

# GAS FURNACES



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for complete details."

# RUUD

## ACHIEVER

Series

## 95% A.F.U.E. WITH *DUAL COMFORT CONTROL™* TWO-STAGE UPFLOW GAS FURNACES

The Ruud *Achiever® Series* 95% A.F.U.E. with *Dual Comfort Control™* line of upflow gas furnaces are designed for utility rooms, closets, alcoves, or attics. **Because of the low-profile 34 inch [864 mm] height, the upflow model can also be used to satisfy most applications.**

The design is certified by CSA.

### RGRM- SERIES

#### ECM Equipped

**Models with Input Rates of  
45,000, 60,000, 75,000,  
90,000, 105,000 & 120,000  
BTU/HR [13.19, 17.58, 22,  
26.38, 30.77 & 35.17 kW]  
(45K through 105K Models  
Rated at 95% A.F.U.E., 120K  
Model Rated at 93.3% A.F.U.E.)**

### Features

- Two stages of operation to save energy and maintain optimal comfort level.
- Furnace operates at 70% capacity for low-heat and 100% capacity for high-heat.
- Compatible with single or two-stage thermostat. (For optimal performance a two-stage thermostat is recommended.)
- Heat exchanger is constructed of all stainless steel for maximum corrosion resistance and thermal fatigue reliability.
- Low profile "34 inch" design is lighter and easier to handle and leaves room for optional accessories.
- Left or right side gas, electric, and condensate drainage connections.
- Integrated control board manages all operational functions and provides hookups for humidifier and electronic air cleaner.
- An insulated blower compartment, a slow-opening gas valve and a specially designed inducer system make it one of the quietest furnaces on the market today.
- Variable speed blower motor technology provides ultimate humidity control, quieter sound levels and year-round energy savings.
- Optional indoor or outdoor combustion air. In addition, combustion air may be piped to either the top or side of the cabinet on all upflow models. A special molded fitting is provided to ease installation.
- Solid bottom is standard.
- Control board diagnostics.

A variety of cooling coils and plenums designed to use with the Ruud *Achiever® Series* 95% A.F.U.E. gas furnaces are available as optional accessories for air conditioning models.

†A.F.U.E. (Annual Fuel Utilization Efficiency) calculated in accordance with Department of Energy test procedures.





# ACHIEVER® SERIES 90 PLUS HIGH EFFICIENCY UPFLOW GAS FURNACE

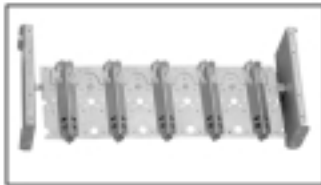


PRIMARY AND SECONDARY HEAT EXCHANGER

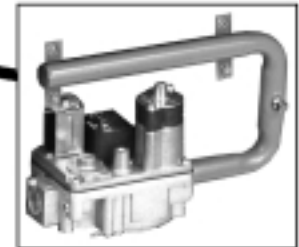
REMOTE SENSOR



DIRECT SPARK IGNITION & REMOTE SENSOR



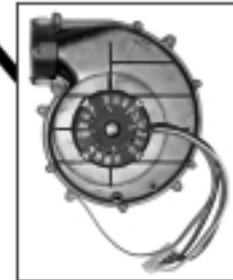
IN-SHOT BURNERS



GAS VALVE AND MANIFOLD



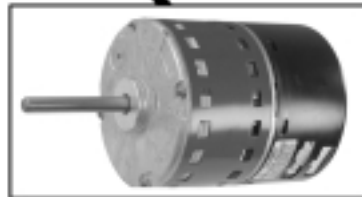
PRESSURE SWITCHES



DRAFT INDUCER



INTEGRATED FURNACE CONTROL



ECM MOTOR

## STANDARD EQUIPMENT

Completely assembled and wired; heat exchanger; primary: 409 stainless steel, secondary: 29-4C stainless steel; induced draft; pressure switches; redundant main gas control; blower compartment door safety switch; solid state time on/off blower control; limit controls; manual shut-off valve; 100% safety lock out; cool fan off delay; field selectable heat fan off delay; one hour automatic retry; power and self-test diagnostics; flame sense current diagnostics; electronic air cleaner connections; twinning (built-in) features; humidifier connections; humidifier on/off delay; low speed continuous fan option; single speed option for heating and cooling applications; pressure regulator for natural and L.P. (propane) gasses; transformer; direct drive, multi-speed blower motor. (Please note: a thermostat is not included as standard equipment.)

## OPTIONAL EQUIPMENT

Side and bottom filter racks; return air cabinet for all sizes.

NOTE: Furnace is not listed for use with fuels other than natural or L.P. (propane) gas.

All models can be converted by a qualified distributor or local service dealer to use L.P. (propane) gas without changing burners. Factory approved kits must be used to convert from natural to L.P. (propane) gas and may be ordered as optional accessories from a parts distributor.

For L.P. (propane) operation, refer to Conversion Kit Index Form.

**WARNING**  
THIS FURNACE IS NOT APPROVED  
OR RECOMMENDED  
FOR USE IN MOBILE HOMES

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

# PHYSICAL DATA AND SPECIFICATIONS—UPFLOW MODELS

## U.S. and Canadian Models

MODEL NUMBERS	RGRM-04*MAES	RGRM-06*MAES	RGRM-07*MAES	RGRM-07*YBGS	RGRM-09*ZAJA	RGRM-10*ZAJA	RGRM-12*RAJA
HIGH FIRE INPUT BTU/HR [kW] ①	45,000 [13.19]	60,000 [17.58]	75,000 [21.98]	75,000 [21.98]	90,000 [26.38]	105,000 [30.77]	120,000 [35.17]
LOW FIRE INPUT BTU/HR [kW] ②	31,500 [9.23]	42,000 [12.31]	52,500 [15.39]	52,500 [15.39]	63,000 [18.46]	73,500 [21.54]	84,000 [24.62]
HEATING CAPACITY BTU/HR [kW]	42,000 [12.31]	56,000 [16.41]	70,000 [20.51]	70,000 [20.51]	84,000 [24.62]	97,000 [28.43]	113,000 [33.12]
HIGH ALTITUDE INPUT 8000' ②	30,600 [8.97]	40,800 [11.96]	51,000 [14.95]	51,000 [14.95]	61,200 [17.94]	71,400 [20.93]	81,600 [23.91]
HIGH ALTITUDE OUTPUT AT 8000' (HIGH FIRE) [kW] ②	28,458 [8.34]	37,944 [11.12]	47,430 [13.90]	47,430 [13.90]	56,916 [16.69]	66,402 [19.46]	75,888 [22.24]
BLOWER (D x W) [mm]	11 x 7 [279 x 178]	11 x 7 [279 x 178]	11 x 7 [279 x 178]	12 x 7 [305 x 178]	12 x 11 [305 x 279]	12 x 11 [305 x 279]	11 x 10 [279 x 254]
MOTOR H.P. [W]—SPEEDS—TYPE	1/2 [373] VAR. SPEED	1/2 [373] VAR. SPEED	1/2 [373] VAR. SPEED	1 [746] VAR. SPEED	1 [746] VAR. SPEED	1 [746] VAR. SPEED	1 [746] VAR. SPEED
MOTOR FULL LOAD AMPS	8.7	8.7	8.7	12	12	12	12
MINIMUM EXT. STATIC PRESSURE (IN. W.C.) [kPa]	.10 [0.25]	.12 [.029]	.12 [.029]	.12 [.029]	.15 [.037]	.20 [.049]	.20 [.049]
MAXIMUM EXT. STATIC PRESSURE (IN. W.C.) [kPa]	.80 [0.2]	.80 [0.2]	.80 [0.2]	.80 [0.2]	.80 [0.2]	.80 [0.2]	.80 [0.2]
LOW HEATING CFM @ .2" [.049 kPa] W.C. E.S.P. [L/s]	850	725	765	1180	1275	1400	1250
HIGH HEATING CFM @ .2" [.049 kPa] W.C. E.S.P. [L/s]	780	900	1080	1180	1450	1604	1450
HIGH COOLING CFM @ .8" [.124 kPa] W.C. E.S.P. [L/s]	A = 1200	A = 1200	A = 1200	A = 1600	A = 2000	A = 2000	A = 2000
	B = 1000	B = 1000	B = 1000	B = 1400	B = 1600	B = 1600	B = 1600
	C = 800	C = 800	C = 800	C = 1200	C = 1400	C = 1400	C = 1400
	D = 600	D = 600	D = 600	D = 1000	D = 1200	D = 1200	D = 1200
LOW COOLING CFM @ .8" [.124 kPa] W.C. E.S.P. [L/s]	A = 900	A = 900	A = 900	A = 1200	A = 1500	A = 1500	A = 1500
	B = 750	B = 750	B = 750	B = 1050	B = 1200	B = 1200	B = 1200
	C = 600	C = 600	C = 600	C = 900	C = 1050	C = 1050	C = 1050
	D = 450	D = 450	D = 450	D = 750	D = 900	D = 900	D = 900
TEMPERATURE RISE-HIGH FIRE RANGE IN DEGREES °F [°C]	30-60 [16.7-33.3]	40-70 [22.2-38.9]	40-70 [22.2-38.9]	35-65 [19.4-36.1]	35-65 [19.4-36.1]	40-70 [22.2-38.9]	50-80 [27.8-4.4]
TEMPERATURE RISE-LOW FIRE RANGE IN DEGREES °F [°C]	15-45 [8.3-25]	35-65 [19.4-36.1]	35-65 [19.4-36.1]	20-50 [11.1-27.8]	25-55 [13.9-30.6]	30-60 [16.7-33.3]	40-70 [22.2 - 38.9]
MAX. OUTLET AIR TEMPERATURE	160	170	180	170	165	180	180
RETURN AIR CABINETS (OPT.) RXGR-FILTER SIZE [mm]	C17B (2) 12" x 16" [305 x 406]	C17B (2) 12" x 16" [305 x 406]	C17B (2) 12" x 16" [305 x 406]	C21B (2) 12" x 20" [305 x 508]	C21B (2) 12" x 20" [305 x 508]	C21B (2) 12" x 20" [305 x 508]	C24B (2) 14" x 16" [609 x 406]
STANDARD, HIGH VELOCITY PERMANENT FILTER (IN.)	15 <sup>3</sup> / <sub>4</sub> x 25 x 1	15 <sup>3</sup> / <sub>4</sub> x 25 x 1	15 <sup>3</sup> / <sub>4</sub> x 25 x 1	15 <sup>3</sup> / <sub>4</sub> x 25 x 1	19 <sup>1</sup> / <sub>4</sub> x 25 x 1	19 <sup>1</sup> / <sub>4</sub> x 25 x 1	22 <sup>3</sup> / <sub>4</sub> x 25 x 1
APPROX. SHIPPING WEIGHT (LBS.) [kg]	117 [53.2]	123 [56.0]	128 [58.2]	139 [63.2]	148 [67.3]	150 [68.2]	159 [72.3]
AFUE ③	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	93.3%

NOTES: All models are 115V, 60HZ, 1 phase. Gas connection size for all models is 1/2" [13 mm] N.P.T.

① See Conversion Kit Index Form for high altitude derate.

② Canadian installations only.

③ In accordance with D.O.E. test procedures.

\*E=Standard

\*N=NOx Models

WARNING: Some heating airflow values may be higher than those required for cooling. Be sure to size duct systems for highest possible airflow value.

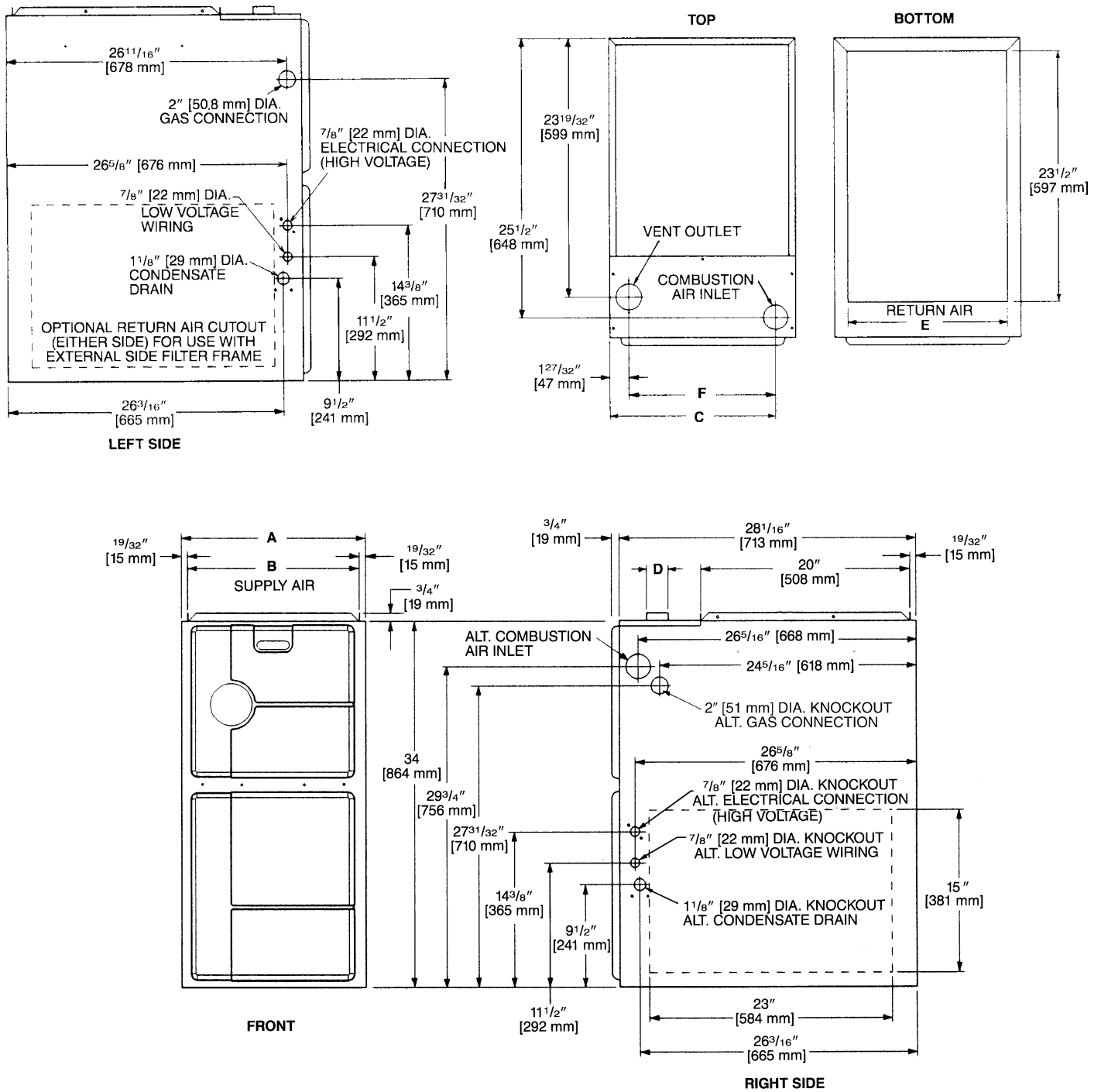
[ ] Designates Metric Conversions

# MODEL IDENTIFICATION

<u>R</u>	<u>G</u>	<u>R</u>	<u>M</u>	—	<u>07E*</u>	<u>Y</u>	<u>B</u>	<u>G</u>	<u>S</u>	<u>278</u>
Ruud	Gas Furnace	Upflow Condensing Gas Furnace	Design Series		Heating Input Designation	Blower Size	Variations	Heat/Cool Designation	Fuel Code	Option Code for High Altitude
					Electric Ignition	Input BTU/HR	<b>M</b> = 11 x 7 [279 x 178 mm] <b>R</b> = 11 x 10 [279 x 254 mm] <b>Z</b> = 12 x 11 [305 x 279 mm] <b>Y</b> = 12 x 7 [305 x 178 mm]	<b>A</b> = Std. <b>B</b> = Wide <b>E</b> = 1100-1300 CFM [519-613.5 L/s] <b>G</b> = 1500-1700 CFM [707.9-802.3 L/s] <b>J</b> = 1900-2100 CFM [896.7-991.1 L/s]	<b>S</b> = U.S. and Canadian	
					04* 45,000 [13.19 kW] 06* 60,000 [17.58 kW] 07* 75,000 [22 kW] 09* 90,000 [26.38 kW] 10* 105,000 [30.77 kW] 12* 120,000 [35.17 kW]			Available Models:		
					NOTES: *E = Standard *N = NO <sub>x</sub> Models			RGRM-04EMAES RGRM-04NMAES RGRM-04EMAES278 RGRM-06EMAES RGRM-06NMAES RGRM-06EMAES278	RGRM-07EMAES RGRM-07NMAES RGRM-07EYBGS RGRM-07NYBGS RGRM-09EZAJS RGRM-09NZAJS	RGRM-09EZAJS278 RGRM-10EZAJS RGRM-10NZAJS RGRM-12ERAJS RGRM-12NRAJS RGRM-12ERAJS78

[ ] Designates Metric Conversions

# UPFLOW MODELS



MODEL RGRM-	A	B	C	D	E	F	LEFT SIDE	MINIMUM CLEARANCE (IN.) [mm]				
								RIGHT SIDE	BACK	TOP	FRONT	VENT
04*M	17.5 [445]	16 <sup>11/32</sup> [415]	15 <sup>5/8</sup> [397]	2 [51]	15 [422]	13 <sup>25/32</sup> [352]	0	0	0	1 [25]	2 [51]	0
06*M	17.5 [445]	16 <sup>11/32</sup> [415]	15 <sup>5/8</sup> [397]	2 [51]	15 [422]	13 <sup>25/32</sup> [352]	0	0	0	1 [25]	2 [51]	0
07*M	17.5 [445]	16 <sup>11/32</sup> [415]	15 <sup>5/8</sup> [397]	2 [51]	15 [422]	13 <sup>25/32</sup> [352]	0	0	0	1 [25]	2 [51]	0
07*Y	21 [533]	19 <sup>27/32</sup> [504]	19 <sup>1/8</sup> [487]	2 [51]	18 <sup>1/2</sup> [511]	17 <sup>9/32</sup> [441]	0	0	0	1 [25]	2 [51]	0
09*Z	21 [533]	19 <sup>27/32</sup> [504]	19 <sup>1/8</sup> [487]	2 [51]	18 <sup>1/2</sup> [511]	17 <sup>9/32</sup> [441]	0	0	0	1 [25]	2 [51]	0
10*Z	21 [533]	19 <sup>27/32</sup> [504]	19 <sup>1/8</sup> [487]	2 [51]	18 <sup>1/2</sup> [511]	17 <sup>9/32</sup> [441]	0	0	0	1 [25]	2 [51]	0
12*R	24.5 [622]	23 <sup>11/32</sup> [593]	22 <sup>5/8</sup> [575]	2 [51]	22 [600]	20 <sup>25/32</sup> [530]	0	0	0	1 [25]	2 [51]	0

\*E=Standard

\*N=NO<sub>x</sub>

# BLOWER PERFORMANCE DATA—RGRM MODELS

MODEL RGRM-	BLOWER SIZE (D x W) IN. [mm]	ECM MOTOR H.P. [W]	BLOWER SPEED	CFM [L/s] AIR DELIVERY EXTERNAL STATIC PRESSURE INCHES WATER COLUMN [kPa]
				0.1 [.02] – 0.8 [.20]
RGRM-04*M	11 x 7 [279 x 178]	1/2 [373]	HIGH MED-HI MED LOW	1200 [566] 1000 [472] 800 [378] 600 [283]
RGRM-06*M	11 x 7 [279 x 178]	1/2 [373]	HIGH MED-HI MED LOW	1200 [566] 1000 [472] 800 [378] 600 [283]
RGRM-07*M	11 x 7 [279 x 178]	1/2 [373]	HIGH MED-HI MED LOW	1200 [566] 1000 [472] 800 [378] 600 [283]
RGRM-07*Y	12 x 7 [305 x 279]	1 [746]	HIGH MED-HI MED LOW	1600 [755] 1400 [661] 1200 [566] 1000 [472]
RGRM-09*Z	12 x 11 [305 x 279]	1 [746]	HIGH MED-HI MED LOW	2000 [944] 1600 [755] 1400 [661] 1200 [566]
RGRM-10*Z	12 x 11 [305 x 279]	1 [746]	HIGH MED-HI MED LOW	2000 [944] 1600 [755] 1400 [661] 1200 [566]
RGRM-12*R	11x 10 [279 x 254]	1 [746]	HIGH MED-HI MED LOW	2000 [944] 1600 [755] 1400 [661] 1200 [566]

\*E=Standard

\*N=NO<sub>x</sub> Models

NOTE: CFM values represent furnace-only airflow ratings.

[ ] 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 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.

Primary and Secondary Heat Exchanger.....Limited Lifetime  
 Conditional Parts Warranty  
 (Registration Required).....Ten (10) Years  
 Conditional Unit Replacement Warranty  
 (Registration Required).....Ten (10) Years

# ACCESSORIES—UPFLOW

## VENT TERMINATION KITS CONCENTRIC: HORIZONTAL/ VERTICAL =

**RXGY-E03A** (US & Canadian Installations)

**HORIZONTAL TWO PIPE:** RXGY-D02, RXGY-D03, RXGY-D04  
(US Installations)

**RXGY-D02A, RXGY-D03A, RXGY-D04A** (Canadian Installations)

**RXGY-G02** (US Only)

**CONDENSATE PUMP KIT:** RXGY-B01

**NEUTRALIZER KIT:** RXGY-A01

**FOSSIL FUEL KIT:** RXPF-F01, RXPF-F02 (TVA)

**RETURN AIR PLENUM:** RXGR-C17B, RXGR-C21B, RXGR-C24B

## PLENUM DATA FOR “A” COILS

Plenum adapters are required in some instances for use on upflow applications when plenum and furnace size do not match.

FURNACE WIDTH IN. [mm]	PLENUM WIDTH IN. [mm]	PLENUM ADAPTER UPFLOW	COIL PLENUM
14 [356]	16 <sup>1</sup> / <sub>4</sub> [413]	RXAA-C171	RXAL-B16BU
14 [356]	20 <sup>1</sup> / <sub>4</sub> [514]	RXAA-C172	RXAL-B20BU
17 <sup>1</sup> / <sub>2</sub> [445]	16 <sup>1</sup> / <sub>4</sub> [413]	RXAA-C185	RXAL-B16BU
17 <sup>1</sup> / <sub>2</sub> [445]	20 <sup>1</sup> / <sub>4</sub> [514]	RXAA-C173	RXAL-B20BU
17 <sup>1</sup> / <sub>2</sub> [445]	21 <sup>5</sup> / <sub>8</sub> [549]	RXAA-C187	RXAL-B21BU
17 <sup>1</sup> / <sub>2</sub> [445]	25 <sup>1</sup> / <sub>4</sub> [641]	RXAA-C174	RXAL-B25BU
21 [533]	25 <sup>1</sup> / <sub>4</sub> [641]	RXAA-C175	RXAL-B25BU
21 [533]	22 <sup>1</sup> / <sub>4</sub> [565]	RXAA-C176	RXAL-B22BU
21 [533]	21 <sup>5</sup> / <sub>8</sub> [549]	RXAA-C188	RXAL-B21BU
24 <sup>1</sup> / <sub>2</sub> [622]	25 <sup>1</sup> / <sub>4</sub> [641]	RXAA-C177	RXAL-B25BU
24 <sup>1</sup> / <sub>2</sub> [622]	21 <sup>5</sup> / <sub>8</sub> [549]	RXAA-C187	RXAL-B21BU

**Note:** See Form Number C22-206 for MultiFlex® coil data.

## LP CONVERSION KITS:

U.S./Canadian RXGJ-FP19 or RXGJ-FP21

**EXTERNAL BOTTOM FILTER RACK:** RXGF-CB

**EXTERNAL SIDE FILTER RACK:** RXGF-CA

FILTER RACK FILTER SIZES* INCHES [mm]		
MODEL RGRM-	RXGF-CB (BOTTOM)	RXGF-CA (SIDE)
04	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]
06	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]
07EM 07NM	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]
07EY 07NY	19 <sup>1</sup> / <sub>4</sub> x 25 [489 x 635]	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]
09	19 <sup>1</sup> / <sub>4</sub> x 25 [489 x 635]	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]
10	19 <sup>1</sup> / <sub>4</sub> x 25 [489 x 635]	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]
12	22 <sup>3</sup> / <sub>4</sub> x 25 [578 x 635]	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]

\*Filter racks are shipped without filters.

Filters shipped with furnace may be used or a suitable 1" [25.4 mm] filter.

## FOR HIGH ALTITUDES: HIGH ALTITUDE KIT:

INPUT BTU/HR [kW]	HIGH ALTITUDE KIT NO.
RGRM-04*M	RXGY-F18
RGRM-06*M	RXGY-F18
RGRM-07*M	Not Required
RGRM-07*Y	Not Required
RGRM-09*Z	RXGY-F20
RGRM-10*Z	Not Required
RGRM-12*R	RXGY-F21

Option – 278 furnaces are shipped with #51 DMS orifices installed. This is one drill size smaller than standard furnaces to account for expected average elevations and heating values typically seen in these areas.

**CAUTION:** Always follow National Fuel Gas Code (NFGC) guidelines when converting for high altitudes.

For all installations above 2000 ft. (including all option – 278 models), the burner orifice size needs to be recalculated and verified. A burner orifice change may still be required. See Installation Instructions for more information.

**NOTE:** For Canadian installations only, an optional derate (manifold gas pressure reduction) method may be used to adjust the furnace for altitude. See Installation Instructions for more information. This optional method may **NOT** be used for U.S. installations.

(U.S. Models—Kit packaged with furnace.  
Requires field installation).

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.

**Ruud Heating,  
Cooling and  
Water Heating**

P.O. Box 17010, Fort Smith, AR 72917



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