# SPIDER*fire* Sealed-Combustion Gas-Fired Commercial Water Heaters

**No Chimney Required**

**Vents Up To 60 Feet Using 3" And Up To 85 Feet Using 4" Schedule 40 PVC, CPVC or ABS Pipe**

**130,000 BTU thru 199,000 BTU Models Are Certified To Vent With 2" Schedule 40 PVC, CPVC or ABS Pipe**

***(For Canadian installations, please use ULC-S636 PVC and CPVC pipe.)***

(On Selected Models)

(With Optional Kit)

## 100 Gallon Model

**130,000 BTU/Hr. thru 350,000 BTU/Hr. – 92-95% thermal efficiency**

**Rheem-Ruud SPIDER*fire*** Gas Commercial Water Heaters are specifically designed to provide customers with maximum savings on operation, space and installation. Designed with the most advanced technology available, these products optimize efficiency and operating reliability.

## Construction Features:

- Maximum thermal efficiency of 95% dramatically reduces operating costs
- No chimney required; power or direct vent using plastic pipe
- Low $NO_X$ emissions. Meets SCAQMD Rule 1146.2
- Corrosion resistant, high efficiency 3-pass heat exchanger
- Self-diagnostic LCD electronic control
- Direct spark ignition
- 185° F maximum temperature setting
- Zero clearance to all combustible surfaces
- Full flow drain valve
- Front and back water connectioins
- Factory installed AGA/ASME rated T&P relief valve
- Altitude certification up to 8,999 feet

## Certifications and Ratings:

- **Efficiency –** these models have been tested according to ANSI test procedures, and meet or exceed the thermal efficiency and standby loss requirements of current ASHRAE standard (Part of the Federally mandated Energy Policy Act (EPact)). Also exceeds energy efficiency codes of all states including California Energy Commission (CEC).
- **Safety and construction –** these products are design certified by the CSA: a) For operation at 185°F. b) To meet all safety and construction requirements of ANSI Z21.10.3. c) As an automatic storage or instantaneous water heater. d) As an automatic circulating tank water heater. e) For operation on combustible floors and in alcove installations. All models are North Carolina Code compliant. **CERTIFIED FOR A 150 PSI MAXIMUM WORKING PRESSURE (160 PSI FOR ASME MODELS).**
- **Optional constructions –** ASME construction is available on designated models. UL Sanitation (NSF5) compliant models are available when equipped with optional seal kit. (Part No. AS42690)

*Continued next page.*

## RECOVERY CAPACITIES

**Recovery in U.S. Gallons/Hr. (GPH) and Liters/Hr. (LPH) at Various Temperature Rises**

| MODEL NUMBER | INPUT (BTU/HR) NAT. & LP | THERMAL EFFICIENCY | UNITS | 40°F (22°C) | 50°F (28°C) | 60°F (33°C) | 70°F (39°C) | 80°F (45°C) | 90°F (50°C) | 100°F (56°C) | 110°F (61°C) | 120°F (67°C) | 130°F (72°C) | 140°F (78°C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GHE100-130(A) | 130,000 | 95% | GPH | 374 | 299 | 249 | 214 | 187 | 166 | 150 | 136 | 125 | 115 | 107 |
| | | | *LPH* | *1418* | *1135* | *946* | *811* | *709* | *630* | *567* | *516* | *473* | *446* | *405* |
| GHE100-160(A) | 160,000 | 95% | GPH | 461 | 368 | 307 | 263 | 230 | 205 | 184 | 167 | 154 | 142 | 132 |
| | | | *LPH* | *1746* | *1397* | *1164* | *998* | *873* | *776* | *698* | *635* | *582* | *537* | *499* |
| GHE100-200(A) | 199,000 | 95% | GPH | 573 | 458 | 382 | 327 | 286 | 255 | 229 | 208 | 191 | 176 | 164 |
| | | | *LPH* | *2171* | *1737* | *1447* | *1241* | *1086* | *965* | *868* | *790* | *724* | *668* | *620* |
| GHE100-250(A) | 250,000 | 93% | GPH | 705 | 564 | 470 | 403 | 352 | 313 | 282 | 256 | 235 | 217 | 201 |
| | | | *LPH* | *2670* | *2136* | *1780* | *1526* | *1335* | *1187* | *1068* | *971* | *890* | *822* | *763* |
| GHE100-300(A) | 300,000 | 93% | GPH | 845 | 676 | 564 | 483 | 423 | 376 | 338 | 307 | 282 | 260 | 242 |
| | | | *LPH* | *3204* | *2563* | *2136* | *1831* | *1602* | *1424* | *1282* | *1165* | *1068* | *986* | *916* |
| GHE100-350(A) | 350,000 | 92% | GPH | 976 | 781 | 651 | 558 | 488 | 434 | 390 | 355 | 325 | 300 | 279 |
| | | | *LPH* | *3698* | *2958* | *2465* | *2113* | *1849* | *1644* | *1479* | *1345* | *1233* | *1138* | *1057* |

## MAXIMUM DELIVERY

**In U.S. Gallons and Liters (Includes useable storage and recovery for indicated times)**

| MODEL NUMBER | GAL. | LITERS | INPUT (BTU/HR) NAT. & LP | TEMP. RISE | UNITS | 5 MIN. | 10 MIN. | 15 MIN. | 20 MIN. | 30 MIN. | 45 MIN. | 1 HR. | 2 HR. | 3 HR. | MIN. TO RECOVER CONTENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GHE100-130(A) | 100 | 379 | 130,000 | 100°F | GAL. | 83 | 95 | 107 | 120 | 145 | 185 | 220 | 369 | 519 | 39 |
| | | | | *56°C* | *LTR.* | *313* | *360* | *407* | *454* | *549* | *700* | *833* | *1400* | *1967* | |
| GHE100-160(A) | 100 | 379 | 160,000 | 100°F | GAL. | 85 | 101 | 116 | 131 | 162 | 208 | 254 | 438 | 623 | 33 |
| | | | | *56°C* | *LTR.* | *323* | *382* | *440* | *498* | *614* | *789* | *964* | *1662* | *2360* | |
| GHE100-200(A) | 100 | 379 | 199,000 | 100°F | GAL. | 89 | 108 | 127 | 146 | 185 | 242 | 299 | 528 | 757 | 26 |
| | | | | *56°C* | *LTR.* | *338* | *410* | *482* | *555* | *700* | *917* | *1134* | *2002* | *2871* | |
| GHE100-250(A) | 100 | 379 | 250,000 | 100°F | GAL. | 94 | 117 | 141 | 164 | 211 | 281 | 352 | 634 | 916 | 21 |
| | | | | *56°C* | *LTR.* | *354* | *443* | *532* | *621* | *799* | *1066* | *1333* | *2402* | *3470* | |
| GHE100-300(A) | 100 | 379 | 300,000 | 100°F | GAL. | 98 | 126 | 155 | 183 | 239 | 324 | 408 | 746 | 1085 | 18 |
| | | | | *56°C* | *LTR.* | *372* | *479* | *586* | *693* | *906* | *1227* | *1547* | *2829* | *4110* | |
| GHE100-350(A) | 100 | 379 | 350,000 | 100°F | GAL. | 103 | 135 | 168 | 200 | 265 | 363 | 460 | 851 | 1241 | 15 |
| | | | | *56°C* | *LTR.* | *389* | *512* | *635* | *758* | *1005* | *1375* | *1745* | *3224* | *4703* | |

All models have a maximum setpoint of 185°F.

## DIMENSIONAL INFORMATION

**All dimensions shown in English and Metric**

| MODEL NUMBER | UNITS | A | B | C | D | E | F | G | H | VENT | WATER CONNECTIONS INLET | WATER CONNECTIONS OUTLET | APPROX. SHIP. WT. (LB)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GHE100-130(A) | inches | 78-3/4" | 26-1/4"† | 66" | 12-3/4" | 73-3/4" | 73-5/8" | 72-7/16" | 66-7/16" | 2", 3", 4" | 2" NPT | 2" NPT | 785 |
| | *mm* | *2001* | *667* | *1674* | *325* | *1873* | *1869* | *1839* | *1687* | | | | |
| GHE100-160(A) | inches | 78-3/4" | 26-1/4"† | 66" | 12-3/4" | 73-3/4" | 73-5/8" | 72-7/16" | 66-7/16" | 2", 3", 4" | 2" NPT | 2" NPT | 785 |
| | *mm* | *2001* | *667* | *1674* | *325* | *1873* | *1869* | *1839* | *1687* | | | | |
| GHE100-200(A) | inches | 78-3/4" | 26-1/4"† | 66" | 12-3/4" | 73-3/4" | 73-5/8" | 72-7/16" | 66-7/16" | 2", 3", 4" | 2" NPT | 2" NPT | 785 |
| | *mm* | *2001* | *667* | *1674* | *325* | *1873* | *1869* | *1839* | *1687* | | | | |
| GHE100-250(A) | inches | 78-3/4" | 26-1/4"† | 66" | 12-3/4" | 73-3/4" | 73-5/8" | 72-7/16" | 66-7/16" | 3", 4" | 2" NPT | 2" NPT | 825 |
| | *mm* | *2001* | *667* | *1674* | *325* | *1873* | *1869* | *1839* | *1687* | | | | |
| GHE100-300(A) | inches | 78-3/4" | 26-1/4"† | 66" | 12-3/4" | 73-3/4" | 73-5/8" | 72-7/16" | 66-7/16" | 3", 4" | 2" NPT | 2" NPT | 825 |
| | *mm* | *2001* | *667* | *1674* | *325* | *1873* | *1869* | *1839* | *1687* | | | | |
| GHE100-350(A) | inches | 78-3/4" | 26-1/4"† | 66" | 12-3/4" | 73-3/4" | 73-5/8" | 72-7/16" | 66-7/16" | 3", 4" | 2" NPT | 2" NPT | 825 |
| | *mm* | *2001* | *667* | *1674* | *325* | *1873* | *1869* | *1839* | *1687* | | | | |

* Weights listed are for non-ASME. Add 35 lbs. for ASME models.
130,000 - 199,000 BTU models are certified to be installed with 2" venting.
All models require a 120V power source.
See use and care manual for venting details.
† Overall width is 27-5/16" due to exhaust cover

**0" CLEARANCE TO COMBUSTIBLES**

**MODELS WITH INPUTS OF 130,000 BTU THRU 199,000 BTU ARE CERTIFIED TO VENT WITH 2" SCHEDULE 40 PVC, CPVC OR ABS PIPE**

***(FOR CANADIAN INSTALLATIONS, PLEASE USE ULC-S636 PVC AND CPVC PIPE.)***

# VENTING OPTIONS

## Power Direct Vent

| MODEL NUMBER | PIPE DIAMETER 2" | PIPE DIAMETER 3" | PIPE DIAMETER 4" |
|---|---|---|---|
| | MAX. VENT LENGHT FOR INLET OR OUTLET (FT.) | | |
| GHE100-130 | 20 | 60 | 85 |
| GHE100-160 | 20 | 50 | 75 |
| GHE100-200 | 20 | 40 | 65 |
| GHE100-250 | – | 40 | 65 |
| GHE100-300 | – | 40 | 40 |
| GHE100-350 | – | 40 | 40 |

For each 90° elbow, reduce pipe length by five (5) feet.
For each 45° elbow, reduce pipe length by two and a half (2.5) feet.
**Note: Vent pipe size should not be mixed for venting these units.**
**Use same diameter pipe for all venting of the unit.**

**Example of Venting for 2" Power Direct Vent Setup:**
Refer to the chart above, "Power Direct Vent", for actual length allowed on each model.

| NUMBER OF 90° ELBOWS EXCLIUDING VENT TERMINALS | | NUMBER OF 45° ELBOWS | MINIMUM VENT PIPE LENGTH IN FEET | MAXIMUM VENT PIPE LENGTH IN FEET |
|---|---|---|---|---|
| INLET VENT | OUTLET VENT | | | |
| None | None | None | 5.0 | 20.0 |
| One (1) | One (1) | None | – | 15.0 |
| One (1) | One (1) | One (1) | – | 12.5 |
| Two (2) | Two (2) | None | – | 10.0 |
| Two (2) | Two (2) | One (1) | – | 7.5 |
| Three (3) | Three (3) | None | – | 5.0 |
| Three (3) | Three (3) | One (1) | – | 2.5 |

**Example of Venting for 4" Power Direct Vent Setup (GHE100-130):**
Refer to the chart above, "Power Direct Vent", for actual length allowed on each model. The 3" venting will follow the same format. See allowable lengths above.

| NUMBER OF 90° ELBOWS EXCLIUDING VENT TERMINALS | | NUMBER OF 45° ELBOWS | MINIMUM VENT PIPE LENGTH IN FEET | MAXIMUM VENT PIPE LENGTH IN FEET |
|---|---|---|---|---|
| INLET VENT | OUTLET VENT | | | |
| None | None | None | 5.0 | 85.0 |
| One (1) | One (1) | None | – | 80.0 |
| One (1) | One (1) | One (1) | – | 77.5 |
| Two (2) | Two (2) | None | – | 75.0 |
| Two (2) | Two (2) | One (1) | – | 72.5 |
| Three (3) | Three (3) | None | – | 70.0 |
| Three (3) | Three (3) | One (1) | – | 67.5 |
| Four (4) | Four (4) | None | – | 65.0 |
| Four (4) | Four (4) | One (1) | – | 62.5 |
| Five (5) | Five (5) | None | – | 60.0 |

## Power Vent

| MODEL NUMBER | PIPE DIAMETER 2" | PIPE DIAMETER 3" | PIPE DIAMETER 4" |
|---|---|---|---|
| | MAX. VENT LENGHT FOR OUTLET (FT.) | | |
| GHE100-130 | 20 | 60 | 85 |
| GHE100-160 | 20 | 50 | 75 |
| GHE100-200 | 20 | 40 | 65 |
| GHE100-250 | – | 40 | 65 |
| GHE100-300 | – | 40 | 40 |
| GHE100-350 | – | 40 | 40 |

For each 90° elbow, reduce pipe length by five (5) feet.
For each 45° elbow, reduce pipe length by two and a half (2.5) feet.
**Note: Vent pipe size should not be mixed for venting these units.**
**Use same diameter pipe for all venting of the unit.**

**Example of Venting for 2" Power Vent Setup:**
Refer to the chart above, "Power Vent", for actual length allowed on each model.

| NUMBER OF 90° ELBOWS EXCLIUDING VENT TERMINALS OUTLET VENT | NUMBER OF 45° ELBOWS | MINIMUM VENT PIPE LENGTH IN FEET | MAXIMUM VENT PIPE LENGTH IN FEET |
|---|---|---|---|
| None | None | 5.0 | 20.0 |
| One (1) | None | – | 15.0 |
| One (1) | One (1) | – | 12.5 |
| Two (2) | None | – | 10.0 |
| Two (2) | One (1) | – | 7.5 |
| Three (3) | None | – | 5.0 |
| Three (3) | One (1) | – | 2.5 |

**Example of Venting for 4" Power Vent Setup (GHE100-130):**
Refer to the chart above, "Power Vent", for actual length allowed on each model. The 3" venting will follow the same format. See allowable lengths above.

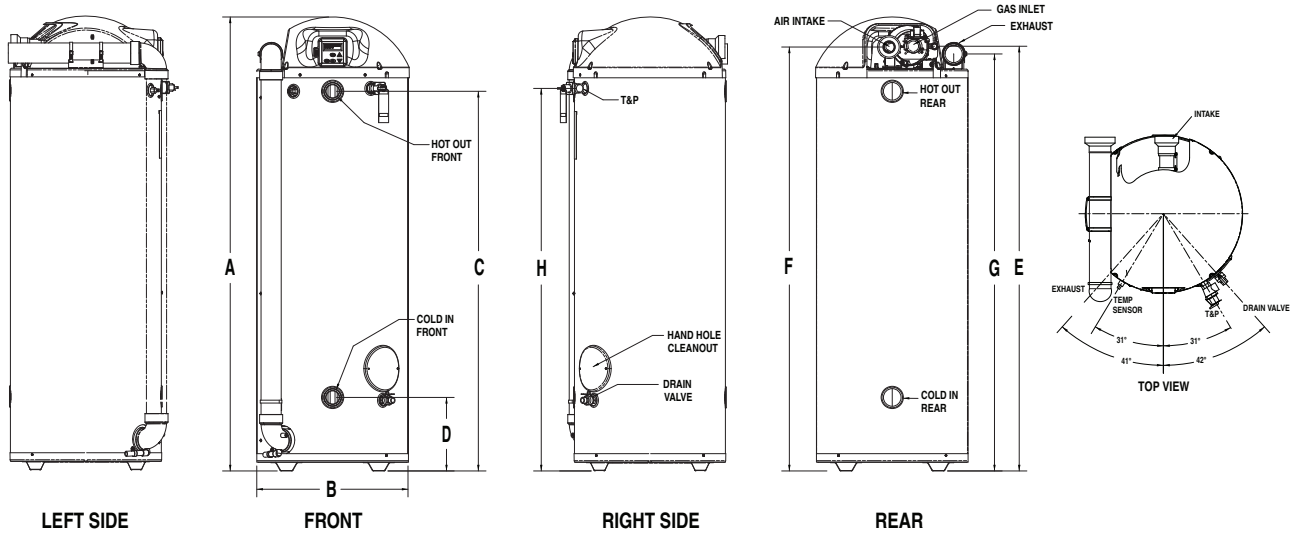
| NUMBER OF 90° ELBOWS EXCLIUDING VENT TERMINALS OUTLET VENT | NUMBER OF 45° ELBOWS | MINIMUM VENT PIPE LENGTH IN FEET | MAXIMUM VENT PIPE LENGTH IN FEET |
|---|---|---|---|
| None | None | 5.0 | 85.0 |
| One (1) | None | – | 80.0 |
| One (1) | One (1) | – | 77.5 |
| Two (2) | None | – | 75.0 |
| Two (2) | One (1) | – | 72.5 |
| Three (3) | None | – | 70.0 |
| Three (3) | One (1) | – | 67.5 |
| Four (4) | None | – | 65.0 |
| Four (4) | One (1) | – | 62.5 |
| Five (5) | None | – | 60.0 |

***NOTE: For Canadian installations, use ULC-S636 PVC and CPVC pipe.***

## Limited Warranty

This product features a three year limited warranty against tank leaks.
Please refer to Commercial Warranty Information brochure
for complete warranty information.

## DIMENSIONAL INFORMATION




## Recommended Specifications (for trade reference only)

Water heater(s) shall be SPIDER*fire* model _____, manufactured by RHEEM-RUUD, having a gas input of _____ Btu/hr. and recovery rate of _____ GPH at a 100°F temperature rise when tested and certified at _____ thermal efficiency. Water heater(s) shall have a storage capacity of _____ gallons. Water heater(s) shall have the CSA seal of certification and supplied with a factory installed AGA/ASME rated temperature and pressure relief valve, and meet SCAQMD Rule 1146.2. Tank(s) shall be of wet-base design and furnished with U.S. Patent 7,290,503 B2 heat exchange system with two-sided coating of high temperature porcelain enamel and furnished with magnesium anode rods rigidly supported. Water heater(s) shall have 2" NPT front and rear water connections. Water heater(s) shall meet or exceed thermal efficiency and standby loss requirements of ASHRAE. Tanks shall have a working pressure of 150 psi and shall be completely factory assembled, including a pressure regulator properly adjusted for operation on _____ gas with a down-fired burner system. Water heater(s) shall certified for schedule IV venting with power vent and powered direct vent options. Water heater(s) shall be covered by a three year limited tank warranty against tank leaks.

- **Add for ASME construction –**
  Water heater(s) shall be constructed in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, Section IV Part HLW.

**Commercial** water heaters
from Rheem-Ruud

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

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