



**RHP13**  
Rooftop Units  
60HZ

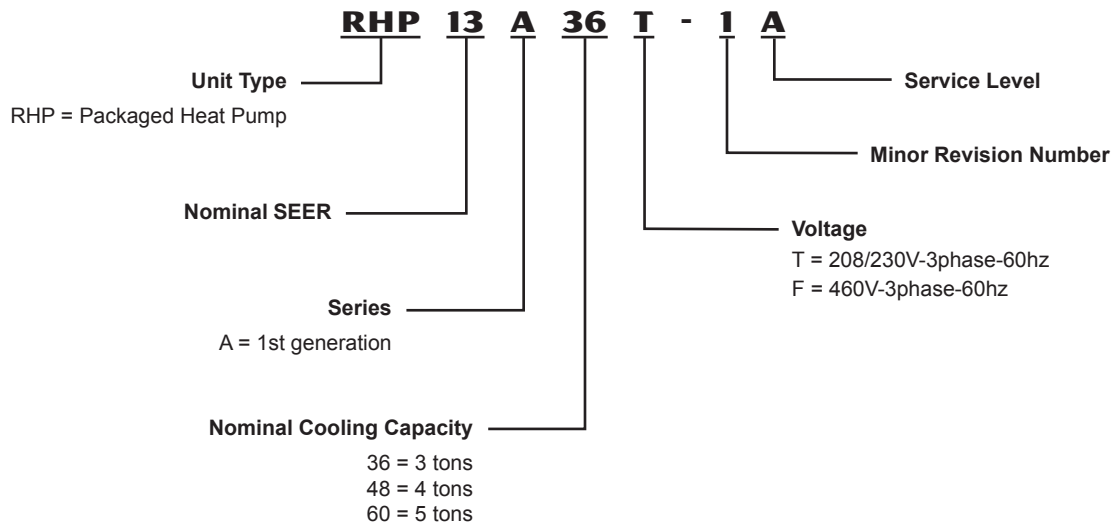
**PRODUCT SPECIFICATIONS**

Bulletin No. 210625  
October 2011  
Supersedes September 2011



**SEER - 13.00**  
**3 to 5 Tons**  
**Cooling Capacity - 34,600 to 56,000 Btuh**  
**Heating Capacity - 33,600 to 54,000 Btuh**  
**Optional Electric Heat - 10 and 15 kW**

**MODEL NUMBER IDENTIFICATION**



## FEATURES

### **CONTENTS**

Accessories Dimensions.....	9
Blower Data .....	7
Cooling Ratings .....	6
Dimensions .....	8
Electrical Data.....	4
Features.....	2
Heating Ratings .....	6
Installation Clearances .....	3
Model Number Identification .....	1
Options / Accessories .....	5
Specifications.....	4

### **WARRANTY**

**Compressor - five year** limited warranty.

**All other covered components - one year.**

### **APPROVALS**

AHRI Certified to AHRI Standard 210/240-2008.

ETL listed.

### **APPLICATIONS**

Designed for outdoor installations at ground level or rooftop applications.

### **SUPPLY AIR BLOWER**

#### **Direct Drive Blower**

Each blower assembly statically and dynamically balanced.

Multi-speed, direct drive blower motor.

Change in blower speed is easily accomplished by simple wiring change on blower motor.

Blower assembly easily removed for servicing.

See Blower Performance tables.

### **REFRIGERATION SYSTEM**

#### **R-410A Refrigerant**

Non-chlorine, ozone friendly, R-410A.

Unit pre-charged with refrigerant.

See Specification table.



#### **Indoor and Outdoor Coils**

Copper tube with aluminum fin coils.

#### **Indoor Coil Drain Pan**

Corrosion resistant plastic drain pan.

#### **Outdoor Coil Fan**

Weather protected heavy duty outdoor coil fan motor with coated steel fan blades for long life.

Internally mounted.

Totally enclosed motor.

Fan guard constructed of corrosion-resistant coated steel.

#### **Reversing Valve**

4-way interchange reversing valve effects a rapid change in direction of refrigerant flow resulting in quick changeover from cooling to heating and vice versa.

#### **High Pressure Switch**

Shuts off unit if abnormal operating conditions cause the discharge pressure to rise above setting.

Protects compressor from excessive condensing pressure. Automatic reset.

### **CONTROLS**

Electronic blower control.

3-Pole Double-Break Contactor.

Furnished and factory installed.

Trade available components.

#### **Defrost Control**

Defrost control furnished as standard equipment.

Gives a defrost cycle for every 30, 60, or 90 minutes (adjustable) of compressor "on" time at outdoor temperatures below 35°F.

Field-selectable, "quiet shift" setting reduces compressor noise during the defrost cycle.

Sensor mounted on liquid line determines when defrost cycle is required and also when to terminate cycle.

Anti-short cycle, timed-off control incorporated into the board.

#### **24 Volt Transformer**

40VA transformer furnished and factory installed in control area.

### **OPTIONS / ACCESSORIES**

#### **Thermostat**

See Thermostat bulletins in Controls section and Lennox Price Book for a complete list of thermostats.

## FEATURES

### **COMPRESSOR**

Scroll compressor on all models.  
Overload protected.  
Resiliently mounted on rubber mounts.

### **CABINET**

Conditioned areas insulated with foil faced insulation to minimize heat loss and reduce operating sound levels.  
Powder paint for maximum durability.  
Easy service access.  
Coated steel wire guard provides complete coil protection.  
Interchangeable panels for horizontal to downflow airflow conversion furnished (shipped for horizontal).  
Factory installed wiring harness for optional Economizer allows fast and easy electrical connections.

### **AIR FILTER (NOT FURNISHED - REQUIRED)**

Filter rails for mounting 1 inch filter are furnished in cabinet. Filter is not furnished and must be field provided.  
See Specifications Table for sizes.

## OPTIONS / ACCESSORIES

### **ROOF CURB**

#### **Roof Curb, Downflow**

Nailer strip furnished, mates to unit, shipped knocked down. See dimension drawing.

### **ECONOMIZER**

Downflow or horizontal, parallel gear-driven action return air and outdoor air dampers, plug-in connections to unit, nylon bearings, neoprene seals, 24-volt, fully-modulating, spring return motor, adjustable minimum damper position.  
Barometric relief dampers furnished in downflow economizer.

### **ELECTRIC HEAT (10 AND 15 KW)**

Field install internal to unit cabinet.  
Available in several voltages and kw sizes.  
Helix wound nichrome heating elements exposed directly in air stream resulting in instant heat transfer, low element temperatures and long service life.  
Cutoff limit control provides positive protection in case of excessive temperatures.  
Easy plug-in connections for low voltage control wiring.

### **OUTDOOR AIR DAMPER**

Manual or motorized. Perforated air intake panel replaces existing duct cover on unit.  
0 to 25% (fixed)  
Manual outdoor air damper has adjustable damper slide.  
Motorized outdoor air damper has motorized damper assembly with adjustable damper slide.  
Outdoor air hood with cleanable filter included.

## INSTALLATION CLEARANCES

	in.	mm
Front (electric heat access)	24	610
Right Side (blower access)	24	610
Left Side (indoor coil access)	24	610
Back	0	0
Top	48	1219

## SPECIFICATIONS

General Data		Model No.	RHP13A36	RHP13A48	RHP13A60
		Nominal Tonnage	3	4	5
Cooling Performance	Total capacity - Btuh		34,600	46,000	56,000
	<sup>1</sup> SEER (Btuh/Watt)		13.0	13.0	13.0
	EER (Btuh/Watt)		11.0	11.0	11.0
Heating Performance (High Temp)	Total capacity - Btuh		33,600	44,000	54,000
	COP		3.5	3.3	3.3
	HSPF Region IV		7.7	7.7	7.7
Heating Performance (Low Temp)	Total capacity - Btuh		20,200	26,800	34,000
	COP		2.3	2.1	2.3
<sup>2</sup> Sound Rating Number (dB)			79	80	80
Refrigerant	Type		R-410A	R-410A	R-410A
	Charge		7 lbs. 6 oz	9 lbs. 10 oz.	9 lbs. 6 oz.
Condensate drain size (fpt) - in.			3/4	3/4	3/4
Outdoor Coil Fan	Motor horsepower		1/4	1/3	1/3
	Motor rpm		1075	1075	1075
	Diameter - in. & No. of blades		18 - 4	22 - 4	22 - 4
Indoor Blower	Motor horsepower		1/2	3/4	3/4
	Blower wheel size dia. x width - in.		10 x 8	10 x 10	10 x 10
<sup>5</sup> Filter Dimensions (filter not furnished)			(1) 24 x 28 x 1	(1) 30 x 30 x 1	(1) 30 x 30 x 1
Shipping weight of basic unit (1 Pkg.) - lbs.			370	480	480
Electrical characteristics (60 hz)		208/230V-3ph or 460V-3ph			

## ELECTRICAL DATA

Line voltage data - 60hz 3 phase	208/230V	208/230V	460V	208/230V	460V
<sup>3</sup> Maximum overcurrent protection (amps)	25	35	15	40	20
<sup>4</sup> Minimum Circuit Ampacity	18.3	24.6	12	27.4	13.9
Compressor	Rated load amps	10.4	13.7	6.2	7.7
	Locked rotor amps	73	83.1	41	52
Outdoor Coil Fan Motor	Full load amps	1.2	1.7	1.7	1
Indoor Blower Motor	Full load amps	4.1	5.8	3.2	3.2

NOTE-Extremes of operating range are plus and minus 10% of line voltage.

<sup>1</sup> AHRI Certified to AHRI Standard 210/240

**Cooling Ratings** - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.

**High Temperature Heating Ratings** - 47°F db/43°F wb outdoor air temperature and 70°F entering indoor coil air.

**Low Temperature Heating Ratings** - 17°F db/15°F wb outdoor air temperature and 70°F entering indoor coil air.

<sup>2</sup> Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270.

<sup>3</sup> HACR type circuit breaker or fuse.

<sup>4</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

<sup>5</sup> Filters are not furnished and must be field provided.

## OPTIONS / ACCESSORIES

Item Description	Model Number	Catalog Number	Unit Model No			
			36	48	60	
<b>ELECTRIC HEAT</b>						
10 kW	208/240V-3ph-60hz	AHSA10B-1	1.821007	X	X	X
	460V-3ph-60hz	AHSA10C-1	1.821014		X	X
15 kW	208/240V-3ph-60hz	AHSA15B-1	1.821008	X	X	X
	460V-3ph-60hz	AHSA15C-1	1.821015		X	X
<b>ECONOMIZER</b>						
Downflow		AECON825-1	1.851395	X		
		AECON826-1	1.851396		X	X
Horizontal		AECON827-1	1.851397	X		
		AECON828-1	1.851398		X	X
<b>OUTDOOR AIR DAMPER</b>						
Manual		ADMPR145-1	1.851274	X		
		ADMPR166-1	1.851293		X	X
Motorized		ADMPR146-1	1.851275	X		
		ADMPR167-1	1.851294		X	X
<b>ROOF CURBS</b>						
		ACURB161-1	1.851299	X		
		ACURB163-1	1.851300		X	X

NOTE - Catalog and model numbers shown are for ordering field installed accessories.  
X = Field installed.

## ELECTRIC HEAT DATA

Packaged Unit Model No.	Electric Heat Size	Input		<sup>1</sup> Minimum Circuit Ampacity	<sup>2</sup> Maximum Overcurrent Protection
		Volt	kW	Circuit 1	Circuit 1
RHP13A36	10 kW	208	7.5	31.2	35
		240	10.0	35.2	40
	15 kW	208	11.3	44.2	45
		240	15.0	50.2	60
RHP13A48 RHP13A60	10 kW	208	7.5	33.3	35
		240	10.0	37.3	40
		480	10.0	19.0	20
	15 kW	208	11.3	46.3	50
		240	15.0	52.4	60
		480	15.0	25.8	30

<sup>1</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. use wires suitable for at least 167°F.

<sup>2</sup> HACR type circuit breaker or fuse.

## COOLING RATINGS

Model	Indoor Temp DB/WB °F	Outdoor Temp - DB°F														
		65°			82°			95°			105°			115°		
		Btuh	S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW
RHP13A36	85/72	41,800	0.61	2.39	39,400	0.63	2.82	37,500	0.65	3.15	35,700	0.68	3.50	33,100	0.70	3.49
	80/67	39,400	0.68	2.37	37,500	0.71	2.80	34,600	0.74	3.14	32,000	0.76	3.47	29,500	0.80	3.43
	75/63	37,100	0.72	2.36	33,900	0.75	2.79	31,500	0.77	3.12	29,400	0.82	3.45	26,200	0.86	3.42
	75/57	34,300	1.00	2.32	32,300	1.00	2.75	30,800	1.00	3.08	28,900	1.00	3.40	26,100	1.00	3.36
RHP13A48	85/72	54,400	0.65	3.10	52,100	0.66	3.72	50,200	0.67	4.19	47,200	0.69	4.66	43,500	0.71	4.71
	80/67	51,900	0.71	3.08	49,500	0.73	3.64	46,000	0.76	4.18	43,500	0.78	4.55	38,400	0.80	4.65
	75/63	49,900	0.73	3.06	45,600	0.76	3.64	42,300	0.78	4.09	38,700	0.82	4.55	34,300	0.85	4.60
	75/57	45,200	1.00	3.02	42,800	1.00	3.63	40,900	1.00	4.10	37,900	1.00	4.53	34,200	1.00	4.56
RHP13A60	85/72	68,500	0.60	3.87	64,500	0.62	4.61	61,300	0.63	5.17	57,500	0.65	5.76	52,300	0.66	5.75
	80/67	64,800	0.66	3.83	60,800	0.68	4.49	56,000	0.70	5.09	53,000	0.72	5.62	45,300	0.77	5.61
	75/63	60,900	0.69	3.81	54,500	0.72	4.50	49,600	0.75	5.03	45,800	0.78	5.56	40,500	0.81	5.52
	75/57	56,400	1.00	3.75	52,700	1.00	4.45	49,800	1.00	4.99	45,500	1.00	5.53	40,300	1.00	5.50

## HEATING RATINGS

Model	Outdoor Temp - DB/WB °F									
	0/0		17/15		35/33		47/43		62/56	
	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW
RHP13A36	15,900	2.53	20,200	2.58	24,900	2.66	33,600	2.82	40,200	2.93
RHP13A48	23,900	3.57	26,800	3.74	29,300	3.73	44,000	3.91	52,900	4.08
RHP13A60	25,200	4.30	34,000	4.34	41,200	4.32	54,000	4.78	64,800	5.03

## BLOWER DATA

### RHP13A36 BLOWER PERFORMANCE

#### <sup>1</sup> Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)				
	Tap 1 (Fan Only)	Tap 2 (Low Static)	Tap 3 (High Static)	<sup>2</sup> Tap 4 (Low Static Electric Heat)	<sup>2</sup> Tap 5 (High Static Electric Heat)
0.20	650	1240	1320	1240	1320
0.30	590	1200	1260	1200	1260
0.40	500	1150	1230	1150	1230
0.50	430	1100	1200	1100	1200
0.60	---	1060	1160	1060	1160
0.70	---	1020	1120	1020	1120
0.80	---	980	1080	980	1080

NOTE - All air data measured external to unit with dry coil and less filter.

<sup>1</sup> For downflow air volume, add 0.10 in. w.g. to duct static.

<sup>2</sup> Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection

### RHP13A48 BLOWER PERFORMANCE

#### <sup>1</sup> Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)				
	Tap 1 (Fan Only)	Tap 2 (Low Static)	Tap 3 (High Static)	<sup>2</sup> Tap 4 (Low Static Electric Heat)	<sup>2</sup> Tap 5 (High Static Electric Heat)
0.20	860	1650	1800	1650	1800
0.30	760	1600	1750	1600	1750
0.40	690	1550	1690	1550	1690
0.50	640	1500	1630	1500	1630
0.60	---	1440	1570	1440	1570
0.70	---	1370	1470	1370	1470
0.80	---	1290	1330	1290	1330

NOTE - All air data measured external to unit with dry coil and less filter.

<sup>1</sup> For downflow air volume, add 0.10 in. w.g. to duct static.

<sup>2</sup> Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection

### RHP13A60 BLOWER PERFORMANCE

#### <sup>1</sup> Horizontal Airflow

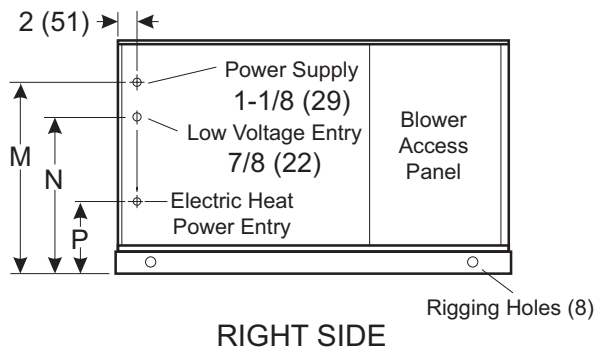
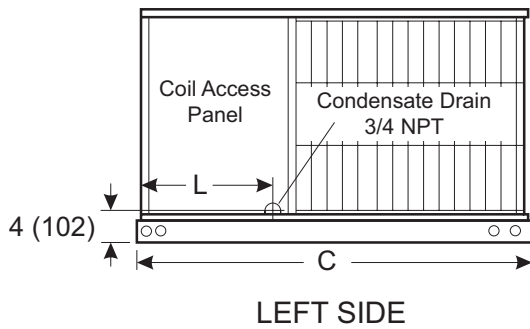
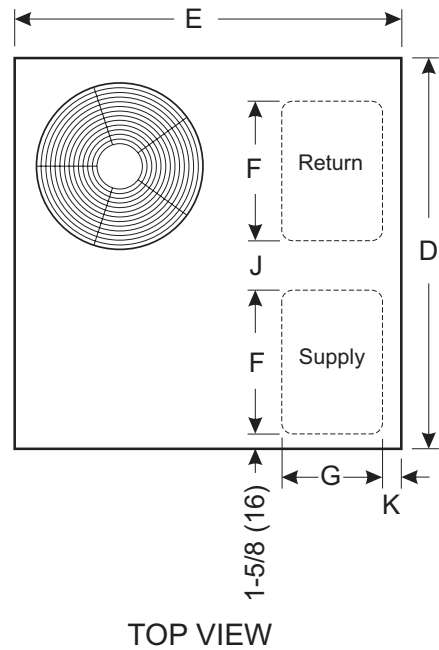
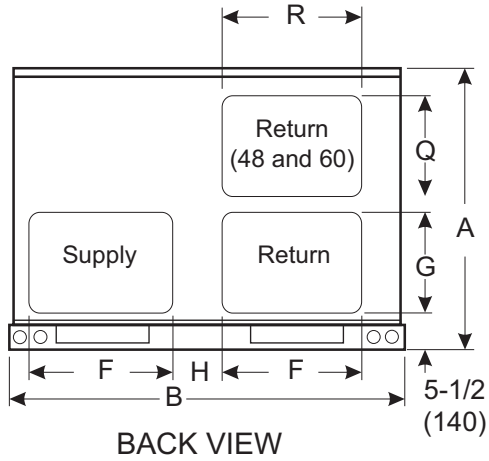
External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)				
	Tap 1 (Fan Only)	Tap 2 (Low Static)	Tap 3 (High Static)	<sup>2</sup> Tap 4 (Low Static Electric Heat)	<sup>2</sup> Tap 5 (High Static Electric Heat)
0.20	1000	1820	1950	1820	1950
0.30	900	1790	1910	1790	1910
0.40	800	1730	1860	1730	1860
0.50	750	1670	1800	1670	1800
0.60	---	1630	1700	1630	1700
0.70	---	1530	1560	1530	1560
0.80	---	1380	1360	1380	1360

NOTE - All air data measured external to unit with dry coil and less filter.

<sup>1</sup> For downflow air volume, add 0.10 in. w.g. to duct static.

<sup>2</sup> Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection

# DIMENSIONS - INCHES (MM)



Model No.	A		B		C		D		E		F		G		H	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
RHP13A36	32-1/2	826	46-1/2	1181	46-1/2	1181	45-5/8	1159	45-5/8	1159	17-1/2	445	11-1/2	292	4	102
RHP13A48 RHP13A60	34-1/2	876	55-1/2	1410	50-1/2	1283	54-5/8	1387	49-5/8	1260	21-1/2	546	12	305	6-1/4	159

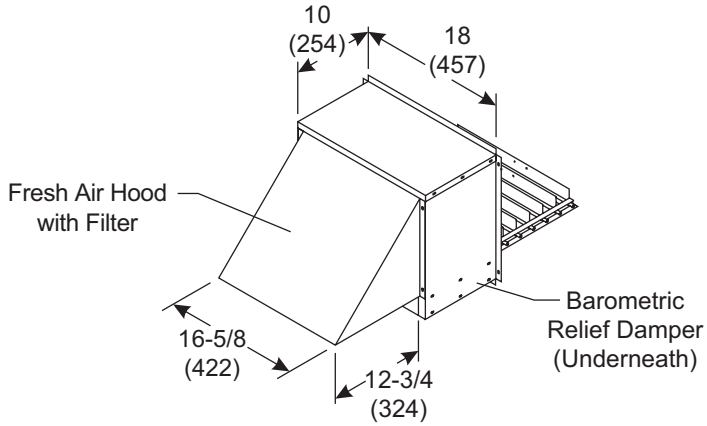
Model No.	J		K		L		M		N		P		Q		R	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
RHP13A36	4	102	1-3/4	44	15-5/8	397	27-3/4	705	24-7/8	632	9-3/4	248	---	---	---	---
RHP13A48 RHP13A60	5-5/8	143	2-3/8	60	17-1/8	435	29-3/4	756	26-7/8	683	15-1/2	394	12	305	21-1/2	546



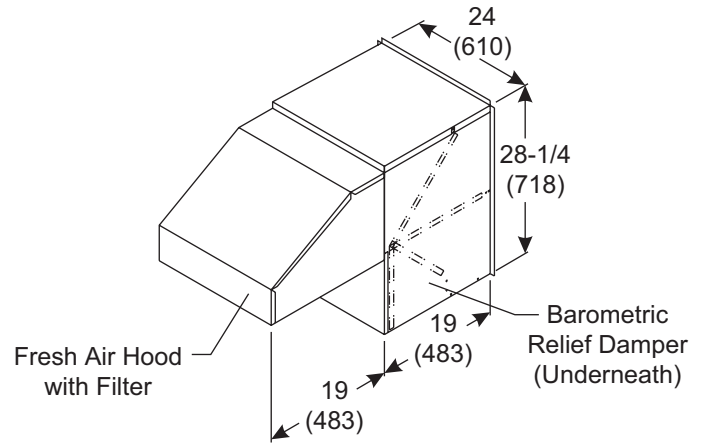
# ACCESSORIES DIMENSIONS - INCHES (MM)

## ECONOMIZER DAMPERS - DOWNFLOW

FOR RHP13A36

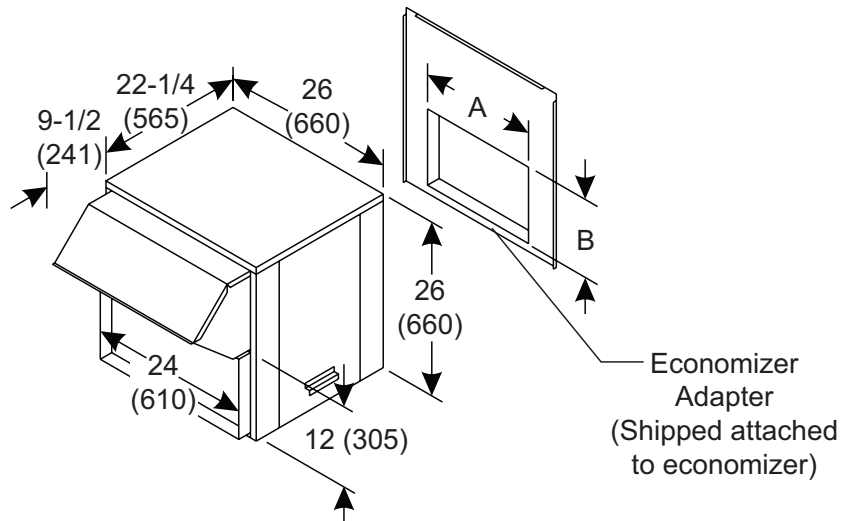


FOR RHP13A48 AND RHP13A60



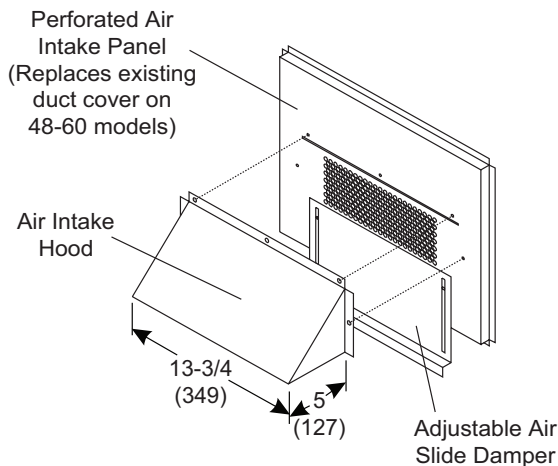
## ECONOMIZER DAMPERS - HORIZONTAL

Model No.	A		B	
	in	mm	in	mm
RHP13A36	17-5/8	448	11-1/2	292
RHP13A48 RHP13A60	21-3/4	552	12-1/4	311

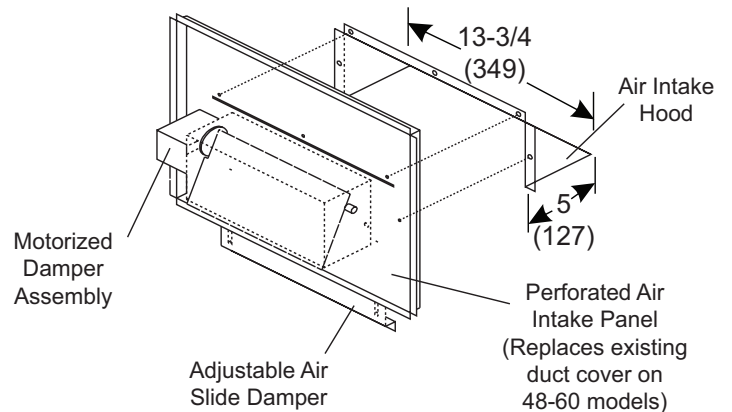


## FRESH AIR DAMPERS

MANUAL

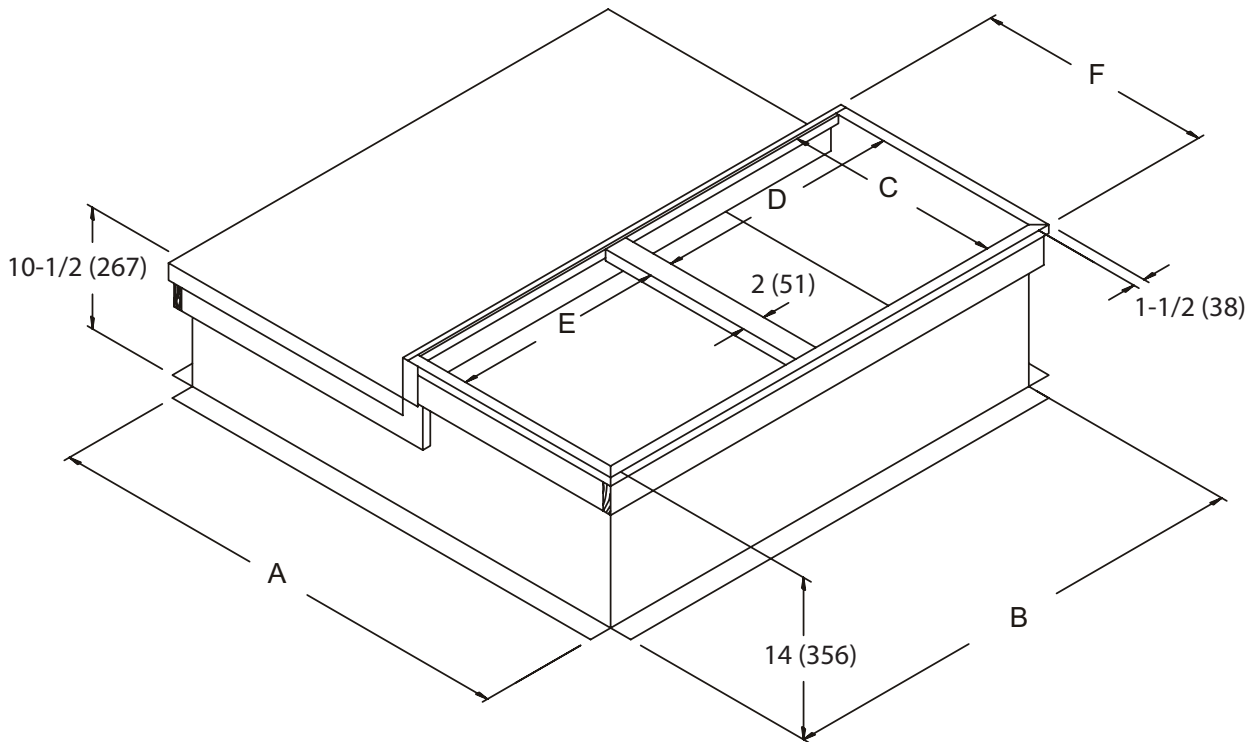


MOTORIZED



## ACCESSORIES DIMENSIONS - INCHES (MM)

### ROOF CURB



Model No.	A		B		C		D		E		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
RHP13A36	40	1016	40	1016	19	483	20	508	18	457	21-1/2	546
RHP13A48 RHP13A60	44-1/8	1121	49	1245	19-1/2	495	23-1/2	597	23-1/2	597	23	584



## REVISIONS

Section	Description
Options/Accessories	Revised catalog numbers for Outdoor Air Dampers.



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NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

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