

# 1

## **Bio-Vent® Exhaust Hood with Modular Grease Extractors Bio Cleaning System Model CA-1-S-M**

### **Construction**

All stainless steel construction, 1.09 mm, (18 MSG) thick, type 304 with no. 4 finish on all exposed surfaces. Each section of the exhaust hood is equipped with mounting tabs. The bio manifold is made of copper pipe and the spray nozzles are made of brass.

### **Lighting**

A fluorescent or incandescent lighting system can be installed inside the exhaust hood at the plant when the unit is assembled. These units are CSA approved for use in kitchen exhaust hood.

### **Exhaust**

The quantity of air exhausted depends upon the type of cooking equipment installed under the exhaust hood. When heated by the cooking surfaces smoke and grease laden air rise towards the exhaust hood. (See Thermal Currents Chart).

### **Exhaust Ducts**

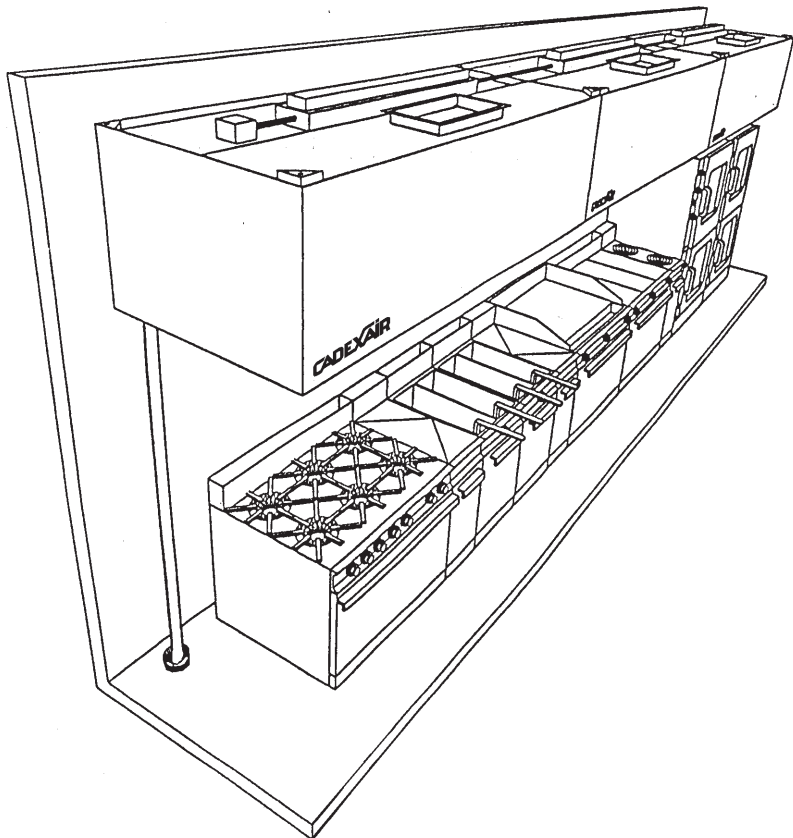
All exhaust ducts are installed according to NFPA 96. Horizontal ducts must be sloped towards the exhaust duct collar to avoid any liquid accumulation.

### **Fire Suppression System**

According to the National Building Code (NFPA 96), the use of this type of exhaust hood requires a fire suppression system to protect the exhaust ducts and cooking equipment. The system is activated by fusible links or thermal detectors located inside the exhaust hood. In case of fire, air exhaust is maintained but make-up air supply is interrupted. The grease extractors are sprayed with water while the ductwork and all cooking surfaces are sprayed with a chemical product. Gas and electricity to the cooking equipment and lighting located under the hood are interrupted and an alarm rings.

### **Application**

This exhaust hood, suspended from the ceiling, is designed to capture, clean and evacuate hot air, smoke and grease vapours produced by cooking surfaces. Its effectiveness ensures the safety, health, comfort and productivity of kitchen staff.



The exhaust hood is installed two metres (six feet, six inches) above the floor and overhangs cooking units by approximately 300 mm (12 inches).

### **Operation**

Hot air, smoke and grease vapours from cooking surfaces rise towards the exhaust hood above. The **GEO-VARY** modular grease extractors, installed in the unit, filter and purify the air before it is exhausted. The **GEO-VARY** baffle allows the air flow to be field adjusted over each appliance without affecting the overall efficiency of the exhaust hood. Even after the kitchen has been completely installed, appliances can be relocated, added, or removed from under the exhaust hood. A simple adjustment will fine tune the exhaust hood to provide excellent smoke

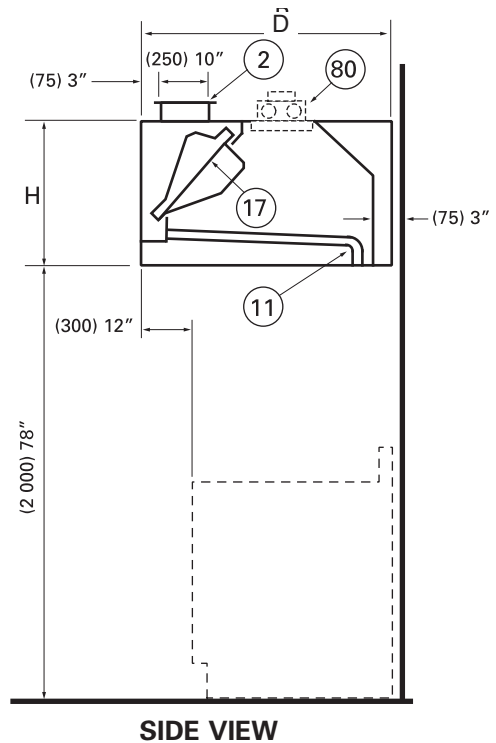
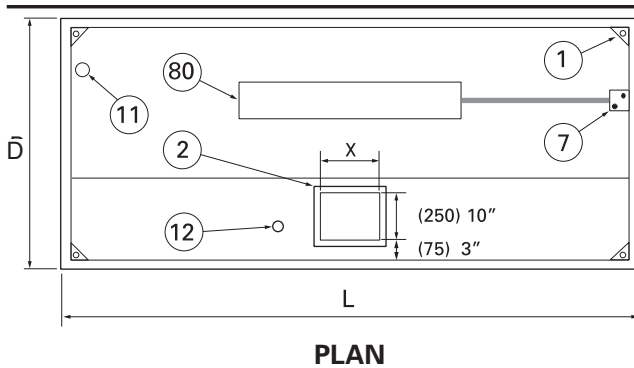
capture with maximum grease extraction. The **GEO-VARY** process minimizes exhausted air, resulting in substantial savings in the capital investment and operational costs required to evacuate and make up air in the kitchen. The modular grease extractors can be equipped with an automatic **Bio-Vent Cleaning System**. (See **Bio-Vent Action Plus System**). The residue is evacuated in a floor drain.



Manufactured  
in accordance  
with NFPA 96

# Bio-Vent® Exhaust Hood with Modular Grease Extractors Bio Cleaning System Model CA-1-S-M

1



- 1 - Mounting tabs
- 2 - Exhaust duct collar
- 7 - Junction box for lights 120 volts
- 10 - **GEO-VARY** high performance grease extractor
- 11 - Drain 50 mm (2 inches) diameter to 2000 (78 inches) from floor
- 12 - Cold water connection 3/8"
- 14 - Grease cup
- 17 - **GEO-VARY** modular grease extractor
- 80 - Sealed fluorescent light fixture 80 W - 120/1/60
- 82 - Sealed incandescent light fixture 100 W - 120/1/60

### Weight in Kg per Meter of Lineal Hood

Depth :	1 000	- 1 100	- 1 200	- 1 300	- 1 400	- 1 500	- 1 600	- 1 700
Kg/M:	65	70	75	80	85	90	95	100

### Weight in Pounds per Foot of Lineal Hood

Depth:	36"	- 42"	- 48"	- 54"	- 60"	- 66"	- 72"	- 78"
Lb/Ft :	33	37	41	45	49	53	57	61

### SIZE

L: \_\_\_\_\_ H: \_\_\_\_\_

D: \_\_\_\_\_ X: \_\_\_\_\_

Total Air Exhaust: \_\_\_\_\_

## SUGGESTED SPECIFICATIONS

### Size

Length: \_\_\_\_\_ x Depth: \_\_\_\_\_ x Height: \_\_\_\_\_, installed 2 000 mm (78 inches) from the floor.

### Description

CADEXAIR, **Bio-Vent** model CA-1-S-M. The exhaust hood is equipped with modular grease extractors. The **GEO-VARY** baffle allows the exhaust air to be field adjusted over each appliance without affecting the overall efficiency of the exhaust hood. The grease extractor is equipped with a **Bio-Vent** Cleaning System. The exhaust hood is approved by ULC and built according to NFPA 96.

### Construction

The housing of the exhaust hood is made of # 304 stainless steel 1.09 mm (18MSG) with # 4 finish on apparent surfaces. All welded joints are polished to the original finish. Each section of the exhaust hood is equipped with mounting tabs. Cleaning pipe is in copper and nozzles are in brass.

### Skirting

The space between the top of the exhaust hood and the ceiling is closed in with stainless steel panels with the same finish as the exhaust hood.

### Lighting

\_\_\_\_ fluorescent light fixture with two tubes, vapour proof, \_\_\_\_ watts, \_\_\_\_ volts, \_\_\_\_ phase, \_\_\_\_ cycles, of 1 200 mm (48 inches) in length, \_\_\_\_ incandescent light fixtures, vapour proof, \_\_\_\_ watts, \_\_\_\_ volts, \_\_\_\_ phase, \_\_\_\_ cycles, wired to a junction box.

### Work by Ventilation Contractor

Connect exhaust duct collar, located on the top of the exhaust hood, to the exhaust system. All exhaust ductwork must be installed according to NFPA 96 and be sloped towards the exhaust hood duct collar to avoid any liquid accumulation.

### Work by Electrical Contractor

Supply and install lighting wiring to junction box on top of the exhaust hood.

### Work by Plumbing Contractor

Supply and install water pipes between the control panel and each hood.

Supply and install a stainless steel pipe from the drain outlet located under the hood section to the floor drain.

Supply and install a drain pipe to the drain outlet located under the control panel.

# 1

## **Bio-Vent® Exhaust Hood with Modular Grease Extractors Bio Cleaning System Model CA-1-S-M-PE**

### **Construction**

All stainless steel construction, 1.09 mm, (18 MSG) thick, type 304 with no. 4 finish on all exposed surfaces. Each section of the exhaust hood is equipped with mounting tabs. The bio manifold is made of copper pipe and the spray nozzles are made of brass.

### **Lighting**

A fluorescent or incandescent lighting system can be installed inside the exhaust hood at the plant when the unit is assembled. These units are CSA approved for use in kitchen exhaust hood.

### **Exhaust**

The quantity of air exhausted depends upon the type of cooking equipment installed under the exhaust hood. When heated by the cooking surfaces, smoke, and grease laden air rise towards the exhaust hood. (See Thermal Currents Chart).

### **Exhaust Ducts**

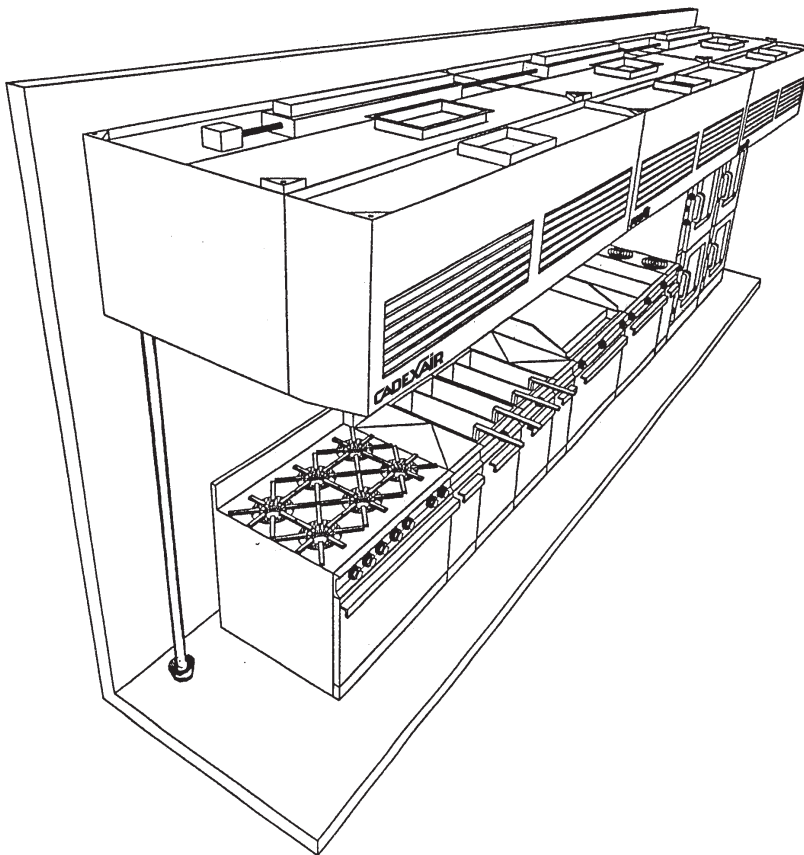
All exhaust ducts are installed according to NFPA 96. Horizontal ducts must be sloped towards the exhaust duct collar to avoid any liquid accumulation.

### **Make Up Air**

An air supply housing, made of insulated stainless steel is secured to the front of the exhaust hood. The replacement air is diffused and directed towards the ceiling with the use of stainless steel grills built into the housing. This low-projection feature limits air movement to the zone surrounding the cooking equipment.

### **Fire Suppression System**

According to the National Building Code (NFPA 96), the use of this type of exhaust hood requires a fire suppression system to protect the exhaust ducts and cooking equipment. The system is activated by fusible links or thermal detectors located inside the exhaust hood. In case of fire, air exhaust is maintained but make-up air supply is interrupted. The grease extractors are sprayed with water while the ductwork and all cooking surfaces are sprayed with a chemical product. Gas and electricity to the cooking equipment and lighting located under the hood are interrupted and an alarm rings.



### **Application**

This exhaust hood, suspended from the ceiling, is designed to capture, clean and evacuate hot air, smoke and grease vapours produced by cooking surfaces. Its effectiveness ensures the safety, health, comfort and productivity of kitchen staff. The exhaust hood is installed two metres (six feet, six inches) above the floor and overhangs cooking units by approximately 300 mm (12 inches).

### **Operation**

Hot air, smoke and grease vapours from cooking surfaces rise towards the exhaust hood above. The **GEO-VARY** modular grease extractors, installed in the unit, filter and purify the air before it is exhausted. The **GEO-VARY** baffle allows the air flow to be field adjusted over each appliance without affecting the overall efficiency of the exhaust hood. Even after

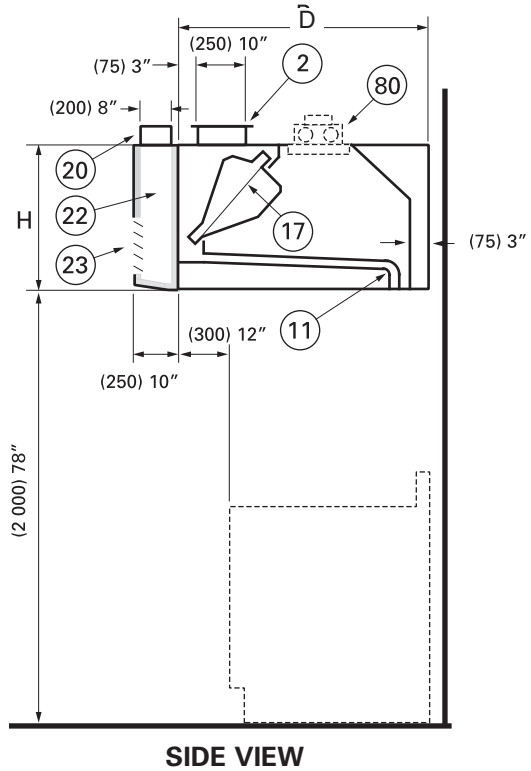
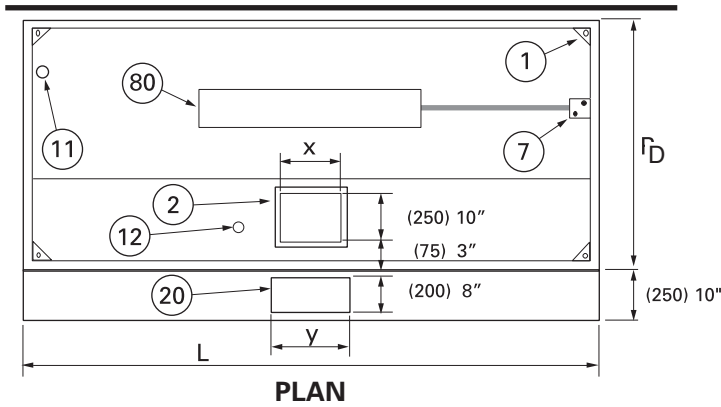
the kitchen has been completely installed, appliances can be relocated, added, or removed from under the exhaust hood. A simple adjustment will fine tune the exhaust hood to provide excellent smoke capture with maximum grease extraction. The **GEO-VARY** process minimizes exhausted air, resulting in substantial savings in the capital investment and operational costs required to evacuate and make up air in the kitchen. The modular grease extractors can be equipped with an automatic **Bio-Vent Cleaning System**. (See **Bio-Vent Action Plus System**). The residue is evacuated in a floor drain.



Manufactured  
in accordance  
with NFPA 96

# Bio-Vent® Exhaust Hood with Modular Grease Extractors Bio Cleaning System Model CA-1-S-M-PE

1



- 1 - Mounting tabs
- 2 - Exhaust duct collar
- 7 - Junction box for lights 120 volts
- 10 - **GEO-VARY** high performance grease extractor
- 11 - Drain 50 mm (2 inches) diameter to 2000 mm (78 inches) from floor
- 12 - Cold water connection 3/8"
- 17 - **GEO-VARY** modular grease extractor
- 20 - Supply duct collar - 50 mm (2 inches) high
- 22 - Insulation - 25 mm (1 inch) tick
- 23 - Integrated stainless grill
- 80 - Sealed fluorescent light fixture 80 W - 120/1/60
- 82 - Sealed incandescent light fixture 100 W - 120/1/60

Weight in Kg per Meter of Lineal Hood							
Depth:	1 000	1 100	1 200	1 300	1 400	1 500	1 600 - 1 700
Kg/M:	100	105	110	115	120	125	130 135
Weight in Pounds per Foot of Lineal Hood							
Depth:	36"	42"	48"	54"	60"	66"	72" - 78"
Lb/Ft:	67	71	75	79	83	87	91 95

Size	
X: _____	L: _____
_____	H: _____
Y: _____	P: _____
Total Air Exhaust: _____	

## SUGGESTED SPECIFICATIONS

**Size**  
Length: \_\_\_\_\_ x Depth: \_\_\_\_\_ x Height: \_\_\_\_\_, installed 2 000 mm (78 inches) from the floor.

**Description**  
CADEXAIR, **Bio-Vent** model CA-1-S-M-PE. The exhaust hood is equipped with modular grease extractors. The **GEO-VARY** baffle allows the exhaust air to be field adjusted over each appliance without affecting the overall efficiency of the exhaust hood. The grease extractor is equipped with a **Bio-Vent** cleaning system. Stainless steel grills are built into the insulated front housing to supply replacement air from the front of the exhaust hood. The exhaust hood is approved by ULC and built according to NFPA 96.

**Construction**  
The housing of the exhaust hood is made of # 304 stainless steel 1.09 mm (18 MSG) with # 4 finish on apparent surfaces. All welded joints are polished to the original finish. Each section of the exhaust hood is equipped with mounting tabs. Cleaning pipe is in copper and nozzles are in brass.

**Skirting**  
The space between the top of the exhaust hood and the ceiling is enclosed by stainless steel panels with the same finish as the exhaust hood.

**Lighting**  
\_\_\_\_ fluorescent light fixture with two tubes, vapour proof, \_\_\_\_ watts, \_\_\_\_ volts, \_\_\_\_ phase, \_\_\_\_ cycles, of 1 200 mm (48 inches) in length, \_\_\_\_ incandescent light fixtures, vapour proof, \_\_\_\_ watts, \_\_\_\_ volts, \_\_\_\_ phase, \_\_\_\_ cycles, wired to a junction box.

**Work by Ventilation Contractor**  
Connect exhaust duct collar, located on the top of the exhaust hood, to the exhaust system. All exhaust ductwork must be installed according to NFPA 96 and be sloped towards the exhaust duct collar to avoid any liquid accumulation.

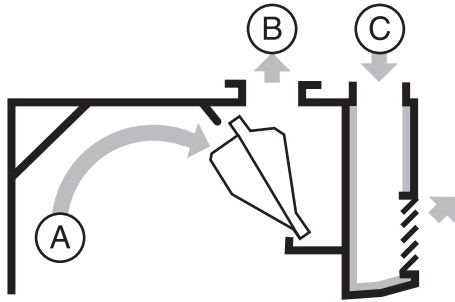
**Work by Electrical Contractor**  
Supply and install lighting wiring to junction box on top of the exhaust hood.

**Work by Plumbing Contractor**  
Supply and install water pipes between the control panel and each hood.

Supply and install a stainless steel pipe from the drain outlet located under the section hood to the floor drain.

Supply and install a drain pipe to the drain outlet located under the control panel.

# 2 Air Volume Chart "S"



- 1 Exhaust duct collar sizes are based on a velocity of 9 metres per second (1700 fpm).
  - 2 Make-up air duct collar sizes are based on a velocity of 5 metres per second (1000 fpm).
- Static pressure at the exhaust duct collar (B) is 30 mm (1.2 inch) of water column or 300 Pa.
- Static pressure at the make-up air duct collar (C) is 10 mm (0.4 inch) of water column or 100 Pa.

<b>(A) EXHAUST FLOW RATE</b> <i>See Thermal Currents Chart</i>				
COOKING EQUIPMENT	EXHAUST FLOW RATE IN CFM/FT	EXHAUST FLOW RATE IN L/s PER METRE	EXHAUST FLOW RATE IN m <sup>3</sup> /h PER METRE	GREASE EXTRACTOR ADJUSTMENT IN mm
Very light (ovens)	130	200	720	1
Light, Electric (counter equipment)	160	250	900	2
Light, Gas (counter equipment)	195	300	1080	3
Medium, Electric (restaurants)	225	350	1260	4
Medium, Gas (restaurants)	260	400	1440	4
Heavy Duty, Electric (hotels, institutions)	290	450	1620	5
Heavy Duty, Gas (hotels, institutions)	325	500	1800	5
Very Heavy Duty, Electric (charbroiler)	355	550	1980	6
Very Heavy Duty, Gas (charbroiler)	390	600	2160	6

<b>Exhaust Opening (B)</b>				
Exhaust flow rate (A) x length of extractor				
CFM	Opening ①	m <sup>3</sup> /h	L/s	Opening ①
500	10" x 5"	720	200	250 x 110
600	10" x 6"	900	250	250 x 130
700	10" x 7"	1080	300	250 x 150
800	10" x 7.5"	1260	350	250 x 180
900	10" x 8"	1440	400	250 x 200
1000	10" x 9"	1620	450	250 x 230
1100	10" x 10"	1800	500	250 x 250
1200	10" x 11"	1980	550	250 x 280
1300	10" x 12"	2160	600	250 x 300
1400	10" x 13"	2340	650	250 x 330
1500	10" x 14"	2520	700	250 x 360
1600	10" x 15"	2700	750	250 x 380
1700	10" x 16"	2880	800	250 x 400
1800	10" x 17"	3060	850	250 x 430
1900	10" x 18"	3240	900	250 x 460
2000	10" x 19"	3420	950	250 x 480
2100	10" x 20"	3600	1000	250 x 510
2200	10" x 21"	3780	1050	250 x 540
2300	10" x 22"	3960	1100	250 x 570
2400	10" x 23"	4140	1150	250 x 600
2500	10" x 24"	4320	1200	250 x 620
2600	10" x 25"	4500	1250	250 x 650
2700	10" x 26"	4680	1300	250 x 680
2800	10" x 27"	4860	1350	250 x 710
2900	10" x 28"	5040	1400	250 x 740
3000	10" x 30"	5220	1450	250 x 770
3100	10" x 31"	5400	1500	250 x 810
3200	10" x 32"	5580	1550	250 x 840
3300	10" x 33"	5760	1600	250 x 870
3400	10" x 34"	5940	1650	250 x 900
3500	10" x 35"	6120	1700	250 x 930
3600	10" x 36"	6300	1750	250 x 960
3700	10" x 37"	6480	1800	250 x 990
3800	10" x 38"	6660	1850	250 x 1020
3900	10" x 39"	6840	1900	250 x 1040
4000	10" x 40"	7200	1950	250 x 1120

<b>Make-up Air Opening (C)</b>				
Maximum air throw: 1.5 M (5 ft) Make-up air volume based on 80% of exhaust volume				
CFM	Opening ②	m <sup>3</sup> /h	L/s	Opening ②
(1) 400	(1) 8" x 11"	(1) 576	(1) 160	(1) 200 x 250
(1) 480	(1) 8" x 13"	(1) 720	(1) 200	(1) 200 x 300
(1) 560	(1) 8" x 15"	(1) 864	(1) 240	(1) 200 x 340
(1) 640	(1) 8" x 16"	(1) 1008	(1) 280	(1) 200 x 400
(1) 720	(1) 8" x 18"	(1) 1152	(1) 320	(1) 200 x 440
(1) 800	(1) 8" x 19"	(1) 1296	(1) 360	(1) 200 x 480
(1) 880	(1) 8" x 21"	(1) 1440	(1) 400	(1) 200 x 520
(1) 960	(1) 8" x 23"	(1) 1584	(1) 440	(1) 200 x 560
(1) 1040	(1) 8" x 25"	(1) 1728	(1) 480	(1) 200 x 610
(1) 1120	(1) 8" x 26"	(1) 1872	(1) 520	(1) 200 x 650
(1) 1200	(1) 8" x 27"	(1) 2016	(1) 560	(1) 200 x 690
(1) 1280	(1) 8" x 29"	(1) 2160	(1) 600	(1) 200 x 740
(1) 1360	(1) 8" x 31"	(1) 2304	(1) 640	(1) 200 x 780
(1) 1440	(1) 8" x 32"	(1) 2448	(1) 680	(1) 200 x 820
(2) 760	(2) 8" x 18"	(2) 1296	(2) 360	(2) 200 x 480
(2) 800	(2) 8" x 19"	(2) 1368	(2) 380	(2) 200 x 500
(2) 840	(2) 8" x 20"	(2) 1440	(2) 400	(2) 200 x 520
(2) 880	(2) 8" x 21"	(2) 1512	(2) 420	(2) 200 x 540
(2) 920	(2) 8" x 22"	(2) 1584	(2) 440	(2) 200 x 560
(2) 960	(2) 8" x 23"	(2) 1728	(2) 460	(2) 200 x 590
(2) 1000	(2) 8" x 24"	(2) 1800	(2) 480	(2) 200 x 610
(2) 1040	(2) 8" x 25"	(2) 1872	(2) 500	(2) 200 x 630
(2) 1080	(2) 8" x 25.5"	(2) 1944	(2) 520	(2) 200 x 650
(2) 1120	(2) 8" x 26"	(2) 2016	(2) 540	(2) 200 x 670
(2) 1160	(2) 8" x 26.5"	(2) 2088	(2) 560	(2) 200 x 690
(2) 1200	(2) 8" x 27"	(2) 2160	(2) 580	(2) 200 x 720
(2) 1240	(2) 8" x 28"	(2) 2232	(2) 600	(2) 200 x 740
(2) 1280	(2) 8" x 29"	(2) 2304	(2) 620	(2) 200 x 760
(2) 1320	(2) 8" x 30"	(2) 2376	(2) 640	(2) 200 x 780
(2) 1360	(2) 8" x 31"	(2) 2448	(2) 660	(2) 200 x 800
(2) 1400	(2) 8" x 32"	(2) 2520	(2) 680	(2) 200 x 820
(2) 1440	(2) 8" x 32.5"	(2) 2592	(2) 700	(2) 200 x 840
(2) 1480	(2) 8" x 33"	(2) 2664	(2) 720	(2) 200 x 860
(2) 1520	(2) 8" x 33.5"	(2) 2736	(2) 740	(2) 200 x 880
(2) 1560	(2) 8" x 34"	(2) 2808	(2) 760	(2) 200 x 900
(2) 1600	(2) 8" x 35"	(2) 2880	(2) 780	(2) 200 x 920

# 1

## **Bio-Vent® Exhaust Hood with Modular Grease Extractors Bio Cleaning System Model CA-1-W-M**

### **Construction**

All stainless steel construction, 1.09 mm, (18 MSG) thick, type 304 with no. 4 finish on all exposed surfaces. Each section of the exhaust hood is equipped with mounting tabs. The bio manifold is made of copper pipe and the spray nozzles are made of brass.

### **Lighting**

A fluorescent or incandescent lighting system can be installed inside the exhaust hood at the plant when the unit is assembled. These units are CSA approved for use in kitchen exhaust hood.

### **Exhaust**

The quantity of air exhausted by an exhaust hood depends upon the type of cooking equipment installed under the exhaust hood. When heated by cooking surfaces, smoke and grease laden air rise towards the exhaust hood. (See the Thermal Currents Chart).

### **Exhaust Ducts**

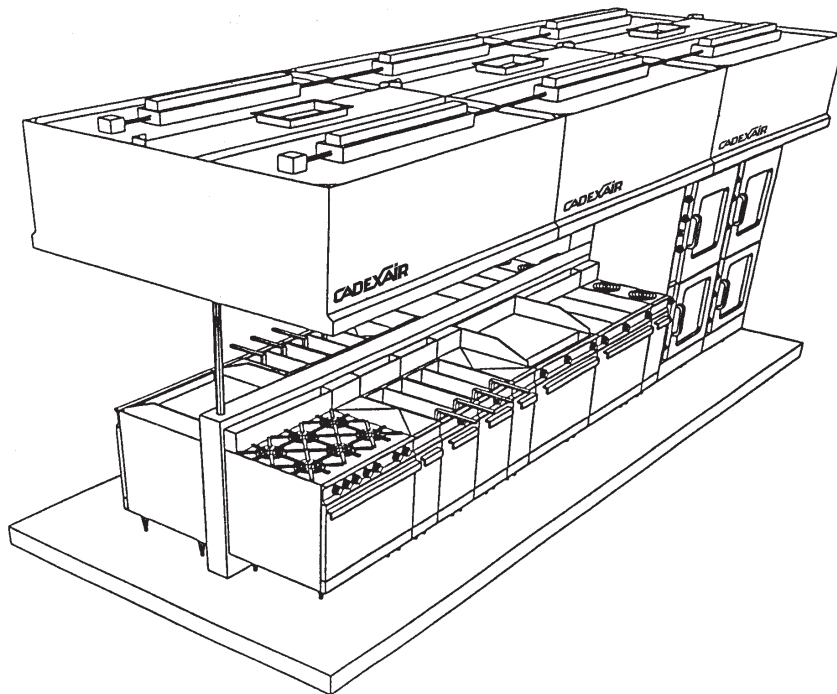
All exhaust ducts are installed according to NFPA 96. Horizontal ducts must be sloped towards the exhaust duct collar to avoid any liquid accumulation.

### **Fire Suppression System**

According to the National Building Code (NFPA 96), the use of this type of exhaust hood requires a fire suppression system to protect the exhaust ducts and cooking equipment. The system is activated by fusible links or thermal detectors located inside the exhaust hood. In case of fire, air exhaust is maintained but make-up air supply is interrupted. The grease extractors are sprayed with water while the ductwork and all cooking surfaces are sprayed with a chemical product. Gas and electricity to the cooking equipment and lighting located under the hood are interrupted and an alarm rings.

### **Application**

This exhaust hood, suspended from the ceiling, is designed to capture, clean and evacuate hot air, smoke and grease vapours produced by cooking surfaces. Its effectiveness ensures the safety, health, comfort and productivity of kitchen staff.



The exhaust hood is installed two metres (six feet, six inches) above the floor and overhangs cooking units by approximately 300 mm (12 inches).

### **Operation**

Hot air, smoke and grease vapours from cooking surfaces rise towards the exhaust hood above. The **GEO-VARY** modular grease extractors, installed in the unit, filter and purify the air before it is exhausted. The **GEO-VARY** baffle allows the air flow to be field adjusted over each appliance without affecting the overall efficiency of the exhaust hood. Even after the kitchen has been completely installed, appliances can be relocated, added, or removed from under the exhaust hood. A simple adjustment will fine tune the exhaust hood to provide excellent smoke capture with maximum grease extraction. The **GEO-VARY** process minimizes exhausted air, resulting in substantial savings in the capital investment and

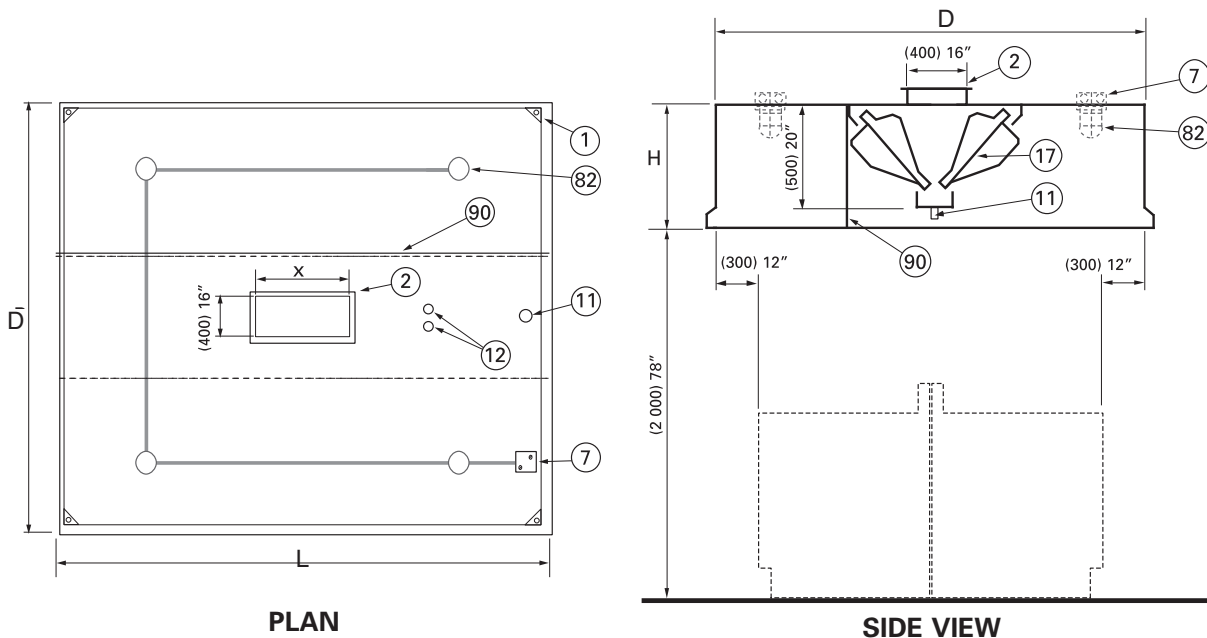
operational costs required to evacuate and make up air in the kitchen. The modular grease extractors can be equipped with an automatic **Bio-Vent Cleaning System**. (See **Bio-Vent Action Plus System**). The residue is evacuated in a floor drain.



Manufactured  
in accordance  
with NFPA 96

# Bio-Vent® Exhaust Hood with Modular Grease Extractors Bio Cleaning System Model CA-1-W-M

1



- |  |   |
|--|---|
| 1 - Mounting tabs  | 12 - Cold water connection 3/8"                         |
| 2 - Exhaust duct collar  | 17 - <b>GEO-VARY</b> modular grease extractor           |
| 7 - Junction box for lights 120 volts                                  | 80 - Sealed fluorescent light fixture 80 W - 120/1/60   |
| 10 - <b>GEO-VARY</b> high performance grease extractor                 | 82 - Sealed incandescent light fixture 100 W - 120/1/60 |
| 11 - Drain 50 mm (2 inches) diameter to 2000 mm (78 inches) from floor | 90 - Mechanical joint for shipment                      |

<b>Weight in Kg per Metre of Lineal Hood</b>								
Depth:	2 000	- 2 200	- 2 400	- 2 600	- 2 800	- 3 000	- 3 200	
Kg/M:	120	130	140	150	160	170	180	
<b>Weight in Pounds per Foot of Lineal Hood</b>								
Depth:	78"	- 84"	- 90"	- 96"	- 102"	- 108"	- 114"	- 120"
Lb/Ft:	80	85	90	95	100	105	110	115

<b>SIZE</b>	
L: _____	D: _____
H: _____	X: _____

## SUGGESTED SPECIFICATIONS

**Size**  
Length: \_\_\_\_\_ x Depth: \_\_\_\_\_ x Height: \_\_\_\_\_, installed 2 000 mm (78 inches) from the floor.

**Description**  
CADEXAIR, **Bio-Vent** model CA-1-W-M. The exhaust hood is equipped with modular grease extractors. The **GEO-VARY** baffle allows the exhaust air to be field adjusted over each appliance without affecting the overall efficiency of the exhaust hood. The grease extractor is equipped with a **Bio-Vent** cleaning system. The exhaust hood is approved by ULC and built according to NFPA 96.

**Construction**  
The housing of the exhaust hood is made of # 304 stainless steel 1.09 mm (18 MSG) with # 4 finish on apparent surfaces. All welded joints are polished to the original finish. Each section of the exhaust hood is equipped with mounting tabs. Cleaning pipe is in copper and nozzles are in brass.

**Skirting**  
The space between the top of the exhaust hood and the ceiling is enclosed by stainless steel panels with the same finish as the exhaust hood.

**Lighting**  
\_\_\_\_ fluorescent light fixture with two tubes, vapour proof, \_\_\_\_\_ watts, \_\_\_\_\_ volts, \_\_\_\_\_ phase, \_\_\_\_\_ cycles, of 1 200 mm (48 inches) in length, \_\_\_\_\_ incandescent light fixtures, vapour proof, \_\_\_\_\_ watts, \_\_\_\_\_ volts, \_\_\_\_\_ phase, \_\_\_\_\_ cycles, wired to a junction box.

**Work by Ventilation Contractor**  
Connect exhaust duct collar, located on the top of the exhaust hood, to the exhaust duct system. All exhaust ductwork must be installed according to NFPA 96 and be sloped towards the exhaust hood duct collar to avoid any liquid accumulation.

**Work by Electrical Contractor**  
Supply and install lighting wiring to junction box on top of the exhaust hood.

**Work by Plumbing Contractor**  
Supply and install water pipes between the control panel and each hood.

Supply and install a stainless steel pipe from the drain outlet located under the section hood to the floor drain.

Supply and install a drain pipe to the drain outlet located under the control panel.

# 1

## **Bio-Vent® Exhaust Hood with Modular Grease Extractors Bio Cleaning System Model CA-1-W-M-PE**

### **Construction**

All stainless steel construction, 1.09 mm, (18 MSG) thick, type 304 with no. 4 finish on all exposed surfaces. Each section of the exhaust hood is equipped with mounting tabs. The bio manifold is made of copper pipe and the spray nozzles are made of brass.

### **Lighting**

A fluorescent or incandescent lighting system can be installed inside the exhaust hood at the plant when the unit is assembled. These units are CSA approved for use in kitchen ventilators.

### **Exhaust**

The quantity of air exhausted by an exhaust hood depends upon the type of cooking equipment installed under the exhaust hood. When heated by the cooking surfaces, smoke and grease laden air rise towards the exhaust ventilator. (See Thermal Currents Chart).

### **Exhaust ducts**

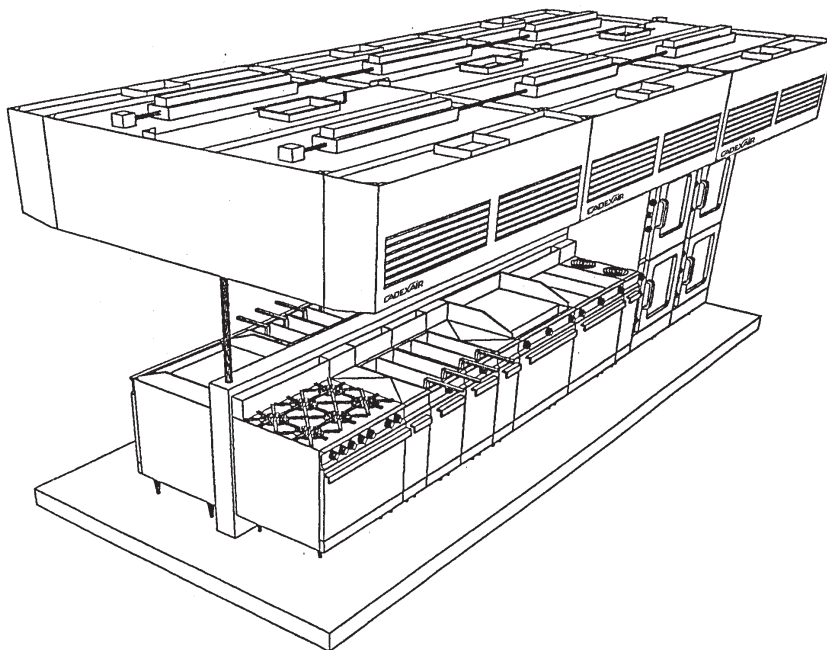
All exhaust ducts are installed according to NFPA 96. Horizontal ducts must be sloped towards the exhaust duct collar to avoid any liquid accumulation.

### **Make Up Air**

An air supply housing, made of insulated stainless steel is secured to the front of the exhaust hood. The replacement air is diffused and directed towards the ceiling with the use of stainless steel grills built into the housing. This low-projection feature limits air movement to the zone surrounding the cooking equipment.

### **Fire Suppression System**

According to the National Building Code (NFPA 96), the use of this type of exhaust hood requires a fire suppression system to protect the exhaust ducts and cooking equipment. The system is activated by fusible links or thermal detectors located inside the exhaust hood. In case of fire, air exhaust is maintained but make-up air supply is interrupted. The grease extractors are sprayed with water while the ductwork and all cooking surfaces are sprayed with a chemical product. Gas and electricity to the cooking equipment and lighting located under the hood are interrupted and an alarm rings.



### **Application**

This exhaust hood, suspended from the ceiling, is designed to capture, clean and evacuate hot air, smoke and grease vapours produced by cooking surfaces. Its effectiveness ensures the safety, health, comfort and productivity of kitchen staff. The exhaust hood is installed two metres (six feet, six inches) above the floor and overhangs cooking units by approximately 300 mm (12 inches).

### **Operation**

Hot air, smoke and grease vapours from cooking surfaces rise towards the exhaust hood above. The **GEO-VARY** modular grease extractors, installed in the unit, filter and purify the air before it is exhausted. The **GEO-VARY** baffle allows the air flow to be field adjusted over each appliance without affecting the overall efficiency of the exhaust hood. Even after the kitchen has been completely installed, appliances can be relocated, added, or

removed from under the exhaust hood. A simple adjustment will fine tune the exhaust hood to provide excellent smoke capture with maximum grease extraction. The **GEO-VARY** process minimizes exhausted air, resulting in substantial savings in the capital investment and operational costs required to evacuate and make up air in the kitchen. The modular grease extractors can be equipped with an automatic **Bio-Vent Cleaning System**. (See **Bio-Vent Action Plus System**). The residue is evacuated in a floor drain.

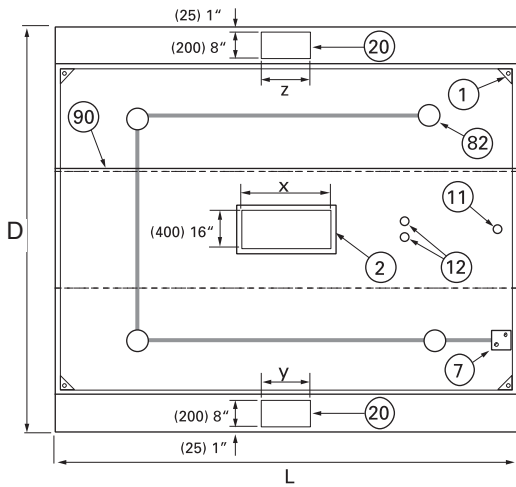


Manufactured  
in accordance  
with NFPA 96

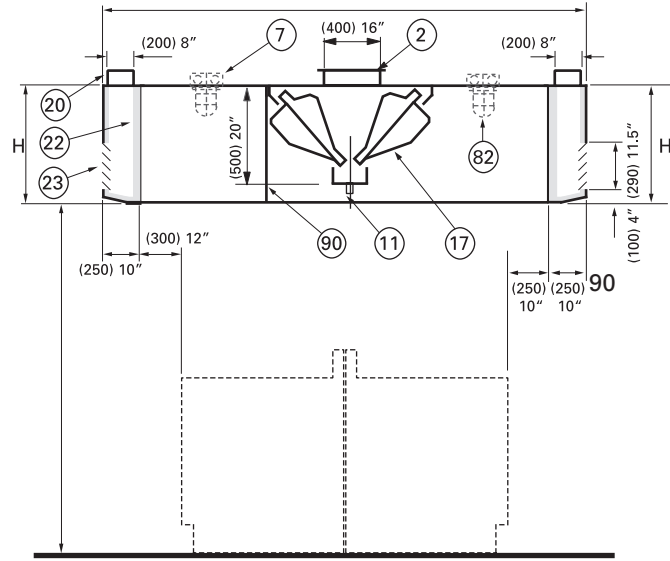


# Bio-Vent® Exhaust Hood with Modular Grease Extractors Bio Cleaning System Model CA-1-W-M-PE

1



PLAN



SIDE VIEW

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>1 - Mounting tabs</li> <li>2 - Exhaust duct collar</li> <li>7 - Junction box for lights 120 volts</li> <li>10 - <b>GEO-VARY</b> high performance grease extractor</li> <li>11 - Drain 50 mm (2 inches) diameter to 2000 mm (78 inches) from floor</li> <li>12 - Cold water connection 3/8"</li> </ul> | <ul style="list-style-type: none"> <li>17 - <b>GEO-VARY</b> modular grease extractor</li> <li>20 - Supply duct collar – 50 mm (2 inches) high</li> <li>22 - Insulation – 25 mm (1 inch) thick</li> <li>23 - Integrated stainless steel grill</li> <li>80 - Sealed fluorescent light fixture 80 W – 120/1/60</li> <li>82 - Sealed incandescent light fixture 100 W - 120/1/60</li> <li>90 - Mechanical joint for shipment</li> </ul> |
|--|---|

**Weight in Kg per Metre of Lineal Hood**

Depth:	2 000 - 2 200 - 2 400 - 2 600 - 2 800 - 3 000 - 3 200
Kg/M:	190 200 210 220 230 240 250

**Weight in Pounds per Foot of Lineal Hood**

Depth:	78" - 84" - 90" - 96" - 102" - 108" - 114" - 120"
Lb/Ft	125 130 135 140 145 150 155 160

**Size**

L: \_\_\_\_\_ D: \_\_\_\_\_

H: \_\_\_\_\_ X: \_\_\_\_\_

Y: \_\_\_\_\_ Z: \_\_\_\_\_

Total Air Exhaust: \_\_\_\_\_

## SUGGESTED SPECIFICATIONS

**Size**  
Length: \_\_\_\_\_ x Depth: \_\_\_\_\_ x Height: \_\_\_\_\_, installed 2 000 mm (78 inches) from the floor.

**Description**  
CADEXAIR, **Bio-Vent** model CA-1-W-M-PE. The exhaust hood is equipped with modular grease extractors. The **GEO-VARY** baffle allows the exhaust air to be field adjusted over each appliance without affecting the overall efficiency of the exhaust hood. The grease extractor is equipped with a **Bio-Vent** Cleaning System. Stainless steel grills are built into the insulated front housing to supply replacement air from both fronts of the exhaust hood. The exhaust hood is ULC approved and built according to NFPA 96.

**Construction**  
The housing of the exhaust hood is made of # 304 stainless steel 1.09 mm (18 MSG) with # 4 finish on apparent surfaces. All welded joints are polished to the original finish. Each section of the exhaust hood is equipped with mounting tabs. Cleaning pipe is in copper and nozzles are in brass.

**Skirting**  
The space between the top of the exhaust hood and the ceiling is enclosed by stainless steel panels with the same finish as the exhaust hood.

**Lighting**  
\_\_\_\_ fluorescent light fixture with two tubes, vapour proof, \_\_\_\_\_ watts, \_\_\_\_\_ volts, \_\_\_\_\_ phase, \_\_\_\_\_ cycles, of 1 200 mm (48 inches) in length, \_\_\_\_\_ incandescent light fixtures, vapour proof, \_\_\_\_\_ watts, \_\_\_\_\_ volts, \_\_\_\_\_ phase, \_\_\_\_\_ cycles, wired to a junction box.

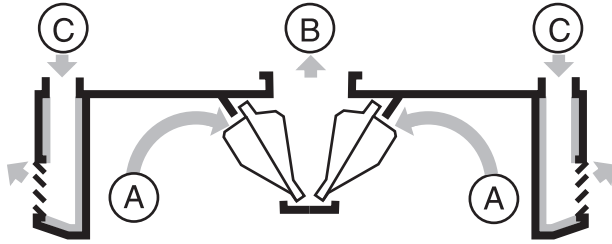
**Work by Ventilation Contractor**  
Connect exhaust duct collar, located on the top of the exhaust hood, to the exhaust system. All exhaust ductwork must be installed according to NFPA 96 and be sloped towards the exhaust duct collar to avoid any liquid accumulation.

**Work by Electrical Contractor**  
Supply and install lighting wiring to junction box on top of the exhaust hood.

**Work by Plumbing Contractor**  
Supply and install water pipes between the control panel and each hood.

Supply and install a stainless steel pipe from the drain outlet located under the section hood to the floor drain.

Supply and install a drain pipe to the drain outlet located under the control panel.



- ① Exhaust duct collar sizes are based on a velocity of 9 metres per second (1700 fpm).
  - ② Make-up air duct collar sizes are based on a velocity of 5 metres per second (1000 fmp).
- Static pressure at the exhaust duct collar (B) is 30 mm (1.2 inch) of water column or 300 Pa.
- Static pressure at the make-up air duct collar (C) is 10 mm (0.4 inch) of water column or 100 Pa.

## A EXHAUST FLOW RATE

See Thermal Currents Chart

COOKING EQUIPMENT	EXHAUST FLOW RATE IN CFM/FT	EXHAUST FLOW RATE IN L/s PER METRE	EXHAUST FLOW RATE IN m <sup>3</sup> /h PER METRE	GREASE EXTRACTOR ADJUSTMENT IN mm
Very light (ovens)	130	200	720	1
Light, Electric (counter equipment)	160	250	900	2
Light, Gas (counter equipment)	195	300	1080	3
Medium, Electric (restaurants)	225	350	1260	4
Medium, Gas (restaurants)	260	400	1440	4
Heavy Duty, Electric (hotels, institutions)	290	450	1620	5
Heavy Duty, Gas (hotels, institutions)	325	500	1800	5
Very Heavy Duty, Electric (charbroiler)	355	550	1980	6
Very Heavy Duty, Gas (charbroiler)	390	600	2160	6

## Exhaust Opening B

Exhaust flow rate **A** + **A** x length of extractor

CFM	Opening ①	m <sup>3</sup> /h	L/s	Opening ①
1000	16" x 6"	1800	500	400 x 160
1200	16" x 7"	2160	600	400 x 200
1400	16" x 8.5"	2520	700	400 x 230
1600	16" x 9.5"	2880	800	400 x 250
1800	16" x 11"	3240	900	400 x 280
2000	16" x 12"	3600	1000	400 x 320
2200	16" x 13"	3960	1100	400 x 350
2400	16" x 14"	4320	1200	400 x 380
2600	16" x 15"	4680	1300	400 x 400
2800	16" x 16"	5040	1400	400 x 430
3000	16" x 17"	5400	1500	400 x 450
3200	16" x 18"	5760	1600	400 x 500
3400	16" x 19"	6120	1700	400 x 530
3600	16" x 21"	6480	1800	400 x 560
3800	16" x 22"	6840	1900	400 x 590
4000	16" x 23"	7200	2000	400 x 620
4200	16" x 24"	7560	2100	400 x 660
4400	16" x 26"	7920	2200	400 x 700
4600	16" x 27"	8280	2300	400 x 730
4800	16" x 28"	8640	2400	400 x 760
5000	16" x 29"	9000	2500	400 x 790
5200	16" x 30"	9360	2600	400 x 830
5400	16" x 32"	9720	2700	400 x 860
5600	16" x 33"	10080	2800	400 x 890
5800	16" x 34"	10440	2900	400 x 920
6000	16" x 36"	10800	3000	400 x 960
6200	16" x 37"	11160	3100	400 x 990
6400	16" x 38"	11520	3200	400 x 1020
6600	16" x 40"	11880	3300	400 x 1070
6800	16" x 41"	12240	3400	400 x 1120
7000	16" x 42"	12600	3500	400 x 1150
7200	16" x 44"	12960	3600	400 x 1200
7400	16" x 45"	13320	3700	400 x 1240
7600	16" x 46"	13680	3800	400 x 1270
7800	16" x 48"	14040	3900	400 x 1310
8000	16" x 50"	14400	4000	400 x 1340

## Make-up Air Opening C

Maximum air throw: 1.5 M (5 ft)  
Make-up air volume based on 80% of exhaust volume

CFM	Opening ②	m <sup>3</sup> /h	L/s	Opening ②
(1) 400	(1) 8" x 11"	(1) 576	(1) 160	(1) 200 x 250
(1) 480	(1) 8" x 13"	(1) 720	(1) 200	(1) 200 x 300
(1) 560	(1) 8" x 15"	(1) 864	(1) 240	(1) 200 x 340
(1) 640	(1) 8" x 16"	(1) 1008	(1) 280	(1) 200 x 400
(1) 720	(1) 8" x 18"	(1) 1152	(1) 320	(1) 200 x 440
(1) 800	(1) 8" x 19"	(1) 1296	(1) 360	(1) 200 x 480
(1) 880	(1) 8" x 21"	(1) 1440	(1) 400	(1) 200 x 520
(1) 960	(1) 8" x 23"	(1) 1584	(1) 440	(1) 200 x 560
(1) 1040	(1) 8" x 25"	(1) 1728	(1) 480	(1) 200 x 610
(1) 1120	(1) 8" x 26"	(1) 1872	(1) 520	(1) 200 x 650
(1) 1200	(1) 8" x 27"	(1) 2016	(1) 560	(1) 200 x 690
(1) 1280	(1) 8" x 29"	(1) 2160	(1) 600	(1) 200 x 740
(1) 1360	(1) 8" x 31"	(1) 2304	(1) 640	(1) 200 x 780
(1) 1440	(1) 8" x 32"	(1) 2448	(1) 680	(1) 200 x 820
(2) 760	(2) 8" x 18"	(2) 1296	(2) 360	(2) 200 x 480
(2) 800	(2) 8" x 19"	(2) 1368	(2) 380	(2) 200 x 500
(2) 840	(2) 8" x 20"	(2) 1440	(2) 400	(2) 200 x 520
(2) 880	(2) 8" x 21"	(2) 1512	(2) 420	(2) 200 x 540
(2) 920	(2) 8" x 22"	(2) 1584	(2) 440	(2) 200 x 560
(2) 960	(2) 8" x 23"	(2) 1728	(2) 460	(2) 200 x 590
(2) 1000	(2) 8" x 24"	(2) 1800	(2) 480	(2) 200 x 610
(2) 1040	(2) 8" x 25"	(2) 1872	(2) 500	(2) 200 x 630
(2) 1080	(2) 8" x 25.5"	(2) 1944	(2) 520	(2) 200 x 650
(2) 1120	(2) 8" x 26"	(2) 2016	(2) 540	(2) 200 x 670
(2) 1160	(2) 8" x 26.5"	(2) 2088	(2) 560	(2) 200 x 690
(2) 1200	(2) 8" x 27"	(2) 2160	(2) 580	(2) 200 x 720
(2) 1240	(2) 8" x 28"	(2) 2232	(2) 600	(2) 200 x 740
(2) 1280	(2) 8" x 29"	(2) 2304	(2) 620	(2) 200 x 760
(2) 1320	(2) 8" x 30"	(2) 2376	(2) 640	(2) 200 x 780
(2) 1360	(2) 8" x 31"	(2) 2448	(2) 660	(2) 200 x 800
(2) 1400	(2) 8" x 32"	(2) 2520	(2) 680	(2) 200 x 820
(2) 1440	(2) 8" x 32.5"	(2) 2592	(2) 700	(2) 200 x 840
(2) 1480	(2) 8" x 33"	(2) 2664	(2) 720	(2) 200 x 860
(2) 1520	(2) 8" x 33.5"	(2) 2736	(2) 740	(2) 200 x 880
(2) 1560	(2) 8" x 34"	(2) 2808	(2) 760	(2) 200 x 900
(2) 1600	(2) 8" x 35"	(2) 2880	(2) 780	(2) 200 x 920

The air exhaust volume for a kitchen exhaust hood must correspond to the volume of air (Thermal Current) produced by cooking equipment.						
THERMAL CURRENTS						
Type of cooking equipment	ELECTRICAL			GAS		
	L/s per lineal metre	m3/h per lineal metre	CFM per lineal foot	L/s per lineal metre	M3/h per lineal metre	CFM per lineal foot
Warmer	160	576	100	190	684	125
Sandwich Unit	175	630	115	210	726	135
Steamer	190	684	125	230	828	150
Oven	200	720	130	240	864	155
Closed Roaster	200	720	130	240	864	155
Countertop Hot Plate	220	792	140	265	954	175
Kettle	260	936	170	310	1116	200
Fryer (counter style)	265	954	175	320	1152	210
Braising Pan	300	1080	195	360	1296	235
Open Roaster	320	1152	205	385	1386	250
Salamander	160	576	100	190	684	125
Range (restaurant type)	325	1170	210	390	1404	250
Fryer (floor type)	330	1188	215	395	1422	255
Griddle	375	1350	240	450	1620	290
Heavy Duty Range	425	1530	275	510	1836	330
Hot Top Range	435	1566	280	520	1872	335
Upright Broiler	500	1800	325	600	2160	390
Charcoal Broiler	550	1980	355	660	2376	425
Wok	475	1710	310	570	2052	370
Heavy Duty Charcoal Broiler	650	2340	420	680	2808	505
Mesquite Charcoal Broiler	-	-	-	790	2844	510

### EXHAUST PERFORMANCE

- 1- The minimum air speed in exhaust duct is 2.54 M/s (500 feet per minute).
- 2- A kitchen exhaust hood must exhaust a sufficient air volume to capture the thermal current produced by cooking equipment.
- 3- Generally, a kitchen exhaust hood must overhang cooking equipment by approximately 300 mm (12 inches) on all sides that are not installed against a wall.