33284	BN-33284	BN-33284
47. Spark Wire SIS	WI-33285	WI-33285	WI-33285	WI-33285	WI-33285	WI-33285
48. Thermocouple SIS	TT-33261	TT-33261	TT-33261	TT-33261	TT-33261	TT-33261
49. Gas Valve SIS (Natural)	VA-23531	VA-23531	VA-23531	VA-23531	VA-23531	VA-23531
50. Gas Valve SIS (Propane)	VA-23532	VA-23532	VA-23532	VA-23532	VA-23532	VA-23532
51. GasValve HSI (Natural)	VA-33369	VA-33369	VA-33369	VA-33369	VA-33369	VA-33369

SIS = Spark Ignition System (Continuous Pilot)

HSI = Hot Surface Ignition (Intermittent Pilot)

PART DESCRIPTION	6•10	7•14	10•10	10•20	12•18	20•20
52. Gas Valve HSI (Propane)	VA-33370	VA-33370	VA-33370	VA-33370	VA-33370	VA-33370
53. Fuse .25 Amp	FU-3673	FU-3673	FU-3673	FU-3673	FU-3673	FU-3673
54. Fuse 1 Amp	FU-3674	FU-3674	FU-3674	FU-3674	FU-3674	FU-3674
55. Power Control Board	BA-33277	BA-33277	BA-33277	BA-33277	BA-33277	BA-33277
56. Display/Operation Board LED	BA-33399	BA-33399	BA-33399	BA-33399	BA-33399	BA-33399
57. Program Module	BA-33400	BA-33400	BA-33400	BA-33400	BA-33400	BA-33400
58. Power Switch	SW-3683	SW-3683	SW-3683	SW-3683	SW-3683	SW-3683
59. Power Switch Knob	SW-3682	SW-3682	SW-3682	SW-3682	SW-3682	SW-3682
60. Humidity Control Switch	SW-33317	SW-33317	SW-33317	SW-33317	SW-33317	SW-33317
61. Humidity Control Switch Knob	KN-23599	KN-23599	KN-23599	KN-23599	KN-23599	KN-23599
62. Oven Probe PT100	PR-33276	PR-33276	PR-33276	PR-33276	PR-33276	PR-33276
63. Bypass Probe PT100	PR-33320	PR-33320	PR-33320	PR-33320	PR-33320	PR-33320
64. Product Probe	PR-33286	PR-33286	PR-33286	PR-33286	PR-33286	PR-33286
65. Product Probe Seal	SA-22320	SA-22320	SA-22320	SA-22320	SA-22320	SA-22320
66. Product Probe Seal	SA-22321	SA-22321	SA-22321	SA-22321	SA-22321	SA-22321
67. Product Probe Seal	SA-22322	SA-22322	SA-22322	SA-22322	SA-22322	SA-22322
68. Contactor 22 Amp	N/A	N/A	N/A	N/A	N/A	CN-33402
69. Motor Relay Overload	CN-33279	CN-33279	CN-33279	CN-33279	CN-33279	N/A
70. Safety Thermostat	TT-33325	TT-33325	TT-33325	TT-33325	TT-33325	TT-33325
71. Transformer 120/240V	TN-33282	TN-33282	TN-33282	TN-33282	TN-33282	TN-33282
72. Fuse 2 Amp	FU-3774	FU-3774	FU-3774	FU-3774	FU-3774	FU-3774
73. Fuseholder 2 Amp	FU-3772	FU-3772	FU-3772	FU-3772	FU-3772	FU-3772
74. Fuse 15 Amp	FU-3775	FU-3775	FU-3775	FU-3775	FU-3775	N/A
75. Fuseholder 15 Amp	FU-3772	FU-3772	FU-3772	FU-3772	FU-3772	N/A
76. Fuse 35 Amp	N/A	N/A	N/A	N/A	N/A	FU-33127
77. Fuseholder 35 Amp	N/A	N/A	N/A	N/A	N/A	FU-33039
78. Ribbon Cable	CB-33298	CB-33298	CB-33298	CB-33298	CB-33298	CB-33312
79. Fan Motor	MO-333272	MO-33263	MO-33272	MO-33263	MO-33263	MO-33404
80. Motor Seal Kit	SA-24097	SA-24097	SA-24097	SA-24097	SA-24097	SA-24097
81. Water Diffuser	PB-23692	PB-23692	PB-23692	PB-23692	PB-23692	PB-23692
82. Fan Wheel	WH-33433	WH-33434	WH-33434	WH-33435	WH-33435	WH-3343
83. Fan Wheel Removal Tool	FA-23701	FA-23701	FA-23701	FA-23701	FA-23701	FA-23701
84. Box for Motor Mount	BX-24473	BX-24473	BX-24473	BX-24473	BX-24473	BX-24473
85. Cap for Motor Stuffing Box	CP-24472	CP-24472	CP-24472	CP-24472	CP-24472	CP-24472
86. Oven Drain Screen	FI-23595	FI-23595	FI-23595	FI-23595	FI-23595	FI-23595
87. Drain Hookup Kit for Gas	DR-24485	DR-24485	DR-24485	DR-24485	DR-24485	DR-24485
88. Water Injection Pipes	PP-23688	PP-23689	PP-23689	PP-23690	PP-23690	PP-23690
89. Water Hose	HO-24482	HO-24482	HO-24482	HO-24482	HO-24482	HO-24482
90. Water Solenoid Valve	VA-33283	VA-33283	VA-33283	VA-33283	VA-33283	VA-33283
91. Low Pressure Relief Valve	VA-24469	VA-24469	VA-24469	VA-24469	VA-24469	VA-24469
92. Over Pressure Relief Valve	VA-24470	VA-24470	VA-24470	VA-24470	VA-24470	VA-24470
93. Pressure Gauge	PB-24726	PB-24726	PB-24726	PB-24726	PB-24726	PB-24726
94. Pressure Switch	SW-33280	SW-33280	SW-33280	SW-33280	SW-33280	SW-33280
95. Pressure Switch Connect Nozzle	PB-24738	PB-24738	PB-24738	PB-24738	PB-24738	PB-24738
96. Cooling Pipe Elbow	EB-24590	EB-24590	EB-24590	EB-24590	EB-24590	EB-24590
97. Cooling Water Nozzle	PB-24591	PB-24591	PB-24591	PB-24591	PB-24591	PB-24591
98. Service Panel	PE-23603	PE-23604	PE-23604	PE-23605	PE-23605	N/A
99. Pivot Screw Suction Panel	SC-24480	SC-24480	SC-24480	SC-24480	SC-24480	SC-24480
100. Fasten Screw Suction Panel	SC-24481	SC-24481	SC-24481	SC-24481	SC-24481	SC-24481

SIS = Spark Ignition System (Continuous Pilot)

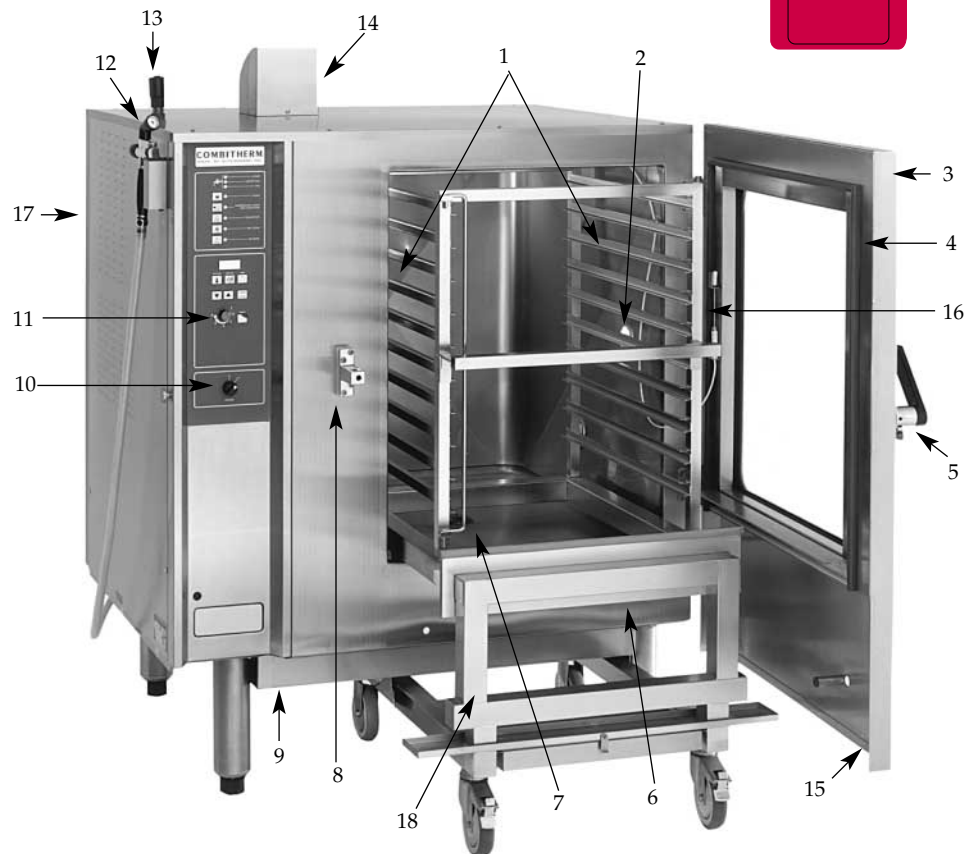
HSI = Hot Surface Ignition (Intermittent Pilot)

4.4 - Gas Combitherm with Exterior Components

Gas Combitherm Oven without Programmable Control

1. Side Rack (left and right side)
2. Light Bulbs - 125/130 Volt
3. Door
4. Gasket
5. Door Handle (HD-2934)
6. Drip Tray
7. Drain Screen (FI-23595)
8. Door Latch (LT-2935)
9. Burner Tubes (not shown)
10. Power Switch (SW-3683)
11. Humidity Control Knob (KN-23599)
12. Hand-held Spray Hose (complete) Line Filter (1/2")
13. Exhaust Silencer (PB-23600)
14. Flue Diverter
15. Door Magnet (MA-23859)
16. Food Probe (PR-33286)
17. Service Panel
18. Trolley or Cart

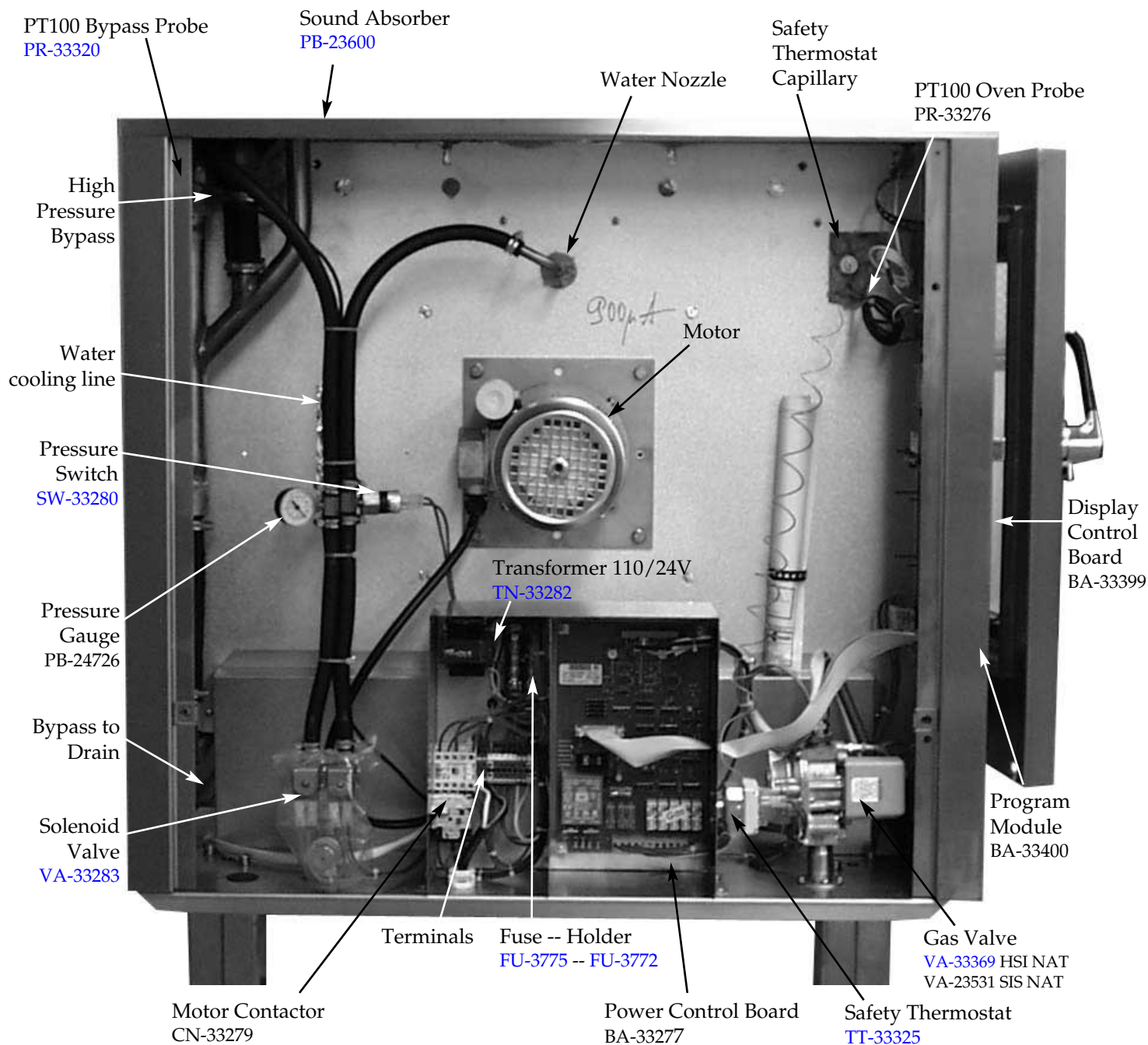
Control Panel with Program Module Parts



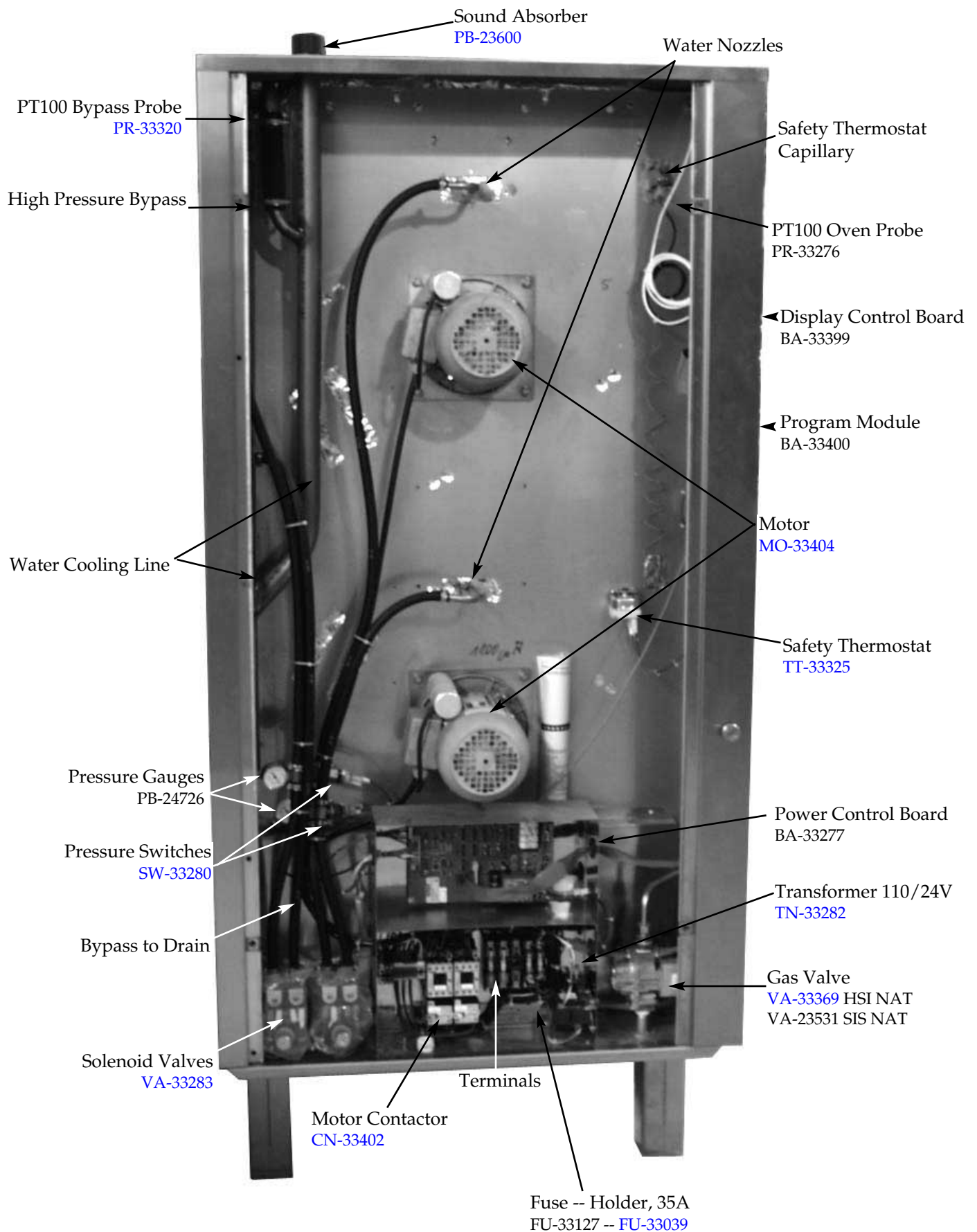
Combitherm Model 10•18 Gas

4.5 - Left Side Components

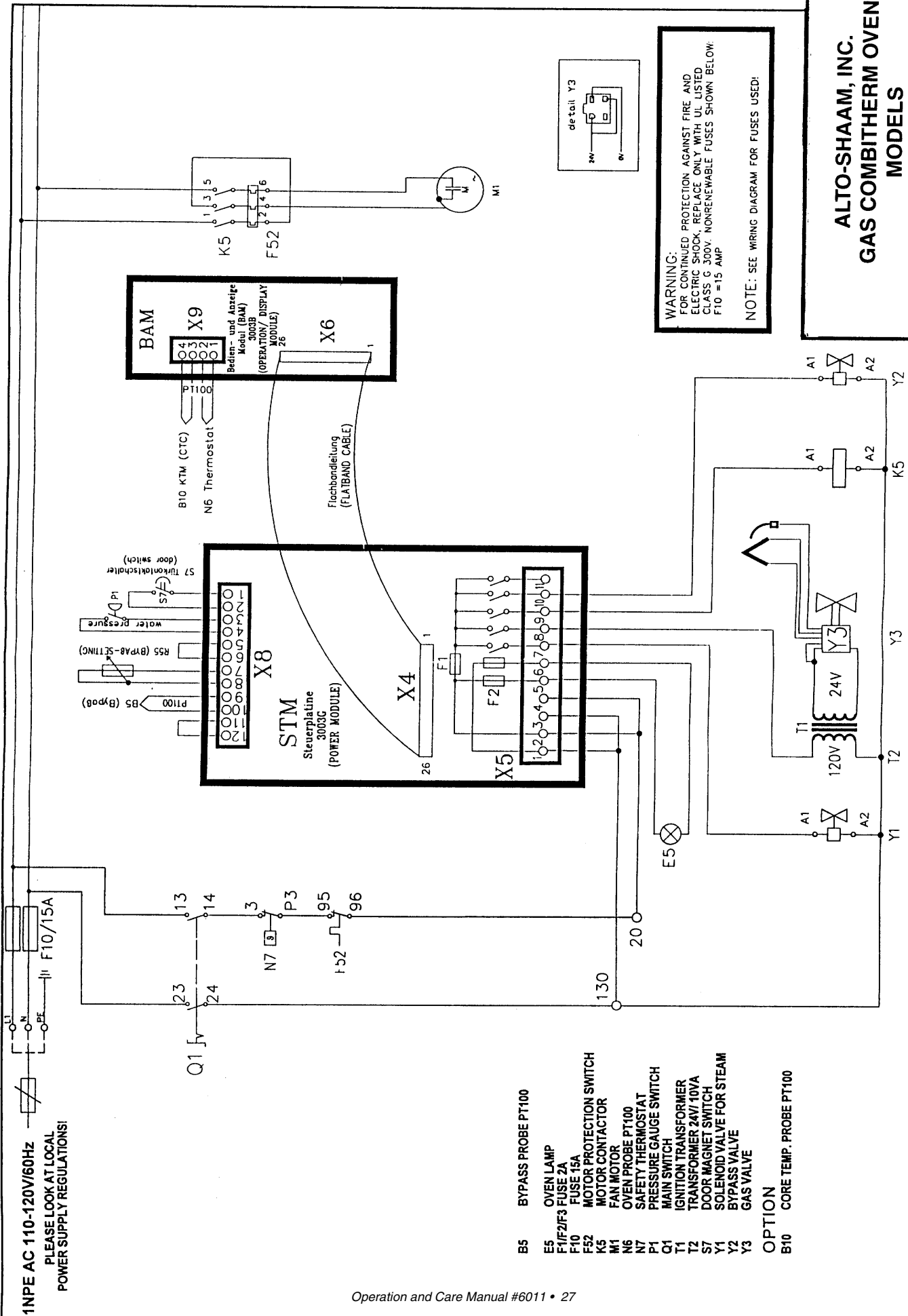
Combitherm 6•10, 7•14, 10•10, 10•20 and 12•18 Gas



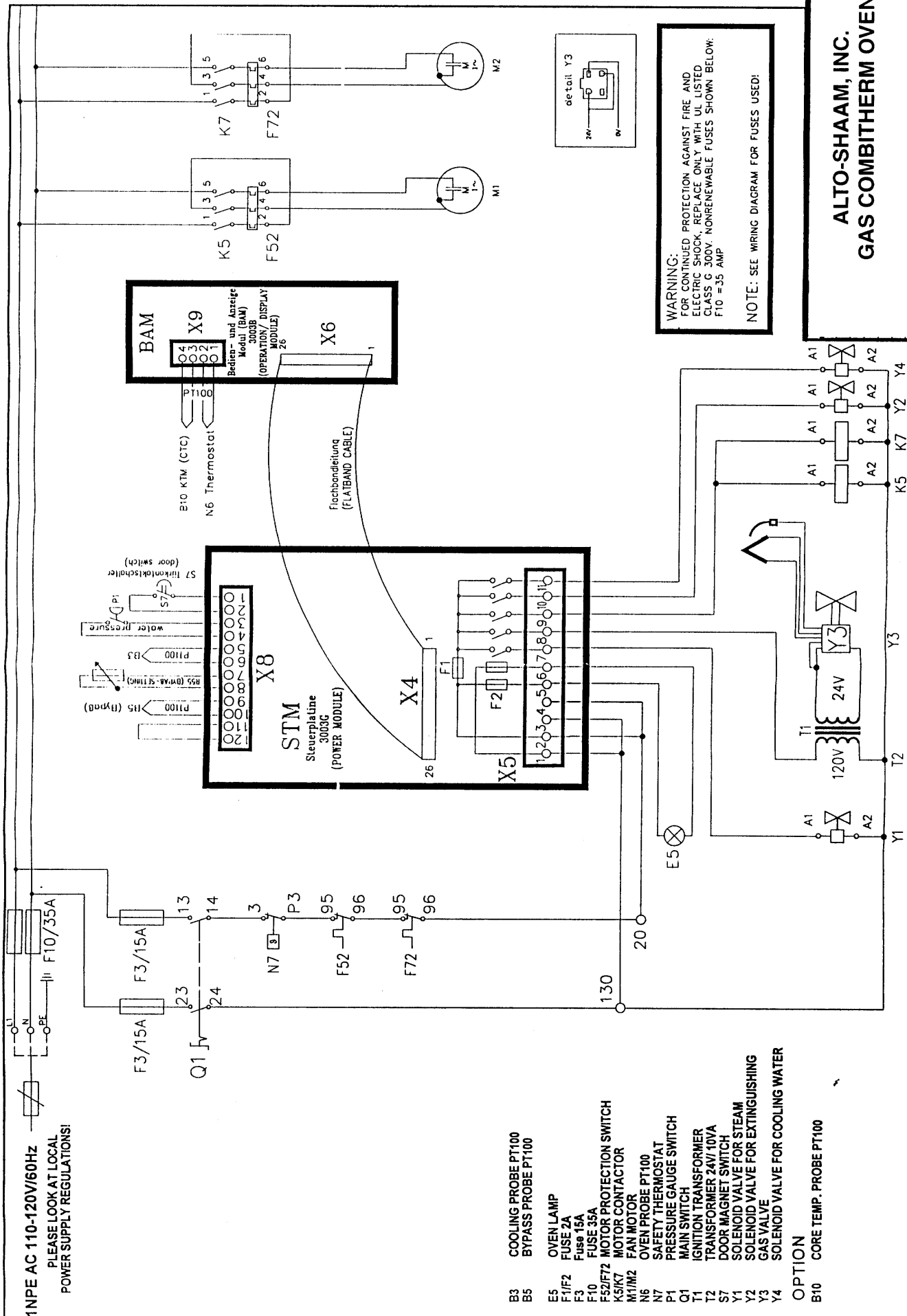
4.6 - Left Side Components – Combitherm 20•20 Gas



ALTO-SHAAM, INC.
GAS COMBITHERM OVEN
MODELS
6•10, 7•14, 10•10, 10•20, 12•18



ALTO-SHAAM, INC.
GAS COMBITHERM OVEN
MODEL 20•20



TRANSPORTATION DAMAGE and CLAIMS



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, or accept deductions in payment for such claims.

ALTO-SHAAM® LIMITED WARRANTY

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 numbers of the unit for easy reference. Always refer to both model and serial numbers in your correspondence regarding the unit.

Model: _____
Serial Number: _____
Purchased From: _____
Date Installed: _____ Voltage: _____

COOK/HOLD/SERVE SYSTEMS BY ALTO-SHAAM®

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