

BW4 / BW5 OIL-FIRED WATER BOILERS SERIES D

PRODUCT DATA

FEATURES

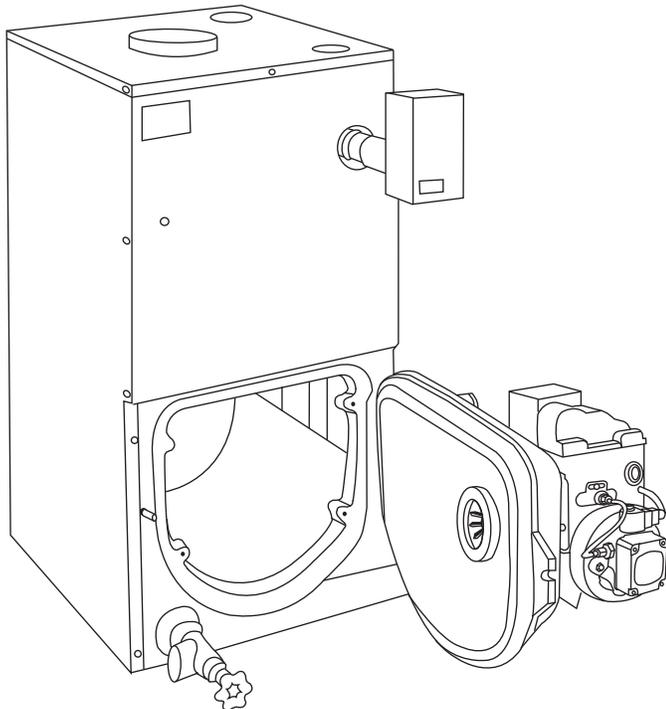
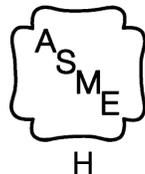


Fig. 1 – Model BW4/BW5

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The modern design and attractive appearance of the models BW4 and BW5 Oil-Fired Water Boilers make them ideal for installation in any area. The boilers are shipped fully assembled and wired, including all controls except barometric regulator and circulator pump. The compact 22-gauge steel cabinet has a baked-on enamel paint finish for durability. A 1-in. layer of thermal insulation is applied inside the jacket for protection and thermal efficiency. The flame retention head burner provides efficient fuel usage. A wet base cast iron block with thermal pins surrounds the combustion area for better heat transfer from flue gases to water.

Range of Capacities

BW4 and BW5 boilers are available in sizes 112,000 to 217,000 BTUH.

2021 DOE Compliant

The BW4/BW5 oil-fired boilers meet all 2021 Department of Energy requirements for these products.

Barometric Draft Control

The factory-supplied barometric draft control can easily be installed in the vent pipe for optimum draft and combustion efficiency.

Controls

Factory-wired controls on units with tankless hot water coil include a triple aquastat relay with high/low limit protection and circulator control. A factory accessory kit is available for protection against low water operation which is required by code.

Combination Transformer Aquastat

A 24V transformer is combined with the aquastat assembly. The transformer will supply power efficient to power a 3-zone system on BW5 models. These units also feature a factory-installed combination pressure/ temperature gauge and a pressure relief valve.

Coil Options

Units are available with or without tankless heater coil. The coil provides a supply of hot water for normal domestic purposes or an accessory tankless heater coil can be added later.

Factory Installed Features

A factory-installed drain is provided should the boiler ever need to be drained. Oil primary control prevents boiler operation in the event of flame loss.

Sections Tested

All BW3 and BW4 heat exchanger assemblies are factory assembled and tested hydrostatically per the current ASME pressure vessel code, section IV, for cast iron sectional boilers. The maximum allowable pressure is 50 psig. Assembled boilers are 100% end-of-line tested for functionality, electrical safety, and gas leak detection.

Ease of Installation

Circulator is shipped pre-wired with 6 ft BX conduit for easy installation for supply-side pumping.

Solenoid Oil Valve

This provides cleaner burning and quieter operation. Valve is included on all burner types.

Swing Burner Door

This unique design offers uninhibited access for set-ups, service, and maintaining the burner. Routine cleaning is also much easier.

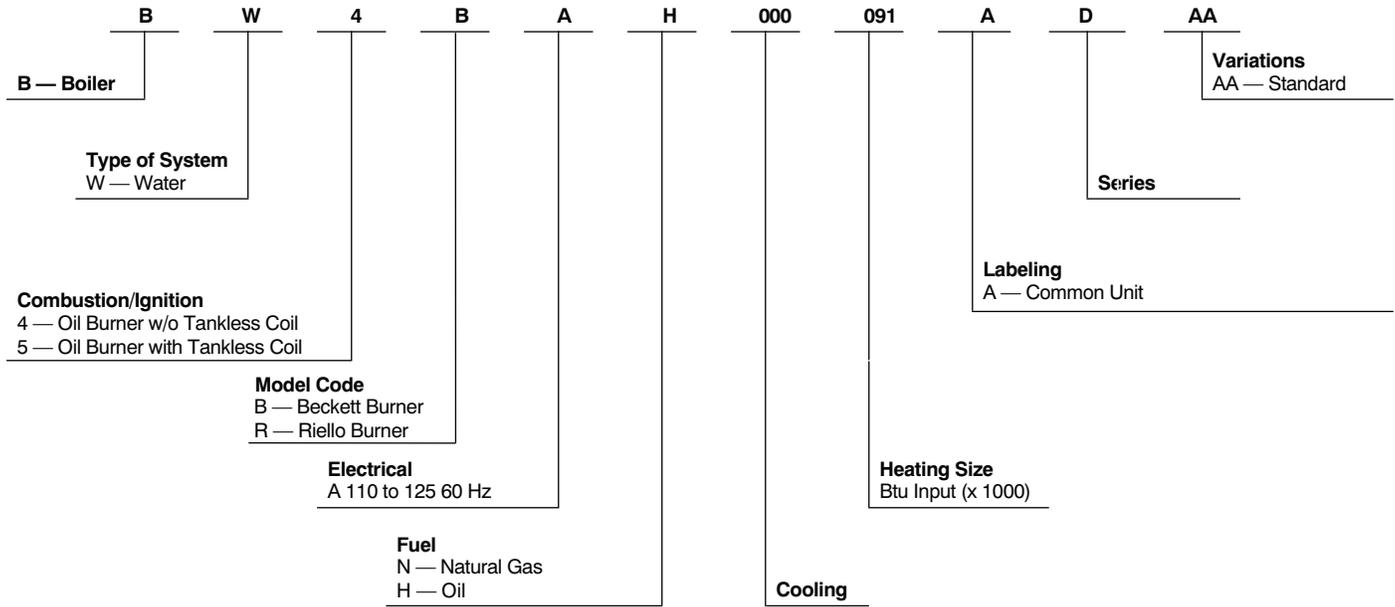


Fig. 2 – Model Number Nomenclature

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Table 1 – ACCESSORIES

DESCRIPTION	PART NO.
Filltrol Package (up to 150,000 BTUH) (Includes Air Purge Extrol Tank and Fill Valve)	KBAFP0201DNK
Filltrol Package (over 150,000 BTUH input) (Includes Air Purge Extrol Tank and Fill Valve)	KBAFP0301DNK
High-Limit Control*	KBAHL0101DNK
Low Water Cut-off Kit	KBALW0101DNK
Tankless Water Heater Kit	KBATH0201DNK
Carbon Monoxide Alarm (10-pack)	COALM(CC,BB)NRB02-A10
Zoning Valve 3/4-in.	KBAZV0101DNK

*Accessory High Limit Control is a strap-on aquastat used as an auxiliary limit or reverse acting circulator control.

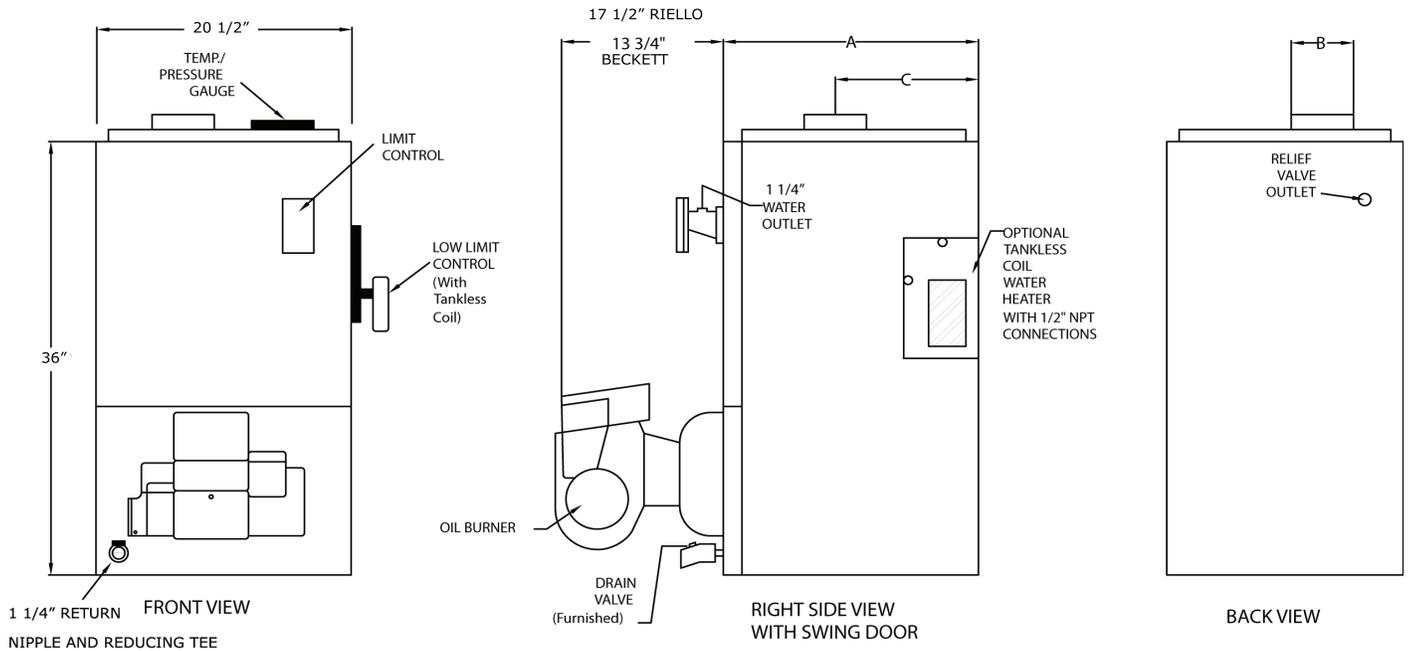


Fig. 3 – Models BW4 and BW5 Dimensions

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Table 2 – DIMENSIONS (In.)

UNIT SIZE	A	B	C
112	14.5	6	8
140, 175	17-3/4	6	9-5/8
217	21	6	11-1/2

Table 3 – CLEARANCES - IN. (MM)

PART OF BOILER	COMBUSTIBLE
RIGHT SIDE	24 (610)
LEFT SIDE	6 (152)
TOP	6* (152)
BACK	6 (152)
FRONT	24 (610)
FLUE	18 (457)

*. Service clearance requirement 24 in. (610 mm)

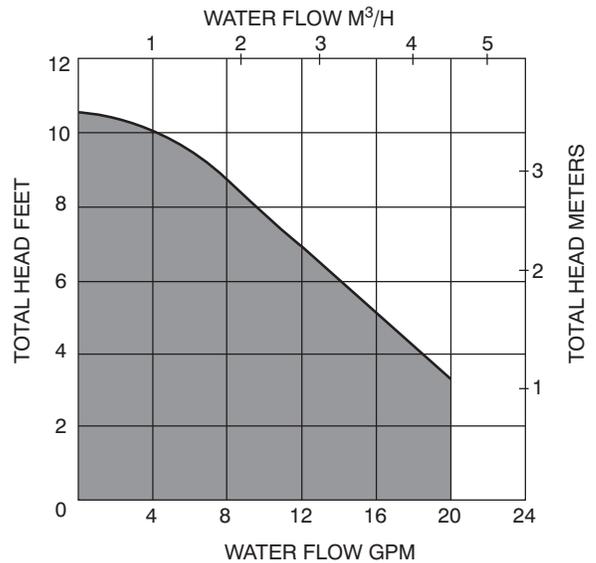


Fig. 4 – Water Boiler Circulator Curve

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Table 4 – ELECTRICAL DATA

ALL MODELS	
Voltage—Hertz—Phase	120 — 60 — 1
Minimum Branch Circuit Wire Size (AWG)	14
Maximum Fuse Size (Amps)	15
Control Circuit Power Available	40va—@ 24v

Table 5 – BURNER SPECIFICATIONS*

BOILER MODEL	BURNER MODEL	INPUT RATE (GPH)	INSERTION DEPTH (IN)	DEVLAN OIL NOZZLE	PUMP PRESS (PSI)	LOW FIRE BAFFLE	TURBU-LATOR SETTING	BURNER HEAD	HEAD SETTING	AIR SHUTTER / BAND	STATIC PLATE (IN)
BW(4,5)BAH000112	AFG50MBAS	0.8	2-1/4	0.65–70°W	150	YES		L1	N/A	10/1	3-3/8
BW(4,5)BAH000140	AFG50MDASN	1.0	2-1/2	0.85–60°A	140	NO		V1	0	6.5/0	2-3/4
BW(4,5)BAH000175	AFG50MDASN	1.25	2-1/2	1.00–60°W	155	NO		V1	0	10/1	2-3/4
BW(4,5)BAH000217	AFG50MDASN	1.55	2-1/2	1.00–60°B	155	NO		V1	2	10/2	2-3/4
BW(4,5)RAH000112	40F5	0.8	2-1/4	0.70–90°B	130		0			1.70	
BW(4,5)RAH000140	40F5	1.0	2-1/4	0.85–60°B	140		0			2.25	
BW(4,5)RAH000175	40F5	1.25	2-1/4	1.10–60°B	130		2			3.00	
BW(4,5)RAH000217	40F5	1.55	2-1/4	1.25–60°B	150		4			3.20	

*. NOTE: All Riello 40 F-5 oil burners are factory preset at 145 psig.

Table 6 – RATINGS AND PERFORMANCE

WITHOUT TANKLESS COIL	NO. SEC.	INPUT MBH*	HEATING CAPACITY† MBH*	NET AHRI RATING MBH*	FIRING RATE GPH‡	AFUE %	MIN CHIMNEY SIZE / HEIGHT	SHIP WGT. LB.
BW4BAH112 BW4RAH112	3	112	98	85	0.80	86.0	8" x 8" x 15'	469
BW4BAH140 BWA4RH140	4	140	122	106	1.00	86.2	8" x 8" x 15'	546
BW4BAH175 BW4RAH175	4	175	152	132	1.25	86.0	8" x 8" x 15'	546
BW4BAH217 BW4RAH217	5	189	189	164	1.75	86.0	8" x 8" x 15'	620

* MBH = 1,000 BTU per hour

† Heating Capacity is based on a 13.1 percent CO2 with a -0.02 in. wc draft over fire and a #1 smoke or less. Testing was done in accordance with the D.O.E (Department of Energy) test procedure.

‡ GPH = Gallons per hour of oil at 140,000 BTU per gallon

Table 7 – RATINGS AND PERFORMANCE

WITH TANKLESS COIL	NO. SEC.	INPUT MBH*	HEATING CAPACITY† MBH*	NET AHRI RATING MBH*	FIRING RATE GPH‡	AFUE%	MIN CHIMNEY SIZE / HEIGHT	SHIP WGT. LB.	TANKLESS HEATER G.P.M.††
BW5BAH112 BW5RAH112	3	112	98	85	0.80	86.0	8" x 8" x 15'	483	3.05
BW5BAH140 BW5RAH140	4	140	122	106	1.00	86.2	8" x 8" x 15'	554	3.25
BW5BAH175 BW5RAH175	4	175	152	132	1.25	86.0	8" x 8" x 15'	554	3.50
BW5BAH217 BW5RAH217	5	189	189	164	1.75	86.0	8" x 8" x 15'	627	3.80

* MBH = 1,000 BTU per hour

† Heating Capacity is based on a 13.1 percent CO2 with a -0.02 in. wc draft over fire and a #1 smoke or less. Testing was done in accordance with the D.O.E (Department of Energy) test procedure.

‡ GPH = Gallons per hour of oil at 140,000 BTU per gallon

†† GPM = Gallons of water per minute, heated from 40°F to 140°F, with 200°F boiler water temperature, intermittent draw.