

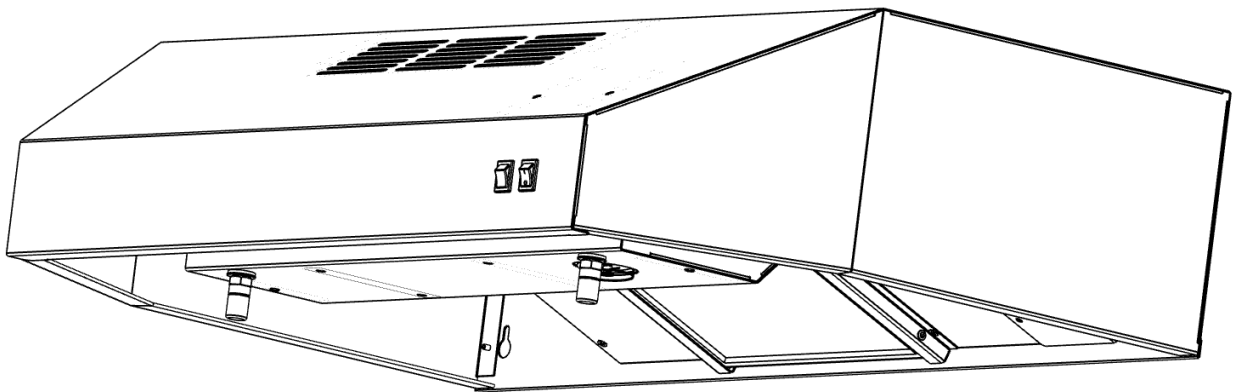
# **DENLAR**

## **FIRE PROTECTION**

**PRE-ENGINEERED RANGE HOODS**

## **DESIGNER SERIES MODELS**

### **INSTALLATION AND USER'S MANUAL**



**READ AND SAVE THESE  
INSTRUCTIONS**

**MODELS:  
DS-30-F  
DS-30-D  
DS-30-D-IF**

<https://www.denlarhoods.com/>

## WARNING

### TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK, OR INJURY TO PERSONS:

1. Use this unit in the manner intended by the Manufacturer. If you have questions or concerns, please contact Denlar Service at **860-526-9846** or [service@denlarhoods.com](mailto:service@denlarhoods.com).
2. Before servicing the Hood, turn off power at the Main Breaker Panel. Ensure the Breaker is locked-out/tag-out in accordance with local codes.
3. It is required that installation work and electrical wiring is performed by a qualified person in accordance with local codes and standards, including fire rated construction codes and standards.
4. Sufficient air flow is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back-drafting. Follow the heating and equipment manufacturer's guidelines and safety standards such as those published by the National Fire Protection Agency (NFPA), and the American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. When cutting or drilling into the wall or ceiling, do not damage electrical wiring or other hidden utilities.
6. To reduce the risk of fire or electrical shock, do not use the Hood with an additional speed control, unless provided by the manufacturer.
7. Ducted fans are required to be vented outdoors.
8. To reduce the risk of fire, use metal duct work based on local code and guidelines.
9. Use with approved wiring.
10. The Hood is required to be Grounded.

### TO REDUCE THE RISK OF A RANGE TOP GREASE FIRE:

1. Never leave surface units unattended. Boilovers cause smoking and greasy spillovers that could ignite. Heat oils slowly on Low or Medium settings.
2. Ensure the Hood's Fan is energized when cooking at a High setting or flambéing food (i.e. Crepes Suzette, Cherries Jubilee, and others).
3. Clean ventilating fans frequently. Do not allow grease to accumulate on the fan filter.
4. Use cookware that is the appropriate size for the surface element.

### TO REDUCE THE RISK OF INJURY TO PERSONS IN THE EVENT OF A RANGE TOP GREASE FIRE:\*

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. Do not pick up a flaming pan, this could cause burns to the person.
3. Do not use water, including water clothes or towels; this will cause a violent steam explosion.
4. Use an extinguisher if:
  - a. It is a K Class Extinguisher.
  - b. The fire is small and contained in the area it started.
  - c. The fire department is called.
  - d. The fire can be extinguished with the persons back facing the exit.

\*(Based on "Kitchen Fire Safety Tips" published by NFPA)

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For the Warranty Statement please visit <https://www.denlarhoods.com/>.

For installation or service calls please contact Denlar Service at 860-526-9846 or at [service@denlarhoods.com](mailto:service@denlarhoods.com).

For sales questions, please contact Denlar Sales at 860-526-9846 or at [sales@denlarhoods.com](mailto:sales@denlarhoods.com).

# HOOD SPECIFICATIONS

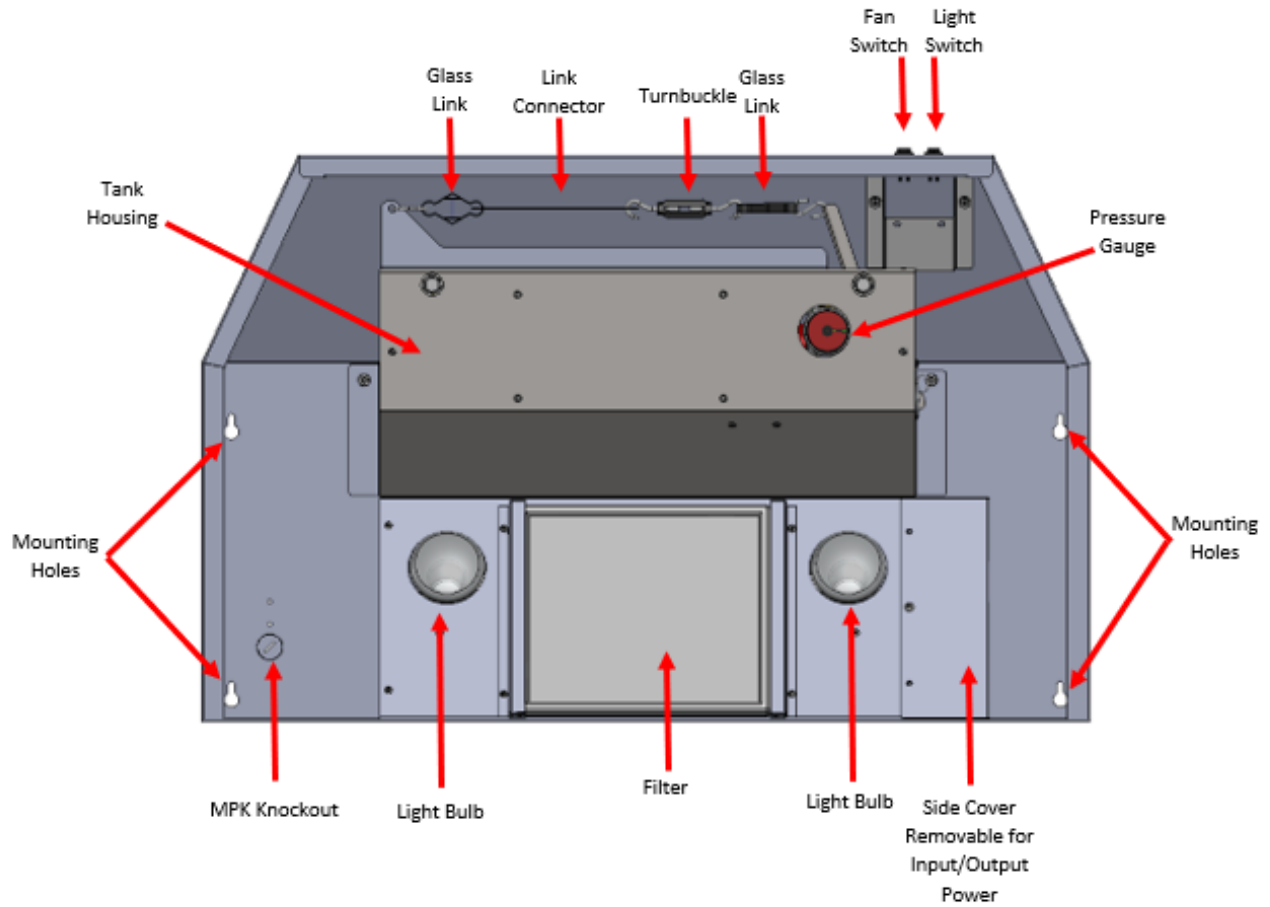
Hood Specifications								
	Mounting Config.	Length (In.)(A)	Depth (In.)(B)	Height (In.)(C)	Weight (lbs.)	Material	Mounting Height (In.)	Compliance
DS-30-F	Wall	30	19.25	7	33.25	Stainless Steel or Powder Paint	Min: 18 Max: 26	UL 300A UL 507
DS-30-D					29.25			
DS-30-D-IF					29.25			

Electrical Specifications								
	Voltage (VAC)	Phase	Breaker (Amp)	Frequency (Hz.)	Internal Fuse (Amp)	Continuous Operating Current (Amp)	Fan Operating Current (Amp)	Output Operating Current (Amp)
DS-30-F	120	1	15	60	2	1.2	Low: 0.41 High: 0.57	0.25
DS-30-D					3.15	2.5		
DS-30-D-IF					3.15	2.5	1.32	

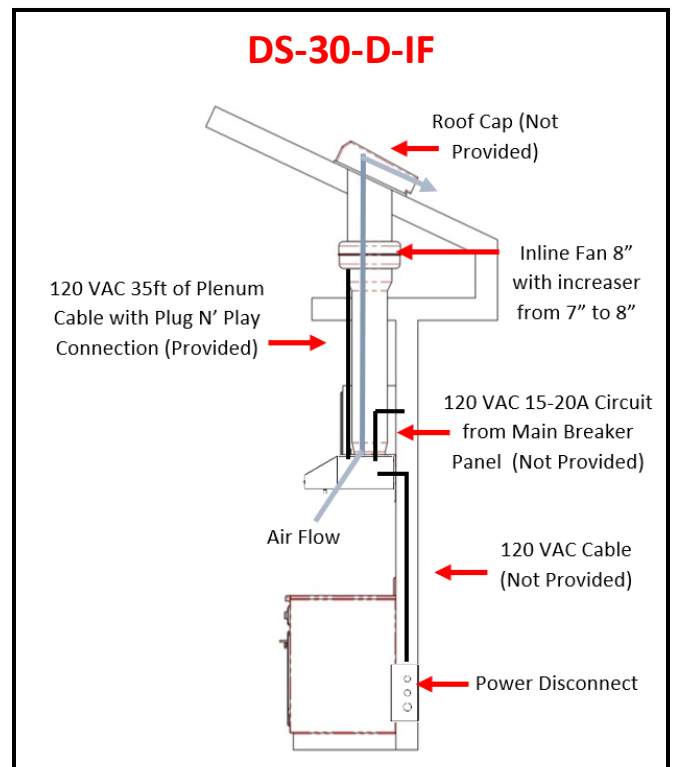
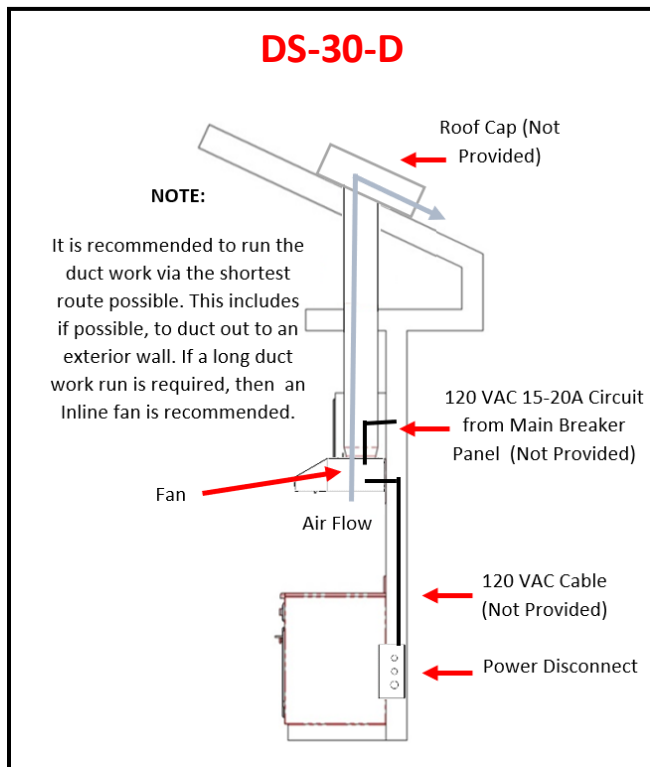
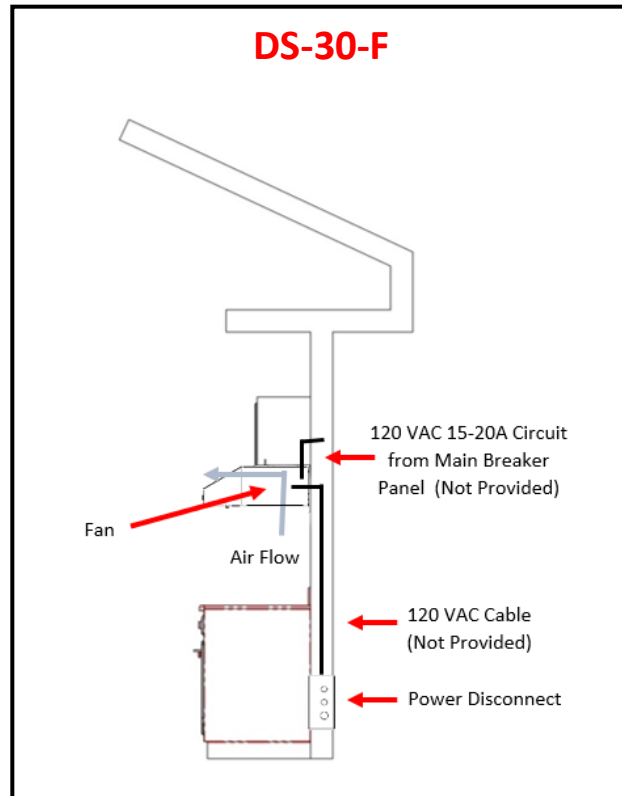
Fan Specifications														
	Location	Voltage (VAC)	Phase	Frequency (Hz.)	Internal Fuse (Amp)	Continuous Operating Current (Amp)	Speeds	Weight (lbs.)	CFM (Low-High)	Pressure (In. Water)	DBA (Low-High)	Hood Outlet (In.)	Duct (In.)	Fan Outlet (In.)
DS-30-F	Integral to Hood	120	1	60	2	Low: 0.41 High: 0.57	Off / Low / High	4	30 - 40 (Two Speed)	0.08	57 - 66	9 x 2.5	N/A	N/A
DS-30-D					7							7		
DS-30-D-IF	External Inline				3.15	1.32	Off / High	8.5	330 (Single Speed)	0.94	60	7	7 - 8	8

Fire Suppression Specifications												
	Type	Media Type	Volume (ml.)	Weight (lbs.)	Pressure (psi.) +8%	Tank Material	Dia (In.)	Height (In.)	Fire Detectors	Qty.	Nozzles	Qty.
DS-30-F	Self Contained	Amerex 660	900	1.8	102	Stainless Steel	3	15	Glass (250 Deg F)	2	60 Deg. Conical	2
DS-30-D												
DS-30-D-IF												

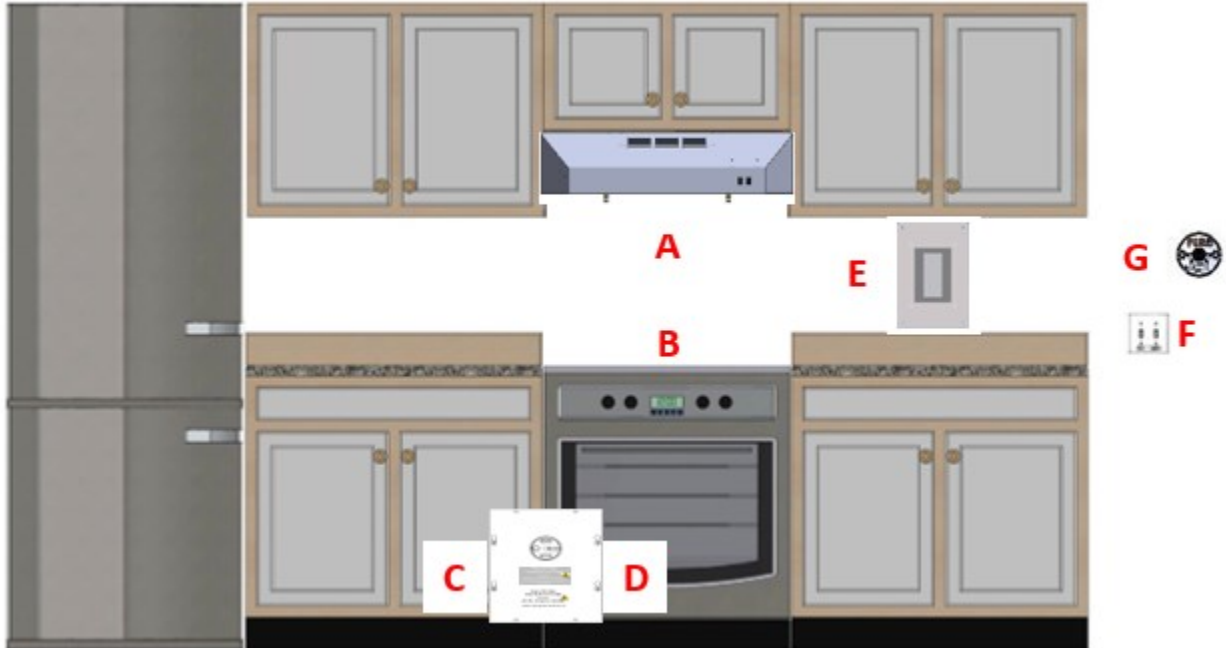
# HOOD LAYOUT



# ELEVATION LAYOUT



# MOUNTING LAYOUT



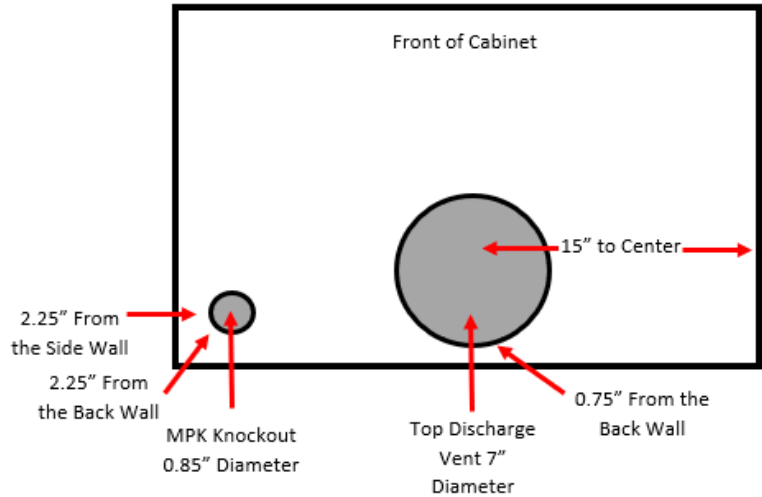
- A. DENLAR Designer Series Hood(DS-30)
- B. Range (for reference purposes (Gas, Electric or Dual Element)
- C. Electric Power disconnect (shown)
- D. Gas Power Disconnect (not shown)
- E. The CLOCKBOX range element lockout system (CLBX option) *The Touchscreen (E) is shown, the control module is not shown.*
- F. Handicap Accessible Control Box (ADA option)
- G. Manual Pull Station (MPK option)

# MOUNTING LAYOUT

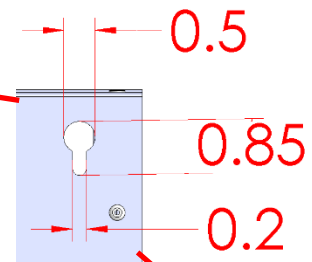
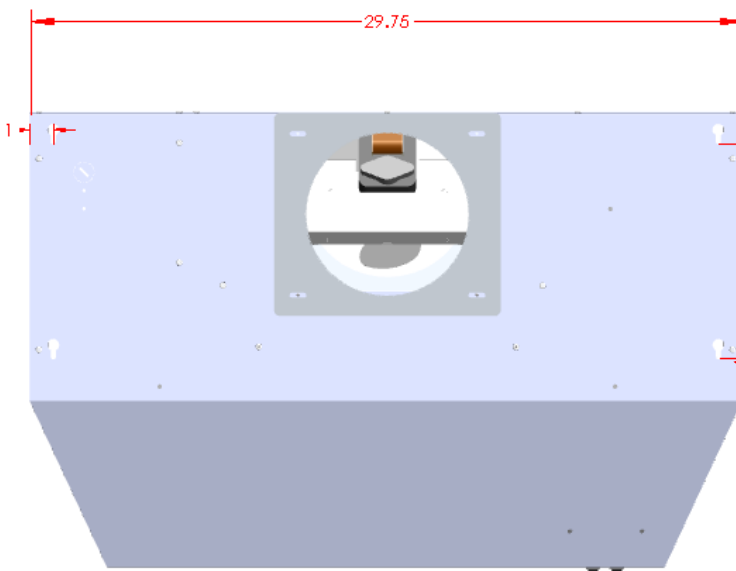
The Hood has two options for mounting. There are four mounting holes in the top and rear of the unit. If a cabinet is installed above the Hood with top discharge or an inline fan, then a 7" hole is needed in the cabinet. If a Hood has a Manual Pull Station (MPK), then a 0.85" diameter hole is needed. See Cabinet Bottom View for the placement of the holes needed.

There are four knockouts (KO) for the input and output power. It is recommended to use the two KO's on the right side of the hood, next to the side cover. This allows the wiring to be installed in a more efficient manner.

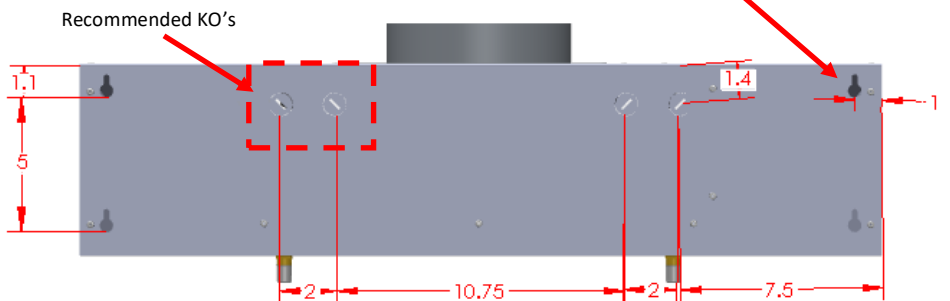
**CABINET BOTTOM VIEW**



**TOP VIEW**

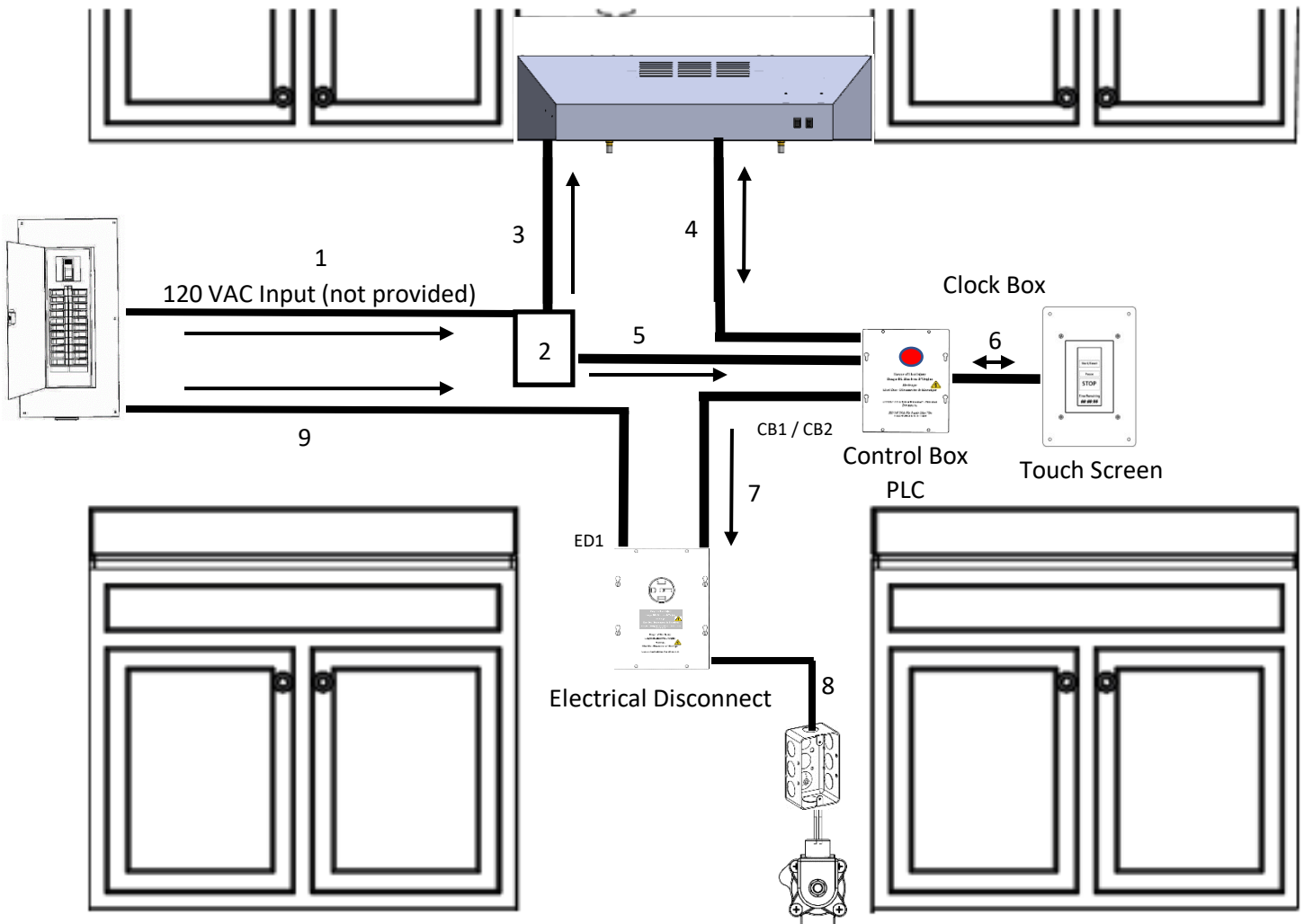


**REAR VIEW**





# POWER CONNECTIONS



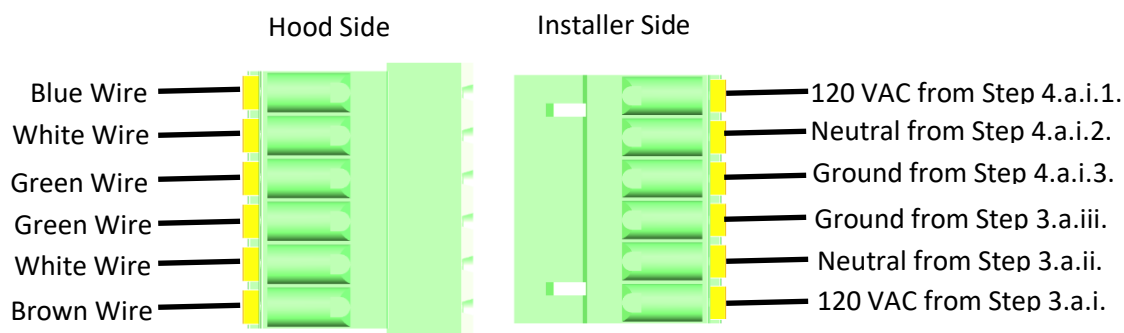
1. 120 VAC Input (not provided)
  - a. 120 VAC / 15 Amp circuit (provided by installer)
    - i. If a Clock Box is not used, connect the wire directly to the Hood, skip to Step 3.
2. Junction Box (not provided)
  - a. Run the 120 VAC Input to the Junction Box
  - b. Run a 120 VAC Input Power Cable (3, not provided), from the Hood to the Junction Box
  - c. Run a new cable (4, not provided) from the Junction Box to the Clock Box Control Box (if applicable)
  - d. Wire Nut the Hot leads from the three wires (1, 3, 4) together.
  - e. Wire Nut the Neutral leads from the three wires (1, 3, 4) together.
  - f. Connect the grounds accordingly (1, 3, 4)

# POWER CONNECTIONS

See Power Connections on Page 8

## 3. 120 VAC Input Power Cable (not provided)

- a. Remove the side cover of the Hood, there is a six-position connector in the compartment. The wire combination is Brown, White, Green, Green, White, and Blue. The mating connector is attached to the plug. The connector is push-to-connect. The wires are required to be solid or terminated with ferrules.
  - i. The Line connects to the Installer Side connector in the 120 VAC position.
  - ii. The Neutral connects to the Installer Side connector in the Neutral position.
  - iii. The Ground connects to the Installer Side connector in the Ground position.



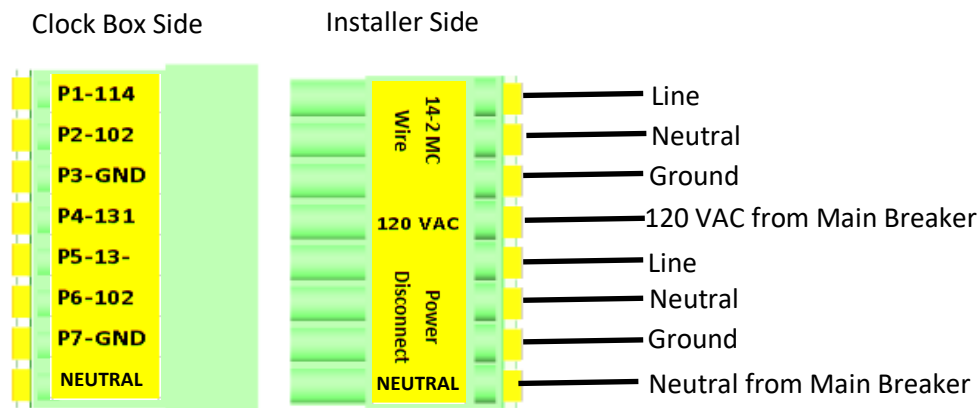
## 4. 120 VAC Output Cable from the Hood (not provided)

- a. Hood Side
  - i. Remove the side cover of the Hood, there is a six-position connector in the compartment. The wire combination is Brown, White, Green, Green, White, and Blue. The mating connector is attached to the plug. The connector is push-to-connect. The wires are required to be solid or terminated with ferrules.
    1. The Line connects to the Installer Side connector in the 120 VAC position.
    2. The Neutral connects to the Installer Side connector in the Neutral position.
    3. The Ground connects to the Installer Side connector in the Ground position.
- b. Other Side
  - i. If a Clock Box is not used connect the wire directly to the coil of the power disconnect (Step 7)
- c. If using a Clock Box, then proceed with the next step.
  - i. Connect the 120 VAC Output Cable to the eight (8)
    1. The Line connects to position one (P1)
    2. The Neutral connects to position two (P2)
    3. The Ground connects to position three (P3)

# POWER CONNECTIONS

See Power Connections on Page 8

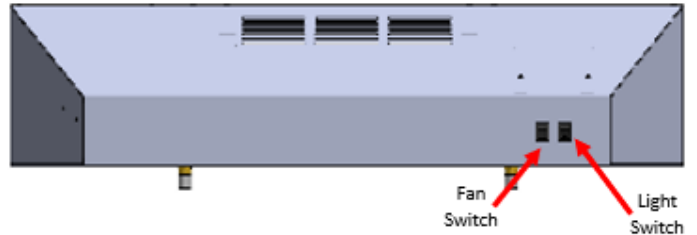
5. Cable (not provided) to provide 120 VAC from the Main Breaker Panel to the Clock Box (if applicable)
  - a. Connect the 120 VAC Output Cable to the Installer Side of eight (8) position Power Plug in the Clock Box Control Box
    - i. The Line connects to position four (P4)
    - ii. Connect the Neutral to position eight (P8)
    - iii. The Ground connects to the Ground Bar.



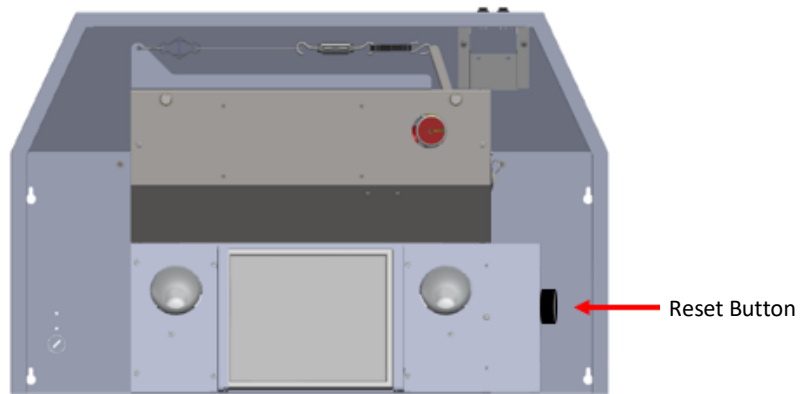
6. 5 VDC Input / Output Communication cable encased in 16 mm ENT Flexible Conduit (provided)
  - a. 25 Ft in length
  - b. One communication
  - c. Connects between the Clock Box PLC and Touch Screen
7. Output Power Disconnect Cable (not provided)
  - a. Connect the cable to the other end to the coil of the Power Source Disconnect (DS-E, DS-G, or DS-DED)
8. Jumper cable for the DS-DED (if applicable, not provided)
9. Supply Line 120-220 VAC from the Main Breaker Panel to the DS-E (not provided)

# OPERATING THE DESIGNER SERIES HOOD

The Designer Series Hood is equipped with two switches. The Switch on the right is for the two lights in the Hood. The switch on the left is for the fan motor. This switch is a three-position rocker switch. The positions are marked "O", "I", and "II". The "O" marking keeps the fan motor off. The "I" marking sets the fan motor to low speed. The "II" marking sets the fan motor to high speed. If the Hood is equipped with an inline external fan motor (DS-30-D-IF) then the fan switch is an ON or OFF switch, there is no speed control.



There is a reset button located on the Hood, this is to ensure someone is available to light the igniters if they are not automatic and prevent an accident. If the Hood loses power, the reset button is needed to be pressed again to open the valve or close the coil of the electrical disconnect. The reset button is a black round push button located on the side cover of the Hood.



If the Hood discharges, the microswitch powering the power disconnect changes states and shuts off power to the power disconnect. An audible buzzer will sound. To reset the system, a new charged tank assembly would need to be installed. The Tanks cannot be recharged in the field.

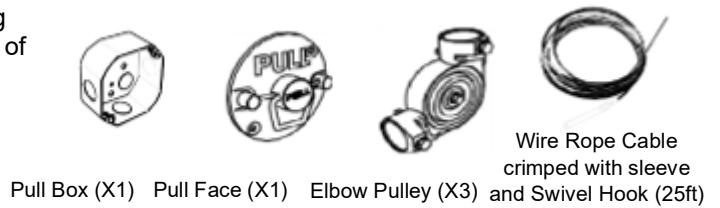
# MANUAL PULL STATION INSTALLATION (MPK)

## STEP 1: INSTALLING CONDUIT

Mount the Pull Box in an appropriate location according to local building codes. The MPK is supplied with 25 Ft of wire rope cable and three Elbow Pulleys as our listing requires. If the site requires more than 25 Ft of Wire Rope or more than three Elbow Pulleys, then it is required to have approval of the local authority.

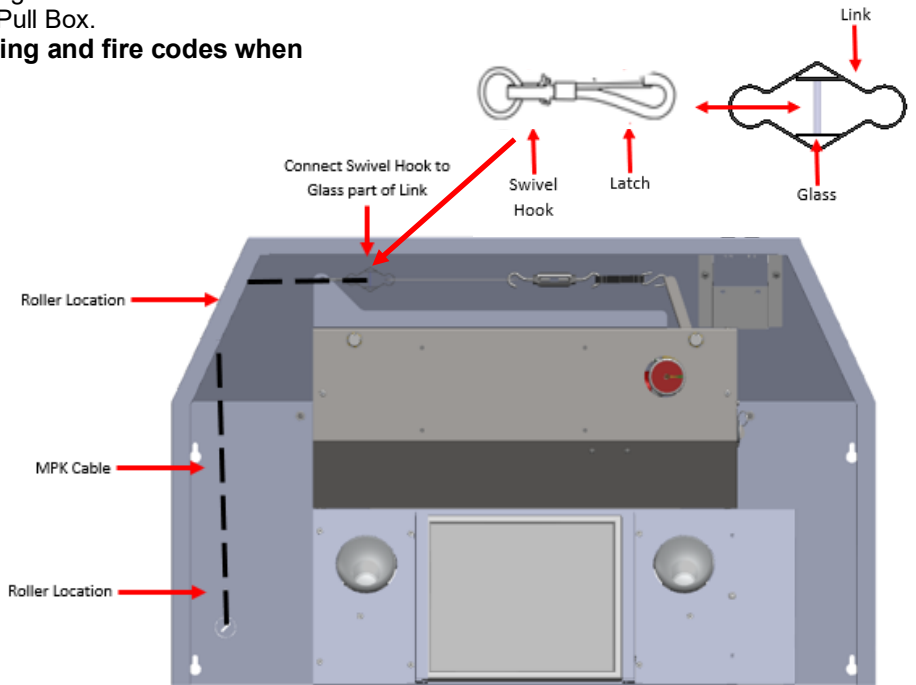
- Install 1/2" conduit (not provided) between the unit and the pull box, using the pulleys as needed.
- Pull the Wire Rope Cable through the conduit and allow 8-12" of slack to be left at the Pull Box.

**Be sure to abide by all local building and fire codes when installing the conduit.**



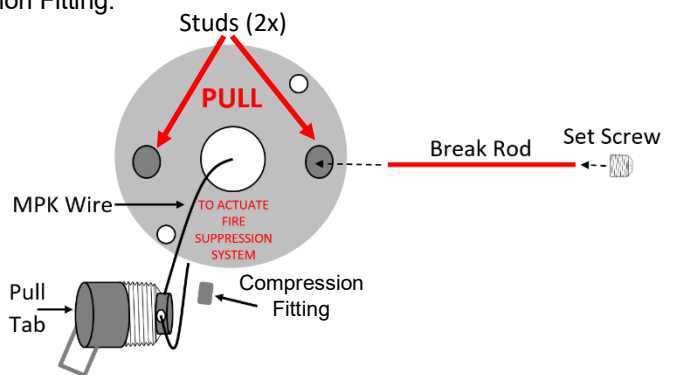
## STEP 2: Connecting to the Hood

Run the Wire Rope Cable into the Hood and through the two rollers. Connect the Swivel Hook to the Glass part of the first link.



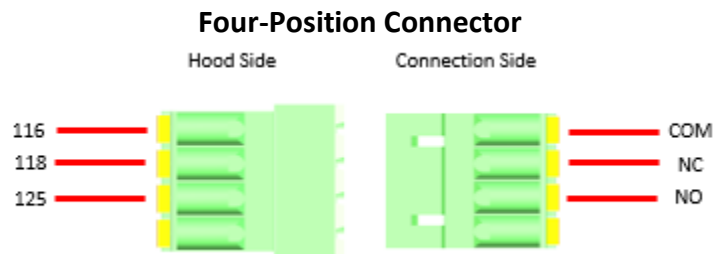
## STEP 3: INSTALL WIRE ROPE CABLE TO PULL FACE

- Ensure the wire rope cable is securely crimped to withstand at least 40 lbs. of pull force.
- Maintain 8-12" of slack of slack in the line on the pull face end.
- Remove the MPK handle by loosening the set screw in one of the studs and sliding the red Break-Rod out.
- Insert the Wire Rope through the Compression Fitting, then through the back of the Pull Tab, and then through the Compression Fitting. Crimp the Compression Fitting.
- Attach the pull face to the pull box, collecting the slack into the pull box.



# ALARM CONNECTIONS

The Designer Series Hood offers a set of Normally Open (NO) or Normally Closed (NC) Contacts to connect to an alarm panel. To access the connection, remove the side cover, there are three red wires inserted into a Four-Position Connector, this mating connector is plugged into the four-position connector. The terminals are push-to-connect; solid wires or wires with a ferrule are required. The three red wires are numbered 116, 118, and 125. Wire 116 is the Common (COM), wire 118 is the NC contact, and wire 125 is the NO contact. When the Hood is in Normal Operating Mode (NOC) then the microswitch for the contacts is engaged and its state are changed. In NOC, wire 118 is the NO contact and wire 125 is the NC contact. Upon Discharge, wire 118 is the NC contact and wire 125 is the NO contact.

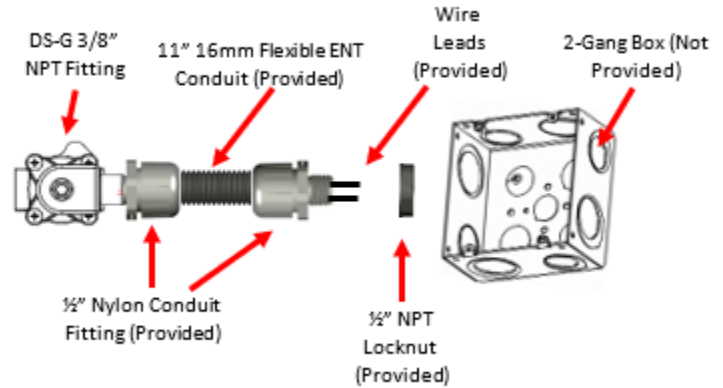


In Normal Operation Mode (NOC) the NO and NC state are switched.

# RANGE ELEMENT DISCONNECT INSTALLATION

## DS-G Installation Gas Solenoid Disconnect

1. Secure the gas line input and output to the DS-G. The fittings are 3/8" NPT. Make note of the direction of the flow, there is an arrow on the bottom of the DS-G.
2. The DS-G has an 11" length of 16mm Flexible ENT Conduit encasing a supply line cable attached with a two wire leads at the end. Install the ENT Conduit to a 2-Gang Box (not provided).
3. Run the 120 VAC Output from the Hood (cable not provided), to the 2-Gang Box.



4. Connect the wire leads from the 120 VAC Output to the wire leads of the DS-G. Secure the ground to the 2-Gang Box.
5. Install the cover for the 2-Gang Box.

**Note:** The Coil voltage cannot be used to power the electronics in the range (clock, igniters, etc.). Doing this, voids the warranty and ETL listing of the Hood. In addition to blowing the fuse.

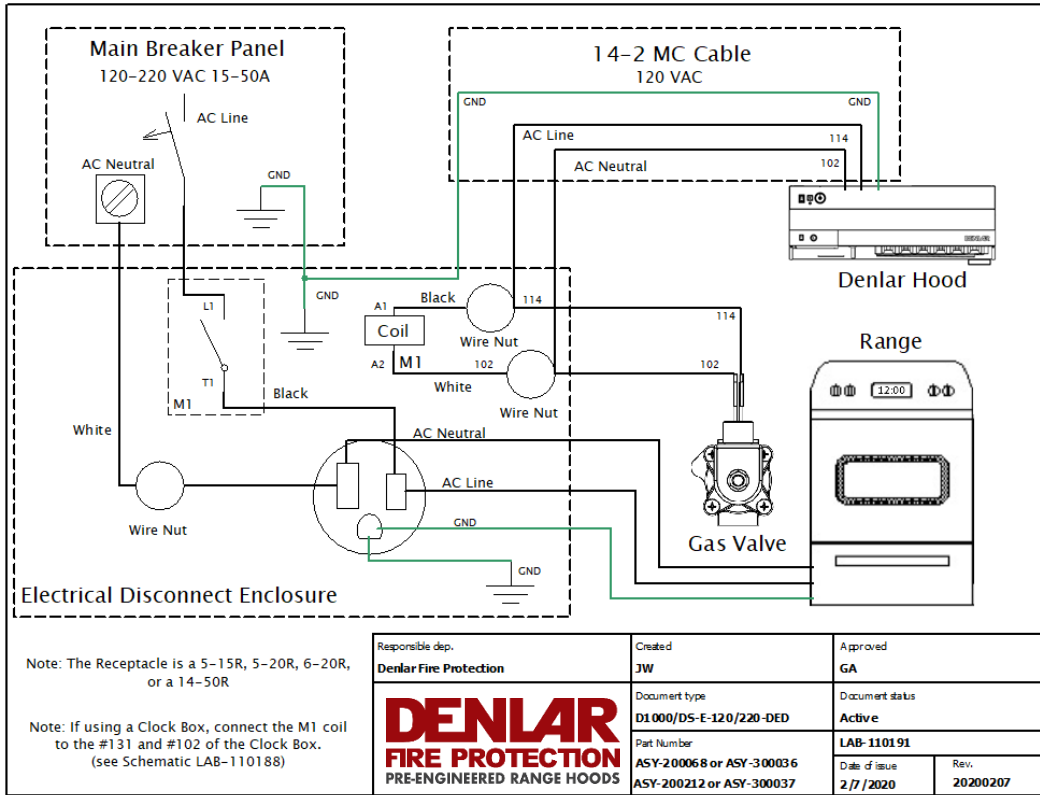
## DS-E Installation Electrical Contactor Disconnect

1. Install the DS-E in the drywall (refer to the specification sheets for the dimensions). Be sure to note the 1 1/4" overhang on both sides of the face plate. The cutout opening should be about 8-3/8". The electrical disconnect has been designed to fit a standard 2" x 4" framed wall.
2. Run the 120 VAC Output (cable not provided) from the Hood, to the power disconnect location. Connect the wires from the coil of the contactor to the wire leads of the 120 VAC Output coming from the Hood. Attach the ground to the ground bar.
3. Run 120 VAC 15 – 20 Amps or 220 VAC 20 – 50 Amps based on the site requirements, from Main Breaker Panel (Not Provided) to the contactor. This will provide power to the receptacle.
4. Secure the face plate to the electrical disconnect.

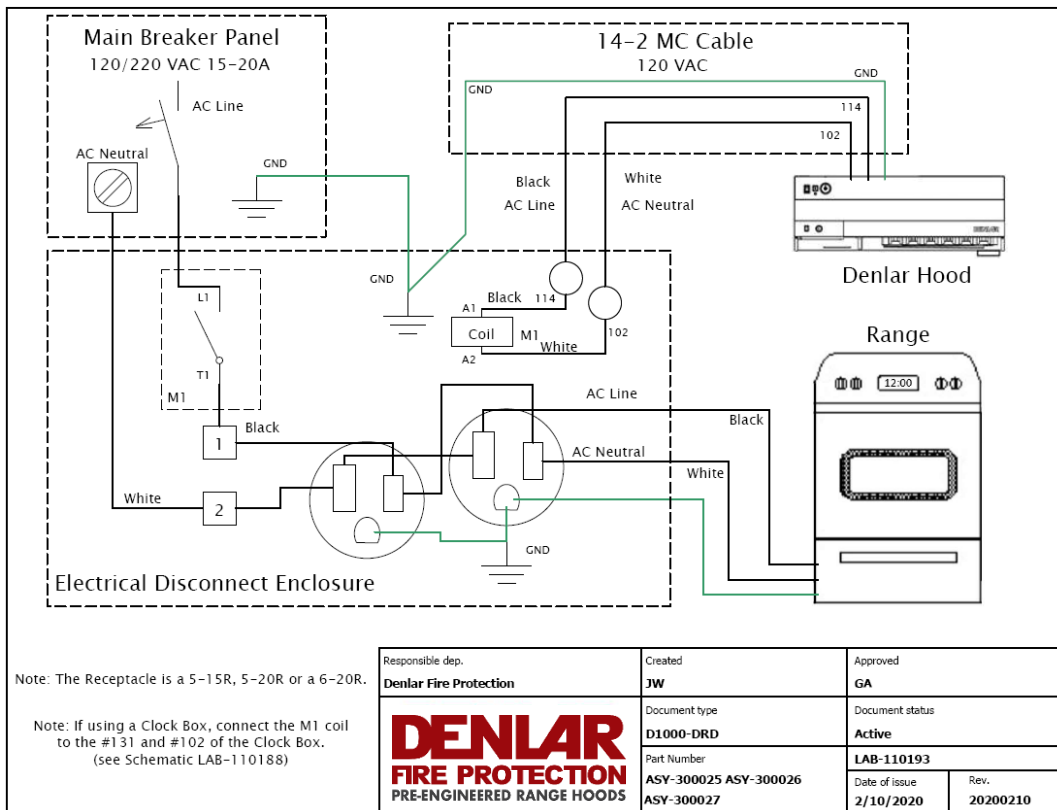




# RANGE ELEMENT DISCONNECT SCHEMATIC



**DS-E-120**



**DS-DED-120/220**

# HANDICAP ACCESSIBLE CONTROL (ADA)

## COMPONENTS

- ADA Wire Harness Assembly
  - (2) Toggle Switches (white)
  - (1) Metal 2-Gang Enclosure
  - (15 ft) Plenum Cable Encased in 16mm ENT Flexible Conduit
  - (1) Eight-Position Male Connector (Plug-N-Play)
  - (1) 2-Gang White Switch Cover
  - (2) Mounting Brackets

## PREPARATION

Turn OFF the supply line 110-120 VAC power (at the panel) to the Hood. Remove the ADA Wire Harness Assembly from the packing.

## INSTALLATION

1. Remove the two switches from the Metal 2-Gang Enclosure.
2. Mount the Metal 2-Gang Enclosure to the desired wall location using the mounting brackets in accordance with local building codes and electrical codes.
3. Install the two switches back to the Metal 2-Gang Enclosure.
4. Install the 2-Gang White Switch Plate on the Metal 2-Gang Enclosure.
5. Run and secure the Plenum Cable Encased in 16mm ENT Flexible Conduit to the Hood.
6. Use one of the Knock-Outs (KO) in the back of the Hood as an entry point.
7. Plug the Eight-Position male and female connectors together inside the Hood (labeled ADA Plug).
8. Ensure that the electrical connections are secured.
9. Turn the power ON for the Hood.
10. The switch on the left of the Metal 2-Gang Enclosure with the Red and White wires connected to it, is for the fan function. Turning ON this switch, enables the fan to run at High Speed only. There is no speed control with this switch.

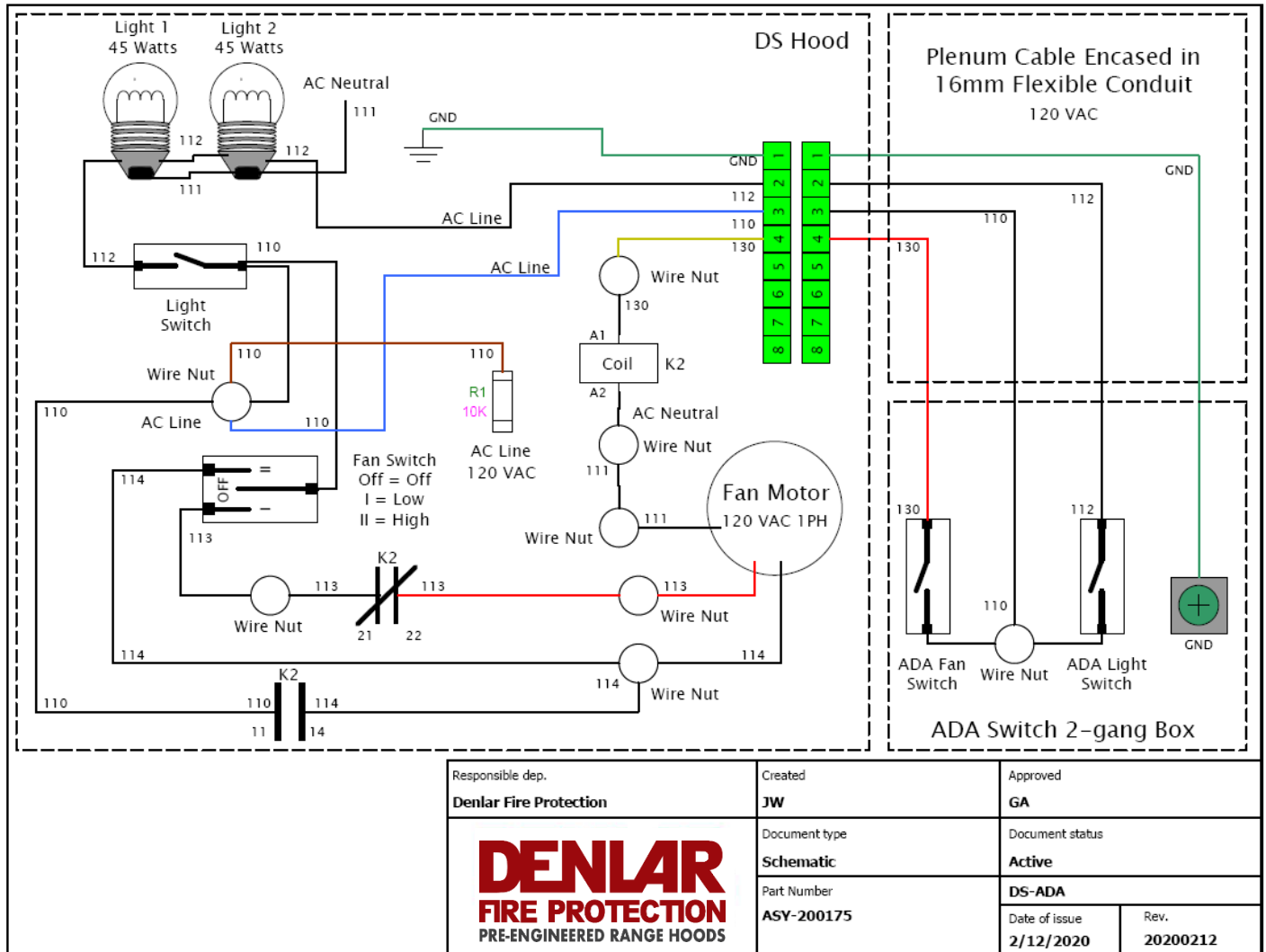


**Note:** To turn the fan OFF, both the ADA toggle switch and the fan switch at the Hood need to be OFF.

11. The switch on the right of the Metal 2-Gang Enclosure with Black and White wires connected to it is for the light function.

**Note:** To turn the light OFF, both the ADA toggle switch and the light switch at the Hood need to be OFF.

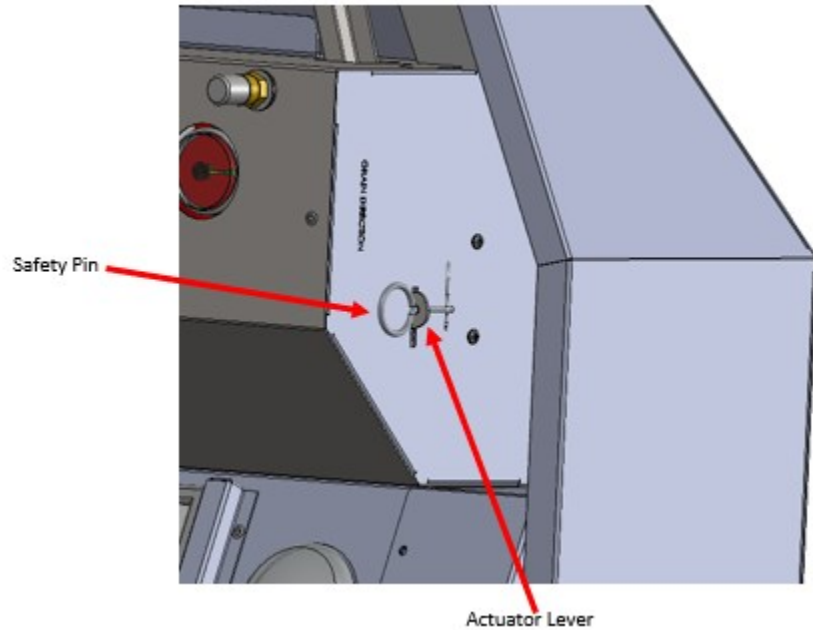
# HANDICAP ACCESSIBLE CONTROL (ADA)



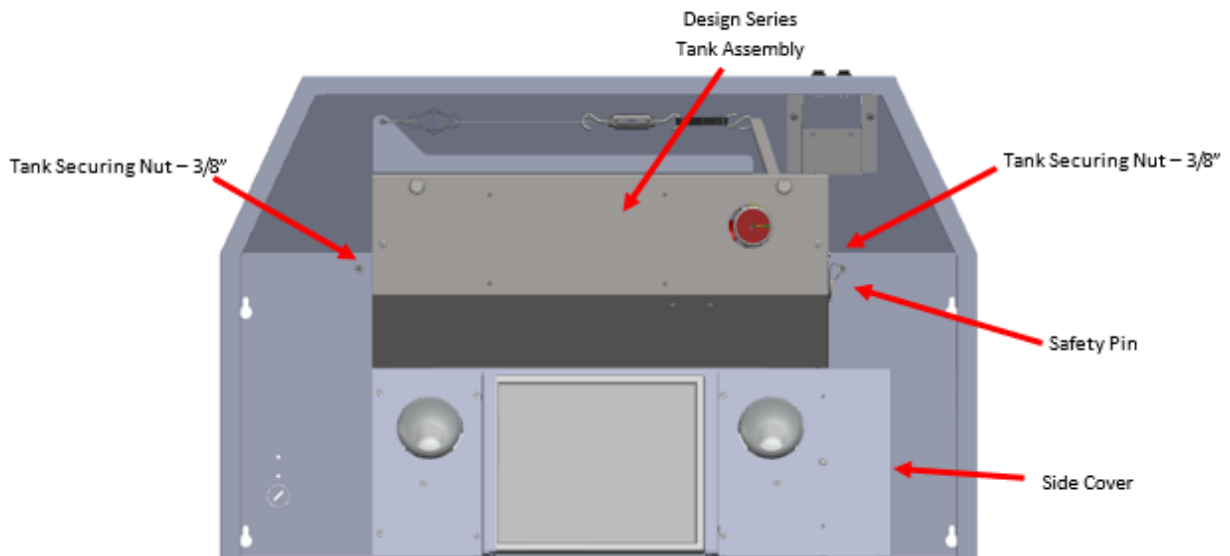
Responsible dep. <b>Denlar Fire Protection</b>	Created <b>JW</b>	Approved <b>GA</b>
<b>DENLAR</b> <b>FIRE PROTECTION</b> PRE-ENGINEERED RANGE HOODS	Document type <b>Schematic</b>	Document status <b>Active</b>
	Part Number <b>ASY-200175</b>	<b>DS-ADA</b>
		Date of issue <b>2/12/2020</b>

# TANK REMOVAL

Prior to removing the Designer Series Tank Assembly, ensure that the Safety Pin is installed correctly into the Actuator Lever. It is recommended to tie-wrap the Safety Pin to the Actuator Lever as a secondary safety measure.



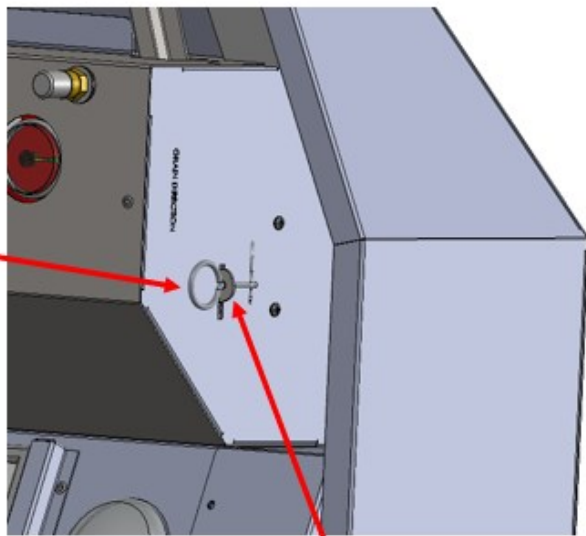
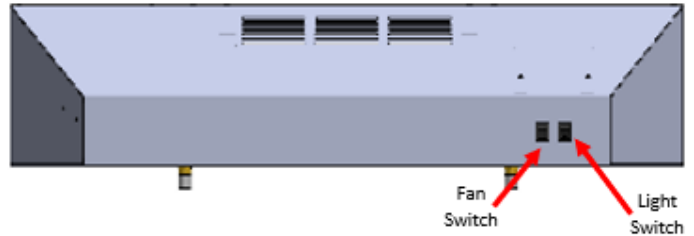
To remove the Designer Series Tank Assembly, a 3/8" socket or Nut Driver is required. Start by removing the Side Cover from the Hood. Inside the cabinet there is a Six-Position connector with three red wires, two blue wires, and one black wire; unplug the Six-Position connector. The male end connects to the microswitches in the Designer Series Tank Assembly. If a Manual Pull Station is installed, remove the swivel hook from the glass link. Using a 3/8" socket or Nut Driver, remove the two Tank Securing Nuts. The Designer Series Tank Assembly can be removed safely at this time. To reinstall the Designer Series Tank Assembly, reverse this process.



# DESIGNER SERIES TESTING

## Testing the Designer Series Hood Fan and Light

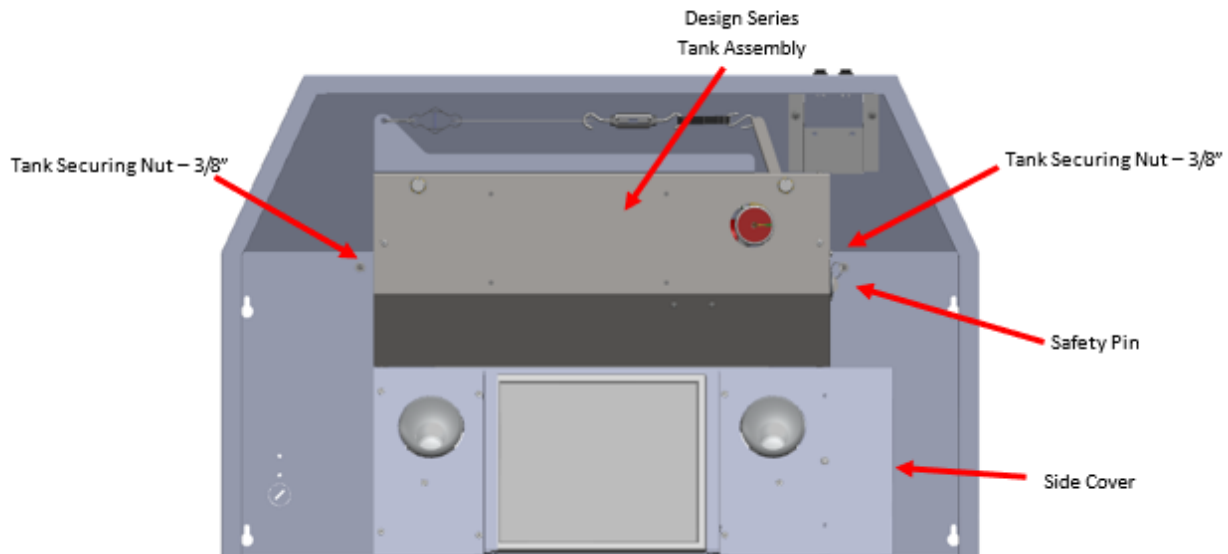
1. Turn the Light Switch ON and ensure both lights turn ON.
2. Turn the Light Switch OFF and ensure both lights turn OFF.
3. The Fan Switch is a Three-Position rocker switch. The positions are marked "O", "I", and "II". The "O" marking keeps the fan motor OFF. The "I" marking sets the fan motor to LOW speed. The "II" marking sets the fan motor to HIGH speed. If the Hood is equipped with an inline fan motor, then the fan switch is an ON or OFF switch, there is no two speed control. Test the different positions of the switch to ensure correct functionality.



4. Testing the 120 VAC Output Control Signal to the Power Disconnect and the Alarm Signal, requires the removal of the microswitch from the Tank Assembly.

a. To do this, ensure the Safety Pin is installed correctly into the Actuator Lever. It is recommended to tie wrap the Safety Pin to the Actuator Lever as a secondary safety measure.

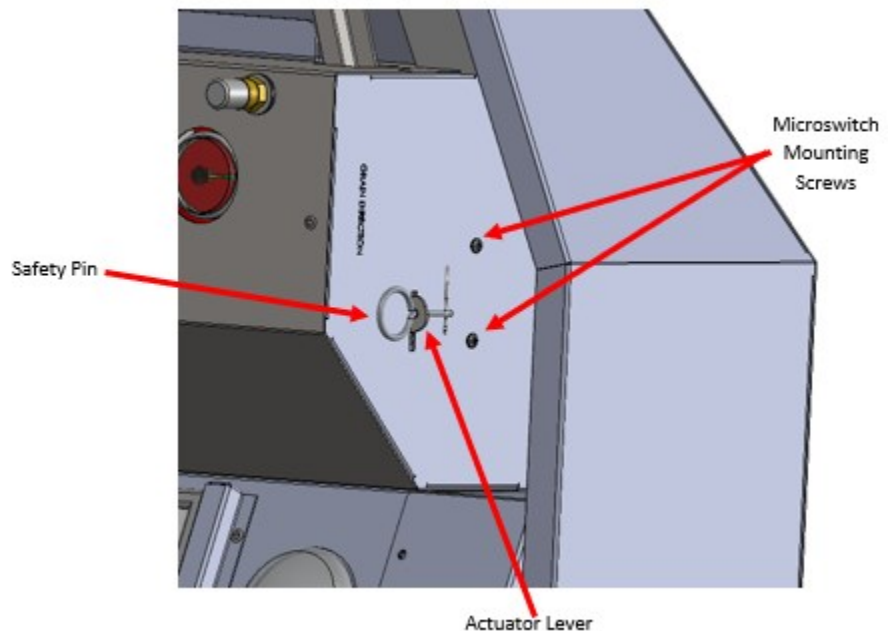
b. Remove the Side Cover from the Hood. Inside this area, there is a Six-Position connector with three red wires, two blue wires, and one black wire.



# DESIGNER SERIES TESTING

Disconnect the Six-Position connector. The male end connects to the microswitches in the Designer Series Tank Assembly.

- c. If a Manual Pull Station is installed, remove the swivel hook from the glass link.
- d. Using a 3/8" socket or Nut Driver, remove the two Tank Securing Nuts. The Designer Series Tank Assembly can be removed safely at this time.
- e. There are two mounting screws securing the microswitches to the Tank Assembly Housing. Remove these screws.
- f. Plug the microswitch Six-Position connector into the same connector it was removed from. Pushing down on the microswitches levers, changes the state of the contacts.
  - i. The microswitch with the two blue wires and one black wire, controls the Power Disconnect and the Audible Buzzer. With the microswitch disengaged, the Audible Buzzer sounds. With the microswitch engaged, the Power Disconnect coil is powered.
  - ii. The microswitch with three red wires is connected to the building fire alarm. Engaging this contact will change its state.
- g. Once the test is completed, reinstall the two microswitches. Verify that the microswitches are engaged and pressing on the tank's actuator lever.
- h. Reverse the steps to reinstall the tank assembly.

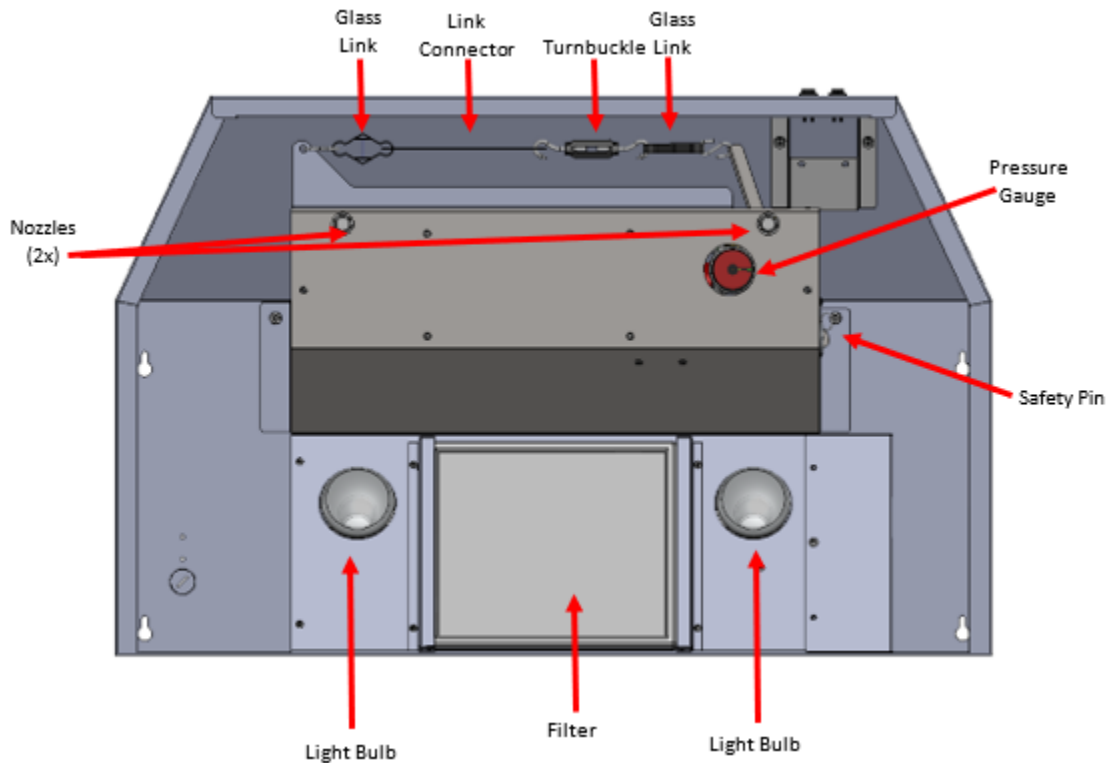


# DESIGNER SERVICE

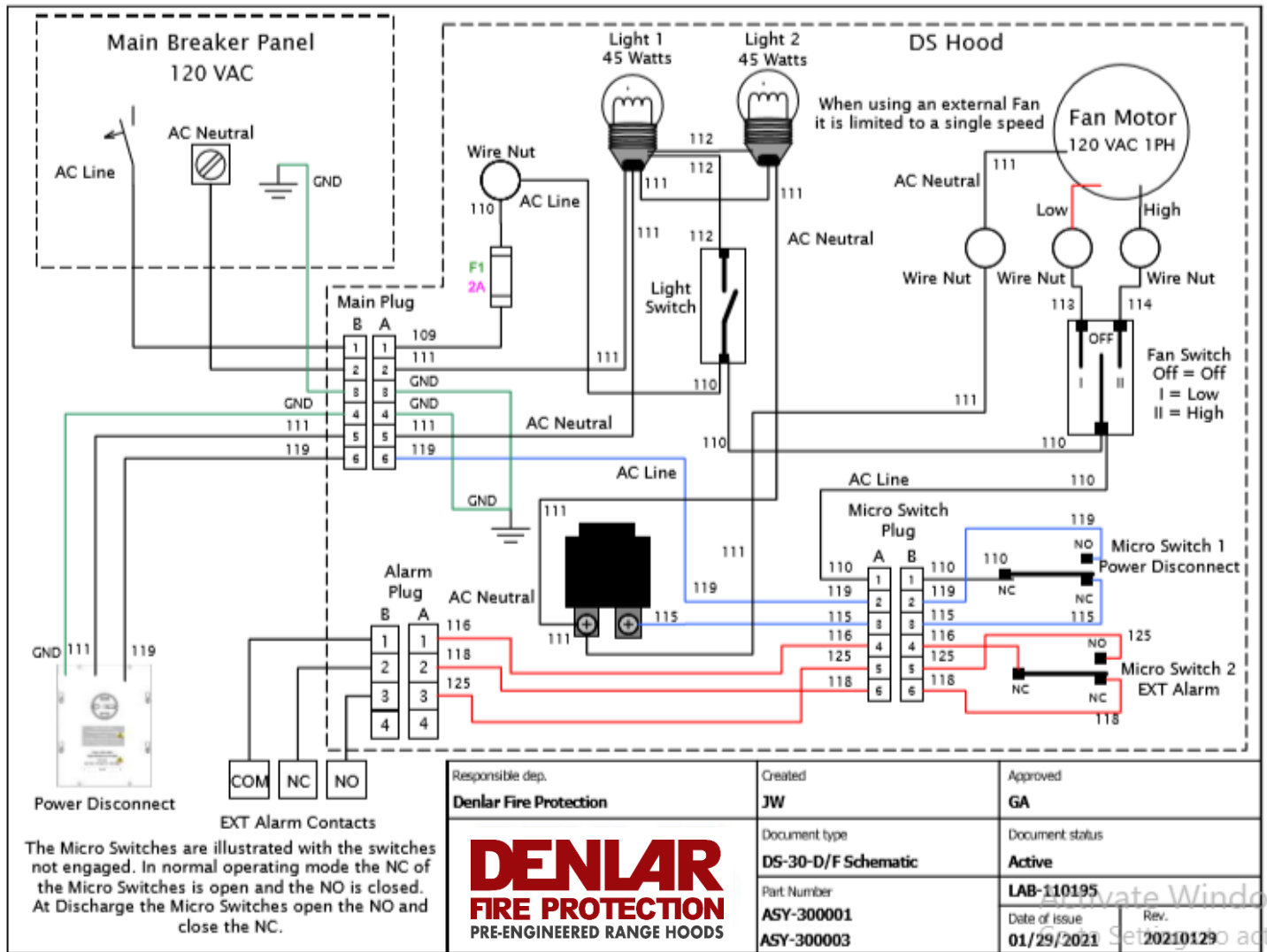
Before servicing the Designer Series Hood, install the Safety Pin for the tank to prevent an accidental discharge.

## Inspection:

1. Verify that all components are clean, non-damaged, and have no corrosion. Corrosion could be a sign that there is an issue with the tank.
2. Verify that the Pressure Gauge is in the green section.
3. Verify the Fan Motor works.
4. Verify the Light Bulbs work.
5. Verify the Range powers ON.
6. Verify the Glass Links (2x) are clean and secured.
  - a. To replace the Glass Links, ensure that the Safety Pin is installed. Use the Turnbuckle to loosen tension on the Glass Links. Replace the Glass Links and retighten the Turnbuckle.
7. Inspect the Nozzles (2x) for grease or debris.
  - a. Remove the Nozzle Caps to inspect that the Nozzle Spray orifice is not clogged.
    - i. If the Nozzle is clogged, it needs replacement. Do not try to clear a clogged Nozzle by inserting a pin or any other object. This may cause the obstruction to go deeper into the Nozzle.
- 8.



# DESIGNER SERIES SCHEMATIC





# DESIGNER SERIES DEVICE FLOW CHART

