National Radiator Corporation

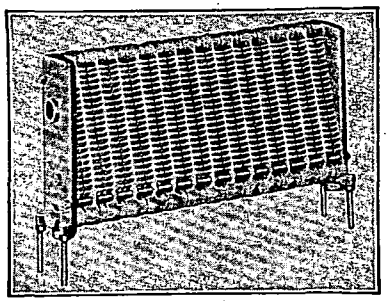
MANUFACTURERS OF BOILERS, RADIATORS AND CONVECTORS

Johnstown, Pa.

National Service through these Branch Offices and Warehouses:

Baltimore, Md.	2622 Matthews St.	Milwaukee, Wis.	511 E. Mason St.
Boston, Mass.	250 Stuart St.	New York, N. Y.	55 West 42nd St.
Buffalo, N. Y.	904 Main St.	Philadelphia, Pa.	2124 Arch St.
Chicago, Ill.	1111 East 83rd St.	Pittsburgh, Pa.	339 Blvd. of the Allies
Cincinnati, Ohio	3530 Spring Grove Ave.	Richmond, Va.	3032 Norfolk St.
Cleveland, Ohio	4500 Euclid Ave.	Washington, D. C.	2205 Fifth St. N.E.

AERO CAST IRON CONVECTORS



The Convector with a Guaranteed Rating

Tested and Rated in Accordance with the A.S.H.V.E. Standard Code for Testing and Rating Concealed Gravity Type Radiation (Steam Code).

U. S. Patents No. 1,888,545
No. 1,912,556. Other
Patents Pending

A message to Heating and Ventilating Engineers, Heating Contractors and Architects

Aero Convector Ratings

Aero Convectors are rated in accordance with the American Society of Heating and Ventilating Engineers' Standard Code for Testing and Rating Concealed Gravity Type Radiation.

These Ratings are based on the Condensation from the convector, the Latent Heat in the steam and the Correction Factor as provided in the Code.

The Catalog Ratings of Aero Convectors are Guaranteed when:

1. The Convectors are used with enclosures having dimensions as shown in the current catalog.
2. The Convectors are placed at a height in the enclosures corresponding to that obtained with "low legs."
3. The Convectors are completely filled with steam at a temperature of 215°F. or water at a temperature of 175°F.

Other Methods of Rating

Present day methods of rating concealed heating units are not uniform, due to the addition to actual condensation ratings of an intangible called "Heating Effect" on the theory that less Equivalent Direct Radiation is required with a concealed radiator than with an exposed radiator.

The Code makes no provision for determining ratings on the basis of "Heating Effect," "Available Heat" or "Effective Heat."

Results of a State University Investigation of Heating Effect

Recent tests conducted at a State University developed these two conclusions which disprove the "Heating Effect" theory:

1. The steam condensation obtained when the temperature is maintained at 68°F, at the 30 inch level is an approximate measure of the relative effectiveness of different types of heating units in providing human comfort; lower condensation corresponding to greater effectiveness.
2. The heating effect is not materially greater than the total heat output as measured by steam condensation under given standard conditions, and the practice of adding a large proportion to condensation rating in order to provide for heating effect CANNOT BE JUSTIFIED.

For Your Protection

When specifying convectors be sure of the basis of rating. Insist that Ratings be according to the A.S.H.V.E. Standard Code. Be safe and choose Aero Convectors with catalog ratings that are guaranteed.

Write or 'phone nearest Branch Office for copy of Aero Convector Catalog No. 2 and Supplement "A"

National Radiator Corporation

General Offices, **Johnstown, Pa.**

NATIONAL PREMIER STEEL BOILERS

Constructed for 15 lbs. working pressure in accordance with the A. S. M. E. Code

SMALL STEEL BOILERS—REAR SMOKE OUTLET—THREE PASS

	Type "DB" Solid Fuel—Hand Fired			Type "MB" Solid Fuel—Stoker Fired			Type "OB" Oil or Gas Fired					
Boiler No. —Types "DB," "MB," "OB"	251	252	253	254	255	256	311	312	313	314	315	316
Steam Rating—Type "DB" Sq. Ft.	485	645	840	990	1120	1250	1350	1525	1700	1875	2050	2225
Steam Rating—Types "MB," "OB" Sq. Ft.	735	890	1045	1200	1355	1510	1635	1850	2065	2280	2495	2710
Water Rating—Type "DB" Sq. Ft.	775	1030	1340	1580	1790	2000	2160	2440	2720	3000	3280	3560
Water Rating—Types "MB," "OB" Sq. Ft.	1175	1425	1675	1925	2175	2425	2615	2960	3305	3650	3995	4340
Stack Diameter In.	12	12	12	12	12	12	16	16	16	16	16	16
Stack Height Ft.	35	35	35	40	40	40	40	40	40	45	45	45

REAR SMOKE OUTLET—THREE PASS

Type "DB" (Direct Draft); Type "SB" (Smokeless); Type "OB" (Oil, Gas or Stoker Fired)

Boiler No. Types "DB," "SB" and "OB"	S.H.B.I. Steam Ratings Type "DB," and "SB" Sq. Ft.	S.H.B.I. Steam Ratings Type "OB" Sq. Ft.	Heating Surface Sq. Ft.	Grate Area Types "DB" and "SB" Sq. Ft.	Furnace Volume Above Water Leg Ring Type "OB" Cu. Ft.	Gross Base Volume Floor to Water Leg Ring Type "OB" Cu. Ft.	Height of Water Line Ft. In.	Width of Boiler In.	Length of Boiler Ft. In.	Length Over-all Ft. In.	Size of Steam Outlet In.	Size of Return In.	Height of Rear Smoke Outlet Ft. In.	Height Over-all Ft. In.	Dia. of Rear Smoke Outlet In.	Dia. of Breechings, 1 Boiler Dia. of Stack, † Boiler In.	Height of Stack, 1 Boiler Ft.
371	2550	3100	183	11.6	28.3	16.5	5-8½	37	5-4	6-4	6	4	5-4	6-7	22	22 20	50
372	3000	3675	216	11.6	31.8	19.1	5-8½	37	6-1	7-1	6	4	5-4	6-7	22	22 20	50
373	3500	4250	250	11.6	36.1	22.0	5-8½	37	7-0	8-0	6	4	5-4	6-7	22	22 20	55
431	4000	4900	287	12.5	45.2	25.5	5-11	43	7-0	8-0	6	4	5-7	7-0	24	24 22	55
432	4500	5500	323	14.0	49.8	28.2	5-11	43	7-9	8-9	6	4	5-7	7-0	24	24 22	55
433	5050	6125	360	15.5	54.3	30.9	5-11	43	8-6	9-6	6	4	5-7	7-0	24	24 22	60
491	6000	7300	428	16.3	58.7	29.0	6-9	49	7-0	8-2	8	5	6-5	8-2	26	26 24	60
492	6550	7950	467	18.0	63.4	31.4	6-9	49	7-7	8-9	8	5	6-5	8-2	26	26 24	60
493	7000	8500	500	19.8	66.4	33.5	6-9	49	8-1	9-3	8	5	6-5	8-2	26	26 26	65
551	8500	10350	608	20.6	83.5	48.4	7-1	55	8-4	9-6	8	5	6-10	8-6	28	28 26	65
552	9575	11625	684	22.6	92.0	53.7	7-1	55	9-3	10-5	8	5	6-10	8-6	28	28 28	65
611	10840	13150	774	25.5	97.8	52.5	7-11	61	8-2	9-5	8	6	7-4	9-4	32	32 30	70
612	12000	14575	857	25.5	106.6	57.3	7-11	61	8-11	10-2	8	6	7-4	9-4	32	32 30	70
671	14330	17400	1024	28.3	131.6	68.9	8-0	67	9-9	11-1	8	6	7-7	9-6	34	34 32	70
672	16350	19850	1168	30.8	145.7	77.1	8-0	67	10-11	12-3	8	6	7-7	9-6	34	34 32	70
731	18650	22650	1332	33.9	172.0	85.9	8-3½	73	11-2	12-10	8	6	7-9	9-10	36	36 34	80
732	20700	25175	1480	36.6	189.3	94.2	8-3½	73	12-3	13-11	8	6	7-9	9-10	36	36 34	90
791	22650	27500	1618	36.9	218.1	103.3	8-5½	79	12-5	14-1	10	6	8-0	10-2	40	40 38	90
792	25550	31000	1825	39.9	241.4	115.1	8-5½	79	13-10	15-6	10	6	8-0	10-2	40	40 38	90
851	28750	34900	2054	40.1	233.3	107.7	9-7½	85	12-0	13-8	10	6	9-0	11-5	42	42 40	100
852	33000	40050	2357	43.3	258.6	121.1	9-7½	85	13-6	15-2	10	6	9-0	11-5	42	42 40	100
853	34150	41450	2438	46.5	266.0	124.8	9-7½	85	13-11	15-7	10	6	9-0	11-5	42	42 40	100

FRONT SMOKE OUTLET—TWO PASS

Type "DF" (Direct Draft); Type "SF" (Smokeless); Type "OF" (Oil, Gas or Stoker Fired)

Boiler No. Types "DF," "SF" and "OF"	S.H.B.I. Steam Ratings Types "DF," and "SF" Sq. Ft.	S.H.B.I. Steam Ratings Type "OF" Sq. Ft.	Heating Surface Sq. Ft.	Grate Area Types "DF" and "SF" Sq. Ft.	Furnace Volume Above Water Leg Ring Type "OF" Cu. Ft.	Gross Base Volume Floor to Water Leg Ring Type "OF" Cu. Ft.	Height of Water Line Ft. In.	Width of Boiler In.	Length of Boiler Ft. In.	Length Over-all Ft. In.	Size of Steam Outlet, In.	Size of Return In.	Height of Smoke Outlet Ft. In.	Height Over-all Ft. In.	Size of Smoke Outlet In.	Dia. of Breechings, 1 Boiler Dia. of Stack, 1 Boiler In.	Height of Stack, 1 Boiler Ft.
371	3000	3650	214	11.6	37.9	21.0	5-8	37	5-5	6-9	6	4	5-10	6-7	10x26	20 18	50
372	3500	4250	250	11.6	41.8	23.6	5-8	37	6-3	7-7	6	4	5-10	6-7	10x26	20 18	55
373	4000	4900	286	12.9	45.8	26.2	5-8	37	7-1	8-5	6	4	5-10	6-7	10x26	20 18	55
431	4500	5500	322	14.0	61.1	32.2	5-10½	43	7-6	8-11	6	4	6-0½	7-0	11x30	22 20	60
432	5000	6100	358	15.5	65.1	34.6	5-10½	43	8-2	9-7	6	4	6-0½	7-0	11x30	22 20	60
433	6000	7300	429	16.9	73.6	39.7	5-10½	43	9-7	11-0	6	4	6-0½	7-0	11x30	24 22	60
491	7000	8500	500	18.1	80.1	36.6	6-9	49	7-4	9-0	8	5	6-11	8-2	14x36	26 24	65
492	8500	10300	607	21.3	91.2	42.5	6-9	49	8-9	10-5	8	5	6-11	8-2	14x36	26 24	65
551	10000	12150	715	22.6	114.3	61.4	7-1	55	9-0	10-9	8	5	7-3	8-6	15x40	28 26	70
552	12500	15200	893	26.6	132.8	73.0	7-1	55	11-0	12-9	8	5	7-3	8-6	15x40	30 28	75
611	15000	18200	1072	28.0	155.4	77.0	7-11	61	10-3	12-2	8	6	8-1	9-4	17x42	32 30	80
671	17500	21250	1250	30.9	181.6	91.4	8-1	67	11-2	13-1	8	6	8-3	9-6	17x46	34 32	85
731	20000	24300	1429	33.9	222.4	101.5	8-4	73	11-5	13-4	8	6	8-6	9-10	17x50	36 34	90
791	25000	30400	1786	37.0	278.4	121.6	8-6	79	12-10	14-9	10	6	8-8	10-2	17x56	40 38	90
851	30000	36450	2143	43.3	295.7	124.5	9-7	85	11-10	14-0	10	6	9-9	11-5	20x60	42 40	100
852	35000	42500	2500	46.5	326.6	140.9	9-7	85	13-8	15-10	10	6	9-9	11-5	20x60	42 40	100

Ratings comform with the Steel Heating Boiler Institute's Code for Rating Low Pressure Heating Boilers.
S. H. B. I. Water Ratings are 60 per cent greater than S. H. B. I. Steam Ratings.