

INTRODUCTION

There exist a variety of causes for cooking fires, but most causes involve unattended cooking. Here are some tips to help prevent a cooking fire in your kitchen.

FIRE PREVENTION TIPS:

- Never leave the kitchen when cooking food.
 Use fresh cooking oil whenever possible. The
- ignition temperature of used cooking oil can be lower than normal and it may contain left-over solids which can ignite.

 Smoke generated from cooking oil is an indication
- that the temperature of the oil has exceeded the desired cooking temperature of 350-375 F. As the oil temperature increases, the smoke produced will increase significantly. If this occurs, simply turn the burner down or turn it off to prevent the oil from reaching its ignition temperature.
- Be sure to keep the cooking surface and surrounding counter areas clean and clear of combustible materials which could ignite.
- If you must leave the kitchen when frying food, turn the burner off or remove the pan from the burner until you return.

IN CASE OF A FIRE:

NEVER attempt to move a burning cooking vessel after it has ignited. Any movement could splash burning grease and spread the fire or cause severe injury. NEVER TRY TO EXTINGUISH A GREASE FIRE USING WATTER, Evacuate the kitchen and call the Fire Department immediately, then alert others and evacuate the building. Let your Guardian G600-B extinguish any range top fire. Because of the heat and smoke associated with a cooking fire, it is recommended that you wait at least 30 minutes after the fire has been extinguished before re-entering the building and approaching your kitchen range.

OPERATION:

The Guardian G600-B system is an automatic fire suppression system designed to detect and extinguish cooking fires on residential type range tops. In the event of a stovetop fire, the sensors will activate at a pre-set temperature and signal the main CPU board. The main CPU automatically sends a signal to release the extinguisher valve assembly, releasing the extinguishing agent and simultaneously activates the CPU-mounted alarm, and the fuel shutoff which disconnects the gas and/or electricity to the range.

NOTE:

Additional equipment or components necessary to install the system in accordance with the instructions and limitations listed are to be provided by the authorized installer if not purchased with the basic system (i.e., electrical Wire, wire mold, shut-off components, etc.). Additional equipment and components may be obtained from a Guardian Safety Solutions International distributor or the manufacturer.

APPLICATION AND LIMITATION

- The Guardian G600-B is designed and Listed for the
 protection of 30 in. wide, gas or electric residential
 range tops when installed in conjunction with a 30 inch
 wide exhaust hood or microwave/exhaust hood
 combination with a flat ferromagnetic underside. The
 extinguishing system is intended for installation within a
 kitchen cabinet having an internal height of 12" or taller
 and located either directly above, or adjacent to the
 range top and exhaust hood.
- Guardian G600-B System is acceptable for use with either a ductless or ducted exhaust hood.
- The extinguisher enclosure assembly is intended for installation within a protected space, such as a kitchen cabinet as outlined in this manual.
- Only components identified by part numbers in this manual are authorized for use with the Guardian G600-B system unless expressly stated in this manual.
- All electrical wiring and alarm connections are to be in compliance with the National Electrical Code (NFPA 70), National Fire Alarm Code (NFPA 72) and any applicable state or local municipal codes.

RESIDENTIAL RANGE-TOP USE ONLY

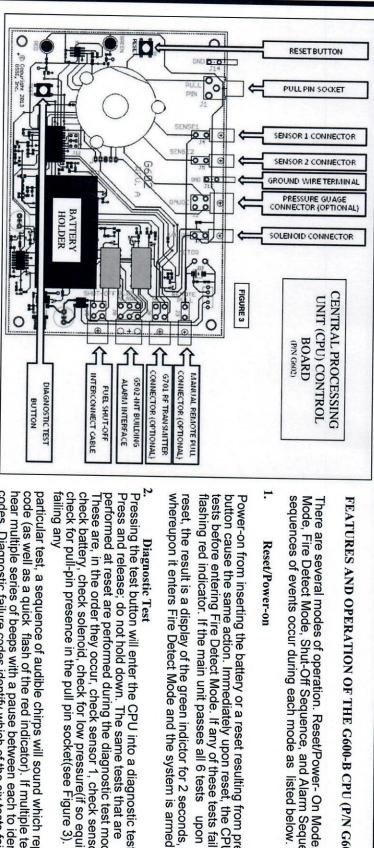
- The Guardian G600-B extinguishing system is designed and thoroughly tested in accordance with UL Subject 300A for normal residential type cooking applications which originate from residential range top cooking appliances when used in conjunction with a flat faced (bottom) exhaust hood or microwave hood only.
- The Guardian G600-B extinguishing system is not intended for the protection of commercial "restaurantstyle" cooking equipment.
- The <u>maximum</u> range top cooking surface protected by the Guardian G600-B System is 720 square inches measuring 30" wide and 24" deep.
- The Guardian G600-B is not designed or intended for the protection of areas adjacent to, or within the residential range top, such as nearby counter tops or within the range oven.

PACKING LIST

Check contents for missing or damaged parts (see FIGURES 1, 2, 3 & 4). Check fire extinguisher for proper operating pressure. Needle should point in the operable (green) zone. Report any damage or missing parts to the manufacturer before starting installation.

DO NOT REMOVE SAFETY PIN FROM FIRE EXTINGUISHER AT THIS TIME!!!

SCALE N/A	SIZE		
N/A	DWG NO		
SHEET	DWG		
SHEET 2 OF 11	REV		



FEATURES AND OPERATION OF THE G600-B CPU (P/N G602)

There are several modes of operation. Reset/Power- On Mode, Diagnostic Test Mode, Fire Detect Mode, Shut-Off Sequence, and Alarm Sequence. Several sequences of events occur during each mode as listed below

Reset/Power-on

reset, the result is a display of the green indictor for 2 seconds Power-on from inserting the battery or a reset resulting from pressing the reset button cause the same action. Immediately upon reset, the CPU board performs 6 flashing red indicator. If the main unit passes all 6 tests upon tests before entering Fire Detect Mode. If any of these tests fail, the result is a slowly

Diagnostic Test

check battery, check solenoid, check for low pressure(if so equipped) failing any check for pull-pin presence in the pull pin socket(see Figure 3). Upon performed at reset are performed during the diagnostic test mode. Press and release; do not hold down. The same tests that are Pressing the test button will enter the CPU into a diagnostic test mode These are, in the order they occur, check sensor 1, check sensor 2,

codes. Diagnostic failure codes identify which of the six tests failed (see "Diagnostic Failure Codes"). The CPU will then revert to a slowly flashing red indication if the can occur in normal operation. See a further explanation of the Shutoff Sequence in way to verify that the entire system is working properly and the Fuel Shutoff function code (as well as a quick flash of the red indicator). If multiple tests fail then you will test failed. If all 6 tests pass, the unit will enter a Shutoff Sequence. This provides a hear multiple series of beeps with a pause between each to identify multiple failure particular test, a sequence of audible chirps will sound which represent a failure

Note: Pressing the Reset button or the Test button should not result in solenoid activation with resultant suppressant dump. **Be sure to always place the pull pin** in the handle when servicing to prevent any accidental discharge of the

SCALE	SIZE
NA	DWG NO
SHEET	DWG
3 OF 11	
3 OF 11	REV

Diagnostic Failure Codes

One chirp Sensor 1/Remote Pull

Two chirps Sensor 2

Three chirps **Battery Voltage**

Four chirps

Solenoid

Six chirps Five chirps

Low Pressure

Fire Detect Mode

During fire-detect mode, the main unit monitors the two sensors to detect high temperature indicating a fire. If a fire is indicated, the CPU will issue an Alarm Sequence (See Section 5. "Alarm Sequence"). During Fire Detect Mode the CPU will continue to silently run all six diagnostic tests. If at any time one of these tests fails (with the exception of the low battery test explained below), the CPU will immediately issue a Shutoff Sequence to prevent use of the cooking appliance until the fire suppression system is serviced. The only exception to this rule is a delay in issuing the Shutoff Sequence if the diagnostic failure is a low battery.

Approximately once per minute the battery is checked. If it is low there will be a short chirp to indicate that the battery needs to be replaced. The unit will continue to function normally, with the warning beep occurring approximately every minute for about 4 ½ hours. If the battery is not replaced before the 4 ½ hours has expired, the system will initiate a Shutoff Sequence. If a reset is initiated in this situation, the CPU will not resume normal operation, as it cannot pass the reset or diagnostic

Shutoff Sequence

A shutoff sequence will cause an audible alarm for 10 seconds, and will disconnect fuel to the cooking appliance. Following the ten seconds of audible alert, the unit will issue a chirp about every minute to alert the owner that the fire suppression system needs to be serviced.

There are six things which will result in a shutoff sequence. These are: (1) Low battery indication has persisted for about 4 ½ hours. (2) A test sequence was executed successfully. (3) The pull-pin was removed from its socket during Fire Detect Mode. (4) An open circuit was detected on one of the sensors during Fire Detect Mode. (5) An open circuit was detected on the solenoid during Fire Detect Mode. (6) If cylinder pressure monitor indicates pressure is low.

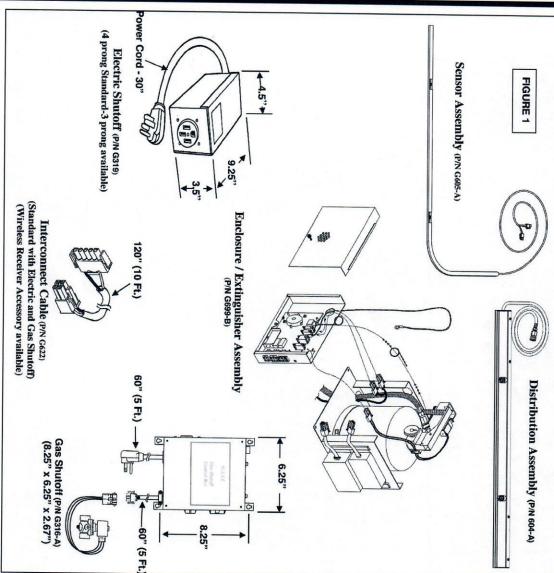
An alarm sequence will only occur if a low voltage is detected at one or both of the sensors. This is an indication of very high temperatures or of a short across the sensor circuit. This sequence can only occur when the CPU is running in Fire Detect Mode. A short circuit across the sensors at power-up or during a test sequence will result in a test failure which prevents the unit from entering Fire Detect Mode.

The alarm sequence causes an audible alarm, suppressant to be released and the fuel shutoff to disconnect fuel to the cooking appliance. This cycle will continue until the unit is reset or the battery is depleted.

SCALE	SIZE
N/A	DWG NO
SHEET	DWG
SHEET 4 OF 11	REV



Each system consists of a pre-assembled enclosure extinguisher assembly, sensor assembly, and distribution/nozzle assembly and one (1) shutoff for electrical or gas stoves, ready for installation in the kitchen cabinet and range hood over the stove.



G600-В



SAFETY SOLUTIONS INTERNATIONAL, INC.



MODEL G600-B

RESIDENTIAL RANGE TOP EXTINGUISHER UNIT



UL FILE NO. EX 3940

SCALE	CIT	SIZE		I
N/A		DWG NO		
SHEET 5 OF 11	CANG	DWG		
5 OF 11	Ę	BEV		

The sensor assembly, which is temperature activated, consists of two sensors mounted in a high temperature silicone rubber sleeve. The rubber sleeve contains magnets running along its length that allow for easy installation on the front edge of the underside of the hood or microwave-hood. The detection sensor assembly (p/n G605) is to be installed where normal ambient cooking temperatures do not exceed 300 deg. F (148.8 deg. C). FIGURE 4 DETECTION SENSOR ASSEMBLY (PIN G605) SCALE SIZE NA DWG NO SHEET DWG 6 OF 11 REV

SYSTEM INSTALLATION INSTRUCTIONS

TOOLS REQUIRED FOR SYSTEM INSTALLATION

Phillips #2 Screwdriver 11/32" Nut Driver

> Electric Drill 1" Hole Saw

Safety Goggles

INSTALLATION INSTRUCTIONS

Before beginning the installation of your Guardian G500-B unit, locate and identify each part. (See FIGURE 1) Turn off the circuit breaker to the kitchen surface from falling debris. approved safety goggles. Protect stove top and counter range hood and stove before boring holes. Wear

System" is performed as outlined on page 15. Installation is not considered complete until "Arming the

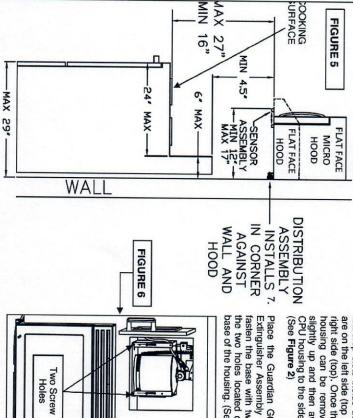
Çī

Perform the following:

Assemble all suggested tools. Remove all components from the box and familiarize yourself Assemble all suggested with assembly components.

6

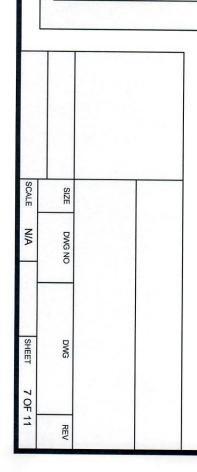
sensors. (See FIGURE 5) maximum Review assembly procedures and check physical beside vent hood. Also check minimum and neight and width requirements of cabinet above or height requirements for nozzles and



Z Z VAX

- ω Plan your installation by selecting the desired (See Figure 6) mounting or side cabinet installation is an option.) the hood or microwave hood, however; right side usually on the left side of the cabinet directly above Extinguisher Assembly. The Guardian G600-B is location of the Guardian G600-B System Enclosure
- B System Enclosure / Extinguisher Assembly in its desired location. The stainless steel braided hose, Determine the best route from below the hood to the location of the Extinguisher Assembly. **Before** through the same set of holes. sensor wire and interconnect cable can route are long enough to connect to the Guardian G600the sensor cable and stainless steel braided hose **Drilling**, measure the route and make certain that
- holes required for your planned route avoiding damage to any existing wires, plumbing, etc. that may be along the chosen route. Clean up any Using your electric drill and 1" hole saw, drill any dust/debris made while drilling.
- removing the front cover of the enclosure -set cover to the side (See FIGURE 2). Using your #2 slightly up and then away from the cylinder- set CPU housing to the side. are on the left side (top and bottom) and one on the Phillips driver, loosen the three silver screws in the Assembly by loosening the thumb screw and teardrop slots inside the main CPU housing. Two Guardian G600-B System Enclosure / Extinguisher Carefully remove the main CPU housing from the housing can be removed by sliding the housing right side (top). Once they are loose the main CPU

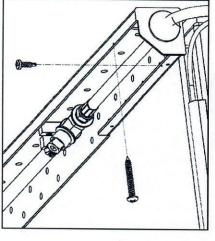
base of the housing. (See Figure 6) Place the Guardian G600-B System Enclosure / Exlinguisher Assembly in its desired location and fasten the base with two screws installed through the two holes located on the front corners at the



SYSTEM INSTALLATION INSTRUCTIONS (Cont'd)

- œ in steps 3-4. (See Figure 7) Attach the Sensor Assembly to the bottom of the feed the sensor wire through the route you planned side of the hood towards the wall. Next, proceed to portion of the tube should run along the bottom sensor assembly along the front, the remaining installing the sensor assembly. After installing the bottom of the hood is cleaned of all grease before specified range (See Figure 5). Make sure the from the wall as the hood will inches away from the rear wall, and as far away place. It should be installed between 12 and 17 edge and allowing the inline magnets to secure it in Hood/Microwave Hood by placing it near the front allow within the
- 9 up to the cabinet or you may choose to route it through the wall and If you are not using the Wireless Tx/Rx, then now is and then follow the same route as the sensor wire, conduit or raceway to the bottom of the cabinets run the interconnect cable through a wall mount the main CPU will be located. You may choose to location of the fuel shut-off up to the cabinet where the best time to run the interconnect cable from the





- 10. using the 11/32" Nut Driver to gently tighten the two where they will go into the walls studs or into a wall anchor. Screws going into the hood must be located where they will not damage any part of the hood including wiring, electronic components, etc. A total of four screws must be installed. After the The distribution assembly must be centered above the mounting posts in the hosing. Center the Nozzle assembly and then secure it into place side as your planned route. Slide the 2 clamps onto assembly in the housing with the hose on the same (See Figure 5, 7, 8 and 9) clamp nuts onto the stainless steel pipe. nousing wall behind. Screws in the wall must be located hood above and two 1-1/4" screws to secure to the by the back wall and the hood. This is done by using two self-tapping screws to anchor into the by the back wall and the hood. This is done mount the distribution housing in the corner formed the cooking appliance when it is installed. Firmly is mounted, place the Nozzle/Hose
- = Route the stainless steel braided hose through the and connect it to the cylinder using the quick as you pull it through the route. Once the hose is (See **Figure 6**) pulled into the cabinet, route it through the housing coupling to prevent debris from entering the hose place a piece of tape over the end of the quick route planned in steps 3 and 4. You may need to
- Reinstall the main CPU enclosure back onto the Guardian G600-B System Enclosure / Extinguisher Assembly interchangeable and can be plugged into either connector. and tighten the three screws loosened in step 6. Route and connect the sensor wires, solenoid wire and pressure gauge wire to the main CPU. (See Figure 2 and 3) Note: sensor 1 and sensor 2 plugs are

12

13. Attach the green ground wire to an earth ground by using a self-tapping screw and fastening it to a grounded metal part of the hood. (See Figure 2)

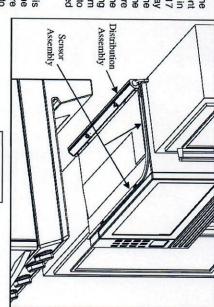


FIGURE 7

SIZE DWG NO DWG REV

SCALE

NA

SHEET

8 OF 11

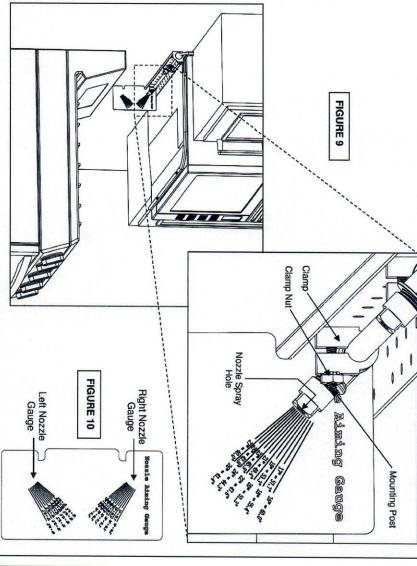
SYSTEM INSTALLATION INSTRUCTIONS (Cont'd)

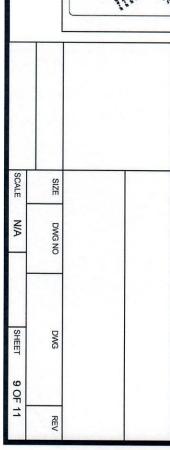
AIMING THE SPRAY NOZZLES

- Determine the height between the top of the cooking surface and the top of the distribution assembly housing. It must be between 16 inches and 27 inches.
 (See FIGURE 5)
- 15. Loosen the two clamp nuts using the 11/32" Nut Driver, Loosen the clamps just enough to be able to adjust the nozzles, but leave enough pressure that the nozzles will stay in the position you rotate them too. Make certain that the nozzle assembly does not slide left or right in the housing during adjustment or the housing cover will not fit properly. The Nozzle Assembly must be centered in the housing for proper fit of the housing cover over the nozzles.

18.

- 16. Using the Nozzle Alming Gauge provided, adjust the nozzles to the correct angle based on the height determined in step 14. This is done by placing the Gauge in the housing and aligning the nozzles spray hole with the corresponding height/angle on the Gauge. Once in the correct position tighten the clamp nuts to secure the Nozzles in place (See Figure 9 & 10. The example in Figure 9 is set to 23 inches or 45.9 degrees.)
- 17. Place the gauge back in the housing to make sure the nozzles are still at the correct angle; that they did not shift during the tightening process.
- Mount the cover on the Distribution Housing by sliding the bottom of the cover into the housing below the nozzles and then rotating the cover up over the nozzles. Carefully install 4 self-tapping screws through the top of the cover and into the pre-drilled holes of the housing.





ELECTRIC SHUTOFF (P/N G319)

WIRELESS RECEIVER (OPTIONAL-SEE FIGURE 24)

INTERCONNECT CABLE IS STANDARD CONFIGURATION

TO MAIN CPU (SEE FIGURE 3)

The electric stove is shut off during system activation by two methods. One of the following interface options is used with the electric shutoff. (1)- Using the interconnect cable (standard) from the Main CPU Control board to the electric shutoff completes a hardwired signal which in turn activates the shutoff unit. (2)- When using the Wireless Transmitter / Receiver (optional), the shutoff, by way of the Wireless Receiver, continuously monitors for a "Signal" sent from the Main CPU board through the Wireless the shutoff. Both methods cause all electrical power to the stove to shut off. The dry contacts provided on the Guardian G600-B CPU are never to be wired directly to the cooking appliance to facilitate appliance shut-down. Either an electric shutoff (P/N G319) or gas shutoff (P/N G316-A) shall be used. In the event that the electric shutoff is activated or an interruption in power occurs, it must be reset. (See Transmitter. In the event of system activation, the Wireless Receiver responds to the signal and activates

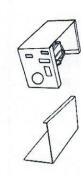
"Reset Stove", p.12)

INSTALLATION

NOTE: Ensure the Electric Shutoff is installed within the same room as the Main CPU control board (part #G602) for proper unit operation.

- Turn" OFF" electricity to the range.
- N .-Identify your electric plug configuration; 3-prong, 4-prong or hardwire. (See FIGURES 11A, 11B, Remove the stove power cord from the wall and 11C).
- outlet and plug it into the outlet on the electric shutoff unit (See FIGURE 14). Insert the stove shutoff power cord into the wall
- 6 5 Plug the "Interconnect Cable" into the shutoff
- Install Interconnect cable between electric shutoff and Main CPU. (See FIGURE 13)

 Plug the interconnect cable into the correct position on the main CPU. (See FIGURE 3)
- Turn "ON" electricity to range.



OPTIONAL ELECTRIC SHUTOFF RESET SWITCH

Docut.

OPTIONAL INTERFACE ENCLOSURE ASSEMBLY (See FIGURE 27)

HARDWIRED

FIGURE 11C

HARDWIRED SHUTOFF

This option is available on the electric shut off if the power cord and receptacle are not needed and is hardwired by a licensed electrician. (See FIGURE



FIGURE 11A

3-PRONG

3 prong, 4 prong, and Hardwired Electric Shutoff's Typical connector configuration for

FIGURE 12

FIGURE 11B

4-PRONG

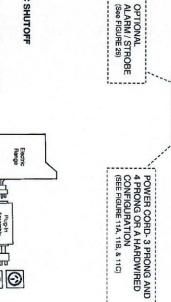
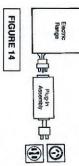


FIGURE 13

Description: WIRELESS ELECTRIC SHUTOFF

replaced with the Wireless Tx/Rx Assembly. To convert the electric shutoff to a wireless the standard interconnect cable ß.

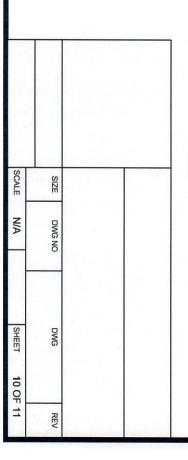
The interconnect socket on the shutoff is compatible with both the interconnect cable and the Wireless Tx/Rx. Either interconnect option is Wireless Tx/Rx Assembly is required to shut off the stove. (See **FIGURE 24 and 25**) device may be required. If this is the case, the In some cases a wireless version of the shutoff available and can plug into the electric shutoff.



Reset Stove

- The electric stove shutoff unit may be reset by locating the circuit breaker supplying power to the stove and turning it off and then back on, or
- Momentarily unplugging the shutoff from the wall outlet and plugging it back in.

NOTE: Method two (2) requires the stove circuit breaker to be in the "ON" position. Method one (1) is preferable since the stove does not need to be moved.



GAS SHUTOFF (P/N G316-A)

The Gas Shutoff Assembly G316-A is the shutoff supplied with the Guardian G600-B system when shutoff include the following: protecting a gas stove. Features provided with this

- It is designed with a "Fail Safe Mode" consisting of a Normally Closed (N/C) valve that is energized continually. <u>Loss of power</u> or <u>activation</u> due to a fire will close the valve, shutting off "gas flow" and "electrical power" to the standard Interconnect Cable will be
- provided or an optional "Wireles Transmitter/Receiver" is available upon request An extra set of dry contacts for switchin for switching "Wireless
- external devices during system activation are provided via the optional Interface Enclosure Assembly (PM G317-A)
 The shuloif also has a manual "power reseff feature to eliminate any possibility of an automatic reservactivation of the valve occurring after a fire or loss of power.

FIGURE 15

INSTALLATION OF GAS STOVE SHUTOFF

NOTE

- Gas stove shutoff must be installed within the same room as the central processing unit control board (Part #G602) for proper unit operation.

 Turn "OFF" electric power and gas to the
- stove prior to installation.

VALVE INSTALLATION

It is suggested that a licensed plumber familiar with local and state codes install the gas valve (PN # 6316-1) on the incoming service line to the stove. Adhere to manufacturers installation and maintenance instructions.

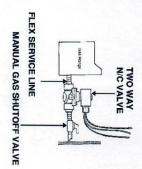
Wiring must comply with local and national electrical

The solernoid valve is designed for a continuous duty cycle. When the solernoid valve is energized for a long period, the enclosure becomes hot and can be touched by hand only for an instant. This is a safe operating temperature.

Normally, the valve is installed between the gas lines manual shutoff and the flexible service line from the stove. Be sure that the manual valve is closed prior to installation of valve. (See FIGURE 15)

NOTE: The gas valve has an "in" and "out" orientation. The installer must make certain that the valve is installed correctly.

the stove back for regular cooking conditions. Install the "Gas Shutoff Control Box" before relocating



GAS SHUTOFF CONTROL BOX INSTALLATION

- Locate installation. required tools and hardware for
- if stove is not unplugged, remove the plug from the outlet

6

Control Box

If interconnect Cable is used, route the cable from Gas Shutoff Control Box to the Main CPU board. Plug the interconnect cable into the "SHUT-OFF" connector of the Main CPU board.

(See FIGURE 3 page 5)

Connect the interconnect cable or Optional Wireless Receiver Board into the Gas Shutoff

FIGURE 17

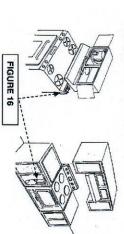
Ņ

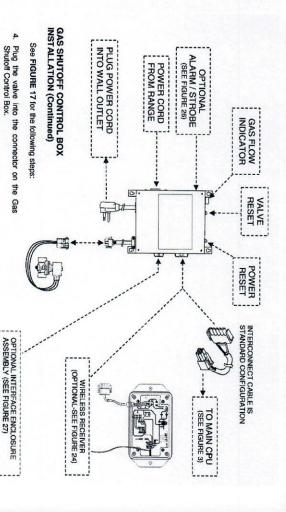
3 stove or in an adjoining cabinet for installation of the Gas Shuteff Conftrol Box (Part # G316-2). (See FIGURE 16) Consider accessibility to activate the manual reset. From the Gas Shutoff Control Box route the cables to gas valve and power cord to wall outlet. Determine the optimal location either behind the

adequate length prior to installation of the Gas Shutoff Control Box.

WIRELESS GAS SHUTOFF

Plug the power cord from the stove into the Gas Shutoff Control Box and then the power cord for the Gas Shutoff Box into the wall outlet.





Resetting Gas Shutoff Assembly

Turn power "ON" to the stove

CAUTION: "GAS WILL BE FLOWING TO THE STOVE WHEN PERFORMING THE NEXT

The "Gas Flow" indicator light should be lit. If not, push the "Power Reset" switch (first) and then the "Valve Reset" switch (second) to arm the control box.

occurs, it shutoff is

version, the standard interconnect cable replaced with the Wireless Tx/Rx Assembly.

ß.

To convert the standard shutoff to a wireless

some cases a wireless version or the shuton device may be required. If this is the case, the Wireless TV/Rx Assembly is required to shut off the stove. (See FIGURE 24 and 25)	the Wireless Lx/Rx. Either interconnect option is available and can plug into the gas shutoff. In	The interconnect socket on the shutoff is compatible with both the interconnect cable and	replaced with the Wireless Tx/Rx Assembly.
		must be reset.	activated or an interruption in power of

SCALE N/A	SIZE	
N/A	DWG NO	
SHEET	DWG	
SHEET 11 OF 11		
11	REV	