

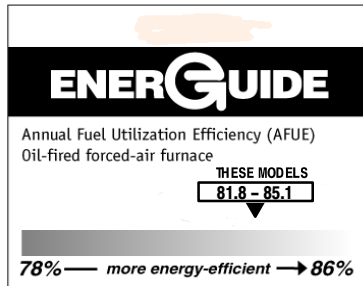
RESIDENTIAL OIL-FIRED FURNACE

FEATURES

- **Stainless Steel construction** – Heavy gauge heat exchanger quickly transfers heat to the ambient air
- **Variable speed blower** – High efficiency GE variable speed ECM 2.3 motor, with constant airflow, delivers the right amount of air for improved comfort and great savings
- **Dehumidification** – Variable speed ECM 2.3 motor allows modulation of blower speed to better extract humidity
- **Sound attenuator** – Integrated inside secondary heat exchanger. High density acoustic wool dampens combustion sound.
- **Burner** – High static pressure Riello F40 coupled with electric air-damper
- **Multi-position** – True four-way multipoise unit that opens-up installation possibilities
- **Inspection port/Clean outs** – External for easy access and sealed from blower compartment – Adjust combustion parameters and perform inspections easily with this sealed, spring-loaded access port
- **Shipped complete** – Burner installed – barometric draft regulator supplied – external filter rack
- **High quality finish** – High gloss baked electrostatic paint
- **Efficient** – AFUE up to 85.1% Canada, 83.0% US
- **Approved vent** – Canada: chimney vent only
US: chimney or with approved side wall ventor



Illustrations and photographs are only representative. Some product models may vary.



ONLY applies to applications in Canada where the furnace is installed in the conditioned space, per sections 5.35.1.2 and 4.7.1.1 of CSA standard B212 dated October 2000.

WARRANTY*

- 10 year No Hassle Replacement™ limited warranty
- Lifetime heat exchanger limited warranty with timely registration
- 5 year parts limited warranty
 - With timely registration, an additional 5 year parts limited warranty

* Applies to original purchaser/homeowner, some limitations may apply. See warranty certificate for complete details.

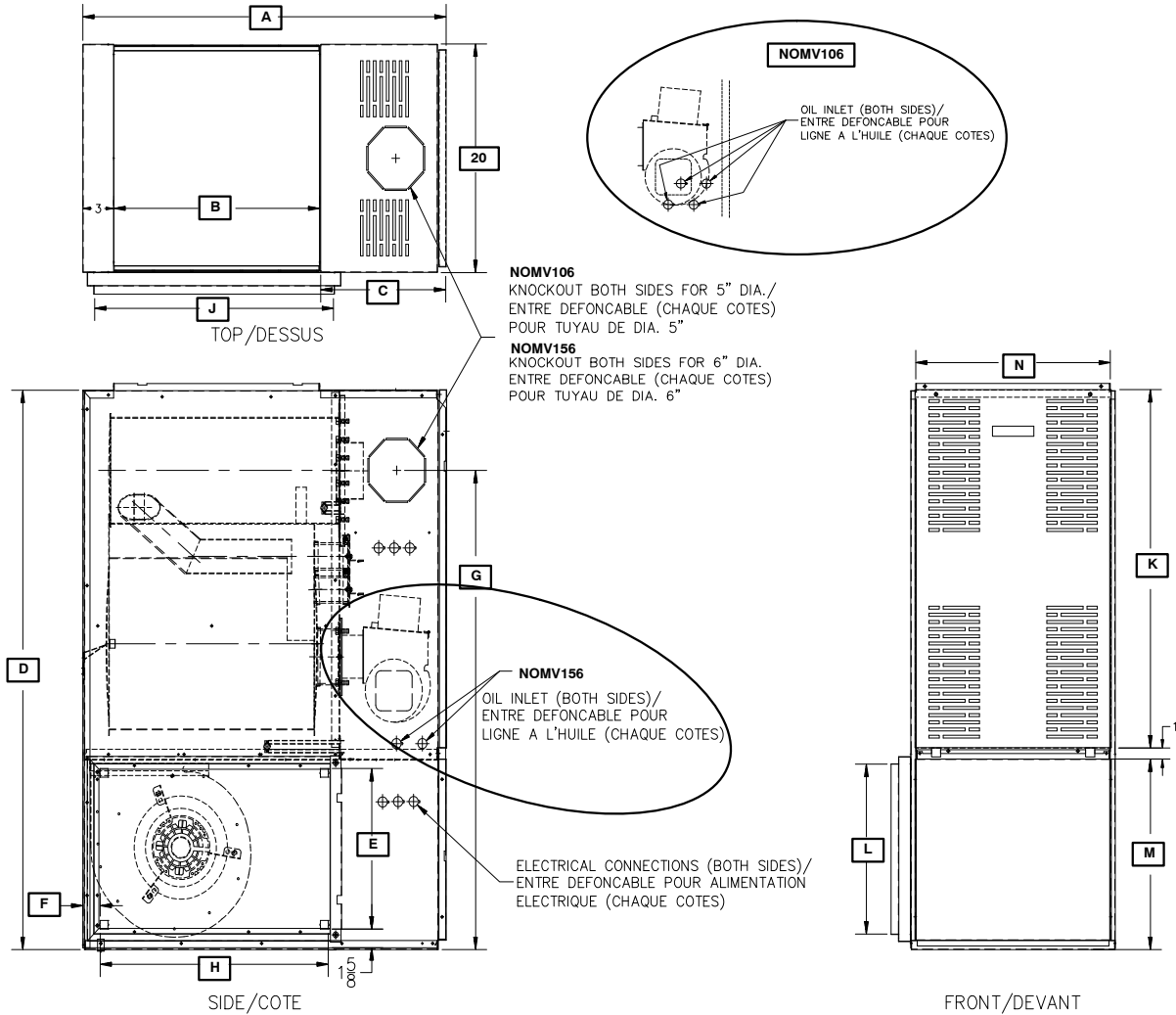
Model Number	Input (BTU/h)	Efficiency AFUE		Cooling capacity @ .5 in. w.c. (125 Pa)	Dimensions in(mm) H x W x D†	Operating Wt. Lbs.(Kg)
		CANADA	US			
NOMV106D12B	70,000–105,000	81.8–82.9	82.0–82.5	3 TON	48–3/4 x 20 x 35 (1329 x 508 x 889)	221 (100)
NOMV156E19B	119,000–154,000	83.0–85.1‡	82.5–83.0	5 TON	53 x 20 x 39–1/2 (1346 x 508 x 1003)	270 (122)

‡ Meets EnergyStar guidelines in Canada (Only specific firing rates meet the ENERGY STAR® guidelines).

† Depth with the burner

MODEL NUMBER IDENTIFICATION GUIDE										
MODEL NUMBER	N	O	M	V	106	D	12	#	REVISION	
FUEL	O = Oil								AIR FLOW	
PRODUCT GROUP	U = Upflow H = Horizontal T = Upflow/Horizontal L = Lo-Boy								12 = 1200 CFM 19 = 1900 CFM	
								SUPPLY PLENUM SIZE		
								A = 20 x 20 E = 19 x 24		
								B = 24 x 24 F = 20 x 24		
								C = 21 ¹ / ₈ x 21 ¹ / ₂ G = 22 x 30		
								D = 19 x 20		
SERIES	F = Front Breech R = Rear Breech V = Variable Speed								INPUT, MBTUH	

DIMENSIONS



Representative only, some models may vary in appearance.

DNS-0139 Rev.E

FURNACE DIMENSIONS - in(mm)

Model No.	A	B	C	D	E	F	G	H	J	K	L	M	N	Flue
in														
106D12	35	19-7/8	12	48-3/4	14	1-3/4	41-3/4	22	23	31-1/4	15	16-5/8	18-3/4	5
156E19	39-1/2	23-7/8	12-1/2	53	16	1-1/2	46-7/8	28	29	33-1/4	17	18-3/4	18-3/4	6
mm														
106D12	889	505	305	1238	356	45	1060	559	584	794	381	422	476	127
156E19	1003	607	318	1346	406	38	1191	711	737	845	432	476	476	152

MINIMUM INSTALLATION CLEARANCES FROM COMBUSTIBLE MATERIALS – in(mm)							
Models:		NOMV106			NOMV156		
Location	Application	Upflow	Downflow	Horizontal	Upflow	Downflow	Horizontal
Sides	Furnace	0	2 (50.8)	2 (50.8)	1 (25.4)	2 (50.8)	2 (50.8)
	Supply plenum within 6’ (1.8m) of furnace	1 (25.4)	2 (50.8)	1 (25.4)	1 (25.4)	2 (50.8)	1 (25.4)
Back	Furnace	0	1 (25.4)	0	0	1 (25.4)	0
Top	Furnace or plenum	2 (50.8)	2 (50.8)	2 (50.8)	2 (50.8)	2 (50.8)	2 (50.8)
	Horizontal warm air duct within 6’ (1.8m) of furnace	2 (50.8)	2 (50.8)	3 (76.2)	2 (50.8)	2 (50.8)	3 (76.2)
Bottom	Furnace (combustible floor with the subbase †)	0	*0	**0	0	*0	**0
Flue Pipe	Horizontally or below Flue Pipe	4 (101.6)	4 (101.6)	4 (101.6)	4 (101.6)	4 (101.6)	4 (101.6)
	Vertically above Flue Pipe	9 (228.6)	9 (228.6)	9 (228.6)	9 (228.6)	9 (228.6)	9 (228.6)
Front	Furnace	8 (203.2)	8 (203.2)	24 (609.6)	8 (203.2)	8 (203.2)	24 (609.6)

† When used with floor base *DFB101 or **HFB101

FURNACE SPECIFICATIONS with ELECTRIC DAMPER							
Model:		NOMV106D12			NOMV156E19		
Rating and Performance							
Firing Rate (USGPH)		.50	.65	.75	.85	1.00	1.10
Input (BTUh)		70,000	91,000	105,000	119,000	140,000	154,000
Heating capacity (BTUh)		57,000	74,000	85,000	97,000	115,000	126,000
Minimum – Maximum Heating Temperature Rise		30° – 47° C / 55° – 85° F			30° – 47° C / 55° – 85° F		
Flue pressure with chimney – in. w.c. (Pa)		-0.06 to -0.025 (-15 to -6)			-0.06 to -0.025 (-15 to -6)		
Overfire pressure with chimney – in. w.c. (Pa)		max +0.025 (+6)			max +0.025 (+6)		
Flue pressure with direct vent – in. w.c. (Pa)		NA			+0.10 to +0.25 (+25 to +62)		
Overfire pressure with direct vent – in. w.c. (Pa)		NA			+0.12 to +0.27 (+30 to +67)		
Riello Burner, Model 40		F3 – Tube Insertion 3–9/16			F5 – Tube Insertion 3–9/16		
Nozzle (Delavan)		0.40 – 70A	0.50 – 70W	0.65 – 70W	0.75 – 70B	0.85 – 70W	1.00 – 70W
Pump pressure (Delavan)		155	170	135	130	140	125
Combustion air adjustment (turbulator/damper)		0 / 3	0 / 3.5	0 / 4	0 / 3	0 / 3.5	0 / 4
CANADIAN regulations and CSA B212 standard ** AFUE %		82.9	82.4	81.8	85.1 ‡	83.8	83.0
US regulations and ASHRAE 103 standard AFUE %		82.5	82.0	82.0	83.0	82.5	82.5
Electrical System							
Volts – Hertz – Phase		115–60–1			115–60–1		
Operating voltage range		104 – 132			104 – 132		
Rated voltage Amp		12.2			15.7		
Minimum ampacity for wiring sizing		13.7			18.1		
Max. wire length – ft (m)		26 (8)			26 (8)		
Max. fuse size (Amps.)		15			20		
Control transformer		40 VA			40 VA		
External control power available,	Heating	40 VA			40 VA		
	Cooling	30 VA			30 VA		
Blower Data *							
Motor (HP) / number of speeds		1/2 HP ECM			1.0 HP ECM		
Blower wheel size – in(mm)		10 x 10 (254 x 254)			12 x 10 (305 x 254)		
Filter quantity and size		(1) 16” x 24” (406 x 610)			(1) 20” x 30” (508 x 508)		
Supply air opening (W x D)		18.625” x 20” (473 x 508)			19” x 24” (483 x 610)		
Return air opening (D x H, with factory filter rack)		15” x 23” (381 x 584)			17” x 29” (432 x 737)		
Maximum cooling, tons @ 0.5 in. w.c. (125 Pa)		3.0			5.0		
Weight – Lbs. (Kg)		221 (100)			270 (122)		

* Dip switches on the electronic board must be adjusted according to heat input and cooling capacity. Refer to air flow tables.

INPUT & OUTPUT ADJUSTMENT

Pump pressure can be increased up to 180 PSIG. Adjust flue gas temperature between 400 and 575 °F/204 and 301 °C. Adjust fan speed for air temperature rise of 55 to 85 °F/30 to 47 °C.

** AFUE value established after minimum 20 hours of continuous operation.

‡ Meets EnergyStar guidelines in Canada. (Only specific firing rates meet the ENERGY STAR® guidelines).



As an Energy Star® Partner, International Comfort Products has determined that this product meets the ENERGY STAR® guidelines for energy efficiency. Ask your contractor for details or visit www.energystar.gov

VARIABLE SPEED ADJUSTMENTS – NOMV106				
OIL HEATING MODE – NOMV106 24 VAC input (R) on W only				
SW1 – HEAT DIP switch position	HEAT INPUT (USGPH)	CFM (L/s) with SW3-ADJ DIP switch position A	CFM (L/s) with SW3-ADJ DIP switch position B	CFM (L/s) with SW3-ADJ DIP switch position C
A (1=OFF, 2=OFF)	0.75	1260 (595)	1385 (654)	1135 (536)
B (1=ON, 2=OFF)	0.65	1050 (496)	1155 (545)	945 (446)
C (1=OFF, 2=ON)	0.5	850 (401)	935 (441)	765 (361)
D (1=ON, 2=ON)	Same value as DIP switch position A			
CONTINUOUS FAN – NOMV106 24 VAC input (R) on G only				
SW2 – COOL DIP Switch position	A/C size (TON)	CFM (L/s) with SW3-ADJ DIP switch position A	CFM (L/s) with SW3-ADJ DIP switch position B	CFM (L/s) with SW3-ADJ DIP switch position C
A (1=OFF, 2=OFF)	3.0	900 (425)	990 (467)	810 (382)
B (1=ON, 2=OFF)	2.5	750 (354)	830 (392)	675 (319)
C (1=OFF, 2=ON)	2.0	600 (283)	660 (311)	540 (255)
D (1=ON, 2=ON)	1.5	450 (212)	495 (234)	405 (191)
COOLING OR HEAT PUMP HEATING MODE – SINGLE SPEED OR 2-SPEED HIGH – NOMV106 24 VAC input (R) to G, Y/Y2 and O (for cooling)				
SW2 – COOL DIP Switch position	A/C size (TON)	CFM (L/s) with SW3-ADJ DIP switch position A	CFM (L/s) with SW3-ADJ DIP switch position B	CFM (L/s) with SW3-ADJ DIP switch position C
A (1=OFF, 2=OFF)	3.0	1200 (566)	1320 (545)	1080 (510)
B (1=ON, 2=OFF)	2.5	1000 (472)	1100 (455)	900 (425)
C (1=OFF, 2=ON)	2.0	800 (378)	880 (363)	720 (340)
D (1=ON, 2=ON)	1.5	600 (283)	660 (274)	540 (255)
Note: In Cooling – Dehumidification mode, with no 24 VAC input to DH, the CFM are reduced by 15%				
COOLING OR HEAT PUMP HEATING MODE – 2-SPEED LOW – NOMV106 24 VAC input (R) to G, Y1 and O (for cooling)				
SW2 – COOL DIP Switch position	A/C size (TON)	CFM (L/s) with SW3-ADJ DIP switch position A	CFM (L/s) with SW3-ADJ DIP switch position B	CFM (L/s) with SW3-ADJ DIP switch position C
A (1=OFF, 2=OFF)	3.0	960 (453)	1055 (498)	865 (408)
B (1=ON, 2=OFF)	2.5	800 (378)	880 (415)	720 (354)
C (1=OFF, 2=ON)	2.0	640 (302)	705 (333)	575 (271)
D (1=ON, 2=ON)	1.5	480 (227)	530 (250)	430 (203)
Note: In Cooling – Dehumidification mode, with no 24 VAC input to DH, the CFM are reduced by 15%				
DELAY PROFILE FOR OIL HEATING MODE – NOMV106				
SW4 – DELAY DIP Switch position	HEAT INPUT (USGPH)	PreRun On-Delay CFM Level – Time	ShortRun On-Delay CFM Level – Time	Off-Delay CFM Level – Time
A (1=OFF, 2=OFF)	0.75	13% – 45 sec.	19% – 30 sec	38% – 3 min.
B (1=ON, 2=OFF)	0.65	13% – 45 sec.	19% – 60 sec	38% – 3 min.
C (1=OFF, 2=ON)	0.50	13% – 60 sec.	13% – 60 sec	38% – 3 min.
D (1=ON, 2=ON)	All	13% – 30 sec.	100% – 0 sec	100% – 2 min.
PreRun and ShortRun are the periods of time when the blower starts at very low CFM, to minimize the distribution of cool air in the system and then runs up to normal speed. Off Delay is the time required to cool down the heat exchanger with low CFM, to minimize cool draft in the air distribution system.				
DELAY PROFILE FOR COOLING OR HEAT PUMP HEATING MODE for NOMV106				
No adjustment required	A/C size	PreRun On-Delay CFM Level – Time	ShortRun On-Delay CFM Level – Time	Off-Delay CFM Level – Time
-	All	13% – 30 sec.	75% – 2.5 min.	50% – 3 min.
PreRun and ShortRun are the periods of time when the blower starts at very low CFM, to minimize the distribution of cool air in the system and then runs up to normal speed. Off Delay time required to cool down the coil (heating mode) with low CFM, to minimize cool draft in the air distribution system.				

VARIABLE SPEED ADJUSTMENTS – NOMV156				
OIL HEATING MODE – NOMV156 24 VAC input (R) on W only				
SW1– HEAT DIP switch position	HEAT INPUT (USGPH)	CFM (L/s) with SW3–ADJ DIP switch position A	CFM (L/s) with SW3–ADJ DIP switch position B	CFM (L/s) with SW3–ADJ DIP switch position C
A (1=OFF, 2=OFF)	0.85	1450 (684)	1595 (753)	1305 (616)
B (1=ON, 2=OFF)	1.00	1700 (802)	1870 (882)	1530 (722)
C (1=OFF, 2=ON)	1.10	1850 (873)	2035 (960)	1665 (786)
D (1=ON, 2=ON)	Same value as DIP switch position A			
CONTINUOUS FAN – NOMV156 24 VAC input (R) on G only				
SW2 – COOL DIP Switch position	A/C size (TON)	CFM (L/s) with SW3–ADJ DIP switch position A	CFM (L/s) with SW3–ADJ DIP switch position B	CFM (L/s) with SW3–ADJ DIP switch position C
A (1=OFF, 2=OFF)	5.0	1500 (708)	1725 (814)	1275 (602)
B (1=ON, 2=OFF)	4.0	1200 (566)	1380 (651)	1020 (481)
C (1=OFF, 2=ON)	3.5	1050 (496)	1205 (569)	890 (420)
D (1=ON, 2=ON)	3.0	900 (425)	1035 (488)	765 (361)
COOLING OR HEAT PUMP HEATING MODE – NOMV156 24 VAC input (R) to G, Y/Y2 and O (for cooling)				
SW2 – COOL DIP Switch position	A/C size (TON)	CFM (L/s) with SW3–ADJ DIP switch position A	CFM (L/s) with SW3–ADJ DIP switch position B	CFM (L/s) with SW3–ADJ DIP switch position C
A (1=OFF, 2=OFF)	5.0	2000 (944)	2200 (1038)	1800 (849)
B (1=ON, 2=OFF)	4.0	1600 (755)	1760 (831)	1440 (680)
C (1=OFF, 2=ON)	3.5	1400 (661)	1540 (757)	1260 (595)
D (1=ON, 2=ON)	3.0	1200 (566)	1320 (623)	1080 (510)
Note: In Cooling – Dehumidification mode, with no 24 VAC input to DH, the CFM is reduced by 15% The CFM shown are reduced by 20% if there is 24 VAC input to Y1 (Cooling first stage).				
DELAY PROFILE FOR OIL HEATING MODE – NOMV156				
SW4 – DELAY DIP Switch position	HEAT INPUT (USGPH)	PreRun On–Delay CFM Level – Time	ShortRun On–Delay CFM Level – Time	Off–Delay CFM Level – Time
A (1=OFF, 2=OFF)	0.85	13% – 45 sec.	44% – 30 sec	38% – 3 min.
B (1=ON, 2=OFF)	1.00	13% – 45 sec.	44% – 60 sec	38% – 3 min.
C (1=OFF, 2=ON)	1.10	13% – 60 sec.	50% – 60 sec	38% – 3 min.
D (1=ON, 2=ON)	All	13% – 30 sec.	100% – 0 sec	100% – 2 min.
PreRun and ShortRun are the periods of time when the blower starts with very low CFM to minimize the distribution of cool air in the system and then runs up to normal speed. Off Delay is the time required to cool down the heat exchanger with low CFM, to minimize cool draft in the air distribution system.				
DELAY PROFILE FOR COOLING OR HEAT PUMP HEATING MODE for NOMV156				
No adjustment required	A/C size	PreRun On–Delay CFM Level – Time	PreRun On–Delay CFM Level – Time	PreRun On–Delay CFM Level – Time
–	All	No delay	No delay	100% – 90 min.
PreRun and ShortRun are the periods of time when the blower starts at very low CFM, to minimize the distribution of cool air in the system and then runs up to normal speed. Off Delay time required to cool down the coil (heating mode) with low CFM, to minimize cool draft in the air distribution system.				

ACCESSORIES				
Product Model No.	Burners	Horizontal Flow Base	Downflow Subbase	Downflow Flue Pipe Guard
NOMV106D12	Riello Model 40 Shipped with Nozzle 0.60–70B	HFB101	DFB101	FPG101
NOMV156E19	Riello Model 40 Shipped with Nozzle 1.00–70B			FPG102

ACCESSORY DESCRIPTION	
Model No.	Description
DFB101	Downflow Subbase for NOMV Furnace
FPG101	Flue Pipe Guard for Downflow for NOMV106
FPG102	Flue Pipe Guard for Downflow for NOMV156
HFB101	Horizontal Floor Base for NOMV Furnace
N03F018	Nozzle, Oil Burner, Delavan, 0.40 GPH/70° Type A for NOMV106
N03G006	Nozzle, Oil Burner, Delavan, 0.50 GPH/70° Type W for NOMV106
N03G007	Nozzle, Oil Burner, Delavan, 0.65 GPH/70° Type W for NOMV106
N03G012	Nozzle, Oil Burner, Delavan, 1.00 GPH/70° Type W for NOMV156
N03G016	Nozzle, Oil Burner, Delavan, 0.85 GPH/70° Type W for NOMV156
N03H013	Nozzle, Oil Burner, Delavan, 0.75 GPH/70° Type B for NOMV156