Carrier®
HEATING & COOLING

28BB
NU-FIN Booster Coils

Installation, Start-up and Service Instructions

CONTENTS

INTRODUCTION

NU-FIN 28BB booster coils (Fig. 1) use heated water or brine to raise the heat output of an air duct. The coils can be installed with drive-clips or flange mounts and piped with straight (sweat) or threaded connections.

SAFETY CONSIDERATIONS

NU-FIN 28BB booster coils provide safe and reliable service when operated within design specifications. However, because of component weight, system pressures, and temperatures, some aspects of coil installation and maintenance can be hazardous. Failure to observe warnings can result in personal injury; failure to observe cautions can result in equipment damage.

Only trained, qualified installers and service mechanics should install and service this equipment; untrained personnel can perform basic coil maintenance functions. All personnel should observe the following precautions when working on this equipment:
- Follow all safety codes.
- Wear safety glasses and work gloves.
- Observe all safety precautions in this literature.

⚠ WARNING

Adequate ventilation is required during any welding or brazing process; ensure that fumes do not migrate through ductwork to occupied areas.

Clear the area of personnel when steam-cleaning the coils.

Never pressurize equipment in excess of specified test pressure.

When welding or flame-cutting, contain sparks to protect adjacent flammable material. Have a fire-extinguisher available.

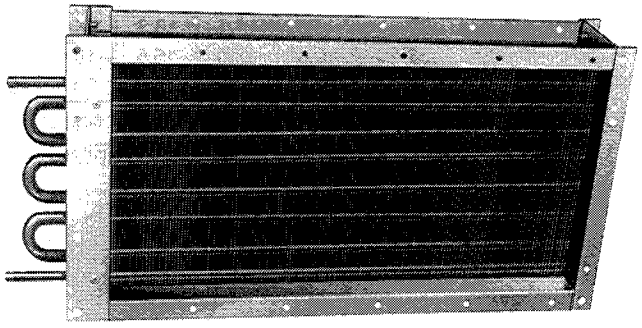


Fig. 1 — 28BB NU-FIN Booster Coil (Flange Mount)

INSTALLATION

Step 1 — Complete Pre-Installation

UNPACKING THE COILS:

1. Remove the coils from the packaging; avoid damaging the coil fins.
2. Inspect the coils; file a claim with the shipping company if the coils are damaged.

MOVING THE COILS:

1. Lift the coils by the casing, never the pipe connections. See Tables 1 and 2 for coil weights.
2. Avoid bending or mutilating the fins.

STORING THE COILS (For More Than 2 Weeks):

Storage surface should be level, rigid, free of debris, and dry.

Do not store the coils in a heavy traffic area or on a vibrating surface.

When storing the coils outside in a heavy rain area, wrap the coils with a waterproof tarp or plastic sheet. Do not remove the wrap or connection caps until you install the unit.

Step 2 — Mount Unit — Figures 2 and 3 show dimensions for drive clip and flange mount coils. Figures 4 and 5 show how to orient and fasten the coils in air ducts.

⚠ CAUTION

Do not support or lift the coils by the pipe connections.

Support the coils or rig straps around the casing only.

Coils must be installed vertically and level.

Table 1 – 28BB Booster Coil Weights (lb.)
Aluminum Fins

TUBE LENGTH (in.)	1-ROW COILS TUBES IN FACE					TUBE LENGTH (in.)	2-ROW COILS TUBES IN FACE				
	4	6	8	10	12		4	6	8	10	12
12	4.1	5.3	6.5	7.7	8.8	12	5.8	7.8	9.8	11.8	13.8
15	4.9	6.3	7.6	9.0	10.3	15	6.9	9.3	11.6	14.0	16.3
18	5.7	7.2	8.7	10.3	11.6	18	8.1	10.7	13.4	16.1	18.9
21	6.5	8.2	9.9	11.6	13.2	21	9.2	12.2	15.2	18.3	21.3
24	7.3	9.1	11.0	12.9	14.7	24	10.3	13.7	17.1	20.4	23.8
27	8.1	10.1	12.1	14.2	16.2	27	11.4	15.1	18.9	22.6	26.3
30	8.9	11.1	13.3	15.4	17.6	30	12.6	16.6	20.7	24.7	28.8
36	10.4	13.0	15.5	18.0	20.6	36	14.8	19.6	24.3	29.0	33.8
42	12.0	14.9	17.8	20.6	23.5	42	17.1	22.5	27.9	33.3	38.7

NOTE: Weights shown are for unit with copper tube, 8 fins/in. –

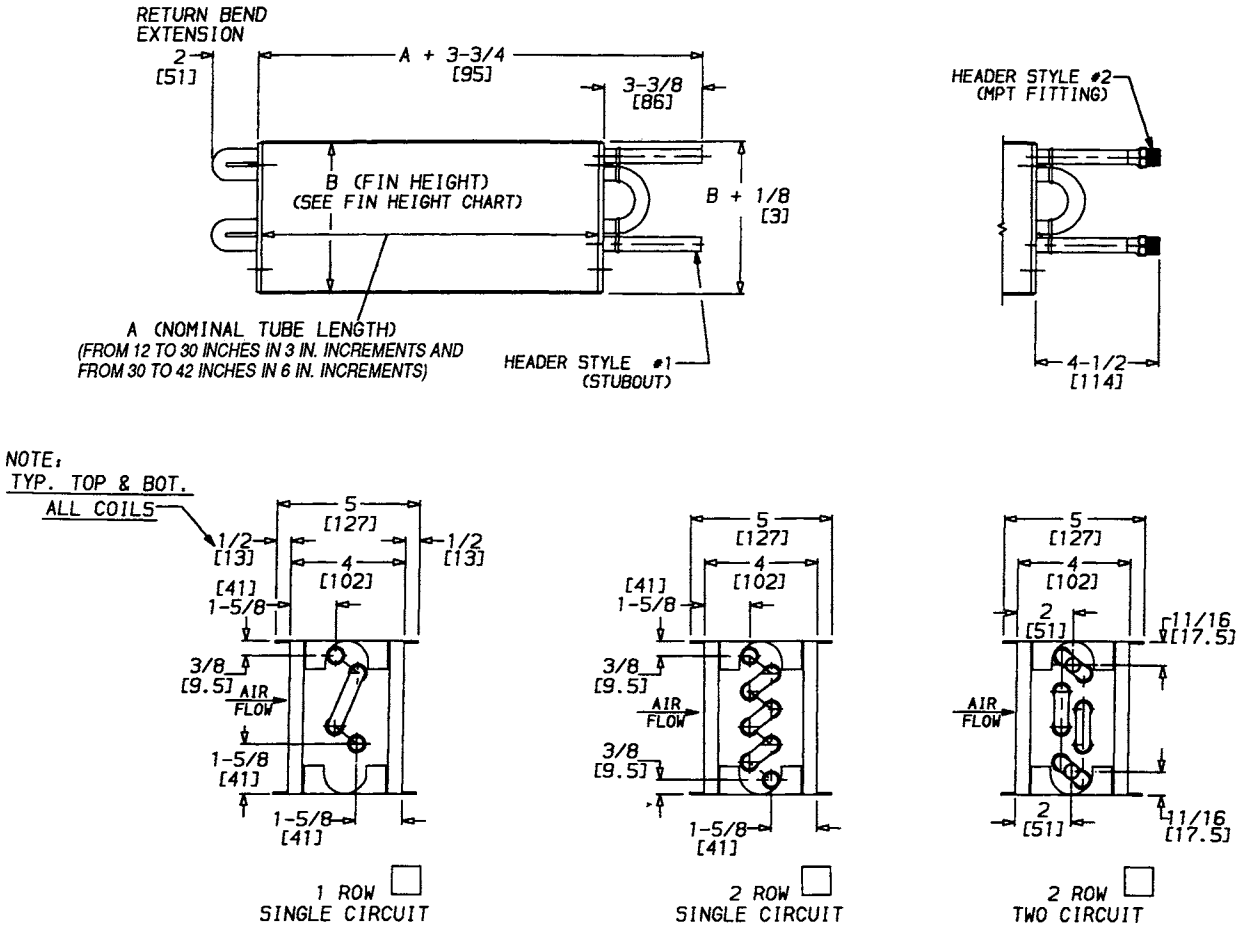
FOR	MULTIPLY WEIGHT BY
11 fins/in.	1.03
14 fins/in.	1.06

Table 2 – 28BB Booster Coil Weights (lb.)
Copper Fins

TUBE LENGTH (in.)	1-ROW COILS TUBES IN FACE					TUBE LENGTH (in.)	2-ROW COILS TUBES IN FACE				
	4	6	8	10	12		4	6	8	10	12
12	4.5	5.9	7.2	8.6	9.9	12	6.5	8.9	11.3	13.7	16.0
15	5.4	7.0	8.5	10.1	11.7	15	7.8	10.6	13.5	16.3	19.1
18	6.3	8.0	9.8	11.6	13.4	18	9.2	12.4	15.6	18.9	22.1
21	7.1	9.1	11.1	13.2	15.2	21	10.5	14.1	17.8	21.5	25.1
24	8.0	10.2	12.5	14.7	16.9	24	11.8	15.9	20.0	24.1	28.2
27	8.9	11.3	13.8	16.2	18.6	27	13.1	17.6	22.2	26.7	31.2
30	9.8	12.4	15.1	17.7	20.4	30	14.4	19.4	24.3	29.3	34.3
36	11.5	14.6	17.7	20.8	23.9	36	17.0	22.8	28.7	34.5	40.3
42	13.3	25.1	31.7	38.4	45.0	42	19.6	26.3	33.0	39.7	46.4

NOTE: Weights shown are for unit with copper tube, 8 fins/in. –

FOR	MULTIPLY WEIGHT BY
11 fins/in.	1.08
14 fins/in.	1.14



FIN HEIGHT	
TIF	B
4	5 [127]
6	7-1/2 [190]
8	10 [254]
10	12-1/2 [317]
12	15 [381]

FACE AREA (SQ. FT.)

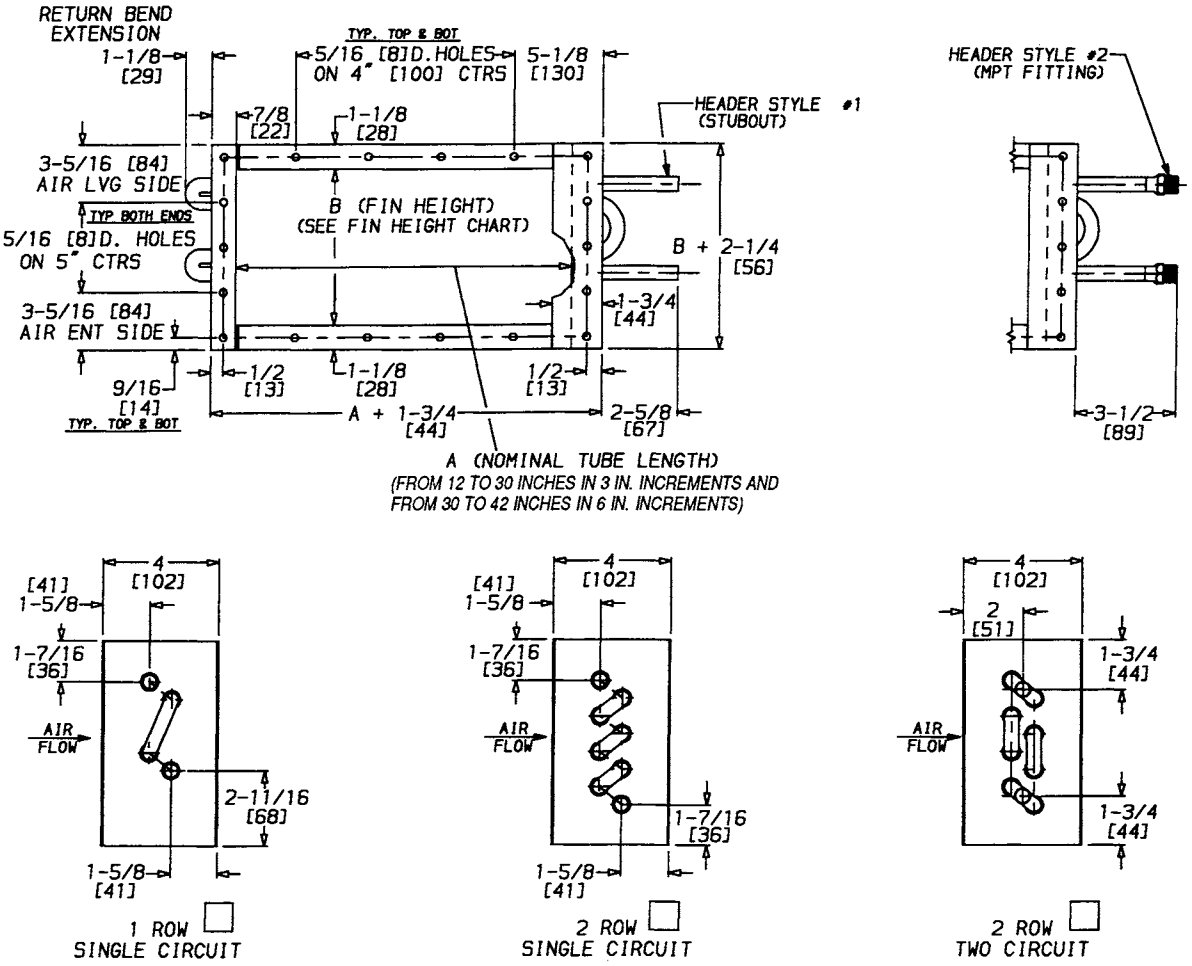
$\frac{A \times B}{144}$ = SQ. FT.

EXAMPLE:

$\frac{27 \times 15}{144}$ = 2.8 SQ.FT.

NOTE: Dimensions are in inches; dimensions in [ ] are in millimeters.

Fig. 2 — 28BB Dimensions, Drive Clip Mount



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4	5 [127]
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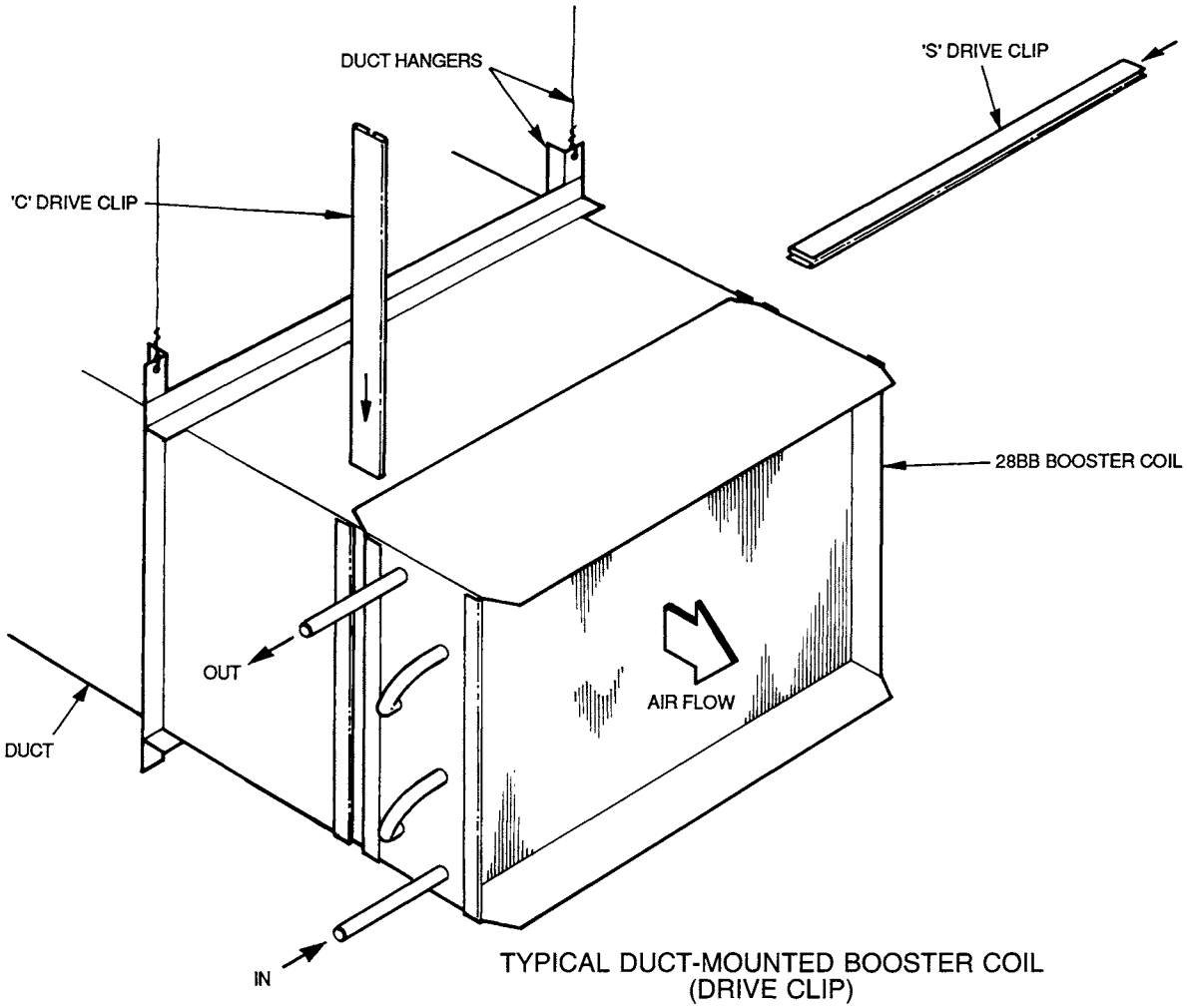
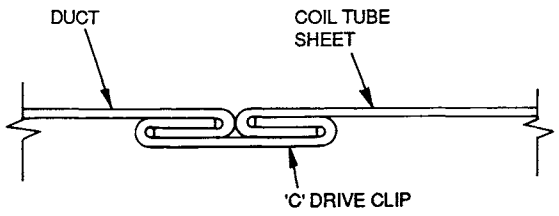
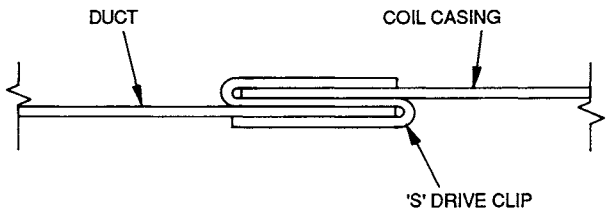
Fig. 3 — 28BB Dimensions, Flange Mount



TYPICAL DUCT-MOUNTED BOOSTER COIL
(DRIVE CLIP)



'C' DRIVE CLIP DETAIL



'S' DRIVE CLIP DETAIL

Fig. 4 – Drive Clip Mount

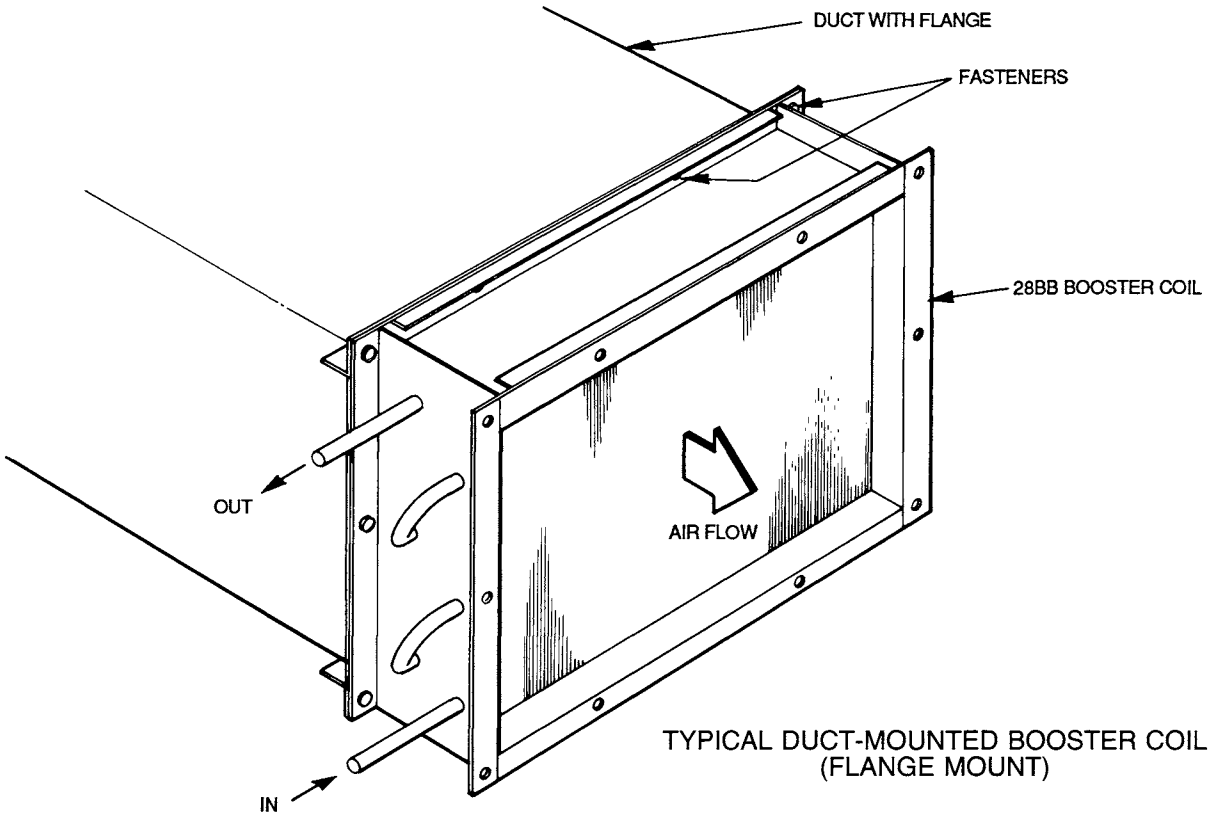


Fig. 5 — Flange Mount

Step 3 — Assemble Pipe Connections — Make all connections in accordance with the standard piping practices described in the Carrier System Design Manual, Part 3. The 28BB coils are supplied with either straight 1/2 in. OD sweat connections or 1/2 in. MPT connections. To ease future service, install unions or flanged connectors.

When mounting the unit, observe the following precautions:

- Avoid damaging the coil connections (nozzles).
- Pipe the coils for counterflow so that the hottest water meets the coolest air.
- Support the supply and return piping so that the weight of the piping is not carried by the coil connections.
- Align the piping parallel with the coil connections to avoid transmitting torque to the connections.
- Provide flexible connectors in both the supply and return piping to avoid transmitting vibration from auxiliary equipment to the coils.

START-UP

Open upstream shutoff valves to fill the coils (see Tables 3 and 4 for fluid capacities). Open a line valve to bleed air from the coils, and close the valve when all air is eliminated. Check all fittings and connections for leaks.

MAINTENANCE

Protecting Against Freeze-Up — When heating subfreezing air with the 28BB booster coils, ensure that the inlet water supply is maintained at full flow.

Cleaning the Coils — Spray detergent solution on the coils with a garden-type sprayer. Rinse with fresh water at low pressure. (High-pressure water can damage the fins.)

Table 3 — 28BB Coil Volume (gal.)
1-Row Coils

LENGTH (in.)	TUBES IN FACE				
	4	6	8	10	12
12	0.6	0.9	1.2	1.5	1.8
15	0.7	1.1	1.4	1.8	2.1
18	0.8	1.2	1.6	2.1	2.5
21	0.9	1.4	1.9	2.4	2.8
24	1.1	1.6	2.1	2.6	3.2
27	1.2	1.8	2.4	2.9	3.5
30	1.3	1.9	2.6	3.2	3.9
36	1.5	2.3	3.1	3.8	4.6
42	1.8	2.6	3.5	4.4	5.3

Table 4 — 28BB Coil Volume (gal.)
2-Row Coils

LENGTH (in.)	TUBES IN FACE				
	4	6	8	10	12
12	1.2	1.8	2.4	2.9	3.5
15	1.4	2.1	2.8	3.5	4.2
18	1.6	2.5	3.3	4.1	4.9
21	1.9	2.8	3.8	4.7	5.6
24	2.1	3.2	4.2	5.3	6.3
27	2.4	3.5	4.7	5.9	7.1
30	2.6	3.9	5.2	6.5	7.8
36	3.1	4.6	6.1	7.6	9.2
42	3.5	5.3	7.1	8.8	10.6