

# 80 Water & steam boilers

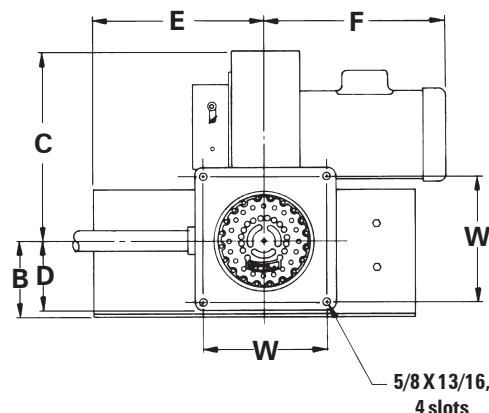
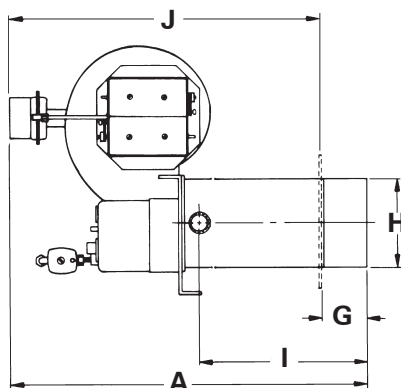
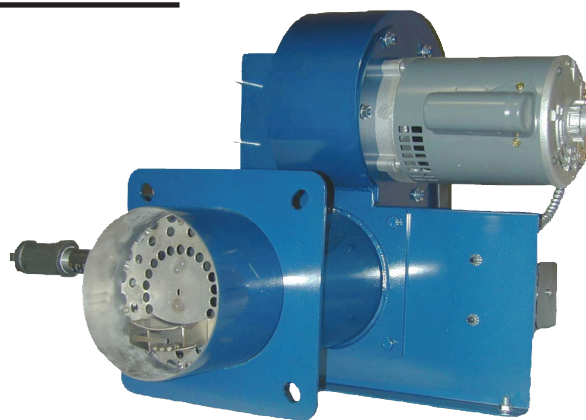
for use with Gas, Light Oil, &  
Gas/Light Oil – Fired Burners

## Burner specifications and data

### Power-Flame burners

Model **WJR** *Flame retention type, for gas firing*

Model **WJR**



Dimensions (inches)

Burner model number	A	B	C	D	E	F	G	H	I	J	W
WJR15	25.25	5.00	12.50	4.63	11.25	10.25	1.50	6.13	11.50	23.75	7.25
WJR30	25.25	5.00	12.50	4.63	11.25	11.25	1.50	6.13	11.50	23.75	7.25
WJR50	29.75	5.13	14.00	5.25	11.25	11.75	3.25	8.13	13.63	26.50	8.25



Boiler model number	Burner Input Gas MBH	Burner model designation	Positive pressure in firebox Inches W.C.	Burner motor 3450 RPM H.P.	Orifice drill size Inches	Pressure drop thru gas train Inches W.C.	Gas Tee pressure Inches W.C.	Gas pressure required at gas controls Inlet (Inches W.C.) *	
								Minimum	Maximum
BG-380	346	WJR15A-10	0.38	1/4	11/32	0.30	3.50	3.80	14.00
BG-480	494	WJR15A-10	0.36	1/4	27/64	0.50	3.50	4.00	14.00
BG-580	641	WJR15A-10	0.34	1/4	17/32	0.90	3.20	4.10	14.00
BG-680	789	WJR30A-10	0.33	1/3	5/8	1.40	3.20	4.50	14.00
BG-780	937	WJR30A-10	0.31	1/3	13/16	1.90	2.80	4.70	14.00
BG-880	1084	WJR30A-12	0.29	1/3	--	2.60	2.70	5.30	14.00
BG-980	1232	WJR50A-15	0.27	1/3	7/8	2.20	3.10	5.40	14.00
BG-1080	1379	WJR50A-15	0.26	1/3	--	4.10	1.70	5.80	14.00
BG-1180	1527	WJR50A-15	0.24	1/3	1	3.50	2.70	6.20	14.00
BG-1280	1674	WJR50A-15	0.22	1/3	--	4.20	2.10	6.70	14.00

\* Gas pressures shown are for standard gas train arrangement. Contact Weil-McLain for alternate gas trains to support other pressures.

Standard Gas Control Components and Sizes in Inches				
Boiler model number	Manual hand valve (point of field connection)	Combination diaphragm operating gas valve and regulator	Safety gas valve	Manual checking gas valve
380–1080	1	1	1	1
1180–1280	1	1	1 1/4	1 1/4

Flame Safeguards Provided with Listed Control Systems by Code																
Boiler model number	UL				FM				CSD-1				IRI			
	OO	LHO	LHL	MOD	OO	LHO	LHL	MOD	OO	LHO	LHL	MOD	OO	LHO	LHL	MOD
380–480	RM7897A	--	--	--	RM7897A	--	--	--	RM7897A	--	--	--	RM7897C	--	--	--
580–1280	RM7897A	RM7897A	RM7897A	RM7897A	RM7897A	RM7897A	RM7897A	RM7897A	RM7897A	RM7897A	RM7897A	RM7897A	—	RM7897C	RM7897C	RM7840L

## Notes

- Standard motor voltage is 120/60/1.
- Standard flame safeguard control is RM7897A with pre-purge and flame rod.
- Electric gas pilot furnished as standard equipment.
- Standard mode of operation is OO – On-off operation, low fire start, high fire run. Single position air, adjustable opening gas valve. Also available on 580-1280 boilers; LHO – On-off operation, low fire start, high fire run. Two-position air controlled by damper arm on motorized gas valve, fixed damper pre-purge. LHL – Low-high-low-off firing conditions. Two-position air controlled by damper arm on motorized gas valve, fixed damper pre-purge. MOD – On-off operation with proven low fire start and full modulating firing conditions with combustion air control. Proportional motor drives fuel metering valve and combustion air damper according to the firing conditions. Fixed damper pre-purge. Burner capacities listed for elevations up to 2,000 feet. For higher elevations, consult local Weil-McLain distributor/agent or sales office.
- Gas ratings based on natural gas with heating value of 1,000 Btu per cubic foot and specific gravity of 0.60. Gas burners for other gases are available. Consult local Weil-McLain distributor/agent or sales office.
- Boiler-burner unit to be adjusted to achieve +0.10 inches W.C. pressure at flue collar, resulting in positive pressure in firebox as listed.
- Minimum gas pressures listed are subject to variations due to job conditions. Gas burners for other gas pressures are available. Consult local Weil-McLain distributor/agent or sales office.
- Gas tee pressures shown are for initial start-up. Final pressure should be determined after checking actual gas flow and combustion readings.
- Combustion Controls:
- RM7897 flame safeguard control uses ultraviolet electronic flame detector to monitor gas burner flame, and provides pre-purge purge programming. “A” models provide intermittent pilot; “C” models provide interrupted pilot and Run/Test switch.
  - RM7840L flame safeguard control monitors the gas burner flame, provides pre-purge and post purge programming, provides switching necessary to allow firing rate motor to be driven to both low fire start and high fire positions, prevents start-up if pre-ignition interlock circuit or running interlock circuit does not “prove”, system will lock out on safety. Ultraviolet sensitive electronic flame detector is standard with infrared detector available.



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