

RGRS/RGRT- SERIES Models with Input Rates from 45,000 to 120,000 BTU/HR [13.19 to 35.17 kW]

(All Models 90% A.F.U.E.⁺ or Above)



90 HIGH EFFICIENCY UPFLOW GAS FURNACES

The Ruud Value Series 90 High Efficiency line of upflow gas furnaces are designed for utility rooms, closets, or alcoves. Because of the low-profile 34 inch height, this model can be used vertically to satisfy most applications that traditionally call for a horizontal furnace.

The design is certified by CSA.

Features

- 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 on upflow models.
- Integrated control board manages all operational functions and provides accessory hookups for an electronic air cleaner.
- A slow-opening gas valve and a specially designed inducer system make it one of the quietest furnaces on the market today.
- Pre-paint galvanized steel cabinet.
- Optional indoor or outdoor combustion air. In addition, combustion air may be piped to either the top or right side of the cabinet on all upflow models. A special molded fitting is provided to ease installation.
- Control board diagnostics.

A variety of cooling coils and plenums designed to use with the Ruud Value Series 90 gas furnaces are available as optional accessories for air conditioning models.

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





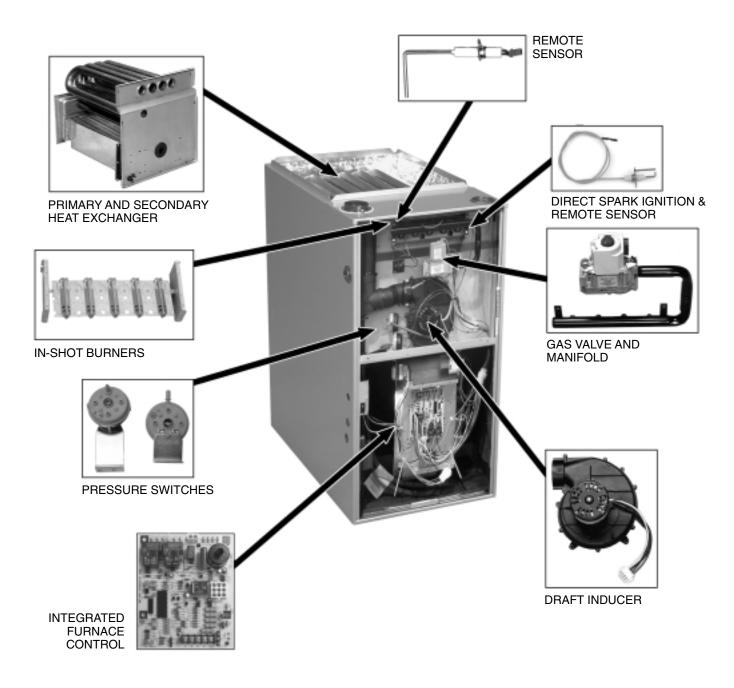












STANDARD EQUIPMENT

Completely assembled and wired; heat exchanger; primary: aluminized 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; self-test diagnostics; flame sense current diagnostics; electronic air cleaner connections; pressure regulator for natural and L.P. (propane) gases; transformer; direct drive, multi-speed blower motor. (Please note: a thermostat is not included as standard equipment.)

OPTIONAL EQUIPMENT

(See Accessory Page)

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.



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 RGRS/RGRT- SERIES | RGRS-04EMAES | RGRS-06EMAES | RGRT-07EMAES | RGRT-07EYBGS | RGRS-09EZAGS | RGRS-09EZAJS | RGRS-10EZAJS | RGRS-12ERAJS |
|------------------------------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Input-BTU/Hr [kW] ① | 45,000 [13.19] | 60,000 [17.58] | 75,000 [21.98] | 75,000 [21.98] | 90,000 [26.37] | 90,000 [26.37] | 105,000 [30.77] | 120,000 [35.17] |
| Heating Capacity BTU/Hr [kW] | 42,000 [12.31] | 56,000 [16.41] | 70,000 [20.51] | 70,000 [20.51] | 84,000 [24.61] | 84,000 [24.61] | 97,000 [28.43] | 113,000 [33.12] |
| High Altitude Input [kW] ② | 40,500 [11.87] | 54,000 [15.83] | 67,500 [19.78] | 67,500 [19.78] | 81,000 [23.73] | 81,000 [23.73] | 94,500 [27.70] | 108,000 [31.65] |
| High Altitude Output Capacity [kW] ② | 37,800 [11.07] | 50,400 [14.77] | 63,000 [18.46] | 63,000 [18.46] | 76,000 [22.27] | 76,000 [22.27] | 87,500 [25.64] | 100,000 [29.31] |
| 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] | 12 x 11 [305 x 279] | 11 x 10 [279 x 254] |
| Motor H.P. [W] Speeds-Type | 1/2 [373] 4-PSC | 1/2 [373] 3-PSC | 1/2 [373] 3-PSC | 3/4 [559] 3-PSC | 1/2 [373] 3-PSC | 3/4 [559] 3-PSC | 3/4 [559] 3-PSC | 3/4 [559] 3-PSC |
| Motor Full Load Amps | 6.8 | 6.8 | 6.8 | 9.5 | 8.0 | 9.5 | 9.5 | 9.5 |
| Heating Speed | Med-Low | Low | Med | Low | Med | Low | Low | Low |
| Cooling Speed | High |
| Heat Ext. Static Pressure (In. W.C.) [kPa] | .10 [.025] | .12 [.029] | .12 [.029] | .12 [.029] | .15 [.037] | .15 [.037] | .20 [.049] | .20 [.049] |
| Rated Ext. Static Pressure (In. W.C.) [kPa] | .50 [.12] | .50 [.12] | .50 [.12] | .50 [.12] | .50 [.12] | .50 [.12] | .50 [.12] | .50 [.12] |
| Heating C.F.M. @ .2" [.049 kPa] W.C. E.S.P. [L/s] | 885 [417] | 845 [398] | 1050 [495] | 1275 [600] | 1465 [691] | 1465 [691] | 1445 [682] | 1580 [745] |
| Cooling C.F.M. @ .5" [.124 kPa] W.C. E.S.P. [L/s] | 1195 [564] | 1100 [519] | 1110 [524] | 1540 [725] | 1580 [746] | 1910 [901] | 1810 [854] | 1900 [897] |
| Temperature Rise Range °F [°C] | 30-60 [16.7-33.3] | 40-70 [22.2-38.9] | 45-75 [25-41.7] | 40-70 [22.2-38.9] | 35-65 [19.4-36.1] | 35-65 [19.4-36.1] | 50-80 [27.8-44.4] | 50-80 [27.8-44.4] |
| 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 16" [305 x 406] | C21B (2) 12" x 16" [305 x 406] | C21B (2) 12" x 16" [305 x 406] | C24B (2) 24" x 16" [609 x 406] |
| Approx. Shipping Weight (Lbs.) [kg] | 111 [50.3] | 117 [53.1] | 123 [55.8] | 123 [55.8] | 148 [67.1] | 148 [67.1] | 152 [68.9] | 160 [72.6] |
| AFUE 3 | 93.5% | 92.5% | 92.8% | 92.0% | 93.5% | 93.5% | 92.0% | 93.5% |
| California Seasonal Efficiency ③ | 84.68% | 86.44% | 87.16% | 85.16% | 85.96% | 85.96% | 86.93% | 87.57% |

NOTES: All models are 115V, 60HZ, 1Ø. Gas connection size for all models is 1/2" [13 mm] N.P.T. ① See Conversion Kit Index Form for high altitude derate.

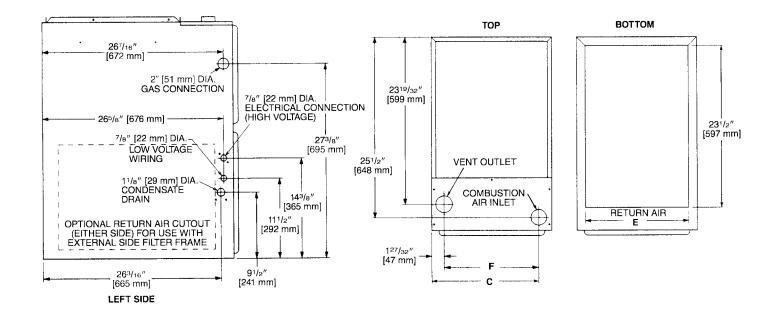
② Canadian installations only.③ In accordance with D.O.E. test procedures.

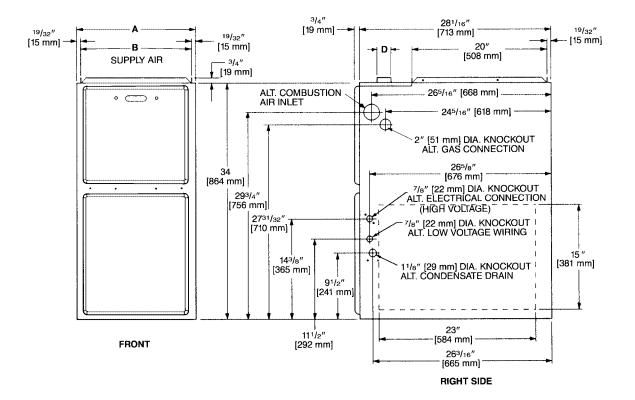
MODEL IDENTIFICATION

| <u>R</u> | <u>G</u> | <u>R</u> | <u>S</u> | — <u>(</u> | 04E | Μ | <u>A</u> | E | <u>S</u> |
|------------------|----------------|---------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| R U U D | Gas Furnace | R = Upflow Condensing | Design Series S = 3rd Design Series T = 4th Design Series | Heating Inp Electric Ignition 04E 06E 07E 09E 10E 12E | but Designation <u>Input BTU/HR [kW]</u> 45,000 [13.1] 60,000 [17.6] 75,000 [21.9] 90,000 [26.4] 105,000 [30.7] 120,000 [35.2] | Blower Designation [mm] $M = 11 \times 7$ $[279 \times 178]$ $R = 11 \times 10$ $[279 \times 254]$ $Y = 12 \times 7$ $[305 \times 178]$ $Z = 12 \times 11$ $[305 \times 279]$ | Variations A = Std. B = Wide Cabinet | Heating & Cooling Designation (Nominal) E = 1100-1300(3R) G = 1500-1700(4R) J = 1900-2100(5R) | Fuel Designation S = Natural Gas - CSA - United States & Canada (North American) |

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UPFLOW MODELS





| MODEL | | | | | | | IEET | - LEFT MINIMUM CLEARANCE (IN.) [mm] | | | | | m] | SHIP |
|------------|--------------------------|----------------------------|--------------------------|--------|--------------------------|----------------------------|------|-------------------------------------|------|--------|--------|------|---------------|------|
| RGRS/RGRT- | A | В | C | D | E | F | SIDE | RIGHT SIDE | BACK | ТОР | FRONT | VENT | WGTS. [kg] | |
| 04 | 17 ¹ /2 [445] | 16 ¹¹ /32 [415] | 15 ⁵ /8 [397] | 2 [51] | 15 [422] | 13 ²⁵ /32 [352] | 0 | 0 | 0 | 1 [25] | 2 [51] | 0 | 111 [50] | |
| 06 | 17 ¹ /2 [445] | 16 ¹¹ /32 [415] | 15 ⁵ /8 [397] | 2 [51] | 15 [422] | 13 ²⁵ /32 [352] | 0 | 0 | 0 | 1 [25] | 2 [51] | 0 | 117 [53] | |
| 07EM | 17 ¹ /2 [445] | 16 ¹¹ /32 [415] | 155/8 [397] | 2 [51] | 15 [422] | 13 ²⁵ /32 [352] | 0 | 0 | 0 | 1 [25] | 2 [51] | 0 | 123 [56] | |
| 07EY | 21 [533] | 19 ²⁷ /32 [504] | 191/8 [487] | 2 [51] | 18 ¹ /2 [511] | 179/32 [441] | 0 | 0 | 0 | 1 [25] | 2 [51] | 0 | 123 [56] | |
| 09 | 21 [533] | 19 ²⁷ /32 [504] | 191/8 [487] | 2 [51] | 18 ¹ /2 [511] | 179/32 [441] | 0 | 0 | 0 | 1 [25] | 2 [51] | 0 | 148 [67] | |
| 10 | 21 [533] | 19 ²⁷ /32 [504] | 191/8 [487] | 2 [51] | 18 ¹ /2 [511] | 179/32 [441] | 0 | 0 | 0 | 1 [25] | 2 [51] | 0 | 152 [69] | |
| 12 | 241/2 [622] | 2311/32 [593] | 22 ⁵ /8 [575] | 2 [51] | 22 [600] | 20 ²⁵ /32 [530] | 0 | 0 | 0 | 1 [25] | 2 [51] | 0 | 160 [73] | |

BLOWER PERFORMANCE DATA—RGRS/RGRT-MODELS

| MODEL | BLOWER SIZE | MOTOR H.P. SPEED | | CFM [L/s] AIR DELIVERY EXTERNAL STATIC PRESSURE INCHES WATER COLUMN [kPa] | | | | | | |
|--------------|------------------------|------------------------|---------------------------------|------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------|
| NOMBER | [mm] | [W] | SFLLD | 0.1 [.02] | 0.2 [.05] | 0.3 [.07] | 0.4 [.10] | 0.5 [.12] | 0.6 [.15] | 0.7 [.17] |
| RGRS-04EMAES | 11 x 7 [279 x 178] | 1/2 [373] | LOW MED-LO MED-HI HIGH | 805 [380] 920 [434] 1140 [538] 1360 [642] | 780 [368] 885 [417] 1110 [524] 1320 [623] | 760 [358] 850 [401] 1085 [512] 1280 [604] | 720 [340] 810 [382] 1045 [493] 1235 [583] | 685 [323] 775 [365] 1010 [476] 1195 [564] | 645 [304] 730 [344] 950 [448] 1140 [538] | 605 [285] 690 [325] 890 [420] 1080 [500] |
| RGRS-06EMAES | 11 x 7 [279 x 178] | 1/2 [373] | LOW MED HIGH | 880 [415] 1060 [500] 1260 [594] | 845 [398] 1025 [483] 1215 [573] | 815 [384] 990 [467] 1175 [554] | 790 [373] 960 [453] 1135 [535] | 760 [358] 925 [436] 1100 [519] | 715 [337] 880 [415] 1040 [491] | 670 [316] 835 [394] 985 [465] |
| RGRT-07EMAES | 11 x 7 [279 x 178] | 1/2 [373] | LOW MED HIGH | 880 [415] 1090 [514] 1300 [613] | 850 [401] 1050 [495] 1255 [592] | 825 [389] 1010 [477] 1210 [571] | 785 [370] 970 [458] 1160 [547] | 750 [354] 925 [436] 1110 [524] | 702 [331] 875 [413] 1055 [498] | 655 [309] 825 [389] 1005 [474] |
| RGRT-07EYBGS | 12 x 7 [305 x 178] | 3/4 [559] | LOW MED HIGH | 1290 [609] 1480 [698] 1705 [805] | 1275 [602] 1435 [677] 1665 [786] | 1280 [696] 1415 [668] 1615 [762] | 1220 [576] 1390 [656] 1570 [741] | 1195 [564] 1370 [647] 1540 [727] | 1170 [552] 1300 [614] 1475 [696] | 1140 [538] 1255 [592] 1400 [661] |
| RGRS-09EZAGS | 12 x 11 [305 x 279] | 1/2 [373] | LOW MED HIGH | 1235 [582] 1490 [703] 1720 [811] | 1210 [571] 1465 [691] 1670 [788] | 1180 [559] 1445 [679] 1620 [764] | 1150 [543] 1405 [663] 1600 [755] | 1120 [528] 1375 [649] 1580 [746] | 1075 [507] 1315 [620] 1520 [717] | 1035 [488] 1255 [592] 1460 [689] |
| RGRS-09EZAJS | 12 x 11 [305 x 279] | 3/4 [559] | LOW MED HIGH | 1490 [703] 1720 [811] 2100 [991] | 1465 [691] 1670 [788] 2050 [967] | 1445 [679] 1620 [764] 2000 [944] | 1405 [663] 1600 [755] 1955 [923] | 1375 [649] 1580 [746] 1910 [901] | 1315 [620] 1520 [717] 1825 [861] | 1255 [592] 1460 [689] 1745 [823] |
| RGRS-10EZAJS | 12 x 11 [305 x 279] | 3/4 [559] | LOW MED HIGH | 1490 [703] 1710 [807] 2010 [949] | 1445 [682] 1665 [786] 1955 [923] | 1405 [663] 1620 [764] 1900 [897] | 1375 [649] 1580 [746] 1855 [875] | 1350 [637] 1540 [727] 1810 [854] | 1295 [611] 1475 [696] 1710 [807] | 1240 [585] 1410 [665] 1610 [859] |
| RGRS-12ERAJS | 11 x 10 [279 x 245] | 3/4 [559] | LOW MED HIGH | 1610 [760] 1870 [882] 2115 [998] | 1580 [746] 1820 [860] 2050 [967] | 1555 [734] 1775 [838] 1990 [939] | 1515 [715] 1715 [809] 1945 [917] | 1475 [696] 1660 [783] 1900 [897] | 1415 [668] 1590 [750] 1795 [847] | 1355 [639] 1520 [717] 1690 [795] |

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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 ... Twenty (20) Years Conditional Parts (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)

NEUTRALIZER KIT: RXGY-A01

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

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

EXTERNAL BOTTOM FILTER RACK: RXGF-CB EXTERNAL SIDE FILTER RACK: RXGF-CA

| FILTEF | RACK FILTER SIZES* INC | HES [mm] |
|---------------------|----------------------------------------|----------------------------------------|
| MODEL RGRS/RGRT- | RXGF-CB (BOTTOM) | RXGF-CA (SIDE) |
| 04 | 15 ³ /4 x 25 [400 x 635] | 15 ³ /4 x 25 [400 x 635] |
| 06 | 15 ³ /4 x 25 [400 x 635] | 15 ³ /4 x 25 [400 x 635] |
| 07EE | 15 ³ /4 x 25 [400 x 635] | 15 ³ /4 x 25 [400 x 635] |
| 07EF | 19 ^{1/4} x 25 [489 x 635] | 15 ³ /4 x 25 [400 x 635] |
| 09 | 19 ¹ /4 x 25 [489 x 635] | 15 ³ /4 x 25 [400 x 635] |
| 10 | 19 ¹ /4 x 25 [489 x 635] | 15 ³ /4 x 25 [400 x 635] |
| 12 | 22 ³ /4 x 25 [578 x 635] | 15 ³ /4 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.

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 ¹ /4 [413] | RXAA-C171 | RXAL-B16BU |
| 14 [356] | 20 ¹ /4 [514] | RXAA-C172 | RXAL-B20BU |
| 171/2 [445] | 16 ¹ /4 [413] | RXAA-C185 | RXAL-B16BU |
| 171/2 [445] | 20 ¹ /4 [514] | RXAA-C173 | RXAL-B20BU |
| 171/2 [445] | 21 ⁵ /8 [549] | RXAA-C187 | RXAL-B21BU |
| 171/2 [445] | 25 ¹ /4 [641] | RXAA-C174 | RXAL-B25BU |
| 21 [533] | 25 ¹ /4 [641] | RXAA-C175 | RXAL-B25BU |
| 21 [533] | 22 ¹ /4 [565] | RXAA-C176 | RXAL-B22BU |
| 21 [533] | 21 ⁵ /8 [549] | RXAA-C188 | RXAL-B21BU |
| 241/2 [622] | 25 ¹ /4 [641] | RXAA-C177 | RXAL-B25BU |
| 241/2 [622] | 215/8 [549] | RXAA-C187 | RXAL-B21BU |

INTERNAL FILTER RACK FOR BOTTOM

OR SIDE RETURN: RXGF-DA*

Each order contains (1) one box of 10 filter racks supplied without filters.

*Filters available through PROSTOCK®.

RXGP-F03

TWINNING KIT—is for use with Ruud Value Series 90 Gas Furnaces for parallel operation requirements.

| WARNING: IMPORTANT NOTICE | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| A SOLID METAL BASE PLATE (SEE TABLE) MUST BE IN PLACE WHEN THE FURNACE IS INSTALLED WITH SIDE OR REAR AIR RETURN DUCTS. FAILURE TO INSTALL A BASE PLATE COULD CAUSE PRODUCTS OF COMBUSTION TO BE CIRCULATED INTO THE LIVING SPACE AND CREATE POTENTIALLY HAZARDOUS CONDITIONS. SOLID BOTTOM IS AVAILABLE FACTORY INSTALLED WITH OPTION CODE 263 . | | | | | | |
| FURNACE BASE BASE WIDTH SOLID BOTTOM BASE PLATE SIZE IN. [mm] KIT NO. PLATE NO. IN. [mm] | | | | | | |
| 17 ¹ /2 [445] 21 [533] 24 ¹ /2 [622] | RXGB-D17 RXGB-D21 RXGB-D24 | AE-61874-02 AE-61874-03 AE-61874-04 | 15 ¹ /8 x 23 ⁹ /16 [384 x 598] 18 ⁵ /8 x 23 ⁹ /16 [473 x 598] 25 ⁵ /8 x 23 ⁹ /16 [651 x 598] | | | |

FOR HIGH ALTITUDES:

*HIGH ALTITUDE KIT: RXGY-F04 (105 KBTU/H) RXGY-F05 (120 KBTU/H) RXGY-F06 (45 KBTU/H/60 KBTU/H/90 KBTU/H) RXGY-F07 (75 KBTU/H)

*For installations over 5000 ft.

OPTION CODE FOR HIGH ALTITUDE: US & Canada - 278

NOTE: High altitude kits and options do **NOT** include additional burner orifices. If a burner orifice change is necessary, they must be ordered through PROSTOCK[®]. See Installation Instructions for more information.

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.

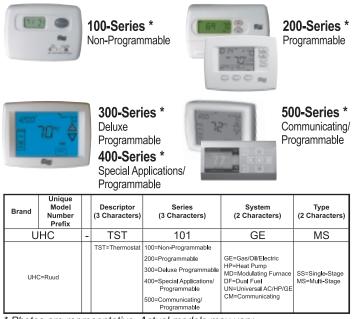
For all installations above 2000 ft. (including all option – 278 models), the burner orifice size needs to be recalculated and verified. A burner orifice change may still be required. See Installation Instructions for more information.

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.

[] Designates Metric Conversions

ACCESSORIES—UPFLOW (Cont.)

THERMOSTATS



* Photos are representative. Actual models may vary. For detailed thermostat match-up information, see specification sheet form number T22-001.

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." PRINTED IN U.S.A. 10-09 DC

FORM NO. G22-497 REV. 4 Supersedes Form No. G22-497 Rev. 3