



VENTURI PELLET STOVE



MODEL FS31

FOR USE IN RESIDENTIAL TYPE HOMES AND MOBILE HOMES INSTALLATION, OPERATION, AND MAINTENANCE MANUAL

Service support: www.api-assembled.com

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INTRODUCTION

Many home fires result from not following installation, operation and maintenance instructions supplied by manufacturers of heating appliances. To assure that satisfactory and safe service is received from this appliance:

1. Read all instructions before starting the installation.
2. Use these instructions as a guide during the installation of the appliance.
3. Be sure these instructions become the property of and are reviewed by all future users of this appliance to encourage proper operation and maintenance of this appliance.

SAFETY STANDARDS AND BUILDING CODES

This Venturi Pellet Stove has been safety tested by Warnock Hersey International, Incorporated, in accordance with UL safety standard 1482 and Oregon test standard 814-23-900. Before beginning the installation, you should check with local building or fire officials to assure compliance with local regulations and codes.

SAFETY PRECAUTIONS

SAFETY NOTICE: IF THIS APPLIANCE IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. FOR YOUR SAFETY, FOLLOW THE INSTALLATION INSTRUCTIONS, AND CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.

Never use kerosene, gasoline, solvents or other explosive liquids to start or "freshen up" a fire. Keep all such liquids well away from the appliance. Recommended firestarting materials are listed in the "OPERATION OF APPLIANCE" section of this manual.

When the appliance is correctly operated, the buildup of creosote in the appliance's chimney vent system will be negligible. However, a precautionary inspection of the chimney vent system should be made frequently and the chimney vent system should be cleaned frequently as required to prevent the accumulation of creosote.

Avoid burnback conditions: Follow operation and maintenance instructions carefully. **NOTE:** Burnback is a potentially dangerous condition whereby flames ignite pellets in the auger and hopper. Burnback may occur when oxygen leaks into the hopper or auger tube by way of an unshut hopper door or leaky gasket.

PRINCIPLES OF OPERATION

The Venturi Pellet Stove is a positive air-induced draft pellet appliance. Positive air means the combustion air is supplied through a manifold to the underfire, overfire and the Venturi systems in the appliance. This air is provided by use of a 40-cfm blower which will be identified in this manual as the combustion blower.

The air supplied to the Venturi tube located at the flue collar assists in venting the appliance along with the natural draft of the chimney.

Fuel is delivered automatically to the burnpot from the fuel hopper by use of a motor-driven auger. This appliance will burn 1 4 inch to 3/8 inch pelletized fuel. Pellets are made from waste sawdust and other byproducts that are ground, dried and then compressed into pellets. Pellets may be purchased in 40 or 50 pounds bags from your nearest dealer. This appliance's fuel hopper will hold up to 85 pounds of pellets.

The combustion of the fuel takes place in the appliance's burnpot as air fuel are combined in the proper proportions.

The underfire air starts the initial burn of the fuel, followed by additional oxygen which is supplied by the overfire air, completing virtually total combustion of the fuel and gases.

NOTE: The underfire air--supplied by the combustion blower--reaches the fire through air holes in the burnpot; the overfire air--also supplied by the combustion blower--reaches the fire through air holes in the overfire tube.

The heat generated by combustion of the fuel and gases is transferred from the appliance to the room by means of a variable speed convection blower. A variable speed selector knob located just above the appliance's control panel on the left side of the hopper cabinet, allows the speed of the convection blower to be adjusted to provide the airflow desired. (See figure 10).

APPLIANCE INSPECTION

After reading this manual and before beginning the appliance installation, inspect the appliance; if any parts are found to be damaged or if any parts appear to be missing, report these findings to your appliance dealer and make sure all problems are resolved before beginning the appliance installation.

FLOOR PROTECTION

This appliance has been designed to prevent excessive temperatures on the floor beneath the appliance. It is important; however, that a combustible floor be protected by a listed floor protector or any equivalent noncombustible inorganic material equal to 3/8 inch thick millboard having a thermal conductivity of $K = 0.43 \text{ BTU/IN/FT}^2/\text{HR/}^\circ\text{F}$. The floor protector must extend at least 6 inches beyond the front of the appliance, and 8 inches beyond the sides and rear of the appliance, or to the wall. See figure 1 for a plan view showing minimum floor protection size requirements.

SELECTING A LOCATION FOR THE APPLIANCE

When selecting a location for the appliance, be sure attention is given to the following considerations:

SELECTING A LOCATION FOR THE APPLIANCE IN A RESIDENTIAL TYPE INSTALLATION ONLY

1. If the appliance is to be located on a combustible floor, there must be suitable floor space to install a floor protector beneath and extending beyond the appliance as specified by figure 1.
2. If the appliance is to be vented into a prefabricated chimney system, review the chimney's installation instructions to assure compliance with requirements for proper chimney location, height, space requirements, etc.
3. If the appliance is to be vented into a masonry chimney, the appliance should be located as near the chimney as possible without failing to comply with the requirements for minimum spacing between the chimney connector, appliance and combustible construction.
4. The location of the appliance must provide at least the minimum clearances between the appliance, chimney connector and combustible construction as specified within this manual by figures 2, 3, 4 and 5.
5. Some materials used for curtains, drapes and household furnishings may discolor, melt or ignite at relatively low temperatures, so located the appliance so that all such items will be a safe distance away from the hot surfaces of the appliance and chimney connector.

6. The appliance should be located away from doorways and central heat outlets and inlets to reduce the chances of drafts blowing smoke, ashes or sparks out of the appliance during ash removal.
7. The appliance should be located centrally within the area where heat is desired but out of traffic areas to minimize the likelihood of persons accidentally contacting the hot surfaces of the appliance.
8. The appliance should not be located beneath overhanging shelves, low ceilings or other structures or elevated so that less clearance is created above the appliance than is provided when the appliance is normally installed in a room with a 7 foot minimum ceiling.
9. The appliance should be located within access to a 120 volt, 60 Hz, 15 amp properly fused and grounded receptacle.

SELECTING A LOCATION FOR THE APPLIANCE IN A MOBILE HOME TYPE INSTALLATION ONLY

WARNING: DO NOT INSTALL IN SLEEPING ROOM.

CAUTION: THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR AND WALL MUST BE MAINTAINED.

1. Be sure the required outside air kit assembly will not be obstructed by support beams, pipes, heating ducts, etc.
2. The location of the appliance must provide at least the minimum clearances between the appliance, chimney connector and combustible construction as specified within this manual by figures 2 and 6.
3. There must be sufficient space to install a floor protector beneath and extending beyond the appliance as specified by figure 1.
4. The appliance should be located centrally within the area where heat is desired but out of traffic areas to minimize the likelihood of persons accidentally contacting the hot surfaces of the appliance.
5. The appliance should be located away from doorways and central heat outlets and inlets to reduce the chance of drafts blowing smoke, ashes or sparks out of the appliance during ash removal.
6. Some materials used for curtains, drapes and household furnishings may discolor, melt or ignite at relatively low temperatures, so locate the appliance so that all such items will be a safe distance away from the hot surfaces of the appliance and chimney connector.
7. The appliance should not be located beneath overhanging shelves, low ceilings or other structures or elevated so that less clearance is created above the appliance than is provided when the appliance is normally installed in a room with a 7-foot minimum ceiling.
8. The appliance should be located within access to a 120 volt, 60 hz, 15 amp properly fused and grounded receptacle.

CHIMNEY VENT SYSTEM

It is important to assure safe and satisfactory performance from this appliance that it be properly connected to a correctly constructed and maintained chimney vent system.

The installation of any new chimney vent system can be a complex and time-consuming project. Anyone not familiar with the building trade and chimney installation codes is not a qualified installer of a new chimney vent system.

CHIMNEY VENT SYSTEMS FOR RESIDENTIAL TYPE INSTALLATION ONLY

For a residential type installation, the chimney vent system for this appliance may be: (1) A 4-inch diameter Listed Type L Chimney Vent System or (2) 4-inch diameter, 26-gauge minimum, black or blued steel chimney connector pipe in conjunction with a factory-built Listed Residential Type and Building Heating Appliance Chimney or (3) 4-inch diameter, 26-gauge minimum, black or blued steel chimney connector pipe in conjunction with an approved masonry chimney with a flue liner.

If a 4-inch diameter Listed Type L Chimney Vent System is used, it may be installed directly through a combustible wall, ceiling and roof so long as a minimum clearance of 3 inches to all combustibles is maintained by installing a listed wall thimble and flashing or a listed firestop and roof flashing as required. The chimney may be terminated above the roofline in a conventional manner, or on an outside wall below the roofline with the following restrictions (also see figure 3):

1. The exit terminal shall be located not less than 60 inches from any opening through which combustion products could enter the building (i.e., windows and doors), nor less than 24 inches from an adjacent building and not less than 7 feet above grade when located adjacent to public walkways. It shall be so arranged that flue gases are not directed so as to jeopardize people, overheat combustible structures or enter the building.
2. For horizontal venting, the chimney pipe shall be terminated by a listed end cap that prevents rain or wind directly entering the chimney pipe. For termination above the roofline, a listed rain cap must be used.

NOTE: A chimney connector (also known as a flue pipe) is the pipe which joins an appliance to a chimney. For this appliance, a Type L Chimney Vent System acts as both the chimney connector and the chimney.

If 4-inch diameter, 26-gauge minimum, black or blued steel chimney connector pipe in conjunction with a Listed Residential Type and Building Heating Appliance Chimney is used to vent this appliance, the chimney manufacturer's installation instructions must be followed precisely. You must also purchase (from the same manufacturer) and install a ceiling support package, firestops (when needed), insulation shield, roof flashing, chimney cap, etc. Be sure to maintain the proper clearance to the structure as specified by the chimney manufacturer. That clearance is usually a minimum of 2 inches, although it may vary by manufacturer or for certain components. The chimney connector should extend at least 2 inches in to the flue of this type chimney. Figure 4 shows typical installations using 4-inch diameter, 26-gauge minimum, black or blued steel chimney connector pipes in conjunction with Listed Residential Type and Building Heating Appliance Chimneys.

If 4-inch diameter, 26-gauge minimum, black or blued steel chimney connector pipe in conjunction with an approved masonry chimney with a flue liner is used to vent this appliance, the chimney must be constructed to the National Fire Protection Association (N.F.P.A.) and local code standards. Have the chimney inspected by a building inspector or other qualified fire official to

determine if it is fit for the type of installation you plan. For your information, a copy of the N.F.P.A. 211 codes (Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances) may be obtained from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269. Figure 5 shows a correct way to connect a chimney, the chimney connector should extend to the inside face of the vertical flue liner as shown by figure 5. It does not have to be fastened in place so long as it cannot accidentally be pulled out of the chimney or shoved into the chimney flue. If fasteners are used to secure the chimney connector to a masonry chimney, the fasteners shall not penetrate the chimney flue liner.

CHIMNEY VENT SYSTEM FOR MOBILE HOME TYPE INSTALLATION ONLY

For a mobile home type installation, the chimney vent system for this appliance may only be a Simpson DURA-VENT Type L 4-inch diameter chimney vent system model PV installed in conjunction with Martin Industries' outside air kit model MAK2.

NOTE: A chimney connector (also known as a flue pipe) is the pipe which joins an appliance to a chimney. For this appliance, the Simpson DURA-VENT model PV acts as both the chimney connector and the chimney.

The Simpson DURA-VENT model PV system may be installed directly through a combustible wall so long as a minimum clearance of 3 inches to all combustibles is maintained by installing a listed wall thimble and flashing as required. The chimney may be terminated above the roofline in a conventional manner, or on an outside wall below the roofline with the following restrictions (also see figure 6):

1. The exit terminal shall be located not less than 60 inches from any opening through which combustion products could enter the building (i.e., windows and doors), nor less than 24 inches from an adjacent building and not less than 7 feet above grade when located adjacent to public walkways. It shall be so arranged that flue gases are not directed so as to jeopardize people, overheat combustible structures or enter the building.
2. For horizontal venting, the chimney pipe shall be terminated by a listed end cap that prevents rain or wind directly entering the chimney pipe. For termination above the roofline, a listed rain cap must be used.

CHIMNEY VENT SYSTEM INSTALLATION RULES

(FOR RESIDENTIAL AND MOBILE HOME TYPE INSTALLATIONS)

Some general chimney vent system installation rules are listed below to aid the installer during installation; but again, if in doubt, contact the appliance dealer for guidance.

1. DO NOT direct the chimney connector downward away from the appliance. Moisture that might collect in the chimney vent system should be directed to the appliance by providing a slope of 1/4 inch per foot to a horizontal run of the chimney connector as shown by figure 7.
2. DO NOT vent into a enclosed area.
3. DO NOT use more than two 90-degree elbows from the appliance to the chimney.
4. DO NOT connect this appliance to a chimney vent system serving another appliance.
5. DO NOT pass a 4-inch diameter, 26-gauge minimum, black or blued steel chimney connector through a combustible floor, ceiling or roof; only a properly installed Type L Chimney Vent System or a properly constructed Listed Factory-Built Residential Type and Building Heating Appliance Chimney, or a masonry chimney constructed to N.F.P.A. 211 standards may pass through a combustible floor, ceiling or roof. A 4-inch diameter, 26-gauge minimum, black or blued steel chimney connector MAY pass through a combustible wall to a masonry chimney ONLY IF the chimney connector is installed in accordance with conditions and clearances specified by N.F.P.A. 211 standards. If in doubt about your masonry chimney, check with a qualified authority.
6. A conversion adapter will be required to connect the chimney connector pipe to the chimney's chimney thimble if the chimney thimble is sized for a chimney connector pipe larger than the chimney connector pipe being installed. See figure 7. Follow the installation instructions provided with the conversion adapter.
7. A chimney must be at least 3 feet higher than the highest point where it passes through the roof and at least 2 feet higher than the highest part of the roof or structure that is within 10 feet of the chimney, measured horizontally. See figure 11.

APPLIANCE INSTALLATION

CAUTION: IF THIS APPLIANCE IS NOT PROPERLY INSTALLED, A HOUSEFIRE MAY RESULT. FOR YOUR SAFETY, FOLLOW THE INSTALLATION DIRECTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.

CAUTION: DO NOT CONNECT THIS APPLIANCE TO A CHIMNEY VENT SERVING ANOTHER APPLIANCE. THERE IS A SERIOUS SAFETY RISK IF TWO APPLIANCES ARE CONNECTED TO THE SAME CHIMNEY VENT.

CAUTION: THE APPLIANCE MUST BE PLACED ON A LISTED FLOOR PROTECTOR AS NOTED IN THIS MANUAL IF THE FLOOR IS WOOD OR OTHER COMBUSTIBLE FLOORING. IF CARPET IS PRESENT, IT MUST BE REMOVED. THE FLOOR PROTECTOR MUST NOT BE PLACED ON CARPET. SEE FIGURE 1.

CAUTION: MOST WALL AND CEILINGS CONTAIN WOOD EVEN THOUGH THEY ARE MADE OF SHEETROCK OR PLASTER ON THE OUTSIDE. THESE WALLS AND CEILINGS CAN CATCH FIRE FROM THE HOT APPLIANCE OR CHIMNEY CONNECTOR IF THE APPLIANCE AND CHIMNEY CONNECTOR ARE NOT PROPERLY INSTALLED.

Validation of your appliance warranty requires installation by a certified Venturi dealer or final inspection by a certified dealer confirming that the manufacturer's installation requirements have been followed as outlined below:

RESIDENTIAL TYPE INSTALLATION ONLY

1. After selecting a location for the appliance and determining the type of chimney vent system to be used, purchase the venting components necessary for your particular type of installation. Number 8 sheet metal screws and furnace cement will also be needed to assemble the chimney connector pipes if black or blued steel chimney connector pipes are used. If the appliance is to be installed on a combustible floor, a floor protector as described earlier and as shown by figure 1 will also be needed.
2. Install the chimney portion of the 4-inch diameter Listed Type L Chimney Vent System, install or adapt a factory-built Listed Residential Type and Building Heating Appliance Chimney, or build an approved masonry chimney with the flue liner, or adapt an existing masonry chimney with flue liner to vent this appliance (see figures 3, 4 or 5).
3. Position the floor protector on the floor so that it will provide protection to the floor as specified earlier and as shown by figure 1.
4. Position the appliance on the floor protector and assemble the chimney connector pipe sections to determine if the chimney connector pipe will correctly extend from the appliance flue collar outlet to the chimney. Any horizontal section of chimney connector pipe must slope upward at least 1/4 inch rise to the horizontal foot as described earlier and as shown by figure 7. Always install crimped chimney connector pipe with the crimped end toward the appliance as shown by figure 7. Always use the least number of chimney connector pipe sections possible. Minimum clearance to combustible walls and ceilings as noted by figures 2, 3, 4 and 5 **MUST** always be maintained; drapes, curtains, furniture and other combustible material **MUST** be kept much farther away from the appliance and chimney connector to avoid a fire.
5. After it is determined that the assembled chimney connector will properly connect the appliance to the chimney, disassemble all sections of the chimney connector in preparation for the final assembly procedures.
6. Place the first chimney connector pipe into the appliance's flue collar outlet and mark it through each of the holes in the appliance's flue collar.
7. Remove the chimney connector pipe from the flue collar outlet and drill 1/8-inch diameter holes in the chimney connector pipe at the points marked by step 6.
8. Apply furnace cement to the inside surface of the appliance's flue collar, reinstall the first section of chimney connector pipe and fasten it in place with number 8 sheet metal screws. Apply additional furnace cement to the outside of the chimney connector flue collar joint if an airtight seal was not achieved when the first section of chimney connector pipe was installed.
9. Assemble the remaining chimney connector pipes by applying furnace cement to the joints, drilling 1/8-inch-diameter holes for and attaching each joint with three number 8 sheet metal screws. Wipe all excess furnace cement to dry before starting the first fire in the appliance. NOTE: Type L chimney vent pipe is self-locking between individual pipe sections. Therefore, the sheet metal screws and furnace cement are not required to complete this step of the installation if type L chimney vent pipe is being used. Check to make sure the type L pipe sections lock together securely.
10. Depending on your particular type of installation, connect the appliance's chimney connector to a chimney as shown by figure 3, 4 or 5.
11. Install the appliance's firebrick in the brick retainers located above the burnpot inside the appliance. See figure 9.
12. Locate the bag provided which contains a wall-mount thermostat and insulated staples. Check to make sure no one has plugged the appliance's electrical cord into a receptacle, then install the wall-mount thermostat in the following manner:
 - (12.1) Choose a location to mount the thermostat. It is recommended that the thermostat location be a minimum of 12 to 15 feet from the appliance, on an inside wall about 5 feet above the floor in an area with good air circulation at average temperature. See the instructions provided along with the thermostat for additional important information about locating and mounting the thermostat.
 - (12.2) Route the 24-volt thermostat wire from the appliance to the chosen thermostat mount location (see figures 8 and 10); use the provided insulated staples to secure the wire along its route.
 - (12.3) Cut off any excess wire and attach the end of the remaining wire to the thermostat as directed by the instructions provided along with the thermostat.
 - (12.4) Mount the thermostat to the wall as directed by the instructions provided along with the thermostat.
 - (12.5) Keep the thermostat instructions along with this manual for future reference if needed.
13. Route the appliance's electrical cord away from the appliance; do not route the cord under the appliance's floor protector or rugs of any type; always keep the cord away from hot surfaces. Plug the cord into a 120-volt, 60 Hz, 15-amp properly fused and grounded receptacle.

MOBILE HOME TYPE INSTALLATION ONLY

1. After selecting a location for the appliance, purchase the Simpson DURA-VENT Type L 4-inch diameter chimney vent system model PV components and purchase Martin Industries' Outside Air Kit Model MAK2. Number 8 sheet metal screws and furnace cement will also be needed, as will a floor protector for the combustible floor as described earlier and as shown by figure 1.
2. Install the chimney portion of the Simpson DURA-VENT Chimney Vent System (see figure 6).
3. Position the floor protector on the floor so that it will provide protection to the floor as specified earlier and as shown by figure 1.
4. Position the appliance on the floor protector and assemble the chimney connector pipe sections to determine if the chimney connector pipe will correctly extend from the appliance flue collar outlet to the chimney. Any horizontal section of chimney connector pipe must slope upward at least 1/4 inch to the horizontal foot as described earlier and as shown by

figure 7. Always use the least number of chimney connector pipe sections possible. Minimum clearance to combustible walls and ceilings as noted by figures 2 and 6 **MUST** always maintained; drapes, curtains, furniture and other combustible material **MUST** be kept much farther away from the appliance and chimney-connector to avoid a fire.

5. After it is determined that the assembled chimney connector will properly connect the appliance to the chimney, disassemble all sections of the chimney connector in preparation for the final assembly procedures.
6. Install the outside air kit model MAK2 per the instructions furnished with the MAK2 kit.
7. Place the first section of chimney connector pipe into the appliance's flue collar outlet and mark it through each of the holes in the appliance's flue collar.
8. Remove the chimney connector pipe from the flue collar outlet and drill 1/8-inch diameter holes in the chimney connector pipe at the points marked by step 7.
9. Apply furnace cement to the inside surface of the appliance's flue collar, reinstall the first section of chimney connector pipe and fasten it in place with number 8 sheet metal screws. Apply additional furnace cement to the outside of the chimney connector flue collar joint if an airtight seal was not achieved when the first section of chimney connector pipe was installed.
10. Assemble the remaining chimney connector pipes by securely locking the chimney connect pipe sections together.
11. Connect the appliance's chimney connector to the chimney as shown by figure 6.
12. Install the appliance's firebrick in the brick retainers located above the burnpot inside the appliance. See figure 9.
13. Locate the bag provided which contains a wall-mount thermostat and insulated staples. Check to make sure no one has plugged the appliance's electrical cord into a receptacle, then install the wall-mount thermostat in the following manner:
 - (13.1) Choose a location to mount the thermostat. It is recommended that the thermostat location be a minimum of 12 to 15 feet from the appliance, on an inside wall about 5 feet above the floor in an area with good air circulation at average temperature. See the instructions provided along with the thermostat for additional important information about locating and mounting the thermostat.
 - (13.2) Route the 24-volt thermostat wire from the appliance to the chosen thermostat mount location (see figures 8 and 10); use the provided insulated staples to secure the wire along its route.
 - (13.3) Cut off any excess wire and attach the end of the remaining wire to the thermostat as directed by the instructions provided along with the thermostat.
 - (13.4) Mount the thermostat to the wall as directed by the instructions provided along with the thermostat.
 - (13.5) Keep the thermostat instructions along with this manual for future reference if needed.
14. Route the appliance's electrical cord away from the appliance; do not route the cord under the appliance's floor protector or rugs of any type; always keep the cord away from hot surfaces. Plug the cord into a 120-volt, 60 Hz, 15-amp properly fused and grounded receptacle.

OPERATION OF APPLIANCE

CAUTION: THE APPLIANCE IS READY FOR OPERATION ONLY AFTER IT HAS BEEN PROPERLY INSTALLED AND INSPECTED BY QUALIFIED PEOPLE.

CAUTION: THE PAINT ON THE APPLIANCE WILL GO THROUGH A CURING PROCESS DURING THE FIRST FEW FIRINGS OF THE APPLIANCE AND WILL EMIT SOME SMOKE AND ODOR INITIALLY. BE PREPARED FOR THIS BY RAISING A WINDOW OR OPENING A DWELLING DOOR TO PROVIDE VENTILATION. DURING THE CURING PROCESS, THE APPLIANCE PAINT MAY BE EASILY SCRATCHED, SO SPECIAL CARE SHOULD BE TAKEN NOT TO SCATCH THE APPLIANCE DURING THIS TIME.

START-UP OF FIRE IN THE APPLIANCE (REFER TO FIGURE 10)

1. Swing open the hopper cabinet top; then swing open the fuel hopper lid and look inside the hopper; make sure the inside of the hopper is clean and free of foreign matter.
2. Fill the fuel hopper with pelletized fuel available from your nearest dealer.
3. Close and securely latch the fuel hopper lid.

CAUTION: FAILURE TO SECURELY LATCH THE FUEL HOPPER LID COULD CAUSE BURNBACK. BURNBACK IS A POTENTIALLY DANGEROUS CONDITION WHEREBY FLAMES IGNITE PELLETS IN THE AUGER AND HOPPER. BURNBACK MAY OCCUR WHEN OXYGEN LEAKS INTO THE HOPPER BY WAY OF AN UNSHUT HOPPER LID OR LEAKY HOPPER LID GASKET.
4. Close the hopper cabinet top and make sure all appliance doors are closed securely.
5. Set the temperature selector switch of the wall-mounted thermostat to its highest temperature selector position; this will ensure the thermostat is "closed" during start-up of fire in the appliance. Startup of fire cannot be accomplished if the thermostat is "open."

NOTE: "Open" means the temperature selector switch of the wall mounted thermostat is set to a temperature selector position equal to or less than the room temperature.
6. Switch the ON/OFF toggle switch of the appliance's control panel to ON and turn the appliance's control panel FUEL FEED control knob clockwise to the HI position.
7. When the fuel has entered into the burnpot to a level of 1 inch below the rim of the burnpot, switch the appliance's control panel ON/OFF toggle switch to the OFF position; then open the appliance's firechamber door and spread a small amount

of approved fire starter material over the top of the fuel bed in the burnpot.

WARNING: Approved fire-starting materials are wax-impregnated wood chips or cardboard cubes, stereo-type wax cubes designed for barbeque and campfire lighting. NEVER USE KEROSENE, GAS, SOLVENTS OR OTHER EXPLOSIVE LIQUIDS TO START OR FRESHEN UP ANY FIRE.

8. Allow the fire-starting material approximately 30 seconds to fully ignite, then slowly close the firechamber door and latch it securely. Switch the appliance's control panel ON/OFF toggle switch to the ON position and turn the appliance's control panel FUEL FEED control knob to the 4 position. As the pellets ignite, the flame will sustain itself and increase in intensity as it involves the pellet fuel bed as the appliance's auger feeds additional pellet fuel into the burnpot as the appliance's combustion blower supplies the oxygen to the fire.

CAUTION: DO NOT HAND FEED PELLETS INTO THE BURNPOT AT ANY TIME. THERE MAY BE LIVE EMBERS BELOW THE CHARRED PELLETS AND EXCESSIVE AMOUNTS OF SMOKE AND GASES WILL BE PRODUCED WHICH MAY IGNITE SUDDENLY.

9. After the initial start-up, adjustments may be made to the fuel feed rate and thermostat setting to produce the desired comfort level. It is recommended that the appliance be operated at a fuel feed rate between medium (4) and medium-high (6). This is the most efficient level of operation for this appliance. As you can see by the following chart, a wide range of settings can be effected by the use of the wall-mounted thermostat. Thermostat operation works by automatically reducing the selected fuel feed rate once the room temperature selected by the thermostat setting is reached. The reduced fuel feed rate will then be in effect until the room temperature drops below the selected thermostat temperature setting, at which time the fuel feed rate will increase to its preselected rate.

FUEL FEED RATE		APPROXIMATE BTU'S PRODUCED WITH:	
SET TO:	CLOSED THERMOSTAT	OPEN THERMOSTAT	
4	17,000	4,300	
5	23,000	5,600	
6	29,000	7,250	
HI	33,600	8,425	

Some fuels require an excessive amount of underfire combustion air in order to achieve complete combustion. If the fuel has a very high ash content, clinkers badly, or is "dirty," and the unit cannot be adjusted with the fuel feed rate to burn cleanly, then more underfire combustion air may be needed. Figure 12 shows how this appliance can be adjusted to provide more underfire combustion air. The steps are: (1) remove the right side panel; (2) remove the cover plate on the combustion air manifold; (3) remove the 7/8-inch-diameter tube inserted into the 1-inch-diameter tube welded to the firebox side (the 7/8-inch-diameter tube is glued with a small amount of silicone rubber and may initially be difficult to move); (4) replace the cover plate on the combustion air manifold, ensuring that the seal is airtight; (5) replace the right side panel. **NOTE:** Most fuels will burn very well in this appliance without using the excess underfire combustion air. Using the excess underfire combustion air adjustment on fuels that do not need excess combustion air will cause the heat output and efficiency of the appliance decrease.

SHUTDOWN PROCEDURE

The appliance can be shut down by simply switching the ON/OFF toggle switch of the appliance's control panel to OFF. The fuel in the burnpot will continue to burn for approximately 10 to 15 minutes or less.

CAUTION: OBSERVE THAT THE FLAME DOES GO OUT IN THE APPROXIMATE TIME ALLOWED. IF THE FLAME CONTINUES TO BURN, CHECK TO SEE THAT THE FUEL HOPPER LID IS SECURELY LATCHED AND THAT THE FUEL HOPPER LID'S GASKET IS SEALING PROPERLY. IF FLAME CONTINUES TO BURN IN BURNPOT, BURNBACK POTENTIALS ARE PRESENT. CONTACT YOUR LOCAL DEALER TO INSPECT THE APPLIANCE. TO EXTINGUISH THE FLAME, OPEN THE APPLIANCE'S FIRECHAMBER DOOR APPROXIMATELY 1 INCH TO SHORT-CIRCUIT OXYGEN SUPPLIED THROUGH THE HOPPER. WHICH IS CAUSING THE BURNBACK SITUATION.

For best shutdown results, it is recommended that the temperature selector switch of the wall-mounted thermostat be set to an "open" position for 30 minutes prior to beginning shutdown.

At the end of the heating season or if the appliance is shutdown for extended periods, remove all pellets from the auger tube and fuel hopper and clean the appliance as directed by the MAINTENANCE OF APPLIANCE section below.

POWER FAILURE

An electrical power failure will shut the appliance down automatically in a safe manner. A small amount of smoke may leak from the appliance into the room during the first few minutes of the power failure; this in no way represents a safety hazard.

Depending on the length of the power failure, the fire in the appliance may or may not burn out during the power failure. If the power failure lasts less than a few hours, the hot coals remaining in the burnpot will revive the fire; otherwise the fire will probably burn out and will have to be restarted as previously outlined by the START-UP OF FIRE IN THE APPLIANCE section of this manual. In any case, once the power returns, the auger will recommence to feed pellets into the burnpot whether there is a fire in it or not, so if a power failure lasts for more than a few hours, it is best to switch the ON/OFF toggle switch of the appliance's control panel to OFF until you are ready to start up a new fire in the appliance.

MAINTENANCE OF APPLIANCE

To prolong the life and ease of operation of this appliance, maintain it as recommended by the following maintenance schedules.

DAILY MAINTENANCE

1. Fill fuel hopper with pelletized fuel.
CAUTION: ALWAYS CLOSE FUEL HOPPER LID SECURELY AFTER REFUELING TO HELP ELIMINATE BURNBACK POTENTIALS.
2. Keep fuel hopper lid gasket area clean from dust particles of fuel, etc.; make sure secure seal of fuel hopper lid is not obstructed. Replace gasket if seal cannot be maintained.
3. Check rope gaskets of firechamber door and ash removal door for proper seals. Replace rope gasket if seal cannot be maintained.

PERIODIC MAINTENANCE

1. Check the ash pan periodically; empty it accordingly. Frequency of emptying the ash pan will depend upon the type and/or cleanliness of fuel being burned.
CAUTION: WHEN REMOVING THE ASH PAN FROM THE APPLIANCE, WEAR GLOVES TO PROTECT YOUR HANDS FROM GLOWING EMBERS AND HOT SURFACES. ASHES SHOULD BE PLACED IN A METAL CONTAINER WITH A TIGHT-FITTING LID. THE CLOSED CONTAINER OF ASHES SHOULD BE PLACED ON A NONCOMBUSTIBLE FLOOR OR ON THE GROUND, WELL AWAY FROM ALL COMBUSTIBLE MATERIALS, PENDING FINAL DISPOSAL. THEY SHOULD BE RETAINED IN THE CLOSED CONTAINER UNTIL ALL CINDERS HAVE THOROUGHLY COOLED. ASHES SHOULD NEVER BE PLACED IN WOODEN OR PLASTIC CONTAINERS, OR IN PAPER OR PLASTIC BAGS. COALS HAVE BEEN KNOWN TO STAY HOT FOR SEVERAL DAYS WHEN EMBEDDED IN ASHES.
2. Check burnpot for clinkers and remove if present. Check burnpot for carbon deposits and chip out with a screwdriver or similar tool if present.
3. Clean air holes in burnpot and overfire tube with a stiff wire; make sure all holes are clean of deposits.
4. Inspections of the chimney vent system should be made frequently and the chimney vent system should be cleaned frequently as required to prevent the accumulation of creosote.
5. Chimney connector pipes do not last forever. Corrosion is particularly a problem if the inside of the pipe tends to get damp from condensation of flue gases or from rain or snow getting into the chimney. Just being on an ocean coast can also accelerate chimney connector pipe corrosion.
Chimney connector pipe replacement may be necessary more than once a season, but once every few years is more typical. Every time the chimney and chimney connector are checked for creosote buildup, the strength and integrity of the chimney connector pipes should also be checked. Tap each chimney connector pipe with a small hammer or poke with a screwdriver to reveal where the metal is getting thin due to corrosion on the inside. Elbows usually give out first. Replace as necessary.
6. The painted surfaces of the appliance may be wiped free of dust with a soft cloth.
The use of any other cleaning method may damage or remove the paint.
The brass-finished trim components on the appliance are coated with a clear baked-on enamel to prevent tarnishing. DO NOT polish the brass-finished trim components.
When cleaning is necessary, use mild soapsuds and a soft cloth. After washing, dry the trim surfaces with a clean, dry, soft cloth.
7. This appliance is equipped with a high temperature resistant glass panel in its firechamber door. An oven cleaner or steel scouring wool and water may be used to clean the glass when the glass is cool. Take care to avoid chipping or scratching the glass. Chipped or scratched glass can break suddenly when heated. Do not use the appliance with a broken glass panel.
8. The appliance's electrical cord should be inspected frequently and replaced if evidence of wear or damage is observed.
9. Twice a year, the appliance should be shut down, the electrical power to the appliance disconnected, the access panel removed from the rear of the hopper cabinet, and the blowers vacuumed or blown free of all dirt and dust. The auger motor and the convection blower motor are permanently lubricated and do not require oiling; the combustion blower should be oiled every 6 months with S.A.E. 20 oil as noted by the label attached to the combustion blower.

ANNUAL MAINTENANCE

1. At the end of each heating season, the appliance should be thoroughly cleaned of all ashes and fuel (this includes the fuel hopper, auger, burnpot, firechamber and ash pan); clean air holes in burnpot and overfire tube with a stiff wire and make sure all holes are clean of deposits; check fuel hopper lid gasket, firechamber door gasket and ash door gasket for proper seal, replace before next heating season if gasket is not sealing properly. All rust spots on the appliance should be wire brushed and covered with a coat of high-temperature paint. If the appliance is to be stored until the next heating season, be sure the storage area is dry.
2. Have a qualified person inspect the appliance and its chimney vent system before each heating season. Replace all damaged or masonry parts.
NOTE: Most dealers have an annual service contract available to their customers contact your dealer when your appliance is due for annual service.

TROUBLESHOOTING SERVICE TIPS

DANGER: RISK OF ELECTRICAL SHOCK. DISCONNECT ELECTRICAL POWER TO APPLIANCE BEFORE PERFORMING SERVICE WORK ON OR AROUND APPLIANCE'S ELECTRICAL COMPONENTS.

1. Symptom: The appliance's motors will not start.
Check:
 - a. That the appliance's electrical cord is plugged into a 120 volt, 60 Hz, 15 amp properly fused and grounded receptacle.
 - b. That all appliance wiring connections are secure and wired according to the wiring diagram shown by figure 8.
2. Symptom: The auger does not feed fuel. The auger should turn for 2 to 6 seconds every 40 to 45 seconds, depending upon the fuel feed control knob setting.
Check:
 - a. That there are pellets in the fuel hopper.
 - b. That the auger is not jammed by an obstruction. If the auger cannot be turned by hand, it may be necessary to remove the three bolts from the auger tube flange and inspect the auger tube for an obstruction. If so, be sure to replace gasket and silicone and tighten the three bolts back securely once inspection is completed.
 - c. The set screw on the auger shaft to make sure it is tight and does not allow the set collar to slip.That the auger wiring is properly connected as shown by figure 8.
3. Symptom: Auger is making grinding noise.
Check:
 - a. For carbon buildup in the burnpot. Carbon buildup in the burnpot can restrict the pellets from entering the burnpot and cause the auger to bind. Remove carbon from burnpot with a stout screwdriver or other similar tool.
 - b. For pellet dust or some other obstruction that may have become packed under the auger entry at the bottom of the fuel hopper. Remove the obstruction from under the auger.
4. Symptom: Unburned fuel spills out of the burnpot.
Check:
 - a. Air holes in burnpot and overfire tube. The holes may be clogged with ash or clinker deposits; unplug the holes with a piece of stiff wire.
 - b. To make sure the fuel feed is functioning properly; i.e., that on a setting of "5" the LED (blinking light on control panel) will flutter for approximately 4 to 5 seconds every 40 to 45 seconds to indicate a feed cycle is taking place. If you observe a constant feed or an erratic feed ask your dealer to check the control panel to see if it is functioning properly. **CAUTION: DO NOT OPERATE THIS APPLIANCE IF YOU OBSERVE ERRATIC OPERATION OF FUEL FEED OR IF THE THERMOSTAT IS CLICKING ON AND OFF EVERY FEW SECONDS.**
 - c. The combustion blower to make sure it is not clogged with foreign material; i.e., lint, dust, hair, ashes, etc. Remove any material which might be clogging the blower.
 - d. The underfire combustion air as described by the OPERATION OF APPLIANCE section of this manual.
5. Symptom: Fire is dying down in the burnpot but shutdown is not in progress.
Check:
 - a. The fuel hopper to make sure there is sufficient fuel in the hopper and that the fuel is feeding properly into the auger.
 - b. The fuel feed control to be sure it is operating at the desired output.
 - c. The underfire combustion air as described by the OPERATION OF APPLIANCE section of this manual.
6. Symptom: Glass in firechamber door is coated with creosote or heavy black soot which cannot be removed with an oven cleaner or steel scouring wool and water when the glass is cool as noted by the PERIODIC MAINTENANCE section of this manual.
Check:
 - a. That the fuel is fully consumed in the burnpot and does not spill out of the burnpot and smoulder, causing smoke to accumulate on the glass and inside the firechamber; the underfire combustion air may need adjusting as described by the OPERATION OF APPLIANCE section of this manual.
 - b. That the fuel has not gotten damp, causing an incomplete burn. The pellets should have a shiny surface and should not crumble when squeezed. Also, fuel with a high percentage of dust will not burn cleanly.

If you experience other service or operational problems, contact your appliance dealer for assistance.

WARRANTY INFORMATION AND REPAIR PARTS

As appliance warranty registration card and an appliance warranty are packed with this owner's manual. For warranty registration and warranty claims, follow the instructions provided by each.

A repair parts pamphlet is packed with this manual. If repair parts are ever needed for this appliance, refer to the repair parts pamphlet for ordering information.

FIGURES

The following figures are referenced throughout this manual. Study these figures carefully before beginning the installation of this appliance.

FIGURE 1
MINIMUM FLOOR PROTECTOR SIZE (FOR RESIDENTIAL AND MOBILE HOME TYPE INSTALLATIONS)

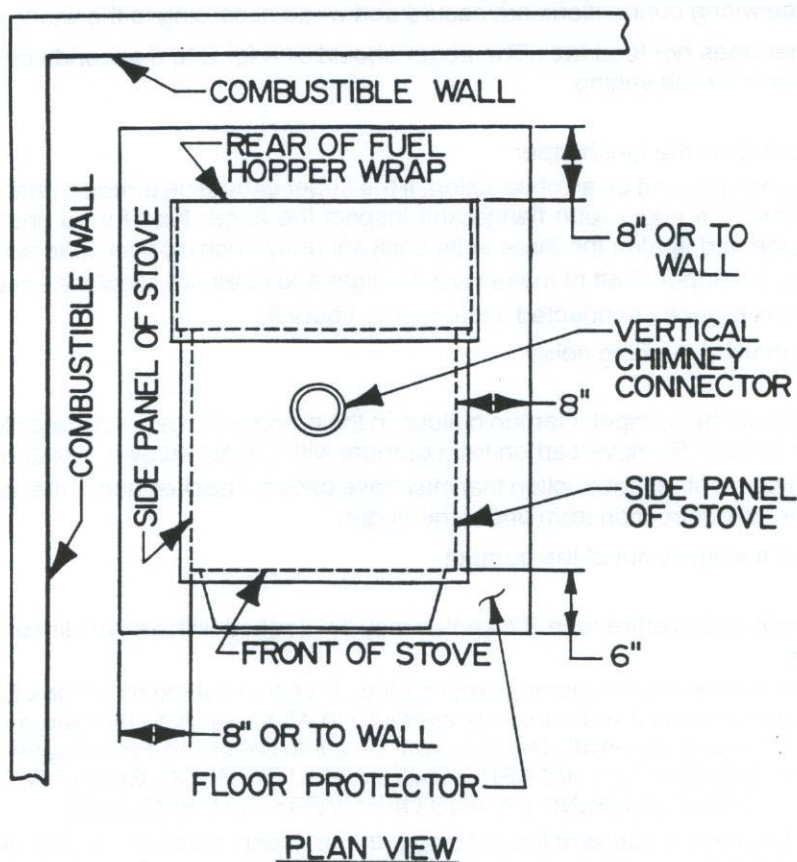
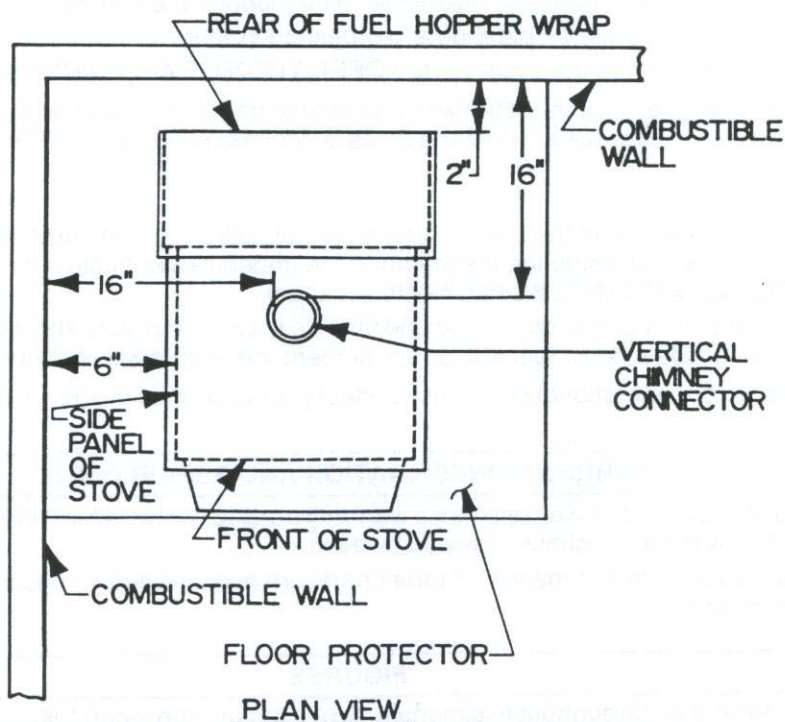


FIGURE 2 Service support: www.api-assembled.com
MINIMUM CLEARANCES FROM APPLIANCE AND VERTICAL CHIMNEY CONNECTOR TO COMBUSTIBLE CONSTRUCTION (FOR RESIDENTIAL AND MOBILE HOME TYPE INSTALLATIONS)

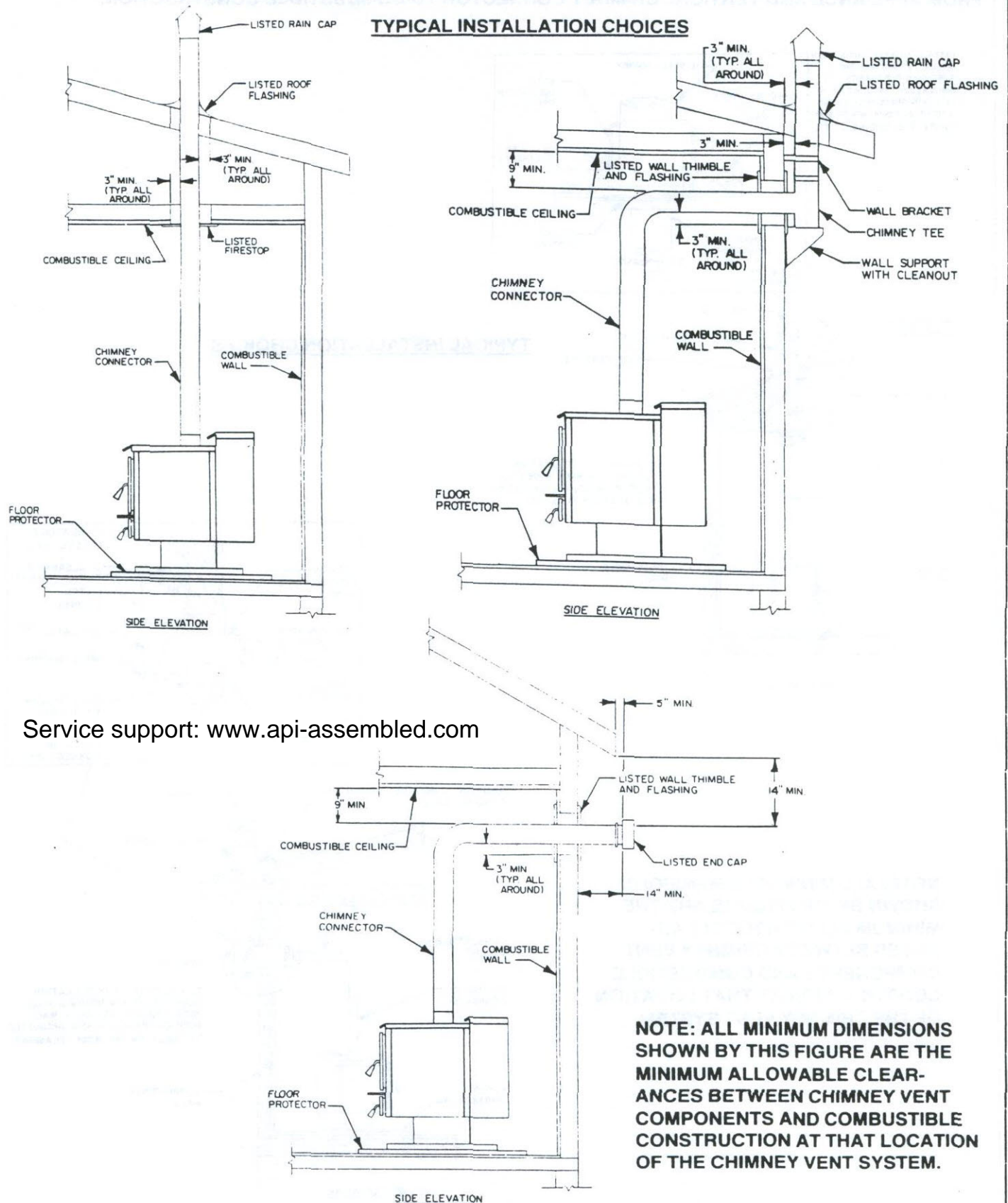


NOTE: SEE FIGURES 3, 4, 5 AND 6 FOR DIFFERENT MINIMUM CLEARANCES BETWEEN HORIZONTAL CHIMNEY CONNECTOR PIPE AND COMBUSTIBLE CEILING.

FIGURE 3

TYPICAL INSTALLATIONS OF 4-INCH DIAMETER TYPE L CHIMNEY VENT SYSTEM (FOR RESIDENTIAL TYPE INSTALLATION ONLY)

NOTE: SEE FIGURE 1 FOR MINIMUM FLOOR PROTECTOR SIZE; SEE FIGURE 2 FOR MINIMUM CLEARANCES FROM APPLIANCE AND VERTICAL CHIMNEY CONNECTOR TO COMBUSTIBLE CONSTRUCTION.



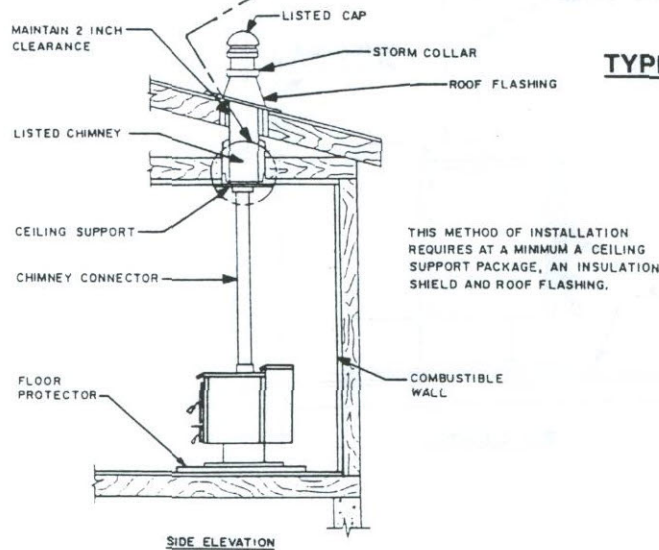
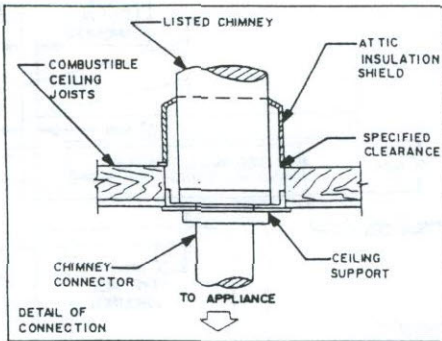
Service support: www.api-assembled.com

FIGURE 4

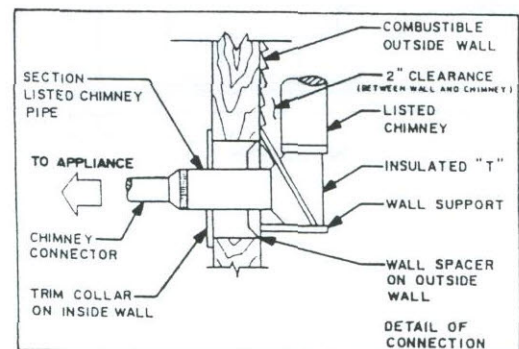
TYPICAL INSTALLATIONS OF 4-INCH-DIAMETER, 26-GAUGE MINIMUM, BLACK OR BLUED STEEL CHIMNEY CONNECTORS IN CONJUNCTION WITH FACTORY-BUILT LISTED RESIDENTIAL TYPE AND BUILDING HEATING APPLIANCE CHIMNEYS (FOR RESIDENTIAL TYPE INSTALLATION ONLY)

NOTE: SEE FIGURE 1 FOR MINIMUM FLOOR PROTECTOR SIZE; SEE FIGURE 2 FOR MINIMUM CLEARANCES FROM APPLIANCE AND VERTICAL CHIMNEY CONNECTOR TO COMBUSTIBLE CONSTRUCTION.

INSTALL AN ATTIC INSULATION SHIELD TO MAINTAIN THE SPECIFIED CLEARANCE TO INSULATION. INSULATION IN THIS AIR SPACE WILL CAUSE A HEAT BUILDUP WHICH MAY IGNITE THE CEILING JOISTS.



TYPICAL INSTALLATION CHOICES



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NOTE: ALL MINIMUM DIMENSIONS SHOWN BY THIS FIGURE ARE THE MINIMUM ALLOWABLE CLEARANCES BETWEEN CHIMNEY VENT COMPONENTS AND COMBUSTIBLE CONSTRUCTION AT THAT LOCATION OF THE CHIMNEY VENT SYSTEM.

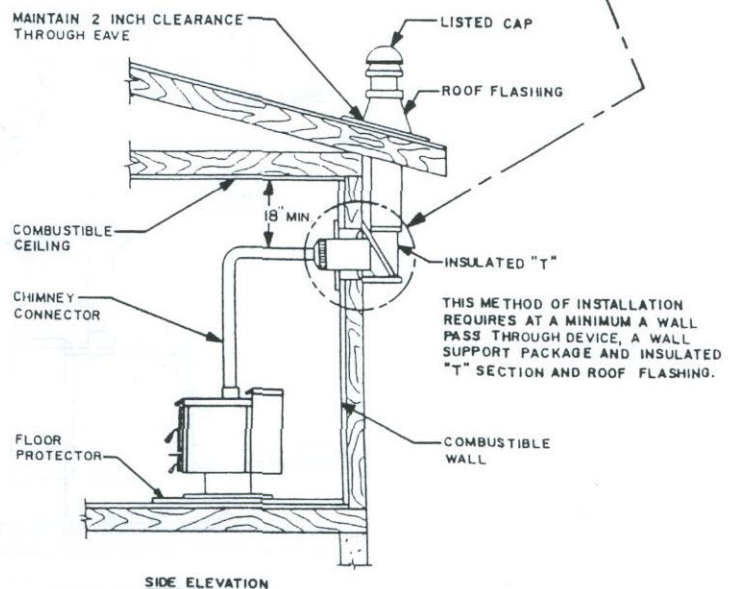
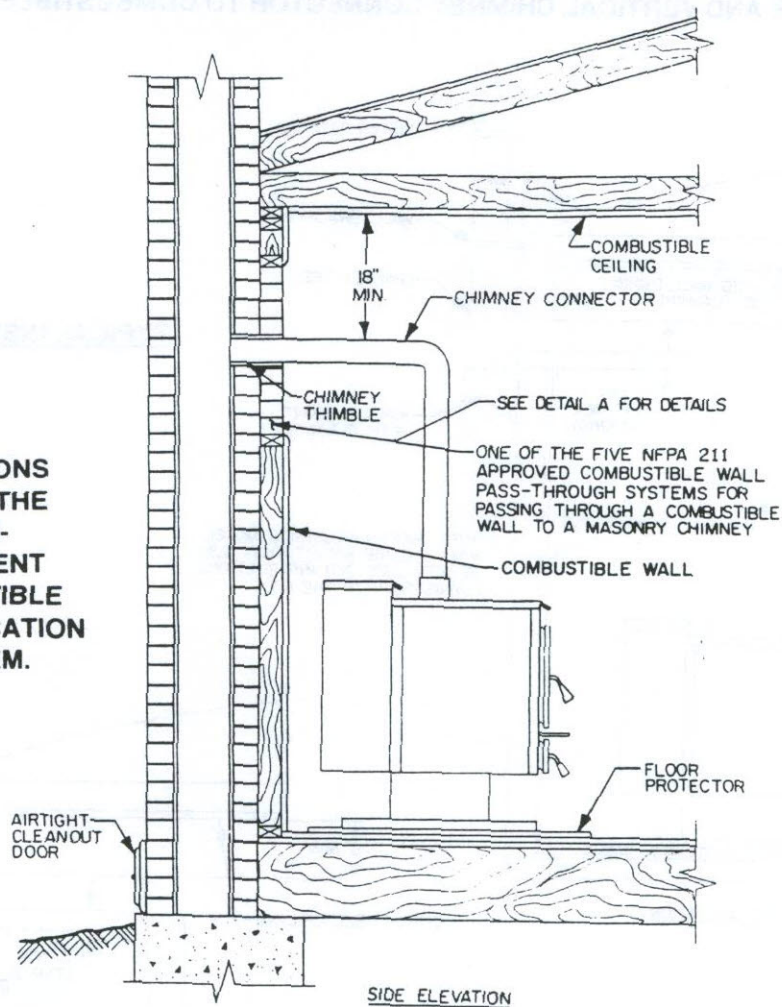


FIGURE 5

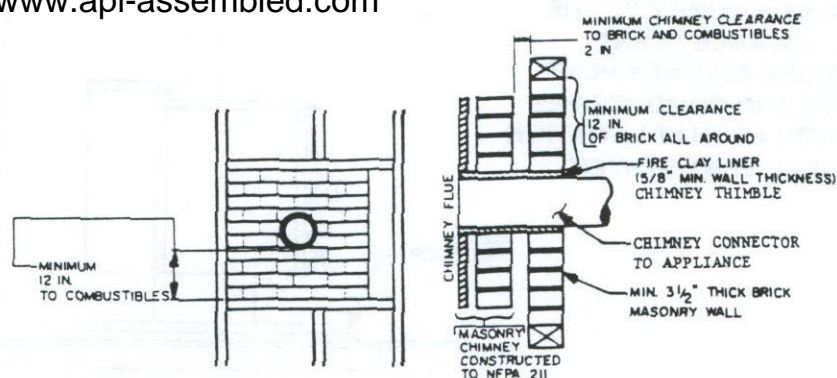
TYPICAL INSTALLATIONS OF 4-INCH DIAMETER, 26-GAUGE MINIMUM, BLACK OR BLUED STEEL CHIMNEY CONNECTORS IN CONJUNCTION WITH AN APPROVED MASONRY CHIMNEY WITH A FLUE LINER (FOR RESIDENTIAL TYPE INSTALLATION ONLY)

NOTE: SEE FIGURE 1 FOR MINIMUM FLOOR PROTECTOR SIZE; SEE FIGURE 2 FOR MINIMUM CLEARANCES FROM APPLIANCE AND VERTICAL CHIMNEY CONNECTOR TO COMBUSTIBLE CONSTRUCTION.

NOTE: ALL MINIMUM DIMENSIONS SHOWN BY THIS FIGURE ARE THE MINIMUM ALLOWABLE CLEARANCES BETWEEN CHIMNEY VENT COMPONENTS AND COMBUSTIBLE CONSTRUCTION AT THAT LOCATION OF THE CHIMNEY VENT SYSTEM.



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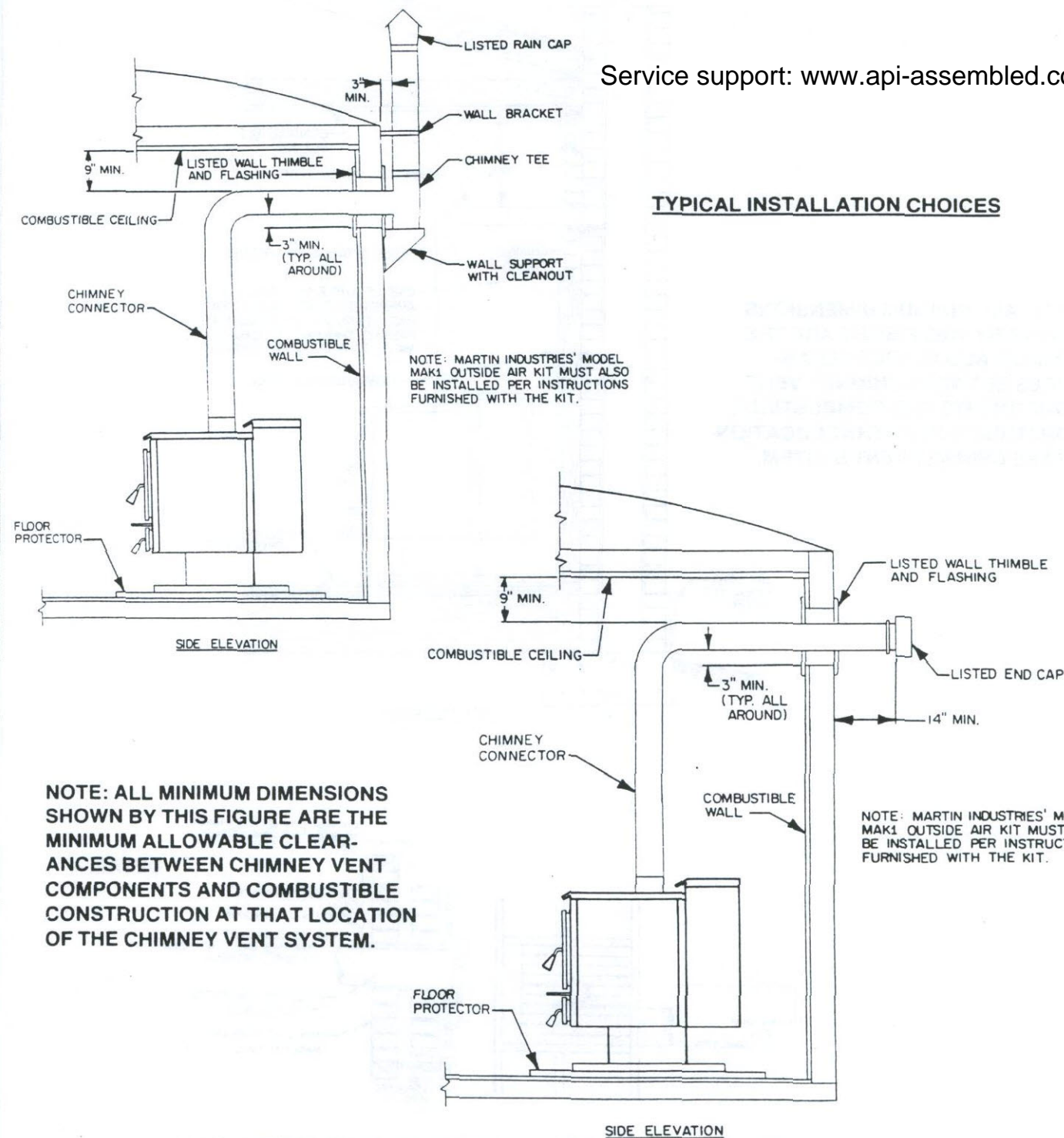
ONE OF THE FIVE NFPA 211 APPROVED COMBUSTIBLE WALL PASS-THROUGH SYSTEMS FOR PASSING THROUGH A COMBUSTIBLE WALL TO A MASONRY CHIMNEY.

FIGURE 6

TYPICAL INSTALLATIONS OF A SIMPSON DURA-VENT TYPE L 4-INCH DIAMETER CHIMNEY VENT SYSTEM MODEL PV IN CONJUNCTION WITH MARTIN INDUSTRIES' OUTSIDE AIR KIT MODEL MAK1 (FOR MOBILE HOME TYPE INSTALLATION ONLY)

NOTE: SEE FIGURE 1 FOR MINIMUM FLOOR PROTECTOR SIZE; SEE FIGURE 2 FOR MINIMUM CLEARANCES FROM APPLIANCE AND VERTICAL CHIMNEY CONNECTOR TO COMBUSTIBLE CONSTRUCTION.

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ADDITIONAL TYPICAL INSTALLATION CHOICES FOR MOBILE HOMES:

1. A THROUGH-THE-CEILING AND ROOF INSTALLATION IS ALSO ACCEPTABLE USING SIMPSON DURA-VENT CEILING FIRESTOPS AND A LISTED ROOF FLASHING.
2. EXISTING CLASS A SYSTEMS MAY ALSO BE UTILIZED WITH SIMPSON DURA-VENT PIPE AND ADAPTORS.

FIGURE 7

TYPICAL HORIZONTAL CHIMNEY CONNECTION INSTALLATION (FOR RESIDENTIAL AND MOBILE HOME TYPE INSTALLATIONS)

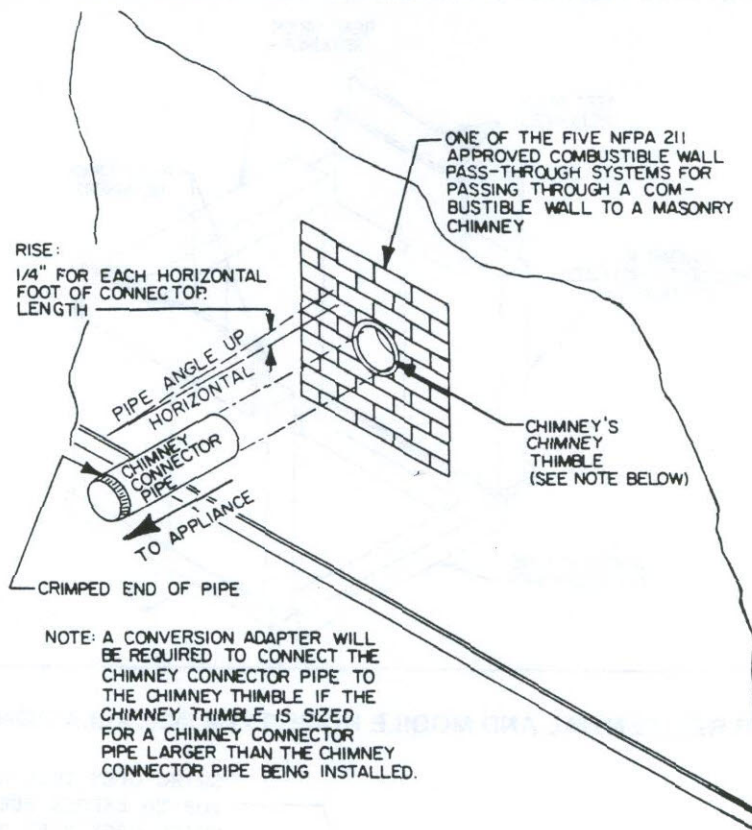


FIGURE 8

APPLIANCE'S WIRING DIAGRAM (FOR RESIDENTIAL AND MOBILE HOME TYPE INSTALLATIONS)

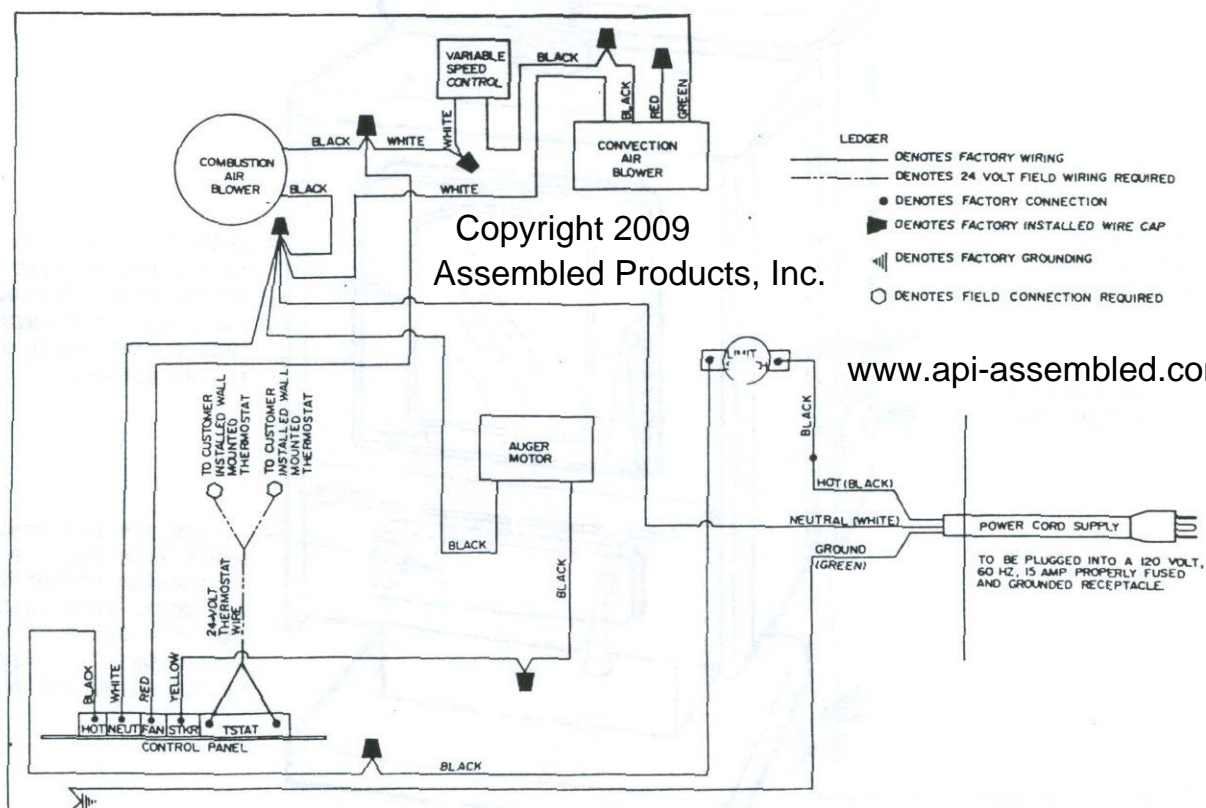


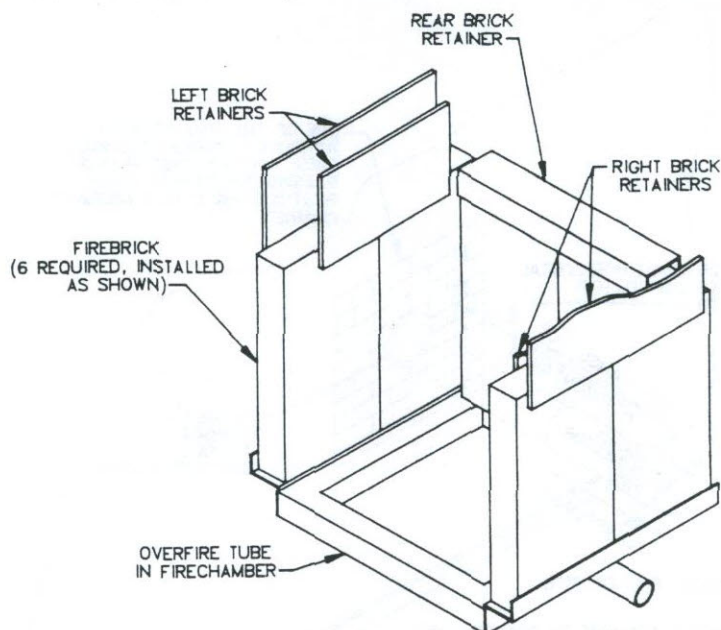
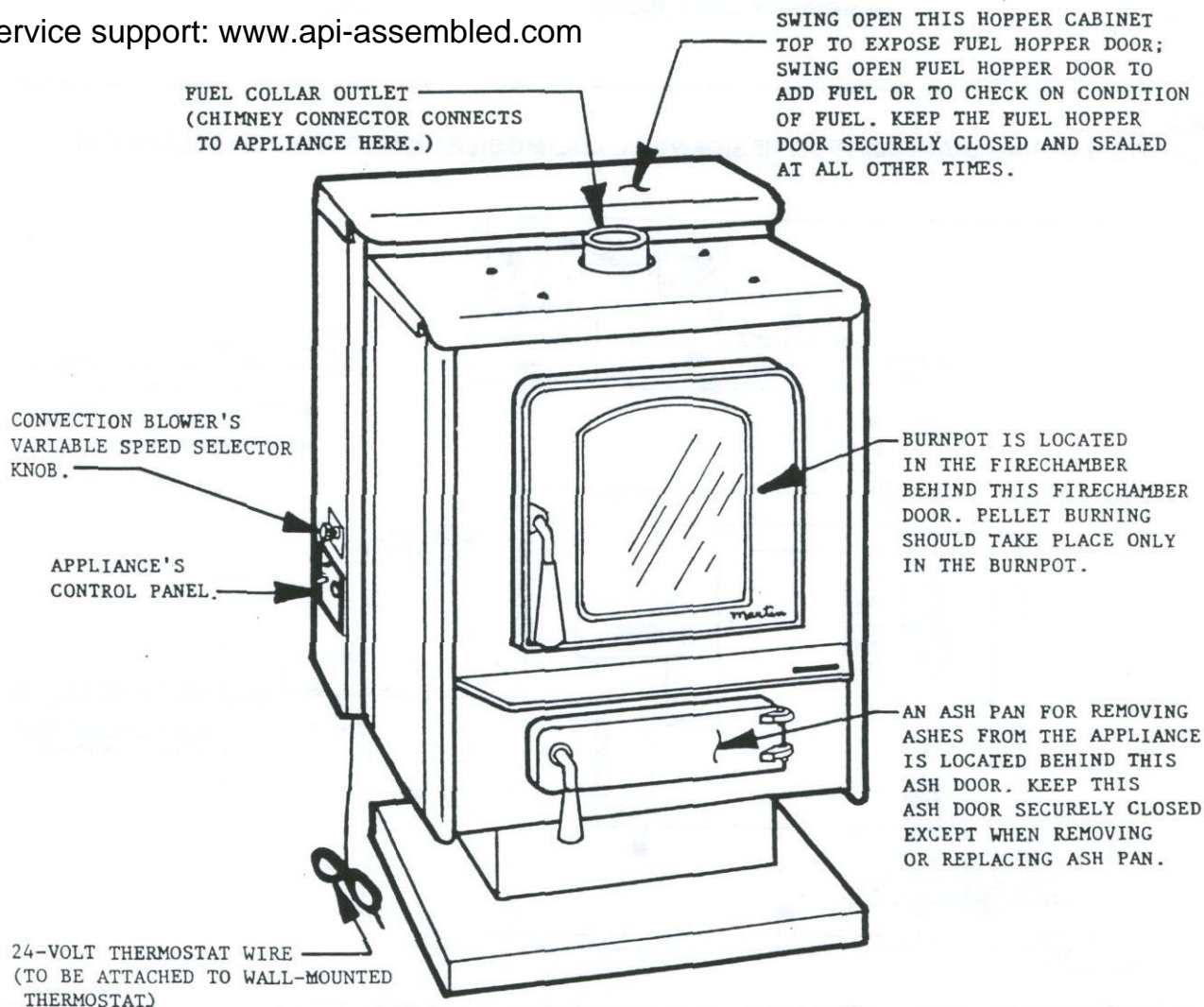
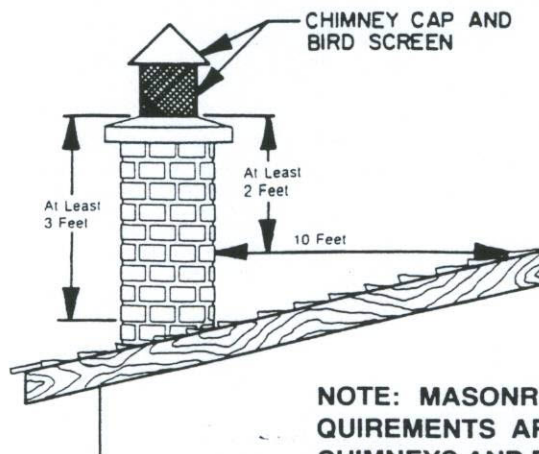
FIGURE 9**FIREBRICK INSTALLATION INSIDE APPLIANCE (FOR RESIDENTIAL AND MOBILE HOME TYPE INSTALLATIONS)****FIGURE 10****APPLIANCE FEATURES (FOR RESIDENTIAL AND MOBILE HOME TYPE INSTALLATIONS)**Service support: www.api-assembled.com

FIGURE 11
CHIMNEY HEIGHT REQUIREMENTS (FOR RESIDENTIAL AND MOBILE HOME TYPE INSTALLATIONS)



NOTE: MASONRY CHIMNEY SHOWN, BUT REQUIREMENTS ARE SAME FOR FACTORY-BUILT CHIMNEYS AND FOR TYPE L CHIMNEY VENT SYSTEMS.

A CHIMNEY MUST BE AT LEAST 3 FEET HIGHER THAN THE HIGHEST POINT WHERE IT PASSES THROUGH THE ROOF AND AT LEAST 2 FEET HIGHER THAN THE HIGHEST PART OF THE ROOF OR STRUCTURE THAT IS WITHIN 10 FEET OF THE CHIMNEY, MEASURED HORIZONTALLY.

IF A CHIMNEY CAP AND BIRD SCREEN ARE INSTALLED ON TOP OF THE CHIMNEY, KEEP THEM CLEARED OF LEAVES, CRESOTE, OR OTHER MATTER WHICH COULD IMEDE THE FLOW OF SMOKE EXITING THE CHIMNEY.

FIGURE 12
UNDERFIRE COMBUSTION AIR ADJUSTMENT (FOR RESIDENTIAL AND MOBILE HOME TYPE INSTALLATIONS)

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