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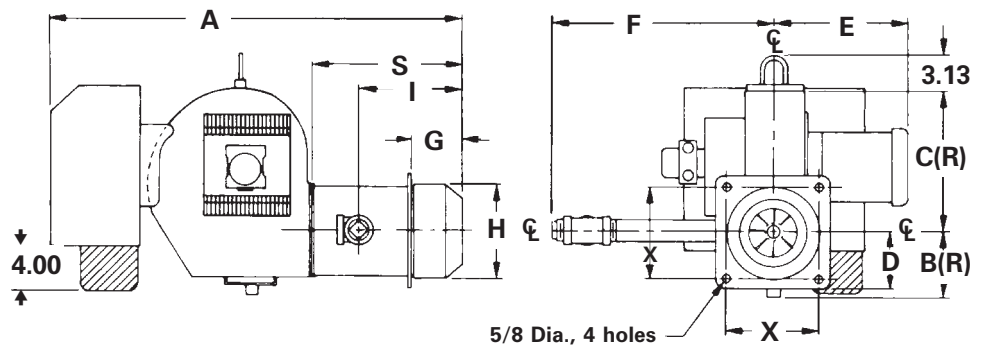
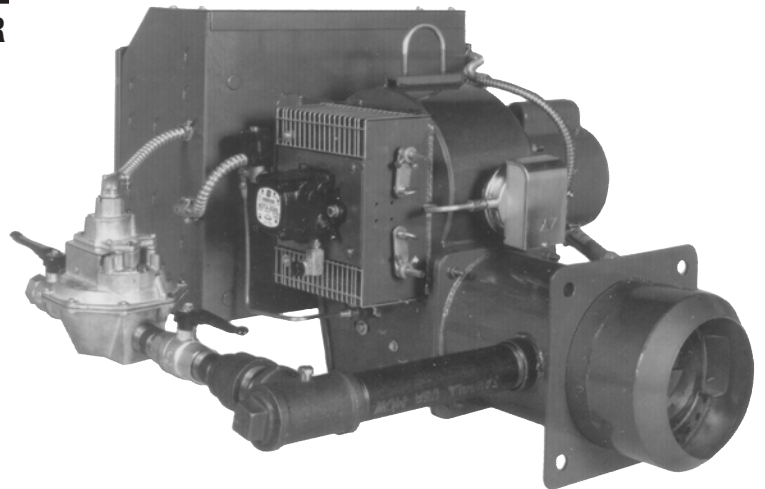
Water & steam boilers
for use with Gas, Light Oil, &
Gas/Light Oil - Fired Burners

Burner specifications and data

Power-Flame burners

Model **WCR** *Flame retention type, for gas, light oil or combination gas/oil firing*

Model **WCR**



Note: Add .38 to "H" dim for size of opening in boiler front plate.

Dimensions (inches)

Burner model	A	B	C	D	E	F	G	H	I	S	X
WCR3	44.00	7.00	15.25	6.00	16.00	22.38	5.00	10.13	11.50	15.50	10.00
WCR4	50.00	7.31	17.69	7.00	18.50	28.00	6.00	12.13	14.25	19.13	12.00
WCR5	50.00	7.31	17.69	7.00	18.50	26.50	6.00	12.13	14.25	19.13	12.00

* Required for installation of standard control components



Boiler model number	Burner Input		Positive pressure in firebox In. w.c.	Standard burner model designation			Standard combustion control			Standard control system			Burner motor 3450 RPM			Standard motor voltage
	No. 2 oil GPH	Gas MBH		Gas	Light oil	Gas/Light oil	Gas	Light oil	Gas/Light oil	Gas	Light oil	Gas/Light oil	Gas	Light oil	Gas/Light oil	
894	17.60	2540	0.27	WCR3-G-20	WCR3-0	WCR3-G0-20	RM7895C	R8184G	RM7896C	LHO	LHO	LHO/LHO	1½	2	2	3-Phase*
994	20.00	2887	0.31	WCR3-G-20	WCR3-0	WCR3-G0-20	RM7895C	R8184G	RM7896C	LHO	LHO	LHO/LHO	1½	2	2	3-Phase*
1094	22.50	3247	0.35	WCR3-G-20	WCR3-0	WCR3-G0-20	RM7895C	RM7896A	RM7896C	LHO	LHO	LHO/LHO	1½	2	2	3-Phase*
1194	25.00	3608	0.39	WCR3-G-20	WCR3-0	WCR3-G0-20	RM7895C	RM7896A	RM7896C	LHO	LHO	LHO/LHO	1½	2	2	3-Phase*
1294	27.50	3969	0.43	WCR3-G-25	WCR3-0	WCR3-G0-25	RM7895C	RM7840L	RM7896C	LHO	LHO	LHO/LHO	1½	2	2	3-Phase*
1394	30.00	4330	0.47	WCR3-G-25	WCR3-0	WCR3-G0-25	RM7895C	RM7840L	RM7840L	LHO	LHO	LHO/LHO	1½	2	2	3-Phase*
1494	32.50	4691	0.51	WCR4-G-25	WCR4-0A	WCR4-G0-25	RM7840L	RM7840L	RM7840L	LHO	LHO	LHO/LHO	3	5	5	3-Phase*
1594	35.00	5052	0.55	WCR4-G-25	WCR4-0A	WCR4-G0-25	RM7840L	RM7840L	RM7840L	LHO	LHO	LHO/LHO	3	5	5	3-Phase*
1694	37.50	5412	0.58	WCR4-G-25	WCR4-0A	WCR4-G0-25	RM7840L	RM7840L	RM7840L	LHO	LHO	LHO/LHO	3	5	5	3-Phase*
1794	40.00	5773	0.62	WCR4-G-25	WCR4-0A	WCR4-G0-25	RM7840L	RM7840L	RM7840L	LHO	LHO	LHO/LHO	3	5	5	3-Phase*
1894	42.50	6134	0.66	WCR4-G-25	WCR4-0A	WCR4-G0-25	RM7840L	RM7840L	RM7840L	LHO	LHO	LHO/LHO	5	5	5	3-Phase*
1994	45.00	6495	0.70	WCR4-G-30	WCR4-0B	WCR4-G0-30	RM7840L	RM7840L	RM7840L	MOD	MOD	MOD/MOD	5	5	5	3-Phase*
2094	47.50	6856	0.75	WCR4-G-30	WCR4-0B	WCR4-G0-30	RM7840L	RM7840L	RM7840L	MOD	MOD	MOD/MOD	5	5	5	3-Phase*
2194	50.00	7216	0.85	WCR5-G-30	WCR5-0	WCR5-G0-30	RM7840L	RM7840L	RM7840L	MOD	MOD	MOD/MOD	5	5	5	3-Phase*
2294	53.00	7649	0.95	WCR5-G-30	WCR5-0	WCR5-G0-30	RM7840L	RM7840L	RM7840L	MOD	MOD	MOD/MOD	5	5	5	3-Phase*
2394	55.00	7938	1.05	WCR5-G-30	WCR5-0	WCR5-G0-30	RM7840L	RM7840L	RM7840L	MOD	MOD	MOD/MOD	7½	7½	7½	3-Phase*
2494	58.00	8371	1.15	WCR5-G-30	WCR5-0	WCR5-G0-30	RM7840L	RM7840L	RM7840L	MOD	MOD	MOD/MOD	7½	7½	7½	3-Phase*
2594	60.00	8660	1.25	WCR5-G-30	WCR5-0	WCR5-G0-30	RM7840L	RM7840L	RM7840L	MOD	MOD	MOD/MOD	7½	7½	7½	3-Phase*

* 208/60/3, 240/60/3, 480/60/3 burner motor voltage must be specified

Standard Gas Control Components and Sizes in Inches									
Boiler model number	Manual hand valve	Low gas pressure switch	Gas pressure regulator	Solenoid operating gas valve	Motorized operating gas valve	Motorized operating gas valve (with proof of closure)	Safety gas valve	Manual checking gas valve	High gas pressure switch
894-1494	2	Standard	2	2	2	Optional	2	2	Standard
1594	2	Standard	2	2	—	2	2	2	Standard
1694-1994	2	Standard	2½	2	—	2	2	2½	Standard
2094-2294	2½	Standard	2½	2½	—	2½	2½	2½	Standard
2394-2594	3	Standard	3	3	—	3	3	3	Standard

- Notes**
- Burner capacities listed for elevations up to 2,000 feet. For higher elevations, consult local Weil-McLain distributor/agent or sales office.
 - Light oil ratings based on No. 2 fuel oil with heating value of 140,000 Btu per gallon.
 - 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 the 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.
 - Manifold pressures and combustion air settings shown are for initial start-up. Final pressure and air settings should be determined after checking actual gas flow and combustion readings.
 - Gas Control Systems
 - LHO: On-off operation, low fire start, high fire run. 894-1894 – two-position air controlled by damper arm on motorized gas valve, fixed damper pre-purge. 1494-1894 – two-position air controlled by separate motor, open damper pre-purge.
 - LHL: Low-high-low-off firing conditions. 894-1894 – two-position air controlled by damper arm on motorized gas valve, fixed damper pre-purge. 1494-1894 – two-position air controlled by separate motor, open 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. Open damper pre-purge.

Burner Specification and Data Sheet



Boiler model number	Pressure drop thru gas train Inches w.c.	Gas test tee pressure Inches w.c.	Gas pressure required at gas control inlet Inches w.c.*		Initial low fire damper setting Inches		Oil nozzle (one per unit)				Oil pressures PSIG				Fuel unit data				
			Minimum	Maximum	Top	Bottom	GPH @ 100 PSIG	Brand**	Type	Spray angle	Pump capacity	High fire	Approximate return		Type	Gear GPH	Mounting	Speed RPM	Motor H.P.
													High fire	Low fire					
894	2.11	1.62	3.73	14.00	1/4	1/4	12.00	Monarch	BPS	80°	300	240	185	80-170	22R322D	105	Direct	3450	—
994	2.77	2.08	4.85	14.00	1/4	1/4	13.50	Monarch	BPS	80°	300	241	176	80-125	22R322D	105	Direct	3450	—
1094	3.50	2.55	6.05	14.00	1/4	1/4	13.50	Monarch	BPS	80°	300	291	210	80-140	22R322D	105	Direct	3450	—
1194	4.30	3.03	7.33	14.00	1/4	1/4	17.50	Monarch	BPS	80°	300	236	160	80-135	22R322D	105	Direct	3450	—
1294	4.36	3.71	8.07	14.00	1/4	1/4	17.50	Monarch	BPS	80°	300	275	185	80-145	22R322D	105	Direct	3450	—
1394	5.19	4.29	9.48	28.00	1/4	1/4	19.50	Monarch	BPS	80°	300	288	204	60-110	22R322D	105	Direct	3450	—
1494	6.08	2.10	8.18	28.00	1/4	1/4	21.50	Monarch	BPS	80°	300	274	221	60-100	22R623D	135	Direct	3450	—
1594	7.05	2.35	9.40	28.00	1/4	1/4	24.00	Monarch	BPS	80°	300	298	255	50-100	22R623D	135	Direct	3450	—
1694	4.83	2.82	7.65	28.00	1/4	1/4	28.00	Monarch	BPS	80°	300	272	163	20-50	22R623D	135	Direct	3450	—
1794	5.50	2.98	8.48	28.00	1/4	1/4	28.00	Monarch	BPS	80°	300	277	170	40-80	22R623D	135	Direct	3450	—
1894	6.22	3.29	9.51	28.00	1/4	1/4	28.00	Monarch	BPS	80°	300	287	181	40-80	22R623D	135	Remote	3450	3/4
1994	6.96	3.70	10.66	28.00	1/4	1/4	28.00	Monarch	BPS	80°	300	293	185	40-95	22R623D	135	Remote	3450	3/4
2094	5.43	4.06	9.49	28.00	1/4	1/4	28.00	Monarch	BPS	80°	300	292	199	40-100	22R623D	135	Remote	3450	3/4
2194	6.03	3.57	9.60	28.00	1/4	1/4	30.00	Monarch	BPS	80°	300	282	210	40-95	2V026C	250	Remote	1725	1
2294	6.65	3.83	10.48	28.00	1/4	1/4	35.00	Monarch	BPS	80°	300	257	153	20-60	2V026C	250	Remote	1725	1
2394	5.29	4.19	9.48	28.00	1/4	1/4	35.00	Monarch	BPS	80°	300	265	172	25-75	2V026C	250	Remote	1725	1
2494	5.79	4.55	10.34	28.00	1/4	1/4	35.00	Monarch	BPS	80°	300	285	187	25-80	2V026C	250	Remote	1725	1
2594	6.31	4.91	11.22	28.00	1/4	1/4	40.00	Monarch	BPS	80°	300	272	172	0-40	2V026C	250	Remote	1725	1

* Gas pressure shown are for standard gas train arrangement
 ** Primary manufacturer. For alternate nozzles, contact Power-Flame

Notes

- 8 Light Oil Control Systems:
 - LHO: On-off operation, low fire start, high fire run. Two-position air, two-position oil. Fixed damper pre-purge on 894-1194, open damper pre-purge on 1294-1894.
 - LHL: Low-high-low-off firing conditions. Two-position air, two-position oil. Fixed damper pre-purge on 894-1194, open damper pre-purge on 1294-1894.
 - MOD: On-off operation, with proven low fire start and full modulating firing conditions. Proportional motor drives fuel metering valve and combustion air damper according to the firing conditions. Open damper pre-purge.
- 9 Gas/Light Oil Control Systems:
 - LHO/LHO: Combines gas and light oil characteristics listed above.
 - LHL/LHL: Combines gas and light oil characteristics listed above.
 - MOD/MOD: Combines gas and light oil characteristics listed above.
- 10 120/60/1 control circuit is used for all burners.
- 11 Control circuit transformer is available as an option.
- 12 Motor starter or contactor will be furnished for all burners.
- 13 Combustion Controls:
 - a) R8184G combustion control uses cadmium cell for flame detector to monitor oil burner flame, also furnishes intermittent ignition.
 - b) RM7895 flame safeguard control uses ultraviolet electronic flame detector to monitor gas or oil burner flame and provides pre-purge programming. "A" models provide intermittent pilot; "C" models provide interrupted pilot and RUN/TEST switch. RM7896 provides same as above with post-purge.
 - c) RM7840L, E110/EPD170 flame safeguard control monitors the oil or 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 and high fire positions, prevents start-up if pre-ignition interlocks are open and has low fire start proving circuit. In the event pre-ignition interlock circuit or running interlock circuit does not "prove", system will lock out on safety. Control is standard equipment with IRI – modulating (proven low fire start) system. Ultraviolet sensitive electronic flame detector is standard with infrared detector available.
 - d) RM7800L, E110/EP170 flame safeguard control monitors the oil or gas burner flame with digital readout control system, provides pre-purge and post-purge programming, provides switching necessary to allow firing rate motor to be driven to both low fire and high fire position, prevents start-up if pre-ignition interlocks are open and has low fire start proving circuit. In the event 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.

Packaging - Processing
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Notes

- 14 Airflow safety switch is standard for all gas and combination gas/light oil units.
- 15 Burners will be completely assembled and wired (except gas train) and factory test-fired.
- 16 Burners listed by Underwriters Laboratories, Inc., state of Connecticut, Fire Marshal state of Massachusetts, city of New York MEA, and others.
- 17 Special controls can be provided to meet other code requirements not listed. Consult your local Weil-McLain distributor/agent or sales office.
- 18 Direct spark ignition is standard on light oil units 894-1794. Electric-gas pilot is standard on gas and combination gas/light oil units and on light oil units 1894-2594. Direct spark ignition is optional on combination gas/light oil units. Consult your local Weil-McLain distributor/agent or sales office.

Flame Safeguards Provided with Listed Control Systems by Code

GAS BURNERS

Boiler model number	UL			FM			CSD-1			IRI		
	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD
894-1394	RM7895C	RM7895C	RM7840L	RM7895C	RM7895C	RM7840L	RM7895C	RM7895C	RM7840L	RM7895C	RM7895C	RM7840L
1494-1894	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L
1994-2594	—	—	RM7840L	—	—	RM7840L	—	—	RM7840L	—	—	RM7840L

LIGHT OIL BURNERS

Boiler model number	UL			FM			CSD-1			IRI		
	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD
894-994	R8184G	R8184G	RM7840L	R8184G	R8184G	RM7840L	RM7895A	RM7895A	RM7840L	RM7895A	RM7895A	RM7840L
1094-1194	RM7896A	RM7896A	RM7840L	RM7896A	RM7896A	RM7840L	RM7896A	RM7896A	RM7840L	RM7896A	RM7896A	RM7840L
1294-1894	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L
1994-2594	—	—	RM7840L	—	—	RM7840L	—	—	RM7840L	—	—	RM7840L

COMBINATION GAS/OIL BURNERS

Boiler model number	UL			FM			CSD-1			IRI		
	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD
894-1194	RM7896C	RM7896C	RM7840L	RM7896C	RM7896C	RM7840L	RM7896C	RM7896C	RM7840L	RM7896C	RM7896C	RM7840L
1294-1894	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L	RM7840L
1994-2594	—	—	RM7840L	—	—	RM7840L	—	—	RM7840L	—	—	RM7840L



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