

# Rinnai®

## RCW • SERIES™

### Commercial Water Heater

**NEW  
models**

RCW399AN, RCW500AN,  
RCW750AN, and RCW1000AN



RCW399AN and RCW500AN

RCW750AN  
and RCW1000AN

#### Remarkable Performance Including:

**10:1**  
Turndown  
Ratio

up to **99%**  
Thermal  
Efficiency

**7"**  
Intuitive LCD  
Touchscreen

# RCW • SERIES™

## Commercial Water Heater

### Advanced Performance

The **RCW • SERIES™** water heater offers a complete line of condensing, gas-fired Floor-Standing Volume Water Heaters that act as a primary water heat source in any size commercial application.

Rely on the **RCW • SERIES™** to deliver reliable, energy saving performance for your building with a ground breaking feature set that outperforms other water heaters in its class.

#### Intuitive 7" LCD Touchscreen Display



**Intuitive Controls** for simple start up, maintenance and monitoring.

**QR code** available on **SERVICE** menu goes directly to manuals.

All **RCW • SERIES™** models make it easy to program, access and monitor your water heater performance data onsite or with multiple connectivity features.

- **7" LCD Touchscreen** puts total control at your fingertips
- **Simple set-up** lets you adjust and customize parameters to maximize performance
- **Demand Screen** gives you critical information with color coded status messages
- **Standard Integrated Wi-Fi Connectivity** Monitor performance data via Wi-Fi
- **Built-In BMS Capability** 0-10V input for Building Management System (BMS)
- **Built-In Modbus** (optional BACnet and Lon Works)



#### Features Common to All RCW Models

- Up to 99% Thermal Efficiency
- 10:1 Turndown Ratio
- 316L SS Water Tube Heat Exchanger
- 2 Pump Controls
- No Special Cascade Cables (T-Stat Wire)
- Warranty: 5 Year HEX (Non-Prorated) 1-year Parts and Labor
- Smart Service Access with 270 degrees of access with removable panels
- Transport with ease, fits into freight elevators or through standard doorways
- Field Conversion Kit available
- ASME Certified, "HLW" stamped and National Board listed



**5 YEARS**  
on the Heat Exchanger  
**1 YEAR**  
on Parts  
**1 YEAR**  
Reasonable Labor

## Easy Installation & Service of Floor-Standing Water Heaters

- Roll onto job site with locking casters and leveling feet
- Only 28.5" wide, fits through a standard commercial doorway
- Maximum weight of 567 lbs.
- Secure Access with Service Panel Key
- Common Vent up to 2MM Btu
- Integrated 3 pump relays, up to 5 Amps each



RCW750AN  
and RCW1000AN



Service Panel Key  
(only on RCW750AN and RCW1000AN)



RCW399AN  
and RCW500AN

# Technical Specification

| Model                                                                                       |                      | RCW399AN                                                                                                                                                         | RCW500AN         | RCW750AN                                                        | RCW1000AN        |
|---------------------------------------------------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------|------------------|
| Installation                                                                                |                      | Condensing, Gas-Fired, Floor-Standing Water Heater. Internal (Indoor) or External (Outdoor) (convertible with optional accessories)                              |                  |                                                                 |                  |
| Ignition System                                                                             |                      | Direct Electronic Ignition                                                                                                                                       |                  |                                                                 |                  |
| Operating Conditions                                                                        |                      | Minimum Ambient Temperature: 33°F (1°C)                                                                                                                          |                  |                                                                 |                  |
| Dimensions (Appliance) - Width x Height x Depth                                             |                      | 21.75 in. x 39.5 in. x 30.75 in.<br>(550 mm x 1004 mm x 781 mm)                                                                                                  |                  | 28.5 in. x 44.5 in. x 51.75 in.<br>(723 mm x 1127 mm x 1312 mm) |                  |
| Weight (Appliance)                                                                          |                      | 227 lb (110 kg)                                                                                                                                                  | 300 lb (110 kg)  | 525 lb (238 kg)                                                 | 567 lb (257 kg)  |
| Dimensions (Shipping) - Width x Height x Depth                                              |                      | 30 in. x 48 in. x 36 in.<br>(770 mm x 1220 mm x 910 mm)                                                                                                          |                  | 38 in. x 57 in. x 60 in.<br>(970 mm x 1450 mm x 1530 mm)        |                  |
| Weight (Shipping)                                                                           |                      | 227 lb (103 kg)                                                                                                                                                  | 300 lb (136 kg)  | 591 lb (268 kg)                                                 | 633 lb (287 kg)  |
| Heat Exchanger Surface Area                                                                 |                      | 30.7 sq ft                                                                                                                                                       | 36.8 sq ft       | 60.9 sq ft                                                      | 75.4 sq ft       |
| Thermal Efficiency                                                                          |                      | 98%                                                                                                                                                              | 98%              | 98%                                                             | 99%              |
| Gas Consumption (Btu/Hr)                                                                    | Minimum              | 39,900                                                                                                                                                           | 50,000           | 75,000                                                          | 99,000           |
|                                                                                             | Maximum              | 399,000                                                                                                                                                          | 500,000          | 750,000                                                         | 999,000          |
| Temperature Setting                                                                         | Water Heater         | (Minimum - Maximum) 98°F - 185°F (37°C - 85°C)                                                                                                                   |                  |                                                                 |                  |
|                                                                                             | Storage Tank (DHW)   | 98°F - 176°F (37°C - 80°C)                                                                                                                                       |                  |                                                                 |                  |
| Water Content                                                                               |                      | 2.2 gal (8.3 l)                                                                                                                                                  | 2.7 gal (10.1 l) | 6.6 gal (24.8 l)                                                | 8.1 gal (30.6 l) |
| Water Pressure                                                                              |                      | Heat Exchanger MAWP: 160 PSI (11 Bar)<br>Pressure and Temperature Relief Valve: 150 PSI (10.3 Bar), 210°F (99°C)                                                 |                  |                                                                 |                  |
| Sound Level                                                                                 |                      | 56 dB(A)                                                                                                                                                         | 59 dB(A)         | 63 dB(A)                                                        | 65 dB(A)         |
| Electrical Data                                                                             | Normal               | 210 W                                                                                                                                                            | 350 W            | 484 W                                                           | 605 W            |
|                                                                                             | Standby              | 10 W                                                                                                                                                             |                  |                                                                 |                  |
|                                                                                             | Max Current          | 20 Amps                                                                                                                                                          |                  |                                                                 |                  |
|                                                                                             | Fuse                 | Main Controller: 2 X 6.3 Amps   Each Pump (total of 3), Fan: 5 Amps                                                                                              |                  |                                                                 |                  |
| Gas Supply Pressure <sup>1</sup>                                                            | Natural Gas          | 3.5 in. - 10.5 in. W.C. (0.87 - 2.61 kPa)                                                                                                                        |                  |                                                                 |                  |
|                                                                                             | Propane              | 8.0 in. - 13.5 in. W.C. (1.99 - 3.36 kPa)                                                                                                                        |                  |                                                                 |                  |
| Electric Connections                                                                        |                      | AC 120 Volts, 60 Hz                                                                                                                                              |                  |                                                                 |                  |
| Certifications                                                                              |                      | ANSI Z21.10.3, CSA 4.3, ASME                                                                                                                                     |                  |                                                                 |                  |
| Canada CRN                                                                                  |                      | Y6325.2C                                                                                                                                                         |                  | R5402.5C                                                        |                  |
| Warranty                                                                                    |                      | Heat Exchanger: 5 years   All other parts & components: 1 year   Reasonable labor: 1 year. See the <b>Rinnai Commercial Boiler Warranty</b> for complete details |                  |                                                                 |                  |
| Venting<br>45° elbow is equivalent to 3 ft (1m)<br><br>90° elbow is equivalent to 6 ft (2m) | Options              | Direct Vent and Non-Direct Vent (Room Air)                                                                                                                       |                  |                                                                 |                  |
|                                                                                             | Materials            | PVC, CPVC, PP, and Stainless Steel                                                                                                                               |                  |                                                                 |                  |
|                                                                                             | Vent Size            | 4 in. PVC/CPVC                                                                                                                                                   |                  | 6 in. PVC/CPVC                                                  |                  |
|                                                                                             | Exhaust <sup>2</sup> | Vent Run (Min-Max): 10 ft (3 m) - 140 ft (43 m)                                                                                                                  |                  |                                                                 |                  |
|                                                                                             | Intake <sup>2</sup>  | Vent Run (Min-Max): 0 ft (0 m) - 140 ft (43 m)                                                                                                                   |                  |                                                                 |                  |
| Maximum Installation Altitude                                                               |                      | 10,200 ft (3,109 m)                                                                                                                                              |                  |                                                                 |                  |

<sup>1</sup>Maximum gas supply pressure must not exceed the value specified by the manufacturer.

<sup>2</sup>RCW500AN Model ONLY: For altitudes above 2,000 ft (609 m), vent length is reduced to 110 ft (33 m).

RCW399AN Model ONLY: For altitudes above 2,000 ft (609 m), vent length is reduced to 90 ft (27 m).

Rinnai products are continually being updated and improved, therefore, specifications are subject to change without prior notice.

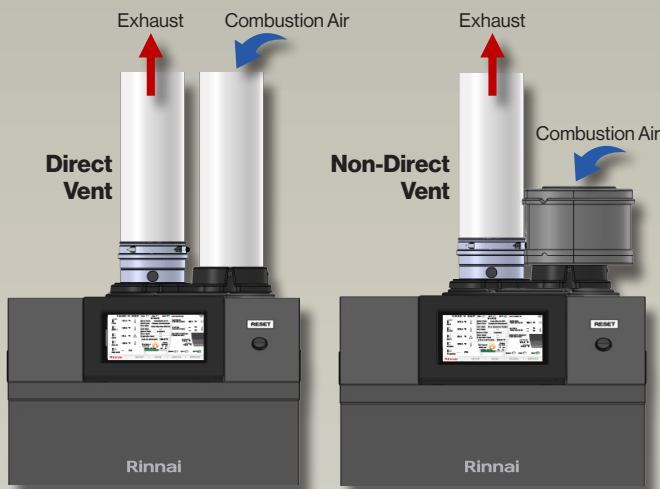
# Sizing Chart

| Model     | U.S. Gallon / HR Liters / HR at Temperature Rise Indicated |     |       |       |       |      |      |      |      |       |       |       |       |       |
|-----------|------------------------------------------------------------|-----|-------|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|
|           | Tank Size<br>(Gal)                                         | °F  | 30°F  | 40°F  | 50°F  | 60°F | 70°F | 80°F | 90°F | 100°F | 110°F | 120°F | 130°F | 140°F |
|           |                                                            | °C  | 17°C  | 22°C  | 28°C  | 33°C | 39°C | 44°C | 50°C | 56°C  | 61°C  | 67°C  | 72°C  | 78°C  |
| RCW399AN  | 80                                                         | GPH | 1628  | 1236  | 1001  | 844  | 732  | 648  | 583  | 531   | 488   | 452   | 422   | 396   |
|           | 303                                                        | LPH | 6164  | 4680  | 3790  | 3196 | 2772 | 2454 | 2206 | 2008  | 1846  | 1711  | 1597  | 1499  |
|           | 119                                                        | GPH | 1658  | 1266  | 1030  | 873  | 761  | 677  | 612  | 560   | 517   | 481   | 451   | 425   |
|           | 450                                                        | LPH | 6275  | 4791  | 3900  | 3307 | 2882 | 2564 | 2317 | 2119  | 1957  | 1822  | 1708  | 1610  |
|           | 175                                                        | GPH | 1700  | 1308  | 1072  | 915  | 803  | 719  | 654  | 602   | 559   | 523   | 493   | 467   |
|           | 662                                                        | LPH | 6434  | 4950  | 4059  | 3465 | 3041 | 2723 | 2476 | 2278  | 2116  | 1981  | 1867  | 1769  |
| RCW500AN  | 119                                                        | GPH | 2055  | 1563  | 1269  | 1072 | 932  | 826  | 744  | 679   | 625   | 581   | 543   | 510   |
|           | 450                                                        | LPH | 7778  | 5918  | 4802  | 4058 | 3527 | 3128 | 2818 | 2570  | 2367  | 2198  | 2055  | 1932  |
|           | 175                                                        | GPH | 2097  | 1605  | 1311  | 1114 | 974  | 868  | 786  | 721   | 667   | 623   | 585   | 552   |
|           | 662                                                        | LPH | 7937  | 6077  | 4961  | 4217 | 3686 | 3287 | 2977 | 2729  | 2526  | 2357  | 2214  | 2091  |
|           | 238<br>(2x 119)                                            | GPH | 1747  | 1355  | 1120  | 963  | 851  | 767  | 701  | 649   | 606   | 571   | 540   | 515   |
|           | 901                                                        | LPH | 6613  | 5129  | 4238  | 3644 | 3220 | 2902 | 2655 | 2457  | 2295  | 2160  | 2046  | 1948  |
| RCW750AN  | 175                                                        | GPH | 3080  | 2342  | 1900  | 1605 | 1395 | 1237 | 1114 | 1016  | 935   | 868   | 812   | 763   |
|           | 662                                                        | LPH | 11657 | 8867  | 7193  | 6077 | 5280 | 4682 | 4217 | 3845  | 3541  | 3287  | 3072  | 2888  |
|           | 238<br>(2x 119)                                            | GPH | 3127  | 2390  | 1947  | 1653 | 1442 | 1284 | 1161 | 1063  | 983   | 916   | 859   | 810   |
|           | 901                                                        | LPH | 11836 | 9046  | 7372  | 6256 | 5459 | 4861 | 4396 | 4024  | 3719  | 3466  | 3251  | 3067  |
|           | 357<br>(3x 119)                                            | GPH | 3216  | 2479  | 2037  | 1742 | 1531 | 1373 | 1251 | 1152  | 1072  | 1005  | 948   | 900   |
|           | 1351                                                       | LPH | 12174 | 9384  | 7710  | 6594 | 5797 | 5199 | 4734 | 4362  | 4057  | 3804  | 3589  | 3405  |
| RCW1000AN | 238<br>(2x 119)                                            | GPH | 4146  | 3154  | 2559  | 2162 | 1879 | 1666 | 1501 | 1369  | 1260  | 1170  | 1094  | 1029  |
|           | 901                                                        | LPH | 15693 | 11939 | 9686  | 8184 | 7112 | 6307 | 5681 | 5181  | 4771  | 4430  | 4141  | 3894  |
|           | 357<br>(3x 119)                                            | GPH | 4235  | 3243  | 2648  | 2251 | 1968 | 1755 | 1590 | 1458  | 1350  | 1260  | 1183  | 1118  |
|           | 1351                                                       | LPH | 16031 | 12277 | 10024 | 8522 | 7450 | 6645 | 6019 | 5519  | 5109  | 4768  | 4479  | 4232  |
|           | 476<br>(4x 119)                                            | GPH | 4324  | 3332  | 2737  | 2341 | 2057 | 1845 | 1679 | 1547  | 1439  | 1349  | 1272  | 1207  |
|           | 1802                                                       | LPH | 16369 | 12614 | 10362 | 8860 | 7787 | 6983 | 6357 | 5857  | 5447  | 5106  | 4817  | 4569  |

# Integrated Cascade Connection

Multiple water heater configurations are accommodated with our Integrated Cascade Logic that distributes runtimes equally for optimal application diversity.

- **Runtimes are equally distributed on up to 8 units** with interchangeable lead unit
- **Simplifies operation and interchangeability** of units in a system, One SKU for each Btu size
- **No special cables required**, uses industry standard thermostat wire



## Venting Options

- **Multiple venting options in either twin pipe or room air** allows you to locate units where you want to within the building
- **Concentric side wall or vertical termination configurations optional** to minimize building penetrations
- **Models RCW399AN and RCW500AN. Use 4" PVC or PP for maximum vent runs of 140 feet** in both twin pipe and room air applications
- **Models RCW750AN and RCW1000AN. Use 6" PVC or PP for maximum vent runs of 140 feet** in both twin pipe and room air applications
- **Models RCW399AN and RCW500AN. Common Vent up to 4 units on 8" PVC or PP**
- **Models RCW750AN and RCW1000AN. Common Vent up to 2 units on 8" PVC or PP**
- **Industry-leading Common Vent runs** (see install manual for details)
- **Vent Material options are PVC, CPVC, PP and Stainless Steel**

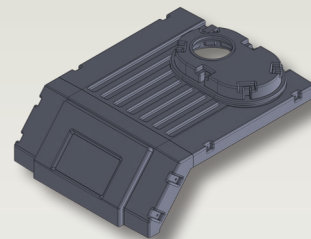


## Recommended External Pump

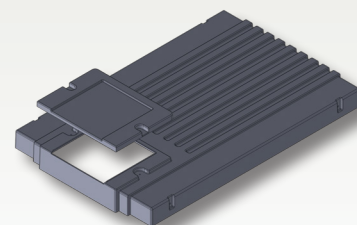
**107000762**  
Magna3 50-180 Stainless Steel (or equivalent)

A stainless steel, high-efficiency, variable-speed circulator pump designed for a wide range of large residential, commercial, and industrial applications. It's known for its ability to adapt to various system demands.

## Outdoor Conversion Kits



**103000123**  
Outdoor Conversion Kit 399/500



**103000124**  
Outdoor Conversion Kit 750/1000

# RCW • SERIES™



RCW399AN



RCW500AN

## Included Accessories

- Pressure Relief Valve: 150 PSI (5.2 bar)
- Outdoor Temperature Sensor
- Pressure and Temperature Gauge
- Documentation: Installation & Operation Manual, User Manual, Warranty Card



RCW750AN

RCW1000AN

## Optional Accessories

- Condensate Neutralizer
- Air Inlet Filter
- Cascade System Sensor
- Gas Conversion Kit
- BACnet Adapter
- BACnet Adapter w/ LonWorks
- Water Temperature High Limit ASME CSD-1
- High & Low Gas Pressure Switches ASME CSD-1
- Low Water Cut-Off ASME CSD-1



# Rinnai®



**Proudly assembling Tankless Water Heaters at our state-of-the-art factory located in Griffin, Georgia, USA**



Residential Water Heating Solutions



Electric Water Heating Solutions



Commercial Water Heating & Heating Solutions



Home Heating Solutions

## Creating a healthier way of living®

**Rinnai America Corporation** | 103 International Drive | Peachtree City, Georgia 30269 | [rinnai.us](http://rinnai.us) | [rinnai.ca](http://rinnai.ca) | 1•800•621•9419

Learn more about Rinnai high-performance Tankless Water Heaters, Hybrid Water Heating Systems, Boilers, Vent-Free Fan Convectors, EnergySaver® Direct Vent Wall Heaters, Hydronic Air Handlers, Electric Heat Pump Water Heaters, and Accessories.

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Rinnai supports our Military and First Responders



**FOLDS of HONOR**