CADDY CORPORATION

Food Service Equipment Air Systems

Ultra Series
Ventilation Systems

Operation And Maintenance Manual

509 Sharptown Road P.O. Box 345 Bridgeport, NJ 08014
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Introduction To The Ultraviolet SHBCU Series

Using the latest ultraviolet light source technology, this ventilator achieves high levels of grease extraction and is also self cleaning. The UV light cassette creates an o-zone that triggers a chemical reaction that breaks down the grease particles in the airstream. This feature creates a cleaner and safer working environment.

- Low air volume energy savings, high velocity design
- Baffle Cartridges easily removed with specially designed cartridge removal tool.
- Standard 24" high construction or custom fabricated to suit conditions using 18 gauge or heavier 300 series stainless steel.
- Available as exhaust only type or with various types of make-up air, including front face, perimeter, and short cycle designs.
- Pre-wired, UL Listed fluorescent or incandescent lights
- No water rough-ins or waste lines required
- UV light cassettes are easily removed without the use of tools
- Touch screen control panel for easy troubleshooting
- UL Listed with or without exhaust fire damper, listed by NSF, meets the requirements of NFPA #96, BOCA, ICBO, and SBCCI.

Caddy Ultra hood systems operate properly when the baffle cartridges are properly installed, the UVC lamps are clean, and the exhaust fan is turned on.

This system is engineered to reduce maintenance and keep service issues to a minimum. The unit is constructed of stainless steel with removable baffle cartridges for interior inspection and cleaning.

"Make-up air" must be provided to replace the air exhausted through all kitchen exhaust systems. The "make-up air" may either be returned through integral plenums within the front of the hoods or from registers in the kitchen ceiling. Velocities of "make-up air" should be kept to a minimum especially near the ventilator perimeter.

CAUTION High "make-up air" velocities will disturb smoke capture. Many codes call for a certain number of air changes per hour. This should be reviewed with the entire ventilation requirements of the facility.

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Suspending and Mounting

See Submittal Drawings 1, 2 and 3 for bracket detail.

Determine location of 1/2" (13mm) diameter hanging rods. All thread rods are recommended for use with front support brackets provided. All hanging rods should have double nuts. Rods should be threaded 4" (102mm) minimum for vertical adjustment.

Hanging rods by installer. Hanging brackets provided to match location of hanging rods. Wall mounted ventilators shall be fastened to wall with lag and/or butterfly bolts securely by installer through wall brackets provided.

Raise ventilator into place and secure all ceiling hanging rods.

Ventilators are shipped in maximum lengths of 16'-0".

All ventilators must be hung level and plumb.

Note

- Allow 90 lbs. per linear foot hanging weight without integral MUA.
- Allow 105 lbs. per linear foot hanging weight with integral MUA.
- Do not lift ventilators from their end panels. Lift from four corners
- All ventilator units and control panels are fitted together and factory tested prior to shipment for alignment and operation.

Duct connections must meet NFPA 96 or applicable local codes. Size of connection is indicated on ventilator shop drawing. Connection to be made after ventilator is hung.

Proper Location Is Essential

- Locating the exhaust ventilator with sufficient overhang over the cooking equipment is mandatory for proper capture and extraction of grease and smoke.
- It is important that the installer check with the Kitchen Equipment Contractor for accurate location of the cooking bank, exhaust ventilator and control panel.
- Ventilator shop drawings show recommended mounting height from finished floor to underside of ventilator at front edge. All hanging bracket locations are also indicated.
- Electrical, ductwork and air requirements are also indicated on the ventilator shop drawing.

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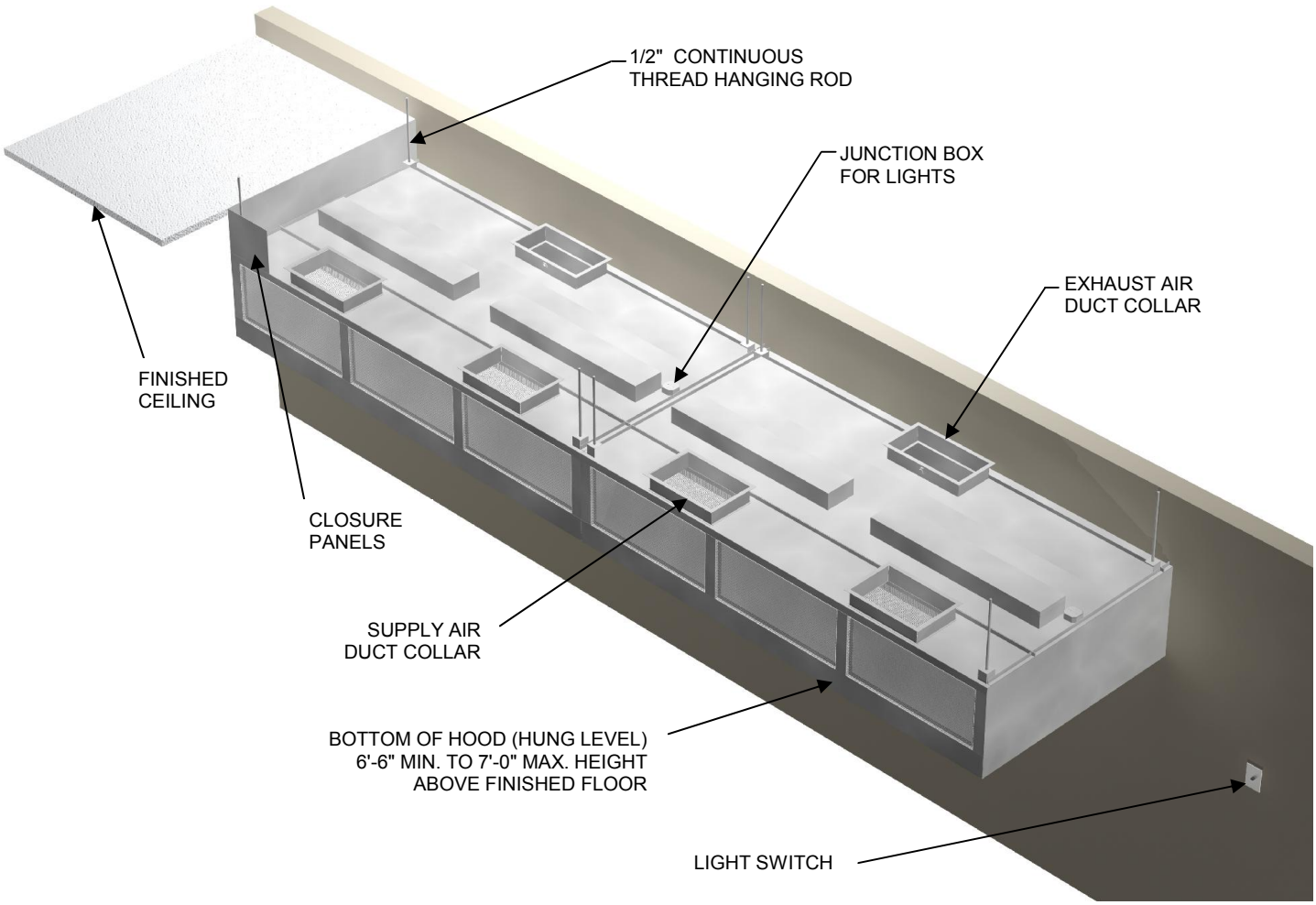
Hood Section Example

Consult the project sales drawings for your specific site.



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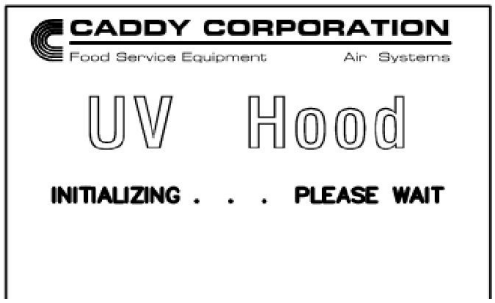
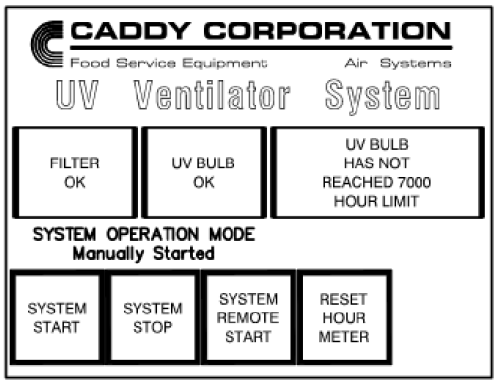
Caddy CPEU Ultra Violet Ventilator Control Panel

Upon applying power to the control panel the Initializing Screen will be displayed



After approximately 12 seconds the Operation Screen will automatically be displayed



The system may be started manually or remotely by building management system or any other automatic device

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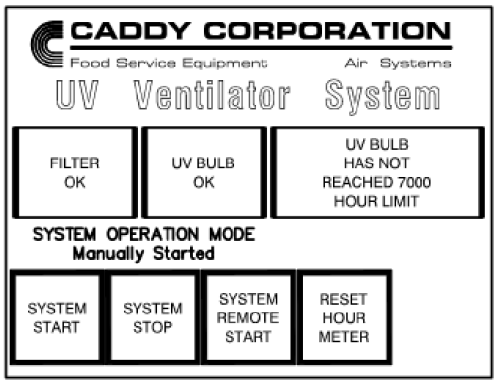
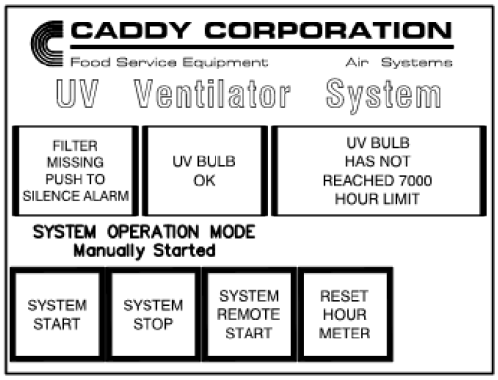
wired to the system. The screen will display "WAITING FOR MODE ENTRY" over the system start /stop buttons. Pressing the "SYSTEM START" button will start the system. The exhaust fan and ultra violet lights located in the ventilator will turn on. The screen will display "MANUALLY STARTED" above the buttons. To stop the system press the "SYSTEM STOP" button and the screen will display "MANULLY STOPPED" above the buttons. To place the system in the automatic mode press the "AUTO REMOTE START "button. In this mode the system will start and stop by a remote input signal wired to the panel. The screen will display "AUTO REMOTE STOP " or "AUTO REMOTED STARTED" depending on the input signal. If optional thermostats are connected to the control panel the screen will read "THERMOSTAT TRIGGERED". The fans will remain on for a minimum of 5 minutes. If the temperature is over the set point after 5 minutes the exhaust fans will remain on.



The system is self-monitoring and the screen displays 3 items "FILTER OK", "UV BULB OK" & "UV BULB HAS NOT REACHED 7000 HOUR LIMIT". The "FILTER OK" monitors the correct placement of all filters in the ventilator extraction chamber. If the proximity switch detects a removed grease extraction filter the "FILTER OK" will change to "FILTER MISSING PUSH TO SILENCE ALARM" and the horn will sound. Pressing this button will silence the alarm. Upon replacing the filter the system will automatically return to "FILTER OK". The ultra violet lights located in the ventilator will deactivate whenever the system enters the filter missing mode. They will reactivate when the system is returned to normal, after approximately 25 seconds of a delay.



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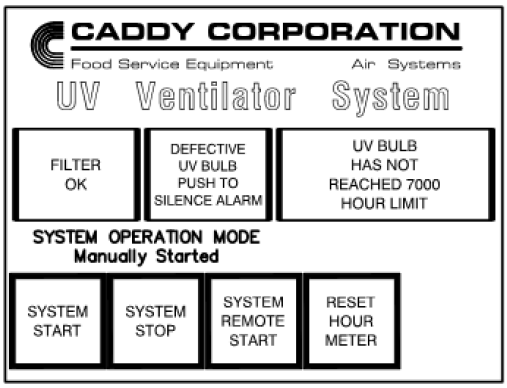
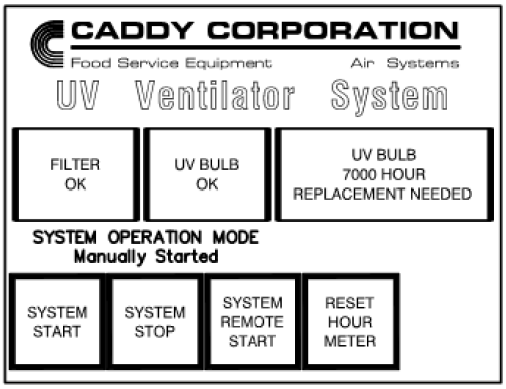
The “UV BULB OK” monitors the ultra violet bulbs in the ventilator. If an ultra violet bulb was to fail the “UV BULB OK” will change to “DEFECTIVE UV BULB PUSH TO SILENCE”. Pressing the button will silence the horn. Upon bulb replacement the system will return to” UV BULB OK” automatically. The system will still operate sufficiently with up to 2 bulbs inoperable.



The “UV BULB HAS NOT REACHED 7000 HOUR LIMIT” tracks hours of operation. When 7000 hours of operation is reached the ultra violet bulbs must be replaced to maintain their effectiveness. When 7000 hours of operation has been reached the screen will display “UV BULB 7000 HOUR REPLACEMENT NEEDED PRESS TO SILENCE ALARM”. Pressing this button will silence the alarm.



To reset the 7000 hour limit after ultra violet bulbs have been replaced press the “RESET HOUR METER”

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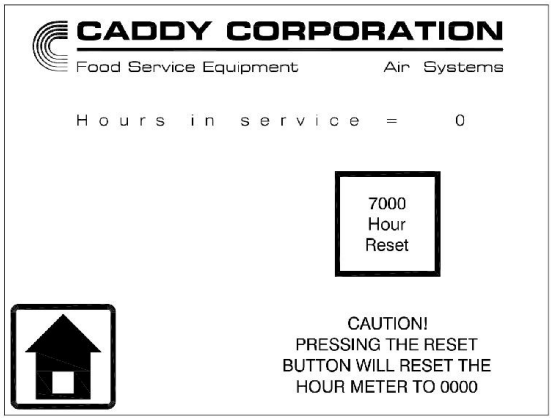
button. The screen will now change to a password screen. Enter the word “CADDY” & press enter. The screen will change to the hours in service screen. Press the “7000 HOUR RESET” button to reset the hours of operation or the accumulated hours of operation may be checked as well. To return to the operational screen press the home button.



The system must be connected to the ventilator fire protection system. If the fire system is activated the screen will indicate “FIRE” & change color to red. In the fire mode the ultra violet lights will deactivate and the supply air fan will shut off. When the fire system is reset the screen will change to amber and the home button must be pressed to return to the operational screen. If the home button is pressed while in the fire mode the operational screen will be red with a small fire mode indication.

Determining Air Flows

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The airflow quantity is determined by calculating two variables. These variables are open area of the exhaust inlet and the face velocity. The calculation is detailed below.

How to determine the Actual CFM Quantity

CFM = Velocity (FPM) x Open Area (Sq. Ft.)

Open Area (Sq. Ft.) = Sq. Ft. Per Filter (20" x 16" = .17 Sq. Ft.)(20" x 20" = .24 Sq. Ft.) x Filter Quantity

(Determine your Filter sizes and Quantities for each size. Multiply Quantities by the Sq. Ft. of the appropriate size.)

Velocity (FPM) is determined by the use of an airflow measuring device.

Refer to project sales drawings for your Required CFM Quantity.

Contact factory for Airflow Questions?

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Servicing Instructions

WARNING Access to the UVC Lamps and Control Panel is to be done by a Caddy Factory Authorized Trained Service Agency only.

Ultra System Component Cleaning

During the day grease accumulates in the interior of the filter cartridge. Therefore, they must be cleaned on a daily basis for heavy duty operations and weekly on light duty operations. This can be accomplished by running them through a dishwasher.

CAUTION If the filter cartridges are not cleaned and maintained, accumulated grease can create a fire hazard and impair the overall performance of the hood's ultra violet light system.

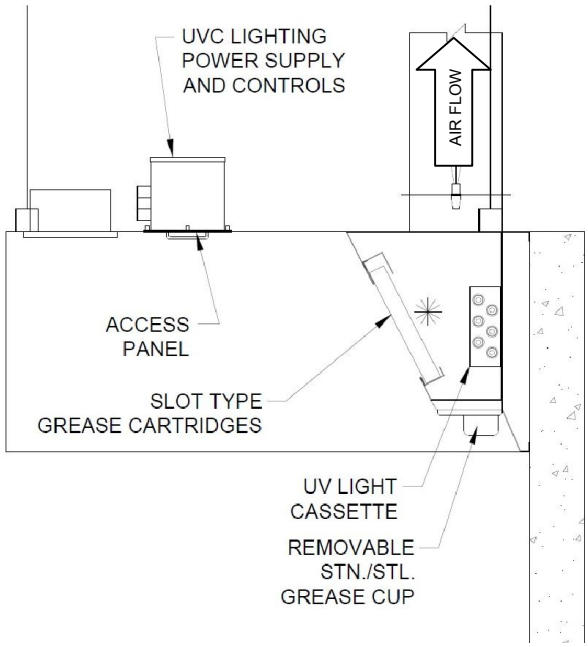
Automatic Duct Protection

A fusible link independently monitors the exhaust temperature at the duct collar. If the fusible link activates, it would set off the fire protection system discharging the fire retardant agent throughout the hood chamber, up through the exhaust collar opening into the duct work and over the cooking equipment.

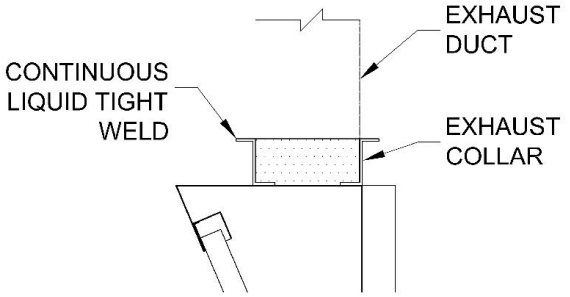
Note Depending on the type of cooking equipment covered, an independent surface fire protection system could be required. In the event of a fire, the surface fire protection system would normally activate and discharge before high temperatures would close an optional exhaust collar fire damper. All gas, and electric, cooking equipment must also be provided with a "power supply" or 'fuel shut-off' device when the surface fire protection system is activated. Duct and plenum protection is normally required on most hood systems.

Consult local authorities.

SECTION VIEW OF BOX STYLE HOOD



EXHAUST DUCT & HOOD COLLAR CONNECTION



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Maintenance and Care Instructions

You have purchased the finest equipment available. Like any fine piece of equipment, it should be given regular care and maintenance.

Note It is crucial that a Preventive Maintenance Program is contracted for and performed by a **CADDY Corporation Factory Authorized Service Agency only**. Your Caddy dealer is well qualified to coordinate this service. Periodic inspections are recommended to check the operation. When corresponding with the factory or your equipment dealer regarding service issues or replacement parts, be sure to refer to the unit by the correct model number, including prefix and suffix letters and numbers and serial number if shown. The model plate affixed to the unit contains this information and is mounted on the inside of the hood end panel.

Regular Maintenance Insures Peak Performance.

Cleaning The Exterior

Stainless Steel: Normal soil may be removed with a stainless steel detergent and warm water applied with a cloth.

Note Remove grease build-up from fixed baffles and other interior surfaces. To remove grease that has baked on, apply cleanser to a damp cloth or sponge and rub cleanser on the metal in the direction of the polishing lines of the metal.

NEVER RUB WITH A CIRCULAR MOTION.

Soil and burned on deposits, which do not respond can usually be removed by rubbing the surface with Scotch-Brite scouring pads or stainless scouring pads.

DO NOT USE ORDINARY STEEL WOOL.

Heat tint can be removed by a vigorous scouring in the direction of the polish lines using Scotch-Brite scouring pads or a stainless scouring pad in combination with a powdered cleanser.

UV Cassette and Lamp Replacement
Before servicing the UV light cassette make sure the system is turned off first. Exposure to the UV light can cause damage to your skin and eyes. To gain access to the UV light cassette, remove both sets of filters. Then disconnect the power supply from the end of the cassette. The cassette can now be removed from the hood by lifting upward. To remove the UV lamps, remove the end cover, which the power supply was connected to by removing the (6) screws. Each bulb is held in place by a small bracket, which will have to be unfastened before the each bulb is removed. Be careful when handling, as the bulbs are fragile. Clean cotton gloves should be worn in order to protect the new lamp during installation. When reassembling the hood, be sure to replace each set of filters before restarting the system.

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Preventive Maintenance

Preventive maintenance is necessary for the efficient operation of your Caddy Ultra Violet hood system.

- **Daily -** Clean ventilator exterior. See Cleaning Exterior, page 7.
- **Weekly -** Make sure the unit is turned off at the control panel. Remove the baffle cartridges. Clean the interior sections where there is any grease build-up. Do not touch, or attempt to clean or service, the UVC Lamps.
- **Monthly -** The Caddy Ultra Violet Hood should be inspected regularly. The UV tube frames and controls should be verified for proper operation and cleaning. Check to ensure that all indicator lights are on and run a complete test of the system and alarms. When handling UV lamps, care should be taken not to leave any residues or skin oils on the lamp envelope as this will affect the lamp's performance. Typical cleaning of the UV lamp would involve using a clean lint-free cloth and denatured isopropyl alcohol.

  Although this is listed as monthly, it may be extended or shortened depending on the type of cooking and hours of operation.

WARNING

Access to the UVC lamps and Control Panel is to be done by a **Caddy Corporation Factory Authorized Trained Service Agency** only.

It is crucial that a Preventive Maintenance Program is contracted and performed by a **Caddy Corporation Factory Authorized Service Agency** only.

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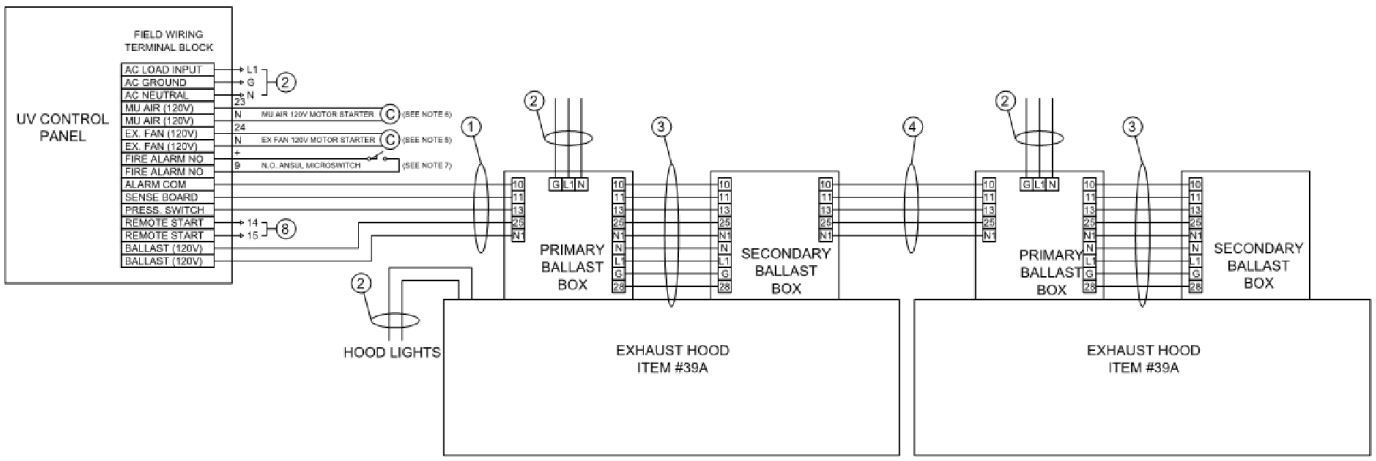
Typical Field Wiring Diagram

(example only)

Consult your project sales drawings for your specific site requirements.



1. 5 WIRE INTERLOCK BY ELECTRICAL CONTRACTOR
2. 120/1 15 AMP POWER SUPPLY BY ELECTRICAL CONTRACTOR
3. 9 WIRE INTERLOCK BY CADDY
4. 5 WIRE INTERLOCK, SUPPLIED OR RECONNECTED BY ELECTRICAL CONTRACTOR
5. 2 WIRE 120V INTERLOCK BY ELECTRICAL CONTRACTOR TO ENERGIZE EXHAUST FAN MOTOR COIL WHEN UV SYSTEM IS TURNED ON.
6. 2 WIRE 120V INTERLOCK BY ELECTRICAL CONTRACTOR TO ENERGIZE MAKE-UP AIR FAN MOTOR COIL WHEN UV SYSTEM IS TURNED ON.
7. 2 WIRE 24V LOW VOLTAGE INTERLOCK FROM ANSUL MICROSWITCH BY ELECTRICAL CONTRACTOR.
8. 2 WIRES TO BUILDING AUTOMATION SYSTEM, IF APPLICABLE

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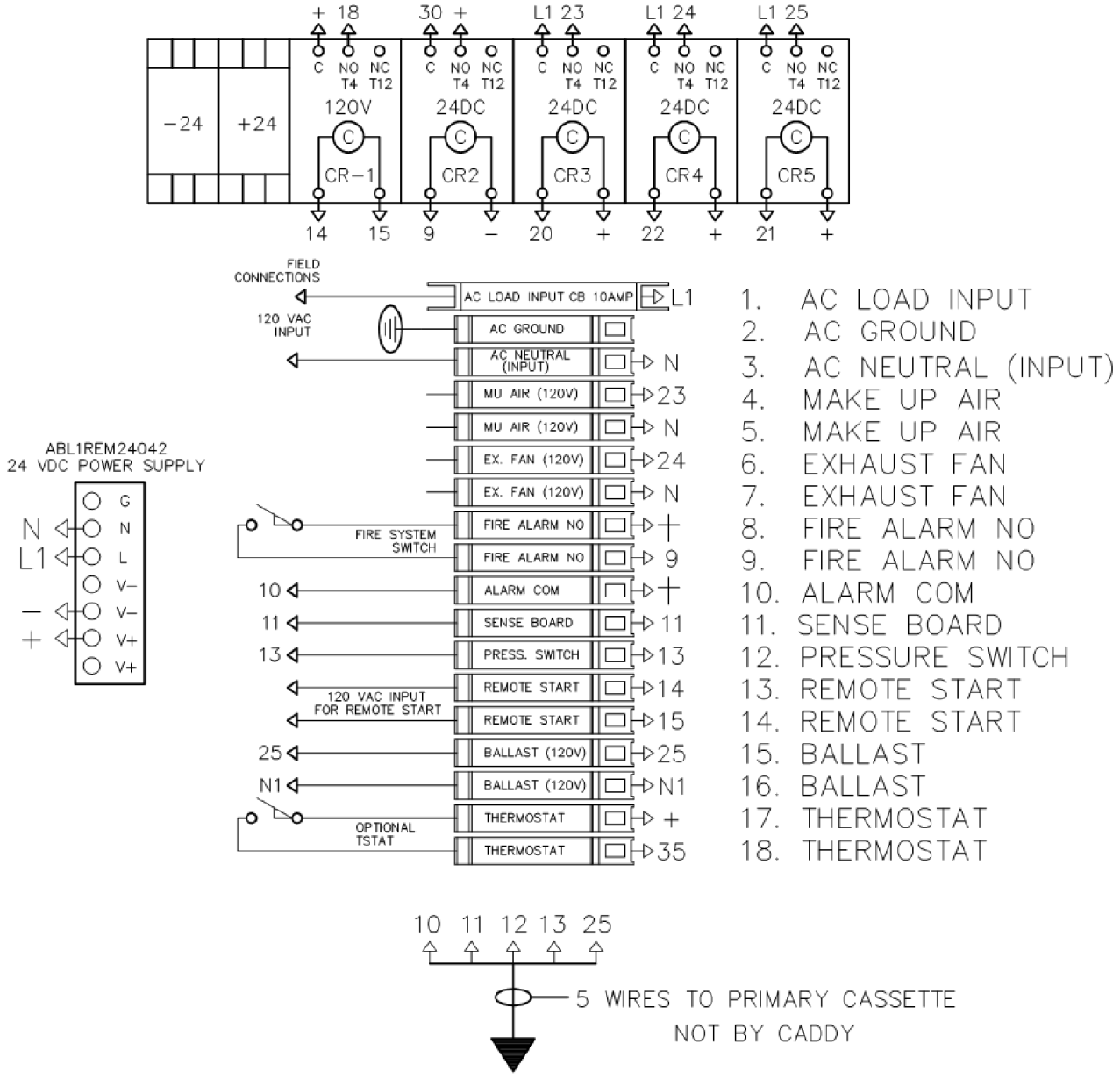
Typical Control Panel Wiring
(Example only)

Consult your project drawings for your site-specific requirements.



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Troubleshooting Guide

Symptom	Probable Cause	Solution
Exhaust fan and UVC Lamp will not function.	Field Wiring or Breaker	Verify field wiring for proper connections. Check breaker at main box.
Filter Missing Alarm	UV Lamps Off	Verify all filters are inserted in exhaust extractor body and Proximity sensor is clean.
Defective UV Bulb Alarm	UV Lamp or Lamps off	Replace failed bulbs Adjust current relay in ballast box

Replacement Parts List	Part Number
UV Control Panel	8201-01
UV Control Panel, PLC	8203-01
UV Control Panel, Control Relay CR1 120V	8207-01
UV Control Panel, Control Relay CR2-5 24V	8208-01
UV Control Panel, Horn	8210-01
UV Ballast Box, Electronic Ballast	8223-01
UV Ballast Box, Current Relay	8224-01
UV Ballast Box, Plug In Relay 120V	8225-01
UV Ballast Box, Cover Gasket	8232-01
UV Ballast Box, Cover, Internal	8260-01
UV Ballast Box, Cover, External	8261-01
UV Ballast Box, Relay View Access Cover	8267-01
UV Ballast Box, Relay View Access Cover Gasket	8268-01
UV Ballast Box, Handle Pull Chrome	0256-01
UV Cassette, 66” Long	8240-01
UV Cassette, 38” Long	8241-01
UV Cassette, UV Lamp, G64T5VH	8244-01
UV Cassette, UV Lamp, G36T5VH	8245-01
UV Cassette, Lamp Connector, 4-Pin	8247-01
UV Cassette, Grommet	8242-01
SHBCU Baffle Cartridge, 14” x 16”	1416-03
SHBCU Baffle Cartridge, 14” x 16” w/ Handle	1416-04
SHBCU Baffle Cartridge, 14” x 20”	1420-03
SHBCU Baffle Cartridge, 14” x 20” w/ Handle	1420-04
SHBCU Mesh Filter, 14” x 16”	7587-03
SHBCU Mesh Filter, 14” x 20”	7587-04

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Service Policies

1. No service work, whether warranty related or otherwise, shall be performed without proper authorization by the Caddy Corporation Service Department.
2. Caddy Corporation supplies a Factory Authorized Start-up Service for each Ultra Series Hood System.
3. Caddy Corporation will not be held responsible for supplying a fire system inspection or test, nor will Caddy be responsible for the acquisition of any permits or fees unless noted and approved on the original order.

Installation and connection of electrical components should comply with the Underwriters Laboratories standards. Insure that electrical supply conforms to electrical characteristics shown on the rating plate.

The installation of the exhaust hoods and the ductwork connections should be installed in accordance with NFPA96 and local codes

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WARRANTY

Products manufactured by Caddy Corporation are warranted to the original purchaser as follows:

Mechanical components are warranted to be free from defects in material and workmanship under normal use, storage and service for a period of one year from the date of installation or eighteen months from factory shipment, whichever occurs first.

Electrical components are warranted to the original purchaser to be free from defects in material and workmanship under normal use, storage and service for a period of ninety days from the date of shipment.

Caddy Corporation shall repair or replace, at our discretion, any part or product which we determine to be defective during the warranty period.

Under no circumstances will Caddy Corporation honor any repair or back charges by any party regardless of whether such equipment is within the warranty period, unless the Service Department of Caddy Corporation has authorized such work in writing.

If the equipment is repaired or altered in any way whatsoever by any person without prior written consent by Caddy Corporation, this warranty shall not apply.

The following are ***NOT*** covered under this warranty:
- Normal wear on parts, such as bulbs, gaskets, etc.
- Defects or damages resulting from accidents, alterations, abuse or misuse of equipment and/or any of its components.
- Damage of electrical components resulting from connecting the equipment to any power supply other than specified on the nameplate, or resulting from unauthorized altering of the equipment.
- Damage from water conditions causing malfunction of electric components and/or control equipment.

There is no other express warranty.

Any and all implied warranties are excluded to the extent permitted by law. Implied warranties, when included by law, including those merchantability and fitness for a particular purpose, are limited to one year from the date of shipment.

Liability for consequential damages under any and all warranties is excluded. This warranty is the buyer's exclusive remedy.

It is Caddy's policy to constantly improve the design and manufacture of our products. Accordingly, all equipment is subject to change consistent with such policy without prior notice and some items may be discontinued without obligation.

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