

WEIL-McLAIN

Model **80**

Boiler-Burner
Units

an ISO 9001 Certified Company

MODEL

80

BOILER-BURNER UNITS

LIGHT OIL, GAS AND GAS-LIGHT OIL

Ratings — (10 sizes)

242 – 1,172 MBH I=B=R NET WATER

208 – 1,018 MBH I=B=R NET STEAM

2.40 – 11.6 GPH #2 FUEL OIL

- **Easy-access jacket**
Jacket side panels lift off – no tools required
- **Convertible flue (rear/top)**
Top or rear flue available, and field convertible
- **Easy inspection & cleaning**
Easy access to side cleanouts
- **Factory assembly available**
Assembled block or completely packaged
- **Hydro-wall design**
Water circulates completely around chamber
- **W-M captured seals**
Grooves protect seals from contaminants
- **Multiple tankless heaters**
Up to 4 heaters available on some sizes
- **Steel flue collar**
Heavy-gauge galvanized steel for durability
- **Wide selection of burners**
... for maximum flexibility

... and the Model 80 is ideal for
multiple boiler applications



Presenting . . . the Weil-McLain **Model 80**

— commercial boiler-burner units for light oil, gas or gas/light oil firing, available with high-capacity tankless heaters, with the features installers have asked for — **Outstanding performance . . . innovative design . . . easier to install and service . . . top or back venting . . .** just a few of the advantages that make the Model 80 boiler the industry's best value. And best of all, the Model 80 boiler is made by Weil-McLain, America's leading name in cast iron boilers for over a century.

The Model 80 is available packaged or knockdown, for water or steam, with or without burner. Burners are ordered and shipped separately — to give you maximum flexibility.



Factory assembly available



In addition to individual sections, the Model 80 boiler is also available with factory-assembled sections. Burner plate, flue collector and flue collar are also assembled. Individual sections as well as the assembled unit are hydrostatically tested before shipping.

Lifting cables are attached to the block so the assembled boiler can be lifted by crane or hoist. Steel skids on the bottom of the boiler permit moving the unit with pipe rollers.

The Model 80 boiler is also available as a factory fire-tested package unit. Consult a Weil-McLain representative for details.

Wide selection of burners

Burners for the Model 80 are designed and engineered to match the firing characteristics of the boiler. Major brands of advance-design burners are available for firing light oil, gas, or combination gas-light oil, including Beckett, Carlin, Gordon-Piatt, Power Flame, and Webster. All burners are flame-retention type, ensuring optimum control of the fuel and air mixture for outstanding operating performance and maximum efficiency.

Model 80 ratings are certified by I=B=R when used with burners listed on page 4.

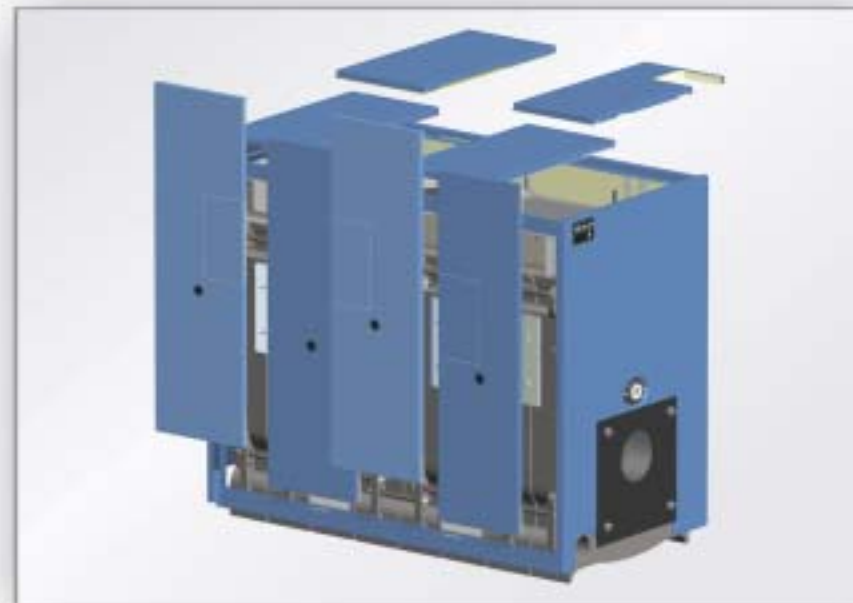
All burners are certified by Underwriters Laboratories, and can be furnished with optional controls to meet all insurance specifications and state and local code requirements.

Refer to the Weil-McLain burner specification sheets for complete details or consult a Weil-McLain representative.

Unique, easy-access jacket design — no tools needed to remove panels

This is the product you've been asking for — a boiler with a sturdy jacket that is quick and simple to assemble. The Model 80's unique jacket design does that and more.

- Jacket support brackets slide onto section tie rods and secure with 5/8" nuts.
- Jacket assembly requires only 10 screws for smaller models and 16 screws for larger models.
- Jacket side panels require **no screws** — just slide onto upper support rail and into lower support channel.
- Jacket side panels are easy to handle — never wider than 24 inches.
- Jacket top panels just **drop into place**, secured in position by support rails and adjacent panels.
- Jacket trim gives a clean, finished look to the jacket corners.



Hydro-wall design



The Model 80 boiler has a water-backed combustion area with water circulating completely around the firebox. The crown sheet, sidewalls, and heat pins on the flue passages enlarge prime heating surface for maximum operating efficiency.

In addition, Hydro-Wall design permits lower height, reduces heat loss through the bottom of the boiler, and allows installation on any floor.

The cast iron sections are not face-ground; the tough outer skin is retained to protect against corrosion. Sealing rope between sections assures the gas-tight seal required for forced draft firing.

Rear or top flue

Model 80 boilers are available with either rear flue or top flue. Save valuable floor space with the top flue option.

And the flexible design of the Model 80 allows simple field conversion of the flue location using a flue conversion kit.

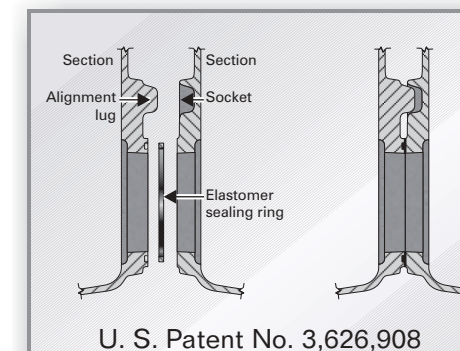


Rear flue
(standard)



Top flue
(optional)

W-M captured seals



Boiler sections want room to move as they heat and cool. Modern elastomer seals provide the ultimate freedom for the cast iron to flex (unlike rigid metal push nipples), preventing leaks caused by expansion and contraction.

The precision-machined port grooves secure the seals in place and protect them from contaminants in the water.

Easy inspection and cleaning



The Model 80 boiler can be inspected by lifting off a jacket side panel and removing a cleanout plate.

To clean the boiler, simply lift off a left side jacket panel and remove the cleanout plates. Replace the plates and jacket panel and continue down the boiler.

Steel flue collar



The Model 80 flue collar is made from heavy-gauge galvanized steel, designed and constructed for long and reliable life.

For maximum flexibility, the flue collar can be installed on either the top or rear of the boiler. (Specify location when ordering.)

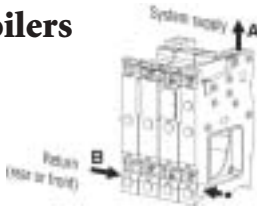
Multiple tankless heaters



Model 80 tankless heaters (Number 78-24) have a continuous draw rating (40° to 140°F, with 200°F boiler water) of 6.5 GPM per heater. Replace intermediate sections with tankless heater sections to provide up to 4 tankless heaters, depending on boiler size. See page 4 for a complete listing for each boiler size. Multiple heaters are another feature of the Model 80 flexibility, allowing (1) Increased domestic water capacity; (2) Multiple domestic water supply temperatures; (3) Use of a tankless heater for snow melting.

Recommended piping connections

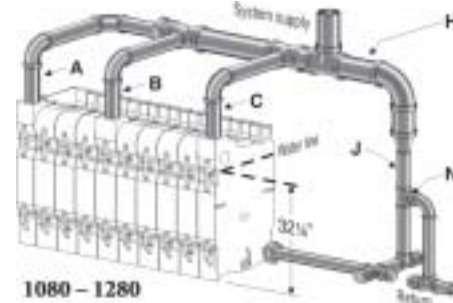
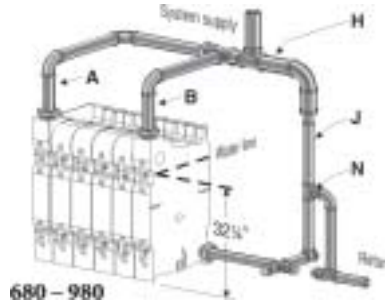
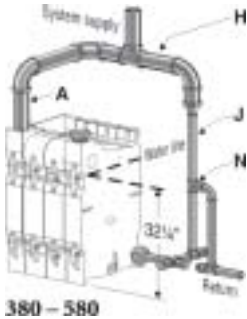
Water boilers



Boiler model	Pipe size		Boiler model	Pipe size		Boiler model	Pipe size	
	A Supply	B Return		A Supply	B Return		A Supply	B Return
380	2"	2"	780	4"	4"	1180	4"	4"
480	2½"	2½"	880	4"	4"	1280	4"	4"
580	3"	3"	980	4"	4"	Pipe sizes are minimum for 20°F or higher temperature drop.		
680	3"	3"	1080	4"	4"			

Steam boilers

- N Connect return to equalizer with close nipple, no lower than 4 inches below boiler water line.
- H Header must be at least 24 inches above boiler water line. Maintain pipe size for no less than 10 pipe diameters from boiler.

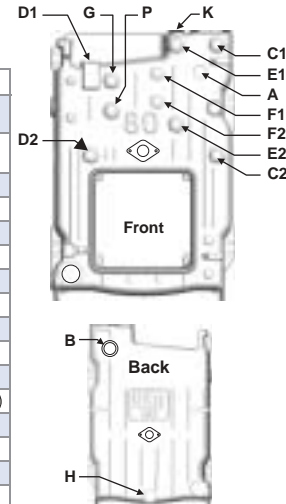


Boiler model	A Riser	B Riser	H Header	J Equalizer	Boiler model	A Riser	B Riser	C Riser	H Header	J Equalizer
380	3"	—	3"	2"	880	4"	4"	—	4"	3"
480	4"	—	4"	2"	980	4"	4"	—	6"	3"
580	4"	—	4"	2½"	1080	4"	4"	4"	6"	3"
680	3"	3"	4"	2½"	1180	4"	4"	4"	6"	3"
780	4"	4"	4"	2½"	1280	4"	4"	4"	6"	3"

Control tappings

Tapping	Size (NPT)	Water boilers, with water level controls:			Steam boilers, with water level controls:	
		Probe-type primary Probe-type secondary	Float-type primary Probe-type secondary	Float-type primary Float-type secondary	Float-type primary Probe-type secondary	Float-type primary Float-type secondary
A	1½" Note 1	Additional high/low limit control.			Not used	
B	3"	Water relief valve			Steam relief valve and skim tapping	
C1	1"	Firing rate control	Primary water level control		Primary water level control	
C2	1"	Not used	Primary water level control		Primary water level control	
D1	1"	Not used	Not used	Secondary level control	Not used	Secondary level control
D2	1"	Not used	Not used	Secondary level control	Not used	Secondary level control
E1	1"	Not used	Not used	Not used	Gauge glass	
E2	1"	Combination high/low limit control			Gauge glass	
F1	1"	Primary level control	Not used		Try cock tapping (Note 2)	
F2	1"	Not used	Firing rate control		Try cock tapping (Note 2)	
G	1"	Pressure-temperature gauge			Control tree (Limit control, operating control, and pressure gauge)	
H	1½"	Boiler drain			Boiler drain	
K	1"	Expansion tank piping or automatic air vent			Not used	
P (Note 3)	1"	Secondary level control		Not used	Secondary level control	Not used

Notes: 1. 1½" plug provided with boiler.



Burner options

Burners		Fuel options	Boilers
Beckett	CF500-W	Oil	380-480
	CF800-W		580-680
	CF1400-W		780-1080
	CF2300-W		1180-1280
Carlin	EZ-3HP-W	Oil	380
	201CRD-W		480
	301CRD-W		580-680
	702CRD-W		780-1180
	801CRD-W		1280
Gordon-Platt	WS4	Gas or Gas/Oil	380-580
	WR6	Oil, Gas or Gas/Oil	680-780
	WR8		880-1280
Power-Flame	WCR1	Oil, Gas or Gas/Oil	480-1080
	WCR2		1180-1280
	WJR15	Gas	380-580
	WJR30		680-980
WJR50	1080-1280		
Webster	WJB1	Oil, Gas or Gas/Oil	580-1280

Tankless heater locations

Boiler model number	Max. no. of heaters	Section arrangement (All heaters must be on left side of boiler.) (Locate sections only where shown.)	
380 W&S	1	F - TI - B	W = Water S = Steam
480 W&S	1	F - TI - I - B	
580 W&S	2	F - TI - I - TI - B	F = Front B = Back
680 W&S	2	F - TI - I - TI - I - B	
780 W&S	2	F - TI - I - TI - I - I - B	I = Intermediate
880 W&S	3	F - TI - I - TI - I - I - TI - B	
980 W&S	3	F - TI - I - TI - I - TI - I - I - B	TI = Tankless intermediate
1080 W	3	F - TI - I - TI - I - I - TI - I - I - B	
1080 S	3	F - TI - I - TI - SI - I - TI - I - I - B	SI = Supply intermediate for steam boilers
1180 W	4	F - TI - I - TI - I - I - I - TI - I - TI - B	
1180 S	4	F - TI - I - TI - I - SI - I - TI - I - TI - B	"I" sections can be substituted for "TI" sections.
1280 W	4	F - TI - I - TI - I - I - I - I - TI - I - TI - B	
1280 S	4	F - TI - I - TI - I - SI - I - I - TI - I - TI - B	

Ratings



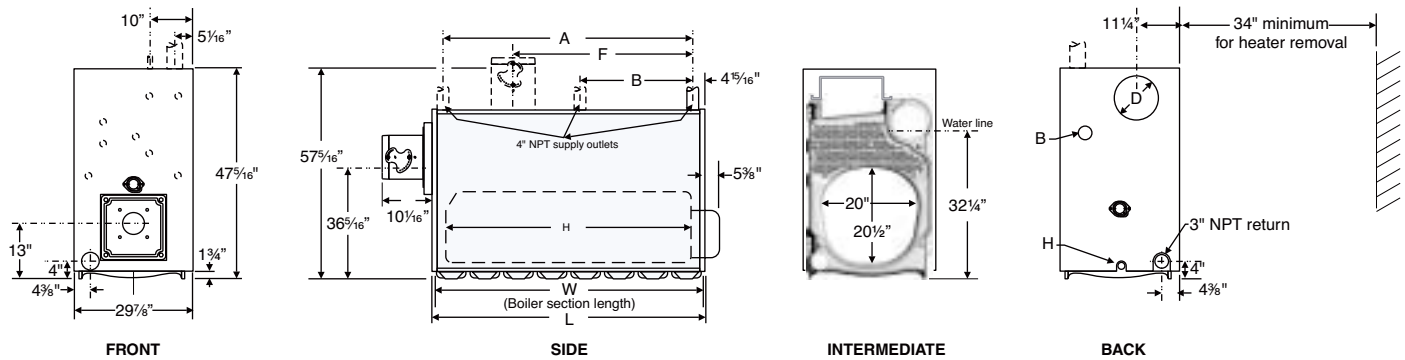
Model	CSA Ratings			Net Rating	Chimney or Vent	C.S.A. Combustion Efficiency		Burners Used Riello Model No.		
	Oil Input GPH	Gas Input MBH	Gross Output MBH			Water MBH	OIL	GAS	OIL	GAS
380c	2.25	324	276	240	8	87.7	85.1	F10	G400	N/A
480c	3.20	461	392	341	8	87.7	85.1	F15	G750	N/A
580c	4.15	598	509	443	8	87.7	85.1	F15	G750	N/A
680c	5.20	750	638	555	8	87.7	85.1	F15	G900	N/A
780c	6.10	880	749	651	10	87.7	85.1	F20 & RL28/2	G900 & RS28/M	RLS28
880c	7.00	1009	859	747	10	87.7	85.1	RL28/2 & RL28/M	RS28/M	RLS28
980c	8.00	1154	982	854	10	87.7	85.1	RL28/2 & RL28/M	RS38/M	RLS38
1080c	9.00	1298	1105	961	10	87.7	85.1	RL38/2 & RL38/M	RS38/M	RLS38
1180c	10.00	1442	1227	1067	10	87.7	85.1	RL38/2 & RL38/M	RS38/M	RLS38
1280c	10.80	1557	1325	1152	12	87.7	85.1	RL38/2 & RL38/M	RS38/M	RLS38

Notes

- Burner input based on maximum of 2,000 feet altitude. For higher altitudes consult local Weil-McLain representative.
- NO. 2 fuel oil Commercial Standard Spec CS75-56. Heat value of oil – 140,000 BTU/Gal.
- Consult Weil-McLain Burner Specifications and Data Sheet for gas pressures required. Gross I=B=R ratings have been determined under the I=B=R provision forced draft boiler-burner units.
- Net I=B=R ratings are based on net installed radiation of sufficient quantity for the requirements of the building and nothing need be added for normal piping and pickup. Water ratings are based on a piping and pick up allowance of 1.15. Steam ratings are based on the following allowances: 380 thru 1180-1333; 1280 – 1321. An additional allowance should be made for gravity hot water systems or for unusual piping and pickup loads. Consult local Weil-McLain representative.
- Stack gas volume at outlet temperature.
- With 0.10" W.C. positive pressure at flue collar.

Dimensions

Boiler model number	Supply tappings Qty – size		Return tappings Qty – size		Dimensions (inches)							
	Water	Steam	Water	Steam	A	B	D	F	H	W	L	
380	2 – 4"	2 – 4"	2 – 3"	2 – 3"	13 1/8"	—	8	12 7/16"	13 1/2"	20 3/8"	21 3/8"	
480	2 – 4"	2 – 4"	2 – 3"	2 – 3"	20 1/8"	—	8	13 3/8"	20 1/2"	27 3/8"	28 3/8"	
580	2 – 4"	2 – 4"	2 – 3"	2 – 3"	27 1/8"	—	8	13 3/8"	27 1/2"	34 3/8"	35 3/8"	
680	2 – 4"	2 – 4"	2 – 3"	2 – 3"	34 1/8"	—	8	13 3/8"	34 1/2"	41 3/8"	42 3/8"	
780	2 – 4"	2 – 4"	2 – 3"	2 – 3"	41 1/8"	—	10	27 3/8"	41 1/2"	48 3/8"	49 3/8"	
880	2 – 4"	2 – 4"	2 – 3"	2 – 3"	48 1/8"	—	10	27 3/8"	48 1/2"	55 3/8"	56 3/8"	
980	2 – 4"	2 – 4"	2 – 3"	2 – 3"	55 1/8"	—	10	41 3/8"	55 1/2"	62 3/8"	63 3/8"	
1080	2 – 4"	3 – 4"	2 – 3"	2 – 3"	62 1/8"	27 3/16"	10	41 3/8"	62 1/2"	69 3/8"	70 3/8"	
1180	2 – 4"	3 – 4"	2 – 3"	2 – 3"	69 1/8"	34 3/16"	10	55 3/8"	69 1/2"	76 3/8"	77 3/8"	
1280	2 – 4"	3 – 4"	2 – 3"	2 – 3"	76 1/8"	34 3/16"	12	55 3/8"	76 1/2"	83 3/8"	84 3/8"	



Equipment

Standard Equipment - All boilers

- Cast iron sections
- Insulated steel jacket
- Flame retention burner (except H-80)
 - Burner mounting plate with refractory (except H-80)
- Aluminized steel flue collector assembly
- Steel flue collar and breeching damper
- Observation ports on front and rear sections
- Refractory blanket and target wall in combustion area
- Side cleanout plates
- Flue brush

Standard Equipment - water boilers

- 30 PSIG ASME safety relief valve (sections tested for 80 PSIG maximum working pressure)
- Combination high limit/low limit control
- Combination pressure/temperature gauge
- Built-in air eliminator

Standard Equipment - steam boilers

- 15 PSIG ASME safety valve (side outlet)
- Low limit and high limit pressure controls
- Steam pressure gauge
- Gauge glass, gauge cocks and gauge guards

Optional Equipment

- Low water cut-offs (probe or float type)
- Tankless heaters
- Burner mounting plate (for H-80 boilers)
- Factory-assembled sections
- Fire-tested packaged boiler (with low water cut-off)

In the interest of continual improvements in product and performance, Weil-McLain reserves the right to change specifications without notice.



Locate our Sales Offices by visiting our website:
www.weil-mclain.com

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