



#2A

**Stock Hot Water
Duct Coils**

1-800-USA-COIL
(1-800-872-2645)

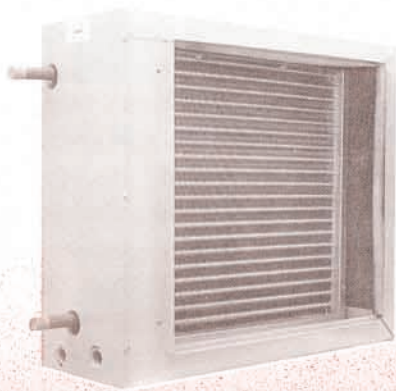
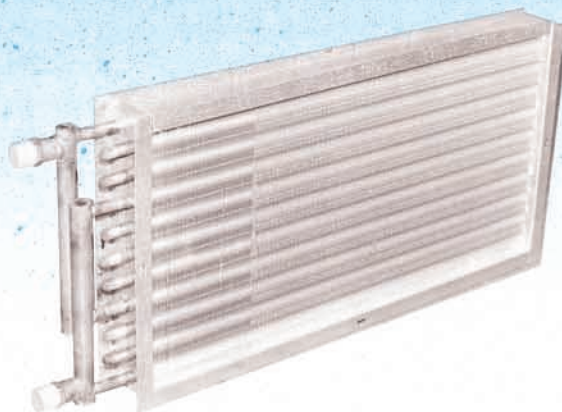
FAX: (610) 296-9763 • www.usacoil.com

Stock Coils:

Immediate shipment plus Superior Design, Quality and Reliability—all at USA.

STOCK HEATING COILS

66 different 1 row and 2 row Heating Coils. Can be used for hot water or low pressure steam applications. All coils are flanged for easy ductwork plenum installation.



STOCK COOLING COILS

Horizontal Cabinet and Vertical "A" Coil or cabinets and coils. Horizontal Units available in 2 thru 10 Tons for both DX or Chilled Water. Vertical application available DX 2 thru 10 Tons and Chilled Water from 2 thru 10 Tons.

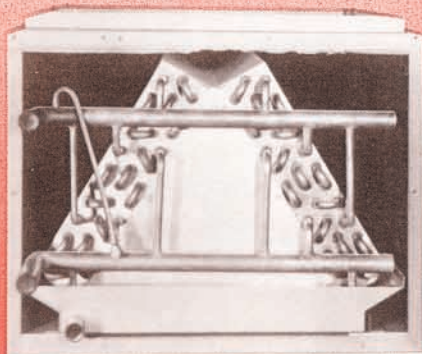
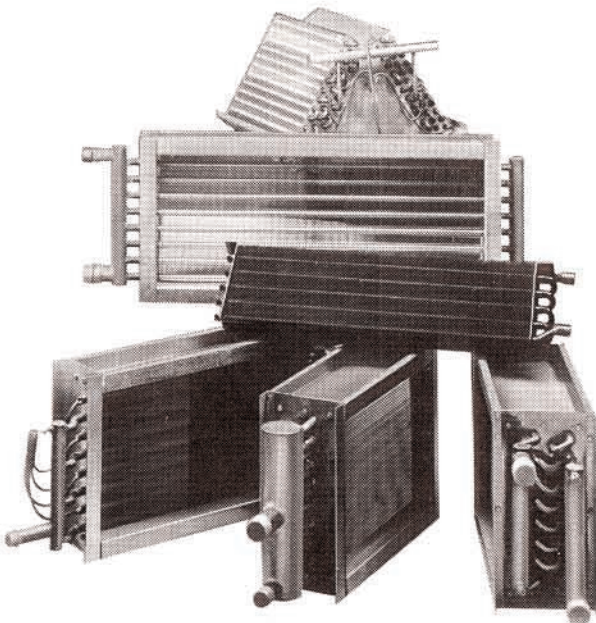


TABLE OF CONTENTS

Section	Description	Page
1. Stock Heating Coils	Nomenclature & Basic Data	3, 4
	Hot Water Performance Data	5
	5/8" Flanged Coil Drawing	6
	1/2" Flanged Coil Drawing	7
	5/8" Slip & Drive Coil Drawing	8
	1/2" Slip & Drive Coil Drawing	9



Replacement Engineering Made Easy

USA COIL
& AIR

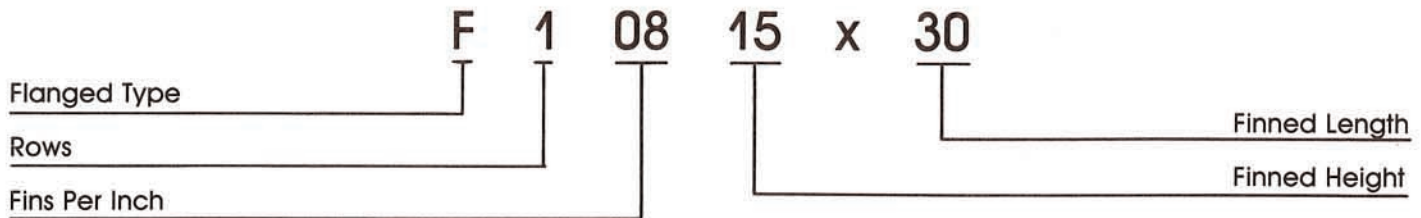
1-800-USA-COIL
(1-800-872-2645)

FAX: (610) 296-9763

1 Stock Heating Coils

Nomenclature
Basic Data

NOMENCLATURE



DUCT SIZE SELECTION PROCEDURE

USE THIS SELECTION PROCEDURE WHEN YOU HAVE A FIXED DUCT SIZE.

- STEP 1:** Establish your duct size or the amount of space available to fit the coil. Very often, you can have higher allowable duct velocities than coil face velocities, and you must transition to a larger coil face area. Duct sizes are most often given in reverse order from coil size.

Example: 3000 CFM in duct = 20 x 18 or 2.5 sq. ft.: $\frac{3000 \text{ CFM}}{2.5 \text{ sq. ft.}} = 1200 \text{ FT./MIN.}$

You must transition to 24" x 24" face area: Coil size = 4 sq. ft. $\frac{3000 \text{ CFM}}{4 \text{ sq. ft.}} = 750 \text{ FT./MIN.}$

- STEP 2:** Coil face velocities should be in the range of 500 ft./min. to 1,000 ft./min. Select the coil size to allow the velocity to fall in this range. Do not exceed 1,000 ft./min., unless there is a special set of circumstances.

- STEP 3:** Select your entering water temperature or steam temperature. Go to the Performance Chart that corresponds to the entering water temperature. Note that there are separate Performance Charts for (1) and (2) Row Coils.

- STEP 4:** Select your water temperature drop:
180°F – 160°F = 20°F TEMP DROP
180°F – 140°F = 40°F TEMP DROP
Go to the chart on the page that corresponds to the proper temperature drop.

- STEP 5:** Find your performance by reading across the top of the charts to the face velocity that you selected in Step 1. Read down to find the coil size that you selected in Step 2. By reading across, you can select BTU/HR, CFM, GPM and Water Pressure Drop.

- STEP 6:** Go to chart SHC-3 and correct for different entering air temperature.

BTU/HR SELECTION PROCEDURE

USE THIS SELECTION PROCEDURE WHEN YOU CAN MATCH YOUR DUCT SIZE TO ANY COIL SIZE.

STEP 1: Establish your CFM and entering air temperature.
Calculate your BTU/HR (Equation shown below)

$$\text{BTU/HR} = \text{CFM} \times 1.085 \times \text{DESIRED TEMP RISE}$$

EXAMPLE: 3.00 CFM, ENT. AIR TEMP = 65°F, DESIRED LVG. TEMP = 100°F.

$$\text{BTU/HR} = 3,000 \text{ CFM} \times 1.085 \times 35^\circ\text{F TEMP RISE} = 113,925 \text{ BTU/HR.}$$

STEPS 2 THROUGH 6 SAME AS PAGE 3

STEAM COIL SELECTION — MAXIMUM DESIGN DATA

Do not use this type of coil for any steam pressures that exceed 5 PSIG. USA Stock Heating Coils are designed for hot water and low pressure steam only. These coils are serpentine type coils with many return bends, and higher pressure steam will cause premature failure.

SELECTION FORMULAS

$$\text{CFM} \div \text{Face Velocity (F.P.M.)} = \text{Coil sq. ft. (Area)}$$

$$\text{CFM} \div \text{Coil sq. ft.} = \text{Face Velocity (F.P.M.)}$$

$$\text{MBH} \times 1000 = \text{BTUH Heat Load}$$

$$\text{Air Temp Rise} = \text{BTUH} \div (\text{CFM} \times 1.085)$$

$$\text{BTUH} = \text{CFM} \times 1.085 \times \text{Air Temp Rise}$$

$$\text{Leaving Air Temp} = \text{Air Temp Rise} + \text{Entering Air Temp}$$

$$\text{GPM} = \text{BTUH} \div (500 \times \text{Water Temp Difference})$$

$$\text{Water Temp Difference} = \text{BTUH} \div (500 \times \text{GPM})$$

CAPACITY CORRECTION FACTORS

TABLE SHC-3
DIFFERENT ENTERING AIR TEMPERATURE

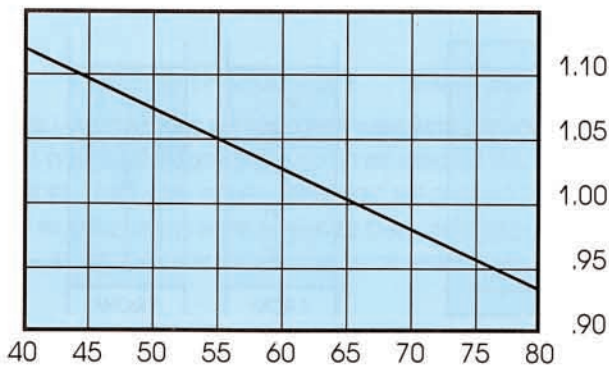


TABLE SHC-6
AIR PRESSURE DROP

AIR VELOCITY FPM	1 ROW	2 ROW
500	.07	.14
600	.09	.19
700	.12	.24
800	.15	.30
1000	.22	.45
1200	.30	.63

1 Stock Heating Coils

Base Performance
Dimensional Data

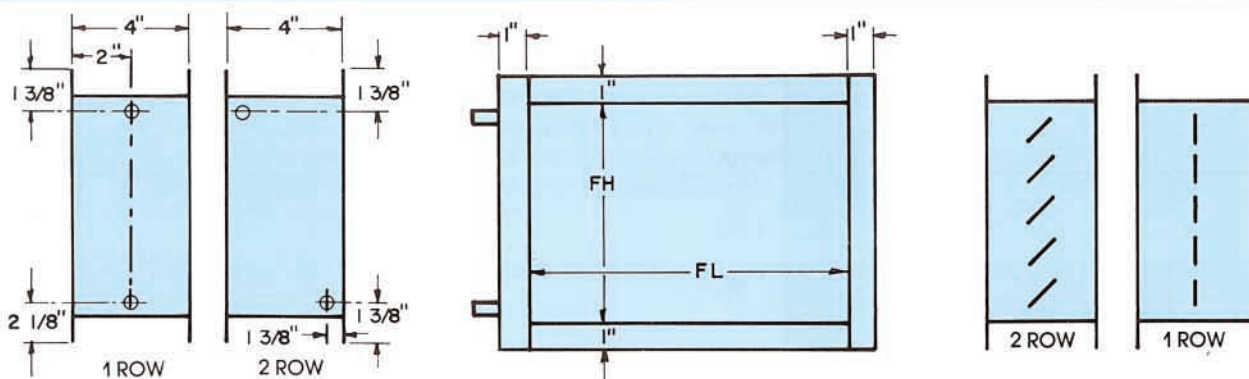
CONDENSED PERFORMANCE CHART 1 ROW AND 2 ROW COILS — TABLE SHC-1

FLANGED TYPE 65°F ENT. AIR TEMP.
180°F ENT. WATER — 160°F OR 5 PSIG STEAM

1 ROW MODEL NO.	2 ROW MODEL NO.	ALL CASING HT CASING LG	CONNECTION SIZES		MBH (BTUH ÷ 1000)				500 FPM	CFM 750 FPM	1000 FPM	COIL WEIGHT 1 ROW	COIL WEIGHT 2 ROW
			1 ROW	2 ROW	STEAM-SPSI 1 ROW	2 ROW	HOT WATER-180°F 1 ROW	2 ROW					
F108-6X12	F208-6X12	8X14	3/4	3/4	13	25	7	15	250	375	500	8	12
F108-6X15	F208-6X15	8X17	3/4	3/4	16	31	9	20	315	469	630	9	15
F108-6X18	F208-6X18	8X20	3/4	3/4	19	37	11	24	375	562	750	10	16
F109-9X9	F208-9X9	11X11	3/4	3/4	14	28	8	17	280	422	560	8	16
F108-9X12	F208-9X12	11X14	3/4	3/4	19	37	11	24	375	562	750	10	13
F108-9X15	F208-9X15	11X17	3/4	3/4	24	47	14	31	470	703	940	12	15
F108-9X18	F208-9X18	11X20	3/4	3/4	29	56	18	37	565	844	1130	12	16
F108-12X12	F208-12X12	14X14	3/4	3/4	25	50	16	33	500	750	1000	12	16
F108-12X15	F208-12X15	14X17	3/4	3/4	32	64	20	42	625	937	1250	13	17
F108-12X18	F208-12X18	14X20	3/4	3/4	38	75	24	51	750	1125	1500	14	20
F108-12X24	F208-12X24	14X26	3/4	1	51	99	33	66	1000	1500	2000	17	25
F108-12X30	F208-12X30	14X32	3/4	1	63	124	42	83	1250	1875	2500	25	29
F108-12X36	F208-12X36	14X38	1	1	76	149	49	101	1500	2250	3000	31	31
F108-15X18	F208-15X18	17X20	3/4	1	48	93	31	62	940	1406	1880	16	26
F108-15X24	F208-15X24	17X26	3/4	1	63	124	42	83	1250	1875	2500	23	30
F108-15X30	F208-15X30	17X32	1	1	79	156	51	103	1563	2344	3125	29	35
F108-15X36	F208-15X36	17X38	1	1	95	186	62	125	2438	2812	4875	35	38
F108-18X18	F208-18X18	20X20	3/4	1	57	112	38	75	1531	1687	3062	18	27
F108-18X24	F208-18X24	20X26	3/4	1	76	149	49	99	1500	2250	3000	26	33
F108-18X30	F208-18X30	20X32	1	1	95	186	62	125	1875	2812	3750	32	36
F108-18X36	F208-18X36	20X38	1	1 1/4	114	224	75	149	2250	3375	4500	32	44
F108-18X48	F208-18X48	20X50	1	1 1/2	152	298	100	197	3000	4500	6000	54	95
F108-21X30	F208-21X30	23X32	1	1	111	218	73	145	2188	3281	4375	32	45
F108-21X36	F208-21X36	23X38	1	1 1/4	133	261	86	176	2625	3937	5250	38	48
F108-21X42	F208-21X42	23X44	1	1 1/2	155	305	102	199	3063	4594	6125	66	94
F108-21X48	F208-21X48	23X50	1	1 1/2	177	348	116	231	3500	5250	7000	75	99
F108-24X24	F208-24X24	26X26	1	1	101	199	67	132	2000	3000	4000	26	39
F108-24X30	F208-24X30	26X32	1	1 1/4	127	249	82	167	2500	3750	5000	33	49
F108-24X36	F208-24X36	26X38	1	1 1/2	152	298	98	200	3000	4500	6000	38	58
F108-24X48	F208-24X48	26X50	1 1/4	1 1/2	203	398	133	263	4000	6000	8000	80	100
F108-27X54	F208-27X54	29X56	1 1/4	1 1/2	257	504	168	338	5063	7594	10125	84	126
F108-30X48	F208-30X48	32X50	1 1/4	1 1/2	254	497	167	328	5000	7500	10000	80	120
F108-30X60	F208-30X60	32X62	1 1/2	2	317	622	211	416	6250	9375	12500	95	142

*Coils are constructed of 5/8" O.D. copper tubes, aluminum fins and casing, M.P.T. connections and are packaged individually.

STOCK HEATING COIL DIMENSIONS

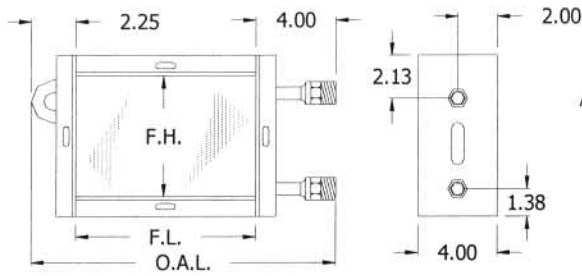


* Some coils feed more than (1) tube and are header type coils.
THESE DIMENSIONS DO NOT SHOW HEADERS.

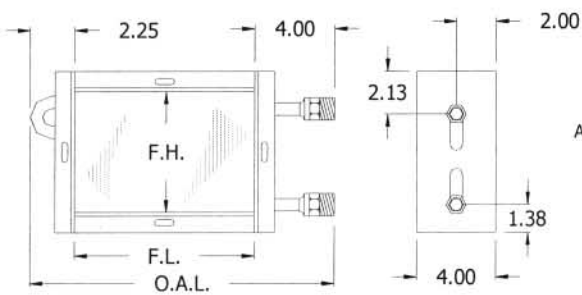
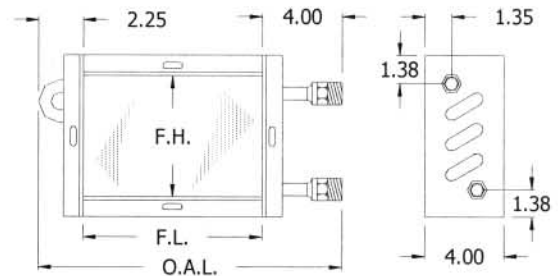
5/8" TUBE 1 AND 2 ROW BOOSTER COILS

1 ROW COILS

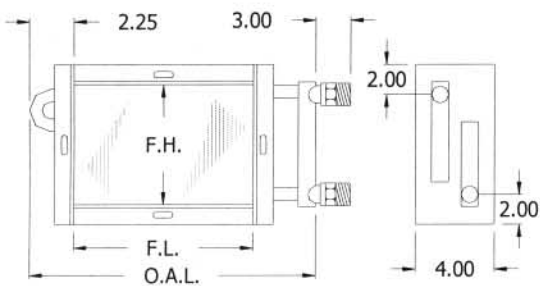
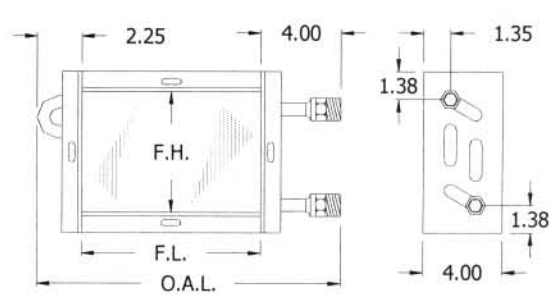
2 ROW COILS



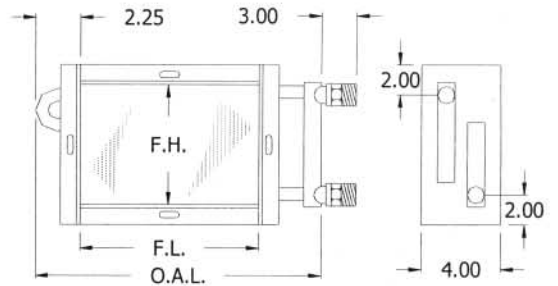
ARRANGEMENT "A"
SINGLE FEED



ARRANGEMENT "B"
TWO FEED



ARRANGEMENT "C"
HEADERED



ALL DIMENSIONS ARE IN INCHES

HEADERED MODELS

OVERALL LENGTH = FIN LENGTH PLUS DIMENSION FROM CHART BELOW

NON-HEADERED MODELS
OVERALL LENGTH = FIN LENGTH PLUS 6.25"

ALL COILS SUPPLIED WITH 1.00" X .312" SLOTS
CENTER OF TOP, BOTTOM, AND SIDES

CONNECTION SIZE	ADD TO F.L. DIMENSION
3/4" M.P.T OR 7/8" SWEAT	6.250"
1.0" M.P.T. OR 1 1/8" SWEAT	6.500"
1.25" M.P.T. OR 1 3/8" SWEAT	6.750"
1.50" M.P.T. OR 1 5/8" SWEAT	7.000"
2.00" M.P.T. OR 2 1/8" SWEAT	7.500"

CONSTRUCTION SPECIFICATIONS

COIL TUBES - ALL COILS HAVE 5/8" O.D. COPPER TUBES WITH .020" WALL AND STAGGERED TUBE PATTERN
 FINS - ALL COILS HAVE .006" THICK DIE FORMED PLATE-TYPE ALUMINUM FINS
 CONNECTIONS - SUPPLY AND RETURN CONNECTIONS ARE AVAILABLE IN COPPER M.P.T. OR SWEAT
 CASING - ALL COILS HAVE 18 GAUGE GALVANIZED STEEL CASING
 TESTING - ALL COILS ARE LEAK TESTED UNDER WATER WITH 550 PSIG DRY NITROGEN
 HEADERED MODELS ARE SUPPLIED WITH 1/4" VENT AND DRAIN CONNECTIONS

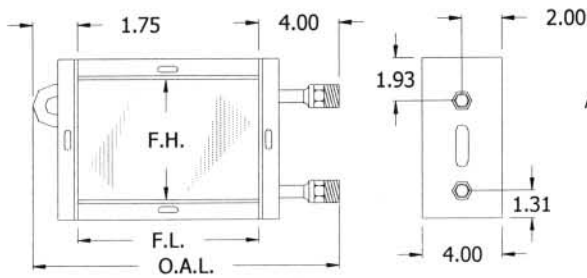
DRAWING NO. 5FB100

PO Box 578 * Devault, PA 19432 * PH:(800)USA-COIL
 PH:(610)296-9668 * Fax:(610)296-9763 * Email: sales@usacoil.com * www.usacoil.com

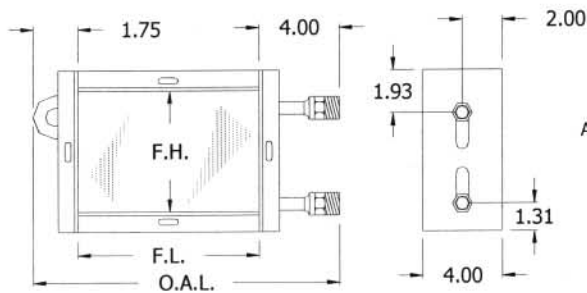
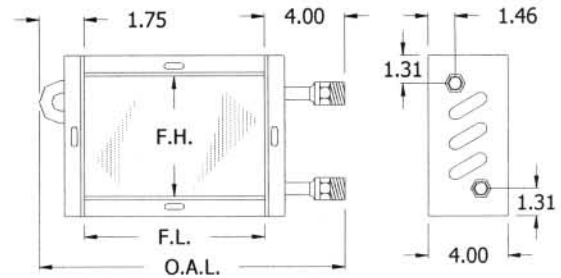
1/2" TUBE 1 AND 2 ROW BOOSTER COILS

1 ROW COILS

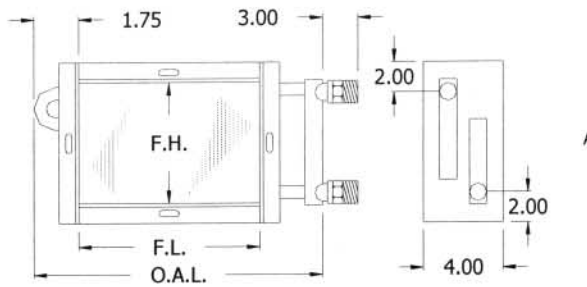
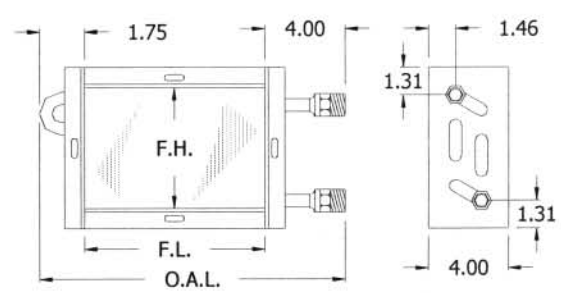
2 ROW COILS



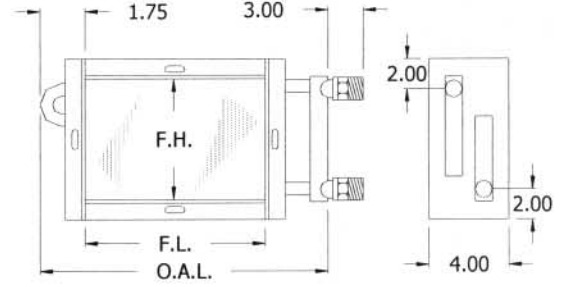
ARRANGEMENT "A"
SINGLE FEED



ARRANGEMENT "B"
TWO FEED



ARRANGEMENT "C"
HEADERED



ALL DIMENSIONS ARE IN INCHES

HEADERED MODELS

OVERALL LENGTH = FIN LENGTH PLUS DIMENSION FROM CHART BELOW

NON-HEADERED MODELS
OVERALL LENGTH = FIN LENGTH PLUS 6.25"

ALL COILS SUPPLIED WITH 1.00" X .312" SLOTS
CENTER OF TOP, BOTTOM, AND SIDES

CONNECTION SIZE	ADD TO F.L. DIMENSION
3/4" M.P.T OR 7/8" SWEAT	6.250"
1.0" M.P.T. OR 1 1/8" SWEAT	6.500"
1.25" M.P.T. OR 1 3/8" SWEAT	6.750"
1.50" M.P.T. OR 1 5/8" SWEAT	7.000"
2.00" M.P.T. OR 2 1/8" SWEAT	7.500"

CONSTRUCTION SPECIFICATIONS

- COIL TUBES - ALL COILS HAVE 1/2" O.D. COPPER TUBES WITH .016" WALL AND STAGGERED TUBE PATTERN
- FINS - ALL COILS HAVE .006" THICK DIE FORMED PLATE-TYPE ALUMINUM FINS
- CONNECTIONS - SUPPLY AND RETURN CONNECTIONS ARE AVAILABLE IN COPPER M.P.T. OR SWEAT
- CASING - ALL COILS HAVE 18 GAUGE GALVANIZED STEEL CASING
- TESTING - ALL COILS ARE LEAK TESTED UNDER WATER WITH 550 PSIG DRY NITROGEN
- HEADERED MODELS ARE SUPPLIED WITH 1/4" VENT AND DRAIN CONNECTIONS

DRAWING NO. 4FB100

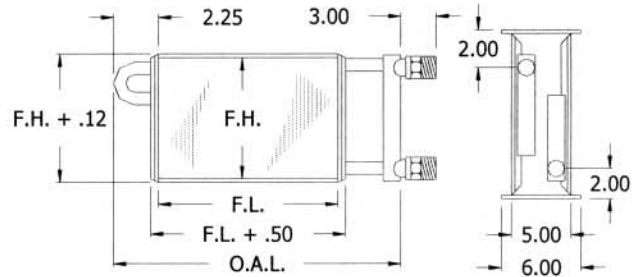
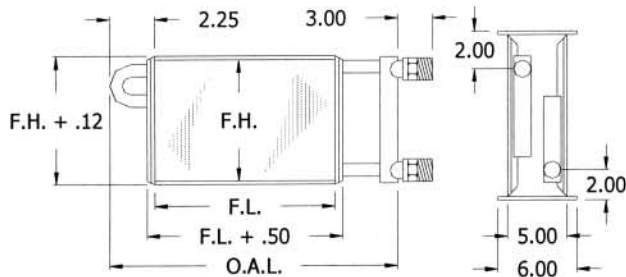
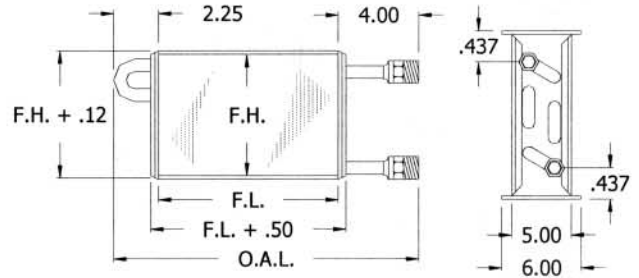
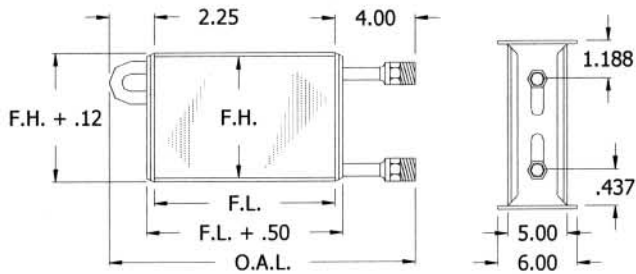
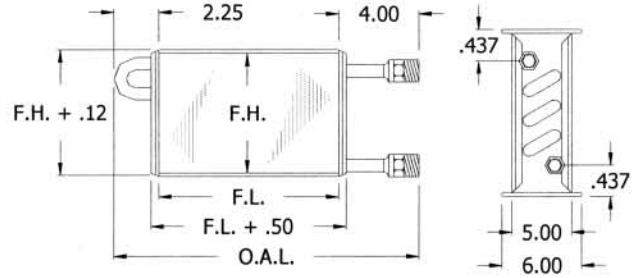
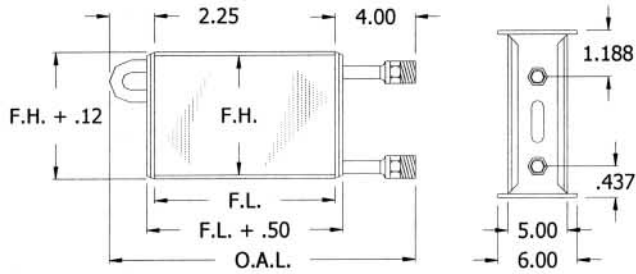
PO Box 578 * Devault, PA 19432 * PH:(800)USA-COIL
PH:(610)296-9668 * Fax:(610)296-9763 * Email: sales@usacoil.com * www.usacoil.com

5/8" TUBE 1 AND 2 ROW BOOSTERS

1 ROW COILS

SLIP & DRIVE STYLE CASING

2 ROW COILS

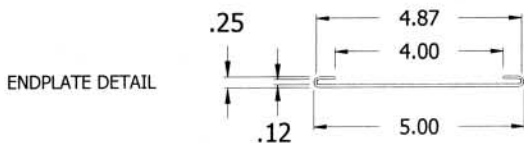


ALL DIMENSIONS ARE IN INCHES

HEADERED MODELS

NON-HEADERED MODELS
OVERALL LENGTH = FIN LENGTH PLUS 6.25"

OVERALL LENGTH = FIN LENGTH PLUS DIMENSION FROM CHART BELOW



CONSTRUCTION SPECIFICATIONS

CONNECTION SIZE	ADD TO F.L. DIMENSION
3/4" M.P.T OR 7/8" SWEAT	6.250"
1.0" M.P.T. OR 1 1/8" SWEAT	6.500"
1.25" M.P.T. OR 1 3/8" SWEAT	6.750"
1.50" M.P.T. OR 1 5/8" SWEAT	7.000"
2.00" M.P.T. OR 2 1/8" SWEAT	7.500"

COIL TUBES - ALL COILS HAVE 5/8" O.D. COPPER TUBES WITH .020" WALL AND STAGGERED TUBE PATTERN
 FINS - ALL COILS HAVE .006" THICK DIE FORMED PLATE-TYPE ALUMINUM FINS
 CONNECTIONS - SUPPLY AND RETURN CONNECTIONS ARE AVAILABLE IN COPPER M.P.T. OR SWEAT
 CASING - ALL COILS HAVE 18 GAUGE GALVANIZED STEEL CASING
 TESTING - ALL COILS ARE LEAK TESTED UNDER WATER WITH 550 PSIG DRY NITROGEN
 HEADERED MODELS ARE SUPPLIED WITH 1/4" VENT AND DRAIN CONNECTIONS

DRAWING NO. 5SB100

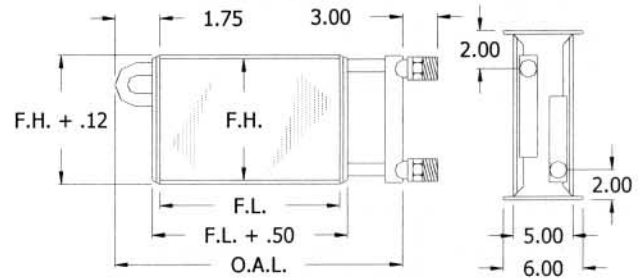
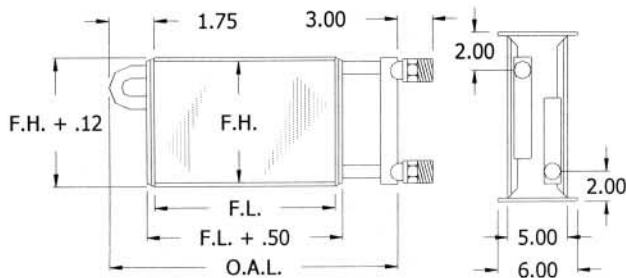
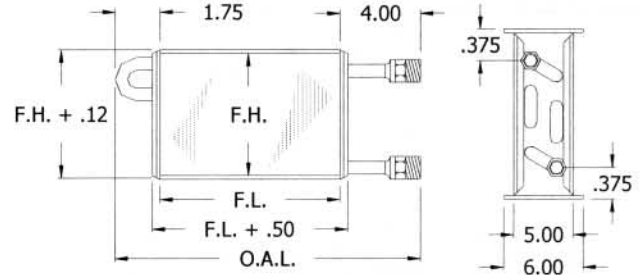
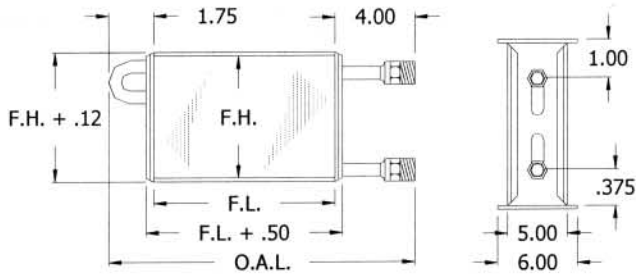
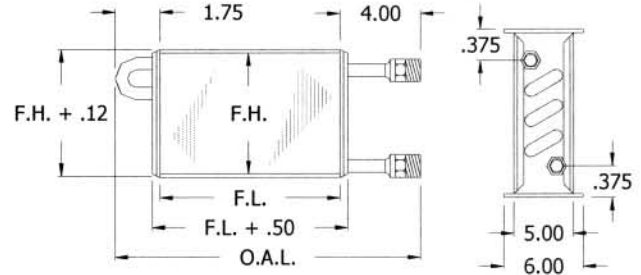
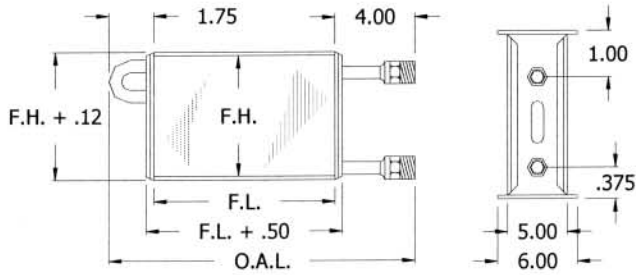
PO Box 578 * Devault, PA 19432 * PH:(800)USA-COIL
 PH:(610)296-9668 * Fax:(610)296-9763 * Email: sales@usacoil.com * www.usacoil.com

1/2" TUBE 1 AND 2 ROW BOOSTERS

1 ROW COILS

SLIP & DRIVE STYLE CASING

2 ROW COILS

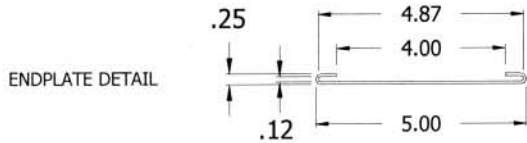


ALL DIMENSIONS ARE IN INCHES

HEADERED MODELS

OVERALL LENGTH = FIN LENGTH PLUS DIMENSION FROM CHART BELOW

NON-HEADERED MODELS
OVERALL LENGTH = FIN LENGTH PLUS 6.25"



CONSTRUCTION SPECIFICATIONS

CONNECTION SIZE	ADD TO F.L. DIMENSION
3/4" M.P.T OR 7/8" SWEAT	6.250"
1.0" M.P.T. OR 1 1/8" SWEAT	6.500"
1.25" M.P.T. OR 1 3/8" SWEAT	6.750"
1.50" M.P.T. OR 1 5/8" SWEAT	7.000"
2.00" M.P.T. OR 2 1/8" SWEAT	7.500"

COIL TUBES - ALL COILS HAVE 1/2" O.D. COPPER TUBES WITH .016" WALL AND STAGGERED TUBE PATTERN
 FINS - ALL COILS HAVE .006" THICK DIE FORMED PLATE-TYPE ALUMINUM FINS
 CONNECTIONS - SUPPLY AND RETURN CONNECTIONS ARE AVAILABLE IN COPPER M.P.T. OR SWEAT
 CASING - ALL COILS HAVE 18 GAUGE GALVANIZED STEEL CASING
 TESTING - ALL COILS ARE LEAK TESTED UNDER WATER WITH 550 PSIG DRY NITROGEN
 HEADERED MODELS ARE SUPPLIED WITH 1/4" VENT AND DRAIN CONNECTIONS

DRAWING NO. 4SB100

PO Box 578 * Devault, PA 19432 * PH:(800)USA-COIL
 PH:(610)296-9668 * Fax:(610)296-9763 * Email: sales@usacoil.com * www.usacoil.com