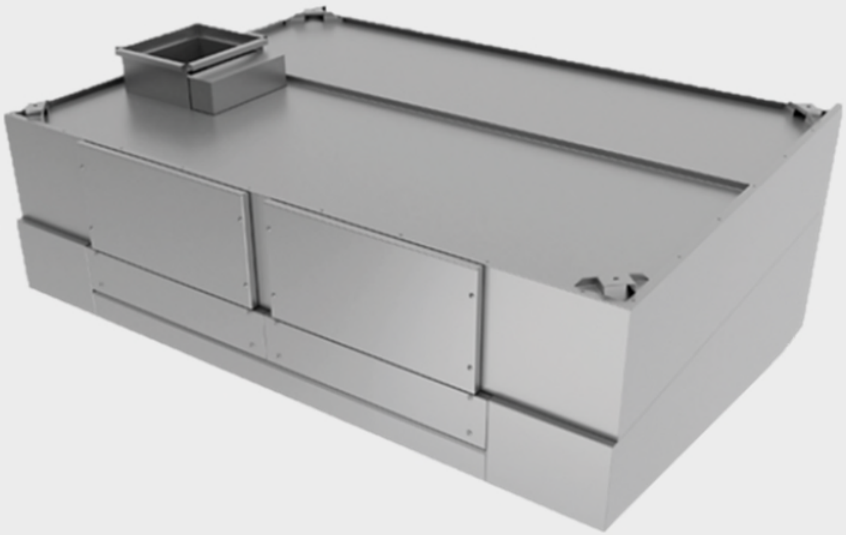
CADEXAIR
EXPERTISE & INNOVATION

STADIUM SERIE

COMBINED HOOD

Operation and maintenance Manual



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WARNING

IMPORTANT / CAUTION / DANGER

A commercial kitchen hood should always be installed by professionals in accordance with local building codes.

A commercial kitchen ventilation system may have several different sources of engine, electrical and gas power involving the hood system and other systems. Make sure you have the necessary qualifications before undertaking any installation, repair or maintenance. Limited knowledge of this type of system can result in property damage, injury or death.

IMPORTANT

Cadexair is not responsible for the installation of the hoods at the job site unless it is clearly stipulated in the sales contract.

A commercial range hood must always be installed in accordance with the current NFPA 96 edition and local standards.

INTRODUCTION

This user manual is intended to provide basic information for the installation, maintenance, and use of Cadexair's Stadium hood. The hood is an essential component of a commercial kitchen's ventilation system because it interacts with several other components. It is important to consult the project specific shop drawings in order to properly understand all the parts involved and the product's features.

The installation of a commercial kitchen ventilation system is complex and must be undertaken by professionals with the necessary skills, recognized by the local authorities having jurisdiction. Therefore, it is essential to call on licensed professionals to install the Stadium hood.

If you have any questions regarding the installation, operation or maintenance of the product, please do not hesitate to contact Cadexair for further information and assistance.

GENERAL DESCRIPTION – STADIUM HOOD

HOMOLOGATION AND CERTIFICATION

The **Stadium** hood is ULC-S646 and ULC-S647 certified and meets NFPA 99 standard.

UL-710: Exhaust Hoods for Commercial Cooking Equipment

ULC-S646: Standard for Exhaust Hoods and Related Controls for Commercial and Institutional Cooking Equipment

ULC-S647: Standard for Exhaust Cleaning and Recirculation Assemblies for Commercial and Institutional Kitchen Exhaust Systems.

IMPORTANT

The hood is ULC-S647 certified which allows the use of standard HVAC ductwork for the unit's outlet. Despite this certification, the use of standard ductwork is not necessarily approved by the local authorities having jurisdiction. Always be sure that you have approval from the authorities having jurisdiction before installing standard HVAC ductwork.

BRIEF DESCRIPTION OF THE COMPONENTS

The Stadium hood is made of 430 or 304 grade stainless-steel, 18 MSG thickness, with a polished finish on exposed surfaces and is designed for use on a single cooking line or kitchen island.

The hood is equipped with an advanced filtration system that complies with the ULC-S647 standard, providing a filtration capacity equal to the advanced filtration units listed as "Air Pollution Control Device" in the NFPA 96 standard. The first stage of the filtration process consists of either a stainless-steel baffle filter or a Geo-Vary centrifugal degreaser.

The hood comes with recessed LED lighting, providing excellent visibility while cooking. Additionally, there is a set of pressure sensors to monitor any clogging in the various filter sections, with a CC20 control box.

To guarantee safety, the hood exhaust is equipped with a high temperature limit and a fire damper installed on the hood sleeve.

Finally, the hood is connected to a Cadexair CC200-CC50 controller, for a control sequence that complies with the ULC-S647 standard and the NFPA 96 standard.

BILL OF MATERIALS

HOOD MODEL	BILL OF MATERIALS
ST-10	Stadium hood with filters in front and a 1000 CFM maximum capacity
ST-20-1	Stadium hood with filters in front and a 2000 CFM capacity
ST-20-2	Stadium hood with filters in front and a 2000 CFM with double filter system
ST-20-T	Stadium hood with filters on top and a 2000 CFM capacity
ST-40	Stadium hood with filters on top and a 4000 CFM with double filter system
ST-40-T	Stadium hood with filters on top and a 4000 CFM capacity

CC200-CC50 CONTROLLER OPERATING SEQUENCE

Cadexair's CC200-CC50 controller (see Appendix 1) is a commercial kitchen hood control panel that uses automatic detection technology to monitor hood filter saturation. It is designed to help maintain proper ventilation and extend the life of the filters, thereby reducing maintenance and operating costs.

Cadexair's CC20 control box (see Appendix 2) is equipped with differential pressure sensors that measure air resistance across the hood’s filters. The sensors send this information to the CC200-CC50 controller, which uses an algorithm to determine the saturation level of the filters.

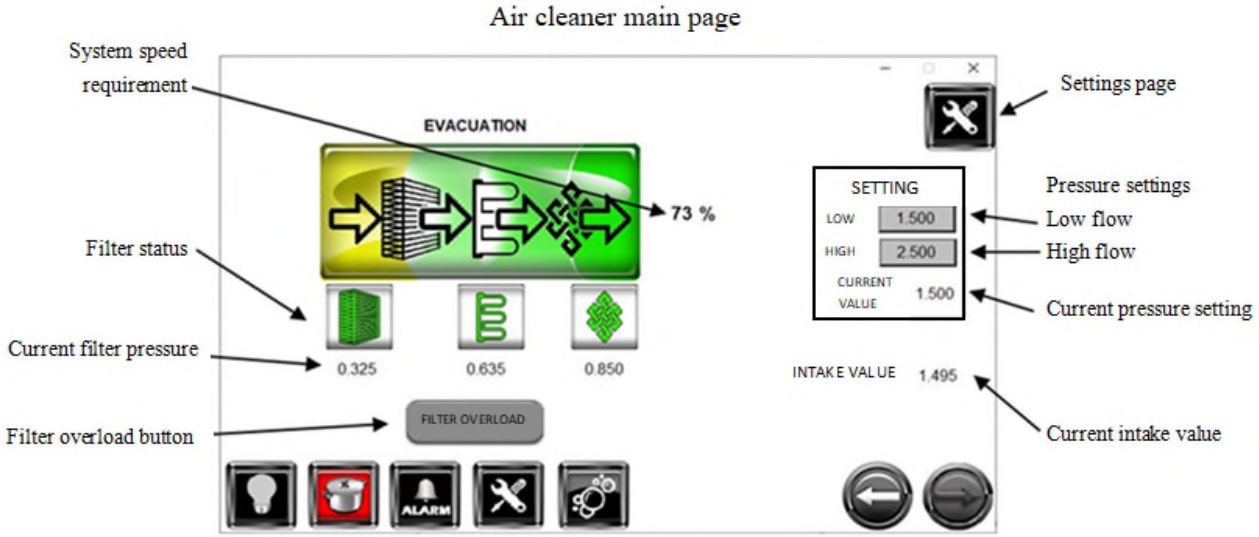
When the filters reach a pre-set saturation level, the CC200-CC50 controller triggers a pre-alarm to alert kitchen staff that it is time to replace the filters.

By monitoring and regulating hood filter saturation, the Cadexair CC200-CC50 controller can extend the life of the filters by increasing the exhaust setting to compensate for the increase in static pressure caused by the accumulated grease in the filters.

Consult the Cadexair CC200 controller manual for the options specific to CC50 and the project.

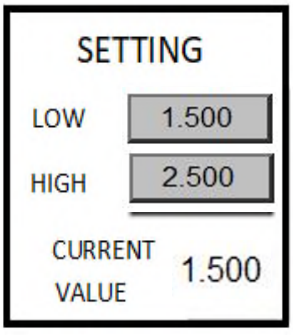
USER INTERFACE CC50 SECTION / STADIUM SECTION (AIR CLEANER)

To access the Stadium hood page, simply use the navigation buttons from the main or secondary page. On this page, you can see the filter status and differential pressure in real time.



The differential pressure is measured to determine filter clogging. When it reaches the pre-alarm threshold, a notice is displayed to give users enough time to change the filters before reaching the maximum clogging allowed. When maximum clogging is reached, the system shuts down completely and displays another message.

If a filter(s) is removed, the system will detect it and shut down immediately.



If a variable speed or 2 speed system is used, 2 pressure settings must be entered.

In a variable speed system, the pressure setting will be between the "Low" and "High" settings (0%=Low, 100%=High) depending on cooking activity.

In a 2-speed system, the setting used varies according to the speed schedule. When the schedule is in high speed, the "High" setting is used, and the "Low" setting is used the rest of the time.

When a single speed system is used, only the "Low" setting is used.

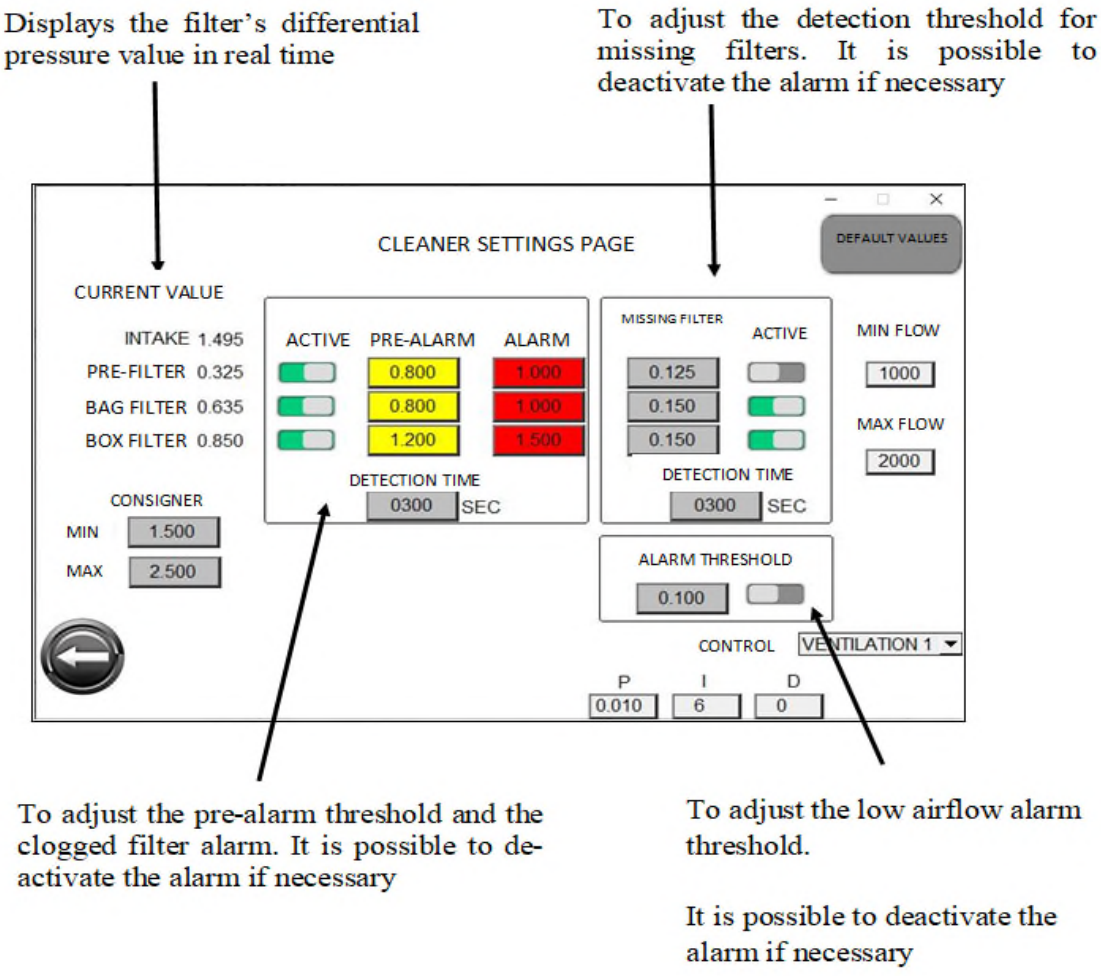
SETTINGS

To access the air cleaner's settings page, press the settings button in the upper right corner on the cleaner's main page.

Or on the settings page

USER REQUIRED - TECHNICAL (TECH)

For more details, please refer to the CC200 user manual available at wwww.cadexair.com, documents tab.



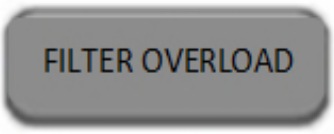
FILTER ALARMS

In the event of a filter alarm, the status will change on the cleaner's main page.

Filter	Normal filter	Pre-filter alarm	Filter alarm	No filter
Pre-filter				 Flashing
Bag filter				 Flashing
Box filter				 Flashing

Cleaner - Alarm panel

FILTER OVERLOAD



When the filters reach maximum clogging, the system fan will shut down. To allow the air cleaner or Stadium hood to operate knowing that the filters are dirty, the "FILTER OVERLOAD" button must be pushed. This button is located on the air cleaner's system main page.

By activating this button, the monitoring system for filter clogging is deactivated for a period of 4 hours.

Note that when the filter monitoring system is not active the air cleaner system will not operate.

HIGH TEMPERATURE - FIRESTAT

There is a high temperature sensor in the air cleaner's filter unit or in the Stadium hood. If the temperature rises above 107ºC (225ºF), the contact sensor opens. The system will switch to the Inactive mode and the cooking appliances will be shut down. A fire indication will be displayed and the blower will shut off.

INSTALLATION

DELIVERY AND HANDLING

- It is the responsibility of the purchaser to coordinate hood delivery to the job site with the proper means of transportation, taking into account the size of the hood and access to the job site.
- When using a forklift to move components over 6 feet (1.8 meters), the forklift must have long forks.
- Upon receipt of the goods, the purchaser must inspect the hood to ensure that all material is in good condition before signing the delivery acceptance documents.
- In case of damage, the buyer must clearly indicate it on the carrier's acceptance document and notify Cadexair as soon as possible by providing photos of the damaged merchandise.

CHECKING THE PARTS – RECEIPT

- Buyer should check the delivery slip to ensure that all parts on the packing slip are included in the delivery.
- If any parts are not included in the delivery, refer to the delivery slip attached to the shipment.
- All claims for missing parts must be made within 72 hours of receipt of the goods. Claims made after this period may be refused by Cadexair.

STORAGE

- Do not store hoods outdoors and avoid exposure to sunlight.
- Avoid storing the hood where the temperature is above 35 degrees Celsius to prevent damage when removing the adhesive film protecting the stainless-steel.

SIZING AND POSITIONING THE HOOD

The size of the hood is an essential element for the proper operation of the product and for compliance with product certification.

The hood must have a minimum overhang of 12 inches (300 mm) in front of the equipment and 6 inches (150 mm) on the sides.

Additional overhangs may be recommended during project specific product selection.

The lower front edge of the hood must be installed a minimum of 42 inches (1067 mm) from a cooking surface such as a grill, stove, fryer or griddle.

Refer to the hood manufacturing drawings and dimensions to install the hoods in the right places (hood direction, position of the hood in the cooking islands, etc.).

When laying the hoods on the floor, place protective material under the hood to avoid damaging the stainless steel.

IMPORTANT

The Stadium hood is fitted with various access doors on the front of the hood. These doors must remain accessible to replace the various filters. It is also important to provide a clearance of 30 inches (700 mm) in front of the hood.

CLEARANCE TO MATERIALS

Be sure to meet the clearance standards for semi-combustible and combustible materials. A commercial range hood must be installed 3 inches (75mm) from materials classified as semi-combustible and 18 inches (460mm) from combustible materials. This clearance applies to both walls and ceilings.

WEIGHT VALIDATION

Confirming the weight of each hood is an important step to ensure that the anchors and fastening methods used are appropriate for the weight of the hood. To verify this, refer to the hood weight table provided by the manufacturer or calculate the weight of the hood based on its dimensions and the materials used.

Once the weight of the hood has been determined, it is important to verify that the anchors and fastening methods used are appropriate to support the weight of the hood. Anchors must be of the proper size and load capacity and adapted to the supporting structure such as walls or ceilings. Fastening methods must comply with building and safety regulations.

If there is any doubt as to the ability of the anchors and fastening methods to support the weight of the hood, it is recommended to consult a qualified professional to perform an evaluation and recommend appropriate solutions. This may include modifications to the support structure, additional anchors or fastening methods to ensure the safety and stability of the hood.

IMPORTANT

The Stadium Series hood is heavier than standard hoods.

LIFTING, SUSPENSION AND LEVELING

Attach the anchor points to the building structure according to the position of the hood’s suspension brackets and install a 7/16" (11mm) threaded rod in the anchor points according to the position of the brackets. See below for typical hood anchor position without a spacer for clearance from combustible materials.

Adjust the length of the threaded rods to meet the hood installation height standards.

Lift the hood and secure the hood with the threaded rods. All suspension brackets for the hood must be held by a threaded rod. Adjust the height of the hood with the bolts of the threaded rods within the suspension brackets to make the hood level.

CONNECTING THE EXHAUST COLLAR TO THE HOOD

Unless the authorities having jurisdiction have approved lower quality ductwork, as permitted by ULC-S-647, the exhaust duct must meet NFPA 96 standard.

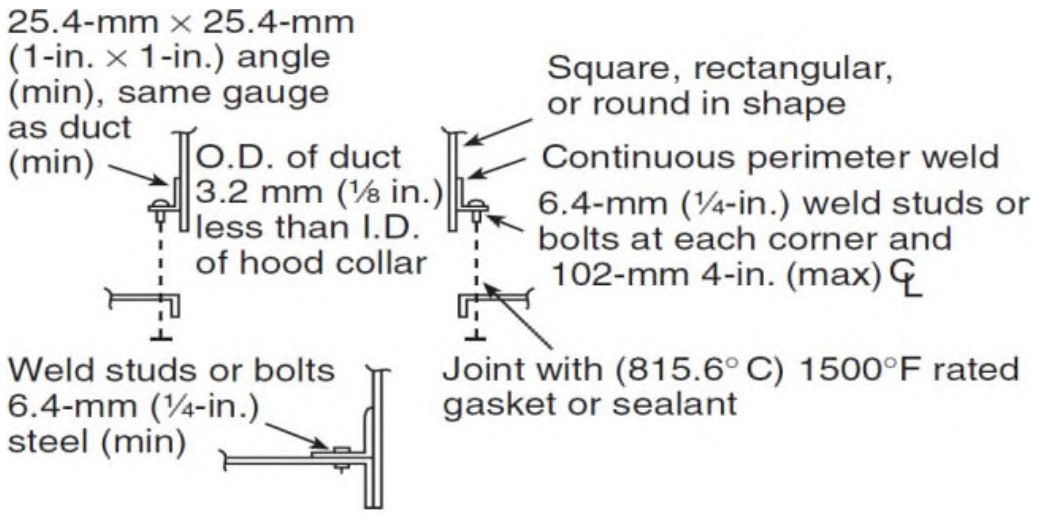
IMPORTANT

According to NFPA 96, the duct must be at least 16-gauge steel or 18-gauge stainless-steel. The duct must be continuously welded and watertight.

Hoods sometimes have factory-made holes. Always ensure that these are free of obstructions and that they are accessible for the installation of future building site components.

The exhaust outlet must be connected via a complete and continuous weld. When welding, protect the stainless-steel surfaces from contamination.

It is possible to connect the exhaust outlet to the hood as shown in the following figure from NFPA 96.



DETAIL OF SEALED HOOD – DUCT JOINT

PLUMBING CONNECTION FOR SELF-CLEANING HOODS

The self-cleaning hood series is equipped with a 3/8" compression brass fitting for each hood section. The hoods are equipped with a 2" female NPT drain connection.

ELECTRICAL FITTINGS

Hoods are frequently equipped with lights. Depending on the type of product, lighting is pre-wired per hood section to a junction box. Some models require connecting each light fixture separately. Refer to the diagram on the manufacturing drawings to ensure that the wiring is done properly.

TOP ACCESS TO HOODS

Provide access to the top of the hoods for maintenance, electrical fittings, control components, plumbing connections and fire protection system components, even after construction is complete.

SILICONE

Once the hood is in place, it is recommended to seal the various hood sections or between the hood and the walls with silicone.

Recommended silicone: Kason RubbaSeal aluminum color

PARASISMIC

It is the responsibility of the purchaser to follow seismic installation requirements as defined by an engineer specializing in this type of installation.

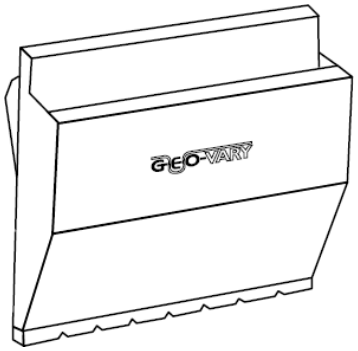
FIRE PROTECTION SYSTEM

According to NFPA 96 standard, using this type of hood over cooking appliances requires the installation of a fire extinguishing system for the exhaust ducts and the cooking appliances. This system is operated by fuses or thermal sensors built into the hood. In case of fire, the air intake is maintained and the blower is interrupted. The filter casings, ductwork and cooking surfaces are sprayed with a chemical. Gas and electricity supply to the cooking appliances and the lighting under the hood are cut-off and an alarm sounds.

INSTALLATION AND ADJUSTEMENT OF GEO-VARY FILTERS

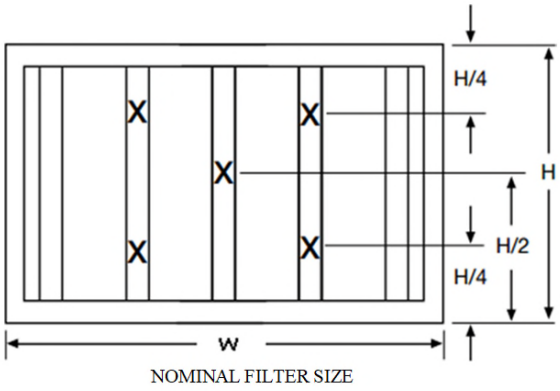
Before starting up the hood, the filters need to be installed. Begin by inserting the top of the filters into the slot located at the top of the hood and then placing the base of the filters in the grease collection gutter.

Geo-Vary filters have a predetermined location and specific adjustment. The Geo-Vary identification must always be on the front. Make adjustments according to the instructions on the label inside each hood (see Appendix 3).



AIRFLOW BALANCING

For hoods with baffle filters, turn on the exhaust fan and check the rotational direction before balancing the system. Make sure that all the filters are in place and have on hand the flow rates required to operate the hood correctly.



Cadexair recommends the following method, based on measurements taken using a propeller anemometer with a 2.75" (70 mm) wheel. Take 5 velocity readings in the filter slots as shown in the image below. Measurements should be taken perpendicular to the top of the filters at a distance of approximately 2" (50 mm).

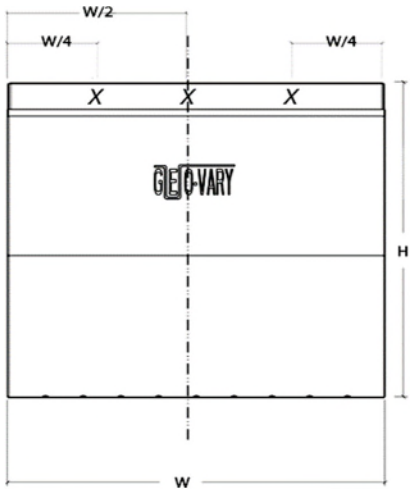
Calculate the average velocity per filter by adding together the 5 mean velocity values and dividing by 5.

Then, multiply the average velocity obtained by the effective area factor according to the filter's size:

SIZE	EFFECTIVE AREA	
H x W (IN)	SQ . FT	SQ . M
16 x 16	1,36	0,126
16 x 20	1,75	0,163
16 x 25	2,24	0,208
20 x 16	1,75	0,163
20 x 20	2,25	0,209
20 x 25	2,88	0,268

For calculations in imperial units, use air velocity units in feet per minute and use the effective area value in square feet (SQ.FT) for a flow rate in cubic feet per minute (CFM). For calculations in metric units, use air velocity units in meters per hour and use the effective area value in square meters (SQ.M) for a flow rate in cubic meters per hour. To convert a flow rate from cubic meters per hour to liters per second, multiply it by 0.278.

Before balancing the exhaust system, it is important to check that the filters are installed and adjusted according to the instructions on the label (see Appendix 3). It is also recommended to start the exhaust fan and check its rotational direction before starting airflow balancing. Finally, it is essential to know the required flow rates to ensure the hood operates properly.



Take 3 velocity readings in the filter slots according to the image below. Measurements should be taken perpendicular to the top of the filters at a distance of approximately 2" (50mm). Calculate an average velocity per filter by adding the 3 average velocity values and dividing by 3.

Then, multiply the mean velocity obtained by the effective area factor according to the filter's size.

SIZE	EFFECTIVE AREA	
H x W (IN)	**SQ . FT**	**SQ . M**
16 x 16	0,431	0,040
16 x 20	0,542	0,050
16 x 25	0,681	0,053
20 x 16	0,431	0,040
20 x 20	0,542	0,050
20 x 25	0,681	0,053

MAINTENANCE

IMPORTANT

It is strongly recommended to have replacement filters in stock at all times on the premises where the hood is located. Despite the implementation of a normal maintenance cycle, it is possible that particular events increase the volume of cooking (festivals, high season, etc.)

STADIUM HOOD FILTER REPLACEMENT FREQUENCY

The pre-filters, bag filters and box filters must be changed regularly to maintain the high grease removal efficiency required by ULC-S647 standard. When a clogged filter alarm is activated, it means that a set of filters has reached its grease holding capacity. Further use will restrict the exhaust airflow, causing smoke particle capture problems in the hood. Therefore, all three filters must be changed before a clogged filter alarm is activated.

We recommend changing the filters after the pre-alarm is activated for the corresponding set of filters.

IMPORTANT

Once the contractor has completed the installation of the STADIUM unit, change the pre-filters immediately. The pre-filters will likely be filled with construction debris, which will affect the initial operation of the unit.

1. Enter the start date on the attached FILTER CHANGING SCHEDULE (Appendix 4). This is also the date the pre-filters were changed.
2. Operate the unit until the pre-alarm for clogged filters comes on. Change the filters corresponding to the alarm at the end of the shift, or the next day before cooking. Write the date and type of filter you changed on the FILTER CHANGING SCHEDULE under filter change number #1/current.
3. Determine the number of days between the start date and the date the filters were changed. Add this number of days to the last current pre-filter change and enter this new pre-filter schedule date into the calendar under filter change number #2/schedule. Change the corresponding filters on this new date.

STAINLESS-STEEL MAINTENANCE

Stainless-steel is highly resistant to corrosion, but requires regular maintenance to maintain its surface integrity. Clean the metal as soon as it becomes soiled and avoid waiting until deep cleaning is necessary. Regular cleaning with a mild soap or detergent, followed by a hot water rinse, usually works well. If the water contains a lot of minerals, wipe the surface with a soft cloth to dry it.

Use commercial products specifically designed for stainless steel, following the manufacturer's instructions carefully. Avoid using chlorine-based cleaners or their derivatives (e.g., bleach or Lysol).

Cleaners can be applied directly to the surface or with a soft cloth or sponge. Rinse thoroughly with clean water and wipe with a soft dry cloth or allow to air dry. Always rub in the direction of the grain. If necessary, specialists can be called in to polish stainless steel on the premises, manually or electrically.

Perform the following maintenance operations according to this schedule:

- **Daily:** wipe down the visible parts of the hoods, check the control box display, and wipe down the Geo-Vary filters.
- **Weekly:** clean the baffle filters, empty the residue cups under the modular degreasers.
- **Monthly:** remove and clean filters, clean grease traps, check exhaust fan belt, check makeup air filter systems.

IMPORTANT

Inspection and cleaning of the hood exhaust and fire protection systems is required by law and by some insurance policies.

INSPECTION AND MAINTENANCE OF EXHAUST AND FIRE PROTECTION SYSTEMS

Owners of commercial kitchens should have their exhaust systems inspected regularly to ensure staff and public safety. Consult your insurance company to know the inspections required by local regulations.

Fire suppression equipment requires regular maintenance to comply with local fire codes. NFPA 96 requires two annual inspections, including the replacement of the components specified in the applicable standard.

REPLACEMENT FILTERS

HOOD MODEL	PREFILTERS		BAG FILTERS		BOX FILTERS	
	12 X 24	24 X 24	12 X 24	24 X 24	12 X 24	24 X 24
ST-10	1		1		1	
ST-20-1		1		1		1
ST-20-2	2		2		2	
ST-20-T	2		2		2	
ST-40		2		2		2
ST-40-T	4		4		4	

COMPATIBLE PRODUCTS

Prefilters 12 x 24 x 4 and 24 x 24 x 4 – MERV8

- AAF / Flanders Prepleat 40 LPD – MERV8 – 12 x 24 x 4 - (80255.041224)
- AAF / Flanders Prepleat 40 LPD – MERV8 – 24 x 24 x 4 - (80255.042424)
- Camfil Farr 30/30 – MERV8 – 12 x 24 x 4 - (059413-022)
- Camfil Farr 30/30 – MERV8 – 24 x 24 x 4 - (059413-001)
- Mann + Hummel Prime 8 – MERV8 - 12 x 24 x 4 – (2321224408)
- Mann + Hummel Prime8 – MERV8 – 24 x 24 x 4 – (2322424408)

Bag filters 12 x 24 x 21, 24 x 24 x 21 / 12 x 24 x 15, 24 x 24 x 15 – MERV 15

- AAF / Flanders Drypack 2000 – MERV15 – 12 x 24 x 21- 3 pockets- 703-209-210
- AAF / Flanders Drypack 2000– MERV15 – 24 x 24 x 21- 6 pockets –709-116-210
- AAF / Flanders Drypack 2000 – MERV15 – 12 x 24 x 15- 3 pockets -709-123-150
- AAF / Flanders Drypack 2000 – MERV15 – 24 x 24 x 15- 6 pockets -709-116-150
- Mann+Hummel Syn-Pac 95E – 12 x 24 x 21-3 pockets – MERV15 -304952421033
- Mann+Hummel Syn-Pac 95E – 24 x 24 x 21- 6 pockets – MERV15-304954421063
- Mann+Hummel Syn-Pac 95E – 12 x 24 x 15-3 pockets – MERV15 -304952415033
- Mann+Hummel Syn-Pac 95E – 24 x 24 x 15- 6 pockets – MERV15-304954415063

Cadexair recommends 21" deep filters in the majority of Stadium hoods. Some Stadium hoods are built with 15" filters when the design calls for smaller hoods.

Box filters 12 x 24 x 4 et 24 x 24 x 4 – MERV16

For Stadium hoods that need to meet ULC-S647 standard

- AAF / Flanders BioCel 1 – MERV16 – 12 x 24 x 12 - (511-631-002)
- AAF / Flanders BioCel 1 – MERV16 – 24 x 24 x 12 - (511-631-001)
- (double-header filters)

Box Filters12 x 24 x 4 et 24 x 24 x 4 – MERV14

Only for Stadium hoods that need to meet UL710 standard

- AAF / Flanders DuraCel XL – MERV14 – 12 x 24 x 12 - (515-549-008)
- AAF / Flanders DuraCel XL – MERV14 – 24 x 24 x 12 - (511-549-006)
- (double header)

REPLACEMENT PARTS

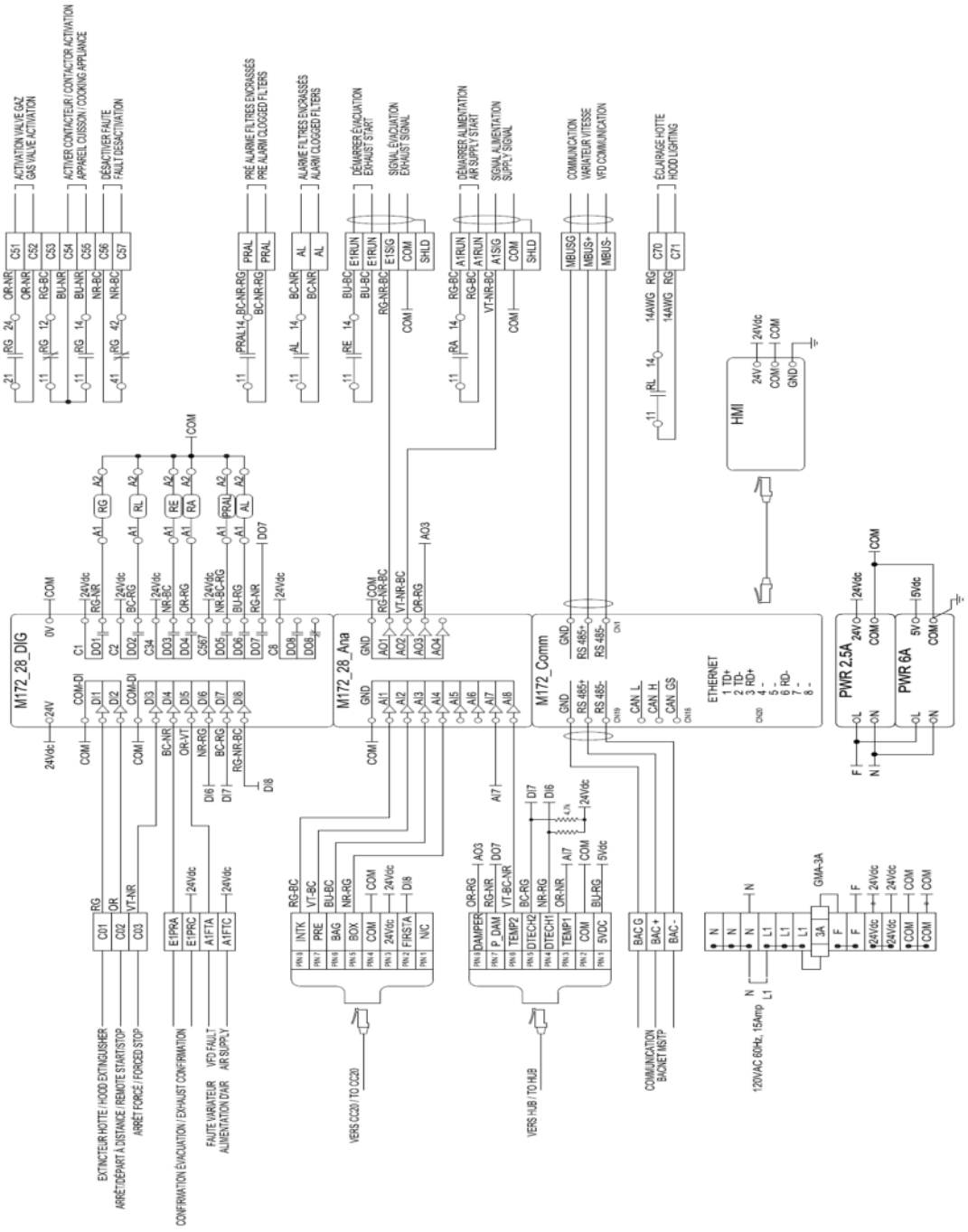
CC20 CONTROLE BOX WITH PRESSURE CARD (MBC-176)

HIGH LIMIT TEMPERATURE (PHY-282)

RECESSED DEL LIGH (XHT-236)

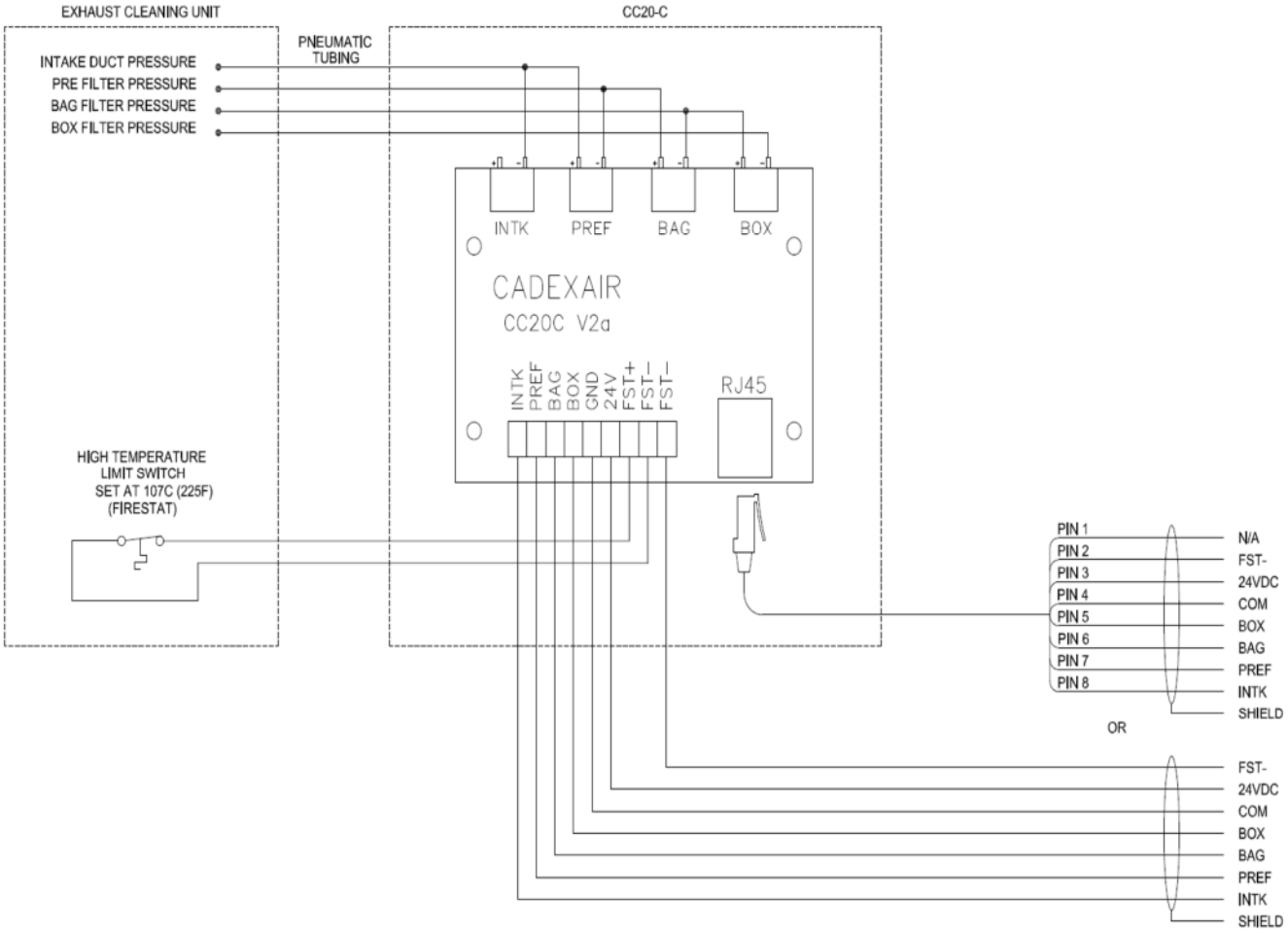
APPENDIX 1

CC200-CC50 controller diagram



APPENDIX 2

CC20 control box diagram



APPENDIX 3

Installating, adjusting and cleaning Geo-Vary filters

LIRE ATTENTIVEMENT

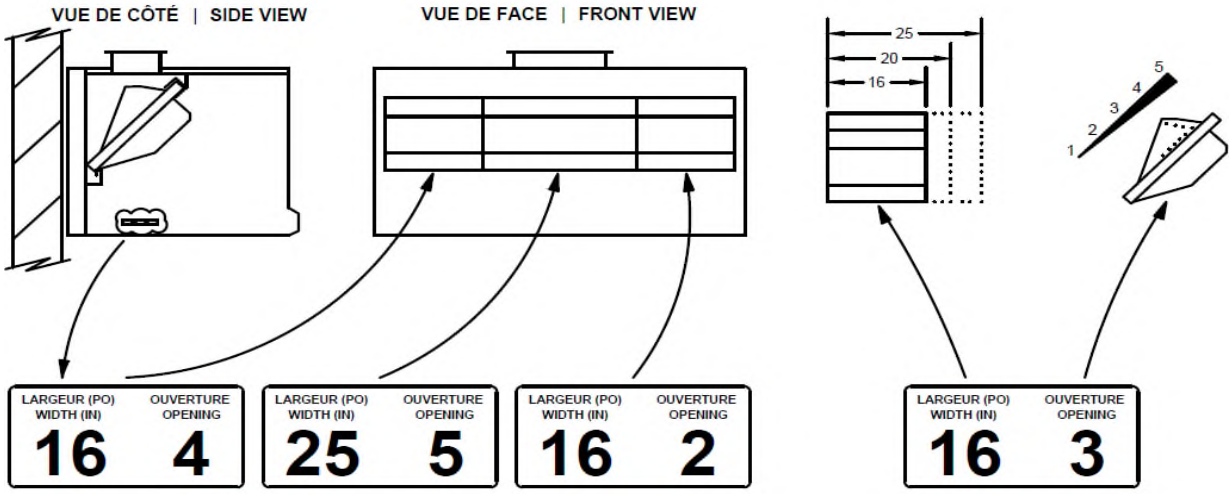
L'AJUSTEMENT DU DÉFLECTEUR DE CHACUN DES MODULES CORRESPOND À UN NUMÉRO DÉTERMINÉ PAR LE MANUFACTURIER POUR UNE ÉVACUATION OPTIMALE SELON LES APPAREILS DE CUISSON.

VOIR L'ORDRE DES MODULES ET LEUR AJUSTEMENT CI-BAS, DE GAUCHE À DROITE, FACE À LA HOTTE DU CÔTÉ OPÉRATEUR.

READ CAREFULLY

EACH BAFFLE ADJUSMENT CORRESPOND TO AN OPENING NUMBER SET BY THE MANUFACTURER FOR THE BEST EXHAUST ACCORDING TO COOKING EQUIPMENTS.

PLEASE REFER TO THE MODULE SEQUENCE AND SETTING BELOW, IN THE ORDER, FROM LEFT TO TO RIGHT, FACING THE HOOD FROM OPERATOR SIDE.



Position and adjust the opening of the Geo-Vary filters according to the plan.

1. Unscrew the butterfly nut;
2. Move the baffle to the required adjustment;
3. Screw the nut back on tightly;

Incorrect adjustment can cause performance problems.

Cleaning the Geo-Vary module

When necessary, remove the Geo-Vary module from the hood's filtration casing, carefully noting the side adjustment number of the sash as well as the location of each module.
Remove the sash from the module by removing the butterfly nut located in the air intake of the module.

Place the sash and the module upside down in a dishwasher or simply wipe the inside of the sash with hot water and degreasing detergent.

Re-insert the sash into the module to its original setting and tighten the butterfly nut located in the air intake of the module.

APPENDIX 4

Filter changing schedule

FILTER FREQUENCY CHART

Startup date / First prefilter change						
Change No.	Prefilter		Bag Filter		Box Filter	
	Date		Date		Date	
	Schedule	Actual	Schedule	Actual	Schedule	Actual
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
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