

TECHNICAL GUIDE

80% STANDARD PSC SINGLE STAGE MULTI-POSITION RESIDENTIAL GAS FURNACES

Low NOx MODELS

MODELS: RGF1L*P

NATURAL GAS

40 - 130 MBH INPUT



Due to continuous product improvement, specifications are subject to change without notice.

Visit us on the web at
www.upgnet.com

Additional rating information can be found at
www.ahridirectory.org

WARRANTY

20-year limited warranty on the heat exchanger.
10-year heat exchanger warranty on commercial applications.
Standard 5-year limited Parts warranty.

Extended 10-year limited parts warranty when product is registered online within 90 days of purchase for replacement or closing for new home construction.

DESCRIPTION

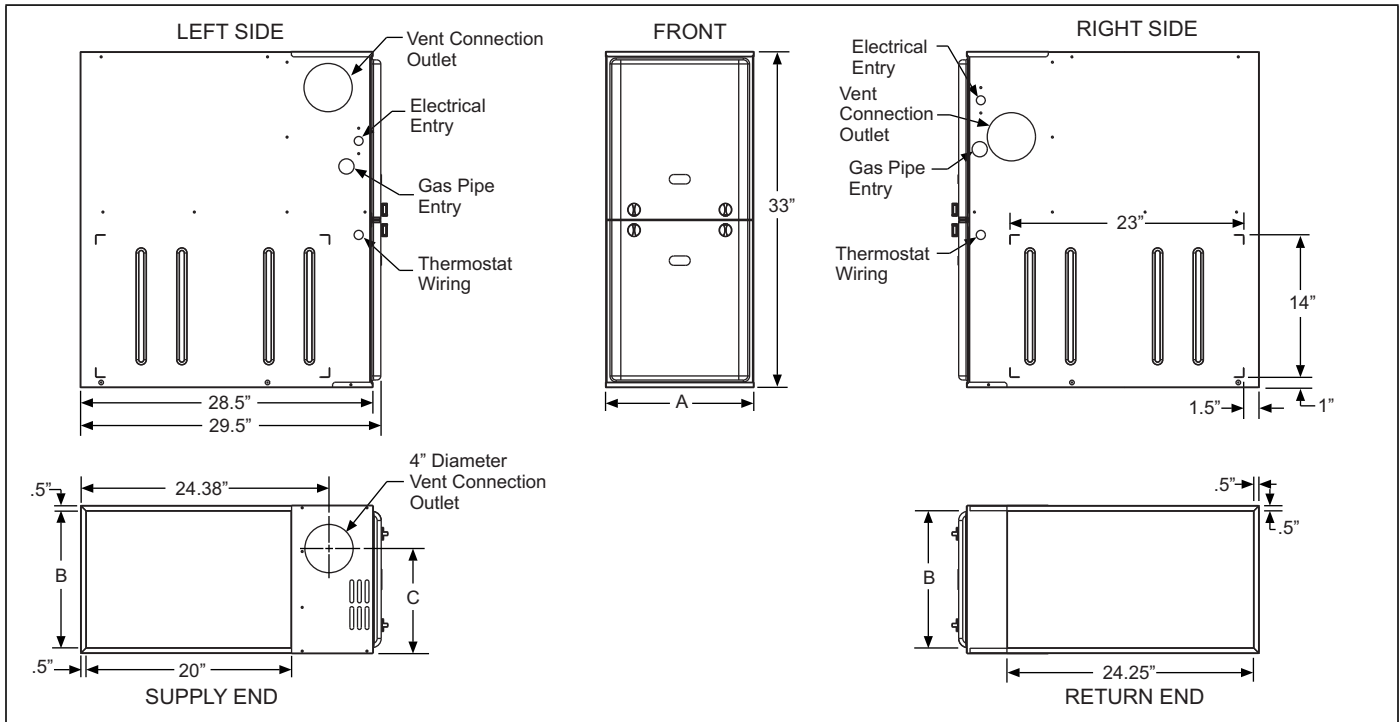
These compact units employ induced combustion, reliable hot surface ignition and high heat transfer aluminized tubular heat exchangers. The units are factory shipped for installation in upflow or horizontal applications and may be converted for downflow applications.

These furnaces are designed for residential installation in a basement, closet, alcove, attic, recreation room or garage and are also ideal for commercial applications. All units are factory assembled, wired and tested to assure safe dependable and economical installation and operation.

These units are Category I listed and may be common vented with another gas appliance as allowed by the National Fuel Gas Code.

FEATURES

- Easily applied in upflow, horizontal left or right, or downflow installation with minimal conversion necessary.
- Compact, easy to install, ideal height 33" tall cabinet.
- Blower-off delay for cooling SEER improvement.
- Easy access to controls to connect power/control wiring.
- Built-in, high level self diagnostics with fault code displays standard on integrated control module for reliable operation.
- Low unit amp requirement for easy replacement application.
- Single wire twinning or staging feature available.
- All models are convertible to use propane (LP) gas.
- Electronic Hot Surface Ignition saves fuel cost with increased dependability and reliability.
- 100% shut off main gas valve for extra safety.
- 4 speed, direct drive PSC motor.
- 24V, 40 VA control transformer and blower relay supplied for add-on cooling.
- Hi-tech tubular aluminized steel primary heat exchanger.
- Timed on, adjustable off blower capability for maximum comfort.
- Blower door safety switch.
- Low NOx models have been designed to meet specific code requirements.
- Airflow leakage less than 1% of total airflow at duct performance testing conditions.
- No knockouts to deal with, making installation easier.
- Movable duct connector flanges for application flexibility.
- Quiet inducer operation.
- Inducer rotates for easy conversion of venting options.
- Fully supported blower assembly for easy access and removal of blower.
- External air filters used for maximum flexibility in meeting customers IAQ needs.
- Venting applications - may be installed as a common vent with other gas-fired appliances or use a masonry chimney.
- 1/4 turn knobs provided for easy door removal.
- Insulated blower compartment for thermal and acoustic performance.



CABINET AND DUCT DIMENSIONS

Models	Nominal CFM (m ³ /min)	Cabinet Size	Cabinet Dimensions (Inches)			Approximate Operating Weights
			A	B	C	Lbs
RGF1L040AP08MP11	800	A	14 1/2	13 3/8	10.3	89
RGF1L060AP12MP11	1200	A	14 1/2	13 3/8	10.3	94
RGF1L080BP12MP11	1200	B	17 1/2	16 3/8	11.8	103
RGF1L080CP16MP11	1600	C	21	19 7/8	13.6	114
RGF1L100CP16MP11	1600	C	21	19 7/8	13.6	118
RGF1L100CP20MP11	2000	C	21	19 7/8	13.6	122
RGF1L120CP20MP11	2000	C	21	19 7/8	15.8	129

RATINGS & PHYSICAL / ELECTRICAL DATA

Models	Input	Output	AFUE	Air Temp. Rise	Max. Outlet Air Temp	Blower		Nominal Airflow	Blower Size	Max Over-Current Protect	Total Unit Amps	Min. wire Size (awg) @ 75 ft one way
	MBH	MBH		°F	°F	HP	Amps					
RGF1L040AP08MP11	40	32	80.0	25-55	190	1/5	2.1	800	9 x 8	10	4.5	14
RGF1L060AP12MP11	60	48	80.0	30-60	190	1/3	4.8	1200	11 x 8	10	7.0	14
RGF1L080BP12MP11	80	64	80.0	35-65	190	1/3	4.8	1200	11 x 8	10	7.5	14
RGF1L080CP16MP11	80	64	80.0	25-55	190	1/2	7.5	1600	11 x 10	15	10.0	14
RGF1L100CP16MP11	100	80	80.0	35-65	190	1/2	7.5	1600	11 x 10	15	10.0	14
RGF1L100CP20MP11	100	80	80.0	25-55	190	1	14.5	2000	11 x 11	20	17.0	12
RGF1L120CP20MP11	120	96	80.0	30-60	190	1	14.5	2000	11 x 11	20	17.0	12

Nominal external static pressure is 0.50" w.c. at furnace outlet ahead of cooling coils.
 Annual Fuel Utilization Efficiency (AFUE) numbers are determined in accordance with DOE Test procedures.
 Wire size and over current protection must comply with the National Electrical Code (NFPA-70-latest edition) and all local codes.

HORIZONTAL SIDEWALL VENTING

For applications where vertical venting is not possible, the only approved method of horizontal venting is the use of an auxiliary power vent. Auxiliary power venters must be approved by CSA, UL, or other recognized safety agencies. Follow all application and installation details provided by the manufacturer of the power vent.

FILTER PERFORMANCE

The airflow capacity data published in the “Blower Performance” tables shown represents blower performance WITH-OUT filters.

⚠ CAUTION

In downflow furnace arrangement, the filter must be located a minimum of 12” from the return air inlet of furnace.

All applications of these furnaces require the use of field installed air filters. All filter media and mounting hardware or provisions must be field installed external to the furnace cabinet. DO NOT attempt to install any filters inside the furnace.

UNIT CLEARANCES TO COMBUSTIBLES

(All dimensions in inches, and all surfaces identified with the unit in an upflow configuration)

Application	Top	Front	Rear	Left Side	Right Side	Flue	Floor/Bottom	Closet	Alcove	Attic	Line Contact
Upflow	1	6	0	0	3	6	Combustible	Yes	Yes	Yes	No
Upflow B-Vent	1	3	0	0	0	1	Combustible	Yes	Yes	Yes	No
Downflow	1	6	0	0	3	6	1 ¹	Yes	Yes	Yes	No
Downflow B-Vent	1	3	0	0	0	1	1 ¹	Yes	Yes	Yes	No
Horizontal	1	6	0	0	3	6	Combustible	No	Yes	Yes	Yes ²
Horizontal B-Vent	1	3	0	0	0	1	Combustible	No	Yes	Yes	Yes ²

1. Special floor base or air conditioning coil required for use on combustible floor.
2. Line contact only permitted between lines formed by the intersection of the rear panel and side panel (top in horizontal position) of the furnace jacket and building joists, studs or framing.

NOTICE

Single side return above 1800 CFM is approved as long as the filter velocity does not exceed filter manufacturer's recommendation and a transition is used to allow use on a 20x25 filter.

RECOMMENDED FILTER SIZES

CFM	Cabinet Size	Side (in)	Bottom (in)
800 (22.7)	A	16 x 25	14 x 25
1200 (34.0)	A	16 x 25	14 x 25
1200 (34.0)	B	16 x 25	16 x 25
1600 (45.3)	C	16 x 25	20 x 25
2000 (56.6)	C	(2) 16 x 25	20 x 25
2200 (62.3)	C	(2) 16 x 25	20 x 25

1. Air velocity through throwaway type filters may not exceed 300 feet per minute (91.4 m/min). All velocities over this require the use of high velocity filters.
2. Do not exceed 1800 CFM using a single side return and a 16x25 filter. For CFM greater than 1800, you may use two side returns or one side and the bottom or one return with a transition to allow use of a 20x25 filter.

ACCESSORIES

Propane (LP) Conversion Kit - This accessory conversion kit may be used to convert natural gas units for propane (LP) operation.

S1-1NP0347 - All Models except 130,000 BTU input

S1-1NP0501 - 130,000 BTU input only.

LP Stainless Steel Burner Kit - This accessory conversion kit may be used to convert existing burners to stainless steel burners for LP use only.

S1-32926889000 - All LP Models

Natural (NAT) Gas Stainless Steel Burner Kit - This accessory kit may be used to replace existing burners with stainless steel burners for NAT gas use only.

S1-32924441000 - All NAT gas Models

Side Return Filter Racks - The S1-1SR0200 Kit accommodates a 1", 2" or 4" filter. The S1-1SR0402 Kit accommodates a 1" filter only.

S1-1SR0200 - All Models

S1-1SR0402 - All Models

Bottom Return Filter Racks - The S1-1BR05* series are galvanized steel filter racks. The S1-1BR06* series are pre-painted steel filter racks to match the appearance of the furnace cabinet. The S1-1BR05* and S1-1BR06* series filter racks accommodate a 1", 2" or 4" filter.

S1-1BR0514 or S1-1BR0614 - For 14-1/2" cabinets

S1-1BR0517 or S1-1BR0617 - For 17-1/2" cabinets

S1-1BR0521 or S1-1BR0621 - For 21" cabinets

S1-1BR0524 or S1-1BR0624 - For 24-1/2" cabinets

Masonry Chimney Kits - This accessory kit allows upflow 80% models to be vented into a tile-lined masonry chimney.

S1-1CK0604 - All 80% Non-modulating Models

Combustible Floor Base Kit - These kits are required to prevent potential overheating situations when the furnaces are installed in downflow applications directly onto combustible flooring material. These kits are also required in any applications where the furnace is installed in a downflow configuration without an indoor coil and where the combustible floor base kit provides access for combustible airflow.

S1-1CB0514 - For 14-1/2" cabinets

S1-1CB0517 - For 17-1/2" cabinets

S1-1CB0521 - For 21" cabinets

S1-1CB0524 - For 24-1/2" cabinets

High Altitude Pressure Switches - For installation where the altitude is less than 5,000 feet, it is not required that the pressure switch be changed. For altitudes above 5,000 feet, see kits below.

S1-1PS3301 - 040, 060, 080, 120

S1-1PS3302 - 100, 130

Thermostat - Compatible thermostat controls are available through accessory sourcing. For optimum performance, these outdoor units are fully compatible with our residential touch screen thermostat with proprietary (patent-pending) hexagon interface. For more information, see the thermostat section of the Product Equipment Catalog.

S1-THXU280 - All Models

BLOWER PERFORMANCE CFM - ANY POSITION (WITHOUT FILTER) - BOTTOM RETURN

Models	Speed	Bottom Airflow Data (SCFM)									
		Ext. Static Pressure (in. H2O)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
RGF1L040AP08MP11	High	966	923	874	804	717	566	386	121	NA	NA
	Medium High	813	782	743	687	605	464	280	118	NA	NA
	Medium Low	745	706	667	619	545	413	205	NA	NA	NA
	Low	684	655	614	565	489	342	171	NA	NA	NA
RGF1L060AP12MP11	High	1358	1341	1319	1303	1275	1238	1190	1130	1062	943
	Medium High	1097	1083	1075	1064	1042	1024	997	962	906	821
	Medium Low	935	928	920	899	872	840	809	771	731	659
	Low	800	779	763	736	711	687	657	622	584	529
RGF1L080BP12MP11	High	1329	1307	1285	1247	1195	1143	1091	1027	927	806
	Medium High	994	1004	1008	984	970	941	893	839	773	669
	Medium Low	786	790	782	781	761	743	726	685	630	540
	Low	655	654	647	629	620	594	560	524	469	399
RGF1L080CP16MP11	High	1881	1822	1783	1696	1602	1539	1465	1394	1267	1130
	Medium High	1553	1535	1492	1456	1408	1343	1279	1226	1113	1014
	Medium Low	1312	1286	1288	1260	1205	1143	1091	1029	966	841
	Low	1169	1166	1128	1098	1069	1032	987	909	835	747
RGF1L100CP16MP11	High	2069	2014	1956	1885	1820	1748	1668	1577	1468	1362
	Medium High	1662	1656	1639	1608	1586	1544	1491	1421	1338	1204
	Medium	1368	1371	1377	1376	1367	1334	1295	1250	1188	1104
	Low	1016	1014	1018	1030	1012	996	975	944	898	852
RGF1L100CP20MP11	High	2893	2774	2687	2589	2478	2376	2255	2120	1978	1824
	Medium High	2272	2243	2204	2169	2086	2018	1940	1842	1743	1602
	Medium Low	1765	1752	1737	1718	1674	1619	1561	1493	1437	1312
	Low	1425	1380	1409	1378	1307	1274	1226	1180	1113	1025
RGF1L120CP20MP11	High	2701	2620	2533	2429	2338	2227	2112	1993	1861	1706
	Medium High	2125	2083	2046	1994	1955	1901	1857	1737	1621	1497
	Medium Low	1664	1664	1647	1619	1580	1555	1468	1392	1332	1226
	Low	1358	1339	1330	1318	1286	1235	1185	1141	1060	938

1. Airflow expressed in standard cubic feet per minute (CFM).
2. Motor voltage at 115 V.

BLOWER PERFORMANCE CFM - ANY POSITION (WITHOUT FILTER) - LEFT SIDE RETURN

Models	Speed	Left Side Airflow Data (SCFM)									
		Ext. Static Pressure (in. H2O)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
RGF1L040AP08MP11	High	966	923	874	804	717	566	386	121	NA	NA
	Medium High	813	782	743	687	605	464	280	118	NA	NA
	Medium Low	745	706	667	619	545	413	205	NA	NA	NA
	Low	684	655	614	565	489	342	171	NA	NA	NA
RGF1L060AP12MP11	High	1358	1341	1319	1303	1275	1238	1190	1130	1062	943
	Medium High	1097	1083	1075	1064	1042	1024	997	962	906	821
	Medium Low	935	928	920	899	872	840	809	771	731	659
	Low	800	779	763	736	711	687	657	622	584	529
RGF1L080BP12MP11	High	1329	1307	1285	1247	1195	1143	1091	1027	927	806
	Medium High	994	1004	1008	984	970	941	893	839	773	669
	Medium Low	786	790	782	781	761	743	726	685	630	540
	Low	655	654	647	629	620	594	560	524	469	399
RGF1L080CP16MP11	High	1881	1822	1783	1696	1602	1539	1465	1394	1267	1130
	Medium High	1553	1535	1492	1456	1408	1343	1279	1226	1113	1014
	Medium Low	1312	1286	1288	1260	1205	1143	1091	1029	966	841
	Low	1169	1166	1128	1098	1069	1032	987	909	835	747
RGF1L100CP16MP11	High	2069	2014	1956	1885	1820	1748	1668	1577	1468	1362
	Medium High	1662	1656	1639	1608	1586	1544	1491	1421	1338	1204
	Medium	1368	1371	1377	1376	1367	1334	1295	1250	1188	1104
	Low	1016	1014	1018	1030	1012	996	975	944	898	852
RGF1L100CP20MP11	High	2893	2774	2687	2589	2478	2376	2255	2120	1978	1824
	Medium High	2272	2243	2204	2169	2086	2018	1940	1842	1743	1602
	Medium Low	1765	1752	1737	1718	1674	1619	1561	1493	1437	1312
	Low	1425	1380	1409	1378	1307	1274	1226	1180	1113	1025
RGF1L120CP20MP11	High	2701	2620	2533	2429	2338	2227	2112	1993	1861	1706
	Medium High	2125	2083	2046	1994	1955	1901	1857	1737	1621	1497
	Medium Low	1664	1664	1647	1619	1580	1555	1468	1392	1332	1226
	Low	1358	1339	1330	1318	1286	1235	1185	1141	1060	938

1. Airflow expressed in standard cubic feet per minute (CFM).
2. Return air is through side opposite motor (left side).
3. Motor voltage at 115 V.
4. Airflow through across motor side (right side) may be slightly less than the data shown above.