

CONDENSING UNITS



RARA- SERIES

16 SEER Models
With efficiencies up to 16.80 SEER
in certain matched systems.
Nominal Sizes 2 to 3.5 Tons
[7.03 kW] to [12.31 kW]



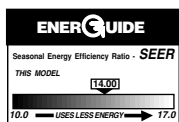
Four Models

Cooling Capacities
24,500 to 41,000 BTU/HR
[7.18 kW] to [12.01 kW]

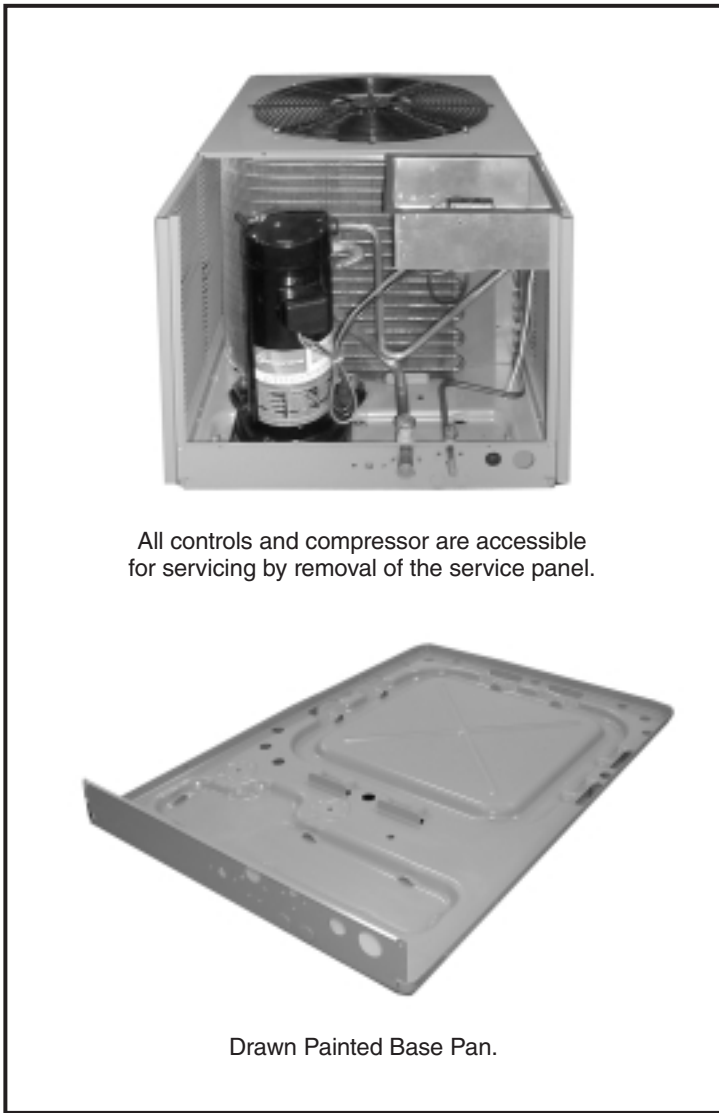
The *Rheem Prestige Series*® High Efficiency RARA- Condensing Unit was designed with performance in mind. These units offer comfort, energy conservation and dependability for single, multi-family and light commercial applications.

The *Rheem Prestige Series*® RARA- Condensing Units are the result of an ongoing development program for improved efficiencies. With system SEER's ranging to 16.80, these units continue a tradition of high efficiency.

- Comfort Alert™ Diagnostics comes installed in each Rheem Prestige Series model.
- All controls are accessible by removing one service panel. Removable top grille provides access to the condenser fan motor and condenser coil.
- Attractive, louvered wrap-around jacket protects the coil from yard hazards and weather extremes. Top grille is steel reinforced for extra strength. Cabinet is powder painted for all-weather protection.
- Air is discharged upward away from bushes and shrubs. The discharge pattern of the top grille provides minimum air restriction, resulting in quiet fan operation.
- Exclusive Combination Grille/Motor Mount secures the motor to the underside of the discharge grille. The grille protects the motor windings and bearings from rain and snow.
- For quiet operation and improved efficiency, the 3 and 3.5 ton models feature the GE® ECM two-speed motor with a 3-blade outdoor fan. The 2 and 2.5 ton models feature an 8-pole motor with a 3-blade outdoor fan.
- All models feature an outdoor low-voltage transformer, making retrofit applications easier by eliminating the need to run additional thermostat wiring.
- All models meet or exceed a 1000-hour salt spray test per ASTM B117 Standard Practice for Operating Salt Spray Testing Apparatus.



"CERTIFIED UNDER THE
A.R.I. CERTIFICATION
PROGRAM—A.R.I.
STANDARD 210/240"



All controls and compressor are accessible for servicing by removal of the service panel.

Drawn Painted Base Pan.

Engineering Features

RARA- Series Condensing Units

1. Scroll compressor is hermetically sealed and incorporates internal high temperature motor overload protection, and durable insulation on the motor windings. It is externally mounted on rubber grommets to reduce vibration and noise.
2. Compressors have an internal pressure relief assembly to protect against excessive pressure differential.
3. All refrigerant connections are on the exterior of the unit, located close to the ground for neat appearing installations.
4. Cabinet is constructed of powder painted galvanized steel. The full wraparound louvered grille protects the coil from damage.
5. Copper Tube—Aluminum Fin coils are used on all models.
6. The control box is located in the top corner of the cabinet providing for easy access through a service panel.
7. Service valves are standard on all models.
8. Power and control wiring are kept separate.
9. Every unit is factory charged and tested.
10. Separate compressor compartment for easy service access.
11. Drawn, painted base pan for extra corrosion resistance and sound reduction.
12. **RARA has a 10 year compressor limited warranty** and a liquid line filter drier. The RARA Series also has factory installed low pressure control, high pressure control, time delay control.
13. **Hard Start Kits**—Standard on all models.
14. Compressor sound wrap is standard
15. For quiet operation and improved efficiency, the 3 and 3.5 ton models feature the GE® ECM two-speed motor with a 3-blade outdoor fan. The 2 and 2.5 ton models feature an 8-pole motor with a 3-blade outdoor fan.
16. All models feature an outdoor low-voltage transformer, making retrofit applications easier by eliminating the need to run additional thermostat wiring.

COPELAND® SCROLL® COMPRESSOR

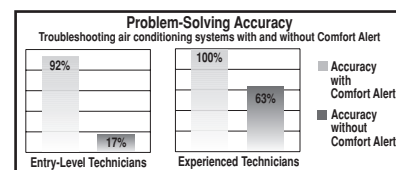
The Copeland scroll compressor is the key to efficiency for this Rheem model. It's the latest in high-efficiency compressor technology. The advanced scroll compressor offers low noise and vibration characteristics and features tolerance to liquid refrigerant and system contamination. The Copeland Scroll also has low start torque, eliminating start problems in the field. And its unique design enables the RARA- condensing unit to perform efficiently, quietly and reliably.



Comfort Alert™ Diagnostics

- In operation, Comfort Alert Diagnostics monitors vital data from the Copeland Scroll® compressor and thermostat, quickly pinpointing the root cause(s) of any cooling system malfunction—including common electrical problems, compressor defects and road system faults.

[] Designates Metric Conversions



Accessories

Low Ambient Control—Cycles outdoor fan to maintain adequate condensing pressures assuring liquid refrigerant flow to the coil. Allows indoor cooling with outdoor temperatures down to 0°F [-17.8°C]. (Model No. RXAD-A04). It is recommended that this control be installed in units to be operated at outdoor ambient temperatures under 70°F [21°C].

Compressor Crankcase Heater (Model No. 44-17402-44CCH) Add to minimize refrigeration migration and to help eliminate any startup noise or bearing “wash out”.

Dual Function White Rodgers Thermostat (Model No. 41-1F95CA-391) Humidity & Temperature Control

Model Number Identification

<u>R</u>	<u>A</u>	<u>R</u>	<u>A</u>	—	<u>024</u>	<u>J</u>	<u>A</u>	<u>Z</u>
RHEEM	REMOTE CONDENSING UNIT	16-SEER	DESIGN SERIES		COOLING CAPACITY	ELECTRICAL DESIGNATION	VARIATIONS	COOLING CONNECTION FITTING
			A = FIRST DESIGN SERIES		024 = 24,000 BTU/HR [7.03 kW] 030 = 30,000 BTU/HR [8.79 kW] 036 = 36,000 BTU/HR [10.55 kW] 042 = 42,000 BTU/HR [12.30 kW]	J = 208/230V-1-60	A = STANDARD	Z = SWEAT W/SCROLL

Performance Data @ ARI Standard Conditions—Cooling

Model Numbers		80°F [26.5°C] DB/67°F [19.5°C] WB Indoor Air 95°F [35°C] DB Outdoor Air					Sound Rating	Indoor CFM [L/s]
Outdoor Unit RARA-	Indoor Coil and/or Air Handler	Total Capacity BTU/H [kW]	Net Sensible BTU/H [kW]	Net Latent BTU/H [kW]	EER	SEER		
024JAZ	BHL-17 + RCQC-2417BS ①	24,500 [7.2]	18,100 [5.3]	6,400 [1.9]	13.70	16.00	7.1	800 [378]
	RGFD-06?MCK?+RCQC-2417BS	24,500 [7.2]	18,100 [5.3]	6,400 [1.9]	13.70	16.00	7.1	825 [389]
	RGFD-07?MCK?+RCQC-2417BS	24,500 [7.2]	18,100 [5.3]	6,400 [1.9]	13.80	16.05	7.1	825 [389]
	RGPL-05?BMK?+RCQC-2417BS	24,500 [7.2]	18,100 [5.3]	6,400 [1.9]	14.10	16.80	7.1	800 [378]
030JAZ	BHL-21 + RCQC-3021BS ①	29,000 [8.5]	22,300 [6.5]	6,700 [2.0]	14.00	16.00	7.1	1000 [472]
	BHL-21 + RCQC-3021BS ⑤	28,400 [8.3]	26,800 [7.9]	7,600 [2.2]	14.00	N/A	7.1	800 [378]
	RGFD-06?MCK?+RCQC-3021BS	28,200 [8.3]	21,600 [6.3]	6,600 [1.9]	12.90	14.55	7.1	1050 [495]
	RGFD-07?MCK?+RCQC-3021BS	28,400 [8.3]	21,800 [6.4]	6,600 [1.9]	13.10	14.85	7.1	1025 [484]
	RGPL-05?BMK?+RCQC-3021BS	29,000 [8.5]	22,300 [6.5]	6,700 [2.0]	14.00	16.00	7.1	1000 [472]
	RGPL-07?BMK?+RCQC-3021BS	28,600 [8.4]	22,000 [6.4]	6,600 [1.9]	13.70	15.60	7.1	1000 [472]
036JAZ	RGPL-07?BRQ?+RCQC-3021BS	28,600 [8.4]	22,000 [6.4]	6,600 [1.9]	13.70	15.60	7.1	1000 [472]
	BHL-24 + RCQC-3624BS ①②③	36,400 [10.7]	28,000 [8.2]	8,400 [2.5]	14.00	16.05	6.9 - 7.1	1200 [566]
	BHL-24 + RCQC-3624BS ②③⑤	35,200 [10.3]	25,400 [7.4]	9,800 [2.9]	14.00	N/A	6.9 - 7.1	950 [448]
	RGFD-09?ZCM?+RCQC-3624BS ②③	35,800 [10.5]	27,400 [8.0]	8,400 [2.5]	12.90	14.70	6.9 - 7.1	1250 [590]
	RGFD-10?ZCM?+RCQC-3624BS ②③	36,000 [10.5]	27,500 [8.1]	8,500 [2.5]	13.05	14.85	6.9 - 7.1	1300 [614]
	RGFD-12?RCM?+RCQC-3624BS ②③④	36,200 [10.6]	27,700 [8.1]	8,500 [2.5]	13.40	15.30	6.9 - 7.1	1250 [590]
	RGPL-07?BRK?+RCQC-3624BS ②③	36,200 [10.6]	27,700 [8.1]	8,500 [2.5]	13.30	15.20	6.9 - 7.1	1200 [566]
	RGPL-07?BRQ?+RCQC-3624BS ②③	36,200 [10.6]	27,700 [8.1]	8,500 [2.5]	13.30	15.20	6.9 - 7.1	1200 [566]
042JAZ	RGPL-10?BRM?+RCQC-3624BS ②③	36,400 [10.7]	27,900 [8.2]	8,500 [2.5]	13.70	15.70	6.9 - 7.1	1225 [578]
	RGPL-12?ARM?+RCQC-3624BS ②③	36,400 [10.7]	27,900 [8.2]	8,500 [2.5]	13.80	15.85	6.9 - 7.1	1200 [566]
	BHL-24 + RCQC-3624BS ①②③	41,000 [12.0]	30,500 [8.9]	10,500 [3.1]	13.30	15.00	6.9 - 7.1	1275 [602]
	BHL-24 + RCQC-3624BS ②③④	39,600 [11.6]	27,600 [8.1]	12,000 [2.9]	13.00	N/A	6.9 - 7.1	1030 [486]
	RGFD-09?ZCM?+RCQC-3624BS ②③	40,000 [11.7]	29,700 [8.7]	10,300 [3.0]	12.50	14.15	6.9 - 7.1	1250 [590]
	RGFD-10?ZCM?+RCQC-3624BS ②③	40,000 [11.7]	29,800 [8.7]	10,200 [3.0]	12.60	14.30	6.9 - 7.1	1300 [614]
	RGFD-12?RCM?+RCQC-3624BS ②③	40,500 [11.9]	30,200 [8.8]	10,300 [3.0]	13.00	14.65	6.9 - 7.1	1250 [590]
	RGPL-07?BRK?+RCQC-3624BS ②③	40,500 [11.9]	30,200 [8.8]	10,300 [3.0]	13.00	14.55	6.9 - 7.1	1200 [566]
RGPL-07?BRQ?+RCQC-3624BS ②③	40,500 [11.9]	30,200 [8.8]	10,300 [3.0]	13.00	14.65	6.9 - 7.1	1200 [566]	
RGPL-10?BRM?+RCQC-3624BS ②③	40,500 [11.9]	30,200 [8.8]	10,300 [3.0]	13.15	15.00	6.9 - 7.1	1225 [578]	
RGPL-12?ARM?+RCQC-3624BS ②③	40,500 [11.9]	30,200 [8.8]	10,300 [3.0]	13.25	15.10	6.9 - 7.1	1200 [566]	

NOTES: ① Highest sales volume tested combination required by D.O.E. test procedures.

② Lower sound at low outdoor fan speed.

③ Sound rated in accordance with ARI 270 but only applies at outdoor ambient below 85 degrees F.

④ The DIP switches on this furnace must be set to 10% reduced airflow.

⑤ Reduced indoor airflow for improved moisture removal.

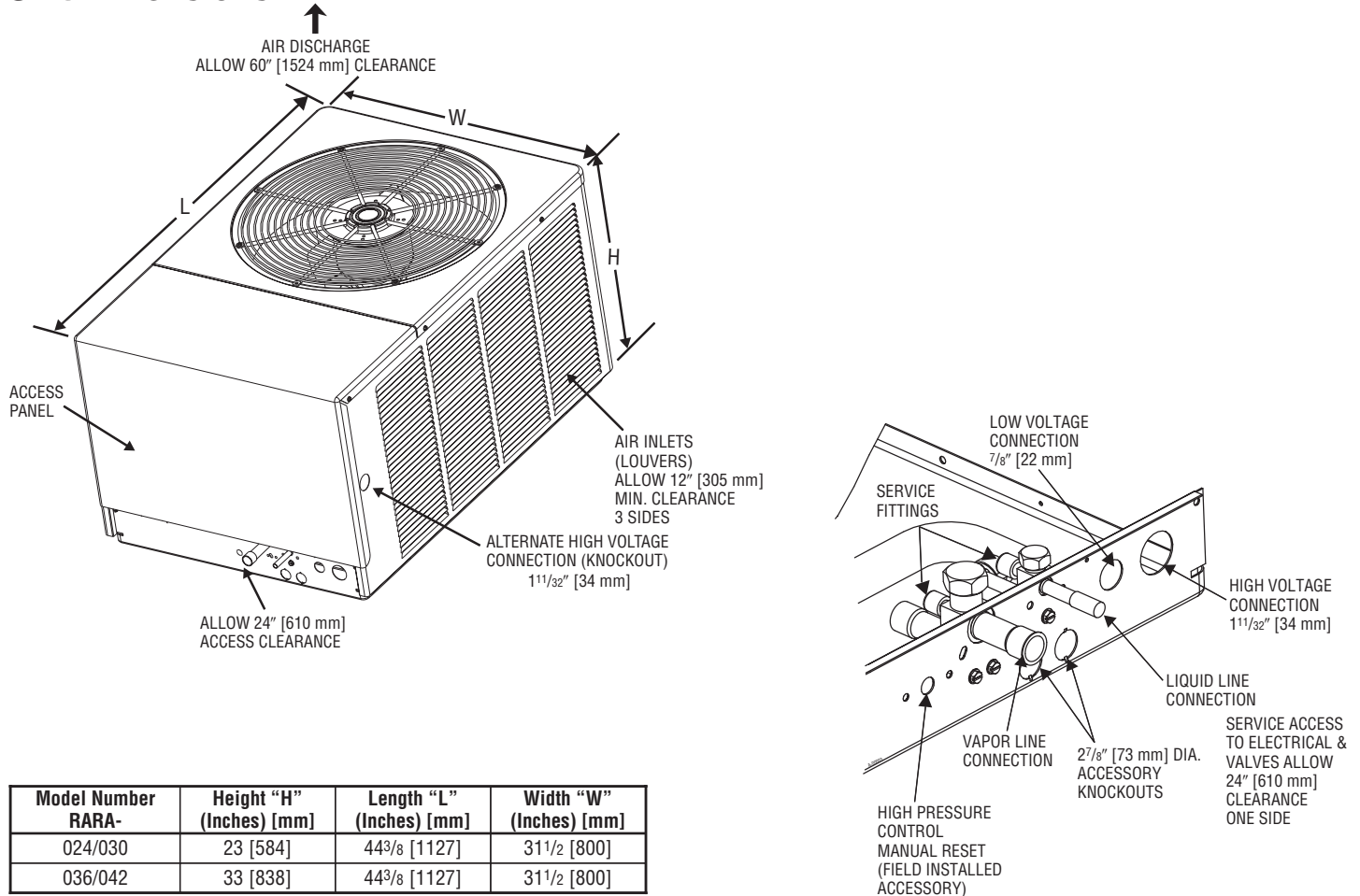
[] Designates Metric Conversions

Electrical and Physical Data

Model Number RARA-	ELECTRICAL						PHYSICAL						
	Phase Frequency (Hz) Voltage (Volts)	Compressor		Fan Motor Full Load Amperes (FLA)	Min. Circuit Ampacity Amperes	Fuse or HACR Circuit Breaker		Outdoor Coil			R22 Oz. [g]	Weight	
		Rated Load Amperes (RLA)	Locked Rotor Amperes (LRA)			Min. Amperes	Max. Amperes	Face Area Sq. Ft. [m ²]	No. Rows	CFM [L/s]		Net Lbs. [kg]	Shipping Lbs. [kg]
024JAZ	1-60-208/230	10.9/10.9	54	0.8	15/15	20/20	25/25	15.8 [1.47]	1.00	2285 [1078]	115 [3260]	190 [86.2]	200 [90.7]
030JAZ	1-60-208/230	12.2/12.2	63	0.8	16/16	20/20	25/25	15.8 [1.47]	1.00	2285 [1078]	122 [3459]	190 [86.2]	200 [90.7]
036JAZ	1-60-208/230	13.5/13.5	73	2.8	20/20	25/25	30/30	23.0 [2.14]	1.00	HS*3400 [1605] LS*2800 [1322]	160 [4536]	236 [107]	246 [111.6]
042JAZ	1-60-208/230	16.5/16.5	95	2.8	24/24	30/30	40/40	23.0 [2.14]	2.00	HS*3400 [1605] LS*2800 [1322]	155 [4394]	239 [108]	249 [112.9]

*HS = high speed
*LS = low speed

Unit Dimensions



[] Designates Metric Conversions

GENERAL TERMS OF LIMITED WARRANTY

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

For Complete Details of the Limited Warranty, Including Applicable Terms and Conditions, See Your Local Installer or Contact the Manufacturer for a Copy.

Rheem Prestige Series equipment features a system-wide 10-year limited parts warranty.*

*This ten-year limited warranty is applicable only to single-phase products installed in residential applications.

BEFORE PURCHASING THIS APPLIANCE, READ IMPORTANT ENERGY COST AND EFFICIENCY INFORMATION AVAILABLE FROM YOUR RETAILER.

Condensing Unit Refrigerant Line Size Information

System Capacity Model	Line Size (Inch O.D.) [mm]	Liquid Line Size Outdoor Unit Above Indoor Coil						Liquid Line Size Outdoor Unit Below Indoor Coil					
		Total Length—Feet [m]						Total Length—Feet [m]					
		25 [7.62]	50 [15.24]	75 [22.86]	100 [30.48]	125 [38.10]	150 [45.72]	25 [7.62]	50 [15.24]	75 [22.86]	100 [30.48]	125 [38.10]	150 [45.72]
Vertical Separation—Feet [m]						Vertical Separation—Feet [m]							
024	1/4* [6.35]	25 [7.62]	50 [15.24]				25 [7.62]	23 [7.01]					
	5/16 [7.94]		24 [7.32]	34 [10.36]	44 [13.41]	54 [16.46]	64 [19.51]		48 [14.63]	38 [11.58]	28 [8.53]	18 [5.49]	8 [2.44]
030	1/4* [6.35]	25 [7.62]	50 [15.24]					25 [7.62]	23 [7.01]				
	5/16 [7.94]		19 [5.79]	33 [10.06]	47 [14.33]	61 [18.59]			50 [15.24]	39 [11.89]	25 [7.62]	11 [3.35]	
	3/8 [9.53]					11 [3.35]	15 [4.57]						57 [17.37]
036	5/16* [7.94]	25 [7.62]	50 [15.24]	70 [21.34]				25 [7.62]	23 [7.01]	9 [2.74]			
	3/8 [9.53]			34 [10.36]	40 [12.19]	46 [14.02]	52 [15.85]			38 [11.58]	32 [9.75]	26 [7.92]	20 [6.10]
042	5/16* [7.94]	25 [7.62]	50 [15.24]	75 [22.86]				25 [7.62]	23 [7.01]	9 [2.74]			
	3/8 [9.53]			32 [9.75]	39 [11.89]	46 [14.02]	53 [16.15]			40 [12.19]	33 [10.06]	26 [7.92]	19 [5.79]

*Standard line size

NOTES:

- ① This chart is applicable for condensing units.
- ② If the separation height exceeds the table values, **reduce** the indoor coil flow-check piston two sizes plus one size for each additional 10 feet [3.05 m].
Example: A 5 ton [17.58 kW] *condensing unit* with a total line length of 125 feet [38.10 m] with a vertical separation of 101 feet [30.78 m] utilizing a 1/2" [12.7 mm] liquid line: Table = 38 feet [11.58 m] maximum vertical separation for 125 feet [38.10 m] run. Separation exceeds table by (101-38) = 63 feet [19.20 m]. Therefore, reduce the indoor coil flow-check piston 2 + 6 = 8 sizes.
- ③ Do not exceed 120 feet [36.58 m] maximum vertical separation.
- ④ No changes are required for expansion valve coils.
- ⑤ Do not exceed table values for capillary tube coils.
- ⑥ Always use the smallest liquid line possible to minimize system charge.
- ⑦ Chart may be used to size horizontal runs.

NOTES:

- ① This chart is applicable for condensing units.
Example 1: A 2.5 ton [8.79 kW] *condensing unit* with a total line length of 75 feet [22.86 m] with a vertical separation of 30 feet [9.14 m] requires a liquid line size of 5/16" [7.94 mm].
- ② This chart may also be used to size horizontal runs.
Example 2: A 5 ton [17.58 kW] *condensing unit* may have a total horizontal run of 100 feet [30.48 m] if using the 3/8" [9.53 mm] liquid line. The total horizontal run if using 1/2" [12.7 mm] liquid line size will be 150 feet [45.72 m].
- ③ Do not exceed vertical separation as indicated on the chart.
- ④ Always use the smallest liquid line possible to minimize system charge.
- ⑤ No changes required for flow-check pistons or expansion valve coils.

Vapor Line Length Size and Capacity Multiplier			
RARA-	024	030	036/042
Unit Vapor Line Connection Size	3/4" [19.05 mm] I.D. Sweat		7/8" [22.23 mm] I.D. Sweat
Vapor Line Run Feet [m]	5/8" [15.88 mm] O.D. Opt. 3/4" [19.05 mm] O.D. Std. 7/8" [22.23 mm] O.D. Opt.		3/4" [19.05 mm] O.D. Opt. 7/8" [22.23 mm] O.D. Std. 1 1/8" [28.58 mm] O.D. Opt.
25' [7.62]	Optional Standard Optional	.98 1.00 1.01	— 1.00 1.01
50' [15.24]	Optional Standard Optional	.96 .99 1.00	— .98 1.00
100' [30.48]	Optional Standard Optional	.93 .98 .99	— .96 .99
150' [45.72]	Optional Standard Optional	— .97 .98	— .94 .98

NOTES:

- 1) Capacity Multiplier x Rated Capacity = Actual Capacity.
- 2) Additional compressor oil is not required for runs up to 150 feet [45.72 m].
- 3) Oil traps in vertical runs are not required for any height up to 120 feet [36.58 m]. See Liquid Line chart for Vertical Separation Requirements and Limitations.
- 4) *Adapter to 1 1/8" [28.58 mm] factory supplied.
- 5) For installations with lines more than 50 feet long, a crank case heater must be used on the compressor.

[] Designates Metric Conversions

NOTES

NOTES

Before proceeding with installation, refer to installation instructions packaged with each model, as well as complying with all Federal, State, Provincial, and Local codes, regulations, and practices.

**RHEEM
AIR CONDITIONING
DIVISION**

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