



Heat Pumps
RP17**H Series

Ruud Achiever Plus® Series Side Discharge Heat Pumps

RP17**H Series

Efficiency: 19 SEER/12 EER/10.7 HSPF

Nominal Sizes 2, 2.5, 3 & 4 Ton

[7.03, 8.8, 10.6 & 14.06 kW]

Cooling Capacities 24 to 45.6 kBTU

[7.03 to 13.36 kW]



Sound
& Space
Constraint
Solution



- Variable speed inverter-driven compressor for maximum comfort and energy savings. Provides heating down to -5°F
- Outdoor sound levels as low as 53 dBA - quiet operation for areas with noise constraints
- Space saving single fan outdoor unit

- High efficiency DC motor
- Communicating heat pump with multi-position air handler
- Compact size - ideal for areas with tight space constraints

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<u>R</u>	<u>P</u>	<u>17</u>	<u>24</u>	<u>H</u>	<u>J</u>	<u>V</u>	<u>X</u>	<u>A</u>	<u>*</u>
Brand	Product Category	SEER	Capacity BTU/HR	Horizontal Discharge	Voltage	Type	Controls	Minor Series**	Option Code
Ruud	P - Heat Pump	17 SEER	24 - 24,000 [7.03 kW] 30 - 30,000 [8.79 kW] 36 - 36,000 [10.55 kW] 48 - 48,000 [14.07 kW] 60 - 60,000 [17.58 kW]		J - 1 ph, 208-230/60	V - Inverter	X - Data Exchange	A - 1st Design	N/A

[] Designates Metric Conversions

Available SKUs

Available Models
RP1724HJVXA
RP1730HJVXA
RP1736HJVXA
RP1748HJVXA

Physical Data											
Type				Inverter Heat Pump							
Model Name				RP1724HJVXA		RP1730HJVXA		RP1736HJVXA		RP1748HJVXA	
Power supply				208/230 V ~ 60 Hz							
Power supply intake				Outdoor unit							
Available voltage range				187—253 V							
Starting current			A		9.6		11.5		20.1		
Fan	Airflow rate	Cooling		CFM (m³/h)	2,119 (3,600)		2,590 (4,400)				
		Heating			2,119 (3,600)		2,590 (4,400)				
	Type x Quantity			Propeller x 1		Propeller x 1					
	Motor output			W		100		111			
Sound pressure level *		Cooling		dB (A)	53		53		54		
		Heating			55		54		55		
Heat exchanger type		Dimensions(H x W x D)		in		31-7/16 x 35-7/16 x 1-7/16		38-1/16 x 36-5/16 x 2-3/16			
				mm		798 x 900 x 36.4		966 x 922 x 55			
		Fin pitch		FPI		20		18			
		Rows x Stages			2 x 38		3 x 46				
		Pipe type			Copper		Copper				
		Fin		Type (Material)		Aluminum		Aluminum			
Surface treatment				PC Fin		Blue Fin					
Compressor	Type x Quantity			DC twin rotary x 1							
	Motor output			W		2,100					
Refrigerant		Type		R410A							
		Charge	lb oz		4 lb 10 oz		9 lb 8 oz				
			g		2,100		4,300				
Refrigerant oil		Type		POE (RB68)							
		Amount		in³ (cm³)		48.8 (800)		70.2 (1,150)			
Enclosure		Material		Steel							
		Color		Beige Approximate color of Munsell 10YR 7.5/1.0							
Dimensions (H x W x D)	Net			in (mm)		32-11/16 x 35-7/16 x 13 (830 x 900 x 330)		39-5/16 x 38-3/16 x 14-9/16 (998 x 970 x 370)			
	Gross			in (mm)		39-3/8 x 41-5/16 x 17-1/2 (1,000 x 1,050 x 445)		45-12/16 x 41-14/16 x 18-13/16 (1,162 x 1,064 x 478)			
Weight	Net			lb (kg)		134 (61)		198 (90)			
	Gross			lb (kg)		152 (69)		220 (100)			
Connection pipe	Size	Liquid		in (mm)	3/8 (9.52)						
		Gas			5/8 (15.88)						
	Method			Flare							
	Pre-charge length			ft (m)		66 (20)		98 (30)			
	Max. length					164 (50)		230 (70)			
	Max. height difference					98 (30)		98 (30)			
Operation range		Cooling		°F (°C)	-4 to 115 (-20 to 46)		14 to 115 (-10 to 46)				
		Heating			-4 to 75 (-20 to 24)		-4 to 75 (-20 to 24)				
Drain hose	Material					LDPE		LDPE			
	Size			in (mm)		1/2 (13.0) [I.D.] 5/8 to 11/16 (16.0 to 16.7) [O.D.]		1/2 (13.0) [I.D.] 5/8 to 11/16 (16.0 to 16.7) [O.D.]			

NOTES:

- Specifications are based on the following conditions:
 - Cooling: Indoor temperature of 80° FDB (26.67° CDB) / 67° FWB (19.44° CWB), and outdoor temperature of 95° FDB (35° CDB) / 75° FWB (23.9° CWB).
 - Heating: Indoor temperature of 70° FDB (21.11° CDB) / 59° FWB (15° CWB), and outdoor temperature of 47° FDB (8.33° CDB) / 43° FWB (6.11° CWB).
 - Pipe length: 24 ft 6 in (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.)
- Protective function might work when using it outside the operation range.
- *: Sound pressure level
 - Measured values in manufacturer's anechoic chamber.
 - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

Electrical Characteristics

Item			Model Name					
			Unit	RP1724HJVXA	RP1730HJVXA	RP1736HJVXA	RP1748HJVXA	
Power supply	Voltage		V	208/230 V~				
	Frequency		Hz	60				
MCA *1			A	20.8		39.9		
Starting current			A	9.6	11.5	20.1		
Wiring spec.*2	Max. Ckt. Bkr. *3		A	30		40		
	Power cable		AWG	16—14		8		
	Connection cable *4	Size	AWG	20—16		14		
		Limited wiring length	ft (m)	167 (51)		246 (71)		

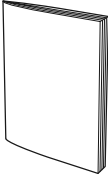
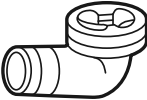
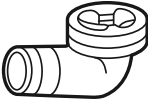
*1. Minimum Circuit Ampacity (Calculation based on UL1995)

*2. Selected sample based on Japan Electrotechnical Standards and Codes Committee E0005. As the regulations of wire size and circuit breaker differ in each country or region, select appropriate devices complied to the regional standard.

*3. Maximum Circuit Breaker

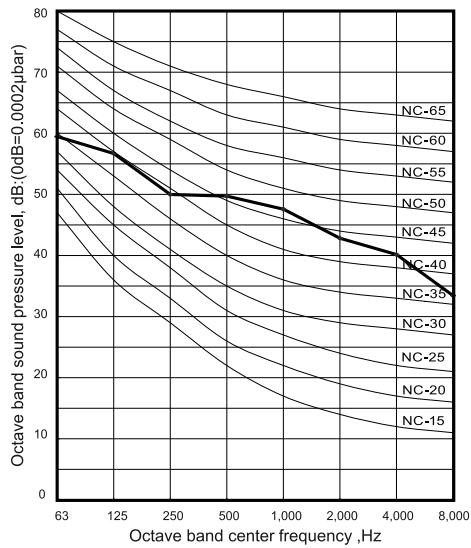
*4. Limit voltage drop to less than 2%. If voltage drop is 2% or more, increase cable conductor size.

Accessories

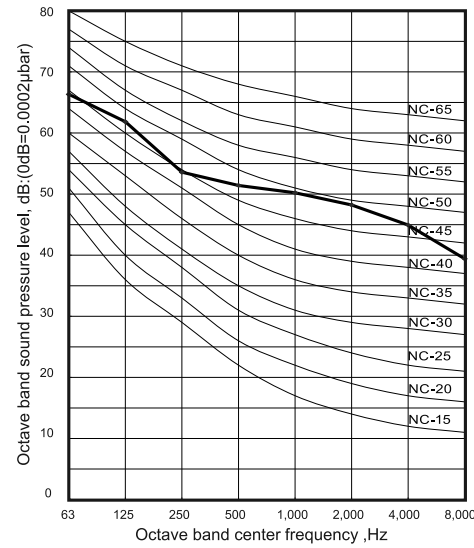
RP1724HJVXA AND RP1730HJVXA			RP1736HJVXA AND RP1748HJVXA		
PART NAME	EXTERIOR	QUANTITY	PART NAME	EXTERIOR	QUANTITY
Installation manual		1	Installation manual		1
Drain pipe		1	Drain pipe		1
Drain cap		5	Drain cap		7

Noise Level Curve

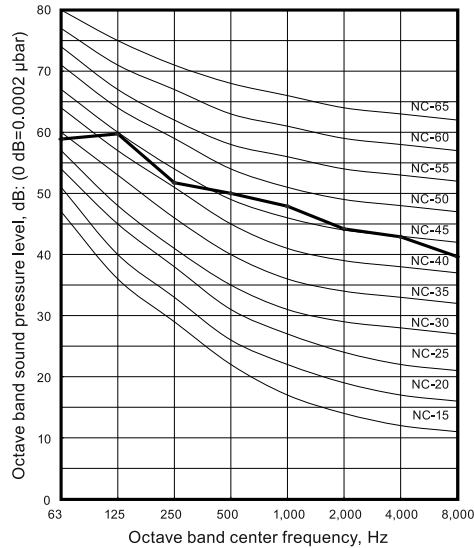
MODEL RP1724HJVXA COOLING



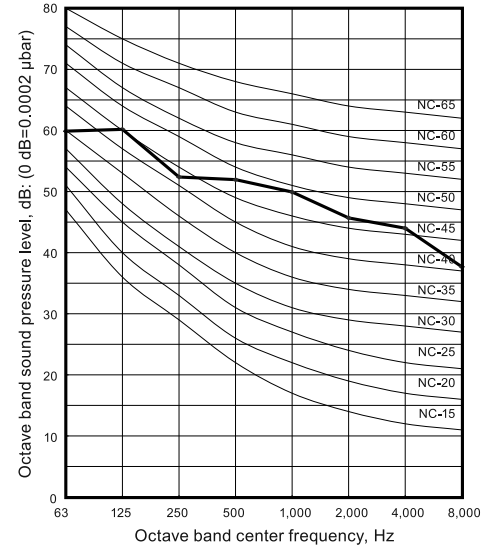
MODEL RP1724HJVXA HEATING



MODEL RP1730HJVXA COOLING

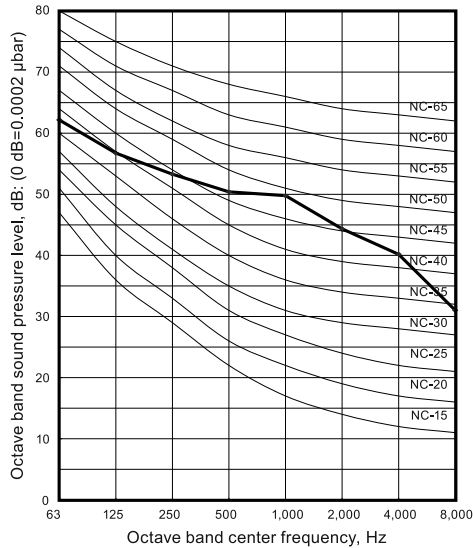


MODEL RP1730HJVXA HEATING

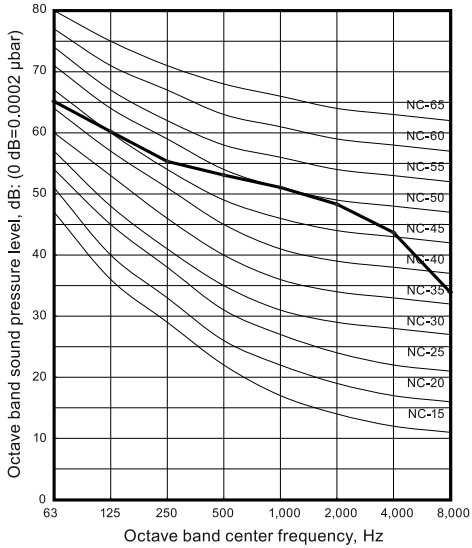


Noise Level Curve (con't)

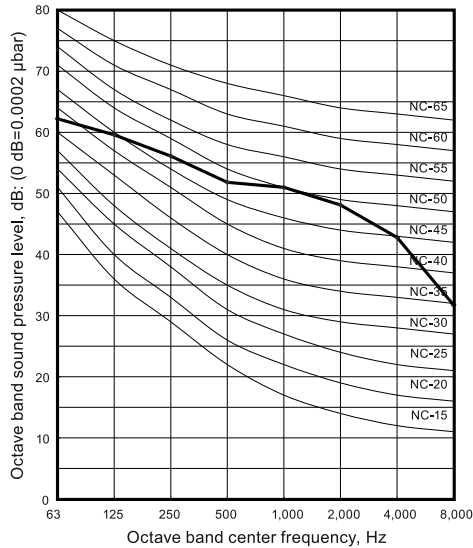
MODEL RP1736HJVXA COOLING



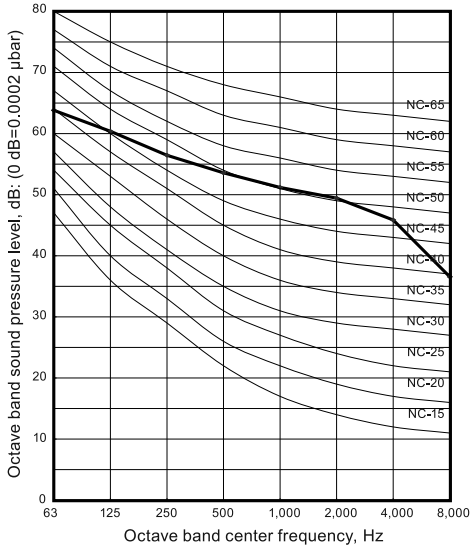
MODEL RP1736HJVXA HEATING



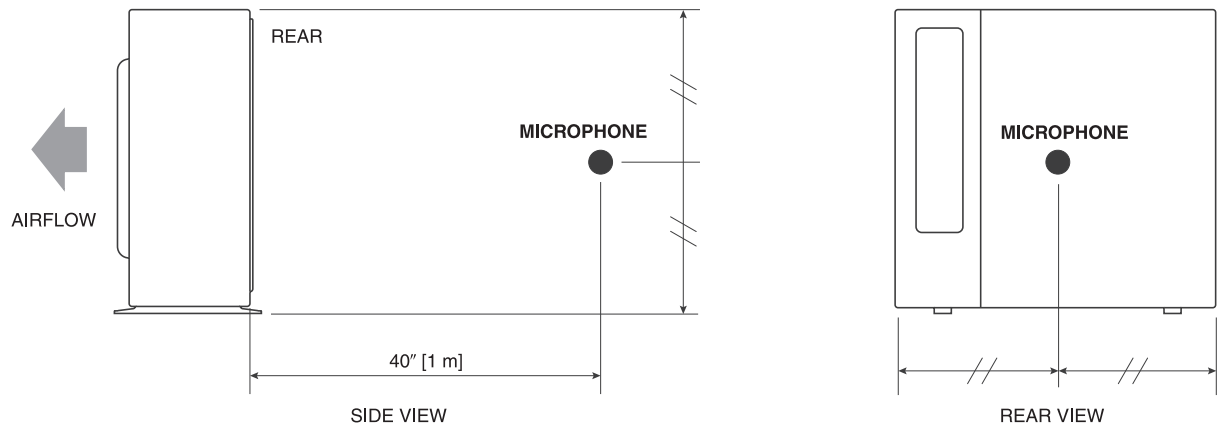
MODEL RP1748HJVXA COOLING



MODEL RP1748HJVXA HEATING



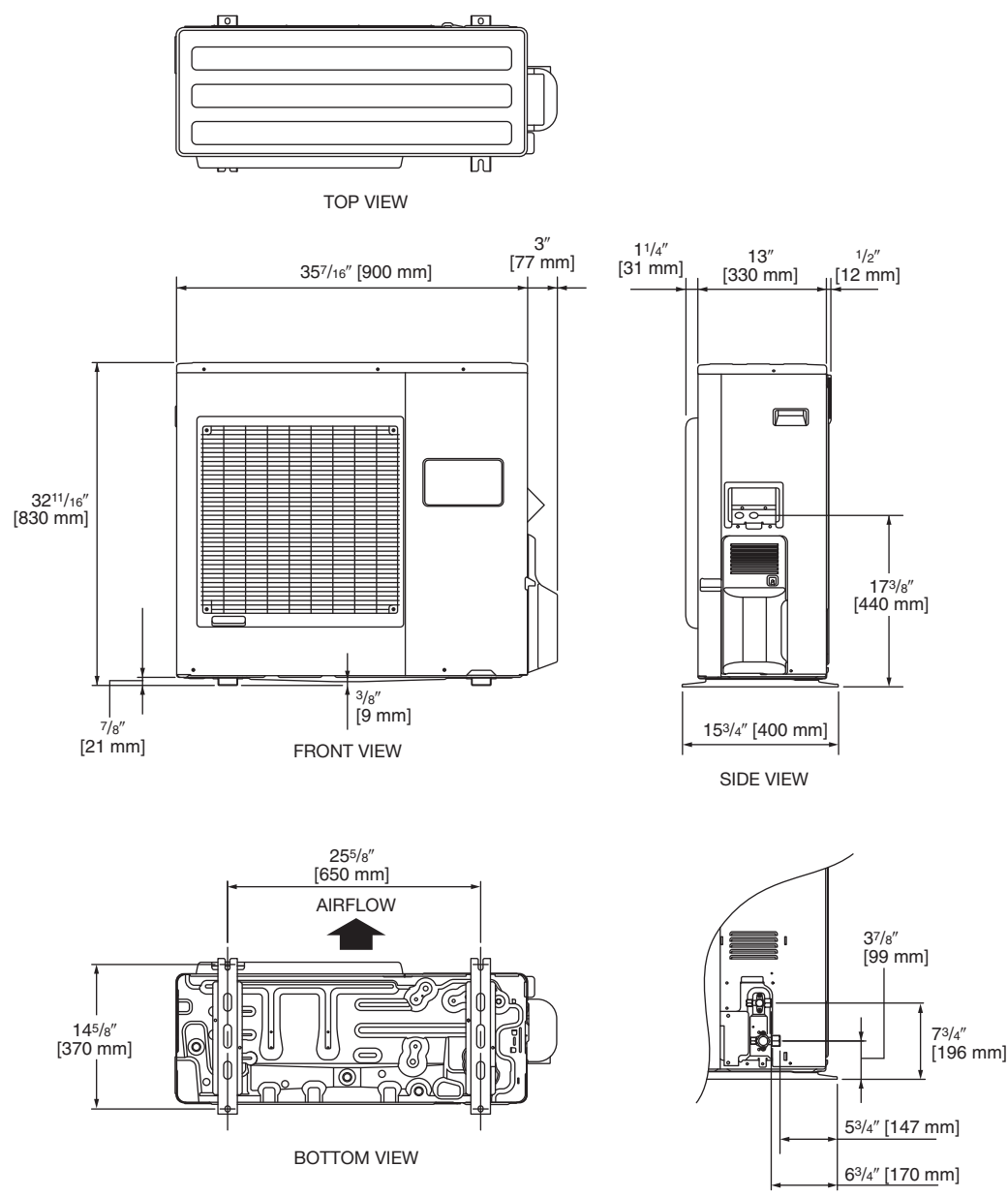
Noise Level Check Point



NOTE: Detailed shape of the actual outdoor unit might be slightly different from the one illustrated above.

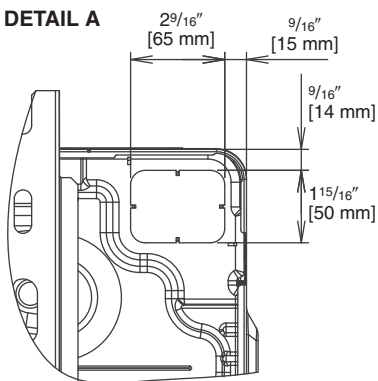
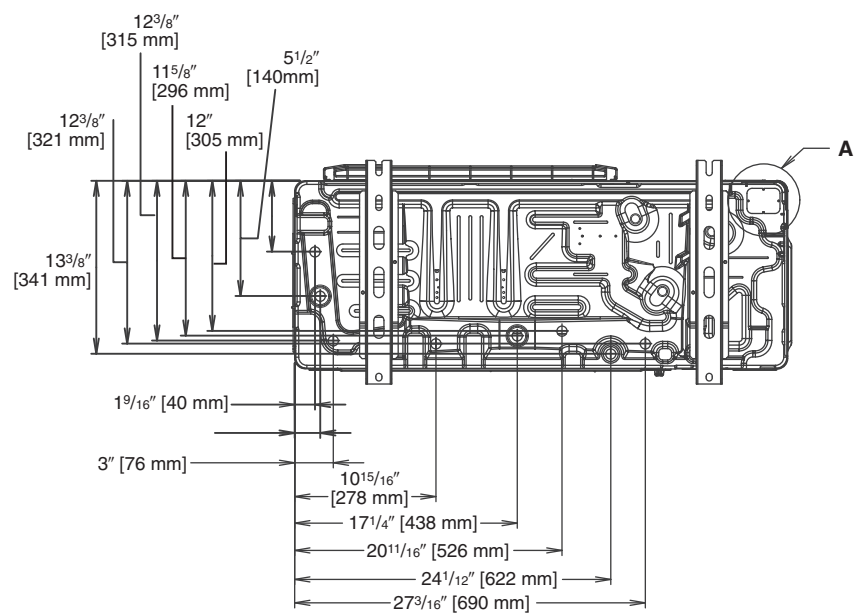
[] Designates Metric Conversions

Unit Dimensions—RP1724HJVXA and RP1730HJVXA



[] Designates Metric Conversions

Unit Dimensions—RP1736HJVXA and RP1748HJVXA (con't)



[] Designates Metric Conversions

Installation Space—RP1724HJVXA and RP1730HJVXA

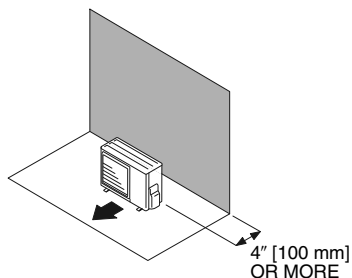
SPACE REQUIREMENT

Provide sufficient installation space for product safety.

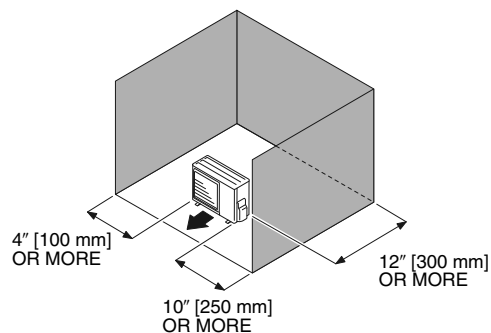
SINGLE OUTDOOR UNIT INSTALLATION

When the upper space is open:

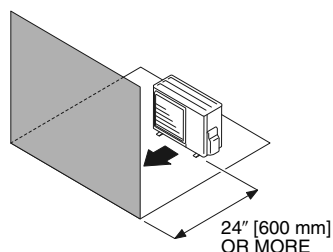
WHEN THERE ARE OBSTACLES AT THE REAR ONLY.



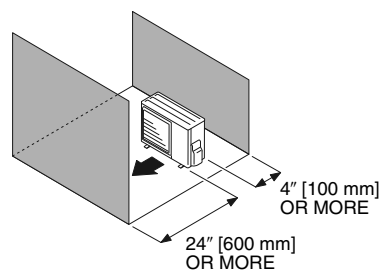
WHEN THERE ARE OBSTACLES AT THE REAR AND SIDES.



WHEN THERE ARE OBSTACLES AT THE FRONT ONLY.

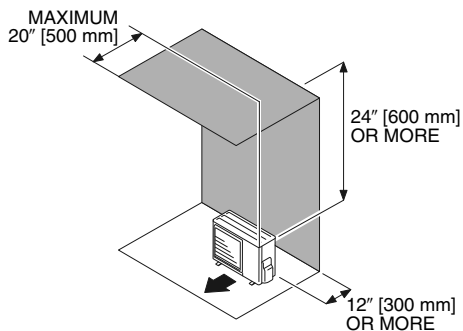


WHEN THERE ARE OBSTACLES AT THE FRONT AND REAR.

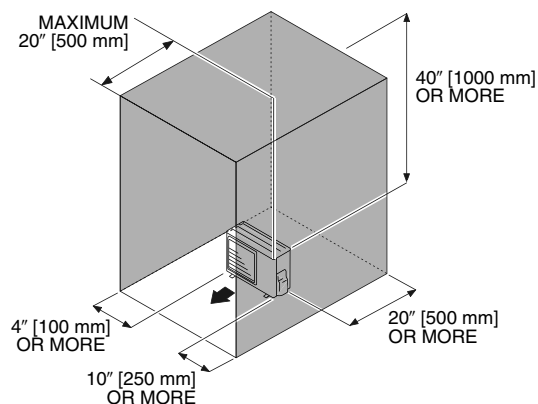


When there is an obstruction in the upper space:

WHEN THERE ARE OBSTACLES AT THE REAR AND ABOVE.



WHEN THERE ARE OBSTACLES AT THE REAR, SIDES AND ABOVE.



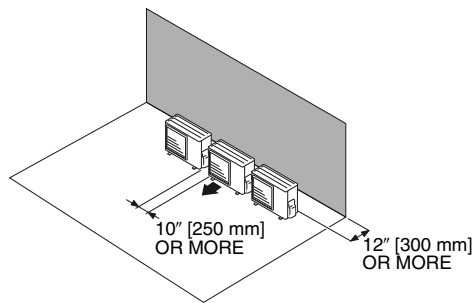
[] Designates Metric Conversions

Installation Space—RP1724HJVXA and RP1730HJVXA (con't)

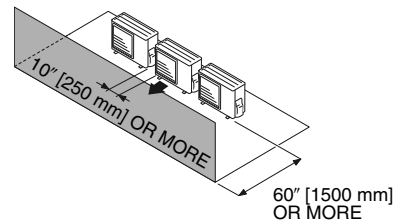
MULTIPLE OUTDOOR UNIT INSTALLATION

When the upper space is open:

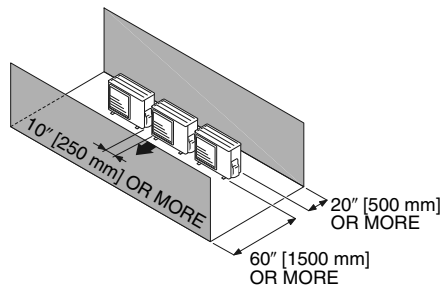
WHEN THERE ARE OBSTACLES AT THE REAR ONLY.



WHEN THERE ARE OBSTACLES AT THE FRONT ONLY.

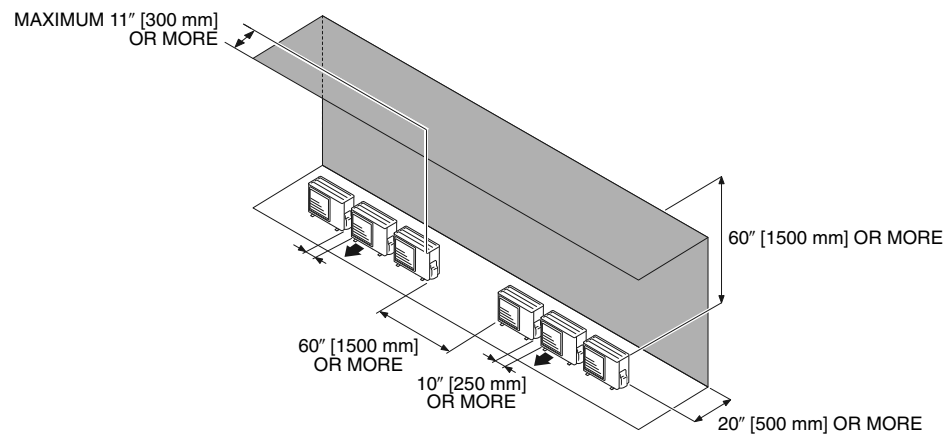


WHEN THERE ARE OBSTACLES AT THE FRONT AND REAR.



When there is an obstruction in the upper space:

WHEN THERE ARE OBSTACLES AT THE REAR AND ABOVE.

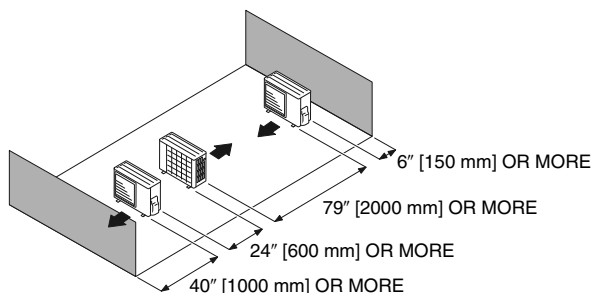


[] Designates Metric Conversions

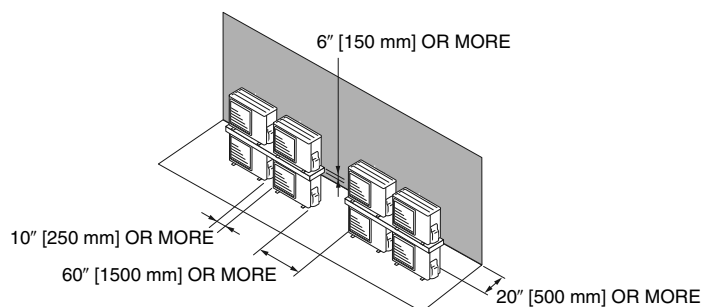
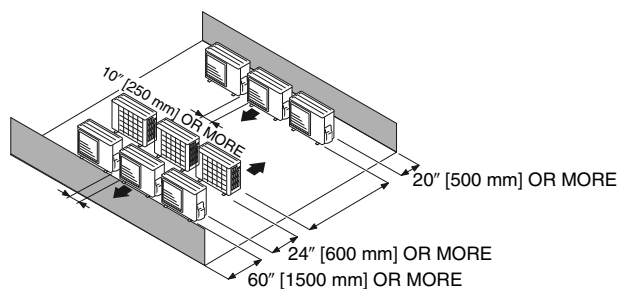
Installation Space—RP1724HJVXA and RP1730HJVXA (con't)

OUTDOOR UNIT INSTALLATION IN MULTI-ROW

SINGLE PARALLEL UNIT ARRANGEMENT



MULTIPLE PARALLEL UNIT ARRANGEMENT

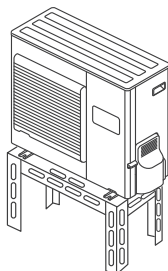


NOTES:

1. If the space is larger than stated above, the condition will be the same as when there is no obstacle.
2. Height above the floor level should be 2 in. [50 mm] or more.
3. When installing the outdoor unit, be sure to open the front and left side to obtain better operation efficiency.

CAUTION:

1. Do not install the outdoor unit in two-stage where the drain water could freeze. Otherwise the drainage from the upper unit may form ice and cause a malfunction of the lower unit.
2. When the outdoor temperature is 32° F [0° C] or less, do not use the accessory drain pipe and drain cap. If the drain pipe and drain cap are used, the drain water in the pipe may freeze in extremely cold climate. (For reverse cycle model only.)
3. In area with heavy snowfall, if the inlet and outlet of the outdoor unit is blocked with snow, it might become difficult to get warm, and it is likely to cause product malfunction. Construct a canopy and a pedestal, or place the unit on a high stand that is locally installed.



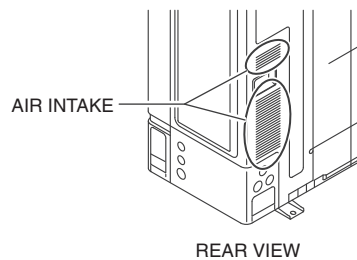
[] Designates Metric Conversions

Installation Space—RP1736HJVXA and RP1748HJVXA

CAUTION:

4. The installation space shown in the following examples is based on an ambient temperature under cooling operation of 95°FDB [35°CDB] at the air intake of the outdoor unit. Provide more space around the air intake than shown in the examples if the ambient temperature exceeds 95°FDB [35°CDB] or if the thermal load of all of the outdoor units exceeds the capacity.
5. Consider the transportation route, installation space, maintenance space, and access, and install the unit in a location with sufficient space for the refrigerant piping
6. Observe the installation space specifications that are shown in the figures. Provide the same space for the air intake at the rear of the outdoor unit.

If the installation is not performed according to the specifications, it could cause a short circuit and result in a lack of operating performance. As a result, the outdoor unit might easily be stopped by high-pressure protection.



7. Installation methods not shown in the following examples are not recommended. Performance may drop significantly.

Installation Space—RP1736HJVXA and RP1748HJVXA (con't)

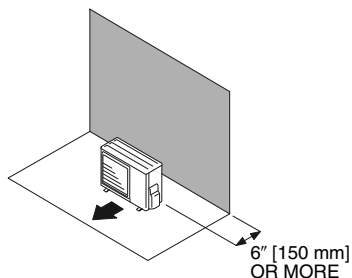
SPACE REQUIREMENT

Provide sufficient installation space for product safety.

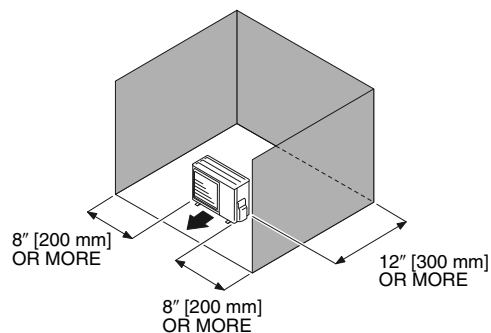
SINGLE OUTDOOR UNIT INSTALLATION

When the upper space is open:

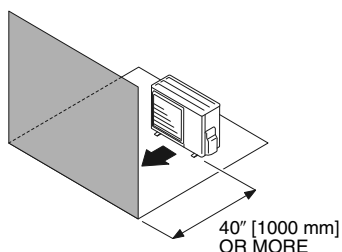
WHEN THERE ARE OBSTACLES AT THE REAR ONLY.



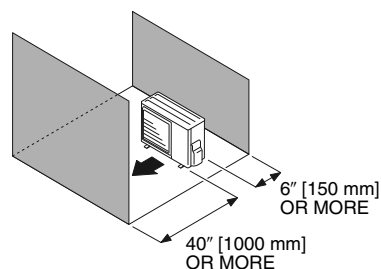
WHEN THERE ARE OBSTACLES AT THE REAR AND SIDES.



WHEN THERE ARE OBSTACLES AT THE FRONT ONLY.

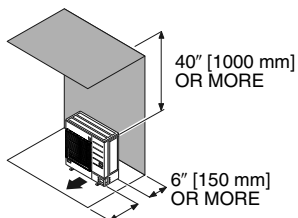


WHEN THERE ARE OBSTACLES AT THE FRONT AND REAR.

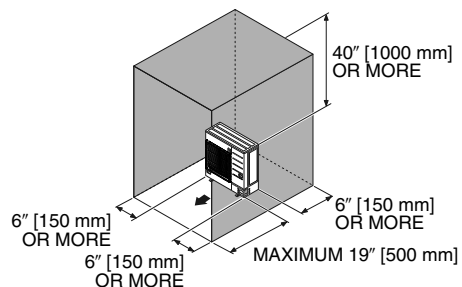


When there is an obstruction in the upper space:

WHEN THERE ARE OBSTACLES AT THE REAR AND ABOVE.



WHEN THERE ARE OBSTACLES AT THE REAR, SIDES AND ABOVE.



[] Designates Metric Conversions

Installation Space—RP1736HJVXA and RP1748HJVXA (con't)

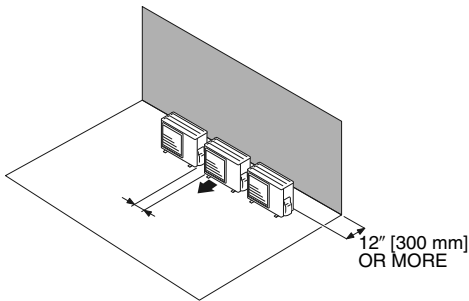
MULTIPLE OUTDOOR UNIT INSTALLATION

NOTES:

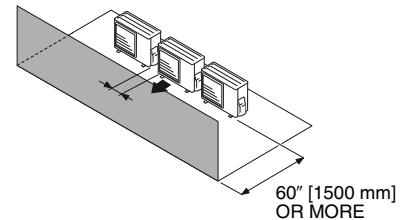
1. Provide at least of space between the outdoor units if multiple units are installed.
2. When routing the piping from the side of an outdoor unit, provide space for the piping.
3. No more than 3 units must be installed side by side. When 3 units or more are arranged in a line, provide the space as shown in the following example when an obstruction is present also in the upward area.

When the upper space is open:

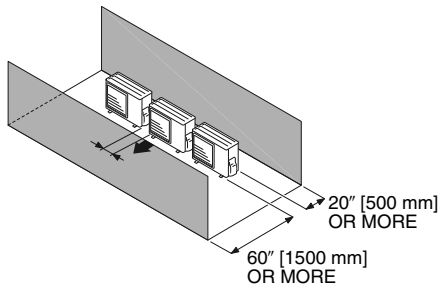
WHEN THERE ARE OBSTACLES AT THE REAR ONLY.



WHEN THERE ARE OBSTACLES AT THE FRONT ONLY.



WHEN THERE ARE OBSTACLES AT THE FRONT AND REAR.

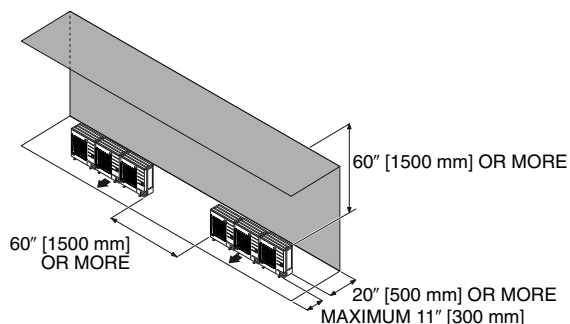


[] Designates Metric Conversions

Installation Space—RP1736HJVXA and RP1748HJVXA (con't)

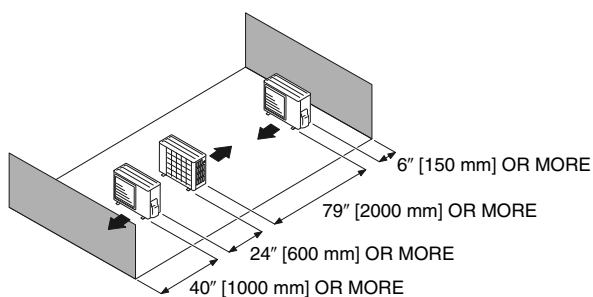
When there is an obstruction in the upper space:

WHEN THERE ARE OBSTACLES AT THE REAR AND ABOVE.

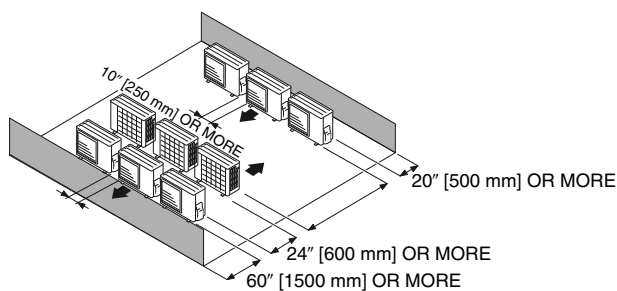


OUTDOOR UNIT INSTALLATION IN MULTI-ROW

SINGLE PARALLEL UNIT ARRANGEMENT



MULTIPLE PARALLEL UNIT ARRANGEMENT

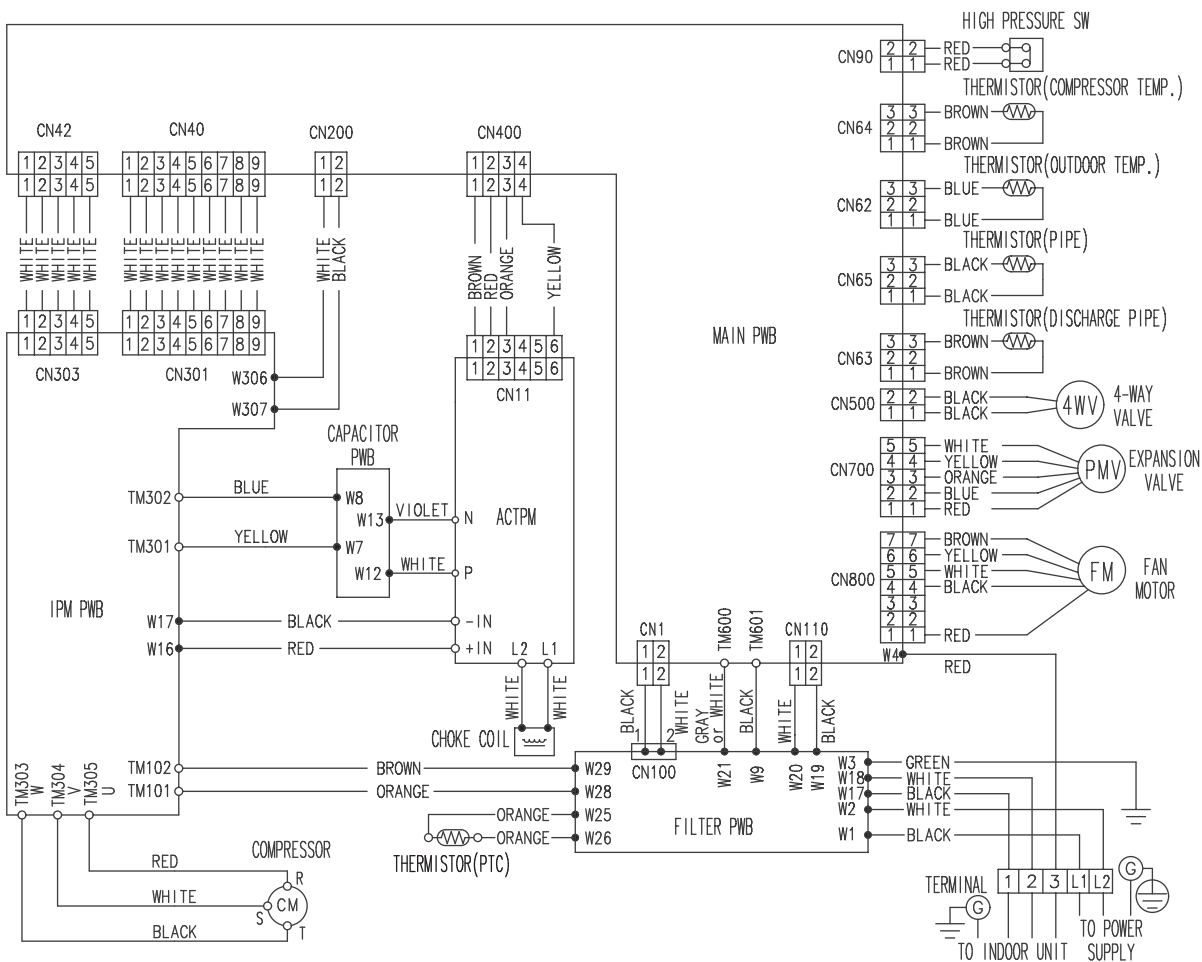


NOTES:

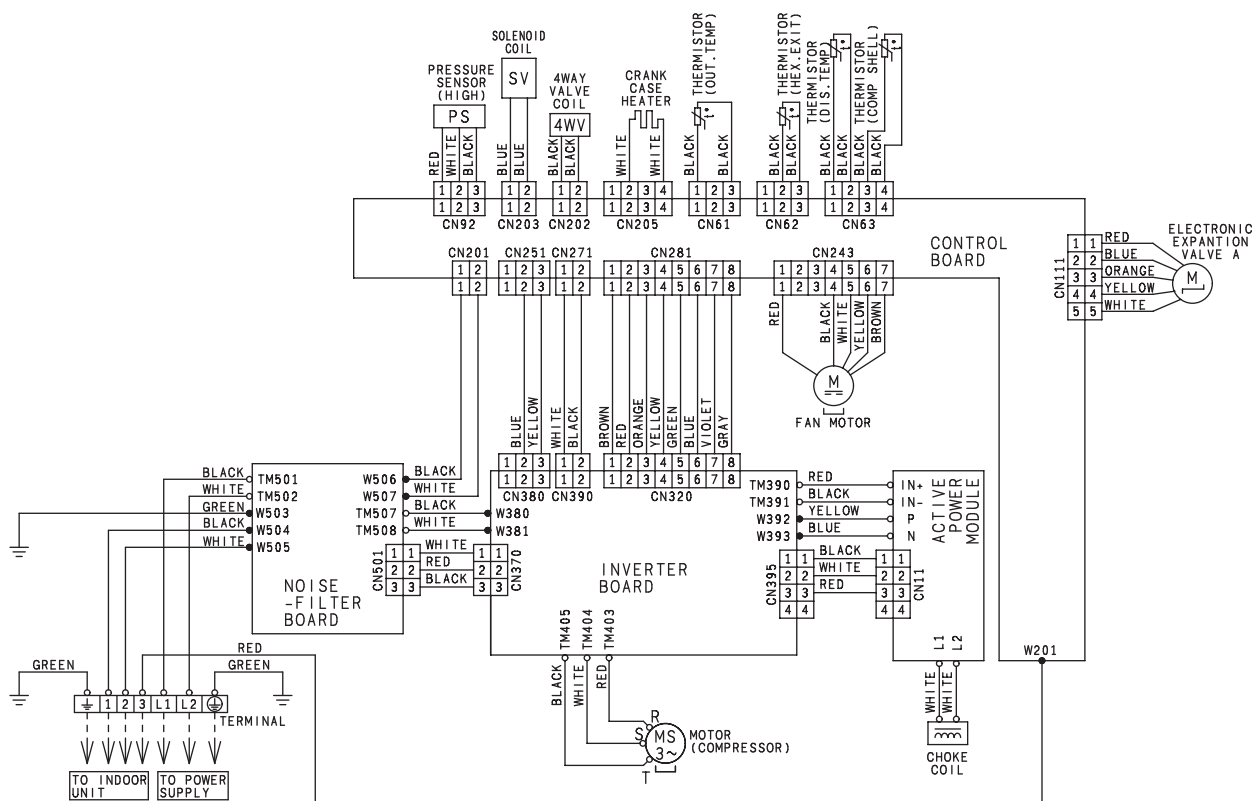
1. If the space is larger than stated above, the condition will be the same as when there is no obstacle.
2. Height above the floor level should be 2 in. [50 mm] or more.
3. When installing the outdoor unit be sure to open the front and left side to obtain better operation efficiency.

[] Designates Metric Conversions

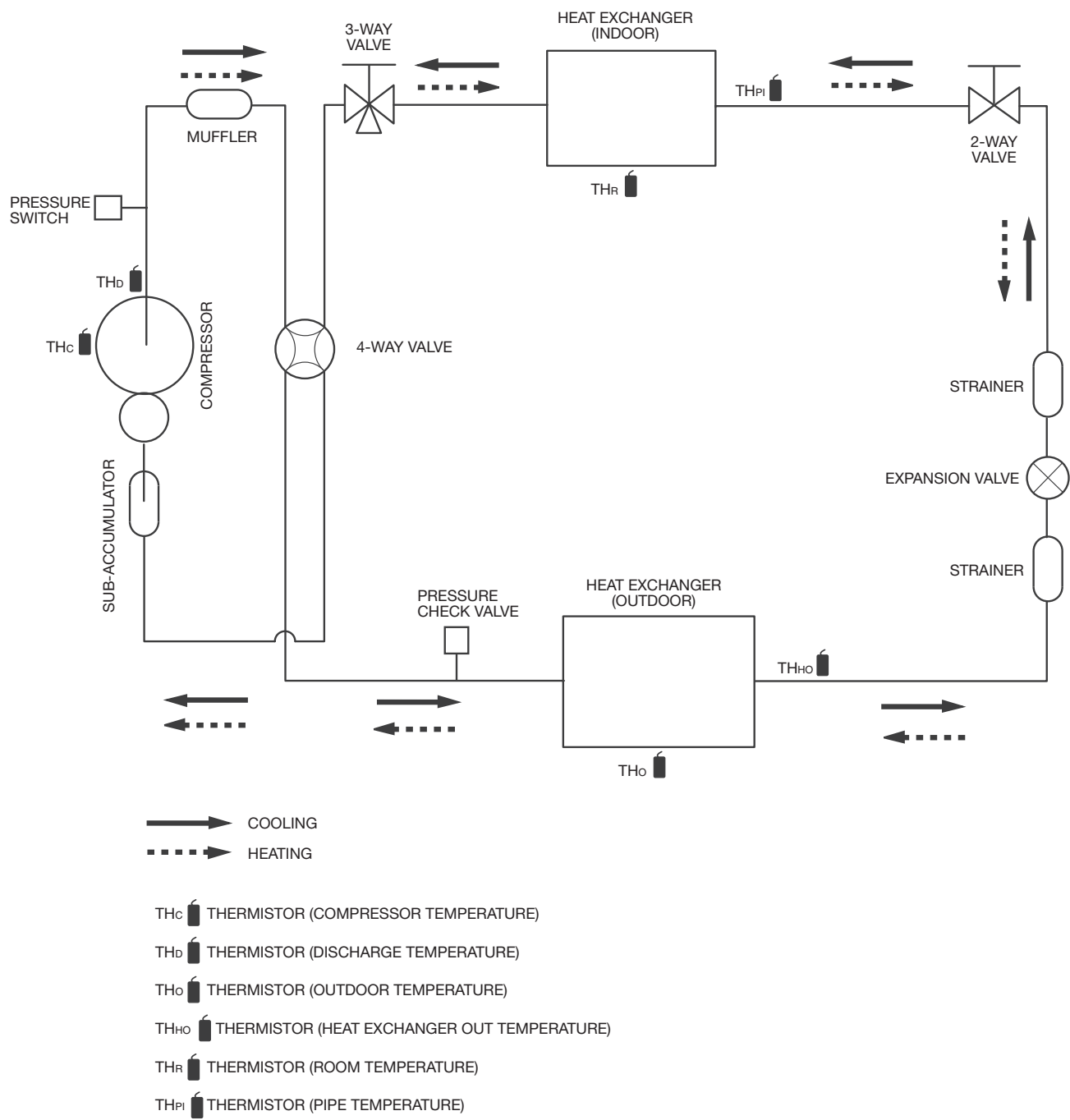
Wiring—RP1724HJVXA and RP1730HJVXA



Wiring—RP1736HJVXA and RP1748HJVXA



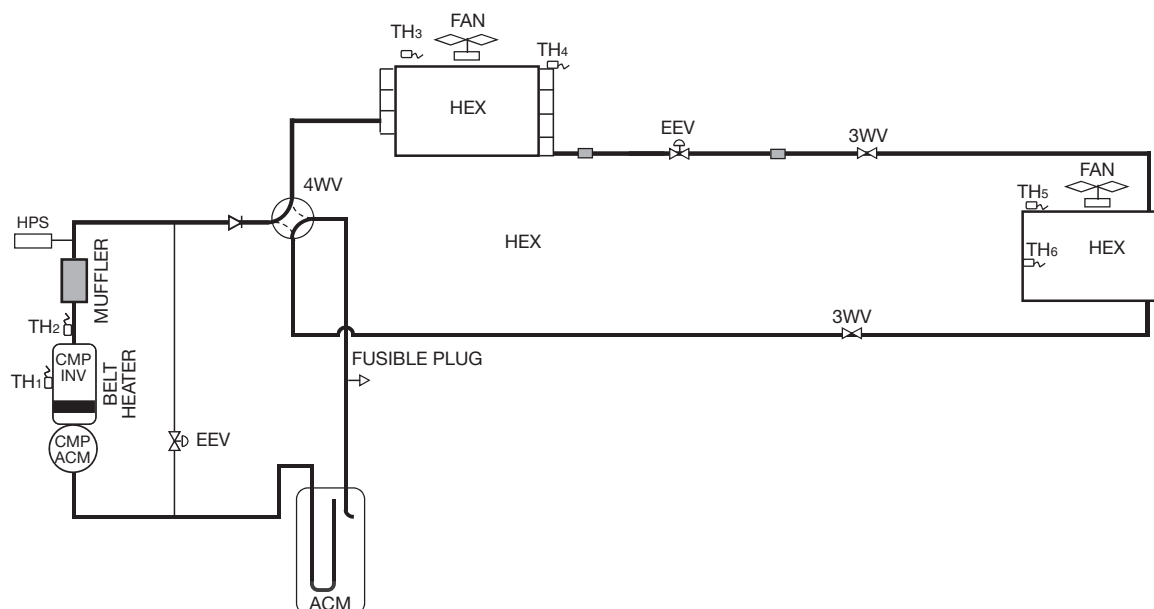
Refrigerant Circuit Information—RP1724HJVXA and RP1730HJVXA



Refrigerant Circuit Information—RP1736HJVXA and RP1748HJVXA

OUTDOOR UNIT

INDOOR UNIT



- ▷ : CHECK VALVE
- : STRAINER
- CMP: COMPRESSOR (INVERTER TYPE)
- HEX: HEAT EXCHANGER
- ACM: ACCUMULATOR
- HPS: HIGH PRESSURE SENSOR
- 4WV: 4-WAY VALVE
- 3WV: 3-WAY VALVE
- EEV: ELECTRIC EXPANSION VALVE

- TH₁: THERMISTOR (SHELL)
- TH₂: THERMISTOR (DISCHARGE TEMPERATURE THERMISTOR)
- TH₃: THERMISTOR (OUTDOOR TEMPERATURE)
- TH₄: THERMISTOR (HEAT EXCHANGER OUT TEMPERATURE)
- TH₅: THERMISTOR (ROOM TEMPERATURE)
- TH₆: THERMISTOR (HEAT EXCHANGER MED TEMPERATURE)

Charge Calculation

MODEL NUMBERS	REFRIGERANT TYPE		R410A
RP1724HJVXA RP1730HJVXA	Refrigerant amount	Lb.	4 Lb. 10 Oz.
		g	2,100
RP1736HJVXA RP1748HJVXA	Refrigerant amount	Lb.	9 Lb. 8 Oz.
		g	4,300

Model No.	Refrigerant Type			R410A				
RP1724HJVXA RP1730HJVXA	Total pipe length	ft	66 or less	98	131	164 (Max.)	—	0.43 oz/ft (40 g/m)
		m	20 or less	30	40	50 (Max.)	—	
	Additional charge	oz	0	14.1	28.2	42.3	—	
		g	0	400	800	1,200	—	
RP1736HJVXA RP1748HJVXA	Total pipe length	ft	98 or less	131	164	196	230 (Max.)	0.43 oz/ft (40 g/m)
		m	30 or less	40	50	60	70 (Max.)	
	Additional charge	oz	0	14.1	28.2	42.3	56.4	
		g	0	400	800	1,200	1,600	

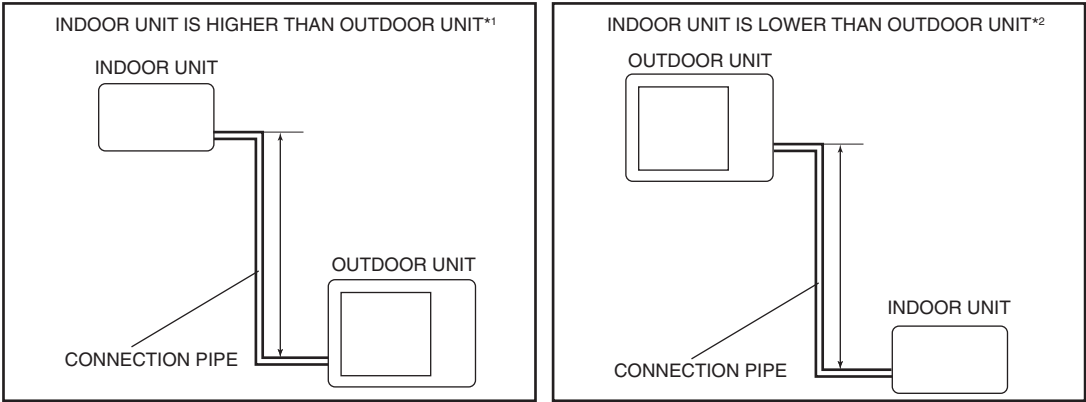
Airflow

Model No.	Cooling		Heating	
RP1724HJVXA RP1730HJVXA	m³/h	3600	m³/h	3600
	l/s	1000	l/s	1000
	CFM	2119	CFM	2119
RP1736HJVXA RP1748HJVXA	m³/h	4400	m³/h	4400
	l/s	1222	l/s	1222
	CFM	2590	CFM	2590



Capacity Compensation Rate for Pipe Length and Height Difference

HEIGHT DIFFERENCE H



Model No.	Cooling		Pipe Length										
			m		5	7.5	10	20	30	40	50	60	70
			ft	16	24	32	65	98	131	164	196	229	
RP1724HJVXA RP1730HJVXA	Height Difference H	Indoor unit is higher than outdoor unit*1	30	98	—	—	—	—	0.913	0.889	0.881	—	—
			20	65	—	—	—	0.941	0.929	0.914	0.896	—	—
			10	32	—	—	0.974	0.957	0.944	0.930	0.911	—	—
			7.5	24	—	0.9888	0.978	0.960	0.948	0.934	0.914	—	—
			5	16	0.998	0.992	0.982	0.964	0.952	0.938	0.919	—	—
			0	0	1.000	1.000	0.989	0.972	0.960	0.945	0.926	—	—
		Indoor unit is lower than outdoor unit*2	-5	-16	1.000	1.000	0.989	0.972	0.960	0.945	0.926	—	—
			-7.5	-24	—	1.000	0.989	0.972	0.960	0.945	0.926	—	—
			-10	-32	—	—	0.989	0.972	0.960	0.945	0.926	—	—
			-20	-65	—	—	—	0.972	0.960	0.945	0.926	—	—
			-30	-98	—	—	—	—	0.960	0.945	0.926	—	—
RP1736HJVXA RP1748HJVXA	Height Difference H	Indoor unit is higher than outdoor unit*1	30	98	—	—	—	—	0.885	0.842	0.800	0.754	0.711
			20	65	—	—	—	0.937	0.895	0.852	0.810	0.770	0.728
			10	32	—	—	0.990	0.947	0.905	0.862	0.822	0.780	0.738
			7.5	24	—	0.993	0.993	0.950	0.908	0.865	0.824	0.782	0.740
			5	16	0.995	0.995	0.995	0.952	0.910	0.867	0.825	0.779	0.736
			0	0	1.000	1.000	1.000	0.957	0.915	0.872	0.830	0.784	0.741
		Indoor unit is lower than outdoor unit*2	-5	-16	1.000	1.000	1.000	0.957	0.915	0.872	0.830	0.784	0.741
			-7.5	-24	—	1.000	1.000	0.957	0.915	0.872	0.830	0.784	0.741
			-10	-32	—	—	1.000	0.957	0.915	0.872	0.830	0.784	0.741
			-20	-65	—	—	—	0.957	0.915	0.872	0.830	0.784	0.741
			-30	-98	—	—	—	—	0.915	0.872	0.830	0.784	0.741

NOTE: Values mentioned in the table are calculated based on the maximum capacity.

Capacity Compensation (con't)

Model No.	Heating		Pipe Length										
			m	5	7.5	10	20	30	40	50	60	70	
				ft	16	24	32	65	98	131	164	196	229
RP1724HJVXA RP1730HJVXA	Height Difference H	Indoor unit is higher than outdoor unit*1	30	98	—	—	—	—	0.939	0.922	0.907	—	—
			20	65	—	—	—	0.963	0.939	0.922	0.907	—	—
			10	32	—	—	0.999	0.963	0.939	0.922	0.907	—	—
			7.5	24	—	1.000	0.999	0.963	0.939	0.922	0.907	—	—
			5	16	1.000	1.000	0.999	0.963	0.939	0.922	0.907	—	—
		Indoor unit is lower than outdoor unit*2	0	0	1.000	1.000	0.999	0.963	0.939	0.922	0.907	—	—
			-5	-16	1.000	0.995	0.995	0.958	0.934	0.917	0.903	—	—
			-7.5	-24	—	0.983	0.992	0.955	0.932	0.915	0.900	—	—
			-10	-32	—	—	0.990	0.953	0.929	0.912	0.898	—	—
			-20	-65	—	—	—	0.943	0.920	0.903	0.889	—	—
		-30	-98	—	—	—	—	0.911	0.894	0.880	—	—	
RP1736HJVXA RP1748HJVXA	Height Difference H	Indoor unit is higher than outdoor unit*1	30	98	—	—	—	—	0.995	0.993	0.990	0.853	0.828
			20	65	—	—	—	0.998	0.995	0.993	0.990	0.853	0.828
			10	32	—	—	1.000	0.998	0.995	0.993	0.990	0.853	0.828
			7.5	24	—	1.000	1.000	0.998	0.995	0.993	0.990	0.853	0.828
			5	16	1.000	1.000	1.000	0.998	0.995	0.993	0.990	0.853	0.828
		Indoor unit is lower than outdoor unit*2	0	0	1.000	1.000	1.000	0.998	0.995	0.993	0.990	0.853	0.828
			-5	-16	1.000	1.000	0.995	0.993	0.990	0.988	0.985	0.848	0.823
			-7.5	-24	—	1.000	0.992	0.990	0.987	0.985	0.982	0.845	0.820
			-10	-32	—	—	0.990	0.988	0.985	0.983	0.980	0.843	0.818
			-20	-65	—	—	—	0.978	0.975	0.973	0.970	0.833	0.808
		-30	-98	—	—	—	—	0.965	0.963	0.960	0.823	0.798	

NOTE: Values mentioned in the table are calculated based on the maximum capacity.

Safety Devices

Type of Protection	Protection From		Model	
			RP1724HJVXA	RP1730HJVXA
Circuit protection	Current fuse (filter PCB)		250 V, 5 A x 2	
	Current fuse (main PCB)		250 V, 3.15 A x 2	
Fan motor protection	Thermal protection	Activate	302 ⁺²⁷ °F (150 ⁺¹⁵ °C) Fan motor stop	
		Reset	248 ⁺²⁷ °F (120 ⁺¹⁵ °C) Fan motor restart	
Compressor protection	Thermal protection program (Compressor temp.)	Activate	226°F (108°C) Compressor stop	
		Reset	176°F (80°C) Compressor restart	
	Thermal protection program (Discharge temp.) (Cool or Dry mode)	Activate	230°F (110°C) Compressor stop	
		Reset	After 7 minutes Compressor restart	
	Thermal protection program (Outdoor temp.)	Activate	—	
		Reset	—	
High pressure protection	Pressure switch	Activate	4.2±0.1 MPa Compressor stop	
		Reset	3.2±0.15 MPa Compressor restart	

Type of Protection	Protection From		Model	
			RP1736HJVXA	RP1748HJVXA
Fuse (Filter PCB)			AC 250 V, 5 A AC 250 V, 10 A x 2	
Protector (Filter PCB)			AC 500 V, 45 A	
Fuse (MAIN PCB)			AC 250 V, 3.15 A x 2	
Fuse (INV PCB)			AC/DC 400 V, 5 A	
Fan motor protection	Thermal protection	Activate	239±27°F (115±15°C) Fan motor stop	
		Reset	158°F (70°C) Fan motor restart	
Compressor protector	Over current protection		—	
	Temperature protection	Activate	226.4°F (108°C) Compressor stop	
		Reset	176°F (80°C) Compressor restart	
	Thermal protection program (Discharge temp.)	Activate	230°F (110°C) Compressor stop	
		Reset	After 3 minutes and 230°F (110°C) less than Compressor restart	
High pressure protection		Activate	580 psi (4.0 MPa)	
		Reset	471 psi (3.25 MPa)	