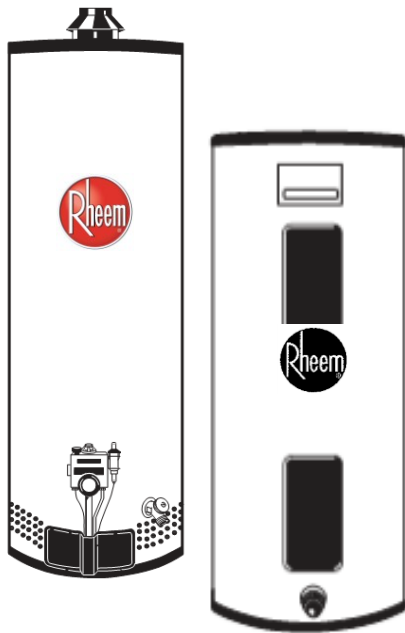


RHEEM WATER HEATERS



GAS^①

		6 Year*	Width x Height to vent top	Recovery/(NAT) Flue Size / Energy Factor
Classic ♦PROG- ♦6-Year Warranty	♦29 gal (29-32N)	\$ 785.00	16½ x 59¾	32 / 3 / .63
	♦40 gal (40-38N)	760.00	19 x 61½	38 / 3 / .62
Classic ♦PROG- ♦6-Year Warranty	♦40 gal (40-40N)	\$ 785.00	19½ x 63¼	40 / 3 / .62
	♦50 gal (50-40N)	923.00	21½ x 62½	40 / 3 / .62
	♦75 gal (75-76N)	1,705.00	26¼ x 64	75 / 4 / .53
LOWBOY ♦PROG- ♦6-Year Warranty	♦30 gal (30S-30N)	\$ 861.00	19¾ x 49⅞	30 / 3 / .63
	♦40 gal (40S-34N)	830.00	21 x 52⅞	34 / 3 / .62
MOBILE HOME ^② ♦6-Year Warranty	30 gal (30-32N)	\$ 1,130.00	16½ x 59⅞	32 / 3 / .63
	40 gal (40-34N)	1,195.00	18½ x 61½	34 / 3 / .62

ELECTRIC

		6 Year*	Width x Height	Energy Factor
Classic ♦PROE- ♦6-Year Warranty	30 gal (E30-T2)	\$ 695.00	19¼ x 47½	.95
	40 gal (E40-M2)	690.00	20¼ x 48¼	.95
	50 gal (E50-T2)	755.00	20¼ x 58⅞	.95
Classic+ ♦8-Year Warranty	★50 gal (+E50-T2)	\$ 815.00	20⅞ x 58⅞	.95
Classic ♦PROE-Short ♦6-Year Warranty	28 gal (E28-S2)	\$ 790.00	23 x 31⅞	.95
	36 gal (E36-S2)	780.00	24¼ x 31½	.95
Classic ♦PROE-POU POINT OF USE ♦6-Year Warranty	2.5 gal (E2-1)	\$ 455.00	+ 9¾ x 14	
	6 gal (E6-1)	445.00	* 15¾ x 15¼	
	10 gal (E10-1)	630.00	* 15¾ x 23	
	15 gal (E15-1)	800.00	* 17¾ x 24¼	
	20 gal (E20-1)	725.00	* 19¾ x 25¼	

*(120v & 240v Models)
 » Side connections «

Protection-Plus #SP20079 \$175.00
Tank Warranty 4-year extension.
6/8-year warranty ⇒ 10/12-year warranty

♦ **NEW Guardian Gas Water Heaters**
 Meets the new ANSI Z21.10.1 code for
 Flammable Vapor Ignition Resistance protocols.
 With Piezo push-button gas igniter.

* **Tank Warranty is 6-years**
Parts have a 6-year warranty.
 The warranty on Mobile Home water heaters is
 still 5-years on the tank & 1-year on parts.

① All Prices are for NATURAL GAS
 For LPG add \$ 66.00 to the Retail Price.
 ② Mobile Home is set for Natural Gas,
 can be field converted to LPG.
 Recovery = GPH Recovery at 90° rise.

All non-compact electric heaters have 2 interlocked
4500W / 240V elements w/ 21 GPH recovery @ 90°rise.
 + = ½"ips water connections (¾"ips for relief valve).
 * = Tanks have ¾" side inlets for water / relief valve
 * = Water / relief valve does not come with these units.

FACTS ABOUT WATER

1 Gal of fresh water = **8.333** lb.

1 cubic foot of water = **7.48** Gal

Water expands 4.34% when heated from 40°F to 212°F.
 A 40 gal water heater will gain an extra 1.8 gal of water volume when heating water from 55°F to 120°F.
 If a house has a check valve on the incoming cold water line, a small expansion tank might be needed to prevent the P&T valve from continuously opening.

1 Foot of Head = **.433** #/sq.ft

2.31 Feet of Head = **1** #/sq.ft

115.5 Feet of Head = **50** #/sq.ft

The **Static-Head** of a water system equals the height difference between the water surface in a water tank and the faucet in the house.

The **Dynamic-Head** of a water system equals the **Static-Head** minus the **Friction-Loss** in the piping, fittings, and valves.

A 1000' run of 1" PVC pipe from a water tank 100' higher than a house will have a **Static-Head** of 43psi. The **Dynamic-Head** will be less than 29psi @ 10gpm. For 1 1/4" Pipe the **Dynamic-Head** will be 39psi @ 10gpm.

GAS & ELECTRICITY

1 kWh = **3,412** BTU

4,500 Watts = **15,354** BTU

1 HP = **745.7** Watts

1 kW = **1.341** HP

1 Gal of Propane = **91,000** BTU

1 Cu. Ft of Natural gas = **1,075** BTU

1 psi of Gas = **27.68"** Water Column

1 psi of Gas = **2.036"** Mercury Column

7" Water Column (Nat) = **4.04** Ounces/Sq. In.

11" Water Column (LPG) = **6.34** Ounces/Sq. In.

1 Therm = **100,000** BTU

1.05 Therm = **100** cubic feet (Nat)

For Electric Water Heaters

$$GPH = .4096x \frac{Watts}{Temp.Rise}$$

GPH is gal / hour of hot water at a given temperature:
 e.g. a 4500watt electric element produces 20.5 GPH @ a 90° Temperature Rise (ground water Temp ~50°F to normal water heater Temp ~140°F)

$$Amps = \frac{Watts}{Volts}$$

e.g. a 4500watt 240volt electric element draws **18.75 amps**,
 a 2000watt 120volt electric element draws **16.67 amps**.

Friction Loss per 100' of PVC Pipe #/Sq. Inch

GPM	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
1	.43	.12				
2	.86	.24	.13	.04	.01	
5	4.87	1.36	.39	.12	.06	.02
7	8.95	2.49	.72	.21	.10	.04
10	17.03	4.74	1.37	.40	.20	.07
15	↘	10.06	2.90	.85	.43	.14
20		17.13	4.94	1.45	.74	.25
25		↘	7.45	2.18	1.12	.37
30			10.46	3.06	1.57	.52
35			13.91	4.07	2.09	.70
40			↘	5.22	2.68	.89
45	<i>Use Next Pipe Size</i>			6.49	3.33	1.11
50				7.88	4.04	1.35
60				↘	5.67	1.89
80					9.68	3.22
100					14.61	4.87

Friction Loss per 100' of Poly Pipe #/Sq. Inch

GPM	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	GPM
	.56	.15					1
	1.84	.48	.15	.04			2
	9.04	2.38	.76	.21	.10		5
	13.00	3.70	1.20	.32	.18	.05	7
	30.95	8.08	2.56	.69	.33	.10	10
	↘	16.58	5.25	1.42	.68	.21	15
		↘	8.69	2.36	1.13	.34	20
			12.92	3.50	1.67	.51	25
			↘	4.82	2.31	.70	30
				6.36	3.03	.92	35
				8.08	3.84	1.17	40
				↘	4.76	1.44	45
					5.76	1.73	50
					↘	7.97	60
						4.02	80
						6.00	100