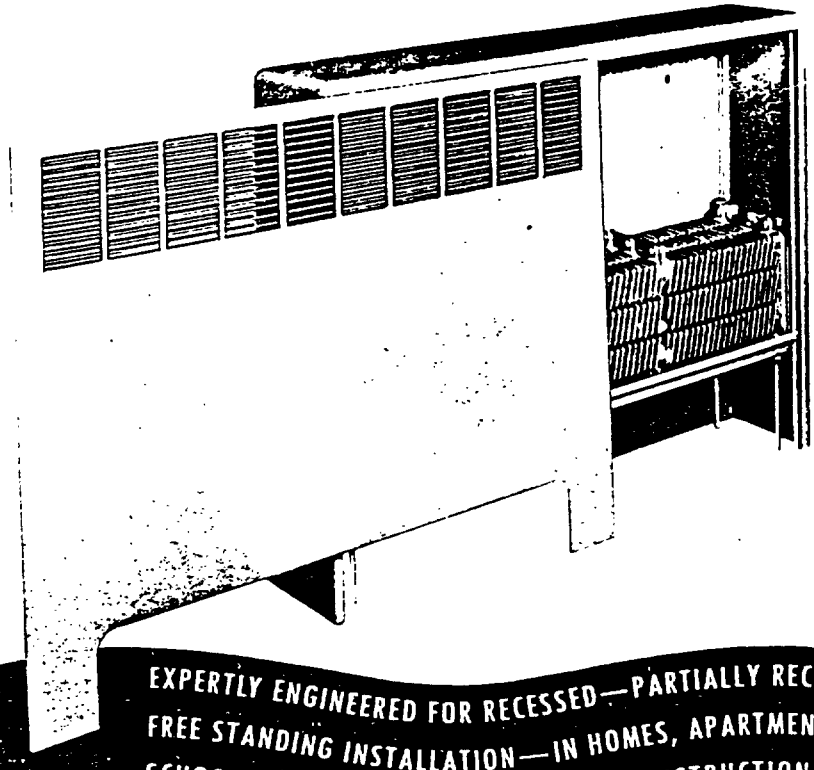
PLAINTIFF'S EXHIBIT

ASI-1077

Standardized

ARCO

CAST IRON CONVECTORS and AMERICAN ENCLOSURES



EXPERTLY ENGINEERED FOR RECESSED—PARTIALLY RECESSED OR FREE STANDING INSTALLATION—IN HOMES, APARTMENTS, OFFICES, SCHOOLS, SHIPS AND OTHER TYPES OF CONSTRUCTION

FOR TWO PIPE STEAM, VAPOR, VACUUM
TWO PIPE FORCED OR GRAVITY HOT WATER
ONE PIPE STEAM

AMERICAN-Standard

HEATING PLUMBING

Serving the Nations' Health and Comfort

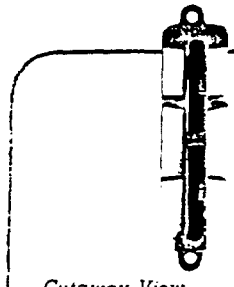
04023

ARCO CAST IRON CONVECTORS

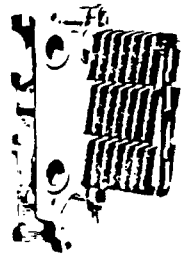
Efficient and Dependable

A time-tested product, scientifically engineered and rated to provide the efficient and economical heat transfer essential for convection heating. As illustrated below, the Convector unit is an assembly of cast iron finned sections and headers, joined with malleable nipples, with individual tie bolts at each nipple port. The fins are cast integrally with the cored sections. They are correctly spaced and staggered to provide maximum live surface for the rapid transfer of heat to surrounding air. And for enduring service, the unit has the strength and durability of cast iron construction.

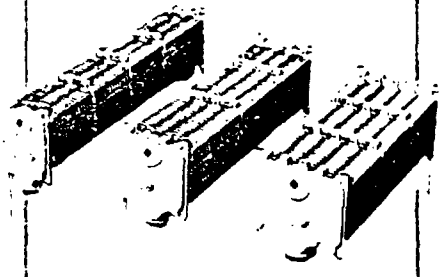
The use of Arco Cast Iron Convectors and AMERICAN Enclosures results in attractively concealed heating units, which provide ample and uniform warmth by circulating convected heat. The complete unit may be recessed, partially recessed or installed free standing and can be decorated to suit the surroundings.



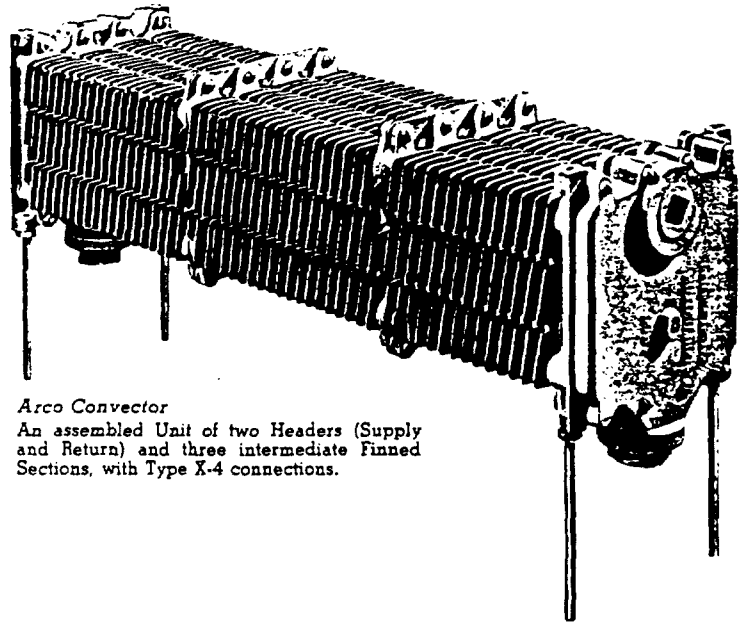
Cutaway View
Showing Internal Area of Sections with Fins cast integrally thereon.



Cutaway View
Header and Intermediate Section.

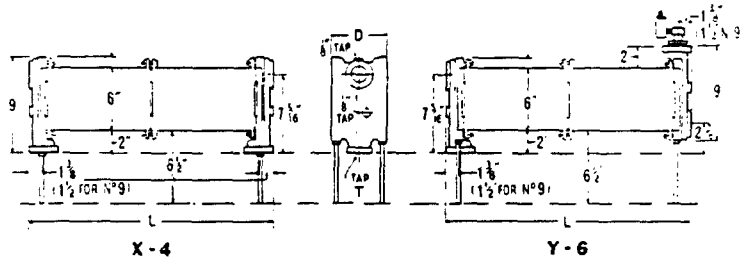


Three Widths
The Arco Convector is available in three widths: No. 5 — 5⅝"; No. 7 — 7⅝"; No. 9 — 9½" (as illustrated above).



Arco Convector
An assembled Unit of two Headers (Supply and Return) and three intermediate Finned Sections, with Type X-4 connections.

DIMENSIONS



Type	Depth—"D"	Tapping—"T"
No. 5	5⅝"	1¼"
No. 7	7⅝"	1¼"
No. 9	9½"	1½"

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ORDERING INSTRUCTIONS

1. In ordering "Standardized" Arco Cast Iron Convectors, specify them by name; also indicate Unit number (from Ratings Table on back page), type of system, whether X-4 or Y-6 connection, and tapping sizes.

2. In ordering Enclosures specify type of Enclosures, Unit number of Convector; also Enclosure height and whether for X-4 or Y-6 connection.

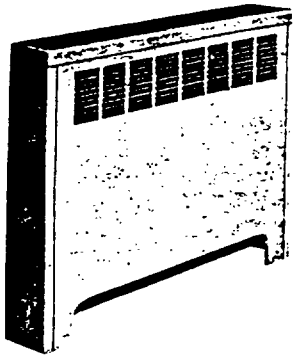
TAPPINGS AND MISCELLANEOUS

No. 5 and No. 7 Convector Units are tapped 1¼"; and No. 9 is tapped 1½". The X-4 and Y-6 connections underneath permit simple installations in limited space.

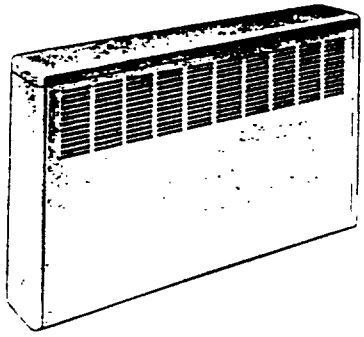
Steel legs are furnished for Convectors. They screw into tappings at bottom of each header and permit slight adjustment in setting. Convectors in Types "W" and "SW" Enclosures are supported on brackets welded to Enclosure; therefore no legs are furnished.

Unless otherwise specified, Convector Units will be shipped with legs that bring bottom of fins on sections 6½" from floor.

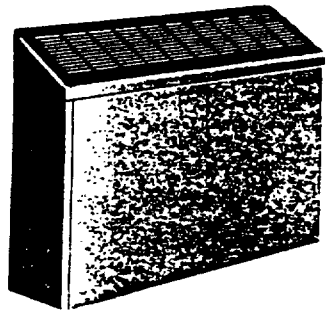
AMERICAN ENCL



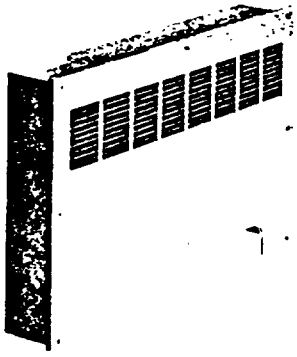
Type NFS — A complete enclosure for general use — partially recessed or free-standing. Removable front.



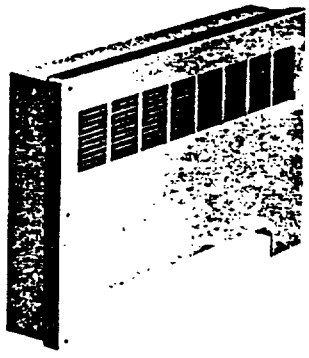
Type W (Flat Top) — A complete enclosure for wall hung treatment. Removable front.



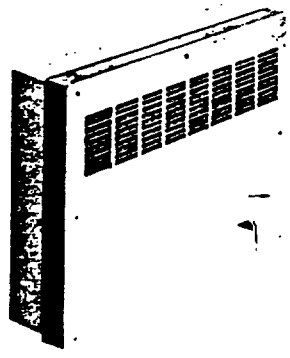
Type SW (Sloping Top) — A complete enclosure for wall hung treatment. Removable front.



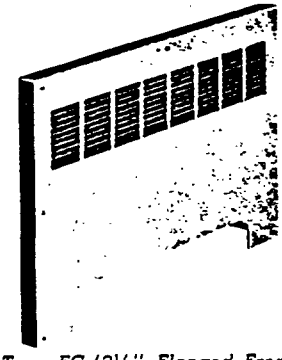
Type OF (Overlap Front — 3/8" Rolled Edge) — A complete enclosure for completely recessed treatment. Front fastened with screws. For Nos. 5, 7 and 9 Convectors.



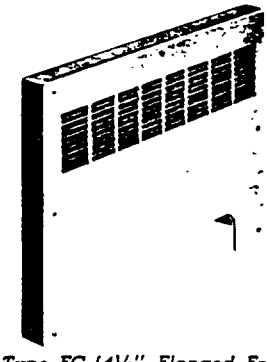
Type OF (Overlap Front — 2½" Flange) A complete enclosure for partially recessed treatment. Front fastened with screws. For No. 5 Convector.



Type OF (Overlap Front — 4½" Flange) — A complete enclosure for partially recessed treatment. Front fastened with screws. For No. 7 Convector.



Type FC (2½" Flanged Front) — A front panel only, designed for partially recessed treatment. For No. 5 Convector.



Type FC (4½" Flanged Front) — A front panel only for partially recessed treatment. For No. 7 Convector.

QUALITY ENCLOSURES

AMERICAN Enclosures offer quality, durability, correct design and attractive appearance. With Arco Convectors they do an efficient job of circulating air over the heated surface of the Convector, to be thoroughly heated before it emerges through top grille of Enclosure to warm the room. Illustration on front cover portrays an NFS Enclosure with front panel removed to show the Arco Convector placed inside.

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NOTE FOR TYPES OF AND FC ENCLOSURES

Flange sizes of 2½" for No. 5 Convector and 4½" for No. 7 Convector are designed for application on standard 2" x 4" stud wall construction with ¾" Lath and Plaster, and allows clearance for installing insulation at back of recess, up to ½" thickness. Other size flanges are not available. Type NFS Enclosure should be used for No. 9 Convector 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. 7 Convector and 4½" for No. 9 Convector. Proper flange size must be shown on order.

CONVECTOR-ENCLOSURE UNITS FOR SPECIAL PURPOSES

Inquiries are invited concerning special installations for Hospitals and Institutions, or any other need not covered by the "Standardized" line. They will receive prompt and careful attention.

ARCO

CAST IRON CONVECTOR RATINGS

TABLE NO. 1

STEAM RATINGS — SQUARE FEET
BASED ON 240 BTU (STEAM — 215°F.) PER SQUARE FOOT PER HOUR
AND FRONT OUTLET ENCLOSURES

Enclosure Height Inches	No. 5 — 5¼" Width									No. 7 — 7¼" Width							No. 9 — 9½" Width					
	Unit No.									Unit No.							Unit No.					
	518	523	528	533	538	543	548	553	563	728	733	738	743	748	753	763	933	938	943	948	953	963
	Convector Length "L" Inches									Convector Length "L" Inches							Convector Length "L" Inches					
	18	23	28	33	38	43	48	53	63	28	33	38	43	48	53	63	33	38	43	48	53	63
20" NFS, OF, FC 16" W	13.5	17.4	21.3	25.2	29.2	33.1	37.0	40.9	48.7	27.2	32.2	37.2	42.3	47.3	52.3	62.3	38.9	45.0	51.1	57.2	63.3	75.5
24" NFS, OF, FC 20", W, SW	15.4	19.9	24.4	28.9	33.4	37.9	42.4	46.8	55.8	30.7	36.4	42.1	47.8	53.5	59.2	70.6	44.2	51.1	58.0	64.9	71.8	85.6
32" NFS, OF, FC 28", W, SW	17.5	22.6	27.7	32.9	38.0	43.1	48.1	53.1	63.5	35.7	42.3	48.9	55.5	62.0	68.6	81.8	51.4	59.5	67.5	75.6	83.6	99.7

For Sizing Standardized Arco Cast Iron Convectors for Steam use the following Simple Formula:

After calculating the heat loss of the room in Btu's, using a recognized and approved method, it is only necessary to divide the Btu heat loss by 240 to obtain the Equivalent Direct Radiation (EDR) and select proper size convector from Steam Rating Columns in above table. For example: Assuming 6,000 Btu per hour as the heat loss of the room and 20" to 24" available enclosure height. 6,000 ÷ 240 = 25.0 sq. ft. EDR. Referring to Steam Rating Columns in table we find — Unit No. 533 = 25.2 Sq. Ft. (20" Enc. Height), Unit No. 528 = 24.4 Sq. Ft. (24" Enc. Height).

TABLE NO. 2

HOT WATER (GRAVITY OR FORCED CIRCULATION) CAPACITIES
EXPRESSED IN MBH (THOUSAND BTU PER HOUR)
BASED ON AVERAGE WATER TEMPERATURES SHOWN

Enclosure Height Inches	Av. Water Temp. in Conv.	No. 5 — 5¼" Width									No. 7 — 7¼" Width								No. 9 — 9½" Width					
		Unit No.									Unit No.								Unit No.					
		518	523	528	533	538	543	548	553	563	728	733	738	743	748	753	763		933	938	943	948	953	963
		Convector Length "L" Inches									Convector Length "L" Inches								Convector Length "L" Inches					
		18	23	28	33	38	43	48	53	63	28	33	38	43	48	53	63		33	38	43	48	53	63
20" NFS, OF, FC 16" W	215	3.1	4.0	4.9	5.8	6.7	7.6	8.5	9.4	11.2	6.2	7.4	8.5	9.7	10.8	12.0	14.3		8.9	10.3	11.7	13.1	14.5	17.3
	210	3.0	3.8	4.7	5.5	6.4	7.2	8.1	9.0	10.7	6.0	7.1	8.1	9.3	10.4	11.5	13.6		8.5	9.9	11.2	12.5	13.9	16.5
	200	2.7	3.5	4.3	5.0	5.8	6.6	7.4	8.2	9.8	5.4	6.4	7.4	8.5	9.5	10.5	12.5		7.8	9.0	10.2	11.4	12.7	15.2
	190	2.5	3.2	3.9	4.6	5.3	6.0	6.7	7.5	8.9	4.9	5.8	6.8	7.7	8.6	9.5	11.3		7.1	8.2	9.3	10.4	11.5	13.8
	180	2.2	2.9	3.5	4.1	4.8	5.4	6.1	6.7	8.0	4.5	5.3	6.1	6.9	7.8	8.6	10.2		6.4	7.4	8.4	9.4	10.4	12.4
	170	2.0	2.5	3.1	3.6	4.2	4.8	5.4	5.9	7.1	3.9	4.7	5.4	6.1	6.7	7.7	9.0		5.6	6.5	7.4	8.3	9.2	10.9
	160	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	6.1	3.4	4.1	4.7	5.3	6.0	6.6	7.8		4.9	5.7	6.4	7.2	8.0	9.5
	150	1.5	1.9	2.3	2.7	3.2	3.6	4.0	4.5	5.3	3.0	3.5	4.1	4.6	5.2	5.7	6.8		4.2	4.9	5.6	6.2	6.9	8.2
24" NFS, OF, FC 20" W, SW	215	3.5	4.6	5.7	6.6	7.7	8.7	9.7	10.7	12.8	7.0	8.3	9.6	10.9	12.2	13.5	16.2		10.1	11.7	13.3	14.8	16.4	19.6
	210	3.4	4.4	5.3	6.3	7.3	8.3	9.3	10.3	12.2	6.7	8.0	9.2	10.5	11.7	13.0	15.5		9.7	11.2	12.7	14.2	15.7	18.7
	200	3.1	3.9	4.8	5.7	6.7	7.5	8.5	9.4	11.2	6.2	7.3	8.4	9.6	10.7	11.8	14.1		8.8	10.2	11.6	12.9	14.4	17.1
	190	2.8	3.6	4.4	5.3	6.1	6.9	7.7	8.5	10.2	5.6	6.6	7.7	8.7	9.7	10.7	12.9		8.0	9.3	10.6	11.8	13.0	15.6
	180	2.5	3.3	4.0	4.7	5.5	6.2	7.0	7.7	9.2	5.0	6.0	6.9	7.8	8.8	9.7	11.6		7.2	8.4	9.5	10.6	11.8	14.1
	170	2.2	2.9	3.5	4.2	4.8	5.5	6.2	6.8	8.1	4.5	5.3	6.1	6.9	7.8	8.6	10.2		6.4	7.4	8.4	9.4	10.4	12.4
	160	1.9	2.5	3.1	3.6	4.2	4.8	5.3	5.9	7.0	3.9	4.6	5.3	6.0	6.7	7.5	8.9		5.6	6.4	7.3	8.2	9.1	10.8
	150	1.7	2.2	2.7	3.2	3.6	4.1	4.6	5.1	6.1	3.4	4.0	4.6	5.2	5.8	6.4	7.6		4.8	5.6	6.3	7.1	7.8	9.3
32" NFS, OF, FC 28" W, SW	215	4.0	5.2	6.3	7.5	8.7	9.9	11.0	12.2	14.5	8.2	9.7	11.2	12.7	14.2	15.7	18.7		11.8	13.6	15.5	17.3	19.1	22.8
	210	3.8	4.9	6.1	7.2	8.3	9.4	10.5	11.7	13.9	7.8	9.2	10.7	12.1	13.6	15.0	17.9		11.2	13.0	14.8	16.5	18.3	21.8
	200	3.5	4.5	5.5	6.6	7.6	8.6	9.6	10.7	12.7	7.1	8.4	9.8	11.1	12.4	13.7	16.4		10.3	11.9	13.5	15.1	16.7	19.9
	190	3.2	4.1	5.0	6.0	6.9	7.8	8.8	9.7	11.6	6.5	7.7	8.9	10.1	11.3	12.5	14.9		9.4	10.9	12.3	13.8	15.3	18.2
	180	2.9	3.7	4.5	5.4	6.2	7.1	7.9	8.7	10.4	5.9	6.9	8.0	9.1	10.2	11.2	13.4		8.4	9.8	11.1	12.4	13.7	16.3
	170	2.5	3.3	4.0	4.8	5.5	6.2	7.0	7.7	9.2	5.2	6.1	7.1	8.1	9.0	9.9	11.9		7.3	8.6	9.8	11.0	12.1	14.4
	160	2.2	2.9	3.5	4.1	4.8	5.4	6.1	6.7	8.0	4.5	5.3	6.2	7.0	7.8	8.6	10.3		6.5	7.5	8.5	9.5	10.5	12.5
	150	1.9	2.5	3.0	3.6	4.1	4.7	5.2	5.8	6.9	3.9	4.6	5.3	6.0	6.8	7.5	8.9		5.6	6.5	7.4	8.2	9.1	10.8
Unit No.		518	523	528	533	538	543	548	553	563	728	733	738	743	748	753	763		933	938	943	948	953	963

For Sizing Standardized Arco Cast Iron Convectors for Hot Water use the following Simple Formula:

Calculate heat loss of the room in Btu's, same as outlined for steam. Divide heat loss by 1,000 to determine MBH (thousand Btu per hour). Then, in Rating Tables above, locate the required MBH for the average water temperature desired and determine Convector from Unit No. listing at top (in line with MBH selected) — keeping in mind the width and Enclosure height required. For example: Assuming 6,000 Btu (or 6.0 MBH) per hour as the heat loss of the room and average water temperature in Convector 190° with 20" to 24" available Enclosure Height. Referring to Rating Tables above, in 190° line, we find — Unit No. 543 = 6.0 MBH (20" Enc. Height), Unit No. 538 = 6.1 MBH (24" Enc. Height).

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Average Water Temperature in Convector	215	210	200	190	180	170	160	150
Heat Emission in Btu per Sq. Ft.	229	219	200	182	164	145	126	109

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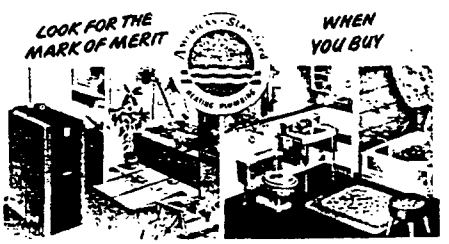

HEATING AND PLUMBING

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CORPORATION
PITTSBURGH 30, PA.

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