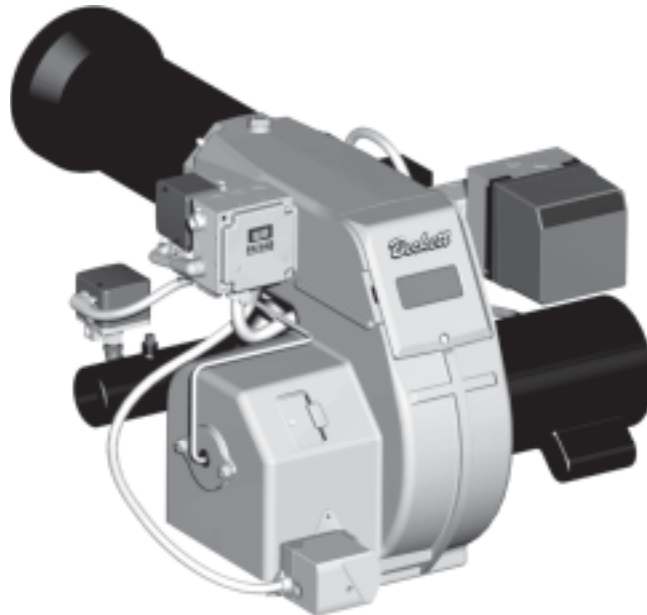# WEIL-McLAIN

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Water & Steam Boilers – Series 2
For Gas, Light Oil, & Gas/Light Oil – Fired Burners

Burner Specification & Data Sheet

Beckett
Gas Burners

Models CG10, CG25, CG50

Figure 1 Model CG

Burner Model Number	Motor Size H.P.	Standard Motor Electrical Characteristics	Optional Motor Electrical Characteristics	Length (From Mounting Flange To Label Area On Burner Front)	Overall Width
CG10	1/3	120/60/1	240/60/1	22.0	11.7
CG25	3/4	120/60/1	240/60/1, 460/60/3, 575/60/3	29.2	20.9
CG50	2	230/60/1	460/60/3, 575/60/3	29.6	24.4

Burner specifications and settings

Table 1   Burner data

Boiler Model Number	Burner Input Gas Mbh	Burner Model Number	Beckett Burner Part Number For Ordering	Approximate Starting Air Settings		Starting Head Setting	Positive Pressure In Firebox Inches W.C.	Burner Motor 3450 Rpm H.P.	Pressure Drop Through Gas Train Inches W.C.	Gas Manifold Pressure (High Fire) Inches W.C.	Gas Pressure Required At Gas Controls Inlet Inches W.C.*	
				Low Fire	High Fire						Min	Max
488R	996	CG10	CG106152	N/A	10/3.5	6	0.50	1/3	2.46	4.30	6.71	14.00
488	1010	CG10	CG106152	N/A	10/3.5	6	0.50	1/3	2.53	4.50	6.71	14.00
588	1357	CG25	CG251258	23	39	1	0.60	3/4	1.90	3.55	5.50	14.00
688	1703	CG25	CG252259	25	48	2	0.70	3/4	2.45	3.70	6.57	14.00
788	2049	CG50	CG501289	14	28	1	0.60	2	2.14	3.10	5.11	14.00
888	2396	CG50	CG502290	14	31	2	0.65	2	2.57	3.05	5.62	14.00
988R	2482	CG50	CG502291	14	34	2	0.60	2	2.44	3.10	5.50	14.00
988	2713	CG50	CG502291	14	34	2	0.60	2	2.92	3.75	5.50	14.00
1088R	2887	CG50	CG503292	17	38	3	0.65	2	1.94	3.00	6.00	14.00
1088	3103	CG50	CG503292	17	38	3	0.65	2	2.25	3.65	6.00	14.00
1188	3392	CG50	CG504293	20	50	4	0.70	2	2.65	3.60	6.45	14.00
1288	3753	CG50	CG504294	19	68	4	0.65	2	3.25	4.15	6.36	14.00
1388	4113	CG50	CG505295	24	93	5	0.70	2	2.53	4.00	6.68	14.00

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

Burner specifications and settings *(continued)*

Table 2   Gas train components and flame safeguards

Standard Gas Control Components and Sizes in Inches				
Boiler Model Number	Manual Hand Valve (Field Gas Train Connection)	Combination Diaphragm Operating Gas Valve And Regulator	Safety Gas Valve	Manual Checking Gas Valve
488R-488	1	1	1	1
588 & 688	1-1/4	1-1/4	1-1/4	1-1/4
788-988	1-1/2	1-1/2	1-1/2	1-1/2
1088R-1288	2	2	2	2
1388	2-1/2	2-1/2	2-1/2	2-1/2

Flame Safeguard Provided with Listed Control Systems by Code									
Boiler Model Number	UL/ CSD1			FM			IRI		
	OO or LFS	LHL	MOD	OO or LFS	LHL	MOD	OO or LFS	LHL	MOD
488R-488	RM7897A	--	--	RM7897A	--	--	RM7897A	--	--
588-1388	--	RM7897C	RM7840L	--	RM7897C	RM7840L	--	RM7897C	RM7840L
Additional control suppliers are available									

Notes for Table 1 and Table 2

1. Standard motor voltage is 120/60/1 for CG10, CG25 , and 230/60/1 for CG50.

2. Direct Spark Ignition is standard on all models.

3. CG10 models are available only as OO (On-Off operation) or LFS (Low fire start, high fire run. Single position air, adjustable opening gas valve).

4. CG25 and CG50 are available as: LHL Low-high-low-off operation. Two position air controlled by linkageless damper actuator, fixed damper pre-purge.
    *   Must be wired with boiler temperature or pressure control switch or operation will be low-high-off.
    *   MOD – On-off operation with proven low fire start and full modulating firing conditions with combustion air control.
    *   Modulation control drives combustion air damper and fuel metering valve in response to boiler demand. Fixed damper pre-purge for RM 7897C.
    *   Open damper pre-purge for RM7840L.

5. Burner capacities listed for elevations up to 2,000 feet. For higher elevations, consult local Weil-McLain distributor/agent or sales office.

6. Gas ratings based on natural gas with heating value of 1,000 btu per cubic foot and specific gravity of 0.60.

7. 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.

8. 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.

9. Gas manifold pressures shown are for initial start-up. Final pressure should be determined after checking actual gas flow and combustion readings.

10. Combustion Controls:
    a. RM7897 flame safeguard control uses ultraviolet electronic flame detector to monitor gas burner flame, and provides pre-purge programming. "C" models provide 10 second main flame establishing period.
    b. 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 preignition interlock circuit or running interlock circuit does not "prove", system will lock out on safety. Ultraviolet sensitive electronic flame detector is standard.

11. Burners listed by Underwriters Laboratories, Inc., Canadian Gas Association, state of Connecticut, Fire Marshal state of Massachusetts, city of New York MEA, and others.

12. Special controls can be provided to meet other code requirements not listed. Consult your local Weil-McLain distributor/agent or sales office.
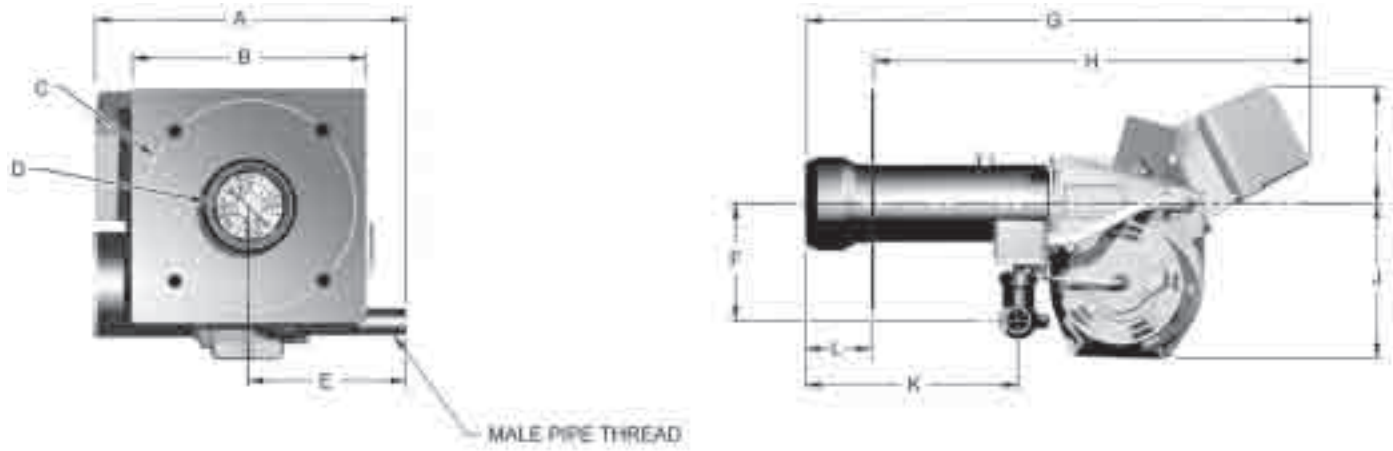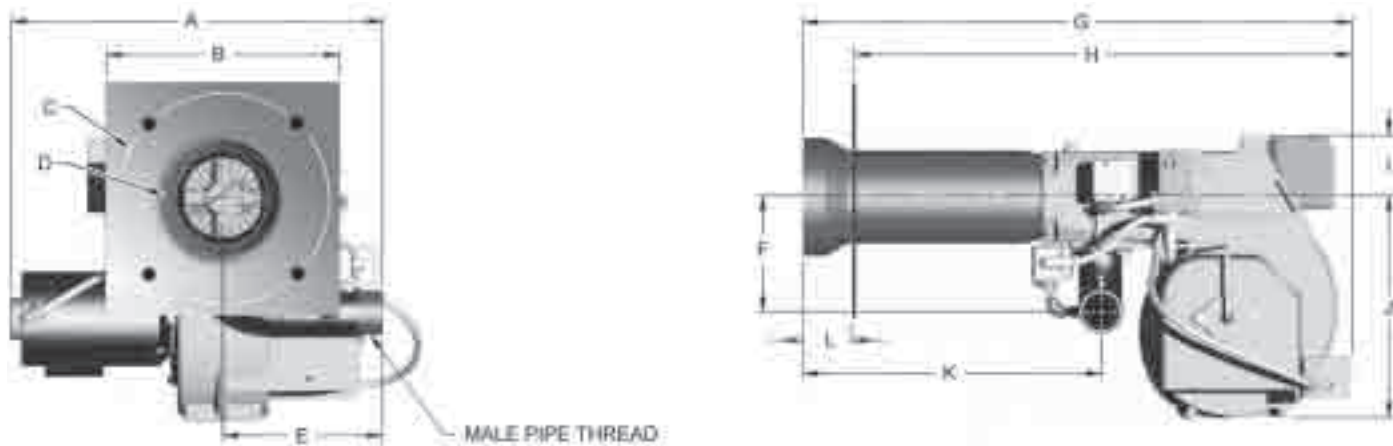
Burner dimensions

Figure 2   Beckett model CG10

Figure 3   Beckett models CG25 and CG50

Burner Model Number	Dimensions, In Inches												
	A	B	C	D	E	F	G	H	I	J	K	L	Pipe Thread
	Overall Width	Square Flange Width & Height	Bolt Circle	Maximum Tube O.D.	Centerline To End Of Manifold	Tube Centerline To Manifold Centerline	Overall Length (Max.)	Burner Length	Centerline To Top Of Burner	Centerline To Bottom Of Burner	Centerline Of Manifold To End Of Tube	Insertion Depth (Max.)	
CG10	11.70	10.0	10.25	4.9	8.1	6.0	26.0	22.0	6.8	8.2	11.0	4.0	1-1/4 NPT
CG25	20.90	12.00	10.25	6.9	9.3	6.8	33.2	29.2	4.1	12.8	17.8	4.0	2 NPT
CG50	24.4	12.00	10.25	7.7	10.5	7.5	33.6	29.6	4.1	14.6	17.4	4.0	2-1/2 NPT

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