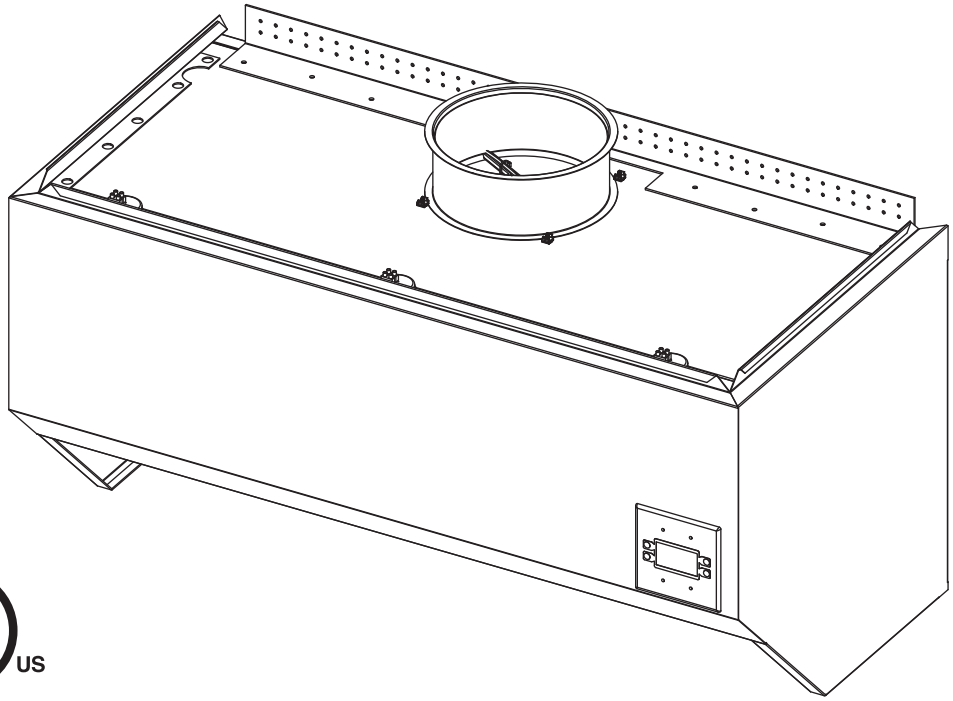
Wall Residential Hoods

Installation, Operation, and Maintenance Manual



RECEIVING AND INSPECTION

Check for any signs of damage upon receipt, and if found, report it immediately to the carrier. Check that all items are accounted for and free of damage.

WARNING!!

Installation of this package should only be performed by a qualified professional who has read and understands these instructions and is familiar with proper safety precautions. Improper installation poses serious risk of injury due to electric shock, contact with rotating equipment, and other potential hazards. Read this manual thoroughly before installing or servicing this equipment. ALWAYS disconnect power prior to working on electrical equipment.

Save these instructions. This document is the property of the owner of this equipment and is required for future maintenance. Leave this document with the owner when installation or service is complete.

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WARRANTY

This equipment is warranted to be free from defects in materials and workmanship, under normal use and service, for a period of 2-years from date of shipment. This warranty shall not apply if:

1. The equipment is not installed by a qualified installer per the MANUFACTURER'S installation instructions shipped with the product.
2. The equipment is not installed in accordance with Federal, State, and Local codes and regulations.
3. The equipment is misused or neglected, or not maintained per the MANUFACTURER'S maintenance instructions.
4. The equipment is not installed and operated within the limitations set forth in this manual.
5. The invoice is not paid within the terms of the sales agreement.

The MANUFACTURER shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 2-year warranty period, upon examination by the MANUFACTURER, such part will be repaired or replaced by MANUFACTURER at no charge. The BUYER shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without MANUFACTURER'S prior authorization, and all returned equipment shall be shipped by the BUYER, freight prepaid to a destination determined by the MANUFACTURER.

Listings

Residential Hoods are ETL-listed to standard UL 507 when installed in accordance with these installation instructions.

Residential CORE Fire Systems are ETL-listed to standard UL 300A when installed in accordance with these installation instructions.

The Safety Control Board is ETL-listed to standard UL 60730-1, UL 60730-2-9, CSA E60730-1, CSA E60730-2-9.

Safety Instructions

WARNING – TO REDUCE THE RISK OF A RANGE TOP GREASE FIRE:

1. Never leave surface units unattended at high settings. Boil-overs cause smoking and greasy spillovers that may ignite. Heat oils slowly on low or medium settings.
2. Always turn hood ON when cooking at high heat or when flambeing food.
3. Clean ventilating fans frequently. Grease should not be allowed to accumulate on fan or filter.
4. Use proper pan size. Always use cookware appropriate for the size of the surface element.

WARNING – TO REDUCE THE RISK OF INJURY TO PERSONS IN THE EVENT OF A RANGE TOP GREASE FIRE, OBSERVE THE FOLLOWING:

1. SMOTHER FLAMES with a close-fitting lid, cookie sheet, or metal tray, then turn off the burner. BE CAREFUL TO PREVENT BURNS. If the flames do not go out immediately, EVACUATE AND CALL THE FIRE DEPARTMENT.
2. NEVER PICK UP A FLAMING PAN – You may be burned.
3. DO NOT USE WATER, including wet dishcloths or towels – a violent steam explosion will result.
4. Use an extinguisher ONLY if:
   - You know you have a Class ABC extinguisher, and you already know how to operate it.
   - The fire is small and contained in the area where it started.
   - The fire department is being called.
   - You can fight the fire with your back to an exit.

Hood Overview

This hood is equipped with features such as a built-in modulating fan, hood lights, and an electronic display (HMI). A wrapper assembly is available as an accessory item.

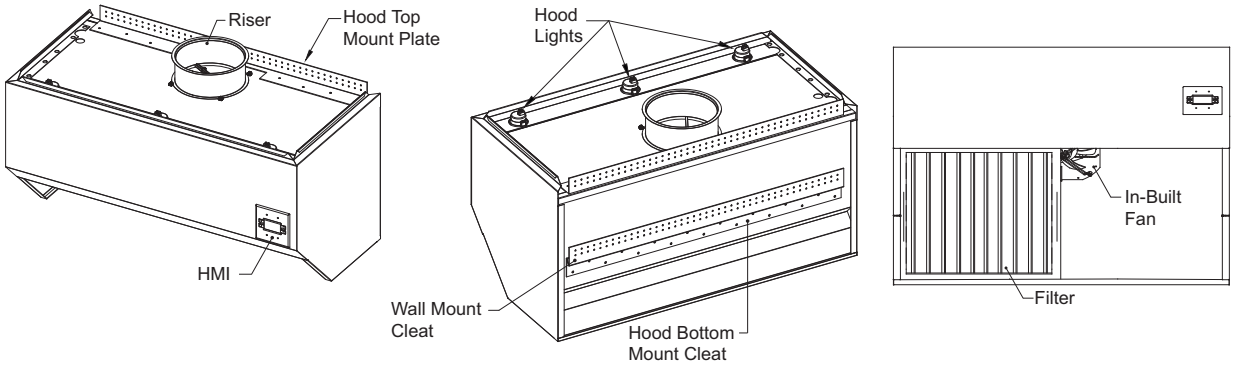
Hood comes with a factory installed 10” round, 4” tall flanged riser.

Size 30”/36” hoods are equipped with 2 lights. Size 48” hoods are equipped with 3 lights. Size 60”/72” hoods are equipped with 4 lights.

Always install an Uninterruptible Power Supply (UPS), purchased separately, when installing the hood. This will allow the hood to operate in the event of a power outage.

An optional 10” round backdraft damper is available for the hood. The backdraft damper must be installed in the duct run. Slide the backdraft damper into the 10” round riser. Use sheet metal screws to secure the backdraft damper to riser.

Figure 1 - Hood Overview



Specifications

Table 1 - Specifications

Description	WRH-30	WRH-36	WRH-48	WRH-60	WRH-72
Hood Length	30”	36”	48”	60”	72”
Max/Min CFM	800/250				
Electrical	120 Volt – 1 Phase – 60 Hz – MCA 15 Amps – MOCP 15 Amps				
Duct Diameter	10 in.				
Number of LED Lights	2	2	3	4	4
Filter Type	Captrate Solo Filter or Standard Baffle				
Number of Filters	1	2	2	3	4
Decibels	71 dB @ 790 CFM				
Hood Weight	125 lbs.	135 lbs.	155 lbs.	175 lbs.	195 lbs.
Depth	24 in.				

NOTE: Only for use with residential appliances.

1. Ensure the application is within the specified constraints of the hood.
2. Verify the location you are installing the hood meets proper clearances.
3. Failure to use specified filters will void warranty.
4. Heat generated by the electric appliance must be included in HVAC calculations.

Light Bulb Replacement

Order part number LED-PL35-DIM for replacement bulbs.

INSTALLATION

It is imperative that this unit is installed and operated with the designed airflow, filters, and construction in accordance with this manual.

WARNING: IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE, OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY, OR DEATH. READ THE INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.

WARNING: TO REDUCE THE RISK OF FIRE, USE ONLY METAL DUCTWORK.

Site Preparation

1. For indoor use only.
2. Provide clearance around installation site to safely rig and lift equipment into its final position. Consider general service and installation space when locating unit.
3. Thoroughly review the plans and specifications of the project.
4. Determine the exact location in which the cooking hood will be installed and verify that there are no interferences that will prevent proper installation.
5. Determine if adequate room is available to install the hood and all ductwork with proper clearances from combustible material.
6. Always make sure to provide access to the components on top of the hood. This will allow for service and accessibility when required.

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, DO NOT USE REPLACEMENT PARTS THAT HAVE NOT BEEN RECOMMENDED BY THE MANUFACTURER.

FOLLOW SMACNA GUIDELINES AND RECOMMENDATIONS FOR HANGING AND INSTALLATION OF HOODS.

CAUTION!

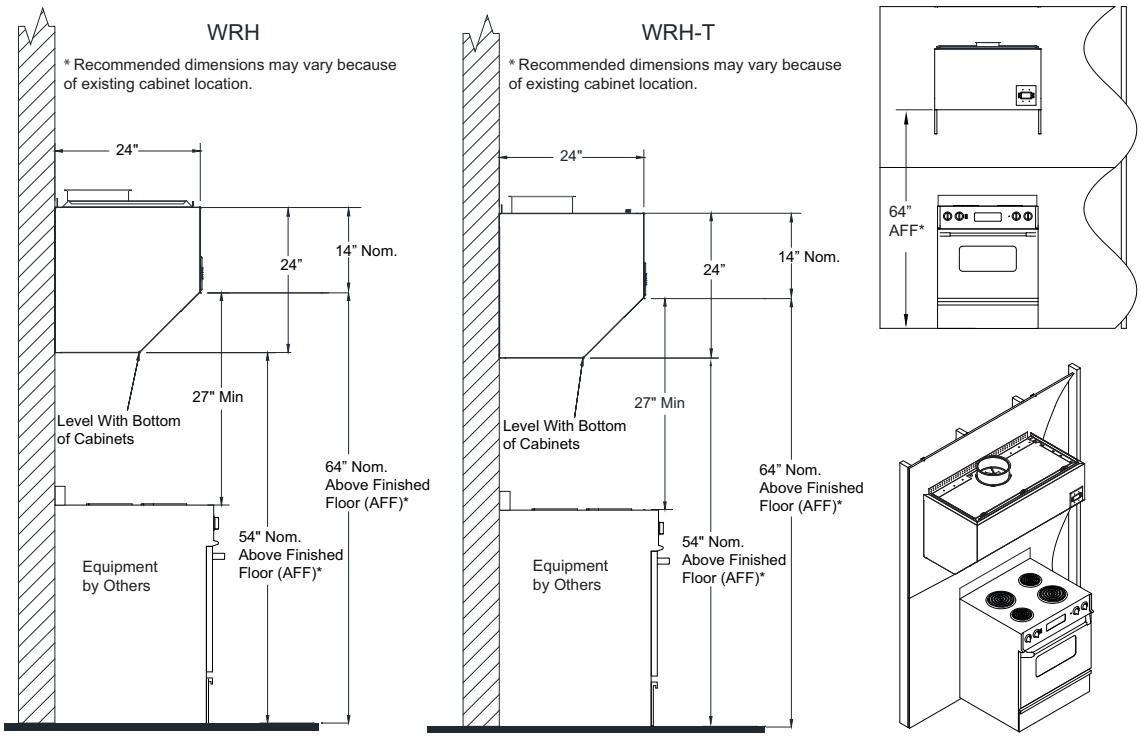
TO REDUCE THE RISK OF FIRE AND ELECTRIC SHOCK, INSTALL THIS HOOD ONLY WITH INTEGRAL BLOWER SHIPPED WITH HOOD.

Hood Installation

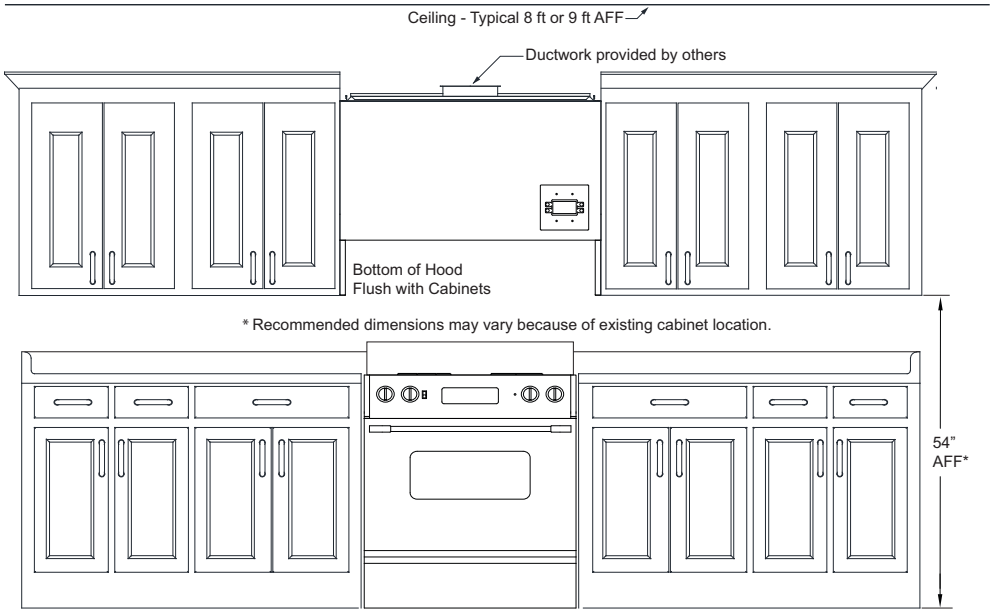
The optional wrapper accessory is not compatible with WRH-T hoods. If a wrapper is required, you must use a WRH hood. For WRH-T hoods, install a facade to hide open areas of the hood. **Kitchen wall cabinet heights may vary.** The recommended hood distance from the floor to the bottom of the hood is 64" Above Finished Floor (AFF). If the recommended hood distance cannot be met, verify the bottom of the hood is flush with the bottom of the cabinets.

NOTE: Hoods installed with a UL300 Fire System, the hanging height of hood should be at least 67" AFF.

Figure 2 - Hood Installation Details

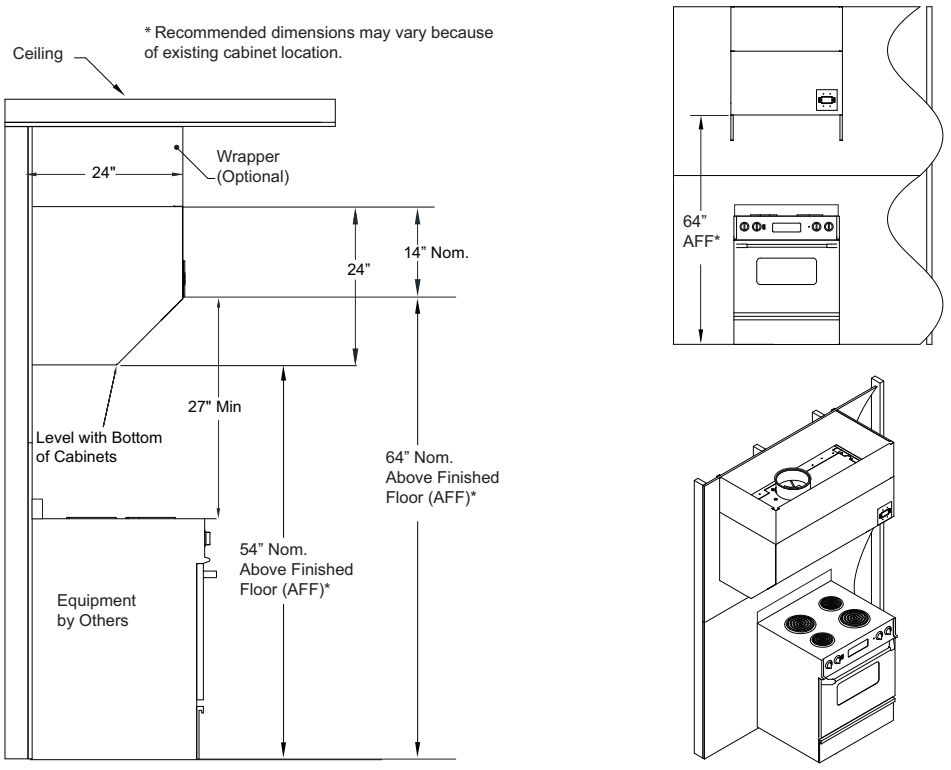


Hood Installation with Cabinets

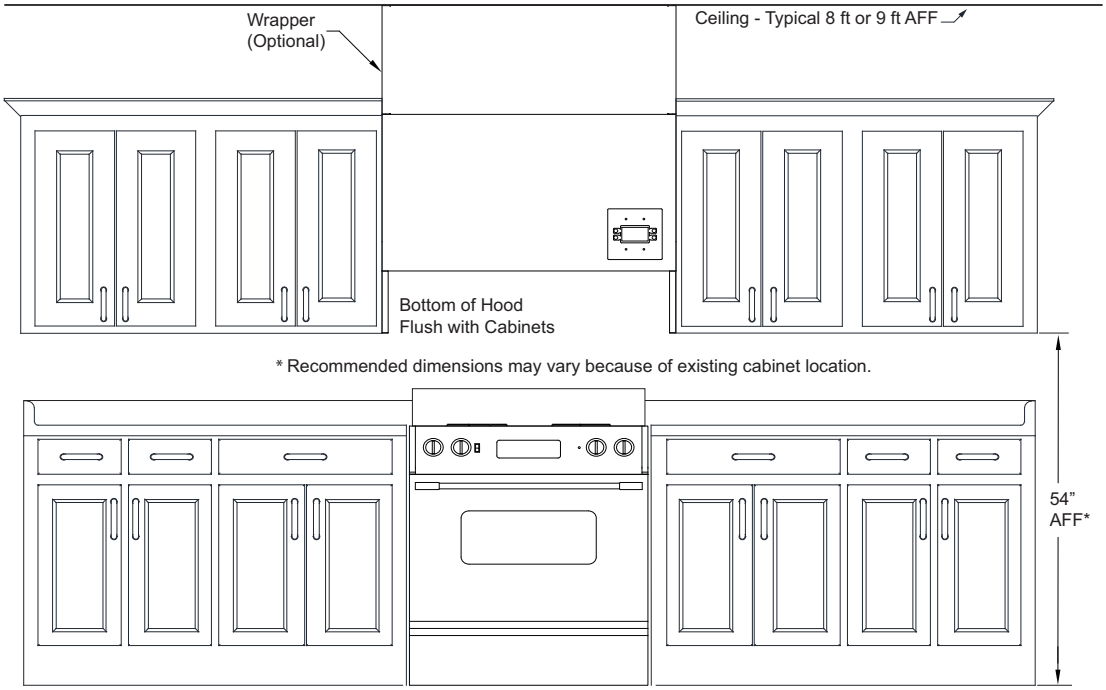


The recommended hood distance from the floor to the bottom of the hood is 64" Above Finished Floor (AFF).

Figure 3 - Standard Wrapper Installation Details

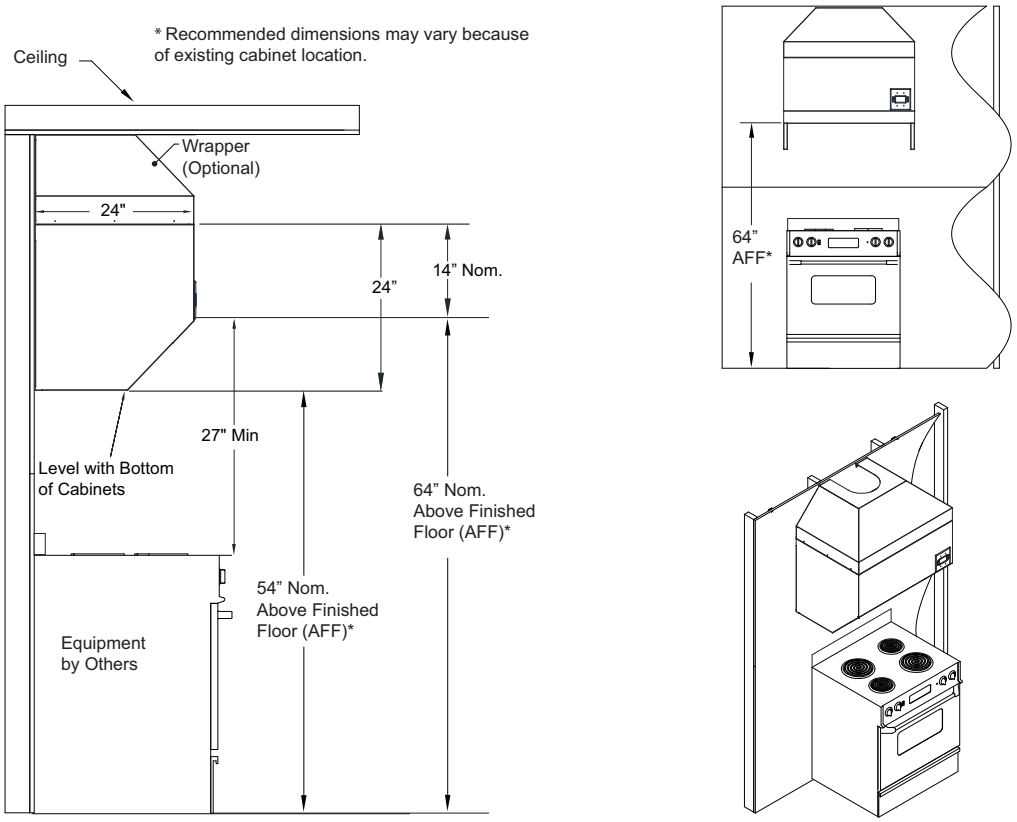


Hood and Standard Wrapper Installation with Cabinets

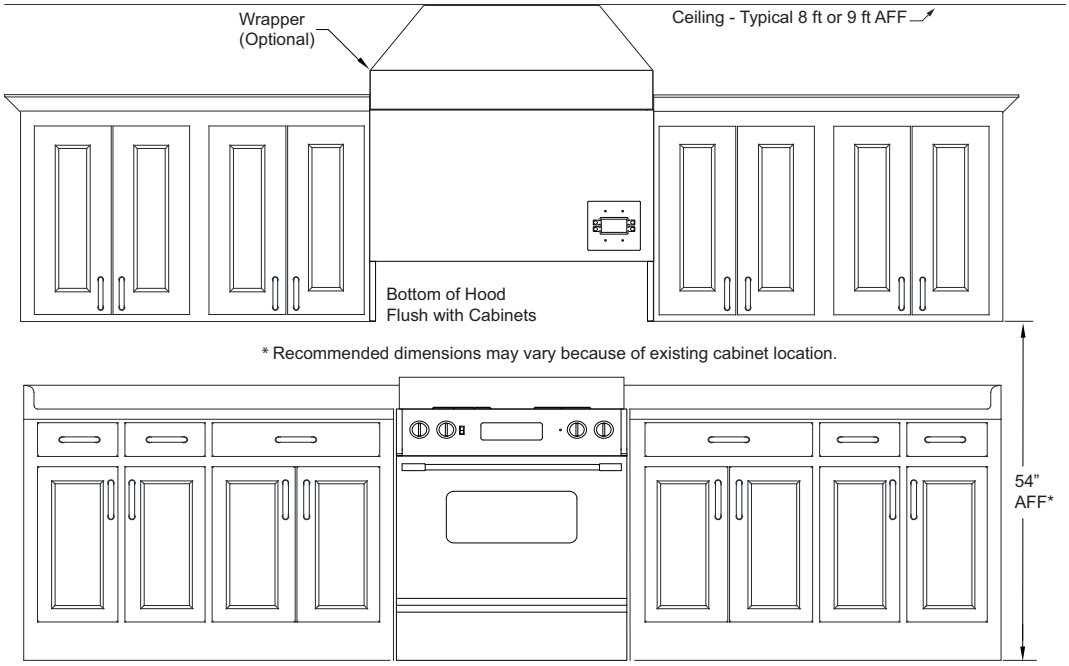


The recommended hood distance from the floor to the bottom of the hood is 64" Above Finished Floor (AFF).

Figure 4 - Decorative Wrapper Installation Details



Hood and Decorative Wrapper Installation with Cabinets



Wall Mounting Cleat

Locate where the wall mount cleat will be installed on the wall. Refer to **Table 2** for hardware required to secure wall mount cleat to type of wall construction. **Kitchen wall cabinet heights may vary. Place the wall cleat so the distance from the top of the cleat to the bottom of the cabinets is 14-1/4”**. **Verify the bottom of the hood will be flush to the bottom of the wall cabinets.** Secure the cleat to the wall with at least 2 screws per column of holes every 24”. The cleat must be installed in the orientation as shown in **Figure 5** Detail A.

If installing the cleat into studs, the manufacturer recommends the following: Verify stud location and spacing. If a stud is not available in a location, use toggle bolts to secure cleat to the wall. For hood lengths 30” and 36”, the manufacturer recommends to secure the cleat to a **minimum of 2 wall studs**. For hood lengths 48” to 72”, the manufacturer recommends to secure the cleat to a **minimum of 3 wall studs**.

Figure 5 - Installing Wall Mount Cleat

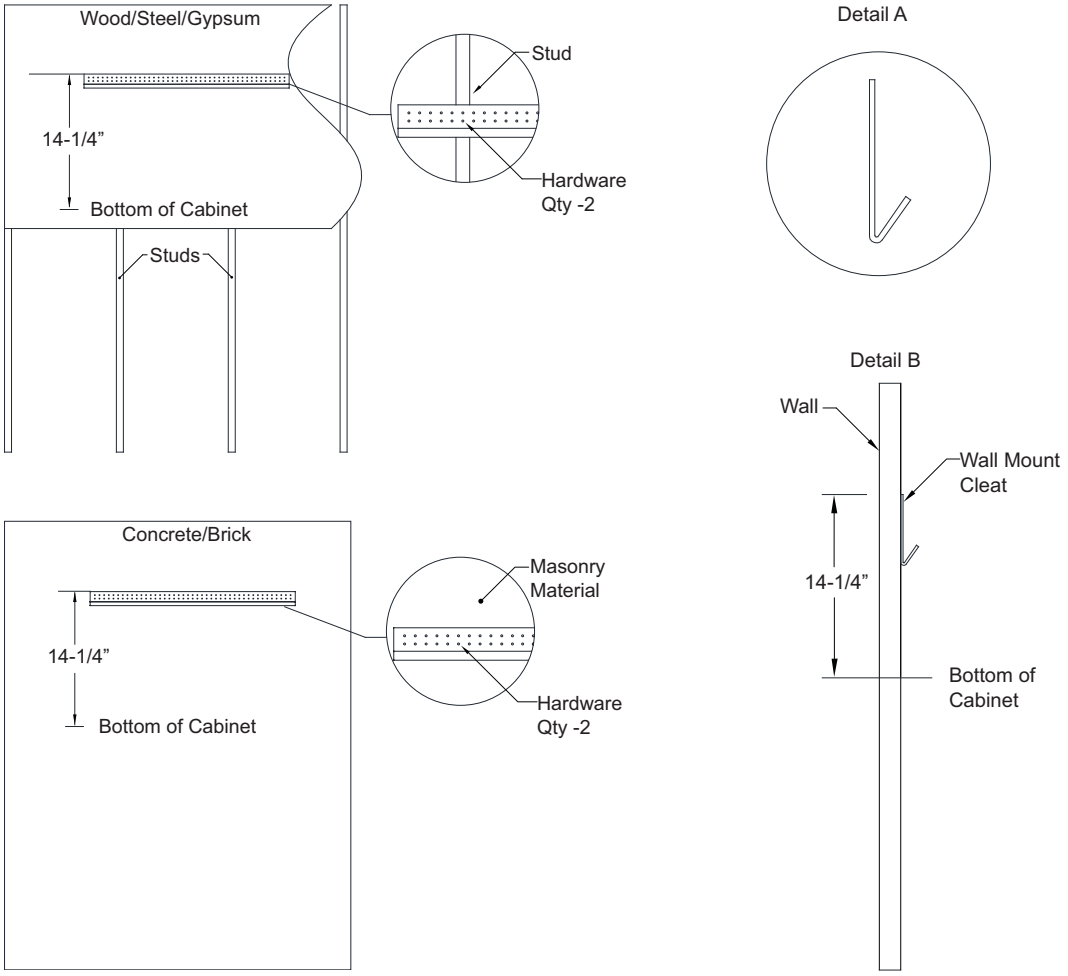


Table 2 - WRH Installation Kit

Material	WRH Installation Kit includes:
Wood	90252A234 - Quantity 16
Brick/Concrete	90161A102 - Quantity 16
Steel	90064A464 - Quantity 16
Toggle bolts are included with kit for instances where a stud is not found. Refer to above for minimum stud requirements for hood lengths.	

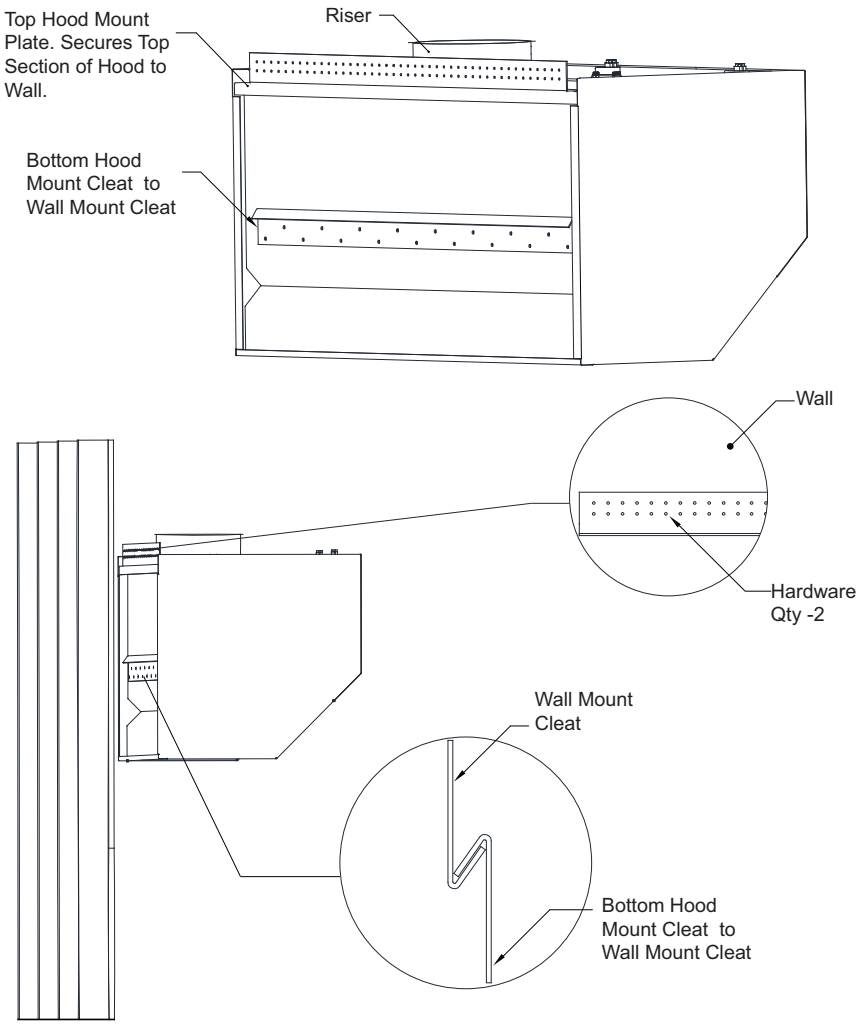
Installing Hood onto Wall

When installing hood to the wall, make sure the bottom hood mount cleat interlocks with the wall mount cleat. Refer to **Table 2** for hardware to secure the top hood mount cleat to the wall. Secure the top hood mount cleat to the wall with at least 2 screws per column of holes every 24”.

If installing the top hood mount cleat into studs, the manufacturer recommends the following: Verify stud location and spacing. If a stud is not available in a location, use toggle bolts to secure cleat to the wall. For hood lengths 30” and 36”, the manufacturer recommends to secure the cleat to **minimum 2 wall studs**. For hood lengths 48” to 72”, the manufacturer recommends to secure the cleat to **minimum 3 wall studs**.

After installation of the hood is complete, connect ductwork to the hood riser.

Figure 6 - Hood to Wall

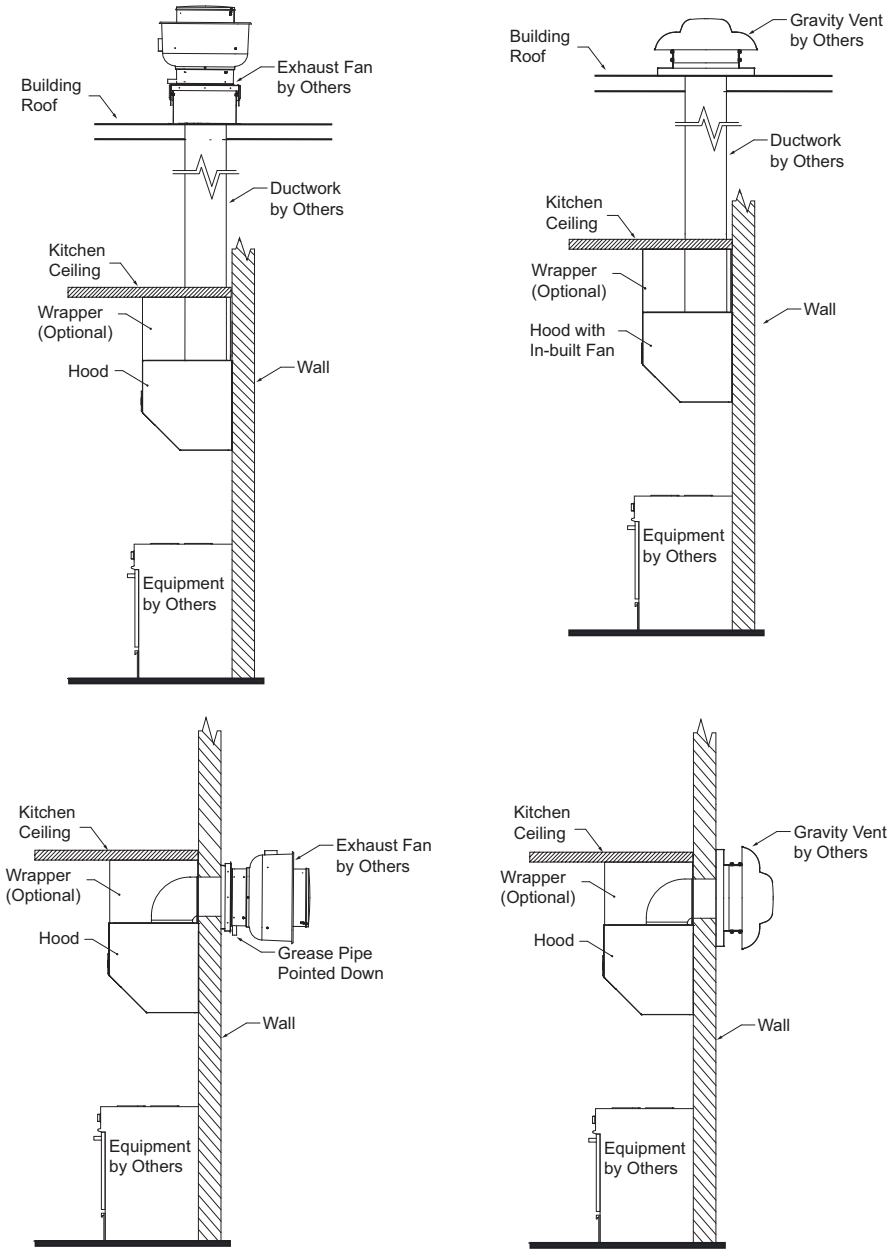


Ductwork Installation

Ductwork is required to carry smoke and exhaust away from the appliances and space. Duct should be constructed of sheet metal (26 gauge minimum) that is galvanized steel, stainless steel, aluminum or copper. Ducts must have a smooth inner wall and must be airtight. Keep transitions and turns in ductwork minimal to prevent system effect, this will drastically increase the static pressure and reduce airflow. Ductwork must be independent of other exhaust ducts. Verify local code and jurisdiction requirements for what type of ductwork must be installed. Hood comes with a factory installed 10” round, 4” tall flanged riser. Ductwork is to be provided by others in the field. A 10” round backdraft damper is shipped with the hood. The backdraft damper must be installed in the duct run.

Ductwork must be installed by a qualified installation technician. Always follow manufacturer’s installation instructions and recommendations. if instructions are not provided, follow SMACNA guides and recommendations for ductwork construction.

Figure 7 - Ductwork Installation Details



Electrical

WARNING!

Disconnect power before installing or servicing unit. High voltage electrical input is needed for this equipment. A qualified electrician should perform this work.

Before connecting power to the unit, read and understand the entire section of this document. As-built wiring diagrams are furnished with each control.

Electrical wiring and connections must be made in accordance with local ordinances and the National Electric Code, ANSI/NFPA 70. Verify the voltage and phase of the power supply, and the wire amperage capacity is in accordance with the unit nameplate.

1. Always **disconnect power** before working on or near this equipment. Lock and tag the disconnect switch or breaker to prevent accidental power-up.
2. An electrical cord containing the line voltage power wiring is shipped with every unit.
3. A dedicated branch circuit should supply the motor circuit with short circuit protection according to the National Electric Code. This dedicated branch should be run to the junction box mentioned above.
4. Verify that the power source is compatible with the requirements of your equipment. The fan nameplate identifies the **proper phase and voltage** of the motor.
5. Before connecting the hood to the building's power source, verify that the power line wiring is de-energized.
6. Secure the power cable to prevent contact with sharp objects.
7. Do not kink power cable and never allow the cable to contact oil, grease, hot surfaces or chemicals.
8. If any of the original wire supplied with the unit must be replaced, it must be replaced with type THHN wire or equivalent.

NOTE: To Reduce The Risk Of Fire Or Electric Shock, Do Not Use This Fan With Any Solid-State Speed Control Device.

Table 3 - Copper Wire Ampacity

Wire Size AWG	Maximum Amps	Wire Size AWG	Maximum Amps	Wire Size AWG	Maximum Amps
14	15	8	50	3	100
12	20	6	65	2	115
10	30	4	85	1	130

Grounding Instructions

WARNING

IMPROPER GROUNDING CAN RESULT IN A RISK OF ELECTRIC SHOCK.

This appliance must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This appliance is equipped with a cord having a grounding wire with a grounding plug. The plug must be plugged into an outlet that is properly installed and grounded.

Consult a qualified electrician if the grounding instructions are not completely understood, or if doubt exists as to whether the appliance is properly grounded.

Do not use an extension cord. If the power supply cord is too short, have a qualified electrician install an outlet near the hood.

HMI Operation

NOTE: Buttons change functions during certain options. Verify the screen, and buttons when adjusting the settings.

The HMI has 4 buttons; a function is displayed adjacent to each button on the LCD. Functions will change depending on the status of the panel. If no text is adjacent to the button, it does not have a function. A shaded box notifies the user the setting is ON, an unshaded box notifies the user the setting is OFF. Access configurations by pressing the top two buttons on the HMI.

Residential Fire System - Set the type of fire system installed on the hood. Go to: **Board Settings > Factory Options > Residential Fire System > CORE/Ansul**.

Residential Hood Option - If this option is not enabled to Yes, go to **Board Settings > Factory Options > Residential Hood Option > Yes/No**.

Residential Hood Fire Set Point - When the hood thermistor exceeds set point (default 150°F), the hood will enter a FIRE state. Once the temperature drops below set point, press “Reset” on the HMI. To adjust setpoint, go to: **Board Settings > Factory Options > Residential Fire Set Point > (150-200°F)**.

NFPA 101 Compliant - For more information, refer to **“NFPA 101 Option” on page 18**.

Residential Max Air Mode - When the hood is in static mode and max air is set to On, the “Max Air” button is displayed. When pressed, the fan speed will go to high speed for the duration of max air timer. High speed is set under “Motor Control/Exh ECM”. “Max Air Time” is set under “Fan One Config.” Go to: **Board Settings > Factory Options > Residential Max Air Mode > On/Off**.

Residential Fan Polarity - Enables the ability to inverse the PWM output from the board to the residential hood fan. Set at the factory based on fan model.

Is Dynamic? - When the fan zone is set to dynamic and the motor is wired to a VFD/PWM signal, the fan will modulate based on temperature. When the zone is set to static (Is Dynamic? set to No), the VFD/PWM will only operate at one speed on activation. Go to **Board Settings > Factory Options > Fan Zone Config > Select Fan Zone 1/2 > Is Dynamic? > Yes/No**.

Is Gas Valved Enable? - For more information, refer to **“NFPA 101 Option” on page 18**.

Light Brightness - For more information, refer to **“Lights Button” on page 16**.

For more detailed information on HMI navigation and settings, refer to the provided **Demand Control Ventilation** manual. **ONLY AN AUTHORIZED SERVICE TECHNICIAN SHOULD MAKE ADJUSTMENTS WITHIN THE HMI.**

Scan for Demand Control Ventilation Manual

Last Fire Info

When viewing information from the “Last Fire Info” screen, the user may see the following:

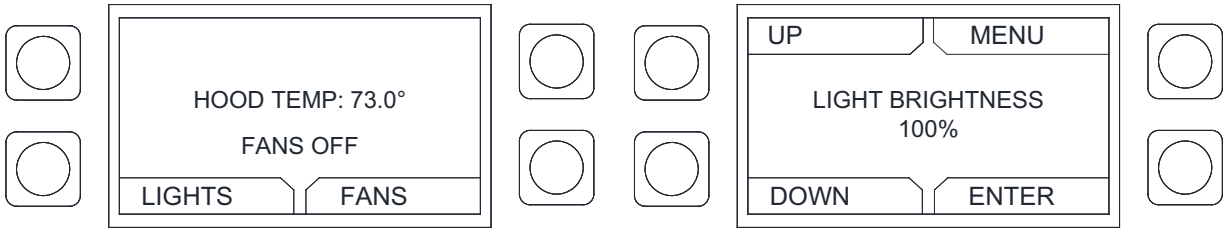
- Date of when the fire activation occurred.
- Time of when the fire activation occurred.
- If the activation occurred through manual activation or a firestat.
- If the system was in Test or Armed mode when the activation occurred.
- Up to 32 temperature sensor readings are displayed on the ECPM03 board. If a temperature sensor is not connected, N/A will be displayed.

To cycle through the menus, press up once to view activation and mode status. Press up again to view temperature readings.

Lights Button

Press the **LIGHTS** button to energize the hood lights. If the lights do not come on, check the lighting circuit. To adjust the dimming control, press and hold the **LIGHTS** button for 3 seconds. Use the **UP** and **Down** buttons to adjust the brightness. The setting range is 10-100% and adjusts in increments of 5, default is 100%. If the lights are not operating when set at a low percentage, try adjusting to a higher percentage before troubleshooting the system.

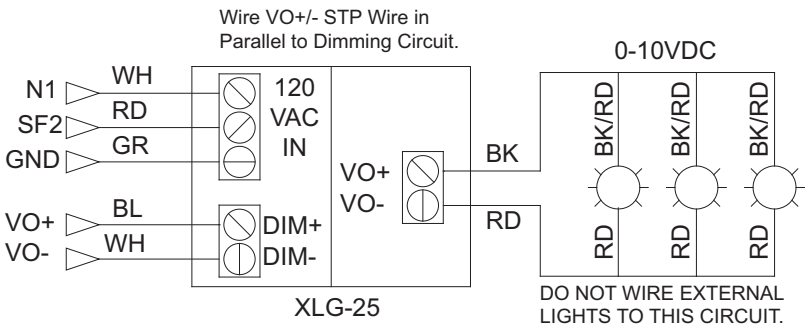
Figure 8 - HMI Lights Setting



Lighting Circuit Overview

The electrical system uses a driver to convert 120V AC to low voltage for the dimming light circuit. Lights are wired in parallel. **DO NOT WIRE EXTERNAL LIGHTS TO THIS CIRCUIT**.

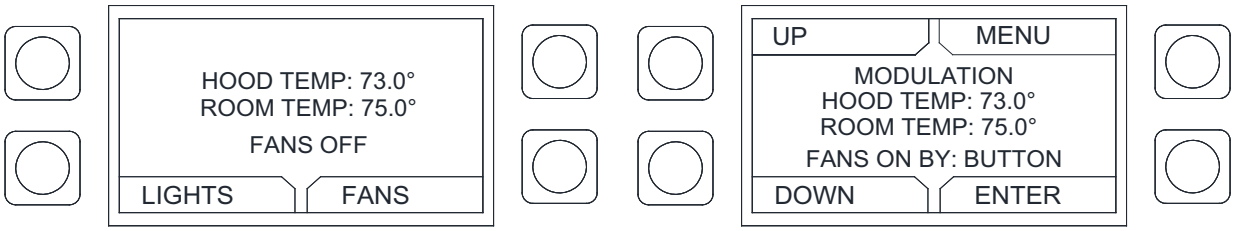
Figure 9 - Dimming Light Circuit



Fans Button

Press the **FANS** button to energize the fans. To adjust the modulation of the fans, press and hold the **FANS** button for 3 seconds. Use the **UP** and **Down** buttons to adjust modulation. The setting range is 5-100% and adjusts in increments of 5, default is 100%.

Figure 10 - HMI Fans Setting



Fan Circuit Overview

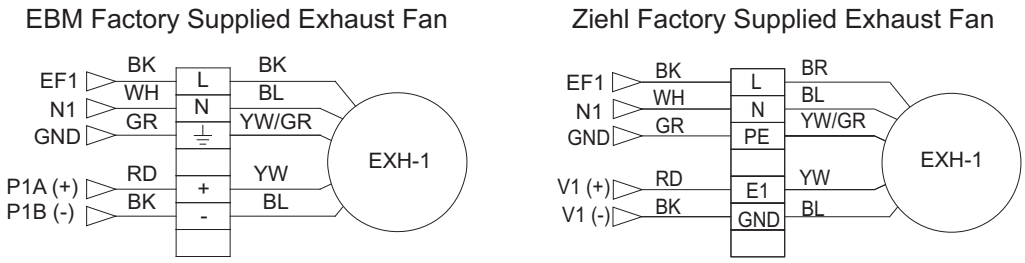
For non-integral hood fans, the wiring connection must be completed in the field. EF1 is the 120V AC output, and P1A(+)/P1B(-) is the PWM signal. Refer to electrical schematics for wiring details.

NOTE: If a non-integral fan motor's FLA exceeds 7 amps, provide a separate power feed to the fan motor.

If the hood is equipped with an integral exhaust fan from the factory, refer to **Figure 11** for connections.

NOTE: If a Ziehl exhaust fan is equipped, a PWM 0-10V board is factory-wired and uses V1(+)/V1(-) for the fan signal.

Figure 11 - Exhaust Fan Wiring



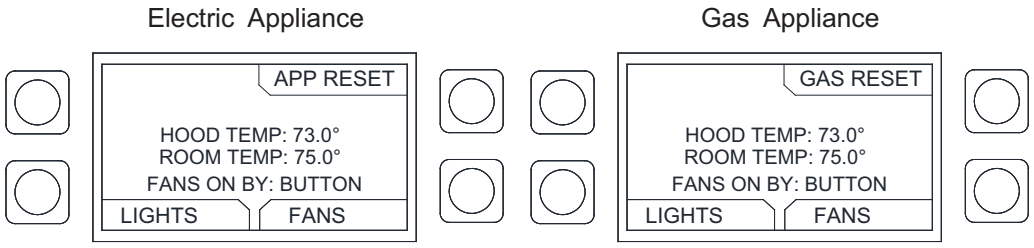
NFPA 101 Option

NOTE: Hoods shipped without a fire system, the end-user must field install a UL300A/UL300 listed fire system to be NFPA 101 compliant.

NFPA requires that a fire system covers a residential hood. Check settings, go to **Board Settings > Factory Options > NFPA 101 Compliant > Yes**. If set to No, the residential hood will not be compliant.

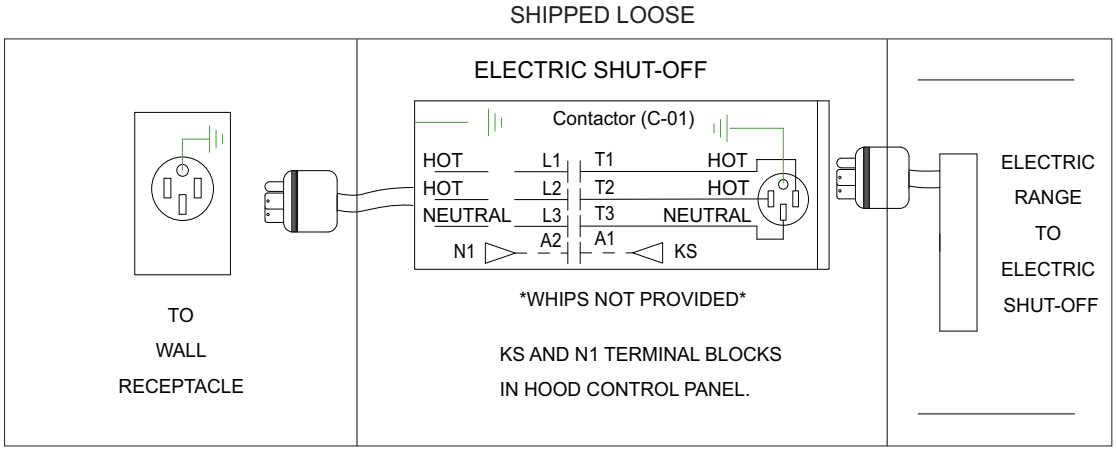
The NFPA 101 option restricts the fan speed to a minimum of 65%. The HMI will display an equipment reset function. If the hood is covering an electric appliance, set “Is Gas Valve Enabled?” to no. The HMI will display “App Reset.” If the hood is covering a gas appliance, set “Is Gas Valve Enabled?” to Yes. Go to **Board Settings > Fire Options > Is Gas Valve Enabled? > Yes/No**. Gas/Electric appliances will shut off after 2-hours of operation. The password to reset the appliance is 1000.

Figure 12 - Appliance Reset



An electric shutoff box will ship loose when NFPA 101 option is selected. Electric range should be connected to this box and wired as per **Figure 13**.

Figure 13 - Electric Shut-off



Residential CORE Fire System

The Residential CORE Fire System may activate in the following scenarios:

- Temperature in hood area rises above the set point of 150°F.
- Pressing the push-station activation device.
- If terminal AR1 loses 120V AC at the board.

NOTE: When the system is in Test Mode, the water solenoid will not activate and water will not flow to the nozzles. The Fire Relay will not activate in Test Mode. If the system is in Test Mode for over 15 minutes, a Test Mode Fault will occur.

The Trouble Relay activates when any fault occurs in the system.

NOTE: If the system needs to be placed in test mode, press the top two buttons on the HMI. Scroll to "Test Mode," place to On.

Mechanical

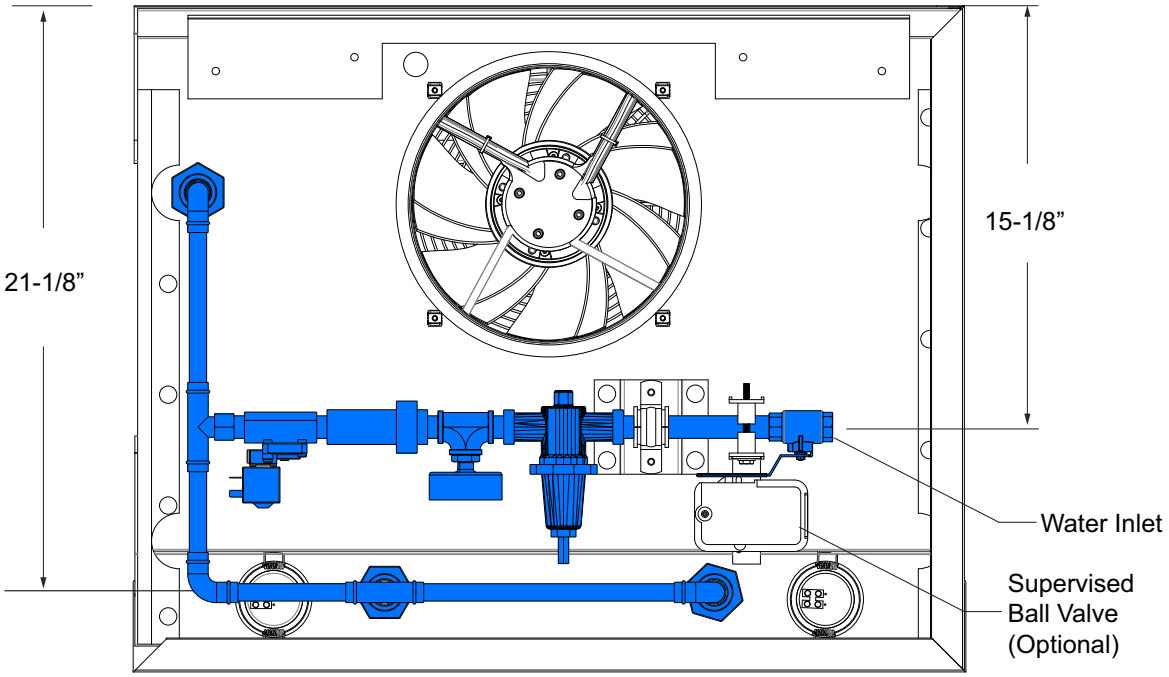
WARNING: APPLY THE APPROPRIATE WATER PRESSURE AND TEMPERATURE TO ALL FITTINGS TO PREVENT LEAKAGE AND COMPONENT FAILURE. SYSTEM MUST BE INSTALLED IN CONDITIONED SPACE BETWEEN 32°F AND 130°F. A 1/2" (OR LARGER) DEDICATED WATER LINE WITH A MONITORED SHUT-OFF VALVE MUST BE CONNECTED TO THE FIRE SYSTEM MANIFOLD INLET. THE PROVIDED BACKDRAFT DAMPER MUST BE INSTALLED IN THE DUCT RUN.

IMPORTANT!
A minimum water operating pressure (while the hood is spraying) must be achieved at the hood, refer to Table 4.

In a fire condition, water will flow through the manifold to the nozzles. **Figure 14** shows the water side of the manifold that is activated during a "fire" condition.

Operating water pressure falls between 20-70 psi when water is spraying. Max water static pressure is 225 psi.

Figure 14 - Residential CORE Fire System



Start-up

WARNING: The use of a torch or flame is strictly prohibited.

Special tools required: AC Voltmeter, Standard Hand Tools, Hand-held heat source.

Jobsite Qualifications - Pre-installation Residential CORE Protection Fire System

1. Verify the source for the Residential CORE water supply (domestic or sprinkler), and determine the pressure drop from the connection at the source to the connection at the Residential CORE manifold inlet.
2. Verify the proper amount of water pressure and flowrate is available for Residential CORE Protection.
3. Verify there is access to the manifold on top of the hood.
4. Verify duct location.

Residential CORE Protection System Start-up Checklist

Action	Completed (Yes/No)	Result
Main Water Line 1/2” or Larger		
Verify No Unmonitored Shut Off Valves are Installed on Main Water Line		
Place System in Test Mode. Test Firestat Actuation Device (push/pull station) System.		
Verify All Gas and Electric Appliances Shut Down		
Verify **FIRE** Flashes on HMI when Fire System Activates		
Audible Alarm Sounds		
Verify FIRE RELAY Does Not Activate		
Verify Trouble Relay Activates		
Reset Remote Manual Actuation Device (push/pull station)		
Verify **FAULT RST** button operates on HMI		
System Activates on Uninterrupted Power Supply (if used)		
Check that the Manual Actuation Device Cover is Installed		
Verify Water Pressure		
Verify Max Water Static Pressure (225 PSI)		
Once testing is complete, turn Test Mode Off.		

Residential CORE Protection System Reset Checklist

Action	Completed (Yes/No)	Result
Ensure Fire is Extinguished		
Reset Remote Manual Actuation Device (if pushed)		
Inspect or Replace All Appliance Nozzles After a Fire		
Inspect All Piping Connections After a Fire		
Inspect All Hood Lights After a Fire		
Inspect All Wiring and Hood Insulation After a fire		
After a fire, full inspection by a certified professional must be conducted prior to restarting the fire system		

Plumbing Connections for Residential CORE Fire System

Field plumbing connections are required for proper Residential CORE fire system hood operation. Residential CORE Fire system can be connected to either a domestic or sprinkler water source. It is recommended that all plumbing connections are sealed with Teflon tape or pipe dope. Use care not to contaminate the interior surfaces of the water lines when plumbing the unit, as small particulate can clog the orifices of the spray nozzle(s).

1. All incoming plumbing connections are connected to the water inlet, refer to **Figure 14**. The water line can be PVC, PEX, copper, or stainless-steel pipe only. Refer to local codes and regulations prior to final installation.
2. The water inlet connection must use an unheated water connection per the minimum and maximum required PSI, refer to **Table 4**. Water pressure may not drop below the minimum recommended PSI while the hood is spraying. Pressure may not rise above 70 PSI when the hood is spraying. If the operating pressure is greater than 70 PSI, a water regulator must be connected. Max water static pressure is 225 PSI.
3. The water connection must be a minimum of 1/2” pipe. Refer to **Table 4** for hood length and pressure requirements.

$$\text{Total Flowrate} = \text{K Factor} \times \text{Pressure}^{0.44}$$

Table 4 - 1/2” Manifold Minimum Operating Pressure Requirements

WRH/WRH-T Hood Model Length (Feet)	Minimum Inlet Operating Water Pressure for Residential CORE (PSI)	Maximum Inlet Operating Water Pressure for Residential CORE (PSI)	Residential CORE Discharge Coefficients (K Factor)
2.5	20	70	1.089
3	20	70	1.089
4	20	70	1.089
5	20	70	1.452
6	20	70	1.452

Residential CORE Total Flood Coverage

The Residential CORE Protection System for appliances depends on proper placement of the fire suppression nozzles. It is important to remember that the nozzles will need an unobstructed path to the cooking surface for proper fire suppression.

NOTE: The Residential CORE fire system can only cover residential appliances.

The 1/2” manifold will be equipped with a strainer if the operating water pressure is below 70 PSI. If the operating water pressure is above 70 PSI, the 1/2” manifold will be equipped with a pressure regulator that has an in-built strainer. Refer to **Figure 15** and **Table 6 on page 23** for system components.

Hazard Zone and Nozzle Placement

The Hazard Zone consists of the cooking surface of each appliance underneath the hood. All appliances outlined in UL300A on **Table 5** are suitable to be covered with the Residential CORE Total Flood System. The lowest and highest cooking surface will determine the height of the fire suppression nozzles. The nozzle height can range between 30 and 48 inches.

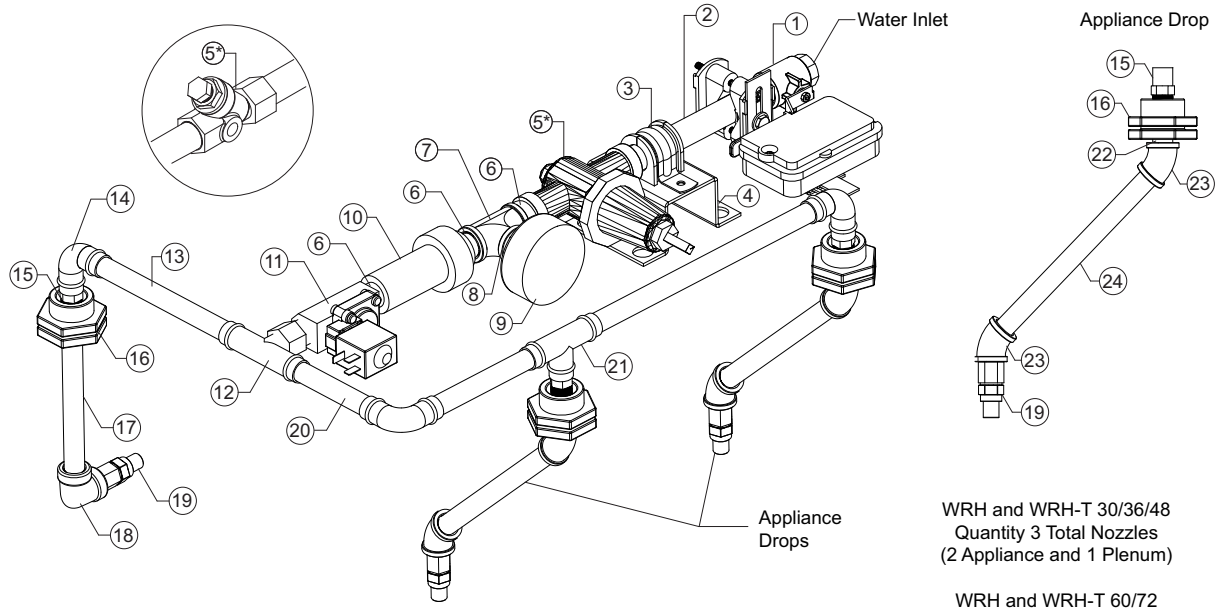
Proper placement of the appliance hazard zone will maximize the performance of the fire system. There are several factors that need to be accounted for when placing the appliances under the fire system, such as the front and side overhang measurements of the hoods with respect to the hazard zone. The common line is a 1/2” copper Pro-Press line typically installed 21-1/8” off the back of the hood and will supply the nozzles.

The nozzles must be no more than 12” away from the end of the hazard zone and the nozzles cannot be spaced further than 24” from each other. The nozzle must be no more than 18” away from the front or back of the hazard zone. The pipe for the nozzle drops cannot be sleeved in stainless steel, but can be made from polished stainless steel or polished chrome-plated black iron. Refer to **“Range Top Protection” on page 24**.

Table 5 - Appliance Coverage

Appliance	Fuel Source	Maximum Depth of Cooking Surface	Maximum Length of Cooking Surface	Maximum Height of Fuel
Cook Range	Gas or Electric	32 inches	Unlimited	N/A

Figure 15 - WRH and WRH-T CORE Fire System



NOTE: Hood lengths 6 feet or larger have qty 3 appliance drops.

Table 6 - Fire System Parts List

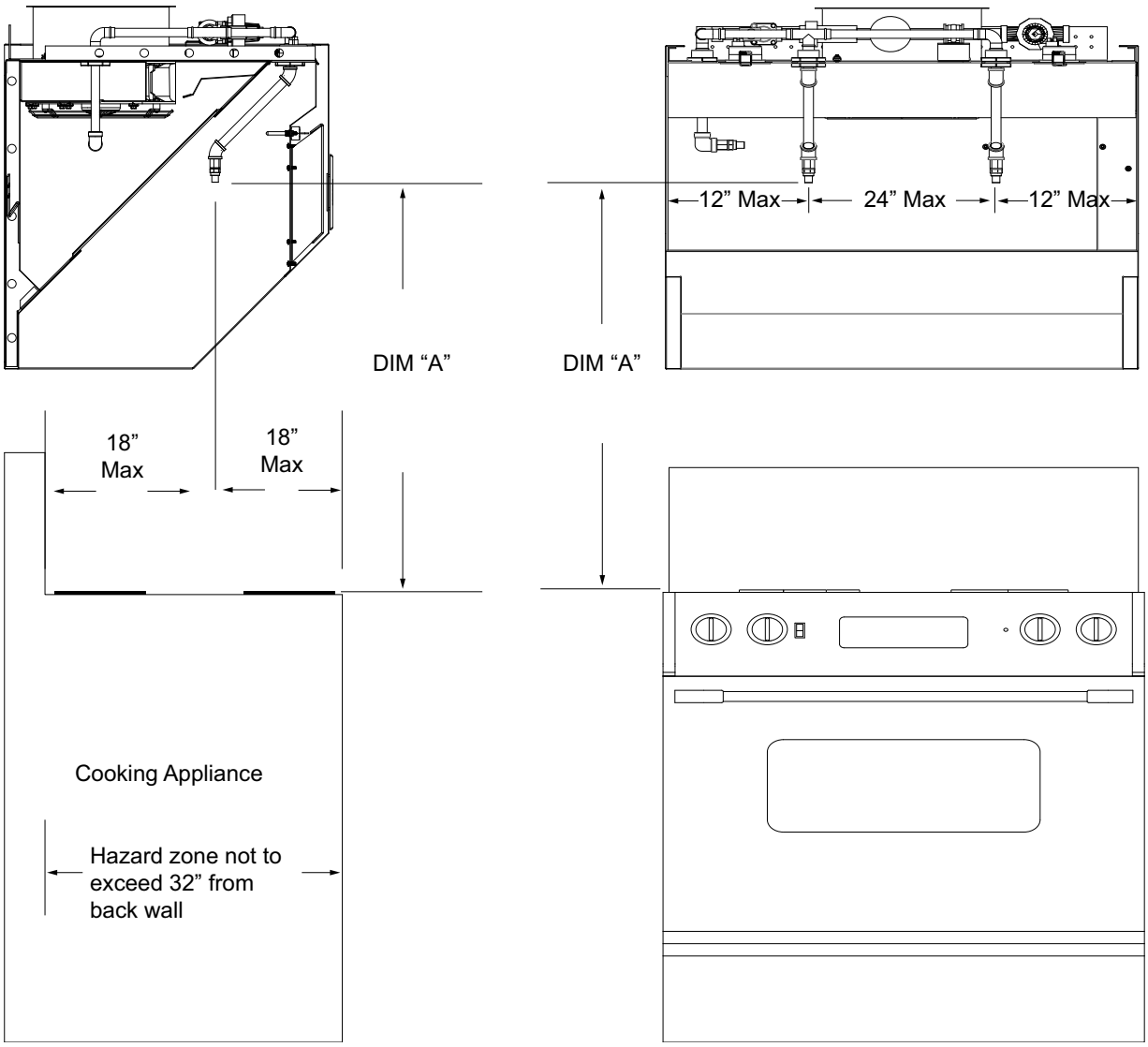
Call Out	Part Number	Description
1	PL-RBVS-1-1/2 KIT	Supervised Ball Valve (optional)
2	4568K184	1/2" NPT Brass Nipple, 8" Long
3	RTU8981T68	7/8" SBR Clamp
4	BD2RSHATCHA	Hat Channel
5*	LFN55BM1-DU	1/2" Watts Pressure Regulator
	1/21THY-LFM20M34-PTI	1/2" Strainer
6	4568K171	1/2" Brass Nipple, 1-1/8" Long
7	4429K253	1/2" Brass Pipe Tee Connector
8	4429K422	1/2" to 1/4" Bushing Adapter
9	AQ2516	Temperature and Pressure Gauge
10	1/2LF7RU2-2	Watts Dual Check Valve
11	L180B333Z610A	1/2" Solenoid
12	79580	1/2" Pro-press X 1/2" NPT F 1/2" Pro-Press Tee
13	UD3025	1/2" Copper Tubing 6.5" Long
14	9055455PC	Pro-Press 1/2" 90
15	9034000CB	1/2" Pro-Press to 3/8" NPT Adapter
16	QSA-3/8	Quick Seal
17	CBI-140	3/8" Chrome Plated Nipple, 5" Long
18	CBI-106	3/8" Chrome Plated 90
19	OL-M (previously 3070-3/8HH-10-SS)	Overlapping Male CORE Nozzle
20	UD3025	1/2" Copper Tubing 4.5" Long
21	9097200PC	1/2" x 1/2" x 1/2" Pro-Press Tee
22	CBI-110	1/2" Chrome Plated Nipple, 1 1/8" Long
23	CBI-102	3/8" Chrome Plated 45
24	CBI-117	Chrome Plated Nipple 3/8" NPT 7" long

Range Top Protection (Gas or Electric)

Range top cooking appliances are available with multiple burner assemblies. **Figure 16** is an illustration showing the position of the hood in relation to the Residential CORE fire system.

Figure 16 - Range Top Protection

Nozzle Height Above Hazard Zone
(DIM “A”) Minimum 30” / Maximum 48”



Gas Shut Off Valves

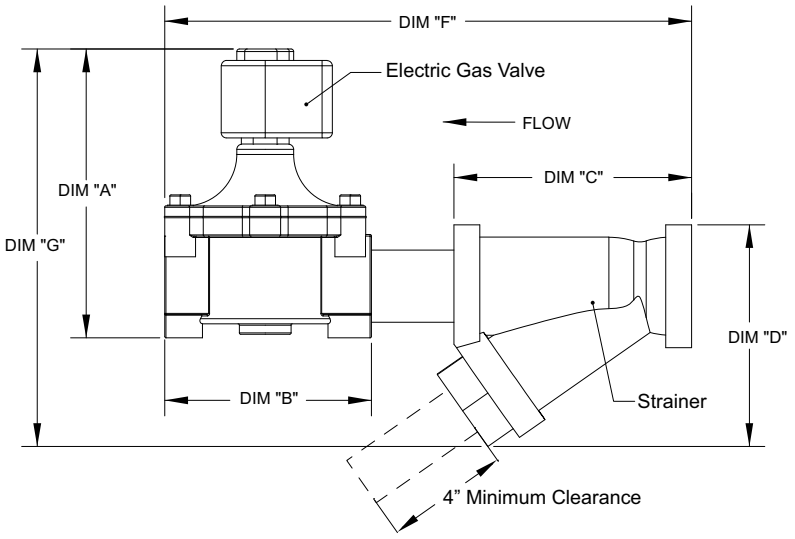
Gas valves (**Figure 17**) are designed to shut off the flow of gas to the kitchen appliances in the event of fire system activation. Electric gas shutoff valves must be installed with an upstream strainer to prevent debris from prohibiting gas valve function. New pipe, properly reamed and cleaned of metal burrs, should be used. Proper care is needed to ensure that the gas flow is in the same direction as indicated on the gas valve and strainer. Do not over-tighten pipe connections. Apply pipe dope to the male threads only. If necessary, install a drip leg in the gas line in accordance with the Authority Having Jurisdiction (AHJ).

120V AC gas valves 3/4” - 2” can be mounted with the solenoid in any position above horizontal.

120V AC gas valves 2-1/2” - 3” must be mounted with the solenoid vertical and upright. The pipe must be horizontal.

All **24V DC** gas valves must be mounted with the solenoid vertical and upright. The pipe must be horizontal.

Figure 17 - Electric Gas Valve



Fire Protection Manual Actuation Device

The push/pull station (**Figure 18**) is a remote manual actuation device to activate the fire system. This remote manual actuation device (push/pull station) contains one set of normally open contacts and mounts to any standard single gang junction box. When the front button is pressed, the electrical connection to the fire system is completed, thus activating the fire system.

The remote manual actuation device (push/pull station) should be mounted at a point of egress and positioned at a height determined by the Authority Having Jurisdiction (AHJ). This position is usually 10 to 20 feet from hood and 42 to 48 inches above the floor. Multiple remote manual actuation devices (push/pull stations) are acceptable to use in the fire system and are wired in parallel per the electrical schematic. The remote manual actuation device (push/pull station) is reset by twisting the push-button clockwise until the internal latch is released.

The clear protective cover must be installed to protect the device from accidental activations. This cover is provided as part of the manual actuation device. Below are the part numbers for the devices and replacement parts (**Table 7**).

Figure 18 - Manual Activation Device

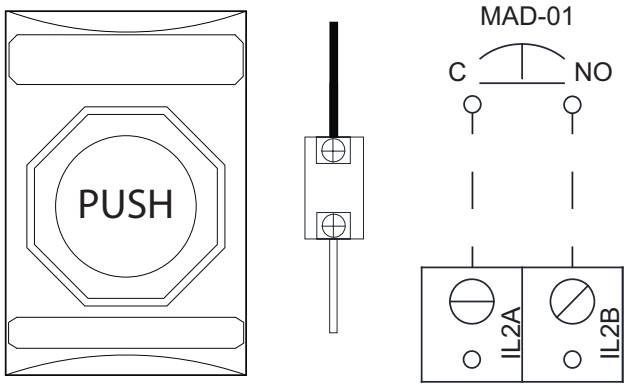


Table 7 - Activation Device Part Numbers

Part Description	Part Number
Push-Button with Clear Cover	STI-SS2431
Push-Button with Clear Cover and Horn	STI-SS2441
Extension for Surface Mounted Push/Pull Stations	SF-1331
Junction Box with Deep Back	STI-KIT71101AB
Normally Open Contact	STI-10196
Normally Closed Contact	STI-10198
Contact Housing Assembly	SF-10197H

Wrapper (Optional)

Installation Details

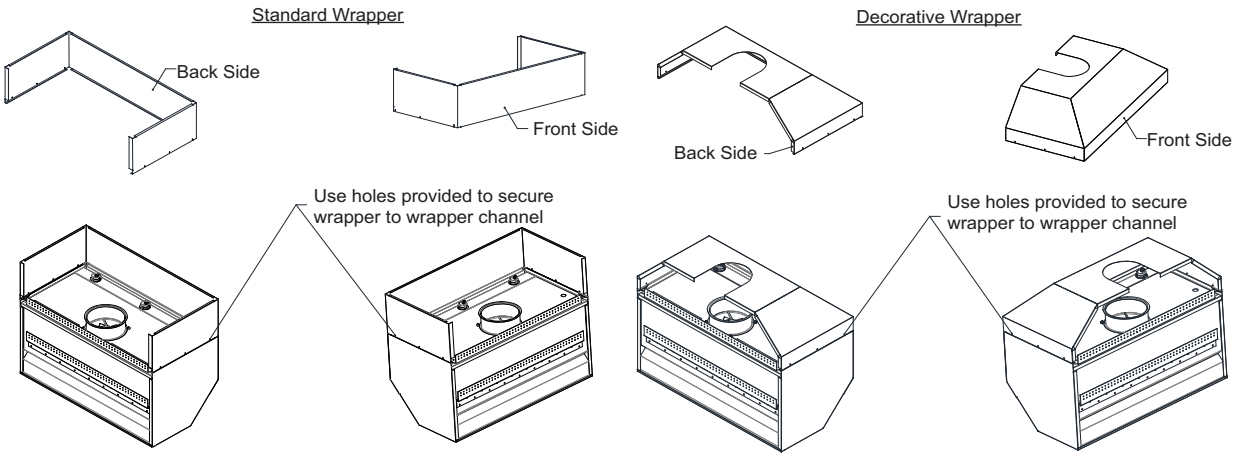
The optional wrapper accessory is not compatible with WRH-T hoods.

Wrapper comes installed to the hood from the factory. Wrapper will have to be removed to hang the hood. After the hood is hung, install the wrapper using the supplied hardware.

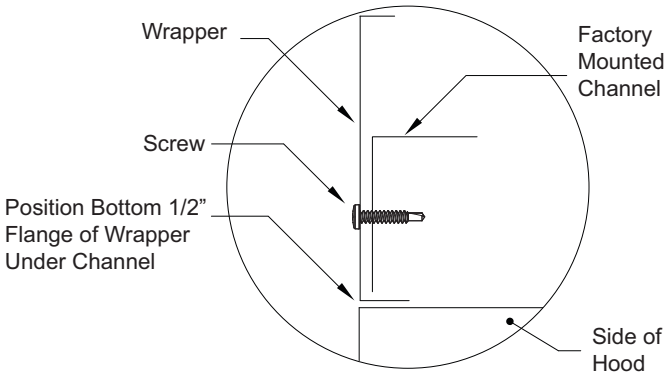
When installing the wrapper, verify there is access to components located on top of the hood. This will allow for service and accessibility when required. Refer to Figure 19 for installation details.

1. Unpack the wrapper panel from the shipping container, be very careful not to dent or scratch the panels.
2. Locate the wrapper panel and position it on the hood so that the 1/2-inch flange on the bottom of the panel slips underneath the side channel on top of the hood.
3. Press fit panel into place until wrapper face is flush with hood face. Use self-tapping screw (part # 92364A247) to secure wrapper to the side channel and wall.
4. Caulk all gaps and seams after the hood(s) and hood accessories have been installed.

Figure 19 - Wrapper Installation Overview



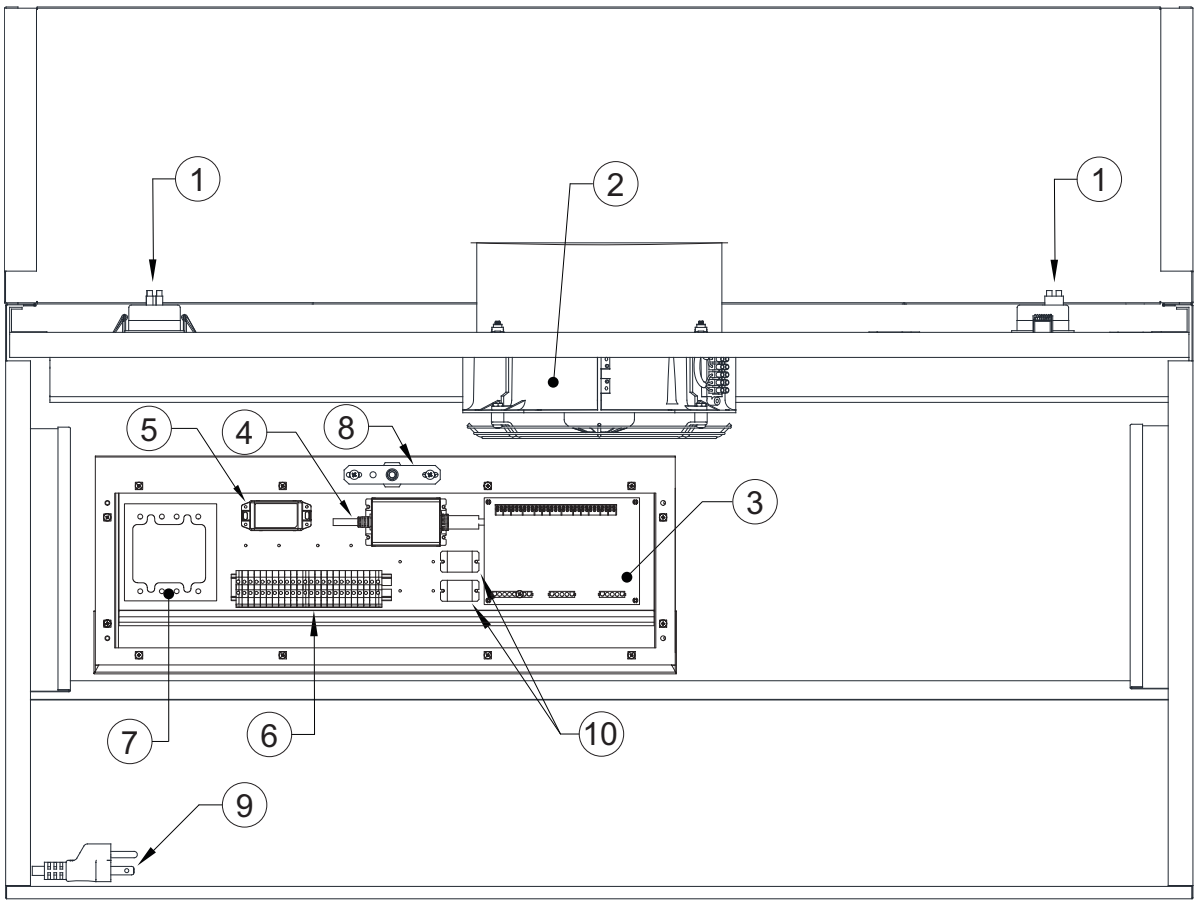
NOTE: Some holes may not be accessible depending on placement of hood and surroundings (cabinets/walls/etc.)



Electrical Components

To gain access to electrical components (**Figure 20**), remove the screws that secure the access cover to the hood. This is behind the face of the hood, directly in front of the filters.

Figure 20 - Hood Electrical Components



1. Lights
2. Modulating Fan (Optional)
3. Safety Control Board
4. Driver for Lights
5. Power Supply
6. Terminal Strip
7. HMI
8. Temp Stat/Firestat
9. 6’ Power Cord
10. 24V Relay(s) (Fire/Trouble)

Connecting Hood to Uninterrupted Power Supply (UPS)

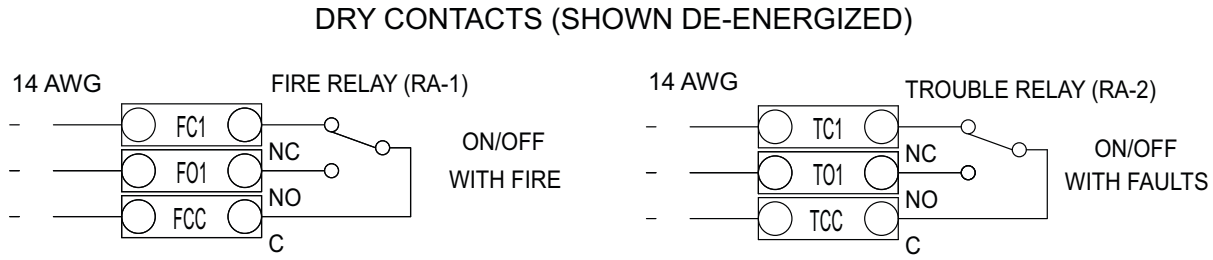
The hood is supplied with a 6-foot power cord. After the hood is installed, find a location to install the Uninterruptible Power Supply (UPS). Connect the hood power cord to the UPS. Plug the UPS into standard 120V AC outlet.

If the hood is covered by a fire system, it is highly recommended to use a UPS.

Fire/Trouble Alarm Relay

All residential hood systems are equipped with a 24V trouble relay. If the system detects a fault, the fault will be displayed on the HMI and the trouble relay will activate. A fire condition will activate the Fire Relay (except for when system is in Test Mode). The hood control panel's fire relay dry contacts can be connected to the premise Fire Alarm Control Panel (FACP). A fire condition will trigger the premise FACP to initiate a general fire alarm. Refer to **Figure 21** for wiring reference.

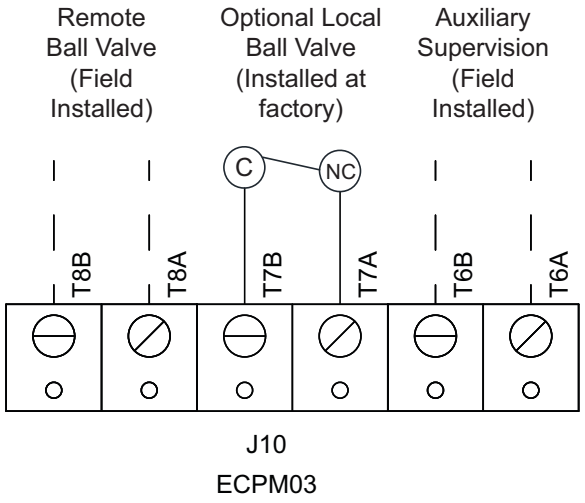
Figure 21 - 24V Relays



Supervised Valves

The hood may be monitored by the following supervised devices (**Figure 22**); field installed auxiliary contacts, optional local ball valve (may be installed in the factory), or by a field installed remote ball valve.

Figure 22 - Supervised Valve Wiring



TROUBLESHOOTING

The following chart lists causes and corrective actions for possible problems with exhaust hoods. Review this list prior to consulting manufacturer.

Problem	Potential Cause	Corrective Action
Smoke is not being captured/ Low Exhaust	Filters are clogged	Clean filters, refer to **"MAINTENANCE" on page 31**.
	Exhaust Fan operating in incorrect direction	Check motor wiring to wiring diagram located on fan motor.
	Hood overhang on appliance is not correct	Hood should overhang cooking appliances adequately.
	Exhaust airflow too low	Increase exhaust fan RPM/HP.
	Exhaust duct static pressure higher than design	Increase exhaust fan RPM/HP or have ductwork re-worked.
No Exhaust	Exhaust Fan not running	Turn fan disconnect on. Check circuit breaker/voltage. Check wiring connections.
	Exhaust Fan running backwards	Wheel should turn per rotation arrow on fan.
Grease does not drain	Grease trough full	Clean grease trough behind hood filters.
Grease dripping from hood	Hood not being cleaned often enough	Clean surface of hood more frequently.
	Exhaust rate too low	Speed up exhaust fan.
Hood is vibrating	Vibrating exhaust or MUA Fan	Find source of vibration in fan(s) and correct. Verify a rag or other debris are not stuck in the exhaust fan wheel.
Lights not operating	Loose connection/Bulb failure	Verify turning the lights on through the HMI. Check wiring connection to the lights. Replace bulb.
FIRE Flashing on HMI Screen	Fire System is Activated	Make sure fire is Out. Press FAULT RESET button on HMI
Fire System will NOT turn OFF	Duct sensor is hot	Heat has activated the duct sensor. Remove heat source or let system extinguish fire. Once heat source or problem is resolved, press FAULT RESET on the HMI.
	Remote Manual Activation Device has been activated	Reset Remote push/pull station once fire is out and press FAULT RESET button on HMI. Reset Remote push/pull station by twisting clockwise until reset.
	Fire system is running on timer	Make sure duct sensor is cool and push/pull station is reset, then press FAULT RESET button on the HMI.
Gas Valve does not close	Debris on gas valve seal	Fully clean gas valve and strainer

MAINTENANCE

To guarantee trouble-free operation of this hood, the manufacturer suggests following these guidelines. Most problems associated with hoods are directly related to poor service and maintenance such as not replacing or cleaning filters.

Please record any maintenance or service performed on this fan in the documentation section located at the end of this manual.

General Maintenance

To order filters or hood parts, refer to **"Technical Support Information" on page 36**.

- Proper operation of the hood depends on how well the hood is maintained. All surfaces should be kept free of grease build-up for sanitation reasons and to reduce the risk of fire.
- Grease filters must always be installed and clean to reduce build-up of grease in the exhaust duct and to allow for proper exhaust airflow. Refer to **"Recommended Cleaning Supplies" on page 32** for cleaning methods. Maintain all belts, motors, and electrical connections on fans attached to the hood. Ensure grease filters are kept clean and there are no leaks in attached ductwork.

Monthly Maintenance

1. Remove the grease baffle filters and clean in a dishwasher or soak sink.
2. Carefully wipe away gritty substances clinging to stainless-steel surfaces to avoid scratching.
3. Dilute 1/2 cup of laundry detergent (e.g. Tide) with one (1) gallon of warm water.
4. Soak a clean cloth in the water detergent solution and wring out the excess water.
5. Wipe the hood surfaces moving in the direction of the grain and periodically rinse the cloth in a detergent solution.
6. Using a different clean cloth soaked in clean warm water, wipe the hood surfaces to remove all traces of the detergent solution.
7. Wipe hood surfaces dry with a clean, dry cloth. Clean the hood temperature sensor in riser if equipped with one.
8. Reapply stainless-steel polish.

CAUTION

DO NOT use iron wool (Brillo or SOS pads), scrapers, or spatulas to clean hood!

DO NOT use the following substances on or around the hood:

1. Chlorine or chlorine based substances.
2. Acids (e.g. acetic, hydrochloric, sulfuric).
3. Chloride based substances (e.g. mercuric chloride, ferric chloride).

Vapors of the above substances can corrode stainless-steel!

Quarterly Maintenance

- Inspect the unit and duct for grease or air leaks and repair leaks where required.
- Clean ductwork attached to hood to prevent a mass accumulation of grease.

Every 6 Months

1. Clean duct sensor in hood, inspect the hood duct and plenum areas for excess build-up of grease/ creosote.
2. The main line strainers in the manifold must be cleaned.
3. Verify proper system activation This includes fire stats, pull stations, and any other activation points
4. Check all nozzles for proper and evenly distributed water flow. If nozzles are clogged, clean or replace.
5. Verify that system has proper water pressures as per the labels on the unit.
6. Check gas valve operation to ensure gas valve fully shuts during system activation. Also, clean strainer upstream of gas valve.

After a Fire

1. Inspect and/or Replace all nozzles.
2. Inspect all piping connections for tightness.
3. Inspect all hood lights for proper seals and security.
4. Inspect all wiring and Hood insulation to ensure all are in good condition.

Recommended Cleaning Supplies

Table 8 - Recommended Cleaning Agents

Cleaning Method/Agent Type	Supplier	Product
Dishwasher Detergent	Ecolab Johnson Diversey	Solid Powder/Plus Suma DiverPak/Plus
Soak Method – Pot and Pan Detergent	Ecolab	Powder Detergent
Soak Method – Commercial Degreaser	Ecolab Johnson Diversey Zep	Decarbonizer MPX Soak Tank Solution Zep FS Pot Scrub
Heavy Duty Commercial Degreaser	Ecolab Johnson Diversey Zep	Grease Cutter Plus Suma Star Zep FS C.I.P Cleaner

Table 9 - Recommended Commercial Soak Tanks

Description	Supplier	Product	Contact
Heated Soak Tank	Hyginix	FOG Tank® (Use only Tiger Carbon Powder Remover®)	www.fogtank.com 858-566-6212 info@fogtank.com

Start-up and Maintenance Documentation

START-UP AND MEASUREMENTS SHOULD BE PERFORMED AFTER THE SYSTEM HAS BEEN INSTALLED (Warranty will be void without completion of this form).

Residential CORE Fire System Verification

Fire System Water Inlet - Sprinkler

Field Measured Information	
Residential CORE water line connected to building wet sprinkler system or dedicated water supply	
Verify there are no shut off valves connected to main water line	
Verify operating PSI (70 PSI Max)	
Verify static pressure PSI (225 PSI Max)	
Verify field pipe material	

Fire System Information (When supplied)

Gas valve wired	
Gas valve functioning properly	
Remote pull station wired	
Test remote pull station prior to water connection	
Verify push/pull station cover is installed	
Test firestat system activation prior to water connection	
All gas and electrical appliances shut down	
Fire system activation illuminates on HMI	
Audible alarm sounds	
Verify fault reset button operates correctly on HMI	
System activates on Uninterrupted Power Supply (UPS)	
All nozzles are 30-48” from cooking surface	
Nozzles are within 18” front/back of hazard zone	

Notes

Notes

Maintenance Documentation

Job Information

Job Name		Service Company	
Address		Address	
City		City	
State		State	
Zip		Zip	
Phone Number		Phone Number	
Fax Number		Fax Number	
Contact		Contact	
Purchase Date		Start-Up Date	

Hood Information

Name Plate and Unit Information	
Model Number	
Job Number	

Cleaning and Maintenance Record

Date	Service Performed

Technical Support Information

CASLink

Technical Support

Parts Store