



Advanced Distributor Products®

SG-RAH-05
February 2008

*R (C,V) Series - High Efficiency
Multi-position Air Handler
With Variable-Speed Motor Option
Engineering & Specification Guide
(Electric & No Heat)*

With Optional Field Conversion Downflow Kit



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ISO 9001:2000
—Registered Quality System—


Product improvement is a continuous process at Advanced Distributor Products. Therefore, product specifications are subject to change without notice and without obligation on our part. Please contact your ADP representative or distributor to verify details.

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Cabinet Features

- Two independent service panels make for easy access to coil.
- Factory installed brackets to hold coil assembly in place when unit is installed in the horizontal position.
- Glued foil faced insulation and securing rods.
- Only four (4) screws to remove blower panel.
- ETL certified 2% or less cabinet air leakage
- Cabinet constructed of heavy gauge painted steel.
- Filter rack - built into every air handler.
- Access panels with wrap around flange design improves cabinet rigidity and air tightness.
- Air Handlers are top handling (basiloid) packaged with bar coding and full description on label.
- Upflow, right and left horizontal airflow configurations available as well as downflow with a field installed kit.
- Downflow kit available as an accessory for field installation, easy to install kit consists of 2 brackets plus instructions.

Evaporator Coil Features

- HydroTec™ drain pans with  anti-microbial additive resists growth of mold and mildew.
- Drain pans are made of high temperature (450°F) UV resistant engineering polymer.
- Dual drain connections (3/4" FPT) on left and right of front panel.
- R-22 and R-410A compatible
- Rifled copper tubing makes for greater heat transfer.
- Patented lanced fin design.
- Coils are air pressure tested at 500 PSI, pressure tested with Helium, sealed and then charged with dry air.

Electrical Features

- Electrical connections can be made on top, right or left side of cabinet.
- Electric heat available factory installed or as field installed kits.
- Fan time delay available factory installed or as a field installed kit.
- Dynamically balanced blowers for quiet vibration-free operation.
- High Efficiency three-speed Motor.
- Circuit breaker standard on 15 Kw and higher heat kits and available factory or field installed for 5-10 Kw heat kits.
- Single point supply voltage breaker kits available as an accessory for field installation.

Variable-Speed Motor Features

- Maintains a selected CFM over a wide range of static conditions.
- Soft Start feature slowly ramps up airflow on start up.
- Dehumidification setting when activated runs cooling cfm at 90%.
- Constant Air Circulation setting runs cooling cfm at 50%. This quiet continuous airflow improves IAQ and eliminates stratification at a reduced energy cost.
- Control Board LED Lights display operating mode and indicates when dehumidification setting has been activated.

Physical Data:

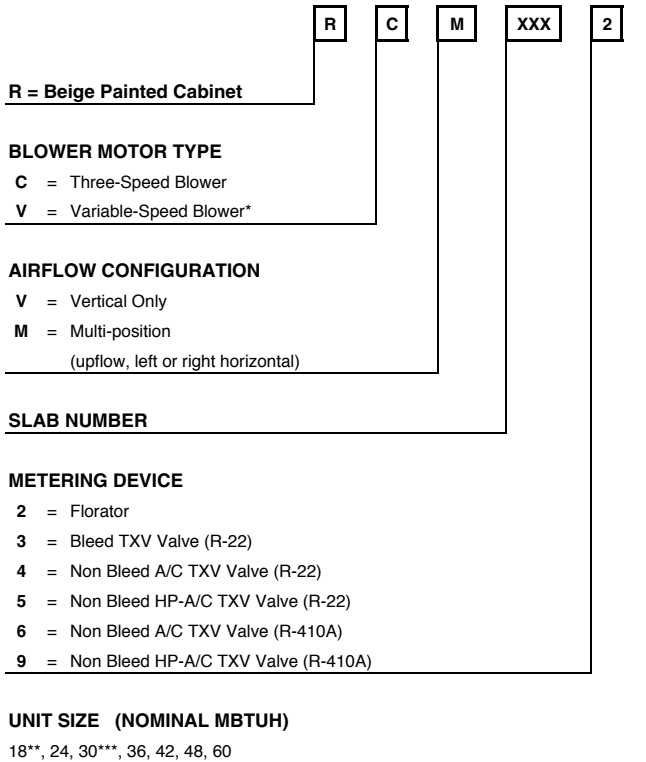
		Air Handler Size						
		18	24	30	36	42	48	60
Available Voltage		208/240 V, 60 Hz, 1 ph. or 220 V, 50 Hz, 1 ph.						
Maximum Elec. Heat (Kw)		10	10	15	15	15	20	20
Transformer Size and Type		40VA, Class 2						
Blower Wheel (dia." x width")		10 x 6	10 x 6	11 x 8	11 x 8	11 x 8	11 x 8	11.5 x 9
Nominal CFM		600	800	1000	1200	1400	1600	1850
Three-Speed Blower Data	Motor H. P.	1/4	1/4	1/4	1/3	1/3	1/2	1/2
	F. L. A. @ 240 V	1.4	1.4	1.5	1.7	1.8	2.5	3.9
Variable-Speed Blower Data*	Motor H. P.	**	1/3	***	1/2	1/2	3/4	3/4
	F. L. A. @ 240 V	**	2	***	2.5	2.8	3	3.8
Air Filter Size [in]		16 x 20	16 x 20	18 x 20	18 x 20	18 x 25	18 x 25	18 x 25
Refrigerant Conn. (IDS) Suction [in]		3/4	3/4	7/8	7/8	7/8	7/8	7/8
Refrigerant Conn. (IDS) Liquid [in]		3/8	3/8	3/8	3/8	3/8	3/8	3/8
Florator Piston Size		53	59	67	73	80	84	93
Weight [lbs]		129	131	138	148	172	177	190

* Variable-speed motor option not available with 220 V, 50 Hz.

** For 18 MBTUH cooling capacity with variable-speed motor option use 24 size model and adjust blower speed setting lower.

*** For 30 MBTUH cooling capacity with variable-speed motor option use 36 size model and adjust blower speed setting lower.

Model Nomenclature:



VOLTAGE

- 1** = 208/240 V, 60 Hz, 1 ph.
- 2** = 208/240 V, 60 Hz, 1 ph. w/Time Delay
- 5** = 220 V, 50 Hz, 1 ph.*
- 6** = 220 V, 50 Hz, 1 ph. w/Time Delay*

HEAT

Note: Maximum 10 Kw per electrical supply circuit

	SIZE	Kw Available
00 = 0 Kw ELEC.	18	5, 7.5, 10
05 = 5 Kw ELEC.	24	5, 7.5, 10, 15
07 = 7.5 Kw ELEC.	30	5, 7.5, 10, 15
10 = 10 Kw ELEC.	36	5, 7.5, 10, 15
15 = 15 Kw ELEC.	42	5, 7.5, 10, 15
15 = 15 Kw ELEC.	48	5, 7.5, 10, 15, 20
20 = 20 Kw ELEC.	60	5, 7.5, 10, 15, 20

LINE VOLTAGE CONNECTION

	Amount of Heat (Kw)					
	0	5	7.5	10	15	20
S = Stripped Wire	#	#				
T = Terminal Block		O	#	#		
B = Circuit Breaker		O	O	O	#	#

= Standard O = Optional

* Variable-speed motor option not available with 220 V, 50 Hz.

** For 18 MBTUH cooling capacity with variable-speed motor option use 24 size model and adjust blower speed setting lower.

*** For 30 MBTUH cooling capacity with variable-speed motor option use 36 size model and adjust blower speed setting lower.

Three-Speed Blower Performance Chart:

All data is given while air handler is operating with a wet DX coil and air filter installed. Speeds marked in **bold with an asterisk*** are the factory speed settings for both heating and cooling. Different speeds can be set for heating mode. **See installation instructions for changing speeds and minimum settings for electric heat.**

Air Handler Size (MBTUH)	Blower Speed	CFM @ESP. -in. W.C.				
		0.10	0.20	0.30	0.40	0.50
18	Low* (Red)	722	702	656	609	517
	Med (Blue)	994	926	838	707	626
	High (Black)	1036	958	873	779	663
24	Low (Red)	722	702	656	609	517
	Med* (Blue)	994	926	838	707	626
	High (Black)	1036	958	873	779	663
30	Low (Red)	929	916	890	842	737
	Med* (Blue)	1059	1043	1014	948	842
	High (Black)	1290	1271	1213	1153	1043
36	Low* (Red)	1135	1120	1112	1079	995
	Med (Blue)	1354	1345	1317	1260	1090
	High (Black)	1494	1469	1417	1336	1250
42	Low (Red)	1202	1192	1160	1116	998
	Med* (Blue)	1404	1413	1386	1303	1192
	High (Black)	1540	1530	1507	1386	1254
48	Low (Red)	1593	1582	1526	1444	1318
	Med* (Blue)	1759	1709	1636	1538	1395
	High (Black)	1886	1820	1742	1606	1446
60	Low (Red)	1782	1755	1672	1554	1393
	Med* (Blue)	2066	1960	1860	1714	1476
	High (Black)	2109	2067	1949	1770	1586

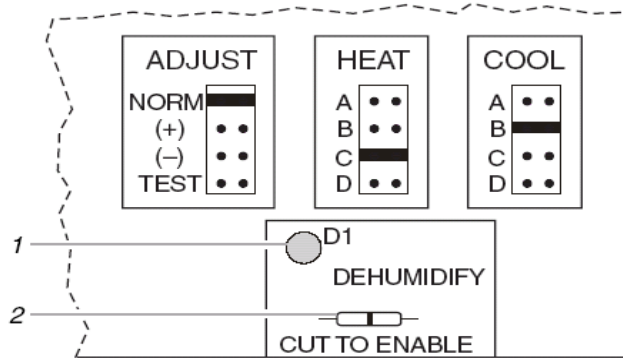
Variable-Speed Blower Performance Chart:

Model	Operating Mode	Thermostat Terminals X = Energized Terminal						Control Board Taps							
		HUM	EM	W1	O	Y2/Y1	G	Cool				Heat			
								A CFM	B CFM	C CFM	D CFM	A CFM	B CFM	C CFM	D CFM
24	Cooling	**			X	X		800	700	600	400				
	Heating					X						800	700	600*	400*
	Continuous Blower						X	400	350	350	350				
	Aux. Heat			X		X		***	***	***	***	800	800	600*	600*
	Emer. Heat		X	X				***	***	***	***	800	800	600*	600*
36	Cooling	**			X	X		1200	1000	800	600				
	Heating					X						1200	1000	800*	600*
	Continuous Blower						X	600	500	400	350				
	Aux. Heat			X		X		***	***	***	***	1200	1200	800*	800*
	Emer. Heat		X	X				***	***	***	***	1200	1200	800*	800*
42	Cooling	**			X	X		1400	1200	1000	800				
	Heating					X						1400	1200	1000*	800*
	Continuous Blower						X	700	600	500	400				
	Aux. Heat			X		X		***	***	***	***	1400	1400	1000*	1000*
	Emer. Heat		X	X				***	***	***	***	1400	1400	1000*	1000*
48	Cooling	**			X	X		1600	1400	1200	1000				
	Heating					X						1600	1400	1200	1000
	Continuous Blower						X	800	700	600	500				
	Aux. Heat			X		X		***	***	***	***	1600	1600	1200	1200
	Emer. Heat		X	X				***	***	***	***	1600	1600	1200	1200
60	Cooling	**			X	X		1800	1600	1400	1200				
	Heating					X						1800	1600	1400	1200
	Continuous Blower						X	900	800	700	600				
	Aux. Heat			X		X		***	***	***	***	1800	1600	1400	1200
	Emer. Heat		X	X				***	***	***	***	1800	1600	1400	1200

NOTES:

- * This CFM is not approved for use with the highest kW heater size.
 - ** Humidistat will reduce cooling airflow by 10% in high humidity.
 - *** Airflow is the greater of the COOL and HEAT values when both electric heat and heat pump are operating.
- The heating and cooling taps are factory set on "A".
 Adjust tap (+) will increase airflow by 10%, while tap (-) will decrease airflow by 12%.
 Adjust tap "test" will cause motor to run at 70% of full airflow. Use this for troubleshooting only.
 At the start of a call for cooling there is a short run at 82% of airflow for 7.5 minutes.
 At the end of a call for cooling there is a blower off delay of 1 minute.

Control Board Taps and Dehumidify Resistor.



1. Dehumidify LED
 2. Dehumidify resistor

Electrical Data (208/240 V, 60 Hz, 1 ph):

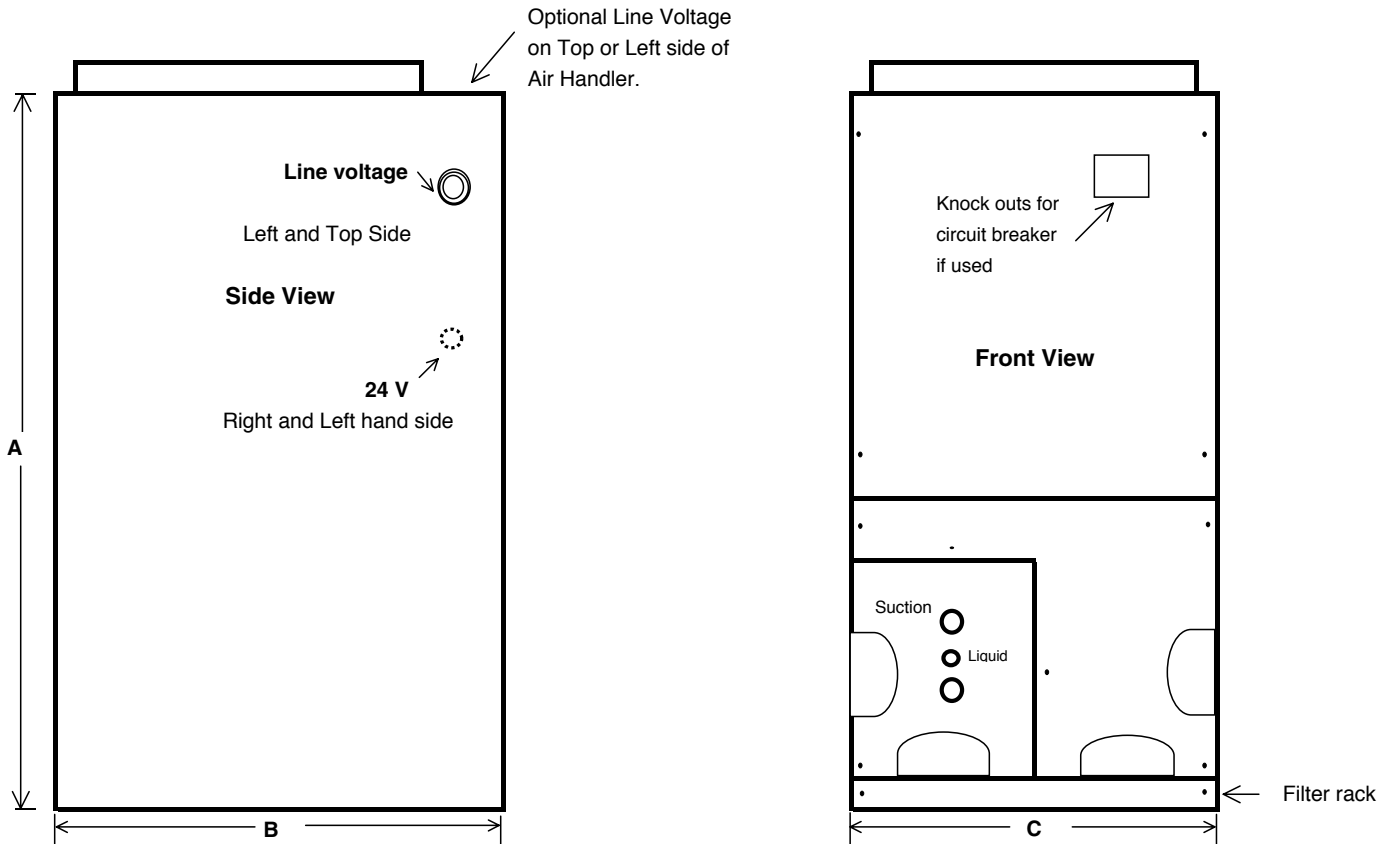
Air Handler Size (4)	Elec. Heating Cap.		3-Speed Blower Amps		Variable-Speed Blower Amps		3-Speed Blower Minimum Circuit Ampacity		Variable-Speed Blower Minimum Circuit Ampacity		Circuit Breaker Amps Per Stage (2,3)	
	Kw	BTUH	208 V	240 V	208 V	240 V	208 V	240 V	208 V	240 V	1	2
	(1) 240 V	(1) 240 V										
18 & 24 (No Heat)	0	0	1.5	1.4	2.0	2.0	1.8	1.8	2.5	2.5	15	-
18 & 24	5	17,065	1.5	1.4	2.0	2.0	24.4	27.8	25.1	28.5	30	-
18 & 24	7.5	25,598	1.5	1.4	2.0	2.0	35.7	40.8	36.3	41.6	45	-
18 & 24	10	34,130	1.5	1.4	2.0	2.0	47.0	53.8	47.6	54.6	60	-
30 (No Heat)	0	0	1.6	1.5	NA	NA	2.0	1.9	NA	NA	15	-
30	5	17,065	1.6	1.5	NA	NA	24.5	27.9	NA	NA	30	-
30	7.5	25,598	1.6	1.5	NA	NA	35.8	40.9	NA	NA	45	-
30	10	34,130	1.6	1.5	NA	NA	47.1	54.0	NA	NA	60	-
30	15	51,195	1.6	1.5	NA	NA	69.7	80.0	NA	NA	60	30
36 (No Heat)	0	0	1.8	1.7	2.5	2.5	2.2	2.1	3.1	3.1	15	-
36	5	17,065	1.8	1.7	2.5	2.5	24.8	28.2	25.7	29.2	30	-
36	7.5	25,598	1.8	1.7	2.5	2.5	36.1	41.2	37.0	42.2	45	-
36	10	34,130	1.8	1.7	2.5	2.5	47.4	54.2	48.3	55.2	60	-
36	15	51,195	1.8	1.7	2.5	2.5	69.9	80.3	70.8	81.3	60	30
42 (No Heat)	0	0	1.9	1.8	2.8	2.8	2.4	2.3	3.5	3.5	15	-
42	5	17,065	1.9	1.8	2.8	2.8	24.9	28.3	26.1	29.5	35	-
42	7.5	25,598	1.9	1.8	2.8	2.8	36.2	41.3	37.3	42.6	45	-
42	10	34,130	1.9	1.8	2.8	2.8	47.5	54.3	48.6	55.6	60	-
42	15	51,195	1.9	1.8	2.8	2.8	70.1	80.4	71.2	81.6	60	30
48 (No Heat)	0	0	2.6	2.5	3.0	3.0	3.3	3.1	3.8	3.8	15	-
48	5	17,065	2.6	2.5	3.0	3.0	25.9	29.2	26.3	29.8	35	-
48	7.5	25,598	2.6	2.5	3.0	3.0	37.1	42.2	37.6	42.8	45	-
48	10	34,130	2.6	2.5	3.0	3.0	48.4	55.2	48.9	55.8	60	-
48	15	51,195	2.6	2.5	3.0	3.0	71.0	81.3	71.4	81.9	60	30
48	20	68,260	2.6	2.5	3.0	3.0	93.6	107.3	94.0	107.9	60	60
60 (No Heat)	0	0	4.1	3.9	3.8	3.8	5.1	4.9	4.8	4.8	15	-
60	5	17,065	4.1	3.9	3.8	3.8	27.7	30.9	27.3	30.8	35	-
60	7.5	25,598	4.1	3.9	3.8	3.8	39.0	43.9	38.6	43.8	45	-
60	10	34,130	4.1	3.9	3.8	3.8	50.3	57.0	49.9	56.8	60	-
60	15	51,195	4.1	3.9	3.8	3.8	72.8	83.0	72.4	82.9	60	30
60	20	68,260	4.1	3.9	3.8	3.8	95.4	109.0	95.0	108.9	60	60

Kw packages in bold indicates that these heat packages require and include circuit breakers.

Optional for others.

- (1) For 208 Volt use .751 correction factor for Kw & BTUH.
- (2) 15 and 20 Kw (2 stage models) require 2 supply circuits.
- (3) Circuit #1 includes blower motor amps.
- (4) Air Handler Size 18 & 30 MBTUH not available with Variable Speed Motor Option

Dimensions:



Unit Size	A	B	C	Supply Duct Opening		Return Duct Opening	
				Depth	Width	Depth	Width
18 & 24	46 3/4"	22"	18 1/2"	17"	16 1/2"	20 1/2"	16"
30 & 36	51"	22"	21 1/4"	17"	19 1/4"	20 1/2"	18 3/4"
42 & 48	54"	26"	21 1/4"	21"	19 1/4"	24 1/2"	18 3/4"
60	60"	26"	21 1/4"	21"	19 1/4"	24 1/2"	18 3/4"



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