



**GAS FURNACES**

**ML193DF**  
**MERIT® SERIES**  
**Downflow**

**PRODUCT SPECIFICATIONS**

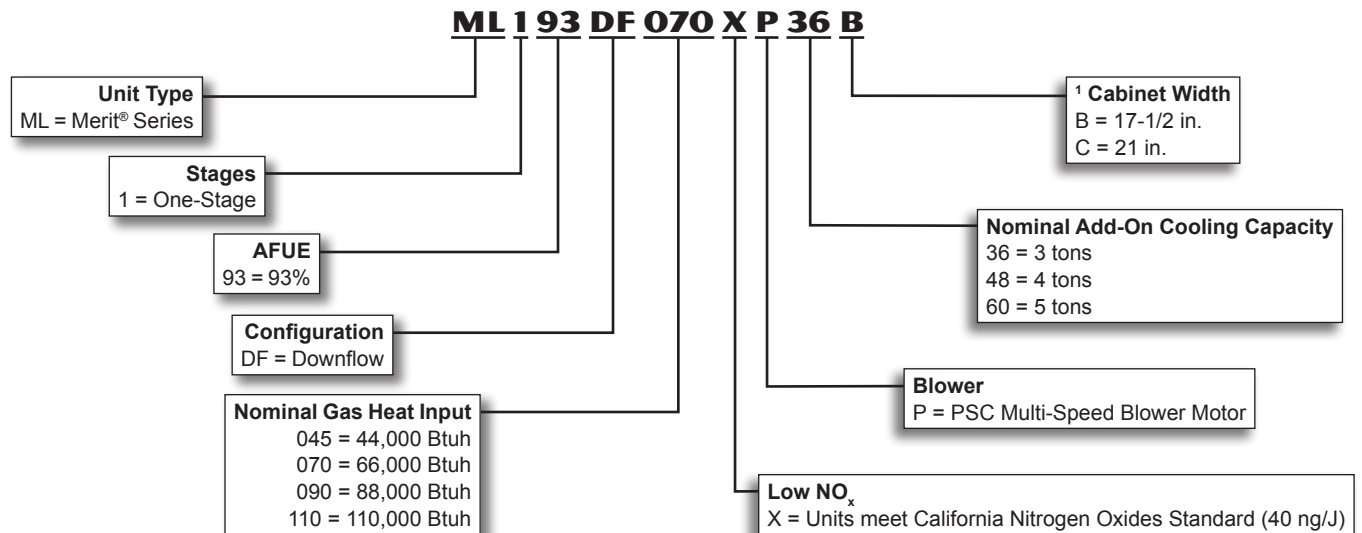
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**MERIT®**  
**SERIES**

**AFUE - 93%**  
**Input - 44,000 to 110,000 Btuh**  
**Nominal Add-on Cooling - 2 to 5 Tons**

**MODEL NUMBER IDENTIFICATION**



<sup>1</sup> Downflow indoor coils with the same letter designation will physically match the furnace supply air opening.

## FEATURES

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### WARRANTY

**Duralok Plus™ Aluminized Steel Heat Exchanger** - Limited twenty year warranty in residential applications, ten years in non-residential applications.

**All Other Covered Components** - Limited five year warranty in residential applications, one year in non-residential applications.

Refer to Lennox Equipment Limited Warranty certificate included with equipment for details.

### APPROVALS

Units are certified by AHRI

Units tested and rated according to US DOE test procedures and FTC labeling regulations.

Blower data from unit tests conducted in Lennox Laboratory air test chamber.

Approved by the California Energy Commission and meets California Nitrogen Oxides Standard (NO<sub>x</sub>) limits of 40 ng/J.

ISO 9001 Registered Manufacturing Quality System.

#### California Only

If installed in South Coast Air Quality Management District (SCAQMD) only:

This furnace does not meet the SCAQMD Rule 1111 NO<sub>x</sub> emission limit (14 ng/J), and thus is subject to a mitigation fee of up to \$450. This furnace is not eligible for the Clean Air Furnace Rebate Program:

[www.CleanAirFurnaceRebate.com](http://www.CleanAirFurnaceRebate.com).

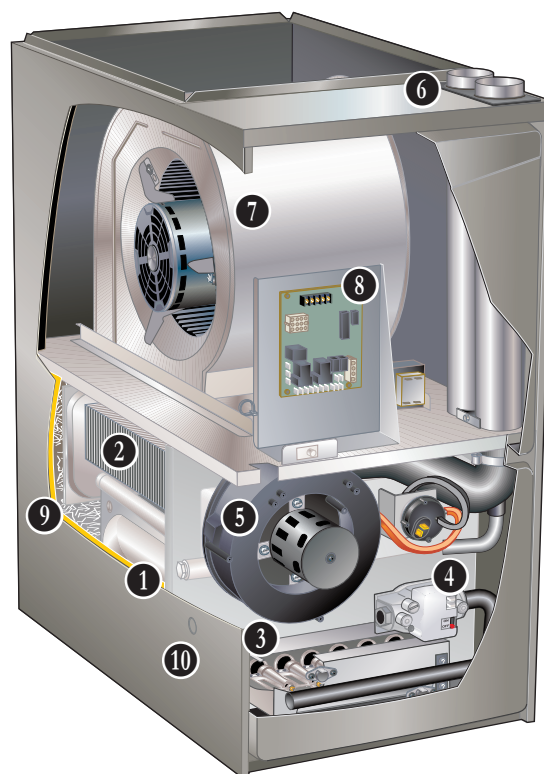
If installed in San Joaquin Valley Air Pollution Control District (SJVAPCD) only:

This furnace does not meet the SJVAPCD Rule 4905 NO<sub>x</sub> emission limit (14 ng/J), and thus is subject to a mitigation fee of up to \$450.

### APPLICATIONS

Input capacities of 44,000, 66,000, 88,000 and 110,000 Btuh.

Energy efficiency (AFUE) 93%.



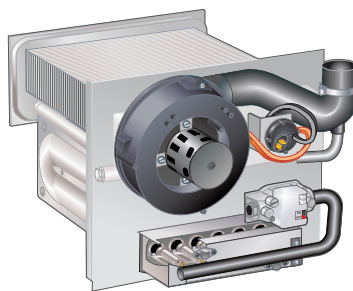
Lennox add-on indoor coils, high-efficiency air cleaners and humidifiers can easily be added to furnace.

Shipped factory assembled with controls installed and wired.

Each unit factory test operated to ensure proper operation.

### HEATING SYSTEM

#### 1 Lennox Duralok Plus™ Heat Exchanger Assembly



Lennox developed heat exchanger assembly consists of primary heat exchanger and secondary condenser coil assembly.

Main multi-pass crimped seam design clamshell type heat exchanger.

Constructed of heavy-gauge, aluminized steel.

Designed for normal expansion and contraction with maximum efficiency and minimum resistance to air flow.

#### 2 Secondary heat exchanger condenser coil constructed of aluminum fins fitted to stainless steel tubes.

Coil is factory tested for leaks.

Condensate drain header box assembly located on front of coil.

Compact size of complete heat exchanger assembly permits low overall design of furnace cabinet.

Heat exchanger assembly has been laboratory life cycle tested in excess of industry standards.

## FEATURES

### HEATING SYSTEM (continued)

#### Lennox Designed Header Box

Header box on end of condenser coil collects flue condensate for disposal through condensate drains.

The drains are located on each side of the cabinet for easy field installation of condensate drain trap.

Only one drain is used, the other drain is sealed.

Condensate drain trap is included with unit for field installation.

#### Lennox Designed Flue Condensate Trap Assembly

Condensate trap assembly is mounted outside the conditioned air stream.

Assembly can be mounted on either side of cabinet. See Installation Instructions. Can also be mounted remotely (up to 5 ft. away) from unit.

90° street elbow furnished for ease of drain trap installation.

Drain connection can be made with field provided PVC pipe or PVC coupling.

Drain cap on trap allows easy cleaning and winterizing.

### 3 Inshot Burners

Aluminized steel inshot burners provide efficient, trouble-free operation.

Burner venturi mixes air and gas in correct proportion for proper combustion.

Burner assembly is removable from the unit as a single component for ease of service.

#### SureLight® Integrated Furnace Control

Tough, reliable, long-life, trouble-free performance.

Silicon nitride ignitor.

Cemented to steatite block for protection against current leakage.

Ignition leads are constructed of nickel plated copper and are enclosed in high temperature Teflon® insulation for dependable operation.

### 4 Gas Control Valve

24 volt redundant combination gas control valve combines manual shut off switch (On-Off), automatic electric valve (dual) and gas pressure regulation into a compact combination control.

#### Flame Rollout Switches (2)

Manual reset switches are factory installed on the front of the burner box.

Switch provides protection from abnormal operating conditions.

#### Limit Control

Automatic reset, primary limit is accurately located on header box on all units.

### 5 Combustion Air Inducer

Shaded pole heavy duty blower prepurges heat exchanger and safely vents flue products.

Operates only during heating cycle.

#### Pressure Switch

Proves Combustion Air Inducer operation before allowing gas valve to open.

### Optional Accessories

#### 36K Derate Kit (045 models only)

Allows 045 (44K input) models input to be reduced to 36K. For use with natural gas only.

#### High Altitude Orifice Kits

Required on all units for proper operation at altitudes from 7501 to 10,000 ft.

Kits are available for natural gas and LPG/propane.

#### High Altitude Pressure Switch Kit

Required for proper unit operation on installations above 4500 ft.

#### Natural Gas to LPG/Propane Conversion Kit

Required for field changeover from natural gas to LPG/Propane.

#### LPG/Propane to Natural Gas Conversion Kit

Required for field changeover from LPG/Propane to natural gas.

#### Muffler (US Only)

Significantly reduces outdoor operating sound levels.

Two-inch diameter muffler is optional for 045 through 110 input models.

*NOTE - Two-inch muffler is optional for the 110 input model with a maximum vent pipe length of up to 29 ft.*

Three-inch diameter muffler is optional for 110 input models.

*NOTE - Three-inch muffler is optional for the 110 input model with a minimum vent pipe length of 30 ft.*

Installed vertically in the exhaust piping.

See Optional Accessory Dimension Drawing.

### **DIRECT VENT / NON-DIRECT VENT SEALED COMBUSTION SYSTEM**

- 6 Furnace features a “sealed combustion” system and can be installed in either Direct Vent or Non-Direct applications.

In Direct Vent applications, combustion air is supplied from outdoors and flue gases are discharged outdoors.

In Non-Direct Vent applications, combustion air is supplied from indoors and flue gases are discharged outdoors.

*NOTE - Lennox® has approved the use of DuraVent® PolyPro® manufactured vent pipe and terminations as an alternative to PVC vent pipe. Must be ordered separately.*

*Tested and listed to the ULC S636 standard in Canada.*

*The PolyPro venting system must follow the uninsulated and unconditioned space vent lengths listed in the table on Page 9.*

*Refer to the Installation Instructions for additional details.*

## FEATURES

### **DIRECT VENT / NON-DIRECT VENT SEALED COMBUSTION SYSTEM (continued)**

#### **Optional Accessories**

##### **Flue Coupling**

Assists with exhaust flue piping connection and servicing.

Includes flexible one 2 inch rubber coupling and two adjustable bands.

Approved for all Lennox 90% furnaces.

##### **Termination Kits**

Facilitates installation of combustion air intake pipe and flue exhaust pipe.

Refer to venting table in this bulletin to determine pipe size needed and proper termination kit required.

See Optional Accessories table and dimension drawings.

##### **Termination Kit - Concentric - Direct Vent Applications**

2 or 3 inch kit contains concentric termination assembly, reducer bushing and 45 degree elbow.

2 inch kit for -045-070 models contains an outdoor exhaust accelerator.

Kit requires single hole penetration of roof or wall for installation.

Roof Termination Flashing Kit is available for use with 2 inch Kits.

CSA certified.

##### **Termination Kit - Flush-Mount**

Kit contains flush-mount termination, accelerator, mounting template and hardware.

Kit may be used with 2, 2-1/2 or 3 in. pipe.

##### **Termination Kits - Wall Assembly**

##### **Close Couple (US Only) - Direct Vent Applications**

2 or 3 inch kit consists of close-couple, side-by-side PVC piping with galvanized steel wall cover plate for sealing and isolating piping penetration of the wall.

Piping spacing and length is sized for proper wall installations.

CSA certified.

##### **Close Couple WTK (Canada Only) - Direct Vent Applications**

2 or 3 inch kit contains one insulated faceplate, one insulated exhaust pipe, elbow and fittings.

##### **Wall Ring - Direct Vent or Non-Direct Vent Applications**

2 inch kit contains 2 stainless steel outside seal caps, 2 galvanized steel inside seal caps, 4 seal rings for the caps and 18 inch insulation sleeve for sealing and isolating intake and exhaust piping penetration of wall.

Maintain a maximum of 6 inches between the inlet and outlet openings in the installation of the pipes.

##### **Roof Termination Flashing Kit - Direct Vent or Non-Direct Vent Applications**

2 or 3 inch kit contains two neoprene rubber roof flashings for vertical venting through a roof.

Vent pipe and insulation not furnished.

Also available for use with 2 inch (use 3 inch flashing) Concentric Vent Termination Kits used in vertical venting rooftop applications.

## **7 BLOWER**

Multi-speed direct drive blower.

Statically and dynamically balanced.

Resiliently mounted.

Blower assembly easily removed for servicing.

Blower speeds are easily changed on the integrated furnace control. See blower performance tables.

## **8 CONTROLS**

### **Integrated Furnace Control**

Contains all necessary controls and relays to operate furnace.

Combustion air inducer is controlled by the integrated furnace control. Prior to ignition, a pre-purge cycle for 15 seconds is initiated. After the main burners are turned off, a post-purge cycle for 5 seconds is run.

Integrated furnace control continuously monitors line voltage and maintains the igniter power at a constant level to provide consistent lighting and maximum igniter life.

Flame sensor assures safe and reliable operation.

Should loss of flame occur, flame sensor controls will initiate 4 re-attempts at ignition before locking out unit operation for 60 minutes.

Watchguard type circuit automatically resets ignition controls after one hour of continuous thermostat demand after unit lockout, eliminating nuisance calls for service.

Fan control consists of adjustable blower timed-off delay (60, 90, 120, 180 seconds - factory setting 120 seconds) and fixed blower timed-on delay (30 seconds).

For air-conditioning applications, blower is automatically energized on thermostat demand for cooling.

Integrated furnace control has one red LED to indicate status and indicate diagnostic codes. Push button recall of the last 5 diagnostic codes aids in troubleshooting.

Integrated furnace control has built-in twinning capability ("TWIN" terminal on control) to operate two furnaces simultaneously without any additional controls. A field supplied isolation relay is required to operate the twinned (no thermostat connection) furnace.

Two accessory terminals furnished for additional power supply requirements for 120 volt (less than 1 amp) power humidifiers and powered air cleaners.

## FEATURES

### CONTROLS (continued)

#### 24 Volt Transformer

Furnished and factory installed in control box. 40VA transformer has fuse wired in series.

#### Field Wiring Make-Up Box

Furnished for line voltage wiring.

Factory installed internally on left side of furnace.

Box may be installed internally or externally on either side of furnace.

### Optional Accessories

#### iComfort® M30 Smart Wi-Fi Thermostat

Wi-Fi-enabled, electronic 7-day, universal, multi-stage, programmable, touchscreen thermostat.

4 Heat/2 Cool.

Auto-changeover.

Dual-fuel control with optional outdoor sensor.

Controls dehumidification during cooling mode and humidification during heating mode.

Offers enhanced capabilities including humidification / dehumidification / dewpoint measurement and control, *Humiditrol*® control, and equipment maintenance reminders.

Easy to read 4.3 in. color touchscreen (measured diagonally).

LCD display with backlight shows the current and set temperature, time, inside relative humidity, system status (operating mode and schedules) and outside temperature (optional outdoor sensor required).

Smooth Setback Recovery starts system early to achieve setpoint at start of program period.

Compressor short-cycle protection (5 minutes).

Up to four separate schedules are available plus Schedule IQ™.

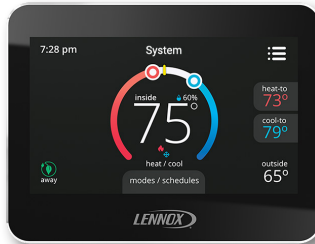
One-Touch Away Mode - A quick and easy way to set the cooling and heating setpoints while away.

Smart Away™ - Uses geo-fencing technology to determine when the homeowner is within a predetermined distance from the home to operate the system when leaving, away and arriving.

Amazon® Alexa-enabled, smart-home-compatible. It works with Amazon Echo, Echo Dot and Tap devices.

Wi-Fi remote monitoring and adjustment through a home wireless network for desktop PCs, laptops and apps for smartphones or tablets.

See the iComfort® M30 Smart Wi-Fi Thermostat Product Specifications bulletin in the Controls section for more information.



#### Remote Outdoor Temperature Sensor

Used with the iComfort® M30 Smart Thermostat.

When installed outdoors, sensor allows thermostat to display outdoor temperature. Sensor is auto-detected when connected to thermostat.

*NOTE - Sensor is required for the Enhanced Dehumidification Accessory (EDA).*

*NOTE - The outdoor sensor is furnished as standard with iComfort® Communicating outdoor units, optional for conventional units.*



#### Thermostat

Thermostat (programmable/non-programmable) is not furnished with unit.

See Thermostat bulletins in Controls Section and Lennox Price Book for selection.

#### Night Service Kit

Contains most commonly used service parts:

- Furnace control
- Igniter
- Flame sensor
- Gas valve
- Transformer
- Service Manual

## FEATURES

### **CABINET**

Low-profile, narrow width cabinet allows easy installation in downflow applications.

Heavy-gauge, cold rolled steel construction.

Pre-painted cabinet finish.

Flanges provided on supply air opening for ease of plenum connection or alignment with indoor coil.

- 9 Cabinet is insulated with foil faced insulation on sides and back of heating compartment.

Sealed blower compartment.

Complete service access.

Safety interlock switch automatically shuts off power to unit when blower compartment access door is removed.

- 10 Gas piping and electrical inlets are provided in both sides of cabinet.

### **Coil Match-Up**

All Lennox downflow indoor coils will physically match the furnace **supply air opening** with the same letter designation (A, B, C, D) as in the furnace model number.

### **Low Leakage Cabinet**

All models have less than 2% air leakage and meet ANSI/ASHRAE Standard 193-2010 *“Method of Test for Determining the Air Tightness of HVAC Equipment”*.

## Optional Accessories

### **Condensate Drain Heat Cable Kits**

Self-limiting wattage heat cable prevents condensate drain from freezing in unconditioned areas.

Available in 6 or 24 ft. lengths.

### **Crawl Space Vent Drain Kit**

Allows venting through a crawl space for downflow applications.

Includes 2 or 3 in. sanitary tee, 2 in. PVC assembly, PVC boot and clamp.

Kit for Canada is certified to ULC S636.

### **Downflow Combustible Flooring Base**

Required for heating only units installed on combustible floors.

Not required in add-on cooling applications.

See Dimension Drawing.

### **FILTER (not furnished)**

Filter and provisions for external mounting must be field provided.

## Optional Accessories

### **Downflow Filter Cabinet**

Filter cabinet mounts directly on top of furnace.

“B and “C” width cabinets have two filters.

Filter rails are furnished.

Front access for servicing.

Cleanable filter(s) are furnished.

## SPECIFICATIONS

		Model No.	ML193DF045XP36B	ML193DF070XP36B	ML193DF090XP48C	ML193DF110XP60C
<b>Gas Heating Performance</b>	AHRI Ref. No.		4792835	4792836	4792837	9100241
	<sup>1</sup> AFUE		93%	93%	93%	93%
	Input - Btuh		44,000	66,000	88,000	110,000
	Output - Btuh		41,000	61,000	82,000	102,000
	Temperature rise range - °F		25 - 55	40 - 70	40 - 70	40 - 70
	Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane		3.5 / 10.0	3.5 / 10.0	3.5 / 10.0	3.5 / 10.0
	High static - in. w.g.		0.50	0.50	0.50	0.50
<b>Connections in.</b>	Intake / Exhaust Pipe (PVC)		2 / 2	2 / 2	2 / 2	2 / 2
	Gas pipe size IPS		1/2	1/2	1/2	1/2
	Condensate Drain Trap (PVC pipe) - i.d.		3/4	3/4	3/4	3/4
	with furnished 90° street elbow		3/4 slip x 3/4 Mipt	3/4 slip x 3/4 Mipt	3/4 slip x 3/4 Mipt	3/4 slip x 3/4 Mipt
	with field supplied (PVC coupling) - o.d.		3/4 slip x 3/4 MPT	3/4 slip x 3/4 MPT	3/4 slip x 3/4 MPT	3/4 slip x 3/4 MPT
<b>Indoor Blower</b>	Wheel nom. dia. x width - in.		10 x 8	10 x 8	10 x 10	11-1/2 x 10
	Motor output - hp		1/3	1/3	1/2	1
	Tons of add-on cooling		2.5 - 3	2.5 - 3	3 - 4	4 - 5
	Air Volume Range - cfm		605 - 1615	560 - 1550	920 - 2145	1210 - 2410
<b>Electrical Data</b>	Voltage	120 volts - 60 hertz - 1 phase				
	Blower motor full load amps		6.1	6.1	8.2	11.5
	Maximum overcurrent protection		15	15	15	15
<b>Shipping Data</b>	lbs. - 1 package		124	129	147	162

NOTE - Filters and provisions for mounting are not furnished and must be field provided.

<sup>1</sup> Annual Fuel Utilization Efficiency based on DOE test procedures and according to FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.

## INSTALLATION CLEARANCES

Sides	<sup>1</sup> 0 inches (0 mm)
Rear	0 inches (0 mm)
Top/Plenum	1 inch (25 mm)
Front	0 inches (0 mm)
Front (service/alcove)	24 inches (610 mm)
Floor	<sup>2</sup> Combustible

NOTE - Air for combustion must conform to the methods outlined in the National Fuel Gas Code (NFPA 54/ANSI-Z223.1) or the National Standard of Canada CAN/CSA-B149.1 "Natural Gas and Propane Installation Code".

NOTE - In the U.S. flue sizing must conform to the methods outlined in the current National Fuel Gas Code (NFPA 54/ANSI-Z223.1) or applicable provisions of local building codes. In Canada flue sizing must conform to the methods outlined in National Standard of Canada CAN/CSA-B149.1.

<sup>1</sup> Allow proper clearances to accommodate condensate trap and vent pipe installation.

<sup>2</sup> Clearance for installation on combustible floor if Optional Downflow Combustible Flooring Base is installed between furnace and combustible floor. Not required in add-on cooling applications if installed in accordance with local codes or National Fuel Gas Code ANSI-Z223.1 or CAN/CSA-149.1,.2. Do not install the furnace directly on carpeting, tile, or other combustible materials other than wood flooring.

## OPTIONAL ACCESSORIES - ORDER SEPARATELY

			"B" Width Models	"C" Width Models
<b>CABINET ACCESSORIES</b>				
Downflow Combustible Flooring Base			11M60	11M61
<b>CONDENSATE DRAIN KITS</b>				
Condensate Drain Heat Cable	6 ft.		26K68	26K68
	24 ft.		26K69	26K69
Crawl Space Vent Drain Kit	US		51W18	51W18
	Canada		15Z70	15Z70
<b>CONTROLS</b>				
iComfort® M30 Smart Wi-Fi Thermostat			15Z69	15Z69
Remote Outdoor Air Temperature Sensor (for dual fuel and EDA)			X2658	X2658
Night Service Kit			68W80	68W80
<b>DOWNFLOW FILTER KITS</b>				
<sup>1</sup> Downflow Filter Cabinet			51W07	51W08
	No. and Size of filter - in.		(2) 16 x 20 x 1	(2) 16 x 20 x 1
<b>TERMINATION KITS</b>				
See Installation Instructions for specific venting information.				
Termination Kits - Direct Vent Applications Only	Concentric	US - 2 in.	71M80	69M29
		3 in.	---	60L46
		Canada - 2 in.	44W92	44W92
		3 in.	---	44W93
	Flush-Mount	US - 2, 2-1/2 or 3 in.	51W11	51W11
		Canada - 2, 2-1/2 or 3 in.	51W12	51W12
	Wall - Close Couple	US - 2 in.	22G44	---
		3 in.	44J40	44J40
	Wall - Close Couple WTK	Canada - 2 in.	30G28	---
		3 in.	81J20	81J20
Termination Kits - Direct or Non-Direct vent	Roof	2 in.	15F75	15F75
	Wall Ring Kit	2 in.	15F74	<sup>3</sup> 15F74
<sup>2</sup> Roof Termination Flashing Kit - Direct or Non-Direct Vent - Contains two flashings			44J41	44J41
<b>VENTING</b>				
Flue Coupling			2 in.	17H92

<sup>1</sup> Cleanable polyurethane frame type filter.

<sup>2</sup> Kits contain enough parts for two, non-direct vent installations.

<sup>3</sup> Non-direct vent only.

NOTE - Termination Kits (44W92, 44W93, 30G28, 51W12, 51W19, 81J20) and Crawl Space Vent Drain Kit (15Z70) are certified to ULC S636 standard for use in Canada only.



## GAS HEAT ACCESSORIES

Models	High Altitude Pressure Switch Kit		Natural Gas to LPG/Propane Kit	LPG/Propane to Natural Gas Kit	Natural Gas High Altitude Orifice Kit	LPG/Propane High Altitude Orifice Kit	<sup>1</sup> 36K Derate Kit (Natural Gas)	Muffler (US Only)
	4501 - 7500 ft.	7501 - 10,000 ft.	0 - 7500 ft.	0 - 7500 ft.	7501 - 10,000 ft.	7501 - 10,000 ft.	0 - 10,000 ft.	
045	11U65	11U66	11K49	73W81	73W37	11K44	10K55	15Y66 (2-inch)
070	11U65	11U66	11K49	73W81	73W37	11K44	---	15Y66 (2-inch)
090	11U65	11U66	11K49	73W81	73W37	11K44	---	15Y66 (2-inch)
110	11U65	11U66	11K49	73W81	73W37	11K44	---	<sup>2</sup> 15Y66 (2-inch) 16A56 (3-inch)

<sup>1</sup> NOTE - 36K Derate Kit information - Reduced Input is 36,000 Btuh, output is 33,500 Btuh.

<sup>2</sup> Two-inch diameter muffler (15Y66) is optional for 110 input model with a maximum vent pipe length of up to 29 ft.

Three-inch diameter muffler (16A56) is optional for 110 input model with a minimum vent pipe length of 30 ft.

## HIGH ALTITUDE DERATE

NOTE - Units may be installed at altitudes up to 10,000 ft.

At altitudes above 4501 ft. the unit must be derated to match the manifold pressure information shown below.

Units installed at altitudes of 4501 to 10,000 ft. require a pressure switch change.

Units installed at altitudes of 7501 to 10,000 ft. require an orifice change.

See the Gas Heat Accessories table for ordering information.

NOTE - This is the only permissible derate for these units.

NOTE - In Canada, certification for installations at elevations over 4500 feet is the jurisdiction of local authorities.

Input	Gas	Manifold Pressure in. w.g.					Supply Line Pressure in. w.g. 0 - 10,000 ft.	
		0 - 4500 ft.	4501 - 5500 ft.	5501 - 6500 ft.	6501 - 7500 ft.	7501 - 10,000 ft.		
All Sizes	Natural	3.5	3.3	3.2	3.1	3.5	4.5	13.0
	LPG/Propane	10.0	9.4	9.1	8.9	10.0	11.0	13.0

## VENT LENGTHS - UNINSULATED EXHAUST PIPE IN UNCONDITIONED SPACE

<sup>1</sup> Winter Design Temperatures	Vent Pipe Diameter	Unit Input Size									
		045		070		090		110		135	
		Maximum Un-Insulated Exhaust Vent Length (ft.)									
		PVC	PolyPro	PVC	PolyPro	PVC	PolyPro	PVC	PolyPro	PVC	PolyPro
32 to 21°F	2 in.	26	24	44	41	44	44	24	24	N/A	N/A
	2-1/2 in.	18	N/A	32	N/A	50	N/A	58	N/A	N/A	N/A
	3 in.	14	12	26	23	38	33	55	49	60	53
20 to 1°F	2 in.	16	15	28	26	40	37	24	24	N/A	N/A
	2-1/2 in.	12	N/A	20	N/A	30	N/A	44	N/A	N/A	N/A
	3 in.	9	8	16	14	26	23	32	28	40	35
0 to -20°F	2 in.	10	9	20	18	30	28	24	24	N/A	N/A
	2-1/2 in.	8	N/A	14	N/A	20	N/A	32	N/A	N/A	N/A
	3 in.	4	3	10	8	16	14	26	23	30	26

<sup>1</sup> Refer to 99% Minimum Design Temperature table provided in the current edition of ASHRAE Handbook-Fundamentals.

PolyPro® poly-propylene vent pipe is a registered trademark of DuraVent®.

## OUTDOOR TERMINATION KIT USAGE

Input Size	Vent Pipe Diameter (in.)	Standard Terminations					Concentric Terminations			
		Flush Mount Kit	Wall Kit		Wall Ring Kit	Field Fabricated Exhaust Accelerator Size Required	Concentric Kit			
			2 inch	3 inch	2 inch		1-1/2 inch	2 inch	3 inch	
			51W11 (US) 4 51W12 (CA)	22G44 (US) 4 30G28 (CA)	44J40 (US) 4 81J20 (CA)		15F74	71M80 (US) 4 44W92 (CA)	69M29 (US) 4 44W92 (CA)	60L46 (US) 4 44W93 (CA)
045	2	<sup>3</sup> YES	YES	<sup>1</sup> YES	YES	1-1/2 in.	<sup>2</sup> YES	---	---	
	2-1/2	<sup>3</sup> YES	YES	<sup>1</sup> YES	YES	1-1/2 in.	<sup>2</sup> YES	---	---	
	3	<sup>3</sup> YES	YES	<sup>1</sup> YES	YES	1-1/2 in.	<sup>2</sup> YES	---	---	
070	2	<sup>3</sup> YES	YES	<sup>1</sup> YES	YES	1-1/2 in.	<sup>2</sup> YES	---	---	
	2-1/2	<sup>3</sup> YES	YES	<sup>1</sup> YES	YES	1-1/2 in.	<sup>2</sup> YES	---	---	
	3	<sup>3</sup> YES	YES	<sup>1</sup> YES	YES	1-1/2 in.	<sup>2</sup> YES	---	---	
090	2	<sup>3</sup> YES	---	YES	<sup>1</sup> YES	2 in.	---	YES	YES	
	2-1/2	<sup>3</sup> YES	---	YES	<sup>1</sup> YES	2 in.	---	YES	YES	
	3	<sup>3</sup> YES	---	YES	<sup>1</sup> YES	2 in.	---	YES	YES	
110	2	YES	---	YES	YES	2 in.	---	YES	YES	
	2-1/2	YES	---	YES	---	2 in.	---	YES	YES	
	3	YES	---	YES	---	2 in.	---	YES	YES	

NOTE - Standard Terminations do not include any vent pipe or elbows external to the structure.

Any vent pipe or elbows external to the structure must be included in total vent length calculations. See Vent Length Tables.

<sup>1</sup> Requires field provided 1-1/2 in. outdoor exhaust accelerator.

<sup>2</sup> Concentric Kits **71M80** and **44W92** include 1-1/2 in. outdoor exhaust accelerator, required when used with 045 and 070 input models. Accelerator is not used with 090, 110, 135 input models.

<sup>3</sup> Flush Mount Kit **51W11** and **51W12** includes 1-1/2 in. outdoor exhaust accelerator, required when used with 045, 070 and 090 input models. Accelerator is not used with 110 or 135 input models.

<sup>4</sup> Termination Kits **30G28**, **44W92**, **44W93**, **51W12** and **81J20** are certified to ULC S636 standard for use in Canada only.

## VENT LENGTHS

### STANDARD TERMINATION AT ELEVATION 0 - 10,000 ft.

Pipe Size	Input	2 in.				2-1/2 in.				3 in.			
		045	070	090	110	045	070	090	110	045	070	090	110
No. of 90 ELL	1	61	46	24	N/A	100	80	43	N/A	127	127	108	108
	2	56	41	19	N/A	95	75	38	N/A	122	122	103	103
	3	51	36	14	N/A	90	70	33	N/A	117	117	98	98
	4	46	31	N/A	N/A	85	65	28	N/A	112	112	93	93
	5	41	26	N/A	N/A	80	60	23	N/A	107	107	88	88
	6	36	21	N/A	N/A	75	55	18	N/A	102	102	83	83
	7	31	16	N/A	N/A	70	50	13	N/A	97	97	78	78
	8	26	11	N/A	N/A	65	45	N/A	N/A	92	92	73	73
	9	21	N/A	N/A	N/A	60	40	N/A	N/A	87	87	68	68
	10	16	N/A	N/A	N/A	55	35	N/A	N/A	82	82	63	63

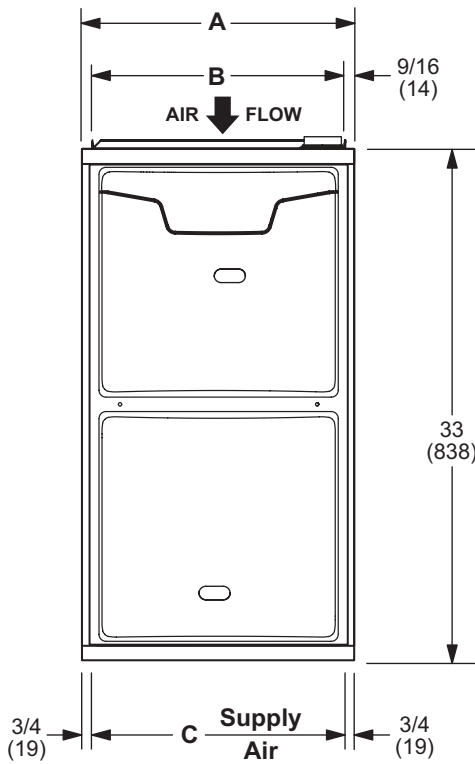
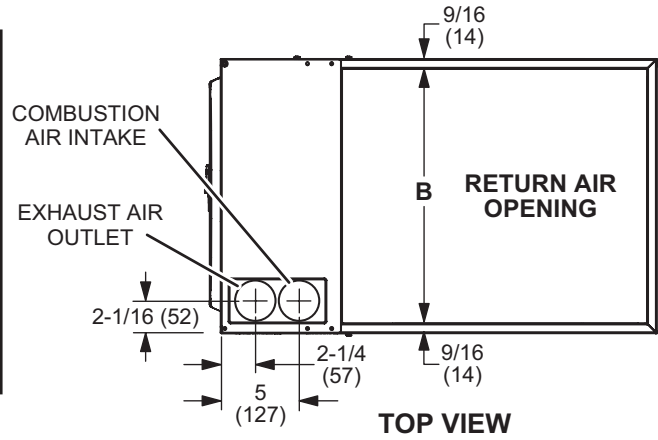
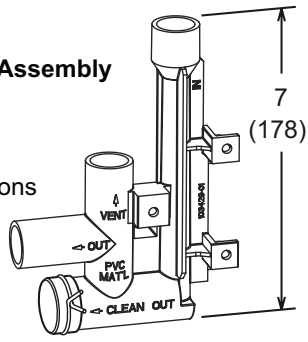
### CONCENTRIC TERMINATION ELEVATION 0 - 10,000 ft.

Pipe Size	Input	2 in.				2-1/2 in.				3 in.			
		045	070	090	110	045	070	090	110	045	070	090	110
No. of 90 ELL	1	53	38	22	N/A	90	70	39	N/A	111	111	104	104
	2	48	33	17	N/A	85	65	34	N/A	106	106	99	99
	3	43	28	12	N/A	80	60	29	N/A	101	101	94	94
	4	38	23	N/A	N/A	75	55	24	N/A	96	96	89	89
	5	33	18	N/A	N/A	70	50	19	N/A	91	91	84	84
	6	28	13	N/A	N/A	65	45	14	N/A	86	86	79	79
	7	23	N/A	N/A	N/A	60	40	N/A	N/A	81	81	74	74
	8	18	N/A	N/A	N/A	55	35	N/A	N/A	76	76	69	69
	9	13	N/A	N/A	N/A	50	30	N/A	N/A	71	71	64	64
	10	N/A	N/A	N/A	N/A	45	25	N/A	N/A	66	66	59	59

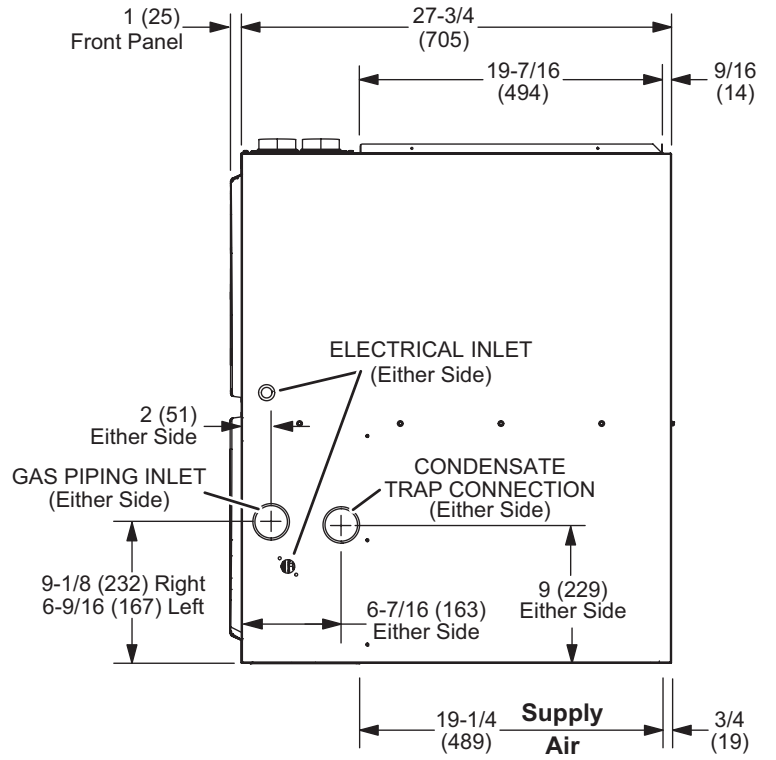
# DIMENSIONS

## Flue Condensate Trap Assembly

Furnished for external field installation on either side of unit. (See installation instructions for additional information.)



FRONT VIEW



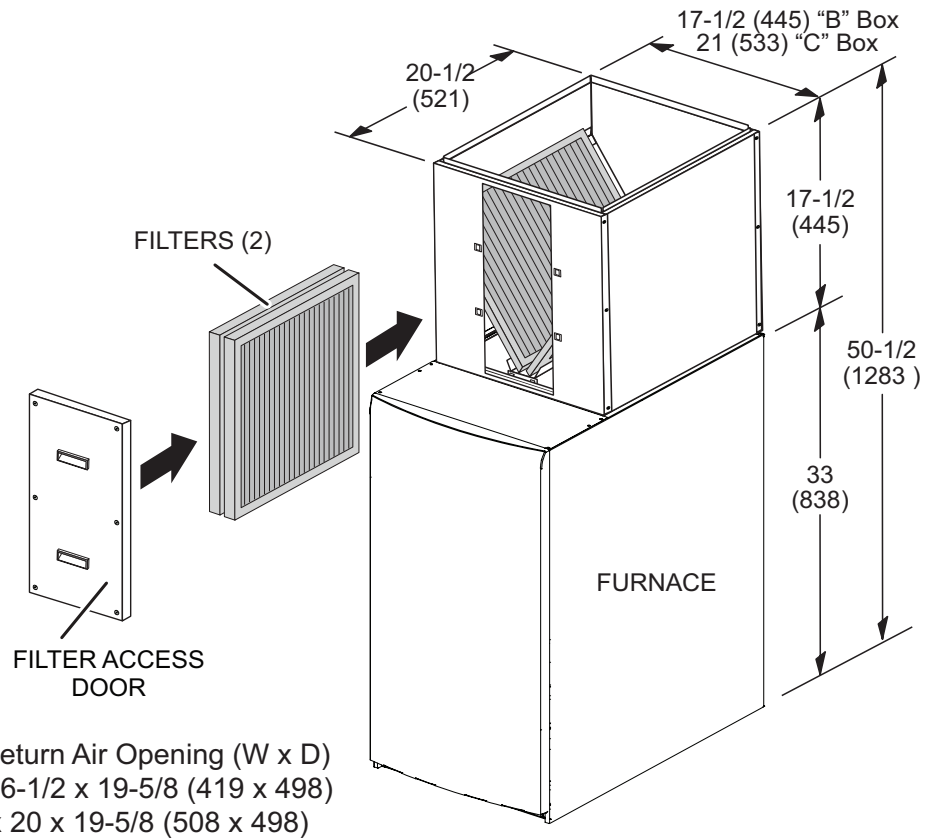
SIDE VIEW

Model No.	A		B		C	
	in.	mm	in.	mm	in.	mm
ML193DF045XP36B ML193DF070XP36B	17-1/2	446	16-3/8	416	16	406
ML193DF090XP48C ML193DF110XP60C	21	533	19-7/8	505	19-1/2	495

## OPTIONAL ACCESSORY DIMENSIONS

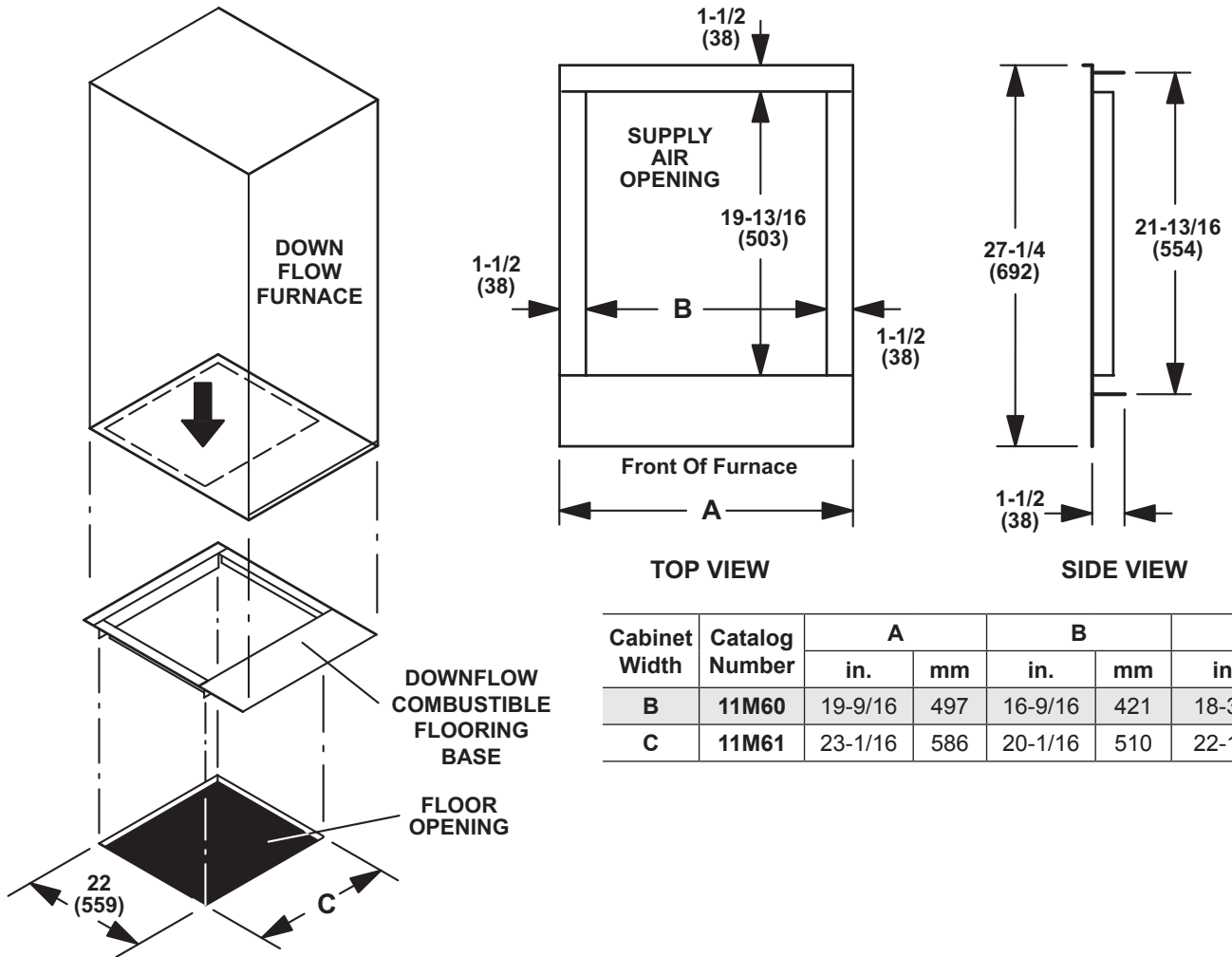
### DOWNFLOW FILTER CABINET

#### "B AND "C" WIDTH FURNACES (Two Filters)



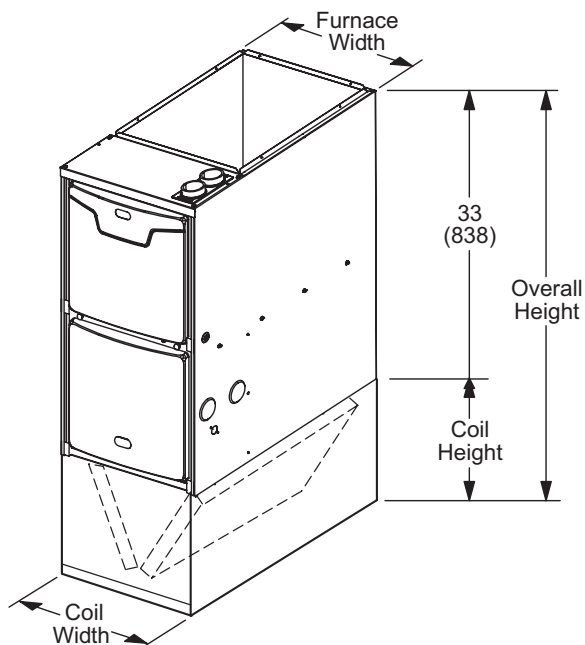
## OPTIONAL ACCESSORY DIMENSIONS

### DOWNFLOW COMBUSTIBLE FLOORING BASE



## DIMENSIONS - FURNACE/COIL COMBINED DIMENSIONS

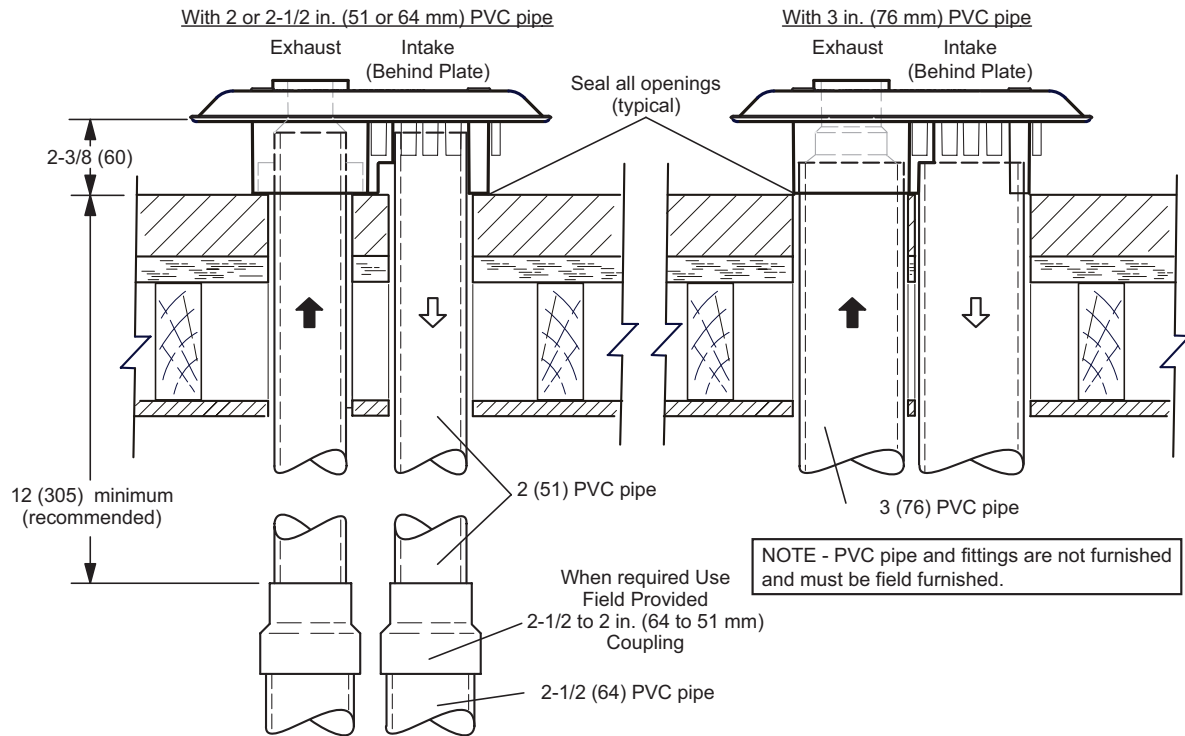
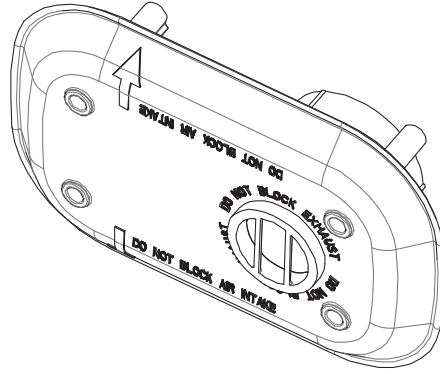
### DOWNFLOW POSITION



Model Number	Coil Width		Furnace Width		Coil Height		Overall Height	
	in.	mm	in.	mm	in.	mm	in.	mm
CR33-24B-F	17-1/2	446	17-1/2	446	13-1/4	337	46-1/4	1175
CR33-30/36B-F	17-1/2	446	17-1/2	446	16-1/8	410	49-1/8	1248
CR33-30/36C-F	21	533	21	533	16-1/8	410	49-1/8	1248
CR33-48B-F	21	533	17-1/2	446	20	508	53	1346
CR33-48C-F	21	533	21	533	20	508	53	1346
CR33-50/60C-F	24-1/2	622	21	533	23-5/8	600	56-5/8	2276

# OPTIONAL ACCESSORY DIMENSIONS

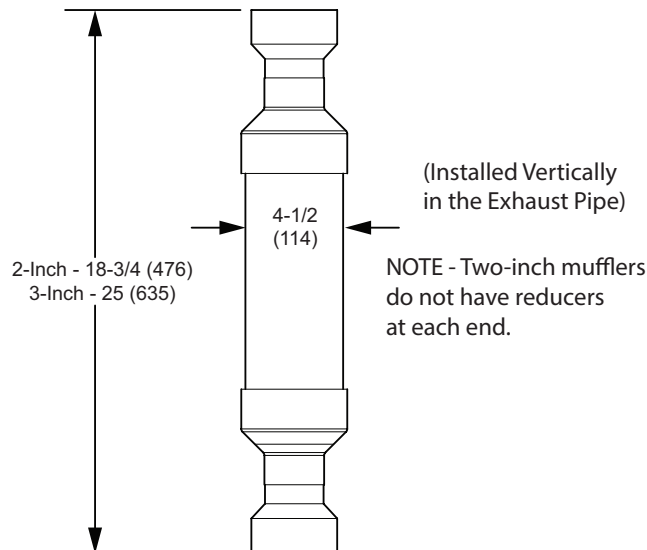
## FLUSH-MOUNT VENT TERMINATION KIT 51W11 (US) or 51W12 (CANADA)



### MUFFLERS

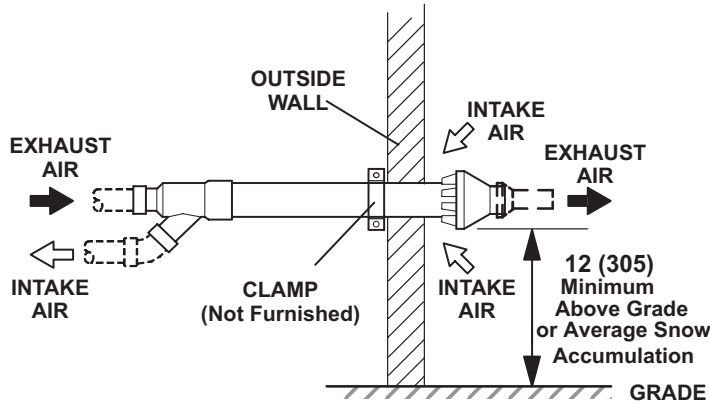
15Y66 - 2-inch

16A56 - 3-inch

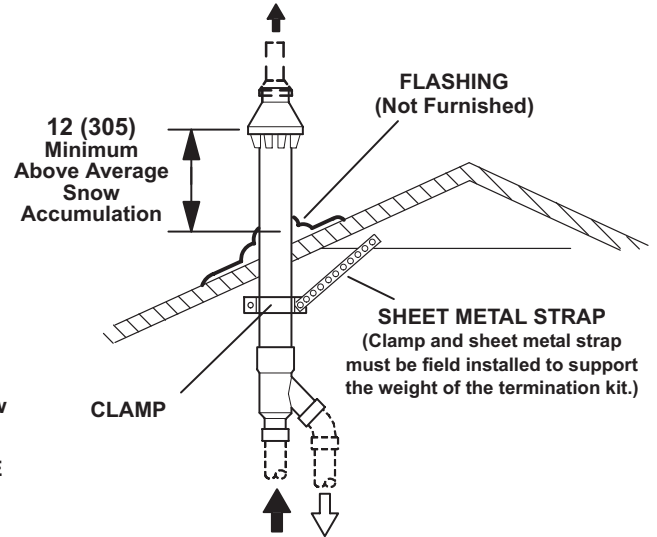


# OPTIONAL ACCESSORY DIMENSIONS

## CONCENTRIC WALL TERMINATION APPLICATIONS

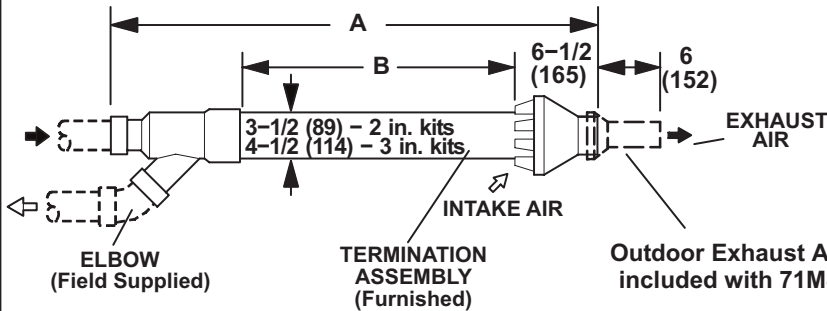


## CONCENTRIC ROOF TERMINATION APPLICATIONS



71M80 / 69M29 / 44W92 – 2 inch kits  
60L46 / 44W93 – 3 inch kits  
See Installation Instructions for additional information.

Note - Field provided reducer may be required to adapt larger vent pipe size to termination.



Cat. No.	A		B	
	in.	mm	in.	mm
71M80 69M29	33-3/8	848	16-3/4	425
44W92 (Canada)	29	737	15-1/2	394
60L46	38-7/8	987	21-3/16	538
44W93 (Canada)	36-1/8	918	19-1/2	495

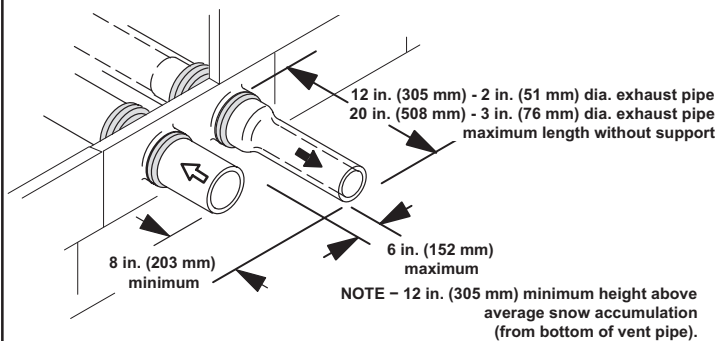
NOTE - Typical illustration for dimensions only. Design may vary depending on kit ordered.

## WALL ASSEMBLY TERMINATION KIT - RING KIT 15F74 - 2 inch (51 mm)

See Installation Instructions for additional information.

Note - Field provided reducer may be required to adapt larger vent pipe size to termination.

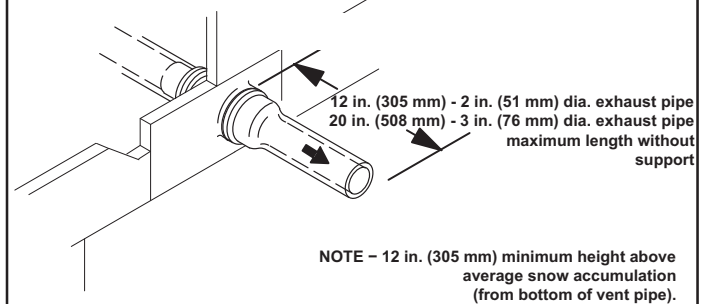
### DIRECT VENT APPLICATION



### NON-DIRECT VENT APPLICATION

#### NOTE - EXHAUST PIPE SHOWN

Kit Contains Enough Parts For Two Installations



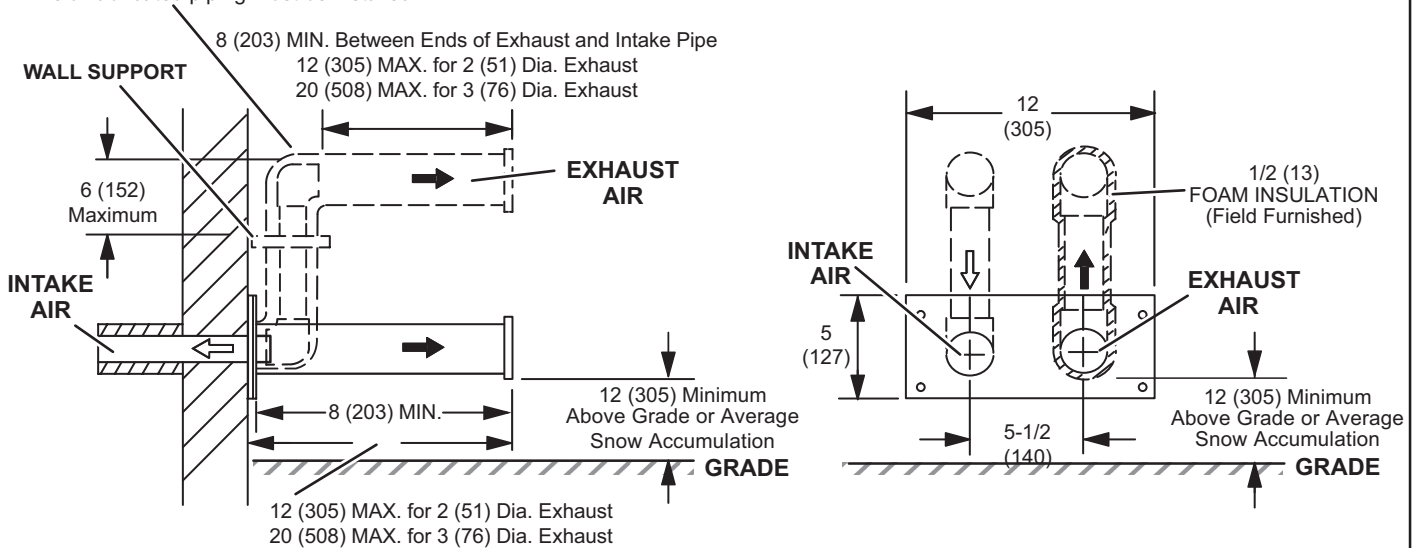
## OPTIONAL ACCESSORY DIMENSIONS

### WALL TERMINATION KITS (CLOSE-COUPLE) EXTENDED VENT FOR GRADE CLEARANCE 2 inch (51 mm) 22G44 (US) 3 inch (76 mm) 44J40 (US)

See Installation Instructions for additional information.

Note - Field provided reducer may be required to adapt larger vent pipe size to termination.

If Intake and Exhaust Pipe is less than 12 in. (305 mm) above snow accumulation or other obstructions, field fabricated piping must be installed.

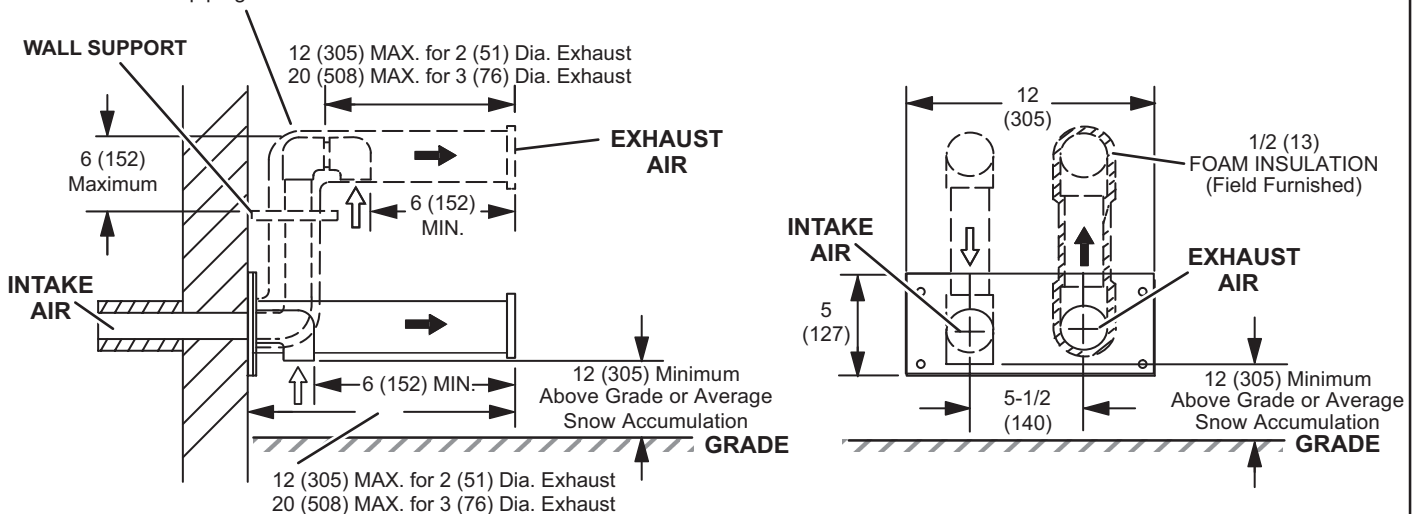


### WALL TERMINATION KITS (CLOSE-COUPLE) EXTENDED VENT FOR GRADE CLEARANCE 2 inch (51 mm) 30G28 (WTK Canada) 3 inch (76 mm) 81J20 (WTK Canada)

See Installation Instructions for additional information.

Note - Field provided reducer may be required to adapt larger vent pipe size to termination.

If Intake and Exhaust Pipe is less than 12 in. (305 mm) above snow accumulation or other obstructions, field fabricated piping must be installed.





## BLOWER DATA

**ML193DF045XP36B PERFORMANCE (Less Filter)**

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds							
	High		Medium-High		Medium-Low		Low	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.00	1615	650	1385	555	1205	465	1045	390
0.10	1605	640	1375	545	1195	455	1035	380
0.20	1500	620	1340	525	1165	445	1015	370
0.30	1450	590	1290	490	1125	420	975	365
0.40	1350	560	1235	480	1090	405	920	345
0.50	1300	545	1170	450	1035	380	875	335
0.60	1195	500	1095	425	990	365	840	320
0.70	1140	485	1020	400	895	345	780	300
0.80	1025	450	920	370	840	330	695	275
0.90	945	435	800	335	700	295	605	250

**ML193DF090XP48C PERFORMANCE (Less Filter)**

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds							
	High		Medium-High		Medium-Low		Low	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.00	2075	800	1890	720	1625	645	1375	535
0.10	1995	755	1830	680	1590	615	1350	515
0.20	1910	715	1775	645	1575	580	1340	500
0.30	1825	680	1705	610	1530	550	1325	485
0.40	1730	645	1620	580	1475	525	1285	460
0.50	1630	615	1530	545	1405	500	1240	440
0.60	1530	585	1450	525	1330	470	1175	420
0.70	1430	555	1340	485	1260	450	1095	390
0.80	1300	525	1245	465	1145	415	1015	370
0.90	1185	495	1110	430	1045	385	915	340

**ML193DF070XP36B PERFORMANCE (Less Filter)**

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds							
	High		Medium-High		Medium-Low		Low	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.00	1505	660	1310	570	1090	455	940	390
0.10	1480	625	1295	550	1070	435	935	365
0.20	1405	585	1255	515	1055	425	930	350
0.30	1355	580	1225	475	1045	405	900	330
0.40	1305	540	1165	470	1010	385	890	325
0.50	1270	525	1110	425	975	370	835	305
0.60	1175	500	1080	415	925	345	815	290
0.70	1105	460	1000	395	855	320	745	270
0.80	1040	440	925	365	790	300	670	250
0.90	920	400	825	335	680	270	560	225

**ML193DF110XP60C PERFORMANCE (Less Filter)**

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds							
	High		Medium-High		Medium-Low		Low	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.00	2410	1390	2190	1080	1860	910	1560	735
0.10	2405	1385	2180	1070	1855	905	1555	730
0.20	2285	1345	2120	1030	1850	865	1540	720
0.30	2220	1315	2015	1005	1770	840	1535	705
0.40	2185	1295	1950	955	1750	815	1530	685
0.50	2045	1240	1830	925	1680	790	1500	660
0.60	1965	1220	1710	890	1575	755	1445	640
0.70	1820	1165	1610	850	1495	720	1370	615
0.80	1625	1155	1510	820	1400	695	1315	595
0.90	1455	1110	1390	790	1350	660	1210	565





## REVISIONS

Sections	Description of Change
Controls	Added iComfort® M30 Smart Thermostat and Remote Outdoor Temperature Sensor.
Optional Accessories	Added Flue Coupling.



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