

# Commercial

## Burner Set-up Tables

The enclosed Set-up Tables were compiled by Carlin's Application Engineering Team. For each appliance listed, the tables contain important set-up information including; the recommended head/ diffuser plate and air band, the drill size for the orifice nipple and insertion depth for setting the adjustable flange.

If the heating appliance you are looking for is not listed, refer to the Instruction Manual for information on configuring the burner for your application.

**Note: This data is intended to be a set-up guide only. It is critical that all gas-fired heating equipment be installed using combustion efficiency test equipment and the burners be set to the appliance manufacturers' recommended settings.**

The Carlin Technical Support Team is committed to providing the finest customer service in the industry. If you should have any questions regarding this guide or on setting up your Carlin gas burner, PLEASE contact the Carlin Technical Service Hot Line at 1-800-989-2275.

## Gas Burner Setup Tables

Appliance Model	Burner Model	Diffuser/ Head	Air Tube	OEM Air Tube	Insertion Depth	Input MBH	Orifice Size		Air Setting	Air Band	Air Shutter	Manifold Pressure
							Natural Gas	Propane				

### AJAX Boiler Inc.

WFG-450	201GAS	A	10"	Universal	4 3/4	360	1/2 (.500)	T (.358)	7/16"	4 slot	none	3.5
						450	3/4 (.750)	1/2 (.500)	1 1/2"	4 slot	none	3.5

### Bock Water Heater

361PG	201GAS	A	12"	TBD	9 1/2	399	1/2 (.500)	13/32 (.406)	75%	4 slot	none	3.5
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### Burnham (U.S. Boiler)

V903A	301GAS	B	14" B	99597	4 1/8	447	31/64 (.484)	25/64 (.391)	35%	4 slot	full	3.5NG/3.4LP
V904A	301GAS	B	14" B	99597	4 1/8	606	37/64 (.578)	7/16 (.438)	65%	4 slot	full	3.5NG/3.6LP
V905A	601GAS	11	14" B	99597	4 1/8	808	23/32 (.719)	33/64 (.516)	2	--	--	3.5NG/3.6LP
V906A	601GAS	12	14" D	99600	4 1/8	1010	1 1/16 (1.06)		4	--	--	3.5
		11	14" C	99599	4 1/8	1010		5/8 (.625)	4	--	--	3.5
V907A	601GAS	32	14" D	99600	4 1/8	1198	15/16 (.938)		5	--	--	3.6
		31	14" C	99599	4 1/8	1198		19/32 (.594)	4.5	--	--	3.5
V908A	601GAS	32	14" D	99600	4 1/8	1386	1 1/8 (1.125)		8	--	--	3.5
		31	14" C	99599	4 1/8	1386		11/16 (.688)	6	--	--	3.2

3 through 5 section boilers require 8" extended front plate P/N 6022909 and burner adapter plate P/N 602292311 (order from Burnham)

### Columbia Boiler

CSFH 6210	201GAS	A	10"	Universal	2 1/2	295	25/64 (.391)	21/64 (.328)	40%	2 slot	full	3.4NG/3.0LP
CT-6	202GAS	B	12"	99322	4 3/4	252	23/64 (.359)	19/64 (.297)	50%	2 slot	full	3.5
CT-10	202GAS	A	12"	99321	4 3/4	420	43/64 (.672)	29/64 (.453)	80%	4 slot	none	3.6
CT-10	301GAS	B	14" B	99328	4 3/4	420	29/64 (.453)	S (.348)	15%	4 slot	full	3.5
CT-15	301GAS	B	14" B	99328	4 3/4	630	37/64 (.578)	29/64 (.453)	65%	4 slot	full	3.5
CT-20	301GAS	C	14" C	99327	4 3/4	840	3/4 (.750)	35/64 (.546)	35NG/50LP	4 slot	none	3.5
CT-25	601GAS	11	14" C	99327	4 3/4	1050	1 (1.00)	19/32 (.593)	1.5NG/ 2LP	--	--	3.8NG/3.5LP
GL-18	201GAS	C	10"	99904	3 1/2	196	11/32 (.344)	9/32 (.281)	50%	2 slot	full	3.5
GL-20	201GAS	A	10"	Universal	Adj	280	W (.386)	O (.316)	0%	4 slot	none	3.5
GL-22	201GAS	A	10"	Universal	Adj	336	27/64 (.422)	T (.358)	20%	4 slot	none	3.5

### Dynatherm Boiler Manufacturing

FP-48	201GAS	B	10"	99618	3	259	3/8 (.375)	5/16 (.312)	40%	2 slot	full	3.3NG/3.5LP
						280	3/8 (.375)	O (.316)	50%	2 slot	full	3.7NG/3.2LP
						300	25/64 (.390)	O (.316)	65NG/75LP	2 slot	full	3.2NG/3.5LP

### Equipment Source

ES 700	301GAS	B	14" C	99373	4 3/4	650	19/32 (.594)	15/32 (.469)	45NG/47LP	4 slot	full	3.1
						700	19/32 (.594)	15/32 (.469)	47NG/57LP	4 slot	full	3.5

### FW Webb PurePro

Trio												
PC6230	201GAS	D	10"	51057	4 1/2	322	5/8 (.625)	15/32 (.469)	85%	4 slot	none	3.5
PC7290	301GAS	S	14" B	51062	4 1/2	406	7/16 (.438)	23/64 (.359)	35%	4 slot	full	3.5NG/3.3LP
PC8350	301GAS	S	14" B	51062	4 1/2	490	1/2 (.500)	13/32 (.406)	50%	4 slot	full	3.0NG/3.4LP
PC9410	301GAS	B	14" B	51062	4 1/2	574	35/64 (.546)	7/16 (.438)	45%	4 slot	center	3.0NG/3.2LP
PC10470	301GAS	B	14" B	51062	4 1/2	658	19/32 (.593)	15/32 (.469)	65%	4 slot	center	3.5NG/3.3LP
PC11530	301GAS	B	14" B	51062	4 1/2	742	5/8 (.625)	31/64 (.484)	90%	4 slot	center	3.4NG/3.5LP
PC12590	301GAS	B	14" C	51063	4 1/2	826	11/16 (.687)	17/32 (.531)	60%	4 slot	none	3.5

### Ground Heaters

Artic Bear	301GAS	C	14" C	99511	4 1/2		5/8 (.625)	15/32 (.469)	80%	4 slot	full	4.2
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### Lanair/ Clean Burn

CB3250	201GAS	A	10"	Universal	Adj	325	7/16 (.437)	Q (.332)	25%	4 slot	none	3.5
CB3500	201GAS	A	10"	Universal	Adj	350	15/32 (.469)	11/32 (.344)	35%	4 slot	none	3.5

## Gas Burner Setup Tables

Appliance Model	Burner Model	Diffuser/ Head	Air Tube	OEM Air Tube	Insertion Depth	Input MBH	Orifice Size		Air Setting	Air Band	Air Shutter	Manifold Pressure
							Natural Gas	Propane				

### Peerless (PB Heat)

EC/ECT-05-250	201GAS	A	10"	Universal	2 1/2	350	15/32(.4687)	23/64 (.359)	35%	4 slot	none	3.5
EC/ECT-06-275	201GAS	A	10"	Universal	2 1/2	385	1/2 (.500)	3/8 (.375)	40%	4 slot	none	3.5
EC/ECT-06-300	201GAS	A	10"	Universal	2 1/2	420/399	9/16(.5625)	7/16(.4375)	60%	4 slot	none	3.5
LC-04	301GAS	B	14" B	99581	2 1/8	686	19/32 (.594)	29/64 (.453)	80%	4 slot	center	3.5
LC-05R	301GAS	C	14" C	99539	2 1/8	808	21/32 (.656)	1/2 (.500)	75%	4 slot	center	3.5
	601GAS	11	14" C	99539	2 1/8	808	21/32 (.656)	1/2 (.500)	3.5NG/ 3LP	--	--	3.4NG/3.5LP
LC-05	301GAS	C	14" C	99539	2 1/8	881	23/32 (.719)	35/64 (.547)	60NG/65LP	4 slot	none	3.6NG/3.2LP
LC-05	601GAS	11	14" C	99539	2 1/8	881	23/32 (.719)	35/64 (.547)	4.5NG/ 4.75LP	--	--	3.6NG/3.1LP
LC-06	601GAS	22	14" D	99540	2 1/8	1077	1 1/4		6.5	--	--	3.5
		21	14" C	99539	2 1/8	1077		19/32 (.594)	6.5	--	--	3.5
LC-07	601GAS	32	14" D	99540	2 1/8	1273	1 1/4		7.25	--	--	3
		31	14" C	99539	2 1/8	1273		21/32 (6.56)	7.25	--	--	3.5
<b>For LC series with 301GAS &amp; 601GAS use front plate # 86074 (order from Peerless)</b>												
SC/ SCT-05	301GAS	S	14" B	99749B	2 1/2	433	29/64 (.453)	3/8 (.375)	30NG/35LP	4 slot	full	3.5NG/3.6LP
SC/ SCT-06	301GAS	S	14" B	99749A	2 1/2	505	1/2 (.500)	13/32 (.406)	50NG/65LP	4 slot	full	3.5NG/3.4LP
SC/ SCT-07	301GAS	B	14" B	99749	2 1/2	577	35/64 (.547)	7/16 (.438)	40NG/50LP	4 slot	full	3.3NG/3.5LP
SC/ SCT-08	301GAS	B	14" B	99749	2 1/2	649	19/32 (.594)	29/64 (.453)	60NG/65LP	4 slot	full	3.4NG/3.5LP
SC/ SCT-09	301GAS	C	14" C	99733	2 1/2	722	19/32 (.594)	15/32 (.469)	40NG/50LP	4 slot	center	3.5
SC/ SCT-10	301GAS	C	14" C	99733	2 1/2	794	21/32 (.656)	1/2 (.500)	55NG/65LP	4 slot	center	3.4NG/3.5LP
<b>For SC series use front plate # 90604 (order from Peerless)</b>												

### Smith Cast-Iron Boilers

19A-03	201GAS	A	12"	99543	4 3/4	375	9/16 (.563)	7/16 (.438)	60%	4 slot	none	3.5
19A-04	301GAS	S	14" B	99728	4 3/4	520	17/32 (.531)	13/32 (.406)	45%	4 slot	center	3.5
19A-05	301GAS	B	14" B	99528	4 3/4	725	5/8 (.625)	1/2 (.500)	60NG/70LP	4 slot	none	3.5
19A-06	301GAS	C	14" C	99529	4 3/4	931	25/32 (.781)	9/16 (.562)	100%	4 slot	none	3.5
19A-06	601GAS	11	14" B	99528	4 3/4	931	25/32 (.781)	9/16 (.562)	8	--	--	3.5NG/3.9LP
19A-07	601GAS	12	14" D	99530	4 3/4	1137	1 1/4 (1.25)		Open	--	--	3.6
		11	14" C	99529	4 3/4	1137		5/8 (.625)	Open	--	--	3.5
19A-08	601GAS	32	14" D	99530	4 3/4	1342	1 1/8 (1.125)		9.5	--	--	3.5
		31	14" C	99529	4 3/4	1342		11/16 (.688)	9.5	--	--	3.4
<b>For 19A series with 301GAS &amp; 601GAS use front plate # 3565 (order from Smith)</b>												

### Solaia Boilers

CT-6	201GAS	D	10"	51057	4 1/2	322	5/8 (.625)	15/32 (.469)	85%	4 slot	none	3.5
CT-7	301GAS	S	14" B	51062	4 1/2	406	7/16 (.438)	23/64 (.359)	35%	4 slot	full	3.5NG/3.3LP
CT-8	301GAS	S	14" B	51062	4 1/2	490	1/2 (.500)	13/32 (.406)	50%	4 slot	full	3.0NG/3.4LP
CT-9	301GAS	B	14" B	51062	4 1/2	574	35/64 (.546)	7/16 (.438)	45%	4 slot	center	3.0NG/3.2LP
CT-10	301GAS	B	14" B	51062	4 1/2	658	19/32 (.593)	15/32 (.469)	65%	4 slot	center	3.5NG/3.3LP
CT-11	301GAS	B	14" B	51062	4 1/2	742	5/8 (.625)	31/64 (.484)	90%	4 slot	center	3.4NG/3.5LP
CT-12	301GAS	B	14" C	51063	4 1/2	826	11/16 (.687)	17/32 (.531)	60%	4 slot	none	3.5

### Southern Breeze

SB250	201GAS	B	12"	99770	7 3/4		13/32 (.406)	O (.316)	40%	2 slot	none	3.5
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### Thermo-Dynamics Boiler Co.

HT-II-225	201GAS	A	8"	Universal	3 3/4	300	27/64 (.422)	5/16 (.312)	30%	4 slot	none	3.5
HT-II-250	201GAS	A	8"	Universal	3 3/4	350	15/32 (.469)	11/32 (.344)	35%	4 slot	none	3.5
HT-II-275	201GAS	A	8"	Universal	3 3/4	399	9/16 (.563)	13/32 (.406)	70%	4 slot	none	3.5

### Triad

900SH	301GAS	C	14" C	99913	5 3/8	600	35/64 (.547)	7/16 (.438)	15%	4 slot	center	3.6
						700	5/8 (.625)	15/32 (.469)	35NG/40LP	4 slot	center	3.4NG/3.5LP
						800	11/16 (.688)	33/64 (.516)	50NG/65LP	4 slot	center	3.5NG/3.3LP
						900	25/32 (.781)	9/16 (.562)	50NG/60LP	4 slot	none	3.5
						1000	1 (none)	19/32 (.594)	100%	4 slot	none	3.7NG/3.5LP

### Utica Boilers

SFH 6210	201GAS	A	10"	Universal	2 1/2	295	25/64 (.391)	21/64 (.328)	40%	2 slot	full	3.4NG/3.0LP
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## Gas Burner Setup Tables

Appliance Model	Burner Model	Diffuser/ Head	Air Tube	OEM Air Tube	Insertion Depth	Input MBH	Orifice Size		Air Setting	Air Band	Air Shutter	Manifold Pressure
							Natural Gas	Propane				

### Weil-McLain

380	201GAS	A	10"	99318	3	346	15/32 (.469)	3/8 (.375)	45NG/50LP	4 slot	none	3.5
480	301GAS	B	14" B	99311	4	491	1/2 (.500)	3/8 (.375)	45NG/52LP	4 slot	full	3.2NG/ 3.8LP
580	301GAS	B	14" B	99311	4	639	9/16 (.562)	7/16 (.438)	75%	4 slot	center	3.5
680	301GAS	C	14" C	99310	4	787	5/8 (.625)	1/2 (.500)	52NG/60LP	4 slot	center	3.5
780	301GAS	C	14" C	99310	4	935	11/16 (.687)	17/32 (.531)	60NG/100LP	4 slot	none	3.5NG/ 3.2LP
780	601GAS	21	14" C	99310	4	935	3/4 (.750)	17/32 (.531)	3	--	--	3.6NG/3.5LP
880	601GAS	21	14" C	99310	4	1082	1 (1.00)	19/32 (.594)	3.5	--	--	3.6NG/3.5LP
980	601GAS	32	14" D	99538	4	1230	15/16 (.938)		5.5	--	--	3.5
		31	14" C	99310	4	1230			5.5	--	--	3.5
1080	601GAS	32	14" D	99538	4	1378	1 1/8 (1.125)	3/4 (.750)	7	--	--	3.5

For 80 series with 301GAS & 601GAS use front plate # 385-700-235 (order from Weil-McLain)

### York Shipley

CT-10	301GAS	B	14" B	99328	4 3/4	420	29/64 (.453)	S (.348)	15%	4 slot	full	3.5
CT-15	301GAS	B	14" B	99328	4 3/4	630	37/64 (.578)	29/64 (.453)	65%	4 slot	full	3.5
CT-20	301GAS	C	14" C	99327	4 3/4	840	3/4 (.750)	35/64 (.546)	35NG/50LP	4 slot	none	3.5
CT-25	601GAS	11	14" C	99327	4 3/4	1050	1 (1.00)	19/32 (.593)	1.5NG/ 2LP	--	--	3.8NG/3.5LP

# ENGINEERING INFORMATION

## Drill Bit Chart

<i>Fraction or Drill Size</i>	<i>Decimal Equivalent</i>	<i>Fraction or Drill Size</i>	<i>Decimal Equivalent</i>	<i>Fraction or Drill Size</i>	<i>Decimal Equivalent</i>	<i>Fraction or Drill Size</i>	<i>Decimal Equivalent</i>
1/64"	0.0156	30	0.1287	B	0.2380	29/64"	0.4531
1/32"	0.0312	29	0.1360	C	0.2420	15/32"	0.4687
60	0.0400	28	0.1415	D	0.2460	31/64"	0.4843
59	0.0410	9/64"	0.1406	E	0.2500	1/2"	0.5000
58	0.0420	27	0.1440	1/4"	0.2500	33/64"	0.5156
57	0.0430	26	0.1470	F	0.2570	17/32"	0.5312
56	0.0465	25	0.1495	G	0.2610	35/64"	0.5469
3/64"	0.0468	24	0.1520	17/64"	0.2656	9/16"	0.5625
55	0.0520	23	0.1540	H	0.2660	37/64"	0.5781
54	0.0550	5/32"	0.1562	I	0.2720	19/32"	0.5937
53	0.0559	22	0.1570	J	0.2770	39/64"	0.6094
1/16"	0.0625	21	0.1590	K	0.2810	5/8"	0.6250
52	0.0635	20	0.1610	9/32"	0.2812	41/64"	0.6406
51	0.0670	19	0.1660	L	0.2900	21/32"	0.6562
50	0.0700	18	0.1695	M	0.2950	43/64"	0.6719
49	0.0730	11/64"	0.1718	19/64"	0.2968	11/16"	0.6875
48	0.0760	17	0.1730	N	0.3020	45/64"	0.7031
5/64"	0.0781	16	0.1770	5/16"	0.3125	23/32"	0.7187
47	0.0785	15	0.1800	O	0.3160	47/64"	0.7344
46	0.0810	14	0.1820	P	0.3230	3/4"	0.7500
45	0.0820	13	0.1850	21/64"	0.3281	49/64"	0.7656
44	0.0860	3/16"	0.1875	Q	0.3320	25/32"	0.7812
43	0.0890	12	0.1890	R	0.3390	51/64"	0.7969
42	0.0935	11	0.1910	11/32"	0.3437	13/16"	0.8125
3/32"	0.0937	10	0.1935	S	0.3480	53/64"	0.8281
41	0.0960	9	0.1960	T	0.3580	27/32"	0.8437
40	0.0980	8	0.1990	23/64"	0.3593	55/64"	0.8594
39	0.0995	7	0.2010	U	0.3680	7/8"	0.8750
38	0.1015	13/64"	0.2031	3/8"	0.3750	57/64"	0.8594
37	0.1040	6	0.2040	V	0.3770	29/32"	0.9062
36	0.1065	5	0.2055	W	0.3860	59/64"	0.9219
7/64"	0.1093	4	0.2090	25/64"	0.3906	15/16"	0.9375
35	0.1100	3	0.2130	X	0.3970	61/64"	0.9531
34	0.1110	7/32"	0.2187	Y	0.4040	31/32"	0.9687
33	0.1130	2	0.2210	13/32"	0.4062	63/64"	0.9844
32	0.1160	1	0.2280	Z	0.4130	1"	1.0000
31	0.1200	A	0.2340	27/64	0.4218		
1/8"	0.1250	15/64"	0.2343	7/16"	0.4375		

# ENGINEERING INFORMATION

## EZ-TEMP™ SENSOR RESISTANCE VS TEMPERATURE (ACCURACY +/- 1°F)

Ohms	°F	Ohms	°F	Ohms	°F	Ohms	°F	Ohms	°F	Ohms	°F
963,730	-67.0	102,900	-5.8	17,254	55.4	4,042	116.6	1,215	177.8	445.2	239.0
895,230	-65.2	97,072	-4.0	16,462	57.2	3,889	118.4	1,177	179.6	433.4	240.8
832,040	-63.4	91,613	-2.2	15,711	59.0	3,742	120.2	1,140	181.4	421.9	242.6
773,710	-61.6	86,494	-0.4	14,998	60.8	3,602	122.0	1,104	183.2	410.8	244.4
719,860	-59.8	81,689	1.4	14,322	62.6	3,468	123.8	1,070	185.0	399.9	246.2
670,090	-58.0	77,183	3.2	13,680	64.4	3,340	125.6	1,037	186.8	389.6	248.0
624,090	-56.2	72,951	5.0	13,071	66.2	3,217	127.4	1,005	188.6	379.4	249.8
581,540	-54.4	68,977	6.8	12,492	68.0	3,099	129.2	973.8	190.4	369.6	251.6
542,170	-52.6	65,242	8.6	11,942	69.8	2,986	131.0	944.1	192.2	360.1	253.4
505,710	-50.8	61,732	10.4	11,419	71.6	2,878	132.8	915.4	194.0	350.9	255.2
471,940	-49.0	58,431	12.2	10,922	73.4	2,774	134.6	887.8	195.8	341.9	257.0
440,630	-47.2	55,326	14.0	10,450	75.2	2,675	136.4	861.1	197.6	333.2	258.8
411,600	-45.4	52,404	15.8	10,000	77.0	2,579	138.2	835.4	199.4	324.8	260.6
384,670	-43.6	49,654	17.6	9,572	78.8	2,488	140.0	810.6	201.2	316.7	262.4
359,670	-41.8	47,064	19.4	9,165	80.6	2,400	141.8	786.6	203.0	308.7	264.2
336,450	-40.0	44,625	21.2	8,777	82.4	2,316	143.6	763.5	204.8	301.0	266.0
314,880	-38.2	42,326	23.0	8,408	84.2	2,235	145.4	741.2	206.6	293.6	267.8
294,820	-36.4	40,158	24.8	8,057	86.0	2,157	147.2	719.6	208.4	286.3	269.6
276,170	-34.6	38,115	26.6	7,722	87.8	2,083	149.0	698.7	210.2	279.3	271.4
258,820	-32.8	36,187	28.4	7,403	89.6	2,011	150.8	678.6	212.0	272.4	273.2
242,660	-31.0	34,368	30.2	7,089	91.4	1,941	152.6	659.1	213.8	265.8	275.0
227,610	-29.2	32,650	32.0	6,808	93.2	1,876	154.4	640.3	215.6	259.4	276.8
213,590	-27.4	31,029	33.8	6,531	95.0	1,813	156.2	622.1	217.4	253.1	278.6
200,520	-25.6	29,498	35.6	6,268	96.8	1,752	158.0	604.6	219.2	247.1	280.4
188,330	-23.8	28,051	37.4	6,016	98.6	1,693	159.8	587.6	221.0	241.1	282.2
176,960	-22.0	26,684	39.2	5,775	100.4	1,636	161.6	571.2	222.8	235.4	284.0
166,340	-20.2	25,391	41.0	5,546	102.2	1,582	163.4	555.3	224.6	229.8	285.8
156,430	-18.4	24,169	42.8	5,326	104.0	1,530	165.2	539.9	226.4	224.4	287.6
147,160	-16.6	23,012	44.6	5,117	105.8	1,479	167.0	525.0	228.2	219.1	289.4
138,500	-14.8	21,917	46.4	4,917	107.6	1,431	168.8	510.6	230.0	214.0	291.2
130,410	-13.0	20,880	48.2	4,726	109.4	1,385	170.6	496.7	231.8	209.0	293.0
122,840	-11.2	19,899	50.0	4,543	111.2	1,340	172.4	483.2	233.6	204.2	294.8
115,750	-9.4	18,970	51.8	4,368	113.0	1,297	174.2	470.2	235.4	199.4	296.6
109,110	-7.6	18,089	53.6	4,201	114.8	1,255	176.0	457.5	237.2	194.9	298.4