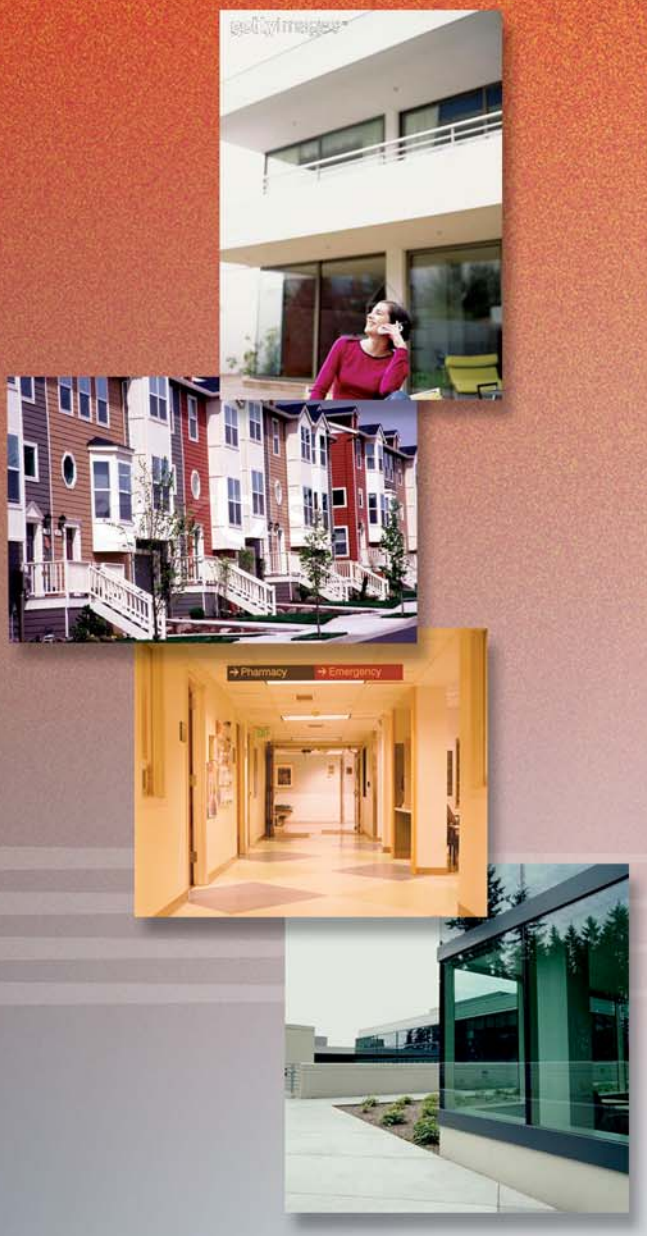
FUTERA II SERIES

Domestic Hot Water Heaters and Boilers



RBI

FUTERA II SERIES

LOW NOx, HIGH EFFICIENCY, HOT WATER SUPPLY AND HYDRONIC HEATING BOILERS

Futera II Series hot water supply boilers, now available with appealing, corrosion-resistant, brushed stainless steel jacket, provide dependable performance with 85% efficiency, non-condensing with industry-leading NOx levels of less than 10 ppm.

Quality components include a rugged heat exchanger with bronze headers and fittings that prevent rust and corrosion for the life of the heater. Finned tubes are industrial grade copper with fins and tubewalls formed as one, providing better heat transfer. Each tube is rolled into all-bronze headers – standard on all Futera II boilers. The tubes are individually field replaceable. The heat exchanger is superior in design, durability and serviceability – each is hydrostatically tested, approved and stamped for 160 psi ASME operation.

Futera II Series boilers and water heaters are also available with corrosion-resistant, brushed stainless steel jacket. Ideal for outdoor or indoor installation in harsh environments such as coastal areas and processing applications requiring wash down.

FOR BOILERS AND 85% EFFICIENT WATER HEATERS

Compact, low maintenance design and venting flexibility permit easy installation and service. All solid reasons to make the Futera II your future choice for virtually any domestic hot water or hydronic space heating application.

RBI Temperature Controller

SP Setpoint or Target Temperature:

The Setpoint is the inlet water temperature that the operating control will try to match by staging the boiler between 'Off', 'Stage 1' and 'Stage 2.'

D1 Boiler Differential:

The Boiler Differential is centered around the setpoint so that when the sensor reads $^1/_2$ of D1 below the setpoint, Stage 1 will be energized. When the sensor reads a temperature $^1/_2$ of D1 above the setpoint, stage will turn off.

D2 Interstage Differential:

The Interstage Differential is the difference in temperature between Stage 1 being called on, and Stage 2 being called on.

Advanced Diagnostic System

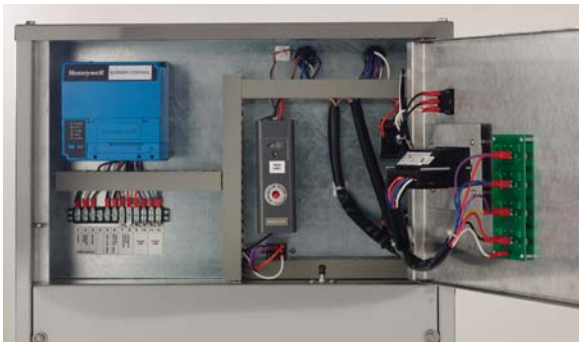
The Futera II features an easy-to-read LCD display that provides clear indication of inlet water temperature or setpoint in Fahrenheit or Celsius. The display also provides information for setting temperature control parameters. Advanced troubleshooting and self-diagnostic control provides a step-by-step cycle of operation. Each step is automatically tested and indicated, allowing for simplified and less costly troubleshooting.

Proven Pilot Ignition System

The Futera II Series uses a proven pilot with interrupted spark ignition and UV flame detection. The UV detector and igniter assembly provide highly reliable ignition and easy service. This important design feature provides long-life reliability. An observation port allows easy inspection of the flame at the top of the boiler.

Smart Service Design

A Honeywell RM Series Flame Safeguard, limit controls and terminal strips are neatly arranged and easily accessible in the front-facing panel.



HOURLY RECOVERY CAPACITY ΔT (GPH & LPH)

Model	Temperature											
	40° F	*22° C*	60° F	*33° C*	80° F	*44° C*	100° F	*56° C*	120° F	*67° C*	140° F	*78° C*
500	1,276	*4,828*	850	*3,219*	638	*2,414*	510	*1,931*	425	*1,609*	364	*1,380*
750	1,913	*7,243*	1,276	*4,828*	957	*3,621*	765	*2,897*	638	*2,414*	547	*2,069*
1000	2,551	*9,657*	1,701	*6,438*	1,276	*4,828*	1,020	*3,863*	850	*3,219*	729	*2,759*
1250	3,189	*12,071*	2,126	*8,047*	1,594	*6,035*	1,276	*4,828*	1,063	*4,024*	911	*3,449*
1500	3,827	*14,485*	2,551	*9,657*	1,913	*7,243*	1,531	*5,794*	1,276	*4,828*	1,093	*4,139*
1750	4,464	*16,899*	2,976	*11,266*	2,232	*8,450*	1,786	*6,760*	1,488	*5,633*	1,276	*4,828*
1950	4,974	*18,831*	3,316	*12,554*	2,487	*9,415*	1,990	*7,532*	1,658	*6,277*	1,421	*5,380*

TEMPERATURE RISE/PRESSURE DROP

Model	Temperature Rise Across Heat Exchanger															
	20° F		*11.1° C*		25° F		*13.9° C*		30° F		*16.7° C*		35° F		*19.4° C*	
	Flow Rate GPM	Pres. Drop Ft.	Flow Rate *l/s*	Pres. Drop *kPa*	Flow Rate GPM	Pres. Drop Ft.	Flow Rate *l/s*	Pres. Drop *kPa*	Flow Rate GPM	Pres. Drop Ft.	Flow Rate *l/s*	Pres. Drop *kPa*	Flow Rate GPM	Pres. Drop Ft.	Flow Rate *l/s*	Pres. Drop *kPa*
500	42.5	.53	*2.7*	*1.5*	34.0	0.35	*2.1*	*1.0*	–	–	–	–	–	–	–	–
750	63.8	1.57	*4.0*	*4.6*	51.0	1.04	*3.2*	*3.1*	42.5	0.70	*2.7*	*2.2*	36.4	0.60	*2.3*	*1.6*
1000	85.0	3.44	*5.4*	*10.1*	68.0	2.27	*4.3*	*6.7*	56.7	1.60	*3.6*	*4.8*	48.6	1.20	*3.1*	*3.6*
1250	106.3	2.11	*6.7*	*6.2*	85.0	1.40	*5.4*	*4.1*	70.8	1.00	*4.5*	*2.9*	60.7	0.70	*3.8*	*2.2*
1500	127.5	3.57	*8.0*	*10.5*	102.0	2.36	*6.4*	*7.0*	85.0	1.70	*5.4*	*5.0*	72.9	1.30	*4.6*	*3.7*
1750	–	–	–	–	119.0	3.67	*7.5*	*10.8*	99.2	2.60	*6.3*	*7.7*	85.0	2.00	*5.4*	*5.8*
1950	–	–	–	–	132.6	5.14	*8.4*	*15.1*	110.5	3.70	*7.0*	*10.8*	94.7	2.80	*6.0*	*8.1*

FUTERA II RATINGS

Model	Input		Output		Net I=B=R		NOx PPM	AMP DRAW	Shipping Weight	
	MBH	*KW*	MBH	*KW*	MBH	*KW*			Lbs.	*Kgs.*
500	500	*147*	425	*125*	366	*107*	9.3	5.9	421	*191*
750	750	*220*	638	*187*	550	*161*	8.8	5.9	550	*250*
1000	1000	*293*	850	*249*	733	*515*	8.0	5.9	560	*254*
1250	1250	*366*	1063	*311*	915	*268*	8.9	8.7	615	*279*
1500	1500	*440*	1275	*374*	1099	*322*	9.3	8.7	678	*308*
1750	1750	*513*	1488	*436*	1283	*376*	9.1	10.7	738	*335*
1950	1950	*571*	1658	*486*	1429	*419*	9.1	10.7	817	*371*

NOTE: Certified South Coast Air Quality Management District (SCAQMD) Protocol Rule 1146.2; Ventura County APCD Rule 74.11.1

FUTERA II PUMPING PERFORMANCE REQUIREMENTS

Water Hardness	Soft			Normal			Hard		
Heat Exch. Type	CuNi			Copper			CuNi		
Model	GPM	ΔP	ΔT	GPM	ΔP	ΔT	GPM	ΔP	ΔT
FW-500	37	0.42	23.0	75	1.50	11.0	90	2.11	9.0
FW-750	37	0.59	34.0	75	2.11	17.0	90	2.96	14.0
FW-1000	37*	0.75*	45.0*	75	2.72	23.0	90	3.82	19.0
FW-1250	52*	0.57*	40.0*	105	2.07	20.0	131	3.12	16.0
FW-1500	52*	0.69*	49.0*	105	2.49	24.0	131	3.76	19.0
FW-1750	52*	0.81*	57.0*	105	2.91	28.0	131	4.40	23.0
FW-2000	52*	0.92*	63.0*	105	3.33	32.0	131	5.04	25.0

*Special Requirements – call factory or representative

ΔT = Temperature Change = (Outlet Temp. – Inlet Temp.) in F°.

ΔP = Head Loss = (Inlet Pres. – Outlet Pres.) in feet of Water Column.

To achieve the proper flow rate, adjust outlet valve on heater piping to obtain the correct ΔT.

Call factory if grains or hardness is less than 3 or greater than 24 ppm.

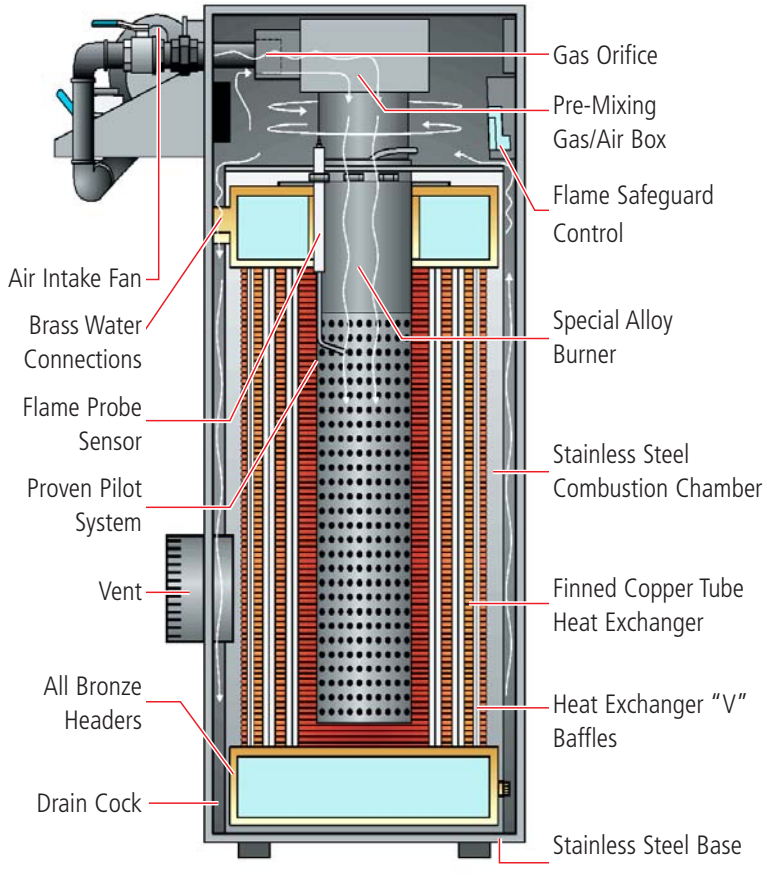
FUTERA II SERIES

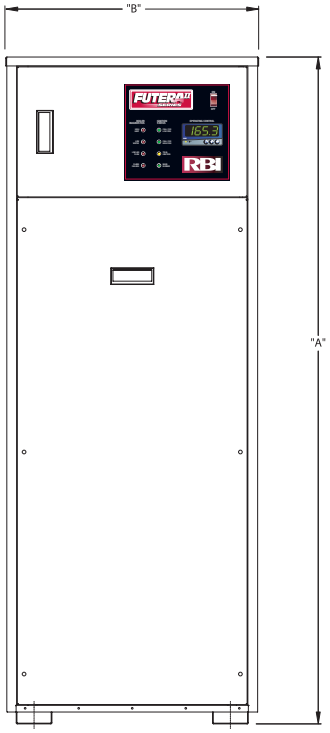
STANDARD FEATURES

- Flame safeguard control
- 85% efficient
- Bronze headers
- Finned copper tube heat exchanger, ASME 160 psi max WP, 4-pass design
- Gasketless heat exchanger assembly
- Stainless steel combustion chamber
- 2-stage digital operator
- Special alloy burner
- Less than 10 ppm NOx
- SCAQMD Rule 1146.2
- Compact, low maintenance design
- Venting flexibility
- CSA Design Certified & Listed (formally) AGA/CGA
- Proven pilot (UV flame detection)
- Factory installed ASME relief valve
- Outlet thermometer
- High limit control with manual reset
- Factory mounted and wired flow switch
- Low air pressure switch
- Easy access to all components
- 5-year limited heat exchanger warranty on water heaters, 10-year on boilers
- Heat exchanger drain
- National Board Certified
- Pump delay relay
- CSD-1 and FM compliant gas train

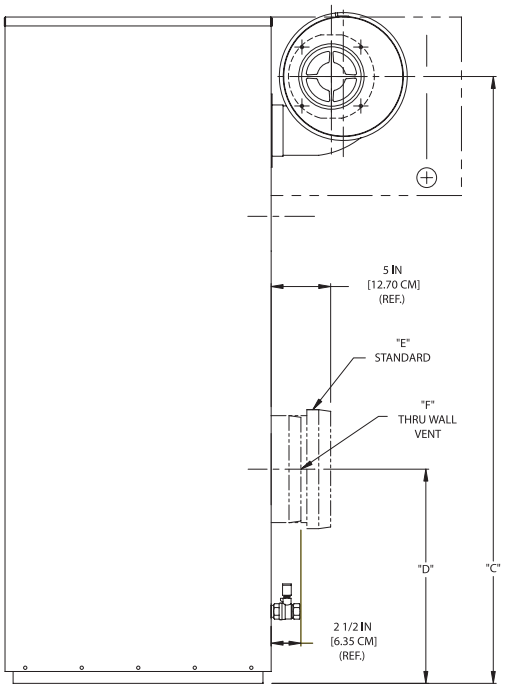
OPTIONAL EQUIPMENT

- Cupro-nickel finned-tubes
- Outdoor installation
- Thru-wall venting
- Direct venting
- Stainless steel jacket
- Barometric damper
- On-Off firing
- Freeze protection package

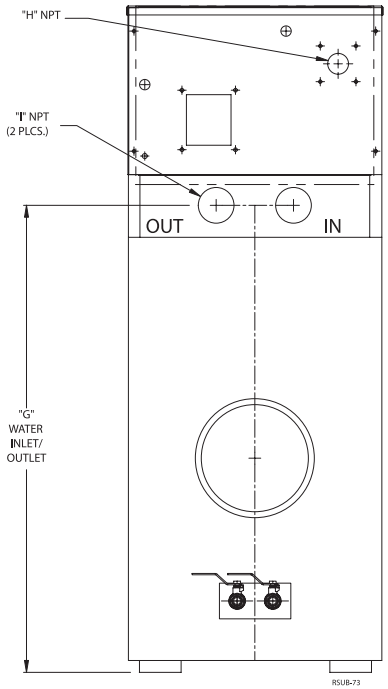




FRONT VIEW



RIGHT SIDE VIEW



REAR VIEW

FUTERA II DIMENSIONS

Model	A		B		C		D		E		F		G		H	I
	In.	*mm*	In.	*mm*	In.	*mm*	In.	*mm*	In.	*mm*	In.	*mm*	In.	*mm*	In.	In.
500	43	*1092*	21 1/4	*540*	37 1/2	*953*	11 3/4	*298*	8	*203*	6	*152*	26 1/4	*667*	1	*2*
750	49 1/2	*1257*	21 1/4	*540*	43 3/4	*1111*	14 3/4	*375*	10	*254*	8	*203*	33	*838*	1	*2*
1000	56	*1422*	21 1/4	*540*	51	*1295*	18	*457*	10	*254*	9	*229*	39 1/4	*997*	1 1/4	*2*
1250	51	*1295*	25 1/2	*648*	44	*1118*	17	*432*	12	*305*	10	*254*	32	*813*	1 1/4	*2 1/2*
1500	55 1/2	*1410*	25 1/2	*648*	48 1/2	*1232*	19	*483*	12	*305*	10	*254*	36 1/2	*927*	1 1/4	*2 1/2*
1750	60	*1524*	25 1/2	*648*	53 1/4	*1353*	21	*533*	14	*356*	12	*305*	41	*1041*	1 1/2	*2 1/2*
1950	64 1/2	*1638*	25 1/2	*648*	57 3/4	*1467*	23 3/4	*603*	14	*356*	12	*305*	45 1/2	*1156*	1 1/2	*2 1/2*

MEA-449-99E

In the interest of product improvement, RBI reserves the right to make changes without notice.

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