



## Ruud Achiever® Series Downflow Gas Furnace



### R801S Downflow Series

80% A.F.U.E.†

Input Rates 50-150 kBTU



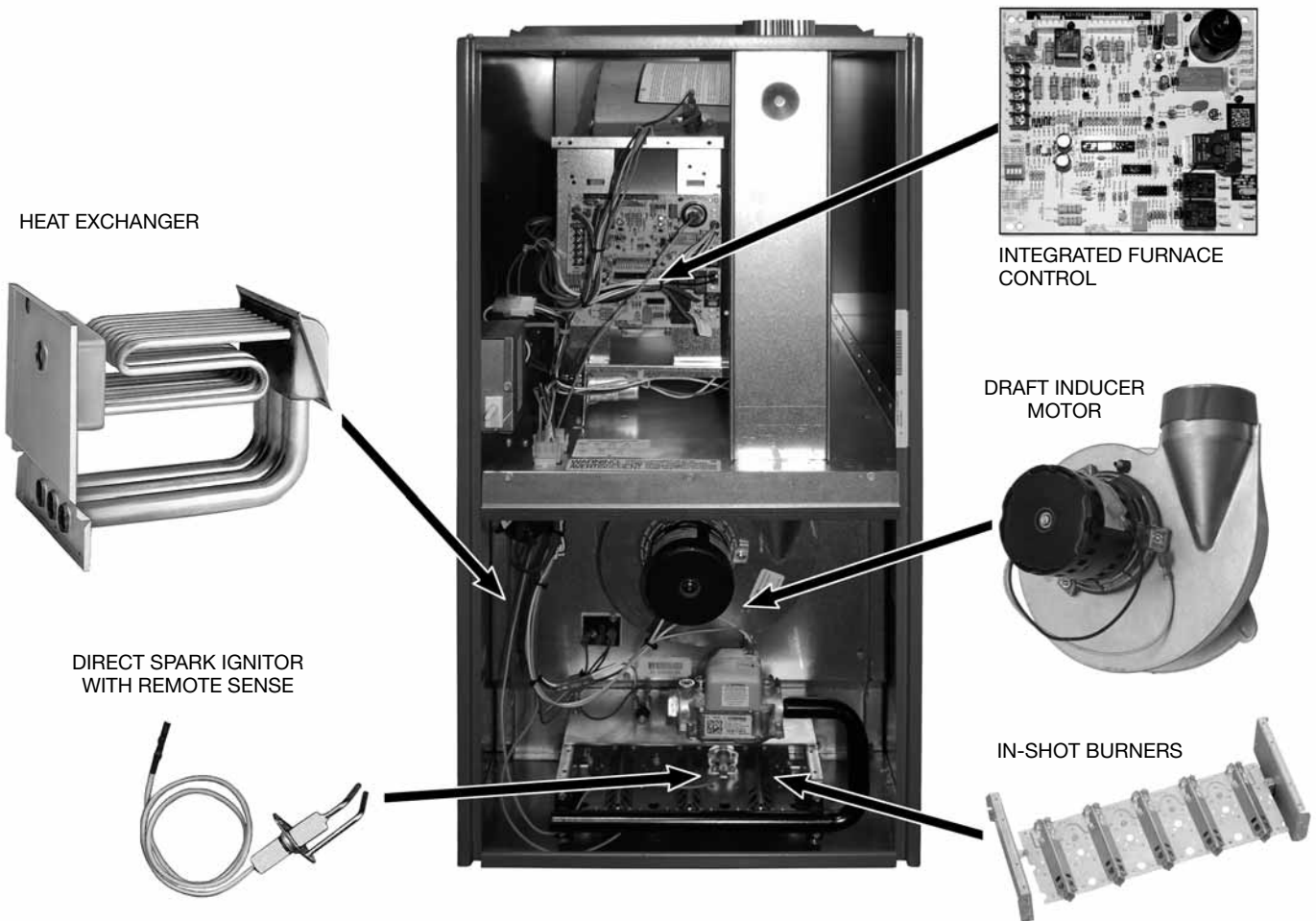
†A.F.U.E. (Annual Fuel Utilization Efficiency) calculated in accordance with Department of Energy test procedures.

- 80% residential Gas Furnace CSA certified
- PlusOne™ Diagnostics — 7 Segment LED all units
- PlusOne™ Ignition System – DSI for reliability and longevity
- Heat exchanger is removable for improved serviceability. Aluminized steel construction provides maximum corrosion resistance and thermal fatigue reliability.

- Low profile 34" cabinet ideal for space constrained installations
- Integrated Control board features dip switches for easy system set up
- QR code for quick access to product information from your smart phone or tablet

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## STANDARD EQUIPMENT

Completely assembled and wired; induced draft; pressure switch; redundant main gas control; blower compartment door safety switch; solid state time on/time off blower control; limit control; manual shut-off valve, pressure regulator for natural and L.P. (propane) gas; transformer; direct drive multi-speed blower motor. Furnaces are equipped with cooling/heating relay and transformer (40VA) ready for air conditioning applications. (Please note: a thermostat is not included as standard equipment.) Flame sensor diagnostics; on-board twinning; fused-protection (secondary), **3rd speed option for continuous fan; common heat/cool terminal.**

## OPTIONAL EQUIPMENT

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

**The complete terms of limited and other warranties are available at our sales office, or through local installer.**

All models can be converted by a qualified Ruud 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 Ruud parts distributor.

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

NOTE: For natural and L.P. (propane) gas models, direct spark ignition is 100% lockout type.

## WARNING

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

## Model Features

- 80% residential Gas Furnace CSA certified
- PlusOne™ Diagnostics — 7 Segment LED all units
- PlusOne™ Ignition System – DSI for reliability and longevity
- Heat exchanger is removable for improved serviceability. Aluminumized steel construction provides maximum corrosion resistance and thermal fatigue reliability.
- Low profile 34" cabinet ideal for space constrained installations
- Blower shelf design – serviceable in all furnace orientations
- Integrated Controls board features dip switches for easy system set up
- QR code for quick access to product information from your smart phone or tablet

## Physical Data and Specifications U.S. and Canadian Models

MODEL NUMBERS R801S (DOWNFLOW)	R801SA 050314Z*A	R801SA 075317Z*A	R801SA 075417Z*A	R801SA 100317Z*A	R801SA 100421Z*A	R801SA 100521Z*A	R801SA 125524Z*A	R801SA 150524Z*A
Input–BTU/Hr [kW] ②	50,000 [15]	75,000 [22]	75,000 [22]	100,000 [29.3]	100,000 [29.3]	100,000 [29.3]	125,000 [36.6]	150,000 [44]
Heating Capacity BTU/Hr [kW] ①	41,000 [12]	60,500 [18]	60,500 [18]	80,000 [23]	80,000 [23]	81,000 [24]	99,000 [29]	120,000 [35]
High Altitude Input [kW]	45,000 [13]	67,500 [19.8]	67,500 [19.8]	90,000 [26.4]	90,000 [26.4]	90,000 [26.4]	112,500 [33]	135,000 [39.6]
High Altitude Output Capacity [kW]	36,500 [10.7]	54,000 [15.8]	54,000 [15.8]	72,000 [21.1]	72,000 [21.1]	72,500 [21.2]	89,000 [26.1]	107,500 [31.5]
Heat Ext. Static Pressure [kPa]	.10 [.025]	.12 [.029]	.12 [.029]	.15 [.037]	.15 [.037]	.15 [.037]	.20 [.05]	.20 [.05]
Blower (D x W) [mm]	11 x 6 [279 x 152]	11 x 6 [279 x 152]	11 x 7 [279 x 178]	11 x 7 = 10*AM [279 x 178]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 10 [279 x 254]
Motor H.P. [W]–Speeds [W]– PSC Type	1/2-4-PSC [373]	1/2-3-PSC [373]	3/4-3-PSC [559]	1/2-3-PSC [373]	1/2-3-PSC [373]	3/4-3-PSC [559]	3/4-3-PSC [559]	3/4-3-PSC [559]
Motor Full Load Amps	6.8	5.8	9.5	7.1	7.9	9.5	9.5	9.5
Heating Speed	LOW	MEDIUM	LOW	MED	MED	LOW	LOW	LOW
Cooling Speed	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
Cooling CFM @ .5" [kPa] E.S.P. (Nominal) [L/s]	1200 [566]	1200 [566]	1600 [755]	1200 [566]	2000 [944]	2000 [944]	2000 [944]	2000 [944]
Rated E.S.P. (In. W.C.) [kPa]	0.5 [.12]	0.5 [.12]	0.5 [.12]	0.5 [.12]	0.5 [.12]	0.5 [.12]	0.5 [.12]	0.5 [.12]
Temperature Rise Range °F [°C]	25-55 [13.9-30.6]	30-60 [16.7-33.3]	25-55 [13.9-30.6]	45-75 [25-41.7]	40-70 [22.2-38.9]	40-70 [22.2-38.9]	40-70 [22.2-38.9]	50-80 [27.8-44.4]
Max. Outlet Air Temp. °F [°C]	155 [68.3]	165 [73.9]	155 [68.3]	190 [87.8]	190 [87.8]	170 [76.7]	180 [82.2]	170 [76.7]
Approx. Shipping Weight (Lbs.) [kg]	85 [38.6]	105 [47.6]	105 [47.6]	115 [52.2]	120 [54.4]	120 [54.4]	140 [63.5]	150 [68.0]
AFUE–Electric Ignition Models ①	80%	80%	80%	80%	80%	80%	80%	80%

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

① In accordance with D.O.E. test procedures.

② See Conversion Kit Index Form for high altitude derate in U.S. applications.

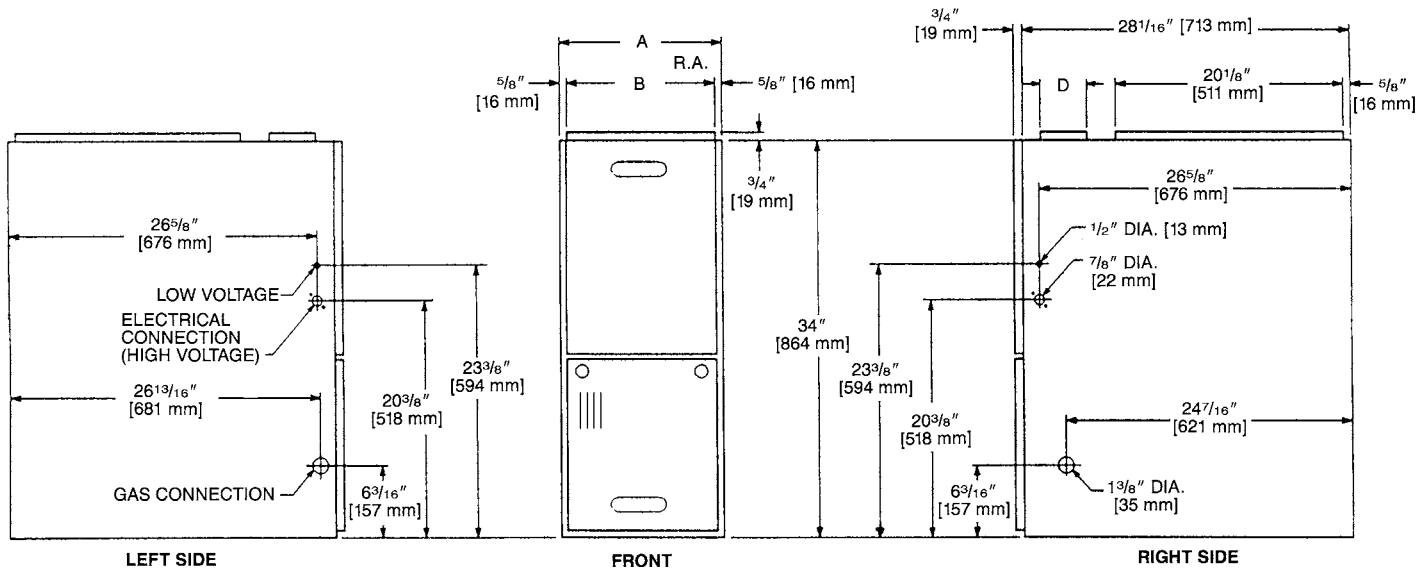
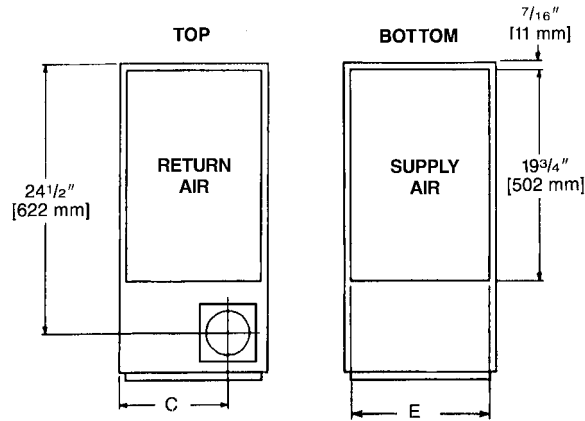
[ ] Designates Metric Conversions

## Model Number Identification—Downflow Models

<u>R</u>	<u>80</u>	<u>1</u>	<u>S</u>	<u>A</u>	<u>075</u>	<u>4</u>	<u>17</u>	<u>Z</u>	<u>S</u>	<u>A</u>
Ruud	80 = 80% AFUE	1 = Single Stage	S = Standard PSC	Design Series A = 1st Design	Input BTU/HR [kW]	3 = Up to 3 Ton	Cabinet Width	Z = Down and Zero Clearance Downflow	X = Low NO <sub>x</sub> S = Standard	Revision- Marketing (A – First Time Release)
					050 = 50,000 [15]	4 = Up to 4 Ton	14 = 14"			
					075 = 75,000 [22]	5 = Up to 5 Ton	17 = 17.5"			
					100 = 100,000 [29]		21 = 21"			
					125 = 125,000 [37]		24 = 24.5"			
					150 = 150,000 [44]					

[ ] Designates Metric Conversions

## Downflow Dimensions



## Dimensions and Clearance to Combustible Material (inches) [mm]

MODEL R801S (DOWNFLOW) SERIES	A	B	C	D	E	REDUCED CLEARANCES (IN.) [mm]						SHIP. WGTS. (LBS.) [kg]
						LEFT SIDE	RIGHT SIDE	BACK	TOP	FRONT	VENT	
050	14 [356]	12 27/32 [326]	10 3/8 [264]	①	13 1/8 [333]	0	4 ②	0	1 [25]	3 [76]	6 [152] ③	85 [38.6]
075	17 1/2 [445]	16 11/32 [415]	12 1/8 [308]	①	16 5/8 [422]	0	3 ②	0	1 [25]	3 [76]	6 [152] ③	105 [47.6]
100317	17 1/2 [445]	16 11/32 [415]	12 1/8 [308]	①	16 5/8 [422]	0	3 ②	0	1 [25]	3 [76]	6 [152] ③	115 [52.2]
100421 100521	21 [533]	19 27/32 [504]	13 7/8 [352]	①	20 1/8 [511]	0	0	0	1 [25]	3 [76]	6 [152] ③	120 [54.4]
125	24 1/2 [622]	23 11/32 [593]	15 5/8 [397]	①	23 5/8 [600]	0	0	0	1 [25]	3 [76]	6 [152] ③	140 [63.5]
150	24 1/2 [622]	23 11/32 [593]	15 5/8 [397]	①	23 5/8 [600]	0	0	0	1 [25]	3 [76]	6 [152] ③	150 [68]

NOTES: ① May require a 3" [76 mm] to 4" [102 mm] or 3" [76 mm] to 5" [127 mm] adapter.

② May be 0" [0 mm] with type B vent.

③ May be 1" [25 mm] with type B vent.

Furnaces must be vented in accordance with the National Fuel Gas Code, ANSI Z223.1 and in accordance with local codes.

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## Blower Performance Data—Downflow Models

MODEL R801S (DOWNFLOW) SERIES	BLOWER SIZE [mm]	MOTOR H.P. [W]	BLOWER SPEED	CFM [L/s] AIR DELIVERY EXTERNAL STATIC PRESSURE INCHES [kPa] WATER COLUMN						
				.1 [.02]	.2 [.05]	.3 [.07]	.4 [.10]	.5 [.12]	.6 [.15]	.7 [.17]
050	11 x 6 [279 x 152]	1/2 [373]	LOW	735 [347]	715 [337]	690 [326]	660 [311]	635 [300]	605 [286]	575 [271]
			<b>MED-LO</b>	<b>1025 [484]</b>	<b>1015 [479]</b>	<b>995 [470]</b>	<b>975 [460]</b>	<b>955 [451]</b>	<b>930 [439]</b>	<b>905 [427]</b>
			MED-HI	1185 [559]	1165 [550]	1150 [543]	1130 [533]	1100 [519]	1075 [507]	1040 [491]
075317	11 x 6 [279 x 152]	1/2 [373]	LOW	1104 [529]	1081 [510]	1050 [496]	1025 [484]	999 [471]	971 [458]	940 [444]
			<b>MED</b>	<b>1284 [606]</b>	<b>1269 [599]</b>	<b>1236 [583]</b>	<b>1206 [569]</b>	<b>1179 [556]</b>	<b>1139 [538]</b>	<b>1102 [520]</b>
			HIGH	1478 [698]	1438 [679]	1397 [659]	1362 [643]	1392 [657]	1282 [605]	1242 [586]
075417	11 x 7 [279 x 178]	1/2 [373]	LOW	1210 [571]	1205 [569]	1195 [564]	1180 [557]	1165 [550]	1155 [545]	1130 [533]
			<b>MED</b>	<b>1580 [746]</b>	<b>1560 [736]</b>	<b>1550 [732]</b>	<b>1530 [722]</b>	<b>1495 [706]</b>	<b>1465 [691]</b>	<b>1430 [675]</b>
			HIGH	1915 [904]	1880 [887]	1825 [861]	1790 [845]	1740 [821]	1675 [791]	1600 [755]
100317	11 x 7 [279 x 178]	1/2 [373]	LOW	1070 [505]	1055 [498]	1040 [491]	1010 [477]	980 [463]	945 [446]	905 [427]
			<b>MED</b>	<b>1240 [585]</b>	<b>1210 [571]</b>	<b>1190 [562]</b>	<b>1165 [550]</b>	<b>1135 [536]</b>	<b>1095 [517]</b>	<b>1055 [498]</b>
			HIGH	1420 [670]	1395 [658]	1370 [647]	1340 [632]	1305 [616]	1265 [597]	1220 [576]
100421	11 x 10 [279 x 254]	1/2 [373]	LOW	1303 [615]	1304 [615]	1280 [604]	1250 [590]	1222 [577]	1188 [557]	1160 [547]
			<b>MED</b>	<b>1697 [801]</b>	<b>1674 [790]</b>	<b>1655 [781]</b>	<b>1638 [773]</b>	<b>1621 [765]</b>	<b>1581 [746]</b>	<b>1542 [728]</b>
			HIGH	2078 [981]	2068 [976]	2037 [961]	2010 [949]	1988 [938]	1938 [915]	1898 [896]
100521	11 x 10 [279 x 254]	3/4 [559]	LOW	<b>1690 [798]</b>	<b>1670 [788]</b>	<b>1655 [781]</b>	<b>1615 [762]</b>	<b>1585 [748]</b>	<b>1565 [739]</b>	<b>1525 [720]</b>
			MED	—	2085 [984]	2055 [970]	2005 [946]	1970 [930]	1945 [918]	1880 [887]
			HIGH	—	2410 [1137]	2355 [1111]	2305 [1088]	2240 [1057]	2165 [1022]	2100 [991]
125524	11 x 10 [279 x 254]	3/4 [559]	LOW	—	<b>1690 [798]</b>	<b>1660 [783]</b>	<b>1635 [772]</b>	<b>1580 [746]</b>	<b>1535 [724]</b>	<b>1480 [698]</b>
			MED	—	2090 [986]	2035 [960]	1985 [937]	1930 [911]	1850 [873]	1785 [842]
			HIGH	—	2395 [1130]	2335 [1102]	2260 [1067]	2185 [1031]	2080 [982]	1965 [927]
150524	11 x 10 [279 x 254]	3/4 [559]	LOW	<b>1675 [791]</b>	<b>1650 [779]</b>	<b>1620 [765]</b>	<b>1570 [741]</b>	<b>1545 [729]</b>	<b>1485 [701]</b>	<b>1425 [673]</b>
			MED	2105 [993]	2075 [979]	2035 [960]	1990 [939]	1955 [923]	1900 [897]	1815 [857]
			HIGH	—	—	—	—	—	—	—

NOTES: Recommended blower speeds are in bold.

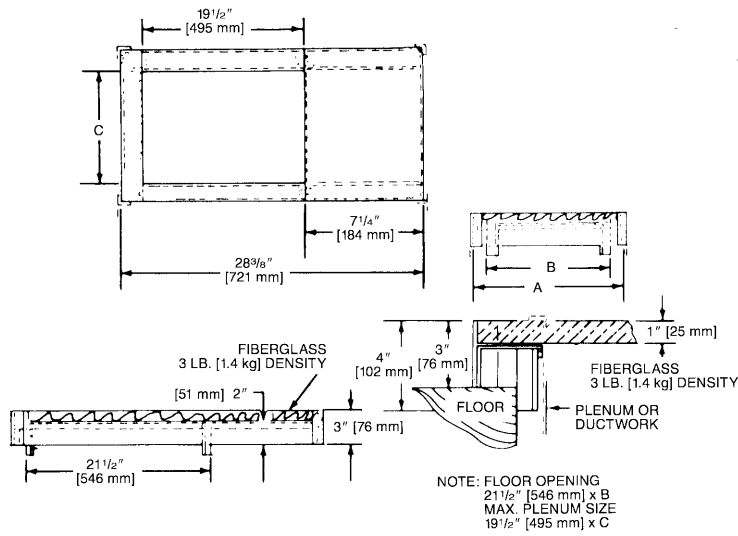
[ ] Designates Metric Conversions

## DOWNFLOW ACCESSORIES

**DOWNFLOW WARNING:** Unit design is certified for installation on non-combustible floor. A special factory supplied combustible floor sub-base is required when installing on a combustible floor. Failure to install the sub-base may result in fire, property damage and personal injury.

## COMBUSTIBLE FLOOR BASE DIMENSIONS

COMBUSTIBLE FLOOR BASE	USE WITH FURNACE SIZES	A IN. [mm]	B IN. [mm]	C IN. [mm]
RXGC-B14	801S050	14 <sup>1</sup> / <sub>2</sub> [368]	13 <sup>1</sup> / <sub>4</sub> [337]	11 <sup>1</sup> / <sub>4</sub> [286]
RXGC-B17	801S075, 801SA100317	18 [457]	16 <sup>3</sup> / <sub>4</sub> [425]	14 <sup>3</sup> / <sub>4</sub> [451]
RXGC-B21	801SA100421, 801SA100521	21 <sup>1</sup> / <sub>2</sub> [546]	20 <sup>1</sup> / <sub>4</sub> [514]	18 <sup>1</sup> / <sub>4</sub> [464]
RXGC-B24	801S125, 801S150	25 [635]	23 <sup>3</sup> / <sub>4</sub> [603]	21 <sup>3</sup> / <sub>4</sub> [552]



## GXGP-F03

**PARALLEL FURNACE KITS**—are for parallel operation requirements.

## RXGF-CC\*

**FILTER RACK**—Downflow top return mount. Requires (2) 14 x 20 filters.

**NOTE:** Filter racks are shipped without filters.

\*Filters available through PROSTOCK®.

## RXGF-DB\*

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

\*Filters available through PROSTOCK®.

## FOR HIGH ALTITUDES:

**HIGH ALTITUDE OPTION CODE:** U.S. –

None required for high altitudes.

**HIGH ALTITUDE CONVERSION KITS:** U.S. –

None required for high altitudes.

## 80+ HIGH ALTITUDE INSTRUCTIONS

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

High altitude option codes are not required for these models. However, the burner orifice size needs to be recalculated and verified at elevations above 2000 ft. See Installation Instructions for more information.

[ ] 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 and Conditional Warranties, including applicable terms and conditions, contact your local contractor or the Manufacturer for a copy of the product warranty certificate.**

Heat Exchanger .....Twenty (20) Years  
Conditional Parts (Registration Required) .....Ten (10) Years







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

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