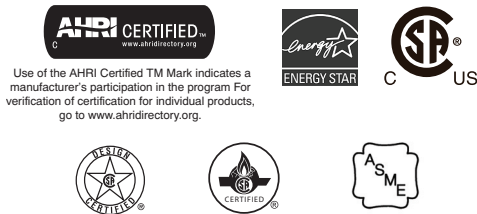
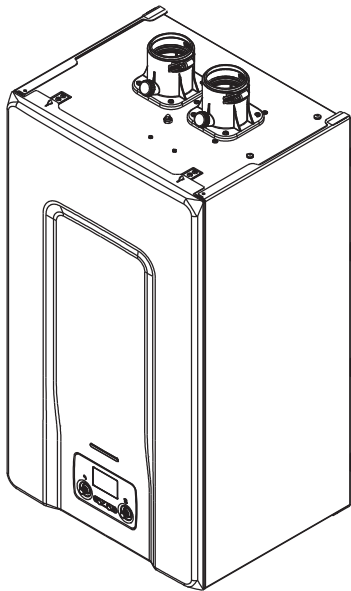


**BWC - COMBINATION
BWH - HEATING ONLY
LEGACY™ SERIES MODULATING
GAS-FIRED WATER BOILER
UP TO 95% AFUE**

Product Data



Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program For verification of certification for individual products, go to www.ahridirectory.org.

Fig. 1 – Model BWC/BWH

A180226

The BWC and BWH are gas fired, wall hung water boilers designed for easier, more flexible installations with extensive venting configurations, a built-in expansion tank, and an adaptive electronic combustion control that continually adjusts the gas valve for optimal combustion during installation and operation.

These boilers also feature an impressive 7:1 turn down ratio, the option to adjust for propane or natural gas with a simple control selection, and a stainless steel heat exchanger, which allows for better heat transfer than a cast iron boiler. With an Annual Fuel Utilization Efficiency (AFUE) up to 95%, 120k and 150k Btu/h nominal input capacities, and heating only and combination models, these condensing boilers offer a great replacement for older equipment.

The BWC and BWH modulating boilers are vented as direct vent (2-pipe) with over twenty options for venting configurations, including concentric terminations, using readily available PP, CPVC, and PVC (intake only) pipes. These compatible boilers can be used with radiators, baseboard heating, radiant flooring, and hydronic coils.

In direct vent installations, the induced draft fan draws in the combustion air, then takes the cooler flue gases from the heat exchanger and provides a positive removal of the flue gases from outside the building through inexpensive and readily available PP and CPVC pipes.

Efficiency

Annual Fuel Utilization Efficiency (AFUE) reaches up to 95% 120k and 150k Btu/ nominal input capacities, with a minimum input of 17k and 20k 7:1 turn-down ratio.

Included outdoor temperature sensor automatically adjusts boiler output temperate based on the outdoor temperature, saving on fuel usage.

Features

- ACC (Active Combustion Control) system automatically adjusts gas valve based on operating conditions, both at initial installation and continually during operation, to optimal combustion for functionality, efficiency, and low emissions.
- Modulating gas valve with 7:1 turn-down ratio
- Stainless steel heat exchanger
- Direct vent (2-pipe) with over 20 venting configuration options
- Compatible venting materials include PP, PVC (intake only), and CPVC
- Freeze protection feature senses low temperature conditions and circulates water to protect the boiler only (not heating system)
- Pre-wired wall plug to save labor costs
- Automatic by-pass internal to the boiler (recommended to also add by-pass in system piping)
- DHW inlet/outlet and 3-way valve circuit included for indirect-fire water heater (BWH models)
- Aquastat and thermistor control inputs (BWH models)
- Fill valve to fill boiler from DHW circuit during initial fill, and servicing (BWH models only)
- Automatic air separator with air purge cycle at power-up
- Auto-diagnostic function with burner lockout
- Low voltage connections are terminated external to the cabinet for convenience
- Combi boiler replaces water heater and supplies domestic hot water up to 4.2 GPM at a 72° F temperate rise (BWCAAG000150)
- Outdoor reset sensor included
- Internal low-water cutoff with pressure transducer
- Intuitive control with digital display

NOTE: Indoor thermostats must be rated 1.5 VA or less to be powdered by this boiler's transformer

Installation Flexibilities

- Wall mounting kit and paper installation template included
- Adaptive electric control reduces the need for manual combustion analysis by the installing technician
- No need for gas conversion kit, adapts for propane or natural gas with a simple control selection
- Completely assembled, including controls (except room thermostat and system circular pump), ready to install
- 2.3 gallon expansion tank built-in external tank may be needed depending on the system size
- Additional flow regulators included with combi models to increase/decrease flow per your application requirements
 - BWC120: 3.2 gpm (12 l/min) standard, 2.6 gpm (10 l/min), and 4.2 gpm (16 l/min) — included in box
 - BWC150: 4.0 gpm (12 l/min) standard, 3.4 gpm (13 l/min), and 4.8 gpm (18 l/min) — included in box

Certifications

- CSA certified
- ENERGY STAR® certified
- Meets California’s ultra low NOx requirements
- Combi models conform to "Lead Free" plumbing products per NSF/ANSI 372, and also CSA 4.3-2017, Storage Water Heaters With Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous

MODEL NUMBER NOMENCLATURE

Example: **B W C A A G 000 150 AAAA**

Boiler

Type

W = water
S = steam

Combustible / Ignition

M = Modulating
 9 = 90% direct vent, sealed combustion / HIS
 4 = Oil burner w/o tankless coil
 5 = Oil burner with tankless coil
 3 = Induced draft / electronic
 B = Natural draft / electronic (non-steam models)
 2 = Natural draft / electronic (steam models)
 H = Heating, 95% modulating, condensing
 C = Combi (Heating & DHW), 95% modulating, condensing

Model Code

A = Major Series

Electrical

A = 120 VAC / 60 Hz / 1 Ph

AAAA = All, except below

Heating Input Code & Capacity

BWC
 150 = 151,000 instantaneous DHW; 119,000 CH
 120 = 120,000 instantaneous DHW; 85,000 CH
BWH
 150 = 119,000 CH; 151,000 DHW with indirect tank (external) *
 120 = 85,000 CH; 120,000 DHW with indirect tank (external) *
 * internal 3-way valve included in boiler for indirect tank connection

Cooling Capacity

000 = 0 Btuh (All models)

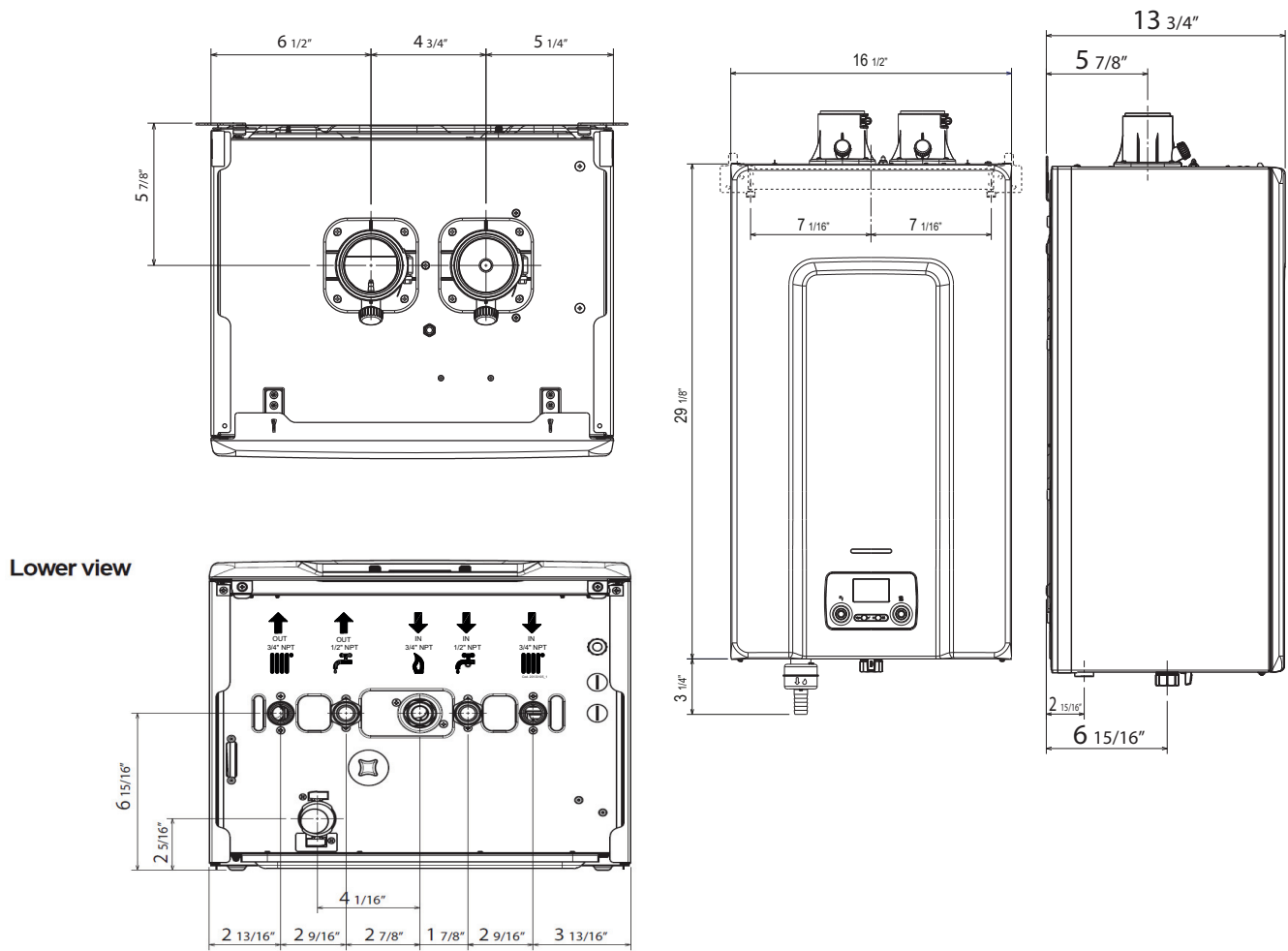
Fuel

N = Natural Gas (Propane convertible)
 H = Heating oil
 G = Gas adaptive, electronically selectable for propane (no kit required)

NOTE: Not all possible options can be displayed above. Refer to other support material or your local Carrier Expert

A180245AA

DIMENSIONS



A180227

Fig. 2 – BWC/BWH 120 Dimensions

UNIT SIZES		BWCAAG000120	BWHAAG000120	BWCAAG000150	BWHAAG000150
WIDTH		16.5" (420 mm)			
HEIGHT		29.13" (740 mm)			
DEPTH		13.7" (348 mm)			
CH WATER CONNECTIONS (NPT)			3/4"		3/4"
DHW WATER CONNECTIONS (NPT)		1/2"	3/4"	1/2"	3/4"
GAS CONNECTION	LOCATION	8-1/4" (210 mm) from left side; 6-15/16" (176 mm) from back			
	SIZE	3/4"			
CONDENSATE DRAIN CONNECTION		7/8" (21 mm)			
WEIGHT	SHIPPING	97 lb (44 kg)	92 lb (42 kg)	105 lb (48 kg)	101 lb (46 kg)
	UNIT	89 lb (40 kg)	84 lb (38 kg)	97 lb (44 kg)	93 lb (42 kg)
VENTING INTAKE		2" or 3" PVC, CPVC, PP			
VENTING EXHAUST		2" or 3" CPVC, PP			

BOILER ACCESSORIES

DESCRIPTION	PART NUMBER
10k NTC Tank Sensor	KBANT0101111
BE09 2nd Pump Relay Board	KBAIR0101BE9
Filtrol Kit	KBAFP0201DNK
Carbon Monoxide Alarm (10-pack)	COALMBBNRB02-A-10

CLEARANCES

UNIT SIZE	COMBUSTIBLE - IN. (MM) Closet or Alcove *	SERVICING - IN. (MM)
TOP	1 (25)	8-1/4 (330)
LEFT SIDE	1 (25)	1 (25)
RIGHT SIDE	1 (25)	6 (152) #
BOTTOM	0 (0)	7-7/8 (200)
FRONT	0 (0)	18 (457.2)
BACK	0 (0)	0 (0)

* Closet must open in front, or, for alcove, the front must be completely open to the room at a distance no greater than 18 in. (457 mm) from the front of the boiler, and the room is at least three (3) times the size of the alcove.

Service clearances on the right side of the boiler can be decreased up to 1 in. (25 mm) if the provided Warning label and Lighting Instructions are applied to the front of the boiler casing.

SPECIFICATIONS

UNIT SIZES	BWCAAG000120	BWHAAG000120	BWCAAG000150	BWHAAG000150
GAS CONTROLS				
Gas Valve	Modulating, Pre-Mix			
Ignition	Electronic			
Burner and Heat Exchanger	Stainless Steel			
CONTROLS				
Limit Control Range _F (_C)	Selectable CH High Temp range: 68–180 °F (20–82 °C) Max CH Limit: 194 °F (90 °C) Selectable DHW Temp range: 100–140 °F (37–60 °C)			
Internal Expansion Tank Capacity *	2.3 gal (9 L)			
Integrated Boiler Control	AKM11 (Main PCB)			
ON BOARD CIRCULATOR				
Grundfos Model	UPS 15-58			
Available Residual Head (ft) / Max Flow Rate (gpm) **	4.38 (ft) / 5.25 (gpm)		5.0 (ft) / 5.6 (gpm)	
Max Operating Pressure (CH System)	30 psi (2.07 bar)			

* A second (external) expansion tank may be required for your application. Please calculate the required expansion tank size.

** Primary / Secondary CH System piping recommended using 2nd field installed pump.

RATINGS AND CAPACITIES*

UNIT	MAX HEATING INPUT Btu/Hr	MAX DHW INPUT Btu/Hr	MIN INPUT RATE Btu/Hr	OUTPUT HEATING CAPACITY Btu/Hr	AFUE** %	DHW FLOW RATE at 70 °F RISE Gal/Min (l/min)	BOILER WATER CAPACITY Gal**
BWCAAG000120	85,000	120,000	17,000	80,000	95.0	3.2 (12.0)	29.1
BWHAAG000120						N/A	
BWCAAG000150	119,000	151,000	20,000	111,000		3.7 (14.1)	31.7
BWHAAG000150						N/A	

*Gas input ratings are for elevations up to 2000 ft. (610 M).

** Using 2.3 gal capacity internal expansion tank inside boiler

^ Annual Fuel Efficiency Rating (fuel burning efficiency)

ELECTRICAL DATA

Size	120	150
Voltage—Hertz—Amps—Phase	120 — 60 — 0.99 — 1	120 — 60 — 0.89 — 1
Rated Power Consumption (Watts)	107	119
Minimum Branch Circuit Wire Size (AWG)	14	
Maximum Fuse Size (Amps)	15 (4A internal in-line replaceable fuse)	
Control Circuit Power Available	1.5 va @ 24 vac	