



MODEL: S96V Multi-Position Gas Furnaces

FORM NO. GRR-540



Russell™ By Rheem S96V 96% A.F.U.E. Two-Stage Variable Speed Multi-Position Gas Furnaces

- **Models with Input Rates from 40 to 115 kBTU [11.72 to 33.71 kW]**



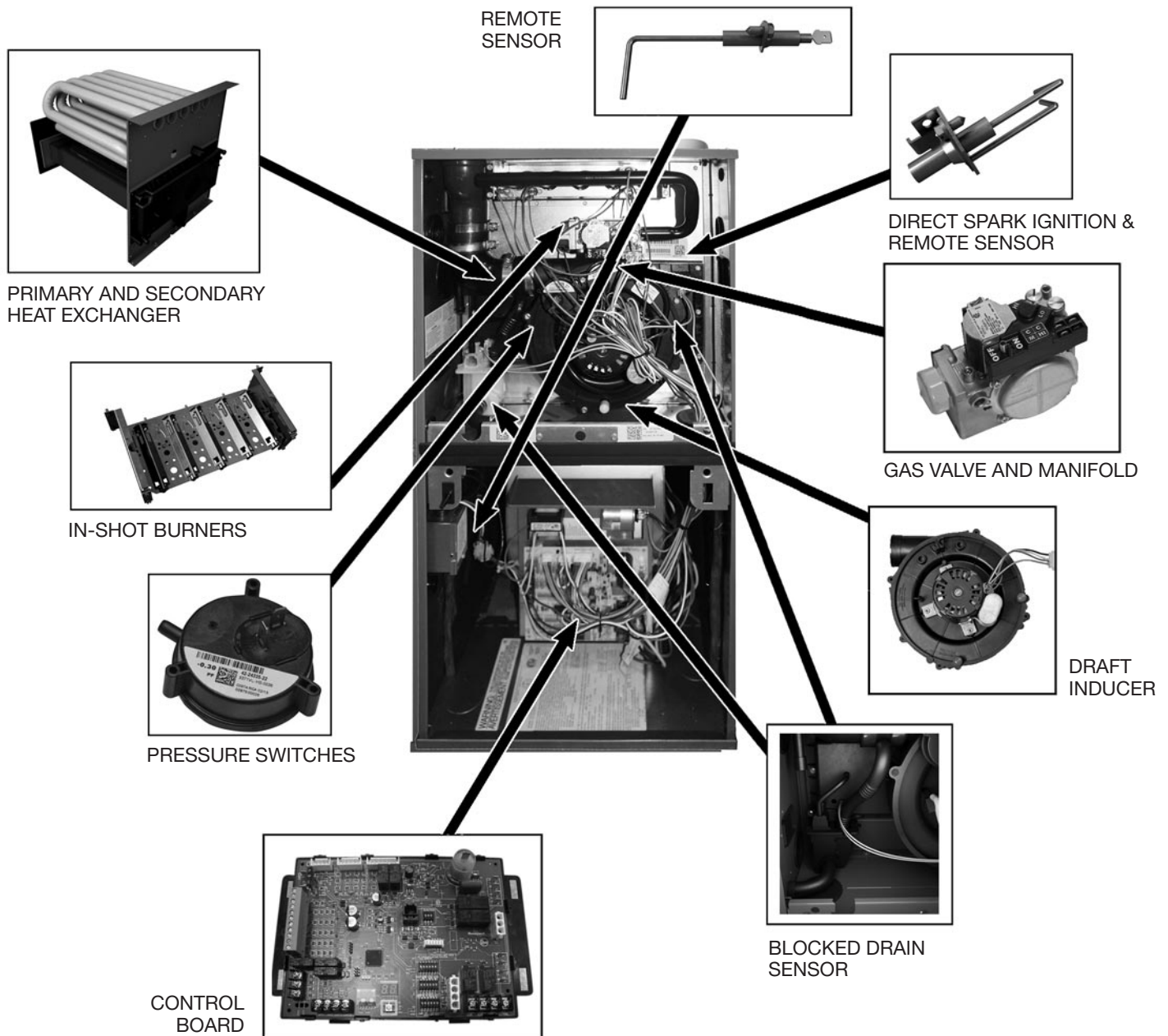
All Models
except
S96VA085

- **96% Residential Gas Furnace** CSA Certified
- **4 Way Multi-Poise** design
- **Two Stages of Operation** to save energy and maintain optimal comfort level.
- **Variable Speed Blower Motor Technology** provides ultimate humidity control, quieter sound levels, and year round energy savings.
- **7-Segment LED** all units
- **Direct Spark Ignition** for reliability and longevity
- **Water Management System** with patented Blocked Drain Sensor
- **Removable Heat Exchanger** for improved serviceability. Aluminized steel primary and stainless steel secondary construction provide maximum corrosion resistance and thermal fatigue reliability.
- **Low Profile "34 Inch" Cabinet** ideal for space constrained installations.
- **Blower Shelf Design** – serviceable in all furnace orientations
- **Pre Marked Hoses** – insures proper system drainage
- **Vent With 2" or 3" PVC**
- **Replaceable Collector Box**
- **Hemmed Edges** on cabinet and doors
- **Quarter Turn Fasteners** for tool less access
- **Integrated Control Boards** feature dip switches for easy system set up
- **Self Priming Condensate Trap**
- **Solid Bottom** included
- **Compatible With Single or Two Stage Thermostats.** For optimal performance a two stage thermostat is recommended.
- **Cabinet Air Leakage Less Than 2%** at 1 inch H₂O when tested in accordance with ASHRAE standard 193

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

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STANDARD EQUIPMENT

Completely assembled and wired; blocked drain sensor, 7 segment LED and marked hoses; heat exchanger; primary: aluminized steel, secondary: 29-4C stainless steel; 2 stage induced draft; pressure switches; redundant 2 stage 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; transformer; direct drive, multi-speed blower motor. Solid bottom. (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

Physical Data and Specifications—Upflow Models
U.S. and Canadian Models

MODEL NUMBERS	S96VA 0402317MSA	S96VA 0602317MSA	S96VA 0702317MSA	S96VA 0702521MSA	S96VA 0852521MSB	S96VA 1002521MSA	S96VA 1152524MSA
HIGH FIRE INPUT BTU/HR [kW] ①	42,000 [12.31]	56,000 [16.41]	70,000 [20.50]	70,000 [20.50]	84,000 [24.61]	98,000 [28.72]	112,000 [32.82]
LOW FIRE INPUT	29,400 [8.61]	39,200 [11.49]	49,000 [14.36]	49,000 [14.36]	58,800 [17.23]	68,600 [20.11]	78,400 [23.00]
HEATING CAPACITY BTU/HR [kW]	41,000 [12.02]	55,000 [16.12]	68,000 [19.93]	68,000 [19.93]	82,000 [24.03]	95,000 [27.84]	109,000 [31.94]
HIGH ALTITUDE OUTPUT 10% DERATE [kW] ②	36,288 [10.64]	48,384 [14.18]	60,480 [17.72]	60,480 [17.72]	72,756 [21.27]	84,672 [24.81]	96,768 [28.36]
BLOWER (D x W) [mm]	11 x 7 [279 x 178]	11 x 8 [279 x 203]	11 x 8 [279 x 203]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 11 [279 x 279]
MOTOR H.P. [W]— TYPE	1/2 [373] E.C.M.	1/2 [373] E.C.M.	1/2 [373] E.C.M.	3/4 [559] E.C.M.	3/4 [559] E.C.M.	3/4 [559] E.C.M.	3/4 [559] E.C.M.
MIN. CIRCUIT AMPACITY	8.00	7.00	9.00	12.00	12.00	12.00	12.00
MIN. OVERLOAD PROTECTION DEVICE	15.00	15.00	15.00	15.00	15.00	15.00	15.00
MAX. OVERLOAD PROTECTION DEVICE	15.00	15.00	15.00	20.00	20.00	20.00	15.00
MINIMUM EXT. STATIC PRESSURE (IN. W.C.) [kPa]	.18 [.045]	.20 [.050]	.23 [.057]	.23 [.057]	.28 [.070]	.28 [.070]	.28 [.070]
MAXIMUM EXT. STATIC PRESSURE (IN. W.C.) [kPa]	1.0 [0.249]	1.0 [0.249]	1.0 [0.249]	1.0 [0.249]	1.0 [0.249]	1.0 [0.249]	1.0 [0.249]
HEATING CFM @ MAX. W.C. E.S.P. [L/s]	1050 [496]	1025 [484]	1015 [479]	1332 [629]	1470 [694]	1710 [807]	1450 [684]
FACTORY SETTING HEATING CFM [L/s]	950 [448]	1025 [484]	1015 [479]	1121 [529]	1470 [694]	1710 [807]	1450 [684]
COOLING CFM @ .5" [.124 kPa] W.C. E.S.P. [L/s]	1050 [496]	1050 [496]	1050 [496]	1750 [826]	1750 [826]	1750 [826]	1750 [826]
TEMPERATURE RISE-HIGH FIRE RANGE IN DEGREES °F [°C]	20 - 50 [11 - 28]	30 - 60 [17 - 33]	40 - 70 [22 - 39]	30 - 60 [17 - 33]	30 - 60 [17 - 33]	40 - 70 [22 - 39]	45 - 75 [25 - 42]
TEMPERATURE RISE-LOW FIRE RANGE IN DEGREES °F [°C]	15 - 45 [8 - 25]	20 - 50 [11 - 28]	30 - 60 [17 - 33]	20 - 50 [11 - 28]	20 - 50 [11 - 28]	30 - 60 [17 - 33]	35 - 63 [19 - 36]
APPROX. SHIPPING WEIGHT (LBS.) [kg]	128 [58]	128 [58]	132 [60]	139 [63]	147.5 [67]	152 [69]	165 [75]
AFUE ③	96.00%	96.00%	96.00%	96.00%	96.00%	96.00%	96.00%

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

① Installation instructions for high altitude derate.

② Canadian installations only.

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

*S=Standard Models

NOTE: Standard model complies with California low nox requirements.

This furnace does not meet air district requirements of 14 ng/J NOx emissions limit, and thus is subject to a mitigation fee of up to \$450. This furnace is not eligible for the Clean Air Furnace Rebate Program: www.CleanAirFurnaceRebate.com.

This furnace is to be installed for propane firing only in air districts requiring 14 ng/J NOx emission limits. Operating in natural gas mode is in violation of these Rules.

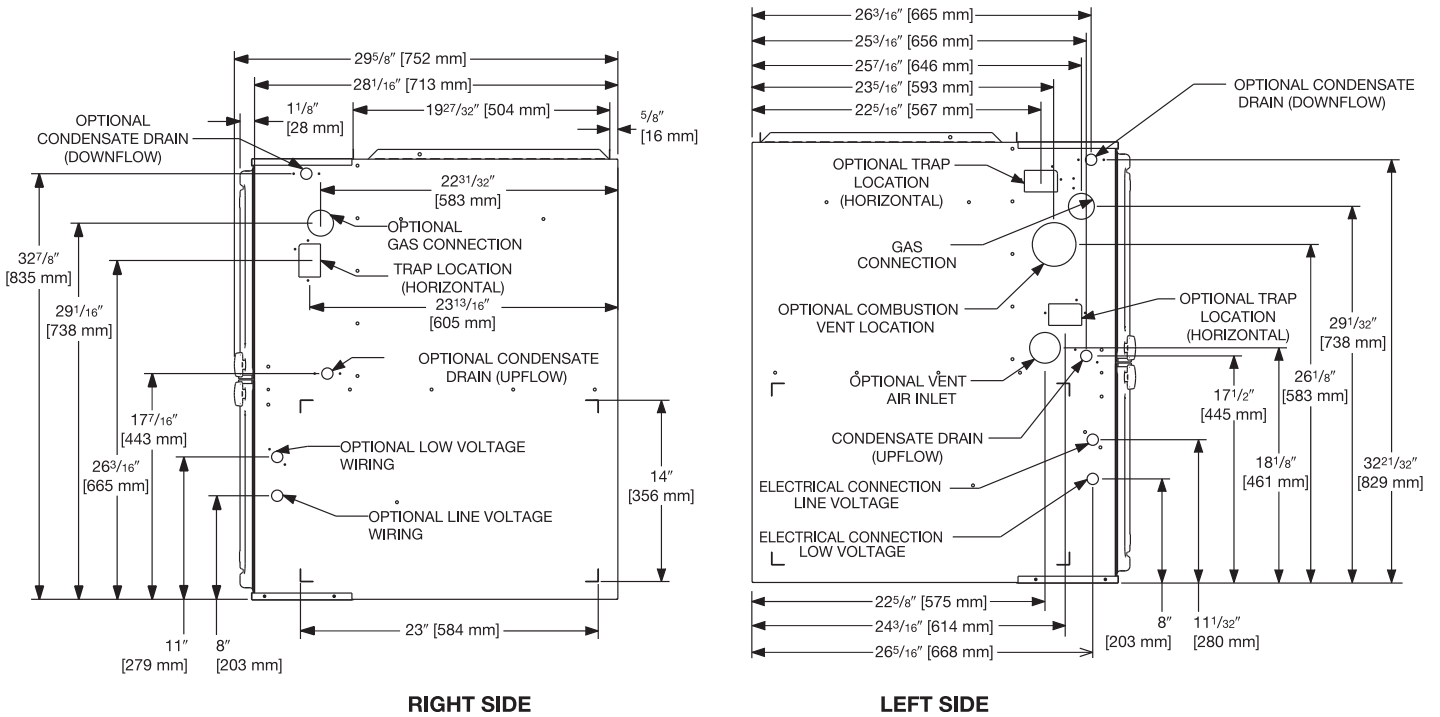
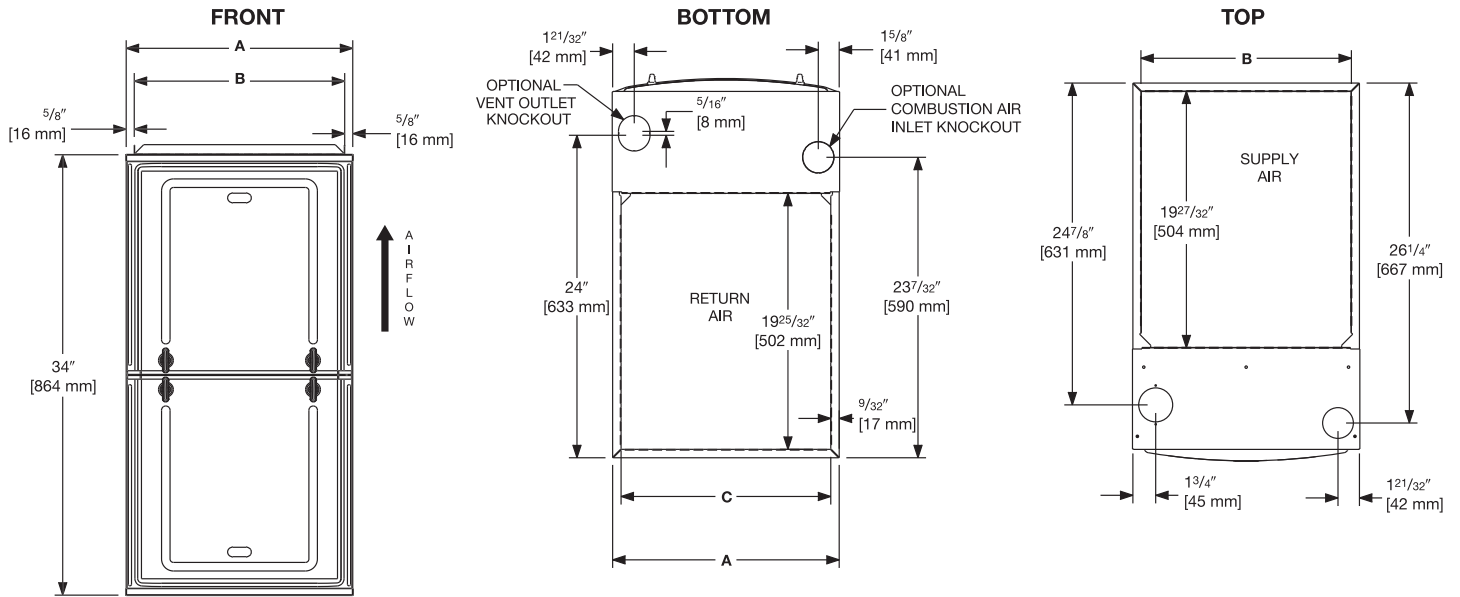
[] Designates Metric Conversions

Model Number Identification

<u>S</u>	<u>96</u>	<u>V</u>	<u>A</u>	<u>—</u>	<u>040</u>	<u>2</u>	<u>3</u>	<u>17</u>	<u>M</u>	<u>S</u>	<u>A</u>
Russell™ By Rheem	96% Efficient	Motor - ECM	Design Series A = 1st Design		Input BTU/HR	Stage - Two	Airflow 3 - Up to 3 Tons 5 - Up to 5 Tons	Cabinet Width 17 = 17.5" 21 = 21.0" 24 = 24.5"	Configuration - Multi-Position	S = Standard N = NOx	Revision - Marketing (A - First Time Release) (B - First Revision)
					040 = 42,000 [12.31 kW]						
					060 = 56,000 [16.41 kW]						
					070 = 70,000 [20.51 kW]						
					085 = 84,000 [24.62 kW]						
					100 = 98,000 [28.72 kW]						
					115 = 112,000 [32.82 kW]						

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Russell™ By Rheem | S96V Multi-Position Gas Furnaces



UNIT DIMENSIONS (CLEARANCE TO COMBUSTIBLES)

MODEL S96V	LEFT SIDE	MINIMUM CLEARANCE (IN.) [mm]					SHIP WGTs.	FLANGE DIMENSIONS		
		RIGHT SIDE	BACK	TOP	FRONT	VENT		A	B	C
040	0	0	0	1 [25]	2 [51]	0	123.5 [56]	17 1/2 [445]	16 17/64 [413]	16 13/64 [412]
060	0	0	0	1 [25]	2 [51]	0	128 [58]	17 1/2 [445]	16 17/64 [413]	16 13/64 [412]
070	0	0	0	1 [25]	2 [51]	0	132 [60]	17 1/2 [445]	16 17/64 [413]	16 13/64 [412]
085	0	0	0	1 [25]	2 [51]	0	147.5 [67]	21 [533]	19 49/64 [502]	19 45/64 [500]
100	0	0	0	1 [25]	2 [51]	0	152 [69]	21 [533]	19 49/64 [502]	19 45/64 [500]
115	0	0	0	1 [25]	2 [51]	0	165 [75]	24 1/2 [662]	23 17/64 [591]	23 13/64 [589]

*A service clearance of at least 24" is recommended in front of all furnaces
 Supply and return depicted as upflow configuration.
 Flange configuration will vary depending on installation orientation.

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MODEL NUMBER				S96VA 0402317MSA	S96VA 0602317MSA	S96VA 0702317MSA	S96VA 0702521MSA	S96VA 0852521MSB	S96VA 1002521MSB	S96VA 115524MSB
TARGET GAS HEATING AIRFLOW	HIGH HEATING CFM [L/s]	SW 15 = OFF	SW 16 = OFF	950 [448]	1025 [484]	1015 [479]	1121 [529]	1470 [694]	1710 [807]	1450 [684]
		SW 15 = ON	SW 16 = OFF	825 [389]	880 [415]	950 [448]	973 [459]	1235 [583]	1490 [703]	1300 [614]
		SW 15 = OFF	SW 16 = ON	1250 [590]	1250 [590]	1190 [562]	1332 [629]	1850 [873]	1965 [927]	1700 [802]
		SW 15 = ON	SW 16 = ON	685 [323]	780 [368]	900 [425]	813 [384]	1120 [529]	1400 [661]	1225 [578]
	LOW HEATING CFM [L/s]	SW 13 = OFF	SW 14 = OFF	790 [373]	925 [437]	900 [425]	1093 [516]	1300 [614]	1500 [708]	1250 [590]
		SW 13 = ON	SW 14 = OFF	620 [293]	750 [354]	770 [363]	910 [429]	1065 [503]	1335 [630]	1060 [500]
		SW 13 = OFF	SW 14 = ON	1000 [472]	1210 [571]	1050 [496]	1366 [645]	1775 [838]	1800 [850]	1400 [661]
		SW 13 = ON	SW 14 = ON	550 [260]	660 [311]	700 [330]	813 [384]	925 [437]	1210 [571]	960 [453]
TARGET COOLING/ HEAT-PUMP AIRFLOW	HIGH COOLING CFM [L/s]	SW 4 = OFF	SW 5 = OFF	1050 [496]	1050 [496]	1050 [496]	1750 [826]	1750 [826]	1750 [826]	1750 [826]
		SW 4 = ON	SW 5 = OFF	875 [413]	875 [413]	875 [413]	1500 [708]	1400 [661]	1400 [661]	1400 [661]
		SW 4 = OFF	SW 5 = ON	700 [330]	700 [330]	700 [330]	1300 [614]	1225 [578]	1225 [578]	1225 [578]
		SW 4 = ON	SW 5 = ON	525 [248]	525 [248]	525 [248]	1125 [531]	1050 [496]	1050 [496]	1050 [496]
	LOW COOLING CFM [L/s]	SW 4 = OFF	SW 5 = OFF	788 [372]	788 [371]	788 [371]	1313 [618]	1313 [618]	1313 [618]	1313 [618]
		SW 4 = ON	SW 5 = OFF	656 [309]	656 [309]	656 [309]	1125 [530]	1050 [495]	1050 [495]	1050 [495]
		SW 4 = OFF	SW 5 = ON	525 [247]	525 [247]	525 [247]	975 [459]	919 [433]	919 [433]	919 [433]
		SW 4 = ON	SW 5 = ON	394 [186]	394 [186]	394 [186]	844 [398]	788 [371]	788 [371]	788 [371]

*S = Standard Models

NOTE Standard model complies with California low NOx requirements.

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VENT TERMINATION KITS: =

- RXGY-E02:** Vertical/Horizontal Concentric Vent Termination Kit 2" Pipe (US Only)
- RXGY-E02A:** Vertical/Horizontal Concentric Vent Termination Kit 2" Pipe (US & Canadian)
- RXGY-E03:** Vertical/Horizontal Concentric Vent Termination Kit 3" Pipe (US Only)
- RXGY-E03A:** Vertical/Horizontal Concentric Vent Termination Kit 3" Pipe (US & Canadian)
- RXGY-G02:** Direct Vent Furnace Side Wall Vent 2" or 3" (US Only)
- RXGY-D05:** Combustion Air Drain Kit 2"
- RXGY-D06:** Combustion Air Drain Kit 3"
- NEUTRALIZER KIT:** RXGY-A01
(Replacement Cartridge 54-22120-01)
- RETURN AIR PLENUM:** RXGR-C17B
RXGR-C21B
RXGR-C24B

EXTERNAL BOTTOM FILTER (UPFLOW/HORIZONTAL) RACK:
RXGF-CB

EXTERNAL SIDE (UPFLOW) FILTER RACK: RXGF-CD

EXTERNAL (DOWNFLOW) FILTER RACK: RXGF-CC

FILTER RACK FILTER SIZES* INCHES [mm]			
MODEL	RXGF-CB (UPFLOW/ HORIZONTAL)	RXGF-CD (UPFLOW)	RXGF-CC (DOWNFLOW)
S96VA040	15 ³ / ₄ x 25 [400 x 635]	15 ³ / ₄ x 25 [400 x 635]	12 x 20 [305 x 508]
S96VA060	15 ³ / ₄ x 25 [400 x 635]	15 ³ / ₄ x 25 [400 x 635]	12 x 20 [305 x 508]
S96VA070	15 ³ / ₄ x 25 [400 x 635]	15 ³ / ₄ x 25 [400 x 635]	12 x 20 [305 x 508]
S96VA070 (wide)	19 ¹ / ₄ x 25 [489 x 635]	15 ³ / ₄ x 25 [400 x 635]	12 x 20 [305 x 508]
S96VA085	19 ¹ / ₄ x 25 [489 x 635]	15 ³ / ₄ x 25 [400 x 635]	12 x 20 [305 x 508]
S96VA100	19 ¹ / ₄ x 25 [489 x 635]	15 ³ / ₄ x 25 [400 x 635]	12 x 20 [305 x 508]
S96VA115	22 ³ / ₄ x 25 [578 x 635]	15 ³ / ₄ x 25 [400 x 635]	14 x 20 [356 x 508]

*Filter racks are shipped without filters.
Filters shipped with furnace may be used or a suitable 1" [25.4 mm] filter.

INDOOR COIL CASINGS

MODEL NUMBER
RXBC-D17A1
RXBC-D21A1
RXBC-D21B1
RXBC-D24A1

FOR HIGH ALTITUDES:

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. See installation instructions as appropriate orifice change is required.

OPTIONAL HIGH ALTITUDE HEATING AIRFLOW ADJUSTMENT KITS			
KIT NUMBER	SEA LEVEL INPUT (BTU)	MINIMUM ELEVATION KIT RECOMMENDED	MAXIMUM ELEVATION KIT RECOMMENDED
RXGY-58	42000	6000	10000
RXGY-59	56000		
RXGY-60	70000		
RXGY-61	84000		
RXGY-62	98000		
RXGY-63	112000		

L.P. CONVERSION KIT: RXGJ-FP34

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

CONDENSATE PUMP KIT: PROSTOCK & 1PCB151TUL

DOWNFLOW/HORIZONTAL CONVERSION KIT: RXGY-CK

DOWNFLOW/HORIZONTAL LEFT ZERO CLEARANCE CONVERSION KIT: RXGY-ZK

COMBUSTIBLE FLOOR BASE: RXGC-B17
RXGC-B21
RXGC-B24

[] Designates Metric Conversions

GENERAL TERMS OF LIMITED WARRANTY*

Rheem® 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.**

Parts.....Ten (10) Years
Heat ExchangerLimited Lifetime
Conditional Unit Replacement
(Registration Required)Ten (10) Years



Russell™ By Rheem

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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.

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