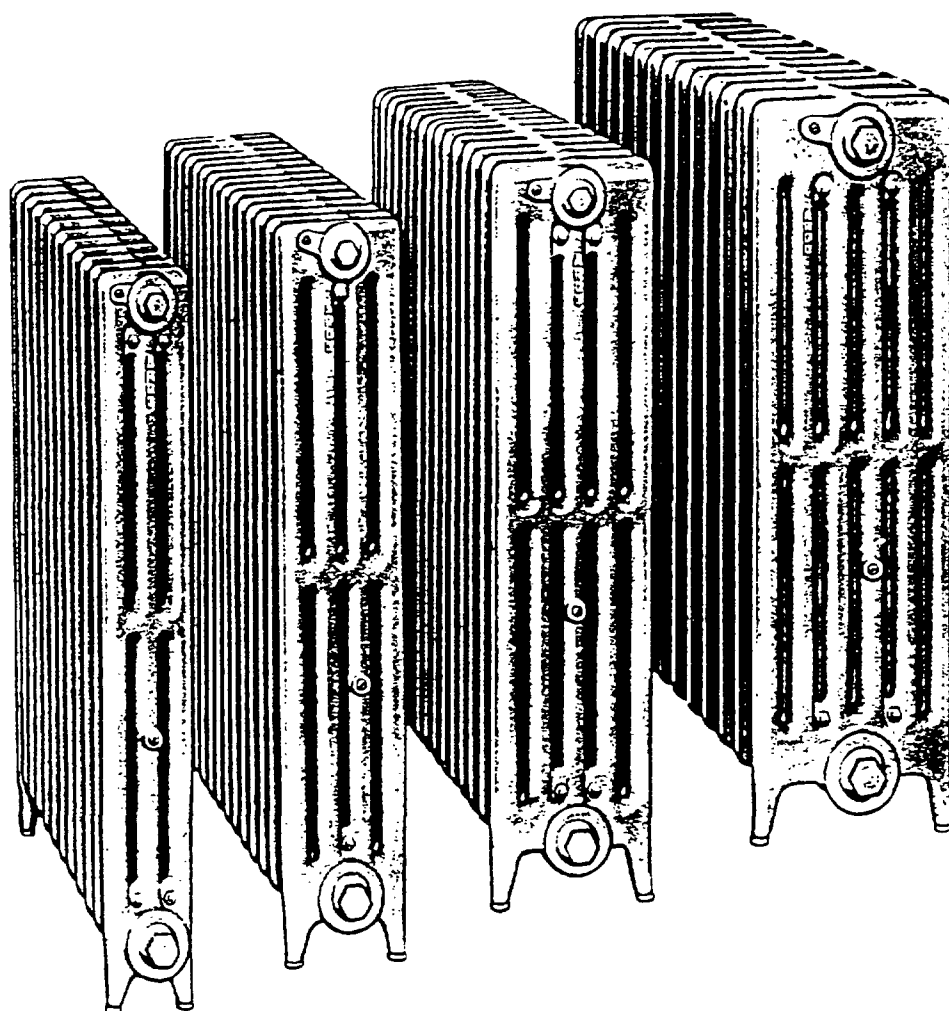




PLAINTIFF'S
EXHIBIT

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ASI-512

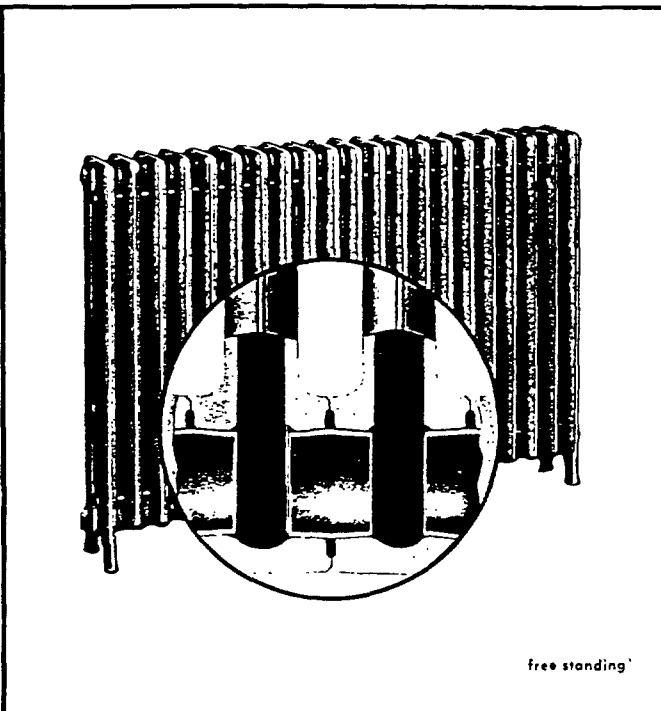
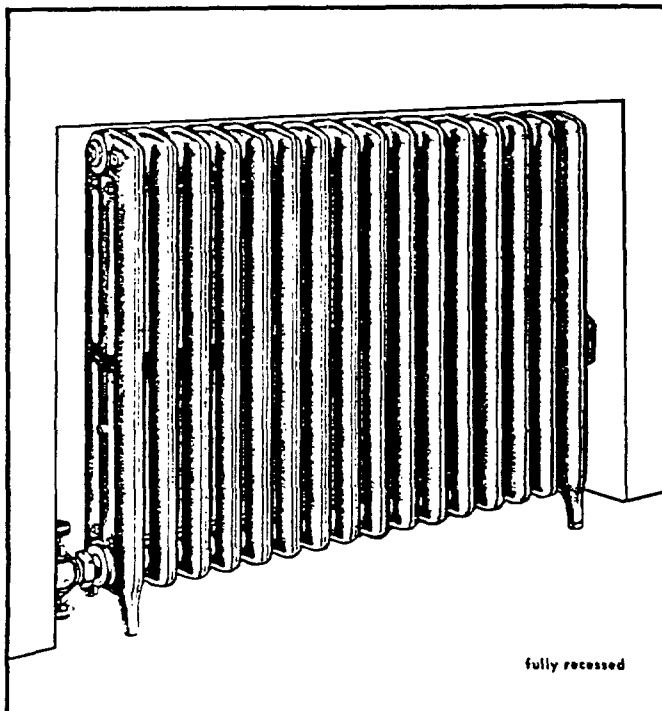
Arco cast iron radiators

AMERICAN-Standard

Hot Water and Steam Heat

13522

► **American-Standard Arco Radiators — cast iron construction**



Arco radiators are the perfect choice for homes, office buildings, schools, hospitals, churches and any large structure where modern, dependable heating and long life are essential factors. The clean, straight lines never detract from their surroundings—fit into any formal setting.

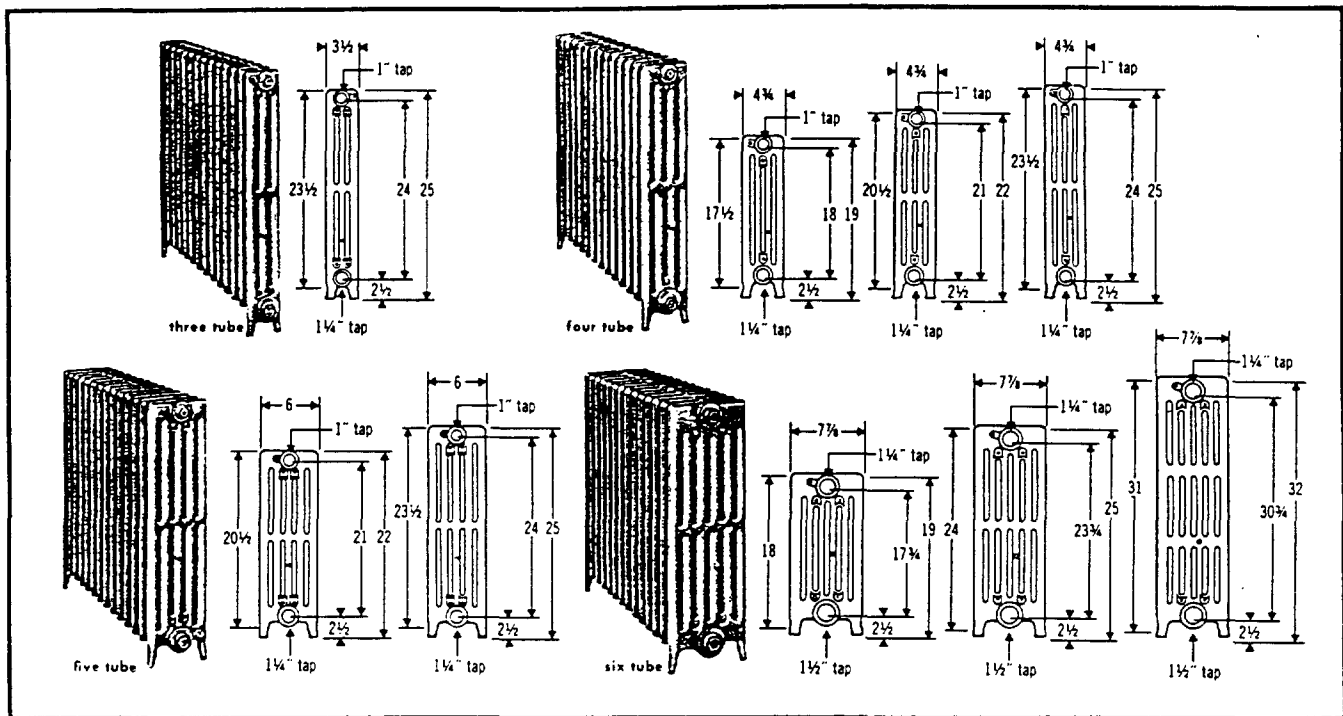
The scientifically designed and proportioned Arco is constructed of durable cast iron and assures real efficiency with hot water, steam or vapor systems. Liberal waterways eliminate frequent venting. Hydrostatic testing and factory-assembled push-nipple connections between sections assure lasting, leak-proof joints.

Arco radiators are easy to handle and economical to install. The average unit weighs approximately $4\frac{1}{2}$ lbs. per square foot compared with old type radiators that weigh up to $6\frac{1}{2}$ lbs. per square foot.

Arco radiators are available in sizes for every heating need—four widths and a wide range of convenient heights range from 19 inches to 32 inches. They are adaptable to any type installation—partially recessed or fully recessed as well as free standing or wall hung.

- Modern slim-tube radiators that require minimum space
- Durable cast iron construction ideal for radiator heating
- Adaptable to any type installation—free-standing, recessed or wall-hung
- Provides the unsurpassed comfort of radiant heat
- Stores up heat—provides gradual temperature changes
- Lightweight—easy to handle and install
- Available in even number of sections up to a maximum of 56 sections in lengths from $3\frac{1}{2}$ to 98 inches
- Factory-assembled, push nipple connections between sections assure lasting, leak-proof joints

► four widths and convenient heights from 19 to 32 inches

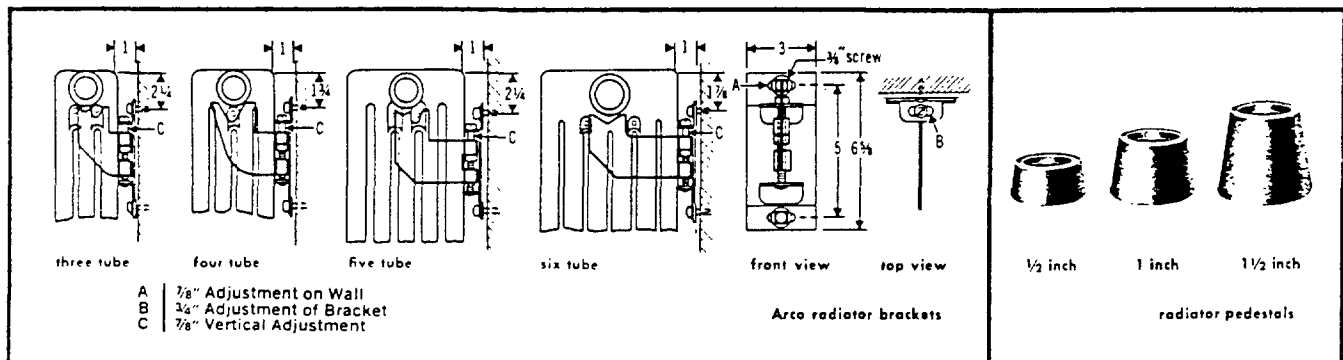


► accessories

■ Arco Radiator Brackets consist of one Bracket and one Wall Plate. For all radiators up to and including 28 sections, 2 Brackets are sufficient. From 30 to 56 sections, 3 Brackets are necessary, one in center and one close to each end. In no case should maximum spacing between brackets

be more than 42 inches. Each Bracket stamped with tube designation.

■ Pedestals to fit under legs of any Arco Radiator can be furnished in the following heights: ½, 1, and 1½ inches.



Heat emission—based on 240 Btu (steam) per square foot per hour.

no of sections	length 1½ inches per section	three-tube	four-tube		five-tube		six-tube			
		25-in height 1.6 sq ft per section	19-in height 1.6 sq ft per section	22-in height 1.8 sq ft per section	25-in height 2.0 sq ft per section	22-in height 2.1 sq ft per section	25-in height 2.4 sq ft per section	19-in height 2.3 sq ft per section	25-in height 3.0 sq ft per section	32-in height 3.7 sq ft per section
		.914 sq ft per lineal in	.914 sq ft per lineal in	1.029 sq ft per lineal in	1.143 sq ft per lineal in	1.20 sq ft per lineal in	1.371 sq ft per lineal in	1.314 sq ft per lineal in	1.714 sq ft per lineal in	2.114 sq ft per lineal in
2	3.5	3.2	3.2	3.6	4	4.2	4.8	4.6	6	7.4
4	7.0	6.4	6.4	7.2	8	8.4	9.6	9.2	12	14.8
6	10.5	9.6	9.6	10.8	12	12.6	14.4	13.8	18	22.2
8	14.0	12.8	12.8	14.4	16	16.8	19.2	18.4	24	29.6
10	17.5	16.0	16.0	18.0	20	21.0	24.0	23.0	30	37.0
12	21.0	19.2	19.2	21.6	24	25.2	28.8	27.6	36	44.4
14	24.5	22.4	22.4	25.2	28	29.4	33.6	32.2	42	51.8
16	28.0	25.6	25.6	28.8	32	33.6	38.4	36.8	48	59.2
18	31.5	28.8	28.8	32.4	36	37.8	43.2	41.4	54	66.6
20	35.0	32.0	32.0	36.0	40	42.0	48.0	46.0	60	74.0
22	38.5	35.2	35.2	39.6	44	46.2	52.8	50.6	66	81.4
24	42.0	38.4	38.4	43.2	48	50.4	57.6	55.2	72	88.8
26	45.5	41.6	41.6	46.8	52	54.6	62.4	59.8	78	96.2
28	49.0	44.8	44.8	50.4	56	58.8	67.2	64.4	84	103.6
30	52.5	48.0	48.0	54.0	60	63.0	72.0	69.0	90	111.0
32	56.0	51.2	51.2	57.6	64	67.2	76.8	73.6	96	118.4
34	59.5	54.4	54.4	61.2	68	71.4	81.6	78.2	102	125.8
36	63.0	57.6	57.6	64.8	72	75.6	86.4	82.8	108	133.2
38	66.5	60.8	60.8	68.4	76	79.8	91.2	87.4	114	140.6
40	70.0	64.0	64.0	72.0	80	84.0	96.0	92.0	120	148.0
42	73.5	67.2	67.2	75.6	84	88.2	100.8	96.6	126	155.4
44	77.0	70.4	70.4	79.2	88	92.4	105.6	101.2	132	162.8
46	80.5	73.6	73.6	82.8	92	96.6	110.4	105.8	138	170.2
48	84.0	76.8	76.8	86.4	96	100.8	115.2	110.4	144	177.6
50	87.5	80.0	80.0	90.0	100	105.0	120.0	115.0	150	185.0
52	91.0	83.2	83.2	93.6	104	109.2	124.8	119.6	156	192.4
54	94.5	86.4	86.4	97.2	108	113.4	129.6	124.2	162	199.8
56	98.0	89.6	89.6	100.8	112	117.6	134.4	128.8	168	207.2

Add ½" to length for each bushing.

CONNECTIONS—Both steam and water extra heavy 1" malleable nipples on 3, 4 and 5-tube, and 1¼" malleable nipples on 6-tube, at top and bottom.

Regularly furnished with 2½" legs. Can be supplied on special order with 4½" legs, or without legs. For height of loop section only, subtract 1½" on 3, 4 and 5-tube, and 1" on 6-tube from total height as shown above.

End sections regularly supplied with 1" top tappings and 1¼" bottom tappings for 3, 4 and 5-tube, and with 1¼" top tappings, 1½" bottom tappings, for 6-tube, bushed if so specified.

NOTE—Arco Radiators are sold only in even number of sections up to a maximum of 56 sections. For assemblies from 30 to 56 sections, one center leg section is furnished.

table of heat emissions for various average hot water temperatures

av. water temp. in radiator	220	215	210	200	190	180	170	160	150
heat emission Btu per sq ft	250	240	230	210	190	170	150	130	110

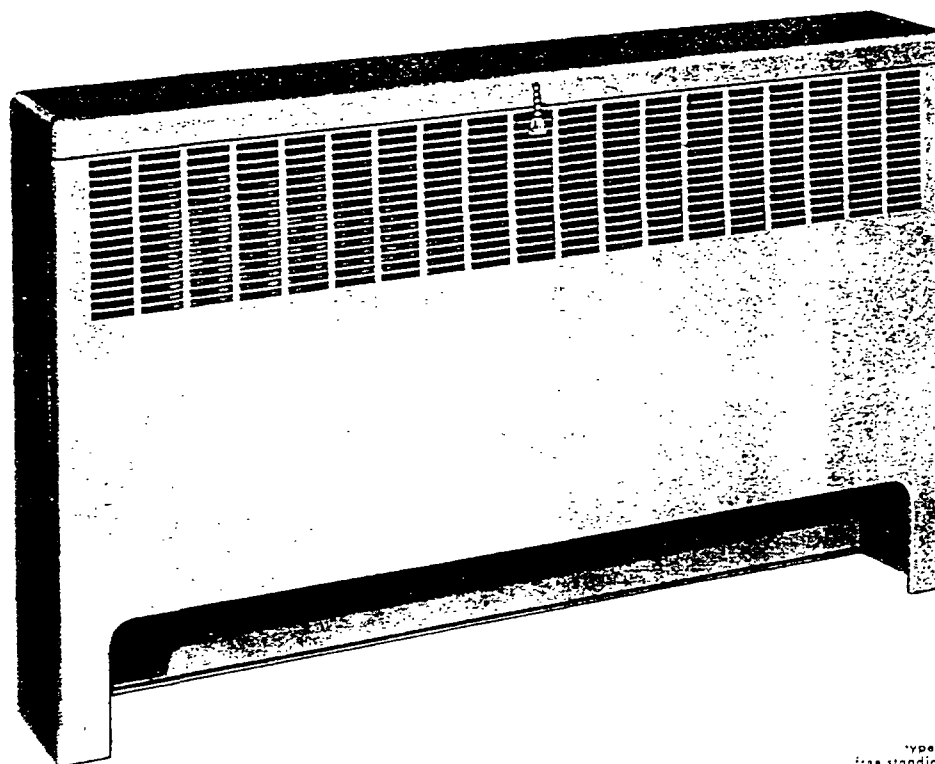
► American-Standard Arco Cast Iron Radiators are another development in hydronics—the science of heating and cooling with water.



AMERICAN-Standard PLUMBING AND HEATING DIVISION

AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

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type F
free standing

special service models

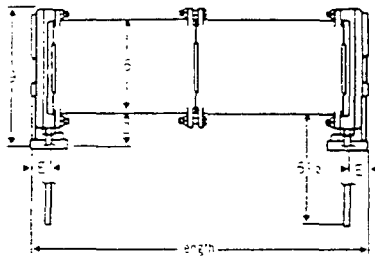
Arco cast iron convectors

AMERICAN-Standard

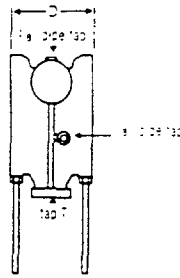
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Arco Convectors

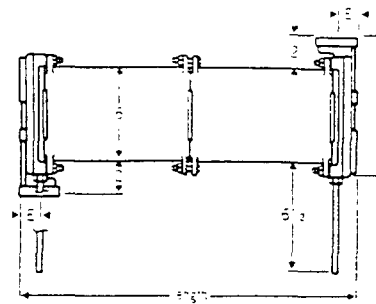
dimensions (inches)



X-4 (upfeed)



end view



Y-4 (downfeed)

heating element	depth D	dimension E	tapping T
no. 4	3 3/4"	1 3/8"	1 1/4"
no. 6	5 5/8"	1 3/8"	1 1/4"
no. 8	7 5/8"	1 3/8"	1 1/4"
no. 10	9 1/2"	1 1/2"	1 1/2"

X-4 two pipe steam or water (upfeed)

Y-4 two pipe steam or water (downfeed) and one pipe steam

tappings and miscellaneous

No. 4, No. 6 and No. 8 Arco Convector heating elements are tapped 1 1/4" and No. 10 is tapped 1 1/2". The type X-4 and Y-4 connections (underneath) permit simple installations in limited space.

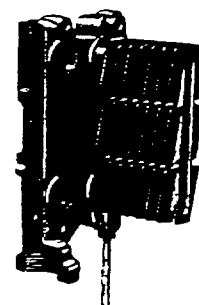
Steel legs are furnished for heating elements. These legs screw into tappings at bottom of each header and permit slight adjustment in setting.

Heating elements for use in types W and S cabinets are suspended from brackets welded to the cabinet. Legs are not furnished for these wall-hung units.

■ Unless otherwise specified, heating elements will be shipped with legs that bring bottom of fins on sections 6 1/2" from floor.



cutaway view
Internal area of cast iron section and integrally cast fins



cutaway view
Header and intermediate section

table of heat emissions for various average hot water temperatures

average water temperature in convector	220	210	200	190	180	170	160	150
heat emission in Btu per sq ft	238	219	200	182	164	145	125	109

▶ American-Standard Arco Convectors are another development in Hydronics — the science of heating and cooling with water.



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quality sheet steel—designed for beauty and efficiency—conceals heating element—prime painted in neutral color—removable front panel

provides effective control of heat—beaded chain permits graduated, fingertip operation—optional equipment at slight additional cost

cast iron—integral with cored sections—spaced to allow steady and continuous flow of heated air over and around entire surface

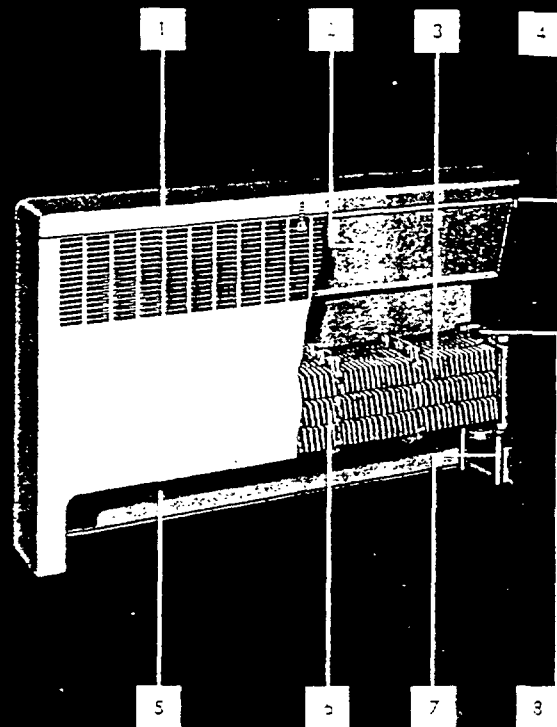
angle on top and vee on front provides maximum rigidity—stiffeners continuous end to end—top angle above damper hanger

correctly proportioned air inlet opening for maximum efficiency—conceals heating element support legs. Bottom grille instead of inlet arch is optional at slight additional cost

cast iron throughout—finned sections have ample cored or internal space to insure unimpeded circulation of steam or hot water—proper air elimination at varying steam pressures. Possess a long "carry over" output, a distinct advantage with intermittent, automatic firing

steel legs furnished to support heating elements except for type W and S—heating elements for wall hung units suspended from brackets welded to cabinet; legs not necessary—legs and brackets permit adjustment for pitch

cast iron, joined to cast iron integral finned sections with 1/4" malleable nipples—perfect performance by correct design and accurate machining



Arco convectors by American-Standard combine cast iron elements and handsome steel cabinets for the most effective convector heating. Scientifically engineered and rated for efficient and economical heat transfer, Arco convectors assure dependable performance. They provide maximum versatility due to the many installation requirements they fulfill, ease of handling and speed of installation.

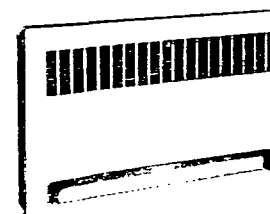
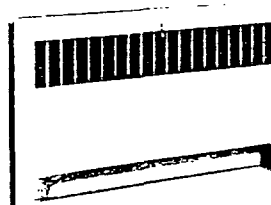
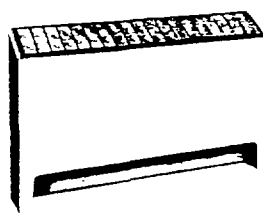
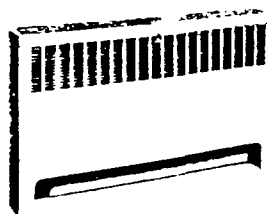
Smartly styled steel cabinets, bonderized and prime painted make an attractive appearance in any setting, whether in the home, office or institution. Available in a wide range of types and sizes, these sturdy cabinets, with rounded edges and corners for safety and added strength, provide for a most limitless application—free standing, partially recessed or wall

hanging. Cabinets are easily painted on the job to match any decorating scheme.

Discharge grilles, properly designed to direct the flow of air throughout the room, are of streamline venetian design stamped into the metal pane.

Arco convector heating elements are available in four widths: No. 1—32 1/2", No. 2—35 1/2", No. 3—37 1/2", and No. 4—39". When ordered, Arco convectors should be specified as a complete unit consisting of cabinet type and size and heating element type of connection, K1 or K2, and tapping size.

Quality built Arco convectors by American-Standard provide an abundance of uniform, beautiful, controlled warmth in any application.



A complete cabinet for general use. Designed principally for free-standing or semi-recessed installations. Front is removable. Cabinets available in six standard heights: 13, 20, 24, 26, 32 & 38 inches.

Similar to the type W in design except that it has a sloping top. Its outlet grille is in the same location as that of the type FS. Recommended for installation same as type W. One-piece front and top.

Similar to the type F in design except that it has a sloping top. The same design outlet grille furnished in the latter is included in the sloping top of the type FS. One-piece front and top.

A complete cabinet unit for fully recessed installations, either in blank walls or under windows. The front fits close to the wall and takes up virtually no usable floor space. Cabinet heights same as type F.

A complete cabinet, similar to type F, is designed for wall hung installations only. It has a flat top and removable front. Installed at least 4 inches above floor. Heights: 14, 18, 20, 25 & 32 inches.

Similar to the type R cabinet except that it is furnished with a choice of two flange depths at the top and ends of front—2½ inches or 4½ inches—for partially recessed installations.

Flange sizes of 2½" for No. 6 heating elements, and 4½" for No. 3 heating elements are designed so that convectors can be installed with standard 2 x 4 stud wall construction with flat bath and plaster. Clearance is allowed for installing insulation, up to 1½" thickness, at back of recess. Other size flanges are not available. Type F cabinets should be used with No. 10 heating

elements except where complete recess treatment is permissible, or where sufficient recess depth is provided to permit the use of the standard flange. Where 2 x 6 stud wall construction is used, the flange sizes can be 2½" for No. 3 heating elements and 4½" for No. 10 heating elements. Correct flange size must be indicated when ordering these units.

American-Standard Convectors are available for a wide range of special installations and applications to meet specific architectural, engineering and other requisites, in hospitals, institutions, and the like. For plaster front cabinets, bathroom convectors, any special adaptation, please contact the American-Standard Sales Office serving you. Inquiries are invited and will receive prompt and careful attention.