



## Ruud High Efficiency Modulating Air Handler

### RHMV- Side Discharge Series

Constant CFM Motor (ECM)  
Efficiencies up to 19 SEER



- The RHMV Air Handler is part of a new line of Ruud smart heating, cooling and water heating products.
- Features a constant CFM variable speed motor (ECM) which provides enhanced SEER performance. The RHMV is rated with UP17\*\*H heat pumps.
- Evaporator is constructed of aluminum fins bonded to internally grooved aluminum tubing.
- Versatile 4-way convertible design for upflow, downflow, horizontal left and horizontal right applications.
- Factory-installed indoor coil.
- Sturdy cabinet construction with 1.0 inch [25.4 mm] of foil faced insulation for excellent sound and insulating characteristics.
- Field-installed auxiliary electric heater kits provide exact heat for indoor comfort. Kits include circuit breakers which meet U.L. and cUL requirements for service disconnect.
- 2 ton [7.0 kW] through 4 ton [14.1 kW] models are between 42½ to 57 inches [1080 to 1448 mm] tall and 22 inches [559 mm] deep.
- All models meet or exceed 330 to 400 CFM [156 to 189 L/s] per ton at .3 inches [.7 kPa] of external static pressure.
- Enhanced airflow up to .7" external static pressure.
- Cabinet air leakage less than 2.0% at 1.0 inch H<sub>2</sub>O when tested in accordance with ASHRAE Standard 193.

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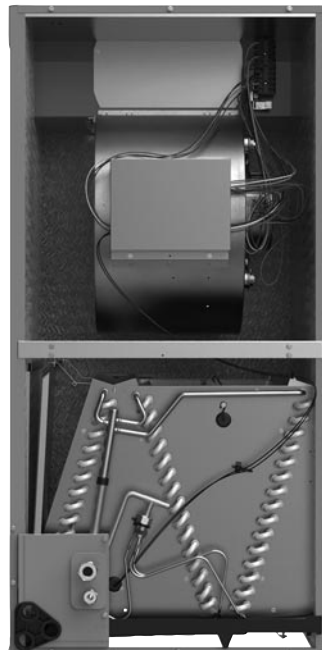
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## Engineering Features

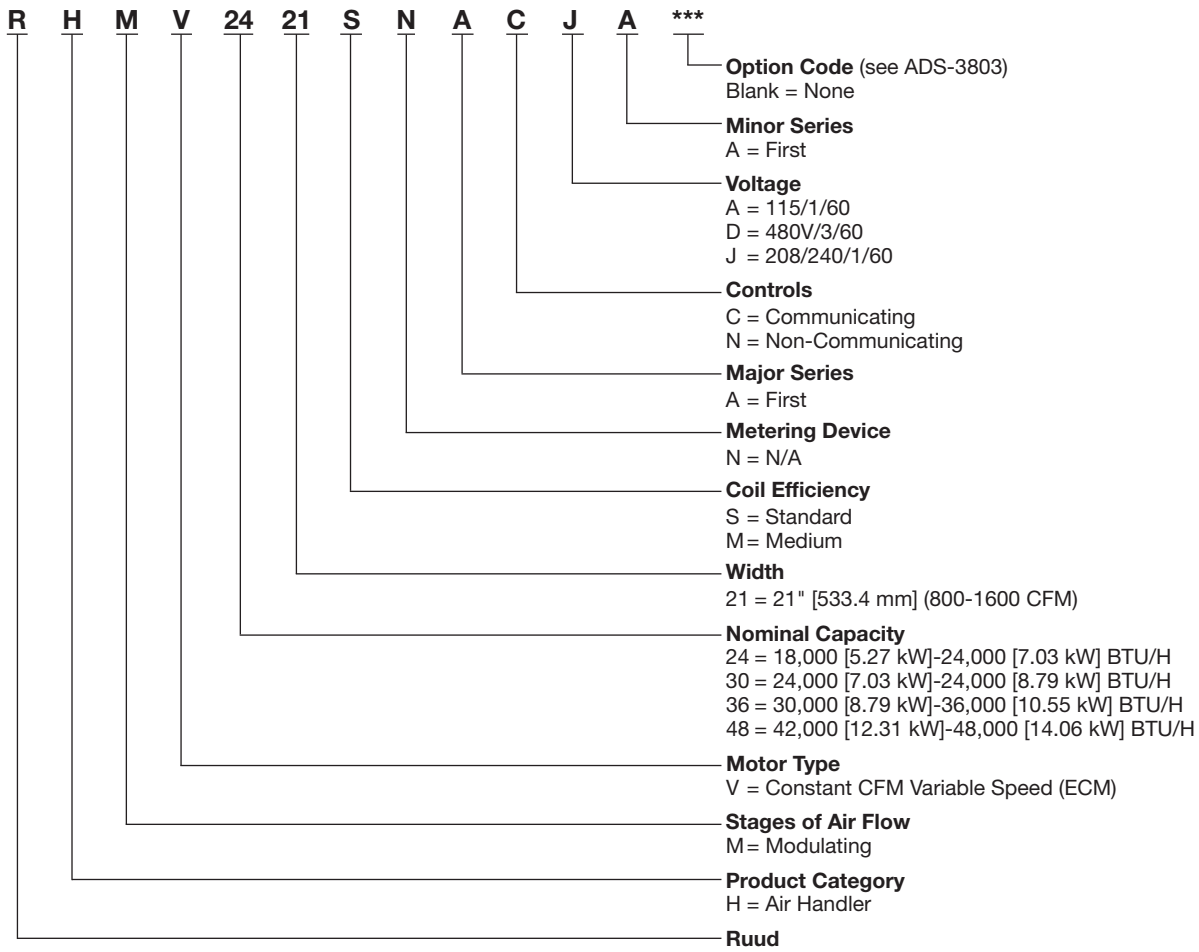
### RHMV- Series

- The most compact unit design available, all standard heat air handler models only 42 $\frac{1}{2}$  to 57 inches [1079 to 1448 mm] high.
- Attractive pre-painted cabinet exterior.
- Rugged wall steel cabinet construction, designed for added strength and versatility.
- 1.0" foil faced insulation mechanically retained in blower compartment for excellent thermal and sound performance.
- Four leg blower motor mount.
- Blower housing with controls, motor and blower. Slide out design for service and maintenance convenience.
- Traditional open wire element design for heat applications.
- Field convertible for vertical downflow, horizontal left hand or right hand air supply.
- 3 combustible floor base accessories fit all model sizes when required for downflow installations on combustible floors.
- Indoor coil design provides low air side pressure drop, high performance and extremely compact size.
- Coils are constructed of aluminum fins bonded to internally grooved aluminum tubing.
- Coils are tested at the factory with an extensive refrigerant leak check.
- Coils have 45 degree flare refrigerant connections.
- Coils utilize chatleff liquid line device connections.
- Molded polymer corrosion resistant condensate drain pan is provided on all indoor coils.
- Supply duct flanges provided as standard on air handler cabinet.
- Provisions for field electrical, connections available from either side or top of the air handler cabinet.
- Concentric knockouts are provided for power connection to cabinet. Installer may pull desired hole size up to 2 inches [51 mm] for 1 $\frac{1}{2}$  inch [38 mm] conduit.
- Front refrigerant and drain connections.

[ ] Designates Metric Conversions



Model Number Identification  
RHMV Series



[ ] Designates Metric Conversions

**Available Models at J Voltage**

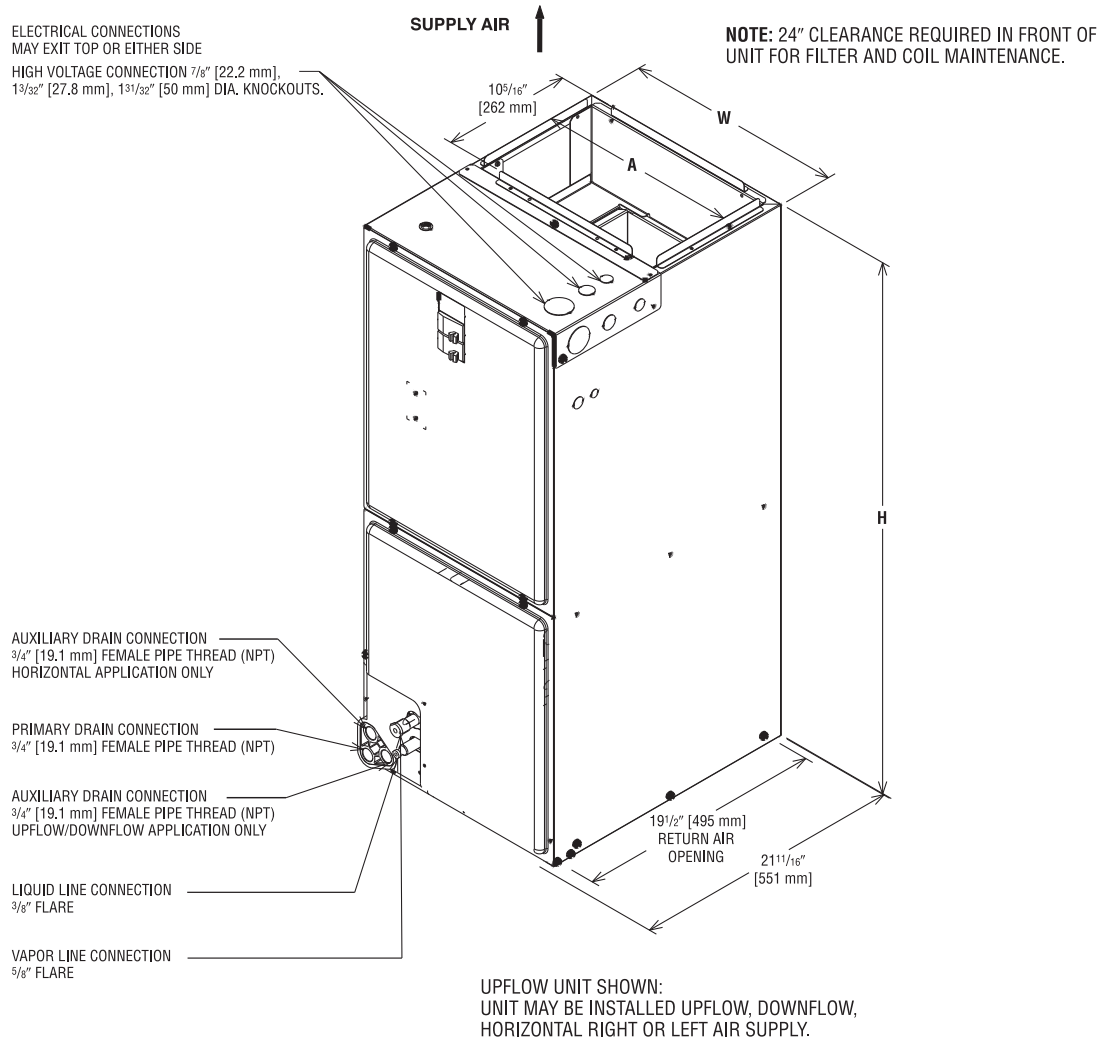
RHMV2421MNACJA
RHMV3021SNACJA
RHMV3621MNACJA
RHMV4821SNACJA

# Unit Dimensions

## Return Air Opening Dimensions

Model Cabinet Size	Return Air Opening Width (Inches)	Return Air Opening Depth/Length (Inches)
21	19 <sup>3</sup> / <sub>8</sub>	19 <sup>3</sup> / <sub>4</sub>

[ ] Designates Metric Conversions



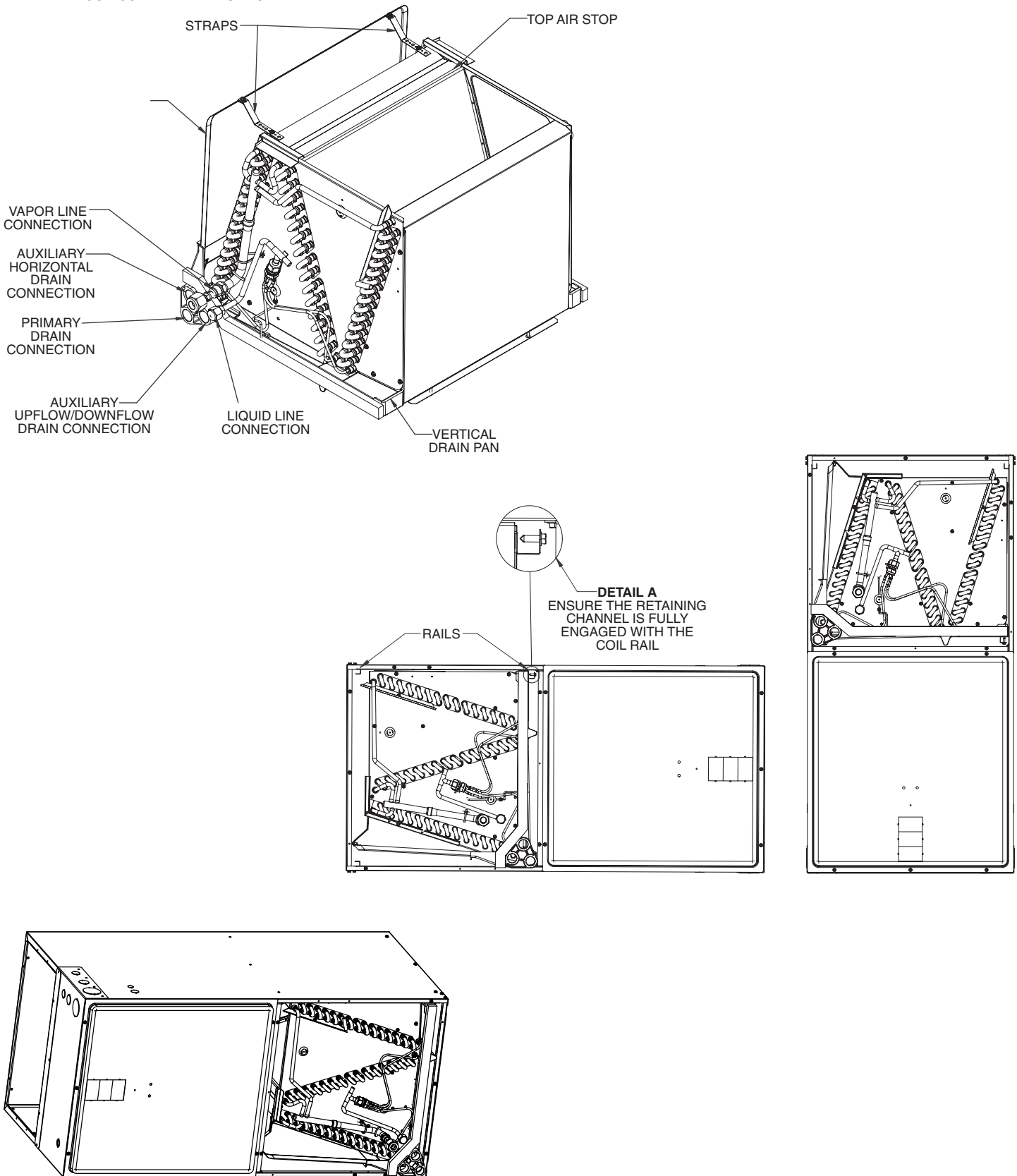
## Unit Dimensions & Weights

Model Size RHMV	Refrigerant Connections Sweat (In.) [mm] ID		Unit Height H In. [mm]	Unit Width W In. [mm]	Supply Duct A In. [mm]	Unit Weight/Shipping Weight (Lbs.) [kg]
	Liquid	Vapor				Unit With Coil (Max. KW)
2421MN, 3021SN	3/8 [9.53]	3/4 [19.05]	42 <sup>1</sup> / <sub>2</sub> [1080]	21 [533.4]	19 <sup>1</sup> / <sub>2</sub> [495.3]	111/126 [50/57]
3621MN, 4821SN	3/8 [9.53]	7/8 [22.23]	57 [1448]	21 [533.4]	19 <sup>1</sup> / <sub>2</sub> [495.3]	141/153 [64/69]

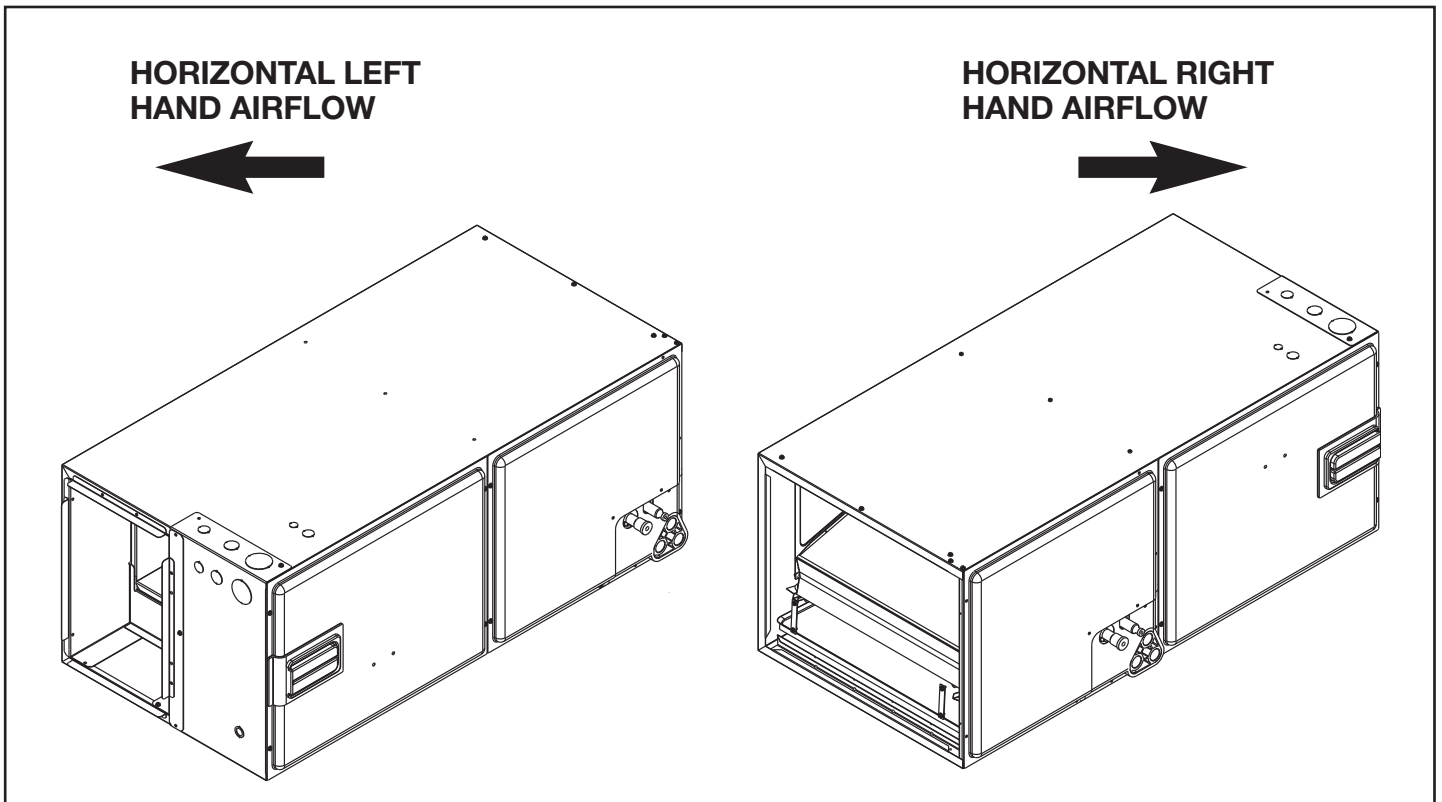
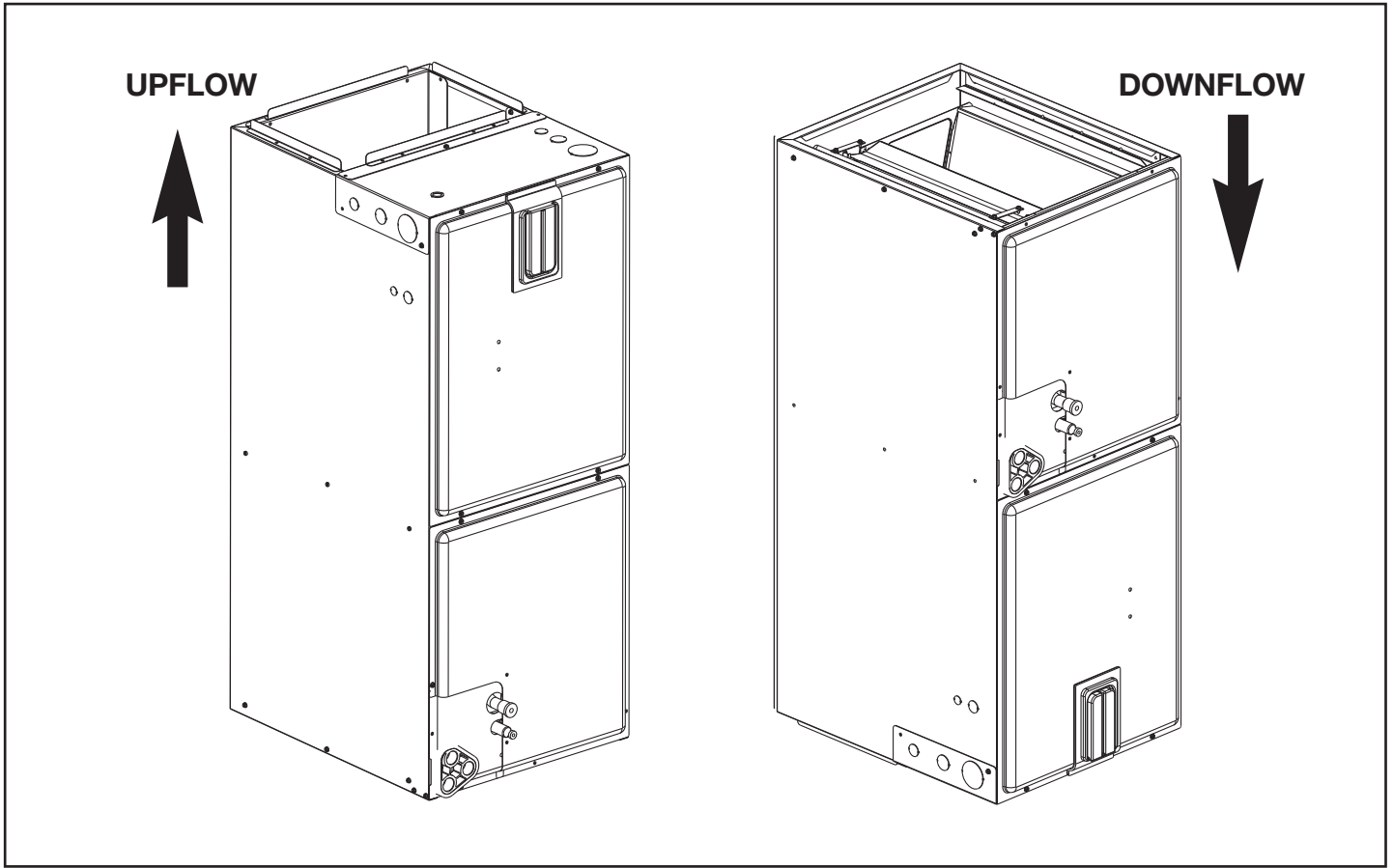
\*Maximum dehumidification airflow.

## Unit Dimensions

FIGURE 7  
INDOOR COIL DRAIN PAN SET-UP



### Airflow Directional Data



## Airflow Performance

### Airflow Operating Limits

RHMV2421MNACJA			
Fan speed	Airflow		
		Cooling	Heating
HIGH	m3/h	1,359	1,359
	l/s	378	378
	CFM	800	800
MED	m3/h	1,138	1,138
	l/s	316	316
	CFM	670	670
LOW	m3/h	1,002	1,002
	l/s	278	278
	CFM	590	590
QUIET	m3/h	527	527
	l/s	146	146
	CFM	310	310

RHMV4821SNACJA			
Fan speed	Airflow		
		Cooling	Heating
HIGH	m3/h	2,786	2,786
	l/s	774	774
	CFM	1,640	1,640
MED	m3/h	1,733	1,733
	l/s	481	481
	CFM	1,020	1,020
LOW	m3/h	1,393	1,393
	l/s	387	387
	CFM	820	820
QUIET	m3/h	1,002	1,002
	l/s	278	278
	CFM	590	590



## Airflow Performance (con't)

### Airflow Operating Limits

RHMV3621MNACJA			
Fan speed	Airflow		
		Cooling	Heating
HIGH	m3/h	2,039	2,039
	l/s	566	566
	CFM	1,200	1,200
MED	m3/h	1,257	1,257
	l/s	349	349
	CFM	740	740
LOW	m3/h	1,002	1,002
	l/s	278	278
	CFM	590	590
QUIET	m3/h	833	833
	l/s	231	231
	CFM	490	490

RHMV3021SNACJA			
Fan speed	Airflow		
		Cooling	Heating
HIGH	m3/h	1,478	1,478
	l/s	411	411
	CFM	870	870
MED	m3/h	1,240	1,240
	l/s	345	345
	CFM	730	730
LOW	m3/h	1,002	1,002
	l/s	278	278
	CFM	590	590
QUIET	m3/h	527	527
	l/s	146	146
	CFM	310	310

## Electrical Data – Motor Only – No Electric Heat RHMV

Installation of the U.L. Listed original equipment manufacturer provided heater kits listed in the following table is recommended for all auxiliary heating requirements.

Model (-)HVM	Voltage	Phase	Hz	Motor HP	Motor Amps
2421MN, 3021SN	208 / 240	1	60	1/3	2.9
3621MN, 4821SN				3/4	4.9

## Electrical Data – With Electric Heat RHMV

Installation of the U.L. Listed original equipment manufacturer provided heater kits listed in the following table is recommended for all auxiliary heating requirements.

**WARNING!** When electric auxiliary heat is added, installer must verify dip switch SW101-3 is in the “ON” position.

RHMV2421MN 2-TON HEATER KITS								
Heater Model Number 1	Circuit 2	Voltage 3	Phase / Hertz 4	Heater kW 5	Heater Amps 6	Motor Ampacity 7	Max. Over Circuit Protection 8	Min. Branch Circuit Ampacity 9
RXBH-1724A03J-A	Single	208 / 240	1 / 60	2.25 / 3.0	10.8 / 12.5	1.7	20 / 20	16 / 18
RXBH-1724A05J-A	Single	208 / 240	1 / 60	3.6 / 4.8	17.3 / 20.0	1.7	25 / 30	24 / 28
RXBH-1724A07J-A	Single	208 / 240	1 / 60	5.4 / 7.2	26.0 / 30.0	1.7	35 / 40	35 / 40
RXBH-1724C05J-A	Single	208 / 240	1 / 60	3.6 / 4.8	17.3 / 20.0	1.7	25 / 30	24 / 28
RXBH-1724C07J-A	Single	208 / 240	1 / 60	5.4 / 7.2	26.0 / 30.0	1.7	35 / 40	35 / 40

RHMV3021SN HEATER KITS								
Heater Model Number 1	Circuit 2	Voltage 3	Phase / Hertz 4	Heater kW 5	Heater Amps 6	Motor Ampacity 7	Max. Over Circuit Protection 8	Min. Branch Circuit Ampacity 9
RXBH-1724A03J-A	Single	208 / 240	1 / 60	2.25 / 3.0	10.8 / 12.5	1.7	20 / 20	16 / 18
RXBH-1724A05J-A	Single	208 / 240	1 / 60	3.6 / 4.8	17.3 / 20.0	1.7	25 / 30	24 / 28
RXBH-1724A07J-A	Single	208 / 240	1 / 60	5.4 / 7.2	26.0 / 30.0	1.7	35 / 40	35 / 40
RXBH-1724A10J-A	Single	208 / 240	1 / 60	7.2 / 9.6	34.6 / 40.0	1.7	50 / 60	46 / 53
RXBH-1724B/C05J-A	Single	208 / 240	1 / 60	3.6 / 4.8	17.3 / 20.0	1.7	25 / 30	24 / 28
RXBH-1724B/C07J-A	Single	208 / 240	1 / 60	5.4 / 7.2	26.0 / 30.0	1.7	35 / 40	35 / 40
RXBH-1724B/C10J-A	Single	208 / 240	1 / 60	7.2 / 9.6	34.6 / 40.0	1.7	50 / 60	46 / 53

**NOTES:**

\* Values only. No single point kit available.

- Electric heater BTUH - (heater watts + motor watts) x 3.414 (see airflow table for motor watts.)
- Supply circuit protective devices may be fuses or “HACR” type circuit breakers.
- Largest motor load is included in single circuit and multiple circuit 1.
- If non-standard fuse size is specified, use next size larger fuse size.
- If the kit is listed under both single and multiple circuits, the kit is shipped from factory as multiple circuits. For single phase application, Jumper bar kit RXBJ-A21 can be used to convert multiple circuits to a single supply circuit. Refer to Accessory Section for details.
- Heater kits connection type. A=Breaker B=Terminal Block C=Disconnect Pull Out

[ ] Designates Metric Conversions

## Electrical Data – With Electric Heat RHMV (Cont.)

Installation of the U.L. Listed original equipment manufacturer provided heater kits listed in the following table is recommended for all auxiliary heating requirements.

**WARNING!** When electric auxiliary heat is added, installer must verify dip switch SW101-3 is in the “ON” position.

RHMV3621SN 3-TON HEATER KITS								
Heater Model Number 1	Circuit 2	Voltage 3	Phase / Hertz 4	Heater kW 5	Heater Amps 6	Motor Ampacity 7	Max. Over Circuit Protection 8	Min. Branch Circuit Ampacity 9
RXBH-1724A03J-A	Single	208 / 240	1 / 60	2.25 / 3.0	10.8 / 12.5	4.9	20 / 20	18 / 20
RXBH-1724A05J-A	Single	208 / 240	1 / 60	3.6 / 4.8	17.3 / 20.0	4.9	30 / 30	26 / 30
RXBH-1724A07J-A	Single	208 / 240	1 / 60	5.4 / 7.2	26.0 / 30.0	4.9	40 / 45	37 / 42
RXBH-1724A10J-A	Single	208 / 240	1 / 60	7.2 / 9.6	34.6 / 40.0	4.9	50 / 60	48 / 55
RXBH-1724A13J-A	Single	208 / 240	1 / 60	9.4 / 12.5	45.1 / 52.1	4.9	60 / 70	57 / 66
RXBH-1724A15J-A	Single	208 / 240	1 / 60	10.8 / 14.4	51.9 / 60.0	4.9	65 / 75	65 / 75
	Multi CKT # 1	208 / 240	1 / 60	3.6 / 4.8	17.3 / 20.0	4.9	25 / 25	22 / 25
	Multi CKT # 2	208 / 240	1 / 60	7.2 / 9.6	34.6 / 40.0	4.9	45 / 50	44 / 50
RXBH-1724A18J-A	Single	208 / 240	1 / 60	12.8 / 17.0	61.6 / 70.8	4.9	80 / 90	77 / 89
	Multi CKT # 1	208 / 240	1 / 60	6.4 / 8.5	30.8 / 35.4	4.9	40 / 45	39 / 45
	Multi CKT # 2	208 / 240	1 / 60	6.4 / 8.5	30.8 / 35.4	4.9	40 / 45	39 / 45
RXBH-1724B/C05J-A	Single	208 / 240	1 / 60	3.6 / 4.8	17.3 / 20.0	4.9	30 / 30	26 / 30
RXBH-1724B/C07J-A	Single	208 / 240	1 / 60	5.4 / 7.2	26.0 / 30.0	4.9	40 / 45	37 / 42
RXBH-1724B/C10J-A	Single	208 / 240	1 / 60	7.2 / 9.6	34.6 / 40.0	4.9	50 / 60	48 / 55

RHMV4821MN 4-TON HEATER KITS								
Heater Model Number 1	Circuit 2	Voltage 3	Phase / Hertz 4	Heater kW 5	Heater Amps 6	Motor Ampacity 7	Max. Over Circuit Protection 8	Min. Branch Circuit Ampacity 9
RXBH-1724A05J-A	Single	208 / 240	1 / 60	3.6 / 4.8	17.3 / 20.0	4.9	30 / 35	28 / 32
RXBH-1724A07J-A	Single	208 / 240	1 / 60	5.4 / 7.2	26.0 / 30.0	4.9	40 / 45	39 / 44
RXBH-1724A10J-A	Single	208 / 240	1 / 60	3.6 / 4.8	34.6 / 40.0	4.9	50 / 60	50 / 57
RXBH-1724A13J-A	Single	208 / 240	1 / 60	9.4 / 12.5	45.1 / 52.1	4.9	60 / 70	57 / 66
RXBH-1724A15J-A	Single	208 / 240	1 / 60	10.8 / 14.4	51.9 / 60.0	4.9	65 / 75	65 / 75
	Multi CKT # 1	208 / 240	1 / 60	3.6 / 4.8	17.3 / 20.0	4.9	25 / 25	22 / 25
	Multi CKT # 2	208 / 240	1 / 60	7.2 / 9.6	34.6 / 40.0	4.9	45 / 50	45 / 50
RXBH-1724A18J-A	Single	208 / 240	1 / 60	12.8 / 17.0	61.6 / 70.8	4.9	80 / 90	77 / 89
	Multi CKT # 1	208 / 240	1 / 60	6.4 / 8.5	30.8 / 35.4	4.9	40 / 45	39 / 45
	Multi CKT # 2	208 / 240	1 / 60	6.4 / 8.5	30.8 / 35.4	4.9	40 / 45	39 / 45
RXBH-1724B/C05J-A	Single	208 / 240	1 / 60	3.6 / 4.8	17.3 / 20.0	4.9	30 / 35	28 / 32
RXBH-1724B/C07J-A	Single	208 / 240	1 / 60	5.4 / 7.2	26.0 / 30.0	4.9	40 / 45	39 / 44
RXBH-1724B/C10J-A	Single	208 / 240	1 / 60	3.6 / 4.8	34.6 / 40.0	4.9	50 / 60	50 / 57

**NOTES:**

- \* Values only. No single point kit available.
- Electric heater BTUH - (heater watts + motor watts) x 3.414 (see airflow table for motor watts.)
- Supply circuit protective devices may be fuses or “HACR” type circuit breakers.
- Largest motor load is included in single circuit and multiple circuit 1.
- If non-standard fuse size is specified, use next size larger fuse size.
- If the kit is listed under both single and multiple circuits, the kit is shipped from factory as multiple circuits. For single phase application, Jumper bar kit RXBJ-A21 can be used to convert multiple circuits to a single supply circuit for the 13 kW, 15 kW and 18 kW heater kits. Refer to Accessory Section for details.
- Heater kits connection type. A=Breaker B=Terminal Block C=Disconnect Pull Out

[ ] Designates Metric Conversions

## Electrical Wiring

### Power Wiring

- Field wiring must comply with the National Electrical Code (C.E.C. in Canada) and any applicable local ordinance.
- Supply wiring must be 75°C minimum copper conductors only.
- See electrical data for product Ampacity rating and Circuit Protector requirement.

## Accessories

### • Combustible Floor Base RXHB-

Model Cabinet Size	Combustible Floor Base Model Number
17	RXHB-17
21	RXHB-21
24	RXHB-24

- **Jumper Bar Kit 2 Ckt. to 1 Ckt. RXBJ-A21** is used to convert single phase multiple two circuit units to a single supply circuit. Kit includes cover and screw for line side terminals.

- **Note:** No jumper bar kit is available to convert three phase multiple two circuit units to a single supply circuit.

### • Auxiliary Horizontal Overflow Pan Accessory RXBM-

Nominal Cooling Capacity-Tons	Auxiliary Horizontal Overflow Pan Accessory Model Number
2 - 3	RXBM-AC48
4 - 5	RXBM-AC61

### Grounding

- This product must be sufficiently grounded in accordance with National Electrical Code (C.E.C. in Canada) and any applicable local ordinance.
- A grounding lug is provided.

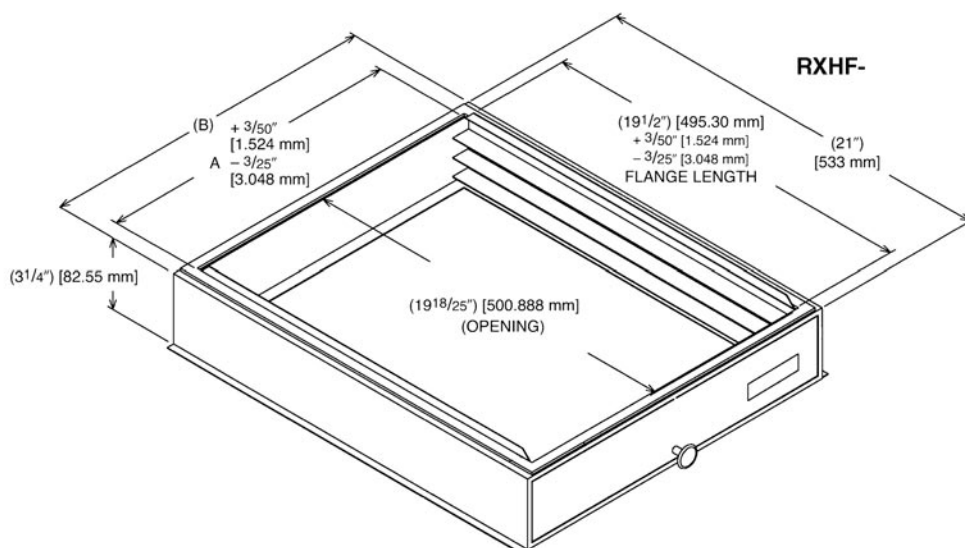
### • Auxiliary Electric Heater Kits RXBH-

Heater Kits include circuit breakers which meet UL and cUL requirements for service disconnect. See the Electric Heat Electrical Data in this specification sheet for specific Heater Kit Model numbers.

### • External Filter Base RXHF-

Model Cabinet Size	Filter Size In. [mm]	Part Number*	A	B
17	16 x 20 [406 x 508]	RXHF-17	15.70	17.5
21	20 x 20 [508 x 508]	RXHF-21	19.20	21.0
24	25 x 20 [635 x 508]	RXHF-24	22.70	25.5

\*Accommodates 1" or 2" filter



[ ] Designates Metric Conversions

**GENERAL TERMS OF LIMITED WARRANTY\***

Ruud will furnish a replacement for any part of this product which fails in normal use and service within the applicable periods stated, in accordance with the terms of the limited warranty.

Parts .....Ten (10) Years

**\*For complete details of the Limited and Conditional Warranties, including applicable terms and conditions, contact your local contractor or the Manufacturer for a copy of the product warranty certificate.**





*In keeping with its policy of continuous progress and product improvement, Ruud reserves the right to make changes without notice.*

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