HWS ELECTRIC HOT WATER STORAGE HEATER


## DESIGN ADVANTAGES

The RHEEM Model HWS (Hot Water Storage) Heaters are Commercial Volume Storage Water Heaters designed for industrial, commercial and institutional users who require large quantities of service water at preset temperatures.

When the job calls for lots of hot water - when it is called for quickly - when a continuous supply that will not quit at a crucial moment is needed - when downtime or failure will cause you a problem - It is time to think Rheem. We offer a wide range of storage and recovery capacities to meet your job requirements.

These complete factory packaged Electric Storage Water Heaters are available in both vertical and horizontal configurations, and are ASME constructed and National Board Registered for design pressures of your choice of 125 PSI or 150 PSI. They are constructed under ASME Code Section IV and stamped HLW. Storage capacities are from 125 Gallons to 5500 Gallons, and recovery from 62 to 1968 Gallons per hour are cataloged with larger sizes available upon request. Input capacities from 10 KW to 480 KW are cataloged using RHEEM Incoloysheathed individually flanged elements in 10, 15, 18, and 20 KW ratings.

## STANDARD FEATURES AND ACCESSORIES

[^0]- Automatic Temperature Control via:

On/Off Temperature Switches (1 \& 2 Step Units)
Electronic Multi Stage Control (3 \& 4 Step Units)
Proportional Solid State Step Control (Units > 4 Steps)

- Magnetic Contactors
- Internal Protection Fusing
- 120 Volt Fused Control Transformer
- On/Off Control Power Switch w/Pilot Light
- Pilot Lights (One Per Step)
- High Limit Aquastats (1) Automatic Reset (1) Manual Reset
- Probe-Type Low Water Cutoff
- Magnesium Anode(s)
- Drain Valve
- Manway (Lined)
- Lifting Lugs


## OPTIONAL EQUIPMENT AND ACCESSORIES

- Dual Fired - Steam or Hot Water Coil and Electric
- Lower Watt Density (50 wsi) Elements (where Lime Deposit and Water Hardness are Problems)
- Main Power Supply Disconnect Switch/Circuit Breaker
- Progressive Sequencing Solid State Step Control (First-On/First-Off)
- Proportional Step Control (for 3 or 4 Stage Models)
- KW Demand Interface Relays
- Programmable Timer
- Plastisert Waterway Inserts
- Dial Pressure Gauge (4-1/2")
- Dial Temperature Gauge ( $3^{\prime \prime}$ )
- Audible Alarm and Silencer
- Ammeter (1 or 3 Phase)
- Bronze Tank Circulator and Piping
- NEMA IV Electrical Enclosure
- Stainless Steel Vessel ( $210^{\circ} \mathrm{F}$ Max) for DI Water
- Cement Lining (NSF-61)
- 24 Hour or Seven Day Clock
- Safety Door Interlock
- Oversized Inlet/Outlet
- Manual Reset Probe or Float Type Low Water Cutoff
- Voltmeter (1 or 3 Phase)

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## STORAGE HEATER BENEFITS

- Handles the wide variations of hot water needs by incorporating both a storage section and a recovery section in the same heater - recovery from 600 to 6000 gallons per hour - storage from 80 to 9000 gallons and available with input from 10 KW to 3000 KW in all common voltages.
- Offers 50 years experience in the manufacture of pressure vessels and heaters where craftsmanship and quality are reflected by our very name - RHEEM.
- Complete Factory package with insulation and 16 gauge enamelled jacket, assembled and tested, ready for electrical and water service connections.
- Provides energy-efficient water heating where electricity is virtually 100\% efficient; and where Factory insulation and steel jacket reduce radiant heat loss to less than 4 watts per square foot of tank surface.
- Meets or exceeds the ASHRAE 90.1B-1992 energy standard.
- Integrated cabinet design on structural steel base with lifting lugs.
- Built-in safety standards, features and controls such as heater UL labelled, ASME rated temperature and pressure relief valve to relieve pressure in the event of overheating or excess pressure, two high temperature cutouts to limit the tank temperature if it exceeds setpoint, low water cutoff to keep the heater from "dry firing", fused control circuits to interrupt power in the event of overload condition, and optional safety equipment such as safety door interlock to prevent the opening of control cabinet door(s) while the main power supply is energized.


## STORAGE HEATER ENGINEERING FEATURES

- Preassembled and prewired, with all necessary controls to provide a reliable and automatic supply of hot water with proper control to obtain desired flow and temperature.
- Heaters which are dual fired with both electric elements and steam coil work well to supplement capacity during peak periods and to handle the loads for off season requirements, when a central steam plant might not be operational.
- Immersion heating elements are 2-1/2" square individually flanged for ease in field replacement. The elements are made of a highly corrosion-resistant Incoloy sheath and nickel-chromium resistance wire packed in magnesium oxide powder in a U-tube design. The tubes are not in direct contact with each other nor are they a part of a bundle of elements. This increases the space between the elements and eliminates pockets where scale can collect and build,
therefore minimizing the tendency of cascade failures. This design allows unrestricted water flow for optimum heat transfer.
- Elements are available in multiples of 10, 15, 18 and 20 KW at 75 watt density ( 50 watt density is available where lime deposits or hard water are a problem).
- All steel pressure vessels are ASME code stamped and National Board registered offering assurance of quality construction. A manway is furnished in all lined vessels for cleaning and inspection.
- A corrosive resistant lining of Precision Seal, a polymerized epoxy, is the standard tank lining used by RHEEM. This lining is NSF-61 approved for domestic water by EPA and USDA and is applied after complete fabrication. One other protective lining ava ilable is Cement also NSF-61 compliant.

HOW TO SELECT A MODEL NUMBER


1. Choose the storage capacity and vessel dimensions for the job requirements, considering space or access limitations and whether vertical or horizontal construction would be suitable.

Note: Total unit weight is the sum of the storage and recovery weights.

* On length or height HWS 6024H assumes (1) in first place where needed (eg, 60 (1) 24)


| MODEL NUMBER* |  | ACTUAL GALLONS | DESIGN PRESSURE(PSI) |  | CONNECTIONS (NPT) |  | DIMENSIONS (IN) |  |  | WEICHT** (LBS.) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | STANDARD | STRONG | IN/ OUT | DRAIN | L | w | H | PS | CEMENT |
| HWS 2468V |  |  | 125 | 150 | - | $1{ }^{\prime \prime}$ | $1{ }^{\prime \prime}$ | 34 | 29 | 76 | 1090 | - |
|  | 2480V | 150 | 150 | - | 1" | 1" | 34 | 29 | 88 | 1210 | - |
| HWS | 3054V | 150 | 150 | - | $1^{1 / 4}{ }^{\prime \prime}$ | $1{ }^{\prime \prime}$ | 40 | 35 | 62 | 1100 | - |
|  | 3070V | 200 | 150 | - | $11 / 4 "$ | $1{ }^{\prime \prime}$ | 40 | 35 | 78 | 1280 | - |
|  | 3086V | 250 | 150 | - | $11 / 4{ }^{\prime \prime}$ | $1{ }^{\prime \prime}$ | 40 | 35 | 94 | 1460 | - |
| HWS | 3662V | 250 | 125 | 150 | $1^{1 / 4}{ }^{\prime \prime}$ | $11 / 4^{\prime \prime}$ | 46 | 41 | 70 | 1400 | 1680 |
|  | 3674V | 300 | 125 | 150 | $11 / 4 "$ | $11 / 4 "$ | 46 | 41 | 82 | 1530 | 1840 |
|  | 3686V | 350 | 125 | 150 | $11 / 4^{\prime \prime}$ | $11 / 4^{\prime \prime}$ | 46 | 41 | 94 | 1690 | 2030 |
|  | 3698V | 400 | 125 | 150 | $11 / 4^{\prime \prime}$ | $11 / 4^{\prime \prime}$ | 46 | 41 | 106 | 1810 | 2170 |
| HWS | 4274V | 400 | 125 | 150 | $11 / 2^{\prime \prime}$ | $11 / 2^{\prime \prime}$ | 52 | 47 | 82 | 1920 | 2300 |
|  | 4282V | 450 | 125 | 150 | $11 / 2^{\prime \prime}$ | $11 / 2 "$ | 52 | 47 | 90 | 2030 | 2440 |
|  | 4290V | 500 | 125 | 150 | $11 / 2^{\prime \prime}$ | $11 / 2^{\prime \prime}$ | 52 | 47 | 98 | 2150 | 2580 |
| HWS | 4872V | 500 | 125 | 150 | $2{ }^{\prime \prime}$ | $11 / 2^{\prime \prime}$ | 58 | 53 | 82 | 2540 | 3050 |
|  | 4884V | 600 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 58 | 53 | 94 | 2770 | 3320 |
|  | 4896V | 700 | 125 | 150 | $2 "$ | $11 / 2^{\prime \prime}$ | 58 | 53 | 106 | 3030 | 3640 |
| HWS | 5480V | 700 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 64 | 59 | 90 | 3000 | 3600 |
|  | 5490V | 800 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 64 | 59 | 100 | 3210 | 3850 |
|  | 5400V | 900 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 64 | 59 | 110 | 3400 | 4080 |
| HWS | 6092V | 1000 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 70 | 65 | 102 | 3600 | 4320 |
|  | 6000V | 1100 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 70 | 65 | 110 | 3780 | 4540 |
|  | 6008V | 1200 | 125 | 150 | 2" | $11 / 2^{\prime \prime}$ | 70 | 65 | 118 | 3960 | 4750 |
| HWS | 6698V | 1300 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 76 | 71 | 108 | 4810 | 5770 |
|  | 6605V | 1400 | 125 | 150 | $2 "$ | $11 / 2^{\prime \prime}$ | 76 | 71 | 115 | 5010 | 6010 |
|  | 6612V | 1500 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 76 | 71 | 122 | 5210 | 6250 |
| HWS | 7202V | 1600 | 125 | 150 | 2" | $11 / 2^{\prime \prime}$ | 82 | 77 | 114 | 5340 | 6410 |
|  | 7214V | 1800 | 125 | 150 | 2" | $11 / 2^{\prime \prime}$ | 82 | 77 | 126 | 5720 | 6860 |
|  | 7226V | 2000 | 125 | 150 | 2 " | $1^{1 / 2}{ }^{\prime \prime}$ | 82 | 77 | 138 | 6080 | 7300 |
| HWS | 8408 V | 2250 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 94 | 89 | 120 | 8790 | 10550 |
|  | 8418V | 2500 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 94 | 89 | 130 | 9250 | 11100 |
|  | 8428V | 2750 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 94 | 89 | 140 | 9710 | 11650 |
| HWS | 9612V | 3000 | 125 | 150 | $3{ }^{\prime \prime}$ | $11 / 2^{\prime \prime}$ | 106 | 101 | 124 | 10700 | 12840 |
|  | 9628 V | 3500 | 125 | 150 | $3{ }^{\prime \prime}$ | $11 / 2^{\prime \prime}$ | 106 | 101 | 140 | 11550 | 13860 |
|  | 9644V | 4000 | 125 | 150 | 3" | $11 / 2^{\prime \prime}$ | 106 | 101 | 156 | 12740 | 15290 |

[^1]HWS HORIZONTAL DIMENSIONAL DATA


NOTE: MINIMUM OF 12" AROUND THE BOILER, 30" FOR MANWAY ACCESS AND ELEMENT REMOVAL, AND 36" IN FRONT OF THE CONTROL CABINET. (FOR LOW KW UNITS CABINET LOCATION IS ON THE LEFT OF THE UNIT)

Note: Alternate Control Cabinet Location for Low KW Units

| MODEL NUMBER* |  | ACTUAL GALLONS | DESIGN PRESSURE (PSI) |  | CONNECTIONS (NPT) |  | DIMENSIONS (IN) |  |  | WEIGHT** (LBS.) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Standard | StRONG | IN/OUT | DRAIN | L | w | H | PS | CEMENT |
| HWS | 3070H |  | 200 | 150 | - | $11 / 4 "$ | $1{ }^{\prime \prime}$ | 80 | 35 | 40 | 1260 | - |
|  | 3086H | 250 | 150 | - | $11 / 4 "$ | 1" | 96 | 35 | 40 | 1440 | - |
|  | 3003H | 300 | 150 | - | $11 / 4 "$ | $1{ }^{\prime \prime}$ | 114 | 35 | 40 | 1620 | - |
| HWS | 3674H | 300 | 125 | 150 | $11 / 2^{\prime \prime}$ | $1^{1 / 4}{ }^{\prime \prime}$ | 84 | 41 | 46 | 1570 | 1880 |
|  | 3696H | 400 | 125 | 150 | $11 / 2^{\prime \prime}$ | $11 / 4 "$ | 106 | 41 | 46 | 1860 | 2230 |
|  | 3620H | 500 | 125 | 150 | $11 / 2^{\prime \prime}$ | $11 / 4^{\prime \prime}$ | 130 | 41 | 46 | 2150 | 2580 |
| HWS | 4290H | 500 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 100 | 47 | 52 | 2200 | 2640 |
|  | 4207H | 600 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 118 | 47 | 52 | 2430 | 2920 |
|  | 4224H | 700 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 134 | 47 | 52 | 2680 | 3220 |
| HWS | 4898H | 700 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 108 | 53 | 60 | 3110 | 3730 |
|  | 4810H | 800 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 122 | 53 | 60 | 3350 | 4020 |
|  | 4823H | 900 | 125 | 150 | 2" | $11 / 2^{\prime \prime}$ | 134 | 53 | 60 | 3600 | 4320 |
|  | 4836H | 1000 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 146 | 53 | 60 | 3870 | 4640 |
|  | 4848H | 1100 | 125 | 150 | 2" | $11 / 2^{\prime \prime}$ | 158 | 53 | 60 | 4130 | 4960 |
| HWS | 5410H | 1000 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 120 | 59 | 66 | 3840 | 4610 |
|  | 5430H | 1200 | 125 | 150 | 2 " | $1^{1 / 2 "}$ | 140 | 59 | 66 | 4290 | 5150 |
|  | 5450H | 1400 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 160 | 59 | 66 | 4740 | 5690 |
| HWS | 6008H | 1200 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 118 | 65 | 72 | 4160 | 4990 |
|  | 6024H | 1400 | 125 | 150 | 2 " | $1^{1 / 2}{ }^{\prime \prime}$ | 134 | 65 | 72 | 4540 | 5450 |
|  | 6040H | 1600 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 150 | 65 | 72 | 4940 | 5930 |
|  | 6056H | 1800 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 166 | 65 | 72 | 5350 | 6420 |
| HWS | 6620H | 1600 | 125 | 150 | 2" | $11 / 2^{\prime \prime}$ | 130 | 71 | 78 | 5530 | 6640 |
|  | 6632H | 1800 | 125 | 150 | 2 " | $11 / 2^{\prime \prime}$ | 142 | 71 | 78 | 5940 | 7130 |
|  | 6644H | 2000 | 125 | 150 | 2" | $1^{1 / 2 "}$ | 154 | 71 | 78 | 6360 | 7630 |
| HWS | 7226H | 2000 | 125 | 150 | 3 " | $11 / 2^{\prime \prime}$ | 136 | 77 | 84 | 6240 | 7490 |
|  | 7254H | 2500 | 125 | 150 | $3{ }^{\prime \prime}$ | $11 / 2^{\prime \prime}$ | 164 | 77 | 84 | 7140 | 8570 |
|  | 7282H | 3000 | 125 | 150 | $3 "$ | $11 / 2^{\prime \prime}$ | 192 | 77 | 84 | 8030 | 9640 |
| HWS | 8450H | 3250 | 125 | 150 | 3 " | $11 / 2^{\prime \prime}$ | 160 | 89 | 96 | 11450 | 13740 |
|  | 8460H | 3500 | 125 | 150 | 3 " | $11 / 2^{\prime \prime}$ | 170 | 89 | 96 | 11950 | 14340 |
|  | 8470H | 3750 | 125 | 150 | 3 " | $11 / 2^{\prime \prime}$ | 180 | 89 | 96 | 12450 | 14940 |
| HWS | 9644H | 4000 | 125 | 150 | 3 " | $11 / 2^{\prime \prime}$ | 154 | 101 | 108 | 12740 | 15290 |
|  | 9660H | 4500 | 125 | 150 | 3 " | $11 / 2^{\prime \prime}$ | 170 | 101 | 108 | 13620 | 16340 |
|  | 9676H | 5000 | 125 | 150 | 3 " | $11 / 2^{\prime \prime}$ | 186 | 101 | 108 | 14490 | 17390 |
|  | 9692H | 5500 | 125 | 150 | 3 " | $11 / 2^{\prime \prime}$ | 202 | 101 | 108 | 15380 | 18460 |


| MODEL NUMBER | (1) INPUT | MBTU's PER | $\begin{aligned} & \text { GPH@ } \\ & \text { 100 } \end{aligned}$ | (2) ELEMENTS |  | NUMBER OF CIRCUITS |  | (3) NUMBER \& KW SIZE OF STEPS |  |  | AMPERAGE <br> (3-PHASE) |  |  | (4) <br> SHIP WEIGHT |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SUFFIX | KW | HOUR | RISE | QTY | KW | <250V | >250V | 208/240V | 380/415V | 480V | 208 V | 380 V | 480V | $<250 \mathrm{~V}$ | $>250 \mathrm{~V}$ |
| -10A | 10 | 34 | 41 | 1 | 10 | 1 | 1 | 1@10 | 1@10 | 1@10 | 29 | 16 | 12 | 125 | 125 |
| -20A | 20 | 68 | 82 | 2 | 10 | 2 | 1 | 1@20 | 1@20 | 1@20 | 56 | 31 | 24 | 150 | 125 |
| -30A | 30 | 102 | 123 | 3 | 10 | 3 | 1 | 1@10, 1 @ 20 | 1@30 | 1@30 | 84 | 46 | 36 | 175 | 125 |
| -40A | 40 | 136 | 164 | 4 | 10 | 4 | 2 | 2@20 | 1@40 | 1@40 | 112 | 61 | 49 | 200 | 150 |
| .50A | 50 | 171 | 205 | 5 | 10 | 5 | 2 | 1@20, 1 @ 30 | 1@20,1@30 | 1@20,1@30 | 140 | 76 | 61 | 225 | 150 |
| -60A | 60 | 205 | 246 | 6 | 10 | 6 | 2 | 2@30 | 2@30 | 2@30 | 167 | 92 | 73 | 250 | 150 |
| .70A | 70 | 239 | 287 | 7 | 10 | 7 | 3 | 2@20, 1 @ 30 | 1@40, 1@30 | 1@40,1@30 | 195 | 107 | 85 | 275 | 175 |
| -80A | 80 | 273 | 328 | 8 | 10 | 8 | 3 | 1@20, 2 @30 | 1@20,2@30 | 1@20,2@30 | 223 | 122 | 97 | 300 | 175 |
| -90A | 90 | 307 | 369 | 9 | 10 | 9 | 3 | 3@30 | 3@30 | 3@30 | 251 | 137 | 109 | 325 | 175 |
| -100A | 100 | 341 | 410 | 10 | 10 | 10 | 4 | 2@20, 2 @ 30 | 2@20, 2 @30 | 2@20, 2 @30 | 279 | 152 | 121 | 350 | 200 |
| -110A | 110 | 375 | 451 | 11 | 10 | 11 | 4 | 1@20, 3 @ 30 | 1@20, 3 @30 | 1@20,3@30 | 306 | 168 | 133 | 375 | 200 |
| -120A | 120 | 409 | 492 | 12 | 10 | 12 | 4 | 4@30 | 4@30 | 4@30 | 334 | 183 | 145 | 400 | 200 |
| -15B | 15 | 51 | 62 | 1 | 15 | 1 | 1 | 1@15 | 1@15 | 1@15 | 43 | 23 | 18 | 125 | 125 |
| -30B | 30 | 102 | 123 | 2 | 15 | 2 | 1 | 1@30 | 1@30 | 1@30 | 84 | 46 | 36 | 150 | 125 |
| -45B | 45 | 154 | 185 | 3 | 15 | 3 | 2 | 1@15, 1 @ 30 | 1@15,1@30 | 1@15,1@30 | 126 | 69 | 55 | 175 | 150 |
| -60B | 60 | 205 | 246 | 4 | 15 | 4 | 2 | 2@30 | 2@30 | 2@30 | 167 | 92 | 73 | 200 | 150 |
| -75B | 75 | 256 | 308 | 5 | 15 | 5 | 3 | 1@15, 2 @ 30 | 1@45,1@30 | 1@45,1@30 | 209 | 114 | 91 | 225 | 175 |
| .90B | 90 | 307 | 369 | 6 | 15 | 6 | 3 | 3@30 | 3@30 | 3@30 | 251 | 137 | 109 | 250 | 175 |
| -105B | 105 | 358 | 431 | 7 | 15 | 7 | 4 | 1@15,3@30 | 1@45, 2@30 | 1@45, 2 @30 | 292 | 160 | 127 | 275 | 200 |
| -120B | 120 | 409 | 492 | 8 | 15 | 8 | 4 | 4@30 | 4@30 | 4@30 | 334 | 183 | 145 | 300 | 200 |
| -135B | 135 | 461 | 554 | 9 | 15 | 9 | 5 | 1@15, 4@30 | 1@45, 3@30 | 1@45,3@30 | 376 | 206 | 163 | 375 | 225 |
| -150B | 150 | 512 | 615 | 10 | 15 | 10 | 5 | 5@30 | 5@30 | 5@30 | 417 | 228 | 181 | 400 | 275 |
| -165B | 165 | 563 | 677 | 11 | 15 | 11 | 6 | 1@15,5@30 | 1@45, 4@30 | 1@45, 4@30 | 459 | 251 | 199 | 425 | 300 |
| -180B | 180 | 614 | 738 | 12 | 15 | 12 | 6 | 6 @30 | 6@30 | 6@30 | 501 | 274 | 217 | 450 | 300 |
| -195B | 195 | 665 | 800 | 13 | 15 | 13 | 7 | 1@15,6@30 | 1@45,5@30 | 1@45,5@30 | 542 | 297 | 235 | 475 | 325 |
| -210B | 210 | 717 | 861 | 14 | 15 | 14 | 7 | 7@30 | 7@30 | 7@30 | 584 | 319 | 253 | 500 | 325 |
| -225B | 225 | 768 | 923 | 15 | 15 | 15 | 8 | 1@15,7@30 | 1@45,6@30 | 1@45,6@30 | 626 | 342 | 271 | 525 | 350 |
| -240B | 240 | 819 | 984 | 16 | 15 | 16 | 8 | 8@30 | 8@30 | 8@30 | 667 | 365 | 289 | 550 | 350 |
| -270B | 270 | 921 | 1107 | 18 | 15 | 18 | 9 | 1@60,7@30 | 1@60,7@30 | 1@60,7@30 | 750 | 411 | 325 | 550 | 325 |
| -300B | 300 | 1024 | 1230 | 20 | 15 | 20 | 10 | 2@60,6@30 | 2@60,6@30 | 2@60,6@30 | 834 | 456 | 361 | 600 | 350 |
| -330B | 330 | 1126 | 1353 | 22 | 15 | 22 | 11 | 3@60, 5 @ 30 | 3@60,5@30 | 3@60,5@30 | 917 | 502 | 397 | 650 | 375 |
| -360B | 360 | 1228 | 1476 | 24 | 15 | 24 | 12 | 4@60, 4@30 | 4@60, 4@30 | 4@60,4@30 | 1000 | 547 | 433 | 700 | 400 |
| -390B | 390 | 1331 | 1599 | 26 | 15 | 26 | 13 | 5@60,3@30 | 5@60, 3@30 | 5@60,3@30 | 1084 | 593 | 470 | 750 | 425 |
| -420B | 420 | 1433 | 1722 | 28 | 15 | 28 | 14 | 6@60, 2 @30 | 6@60,2@30 | 6@60,2@30 | 1167 | 639 | 506 | 800 | 450 |
| -450B | 450 | 1535 | 1845 | 30 | 15 | 30 | 15 | 7@60, 1@30 | 7@60,1@30 | 7@60,1@30 | 1250 | 684 | 542 | 850 | 475 |
| -480B | 480 | 1638 | 1968 | 32 | 15 | 32 | 16 | 8@60 | 8@60 | 8@60 | 1333 | 730 | 578 | 900 | 500 |
| -18C | 18 | 61 | 74 | 1 | 18 | N/A | 1 | N/A | N/A | 1@18 | - | - | 22 | - | 125 |
| -36C | 36 | 123 | 148 | 2 | 18 | N/A | 1 | N/A | N/A | $1 @ 36$ | - | - | 44 | - | 125 |
| -54C | 54 | 184 | 221 | 3 | 18 | N/A | 2 | N/A | N/A | 1@18,1@36 | - | - | 65 | - | 150 |
| .72C | 72 | 246 | 295 | 4 | 18 | N/A | 2 | N/A | N/A | 2@36 | - | - | 87 | - | 150 |
| -90C | 90 | 307 | 369 | 5 | 18 | N/A | 3 | N/A | N/A | 1@54,1@36 | - | - | 109 | - | 175 |
| -108C | 108 | 368 | 443 | 6 | 18 | N/A | 3 | N/A | N/A | 3@36 | - | - | 130 | - | 175 |
| -126C | 126 | 430 | 517 | 7 | 18 | N/A | 4 | N/A | N/A | 1@54, 2@36 | - | - | 152 | - | 200 |
| -144C | 144 | 491 | 590 | 8 | 18 | N/A | 4 | N/A | N/A | 4@36 | - | - | 174 | - | 200 |
| -162C | 162 | 553 | 664 | 9 | 18 | N/A | 5 | N/A | N/A | 1@54,3@36 | - | - | 195 | - | 225 |
| -180C | 180 | 614 | 738 | 10 | 18 | N/A | 5 | N/A | N/A | 5@36 | - | - | 217 | - | 275 |
| -198C | 198 | 676 | 812 | 11 | 18 | N/A | 6 | N/A | N/A | 1@54, 4@36 | - | - | 239 | - | 300 |
| -216C | 216 | 737 | 886 | 12 | 18 | N/A | 6 | N/A | N/A | 6@36 | - | - | 260 | - | 300 |
| -252C | 252 | 860 | 1033 | 14 | 18 | N/A | 7 | N/A | N/A | $7 @ 36$ | - | - | 304 | - | 325 |
| -288C | 288 | 983 | 1181 | 16 | 18 | N/A | 8 | N/A | N/A | 8@36 | - | - | 347 | - | 350 |
| -324C | 324 | 1105 | 1328 | 18 | 18 | N/A | 9 | N/A | N/A | 1@72, 7@36 | - | - | 390 | - | 375 |
| .360C | 360 | 1228 | 1476 | 20 | 18 | N/A | 10 | N/A | N/A | 2@72,6@36 | - | - | 434 | - | 400 |
| -20D | 20 | 68 | 82 | 1 | 20 | N/A | 1 | N/A | N/A | 1@20 | - | - | 25 | - | 125 |
| -40D | 40 | 136 | 164 | 2 | 20 | N/A | 1 | N/A | N/A | 1@40 | - | - | 49 | - | 125 |
| -60D | 60 | 205 | 246 | 3 | 20 | N/A | 2 | N/A | N/A | 1@20,1@40 | - | - | 73 | - | 150 |
| -80D | 80 | 273 | 328 | 4 | 20 | N/A | 2 | N/A | N/A | 2@40 | - | - | 97 | - | 150 |
| -100D | 100 | 341 | 410 | 5 | 20 | N/A | 3 | N/A | N/A | 1@60,1@40 | - | - | 121 | - | 175 |
| -120D | 120 | 409 | 492 | 6 | 20 | N/A | 3 | N/A | N/A | 3 @40 | - | - | 145 | - | 175 |
| -140D | 140 | 478 | 574 | 7 | 20 | N/A | 4 | N/A | N/A | 1@60,2@40 | - | - | 169 | - | 200 |
| -160D | 160 | 546 | 656 | 8 | 20 | N/A | 4 | N/A | N/A | 4@40 | - | - | 193 | - | 200 |
| -180D | 180 | 614 | 738 | 9 | 20 | N/A | 5 | N/A | N/A | 1@60,3@40 | - | - | 217 | - | 225 |
| -200D | 200 | 682 | 820 | 10 | 20 | N/A | 5 | N/A | N/A | 5@40 | - | - | 241 | - | 275 |
| -220D | 220 | 751 | 902 | 11 | 20 | N/A | 6 | N/A | N/A | 1@60,4@40 | - | - | 265 | - | 300 |
| -240D | 240 | 819 | 984 | 12 | 20 | N/A | 6 | N/A | N/A | 6 @40 | - | - | 289 | - | 300 |
| -280D | 280 | 955 | 1148 | 14 | 20 | N/A | 7 | N/A | N/A | $7 @ 40$ | - | - | 337 | - | 325 |
| -320D | 320 | 1092 | 1312 | 16 | 20 | N/A | 8 | N/A | N/A | 8@40 | - | - | 385 | - | 350 |
| -360D | 360 | 1228 | 1476 | 18 | 20 | N/A | 9 | N/A | N/A | 1@80, 7@40 | - | - | 434 | - | 375 |
| -400D | 400 | 1365 | 1640 | 20 | 20 | N/A | 10 | N/A | N/A | 2@80,6@40 | - | - | 482 | - | 400 |
| -440D | 440 | 1501 | 1804 | 22 | 20 | N/A | 11 | N/A | N/A | 3@80,5@40 | - | - | 530 | - | 425 |
| -480D | 480 | 1638 | 1968 | 24 | 20 | N/A | 12 | N/A | N/A | 4@80, 4@40 | - | - | 578 | - | 450 |
| (1) Recovery ratings should not exceed 1 KW per gallon of storage capacity. <br> (3) Recovery ratings with 5 or more steps include a proportional step control <br> (2) Element limitations for Vertical Tanks are as follows: <br> "A": No limitations on elements <br> (4) Add recovery weight to storage tank weight to obtain total unit weight. <br> "B" Element (15KW): Not to be used on vertical tanks <36" diameter <br> "C" Element (18KW): Not to be used on vertical tanks <42" diameter <br> "D" Element (20KW): Not to be used on vertical tanks <48" diameter |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## 1.General

Furnish and install as shown on the plans a RHEEM Storage Water Heater Model HWSwhich shall be a complete Factory tested, packaged unit consisting of an electrically-heated water storage vessel complete with all required operating and safety controls.

The pressure vessel shall meet all the applicable requirements for ASME Section IV and stamped HLW and shall be National Board Inspected and designed for (125) (150) PSIG maximum working pressure. A copy of the Manufacturer's Data Report shall be provided to the owner.

The completed Hot Water Storage Heater shall be UL listed and be installed in accordance with all applicable state and local codes.

## 2. Recovery

Each Hot Water Storage Heater shall have an electrical heating capacity of voltage of $\qquad$ KW for operation at a line voltage shall be 120 volts derived from an integral control transformer.

## Note for steam dual fired heater:

Heater shall also be provided with steam coil and controls rated to heat ___ GPH of water from $\qquad$ ${ }^{\circ} \mathrm{F}$ to $\quad{ }^{\circ} \mathrm{F}$ temperature rise and to control the outlet within 5 degrees of the selected temperature when supplied with $\qquad$ PSIG saturated steam to the control valve.

## 3. Controls and safety devices

## Load Sequencing:

Units of 4 or less steps - The Hot Water Heater shall be equipped with on/off thermostats to provide not less than $\qquad$ stages. The limit circuit shall consist of a high limit thermostat (automatic reset), a high limit thermostat (manual reset), internal branch circuit fusing, magnetic contactors, a probe-type low water cutoff, and pilot lights (one per stage).


Units of 5 or more steps - The Hot Water Heater shall be equipped with a proportional step control to provide not less than $\qquad$ steps. The control circuit shall consist of a proportional temperature controller with adjustable throttling range, a high limit thermostat (automatic reset), a high limit thermostat (manual reset), internal branch circuit fusing, magnetic contactors, an on/off switch with pilot light, a recycle feature, a probe-type low water cutoff, and pilot lights (one per step).

Each Heater shall be equipped with an ASME pressure and temperature relief valve, a combination pressure and temperature gauge, and an integral electric control panel with key-locked door.

## 4. Construction

Heater shall be constructed of a ( $\square$ vertical) ( $\square$ horizontal) steel tank " (inches) diameter x_ "(inches) ( $\square$ long) ( $\square$ high) and shall have a storage capacity of $\qquad$ gallons.
The immersion heating elements shall be Incoloysheathed individually flanged and sized for a maximum of 75 watts per square inch. The U-bend shall be heat treated and re-compressed after forming, to avoid failure due to stress cracks in the bend, and then brazed into a 2-1/2" square steel flange.
The pressure vessel shall be insulated with a minimum of 4 inches of $3 / 4$ pound density fiberglass insulation (or equivalent) and shall be enclosed in a enamelled sheet steel enclosure of at least 16 gauge thickness. The Heater shall be furnished with a $12^{\prime \prime} \times 16^{\prime \prime}$ manway,
" inlet,

" outlet, drain pipe and
valve, and lifting lugs.

## 5. Vessel Lining

Heater shall be completely lined After Fabrication with ( $\square$ RHEEM Seal) ( $\square$ Cement) lining as follows: (Insert one of the following paragraphs that applies to your selection of linings)
5.1 Rheem Seal: (NSF 61 Compliant) The tank interior shall be lined with two separate coats of polymerized epoxy to a dry film thickness of 5-6 mils per coat. Each coat shall be baked and force-cured in an oven.
5.2 Cement Lined: (NSF 61 Compliant) The tank interior shall be completely lined with Hydraulic Calcium Oxide cement, good for service temperatures to $250^{\circ} \mathrm{F}$ with the same coefficient of expansion as medium steel. The cement is applied at a minimum thickness of $5 / 8^{\prime \prime}$ to form a hard one-piece lining.

101 Bell Road Montgomery, AL 36117



[^0]:    - Constructed per NEC and UL Standards, and UL Labeled
    - Pressure Vessel Built to ASME Code Section IV and National Board Registered (125 PSI or 150 PSI)
    - Completely Assembled and Tested at the Factory
    - Precision Seal Lining (NSF-61 Compliant)
    - 16 Gauge Enamelled Steel Jacket on Structural Steel Base
    - 4" Fiberglass Insulation
    - Individually Flanged Incoloy-Sheathed Elements (75 wsi)
    - Integral Electric Control Panel with Key-Locked Door(s)
    - ASME Pressure and Temperature Relief Valve(s)
    - Pressure Gauge (w/Cock)
    - Manual Limit Toggle Switches (One Per Step)
    - Main Supply Circuit Lugs

[^1]:    * For complete Model \#, suffix given number by recovery model (see page 6). Model \# = HWS 2480V-30A-208-150 CC
    ** Add $10 \%$ to obtain weights for "strong" design for 60", 72 " and 96 " Diameters.

