

SPLIT SYSTEM

SADE - SERIES

Nominal Sizes 1½ to 6 Tons



CLASSIC^X HIGH EFFICIENCY CONDENSING UNITS 50 Hertz HEAVY DUTY

The Rheem Classic X High Efficiency SADE -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 Classic X - Condensing Units are the result of an ongoing development program for improved efficiencies. With SEER's ranging to 10.50, these units continue a tradition of high efficiency.

- 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.
- 1008 hours salt spray test successfully conducted on the cabinet.
- 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.
- All controls are accessible by removing one service panel. Removable top grille provides access to the condenser fan motor, condenser coil and Compressor.
- Single speed fan motor is designed for low speed, quiet, energy-saving operation.



SBHC - SERIES



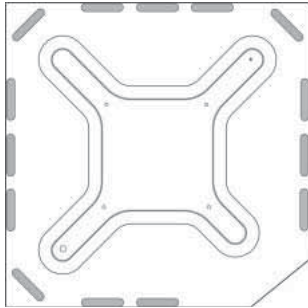
TESTED IN ACCORDANCE
WITH A.R.I. STANDARD NO.
2-10-81-360-86

Engineering Features Condensing Units

1. Compressor is hermetically sealed and incorporates internal high temperature motor overload protection, and durable insulation on the motor windings. It is internally spring mounted and 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 units, 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 - Aluminium 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. Drawn, painted base pan for extra corrosion resistance and sound reduction.
11. High Pressure Control and Low Pressure Control, are provided as a standard feature.

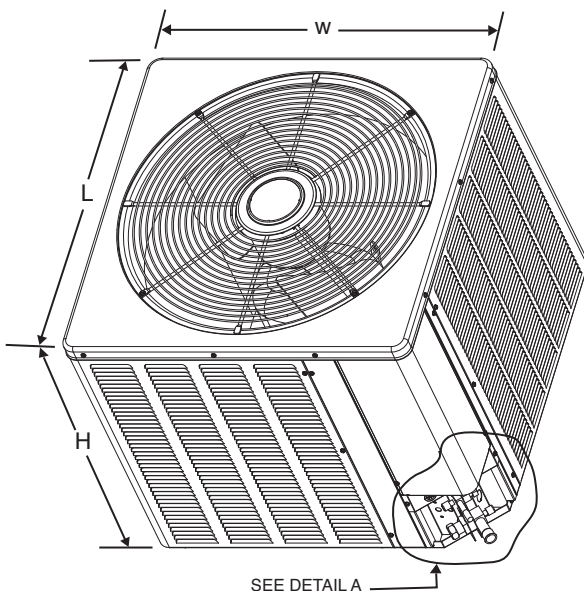
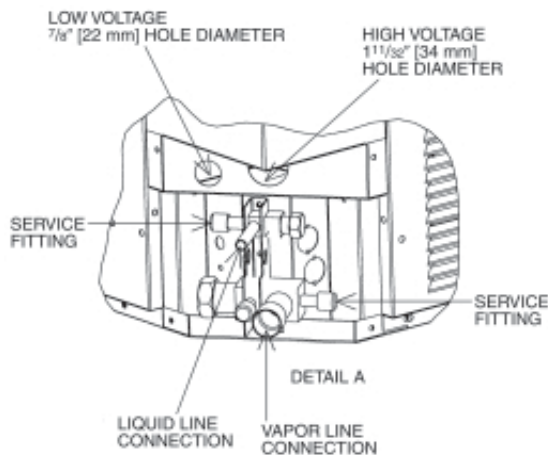


All controls and compressor are accessible for servicing by removal of its service panels.



DO NOT OBSTRUCT DRAIN SLOTS (SHADED).

Drawn Painted Base Pan.



Field Installed Accessories

- **Time Delay Control** - Compressor will remain off for five minutes after power or thermostat interruption, allowing system pressures to equalize. Starting during high pressure conditions can result in shortened compressor life.
(Model No. RXMD-B01)
- **Low Ambient Switch** - 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. (Model No. RXAD-A04)
It is recommended that this control be installed in units to be operated at outdoor ambient temperatures under 70°F.
- **Hard Start Kits** - Available through the Parts Department.
- **Crankcase Heater** - Available through the Parts Department.

Model No. SADE	Unit Dimensions		
	Width "W" Inches [mm]	Length "L" Inches [mm]	Height "H" Inches [mm]
018, 024, 030, 036, 042	23 ⁵ / ₈ [600.07]	23 ⁵ / ₈ [600.07]	24 ¹ / ₄ [615.95]
048, 060, 065	31 ⁵ / ₈ [803.27]	31 ⁵ / ₈ [803.27]	27 ¹⁵ / ₁₆ [709.61]

Condensing Unit Refrigerant Line Size Information

System Model Numbers SADE	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 [7.26]	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]					
018	1/4* [6.35]	25 [7.62]	50 [15.24]	70 [21.34]			25 [7.62]	23 [7.01]	8[2.44]				
	5/16 [7.94]			36 [10.97]	42 [12.80]	48 [14.63]	54 [16.46]			36 [10.97]	30 [9.14]	24 [7.32]	18 [5.49]
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 [10.66]	26 [7.92]	19 [5.79]
048	3/8* [9.53]	25 [7.62]	44 [13.41]	53 [16.15]	61 [18.59]	70 [21.34]		25 [7.62]	28 [8.53]	19 [5.79]	11 [3.35]	3 [.91]	
	1/2 [12.7]					37 [11.28]	39 [11.89]					35 [10.67]	33 [10.06]
060	3/8* [9.53]	25 [7.62]	48 [14.63]	61 [18.59]	72 [21.95]			25 [7.62]	23 [7.01]	11 [3.35]	3 [.91]		
065	1/2* [12.7]				35 [10.67]	38 [11.58]	41 [12.50]				37 [11.28]	34 [10.36]	31 [9.45]

*Standard line size

NOTES :

- This chart is applicable for condensing units.
- 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 [3.05m].
Example 1: A 5 ton [17.58kW] condensing unit with a total line length of 125 feet [38.10m] with a vertical separation of 101 feet [30.78m] utilizing a 1/2 [12.7mm] liquid line : Table =38 feet [11.58m] maximum vertical separation for 125 feet [38.10m] run. Separation exceeds table by (101-38) = 63 feet [19.20m]. Therefore, reduce the indoor coil flow - check piston 2 + 6 = 8 sizes (For example, a # 89 piston would reduce to a # 81 piston)
- Do not exceed 120 feet [36.58m] maximum vertical separation,
- No changes are required for expansion valve coils.
- Do not exceed table values for capillary tube coils.
- Always use the smallest liquid line possible to minimize system charge.
- Chart may be used to size horizontal runs.

NOTES :

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

Vapor Line Length / Size versus Capacity Multiplier								
SADE		018	024	030	036	042	048	060/065
Vapor Line Run-feet [m]		--		5/8" [15.88mm] O.D. Optional			7/8" [22.23 mm] O.D. Optional	
		5/8" [15.88 mm] O.D. Standard		3/4" [19.05mm] O.D. Standard			1 1/8" [28.58mm] O.D. Standard	
		3/4" [19.05mm] O.D. Optional		7/8" [22.23 mm] O.D. Optional			1 3/8" [34.94mm] O.D. Optional	
25' [7.62]	Optional	-	.98	-	-	-	.99	.98
	Standard	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Optional	1.01	1.01	1.01	1.01	1.01	1.01	1.01
50' [15.24]	Optional	-	.96	-	-	-	.97	.97
	Standard	.98	.99	.99	.98	.97	1.00	.99
	Optional	1.00	1.00	1.00	1.00	1.00	1.01	1.01
100' [30.48]	Optional	-	.93	-	-	-	.96	.95
	Standard	.96	.98	.97	.96	.94	.99	.99
	Optional	.99	.99	.99	.99	.98	1.00	1.00
150' [45.72]	Optional	-	-	-	-	-	.93	.91
	Standard	.97	.97	.95	.93	.90	.99	.98
	Optional	.98	.98	.97	.97	.96	1.00	.99

NOTES: Capacity Multiplier x Rated Capacity = Actual Capacity.

Additional compressor oil is not required for runs up to 150 feet [45.72 m].

Oil traps in vertical runs are not required for any height up to 100 feet [30.48 m]. See Liquid Line chart for Vertical Separation Requirements and Limitations.

Condensing Units - Electrical and Physical Data

Model No.	ELECTRICAL							PHYSICAL					
	Phase Hertz Volts	Compr FLA	Compr LRA	Fan Motor FLA	Min. Circuit Ampacity Amps	Fuse or HACR Circuit Breaker		Outdoor Coil			R22 Oz	Weight	
						Min. Amps.	Max. Amps	Face Area Sq. Ft.	No. Rows	CFM		Net Lbs.	Shipping Lbs.
018T	1-50-220/240	7.1	42	0.9	10	15	15	5.24	1	1585	40	130	138
024T	1-50-220/240	9.6	55	0.9	13	20	20	8.43	1	1375	51.2	135	143
030T	1-50-220/240	11.0	69	0.9	10	15	15	8.43	1	1375	60	135	143
036T	1-50-220/240	14.7	85	1.1	20	25	30	11.06	1	1835	71	140	148
036N	3-50-380/415	5.5	42	0.6	8	15	15	11.06	1	1835	71	140	148
042T	1-50-220/240	17.3	97	1.1	23	30	40	11.06	1	1835	81.6	145	153
042N	3-50-380/415	6.4	45	0.6	9	15	15	11.06	1	1835	81.6	145	153
048T	1-50-220/240	20	102.5	1.5	27	35	45	12.43	1	2375	104	167	177
048N	3-50-380/415	7.7	50	1.0	11	15	15	12.43	1	2375	104	167	177
060N	3-50-380/415	9.6	70	1.0	14	20	20	16.39	1	3000	96	180	188
065N	3-50-380/415	9.6	82	1.0	14	20	20	16.39	1	3000	96	181	190

Air Handlers - Blower Motor Electrical Data at 240 Volts.

Model Size/Elec. Designation	Voltage	Phase	Hertz	HP	RPM	Circuit Amps	Minimum Circuit Ampacity	Maximum Circuit Protector
-14T	220/240	1	50	1/6	750	1.3	1.7	15
-17T	220/240	1	50	1/4	750	2.1	2.7	15
-21T	220/240	1	50	1/3	750	3.2	4.0	15
-24TH	220/240	1	50	1/2	825	3.7	4.5	15

Air Handlers - Airflow Performance Data 50 Hz & 240 Volts.

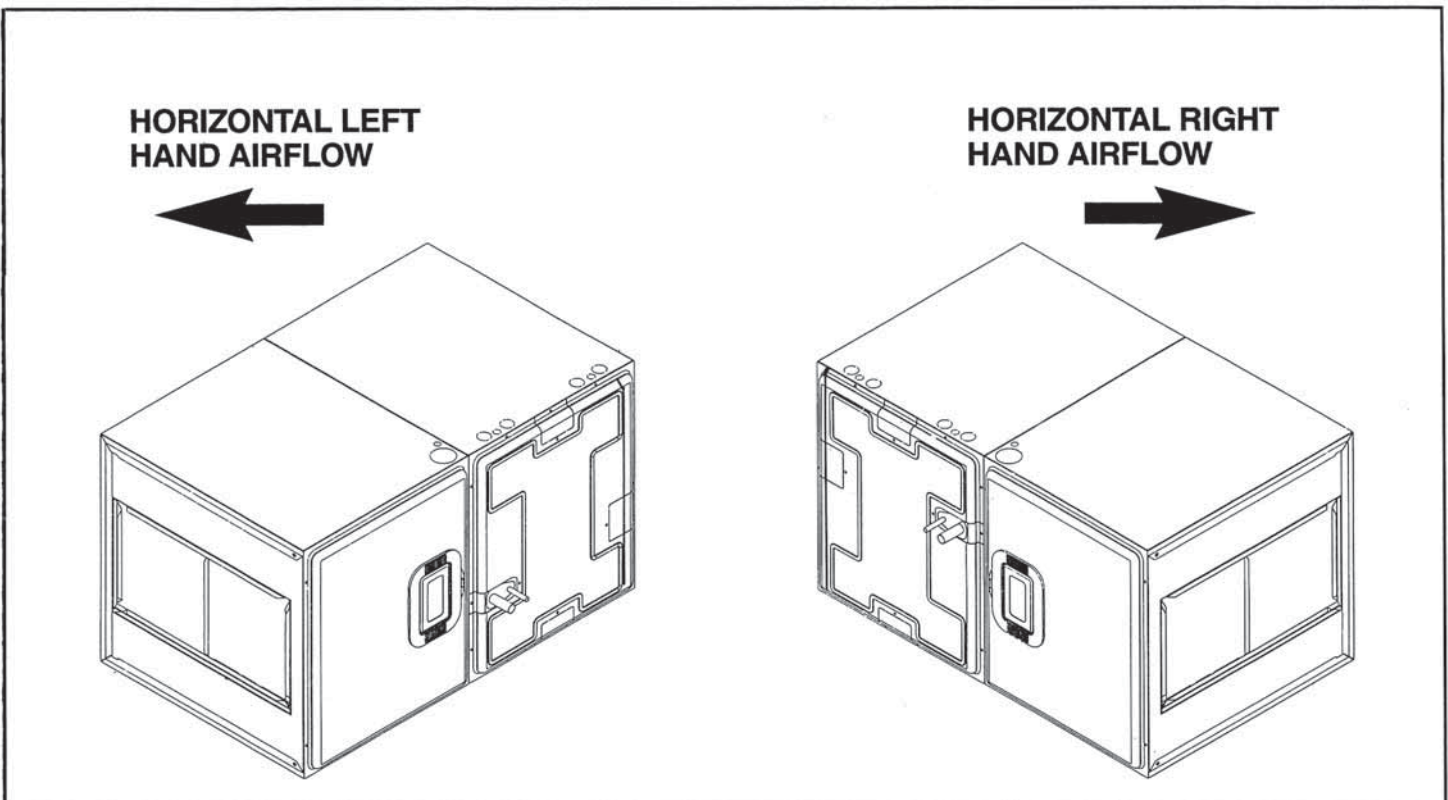
Model Cabinet Size	Electric Heaters	Blower Motor Speed	CFM / External Static Pressure - In. W.C.				
			0.1	0.2	0.3	0.4	0.5
-14	None	Low	792	759	719	672	619
	None	High	941	904	859	804	740
-17	None	Low	1226	1182	1133	1077	1015
	None	High	1342	1292	1233	1167	1093
-21	None	Low	1636	1596	1546	1485	1413
	None	High	1772	1724	1667	1600	1524
-24H	None	Low	2070	2038	2004	1957	1897
	None	High	2319	2269	2218	2157	2081

Engineering Features

Air Handler

The most compact unit design available, all air handler models only 35 inches high/long in case of horizontal application

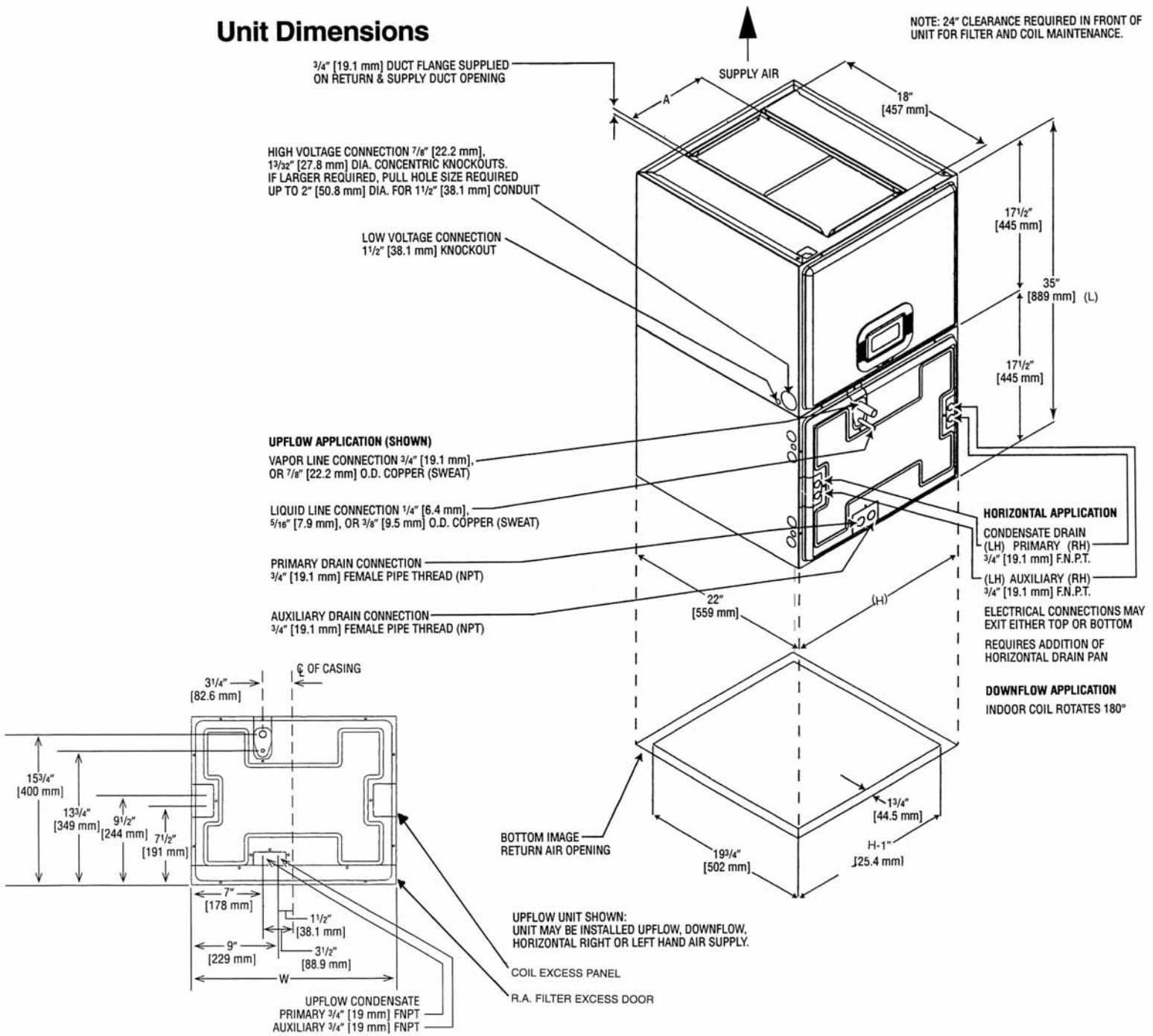
- Attractive pre-painted cabinet exterior.
- Rugged double wall steel cabinet construction, designed for added strength and versatility.
- Quiet-efficient 8-pole blower motors provide nominal airflow to .5 inches or more external duct static.
- Four leg flexible blower motor mount.
- Circuit breakers standard on 1-phase models above 11 KW and optional on models with 11 KW or less.
- Models supplied with circuit breakers meet UL and CSA requirements as a service disconnect switch.
- Provisions for field electrical, refrigerant and drain connections from either side of air handler cabinet.
- All single phase models above 11 KW are available with multiple electrical supply circuits or single electrical supply circuit. Kits and parts available for field conversion either way.
- Tab lock blower housing with intergrated electric heaters, controls, motor and blower. Slide out design for service and maintenance convenience.
- Optional, exclusive dependable stainless steel sheath type electric heating elements located in the blower housing provide mixed warm air without cold spots.
- Factory configurated or filed convertible for vertical upflow, vertical downflow, horizontal right hand or left hand air supply.
- Separeate return air filter compartment provided with thumb screw openable access panel to easily service / remove the filter
- Common combustibile floor base accessory fits all model sizes when required for downflow installations on combustibile floors.
- Durable framed cleanable air filter provided as standard in unit filter rack.
- MultiFlex™ indoor coil design provides low air side pressure drop, high preformance and extremely compact size.
- Flow check piston on indoor coil provides for operation with air conditioning or heat pump using the same coil. (Some models require piston size change.)
- All indoor coils have copper tubing and aluminum fins.
- Molded polymer corrosion resistant condensate drain pan is provided on all indoor coils.
- Common size horizontal drain pan kit fits all coil sizes and all air handler model sizes.
- Both supply and retrun duct flanges provided as standard on iair handler cabinet.
- Connection points for both high voltage and low voltage control wiring inside air handler cabinet.
- 7/8 inch knockouts are provided for power connection to cabinet. Installaer may pull desired hole size up to 2 inches for 1 1/2 inch conduit.
- Patented watt restrictor on heat pump models to control electric heat during heating operation.
- Front refrigerant and drain connections.



NOTE: Coil and blower section are always in a draw through configuration.

Unit Dimensions

NOTE: 24" CLEARANCE REQUIRED IN FRONT OF UNIT FOR FILTER AND COIL MAINTENANCE.



Specification Data

Blower	Indoor Coil	Cooling Capacity Range	Blower Size	Max Cfm at 0.1" ESP	Cool Speed	Filter
-14	RCBA-2457	1 1/2-2 TR	11.9 x 3.81	941/792	HI/LO	12.75 x 21
-17	RCBA-3765	2 1/2-3 TR	11.9 x 5.29	1342/1226	HI/LO	16.25 x 21
-21	RCBA-4882	3 1/2-4 TR	11.9 x 7.12	1772/1636	HI/LO	19.75 x 21
-24H	RCBA-6089	5-6 TR	11.9 x 9.50	2319/2070	HI/LO	23.25 x 21

Unit Dimensions & Weights

Model Number	Unit "H"		Supply Duct "A"		Unit Weight/Shipping Weight Unit With Coil		Max. Heater Elements	
	In.	mm.	In.	mm.	Lbs.	KG.	No.	KW
-14	14	356	6 3/32	155	81/88	37/40	3	15
-17	17 1/12	434	7 9/16	192	92/99	42/65	4	20
-21	21	534	9 7/16	240	109/117	49/53	5	25
-24H	24 1/2	623	11 3/4	298	125/134	57/61	6	30

NOTE: Subtract 1.5 lbs/ 0.6 kg for each heater element less than maximum.