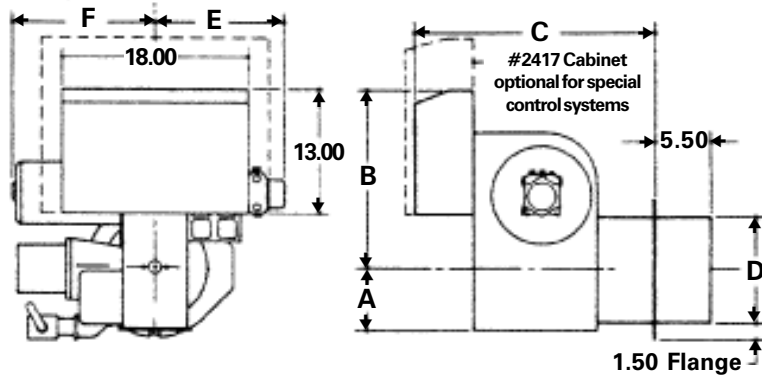


# 94

## Burner Specification and Data Sheet

### Gordon-Piatt burner models WR and WFL *Flame retention burners for gas, light oil and combination gas/light oil firing*

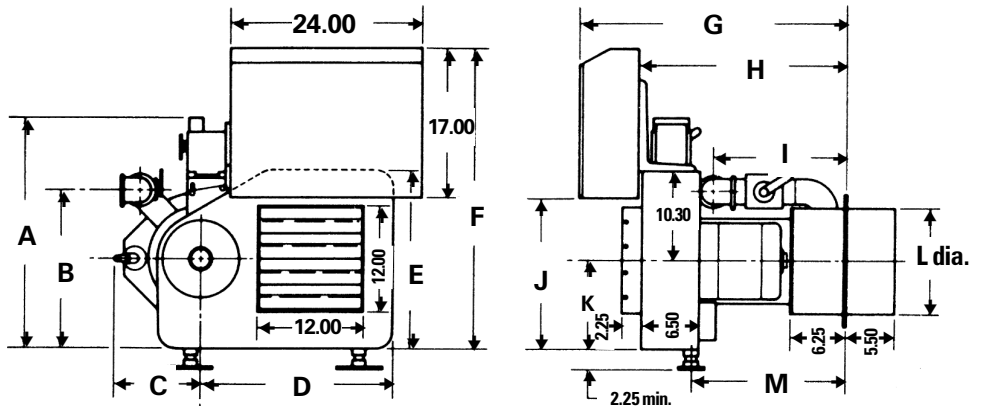
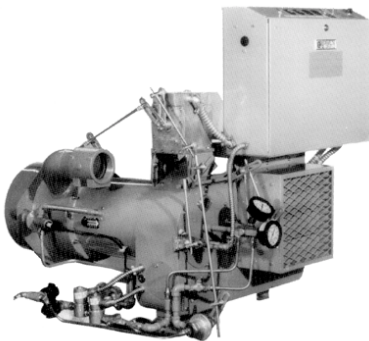
#### WR10 & WR12



#### Dimensions in Inches

Burner Model Number	A	B	C	D	E	F
WR10	6.50	15.25	28.50	10.00	14.50	13.50
WR12	8.13	17.00	30.75	12.00	16.00	13.50

#### WFL12



#### Dimensions in Inches

Burner Model Number	A	B	C	D	E	F	G	H	I	J	K	L	M
WFL12	27.00	16.75	11.00	22.00	20.50	34.25	30.25	23.50	16.25	17.25	10.50	12.00	20.00



Boiler Model Number	Burner Input		Positive Pressure in Firebox Inches W.C.	Standard Burner Model Designation			Standard Combustion Control			Standard Control Systems			Burner Motor 3450 RPM H.P.	Standard Motor Voltage
	No. 2 Oil	Gas MBH		Gas	Light Oil	Gas/Light Oil	Gas	Light Oil	Gas/Light Oil	Gas	Light Oil	Gas/Light Oil		
894	17.60	2540	0.28	WR10.9-G	WR10.9-O	WR10.9-GO	RM7895C	R8184G	RM7895C	H	F4S	H/F4S	1 1/2	Three Phase*
994	20.00	2887	0.32	WR10.9-G	WR10.9-O	WR10.9-GO	RM7895C	R8184G	RM7895C	H	F4S	H/F4S	1 1/2	Three Phase*
1094	22.50	3247	0.34	WR10-G	WR10-O	WR10-GO	RM7895C	RM7896C	RM7896C	H	F4S	H/F4S	1 1/2	Three Phase*
1194	25.00	3608	0.40	WR10-G	WR10-O	WR10-GO	RM7895C	RM7896C	RM7896C	H	F4S	H/F4S	1 1/2	Three Phase*
1294	27.50	3969	0.44	WR10.1-G	WR10.1-O	WR10.1-GO	RM7895C	RM7896C	RM7896C	H	F4S	H/F4S	3	Three Phase*
1394	30.00	4330	0.48	WR10.1-G	WR10.1-O	WR10.1-GO	RM7895C	RM7896C	RM7896C	H	F4S	H/F4S	3	Three Phase*
1494	32.50	4691	0.52	WR12-G	WR12-O	WR12-GO	RM7895C	RM7896C	RM7896C	H	F4S	H/F4S	5	Three Phase*
1594	35.00	5052	0.56	WR12-G	WR12-O	WR12-GO	RM7895C	RM7896C	RM7896C	H	F4S	H/F4S	5	Three Phase*
1694	37.50	5412	0.59	WR12-G	WR12-O	WR12-GO	RM7840L	RM7840L	RM7840L	E2	F7T	E2/F7T	5	Three Phase*
1794	40.00	5773	0.63	WR12.1-G	WR12.1-O	WR12.1-GO	RM7840L	RM7840L	RM7840L	E2	F7T	E2/F7T	5	Three Phase*
1894	42.50	6134	0.67	WR12.1-G	WR12.1-O	WR12.1-GO	RM7840L	RM7840L	RM7840L	E2	F7T	E2/F7T	5	Three Phase*
1994	45.00	6495	0.71	WFL12-G	WFL12-O	WFL12-GO	RM7840L	RM7840L	RM7840L	E2	F7.2	E2/F7.2	5	Three Phase*
2094	47.50	6856	0.75	WFL12-G	WFL12-O	WFL12-GO	RM7840L	RM7840L	RM7840L	E2	F7.2	E2/F7.2	5	Three Phase*
2194	50.00	7216	0.85	WFL12.1-G	WFL12.1-O	WFL12.1-GO	RM7840L	RM7840L	RM7840L	E2	F7.2	E2/F7.2	5	Three Phase*
2294	53.00	7649	0.95	WFL12.1-G	WFL12.1-O	WFL12.1-GO	RM7840L	RM7840L	RM7840L	E2	F7.2	E2/F7.2	5	Three Phase*
2394	55.00	7938	1.05	WFL12.4-G	WFL12.4-O	WFL12.4-GO	RM7840L	RM7840L	RM7840L	E2	F7.2	E2/F7.2	5	Three Phase*
2494	58.00	8371	1.15	WFL12.4-G	WFL12.4-O	WFL12.4-GO	RM7840L	RM7840L	RM7840L	E2	F7.2	E2/F7.2	5	Three Phase*
2594	60.00	8660	1.25	WFL12.5-G	WFL12.5-O	WFL12.5-GO	RM7840L	RM7840L	RM7840L	E2	F7.2	E2/F7.2	7 1/2	Three 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 w/Proof of Closure	Safety Gas Valve	Manual Checking Gas Valve	High Gas Pressure Switch
894-1094	2	Standard	2	2	2	Optional	2	2	Standard
1194-1294	2 1/2	Standard	2 1/2	2 1/2	2 1/2	Optional	2 1/2	2 1/2	Standard
1394-1494	3	Standard	3	3	3	Optional	3	3	Standard
1594-1794	3	Standard	3	3	--	3	3	3	Standard
1894-2094	2 1/2	Standard	2 1/2	2 1/2	--	2 1/2	2 1/2	2 1/2	Standard
2194-2594	3	Standard	3	3	--	3	3	3	Standard

### Notes

- 1 Burner capacities listed for elevations up to 2,000 feet. For higher elevations, consult local Weil-McLain distributor/agent or sales office.
- 2 Light oil ratings based on No. 2 fuel oil with heating value of 140,000 Btu per gallon.
- 3 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.
- 4 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.
- 5 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.
- 6 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.
- 7 Gas Control Systems:
  - H (LHO): On-off operation, low fire start, high fire run. Two-position air controlled by damper arm on motorized gas valve.
  - H4 (LHL): Low-high-low-off firing conditions. Two-position air controlled by damper arm on motorized gas valve.
  - E2 (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	Manifold Pressure Inches W.C.	Gas Pressure		Combustion Air Settings			Oil Nozzle(s)				Oil Pressures			Fuel Unit Data					
	Gas Train Inches W.C.		Required at Gas Control Inlet Inches W.C.	Low	High	Primary-Secondary	Qty.	GPH @ 100 PSIG	Brand	Type	Spray Angle	Supply PSIG	High Fire	Low Fire	Type	Gear MPH	Speed RPM	Motor H.P.		
	Inches W.C.		Minimum	Maximum	Initial Settings	Operating PSIG	High Fire	Low Fire	PSIG	High Fire	Low Fire	Type	Gear MPH	Speed RPM	Motor H.P.					
894	1.90	2.60	4.50	1 PSI	1/2	1	2	2	6.00	Delavan	B	60°	300	215	100	B2TA-8930	39	Direct	3450	--
994	2.50	3.30	5.80	1 PSI	5/8	1 1/2	2	2	6.00	Delavan	B	60°	300	275	100	B2TA-8930	39	Direct	3450	--
1094	3.20	3.10	6.30	1 PSI	1/2	1	2	2	7.50	Delavan	B	60°	300	230	100	B2TA-8930	39	Direct	3450	--
1194	2.70	3.80	6.50	1 PSI	5/8	1 1/2	2	2	7.50	Delavan	B	60°	300	280	100	22R322D-5AA14	104	Direct	3450	--
1294	2.50	4.40	6.90	1 PSI	1/2	1	2	2	8.00	Delavan	B	60°	300	295	100	22R322D-5AA14	104	Direct	3450	--
1394	1.80	5.20	7.00	1 PSI	11/16	1 1/2	2	2	9.00	Delavan	B	60°	300	280	100	22R322D-5AA14	104	Direct	3450	--
1494	2.10	4.00	6.10	1 PSI	1/2	7/8	2	2	10.00	Delavan	B	90°	300	260	100	22R322D-5AA14	104	Direct	3450	--
1594	2.40	4.60	7.00	1 PSI	1/2	1 1/8	2	2	10.00	Delavan	B	90°	300	300	100	22R322D-5AA14	104	Direct	3450	--
1694	2.80	4.00	6.80	1 PSI	5/8	1 3/8	MOD**	3	(2) 10.00 (1) 12.00	Delavan	BPS	45°	300	155	80	2V023D-4D020	270	Direct	3450	--
1794	3.30	4.50	7.80	1 PSI	3/4	1 1/2	MOD**	3	12.00	Delavan	BPS	45°	300	155	80	2V023D-4D020	270	Direct	3450	--
1894	7.60	5.10	12.70	1 PSI	7/8	1 3/4	MOD**	3	12.00	Delavan	BPS	45°	300	155	80	2V023D-4D020	270	Direct	3450	--
1994	6.60	5.60	12.20	1 PSI	1/4	2	MOD**	1	45.00	Delavan	BPS	90°	300	168	80	HS2D115	190	Remote	1750	1 1/2
2094	7.50	6.20	13.70	1 PSI	1/4	2 1/2	MOD**	1	45.00	Delavan	BPS	90°	300	168	80	HS2D115	190	Remote	1750	1 1/2
2194	5.00	6.80	11.80	1 PSI	1/4	2	MOD**	1	50.00	Delavan	BPS	90°	300	155	80	HS2D115	190	Remote	1750	1 1/2
2294	5.60	7.60	13.20	1 PSI	1/4	2 1/2	MOD**	1	50.00	Delavan	BPS	90°	300	155	80	HS2D115	190	Remote	1750	1 1/2
2394	6.00	6.80	12.80	1 PSI	1/8	1 3/4	MOD**	1	55.00	Delavan	BPS	90°	300	193	80	HS2D115	190	Remote	1750	1 1/2
2494	6.70	7.60	14.30	1 PSI	3/16	2 1/4	MOD**	1	55.00	Delavan	BPS	90°	300	193	80	HS2D115	190	Remote	1750	1 1/2
2594	7.30	8.20	15.50	1 PSI	1/4	2 3/4	MOD**	1	60.00	Delavan	BPS	90°	300	188	80	HS2D115	190	Remote	1750	1 1/2

\*\* MOD - Modulating air sleeve. Low fire 0.50 to high fire 2.50.

## Notes

- 8 Light Oil Control Systems:
  - F4S (LHO): On-off operation, low fire start, high fire run. Two-position air, two-position oil.
  - F4S (LHL): Low-high-low-off firing conditions. Two-position air, two-position oil.
  - F7T & F7.2 (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:
  - H/F4S (LHO/LHO): Combines gas and light oil characteristics listed above.
  - H4/F4S (LHL/LHL): Combines gas and light oil characteristics listed above.
  - E2/F7T and E2/F7.2 (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) RM7840M, E110/EPD390 flame safeguard control monitors the oil or gas burner flame, provides pre-purge and post-purge programming. Timed low fire start is provided by means of timing built into control. Control is used with UL on-off (low fire start) systems. Ultraviolet sensitive electronic flame detector is standard with infrared detector available.
  - d) RM7840L, E110/EPD160 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. Ultraviolet sensitive electronic flame detector is standard with infrared detector available.



**Notes**

- e) RM7800L, E110/EP160 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.
- 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 trains).
- 16 Burners listed by Underwriters Laboratories, Inc., Canadian Gas Association, 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 Electric gas pilot is standard on gas and combination gas/light oil units and on light oil units 1494-2594. Direct spark ignition is standard on light oil units 894-1394. Direct spark ignition is optional on combination gas/light oil units 894-1494 and 1694-1794. Consult your local Weil-McLain distributor/agent or sales office.

**Flame safeguards provided with listed control systems by code**

**Gas**

Boiler Model Number	UL			FM			CSD-1			IRI		
	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD
894-1594	RM7895C	RM7895C	RM7840L	RM7895C	RM7895C	RM7840L	RM7895C	RM7895C	RM7840L	RM7895C	RM7895C	RM7840L
1694-2594	--	--	RM7840L	--	--	RM7840L	--	--	RM7840L	--	--	RM7840L

**Light oil**

Boiler Model Number	UL			FM			CSD-1			IRI		
	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD
894-994	R8184G	R8184G	RM7895A	RM7895A	RM7895A	RM7895A	RM7895A	RM7895A	RM7895A	RM7895C	RM7895C	RM7840L
1094-1594	RM7896C	RM7896C	RM7840L	RM7896C	RM7896C	RM7840L	RM7896C	RM7896C	RM7840L	RM7896C	RM7896C	RM7840L
1694-2594	--	--	RM7840L	--	--	RM7840L	--	--	RM7840L	--	--	RM7840L

**Gas/light oil**

Boiler Model Number	UL			FM			CSD-1			IRI		
	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD	LHO	LHL	MOD
894-994	RM7895C	RM7895C	RM7840L	RM7895C	RM7895C	RM7840L	RM7895C	RM7895C	RM7840L	RM7895C	RM7895C	RM7840L
1094-1594	RM7896C	RM7896C	RM7840L	RM7896C	RM7896C	RM7840L	RM7896C	RM7896C	RM7840L	RM7896C	RM7896C	RM7840L
1694-2594	--	--	RM7840L	--	--	RM7840L	--	--	RM7840L	--	--	RM7840L



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