Installation, Assembly and Disassembly Instructions for

Radiant

Manual Contents **Page**

U.S. Boiler Company ships Radiant Radiators in even number sections up to 44 section assemblies.

U.S. Boiler Company

113537-01 5/26

The following terms are used throughout this manual to bring attention to the presence of hazards of various risk levels, or to important information concerning product life.

⚠ DANGER

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

⚠ WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE: Indicates special instructions on installation, operation, or service which are important but not related to personal injury hazards.

1 Product Specification/Rating

Table 1-1: Product Ratings (per section)

Steam			Water	
Square Feet EDR	Ratings BTU/hr.	Max Steam Pressure (psi)	Ratings BTU/hr. at 170°F	Max Pressure (psi)
2.3	540	15	338	30

Table 1-3: Legged Intermediate Location

Number of Sections	E
32	15
34	16
36	17
38	18
40	19
42	20
44	21

Table 1-2: Product Dimensions

Water Volume (Gal)	Width (inches) (A)	Length (inches) (B)	Height (inches) (C)	Shipping Weight (lbs.)
0.15 x # of Sections	5	2.25 x # of Sections	20	11.5 x # of Sections

1 Product Specification/Rating *(continued)*

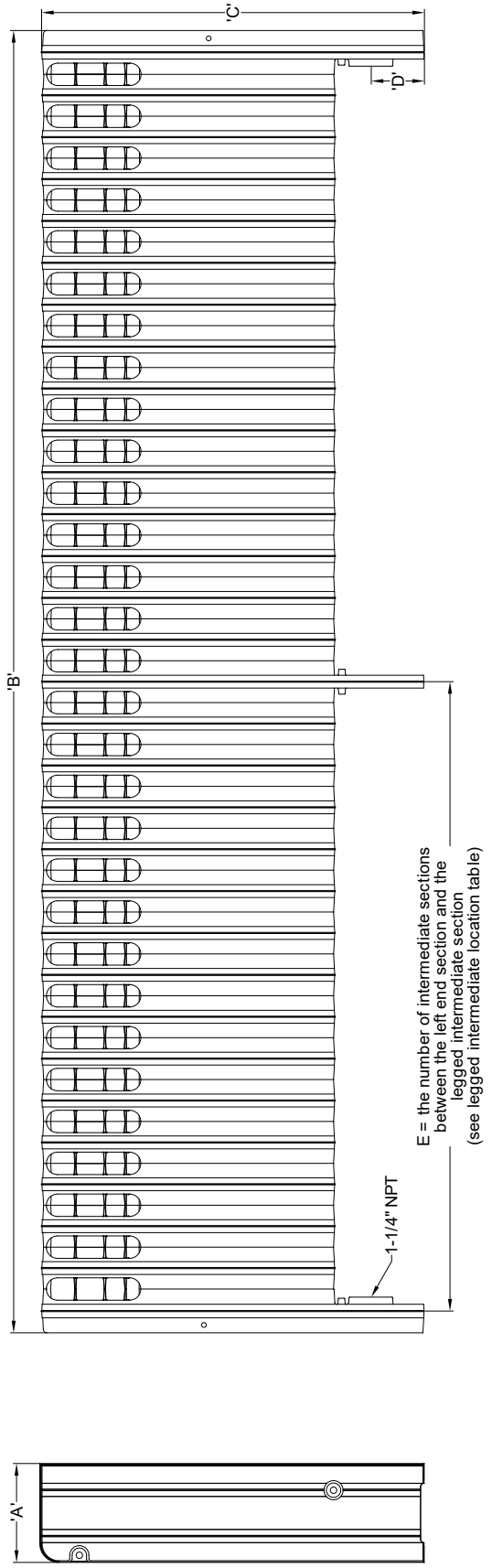

Figure 1-4

2 Installation/Piping

NOTICE:

- Ensure wall is properly insulated.
- Recommend installing thermal reflective material behind radiator before installation.

A. Pre-Installation Guidelines

1. Positioning Pipes

   Never install final pipe work for cast iron radiators without confirmed measurements.

   Measure radiator length, deduct 5-1/4 in. from the inside face of the end section for each hydronic valve from end of assembly.

B. Hydronic

1. Valves

   Install balancing valve on the inlet side. Install isolation valves on the return side.

2. Balancing Radiators

   Balancing radiators is an essential part of installation that should never be overlooked. It ensures that your radiators heat evenly without being too hot or too cold.

3. Paint

   Radiators and Grilles are primed with a water-based paint and must be coated with a high grade oil or solvent based enamel to prevent rusting.

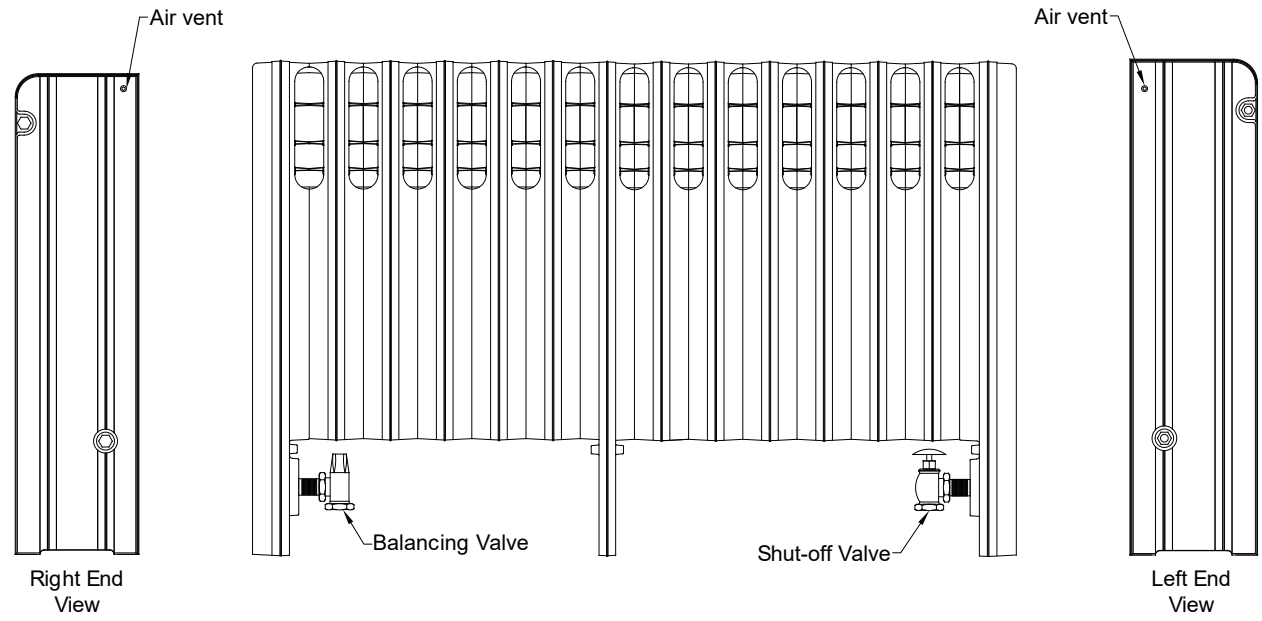

Figure 2-1

2 Installation/Piping *(continued)*

C. Steam

1. Site Preparation

   Don't install a cast iron radiator on unsound flooring.

   There is likely to be some residual water inside the radiator from the manufacturing process. This will stain floors, so be sure to protect the area in which you're working.

   Cast iron radiators are very heavy. Always protect the floor from scratches.

2. Pitch (One Pipe Only)

   The radiator should lean very slightly towards the inlet valve. A rule of thumb is approximately 1/16 in. for every eight sections of radiator.

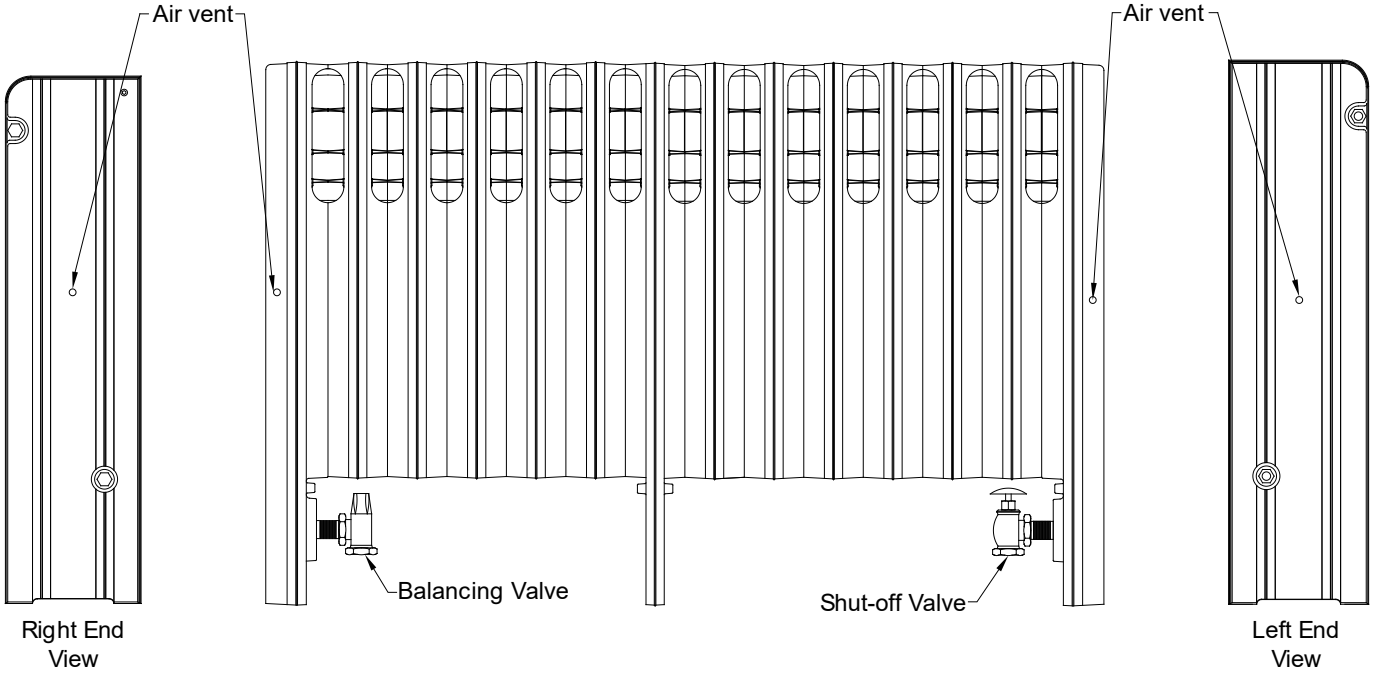

Figure 2-2: One Pipe

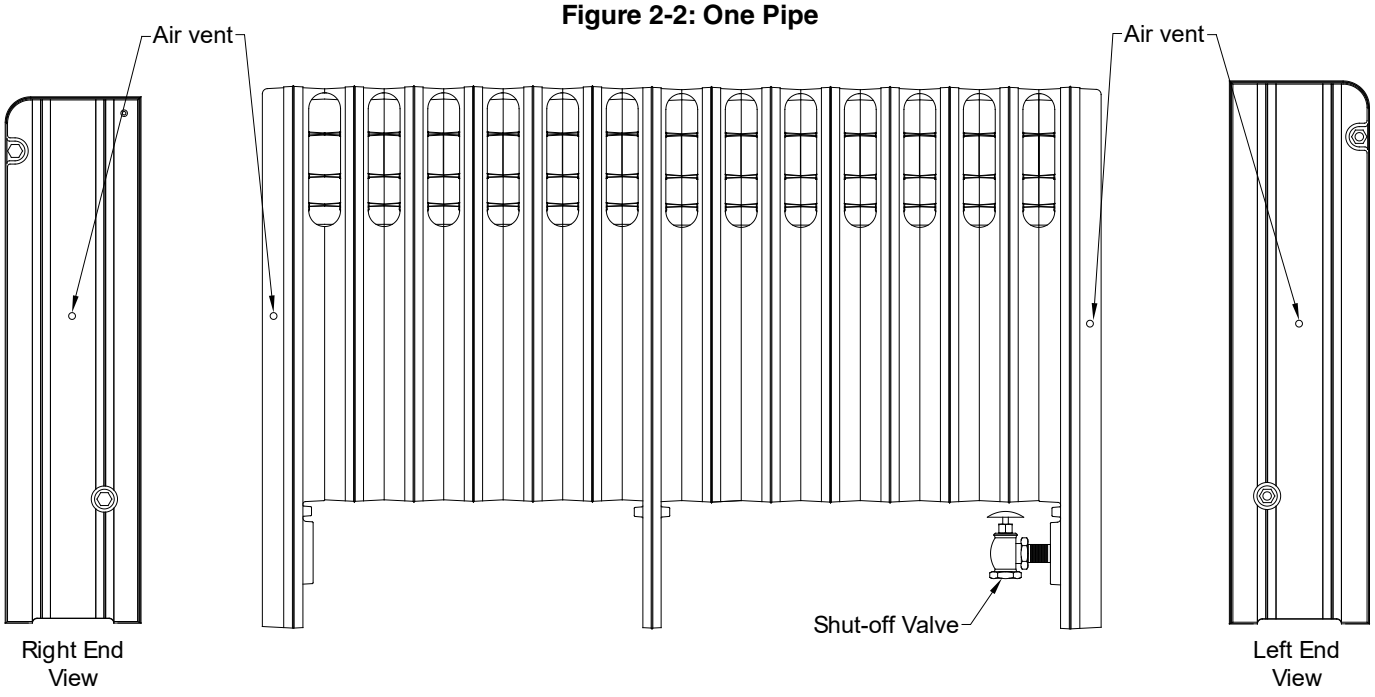

Figure 2-3: Two Pipe

3 Adding Section/Resizing

⚠ WARNING

- Use precautions and appropriate rigging apparatus when moving heavy objects.
- Use proper Personal Protective Equipment (PPE) during assembly.

A. Section Assembly

NOTICE: Failure to follow these instructions may result in damage and/or cracking of cast iron sections.

See Figure 3-1 and 3-2 for References.

1. Thoroughly clean nipples, **Item 3**, and nipple ports with a de-greasing solvent.
2. Evenly coat nipples and nipple ports with provided Loctite® 592.
3. Place nipples in nipple ports and set carefully with a wooden block. Make sure nipples are squarely placed.
4. Place section assembly A as close to section assembly B as possible, aligning nipples to nipple ports.
5. Using a block of wood and a 5 pound sledge hammer, position the wood over the nipple port and strike with hammer. Alternate between top and bottom ports.
6. Draw section assemblies together slowly and evenly. Section assemblies may require adjusting to maintain nipple and nipple port alignments.
7. Draw until sections meet iron-to-iron.
8. Place tie rods through top lug holes at upper and lower nipple ports.
9. Tighten nut and washer onto each end of a tie rod until hand tight. This will allow for thermal expansion.
10. Hydrostatically test section assembly.

B. Section Disassembly (Refer to Figure 3-3)

1. Remove tie rods.
2. Lay radiator on its back.
3. Use a high angle chisel and a 5-pound hammer to open a gap between the sections.
4. Using two (2) plastic or wooden wedges and a 5-pound hammer, position the wedges on either side of the top nipple port and strike with hammer.
5. Repeat Step 2 for bottom nipple port.
6. Follow Paragraph A for Section Reassembly. Do not reuse the used nipples.

C. Hydro Test

Hydro-Test per requirements of authority having jurisdiction. In the absence of such requirements, the following procedure can be used.

1. Connect a hose from water service to one of the lower tappings.
2. Install a boiler drain to the other lower tapping and connect other end to a drain.
3. Plug tappings on end sections that will not be used on final installation with supplied plugs.
4. Install a pressure gauge in any convenient tapping.
5. Plug all remaining unused tappings.
6. Fill until a steady stream of water is flowing down the drain.
7. Slowly close valve until pressure reads between 40 and 45 psi.
8. Let stand 5 to 10 minutes.

⚠ CAUTION

- Do not exceed 50 psi. Over pressurizing section assembly could cause failure.
- Do not leave section assembly filled with water and unattended. Leaks may occur resulting in substantial property damage.
- Leaving radiators unattended during hydrotesting can cause critical failure of radiator section.

9. Examine all parts of section assembly for leaks.
10. Drain.
11. Remove plugs from tappings used on final installation.

3 Adding Section/Resizing *(continued)*

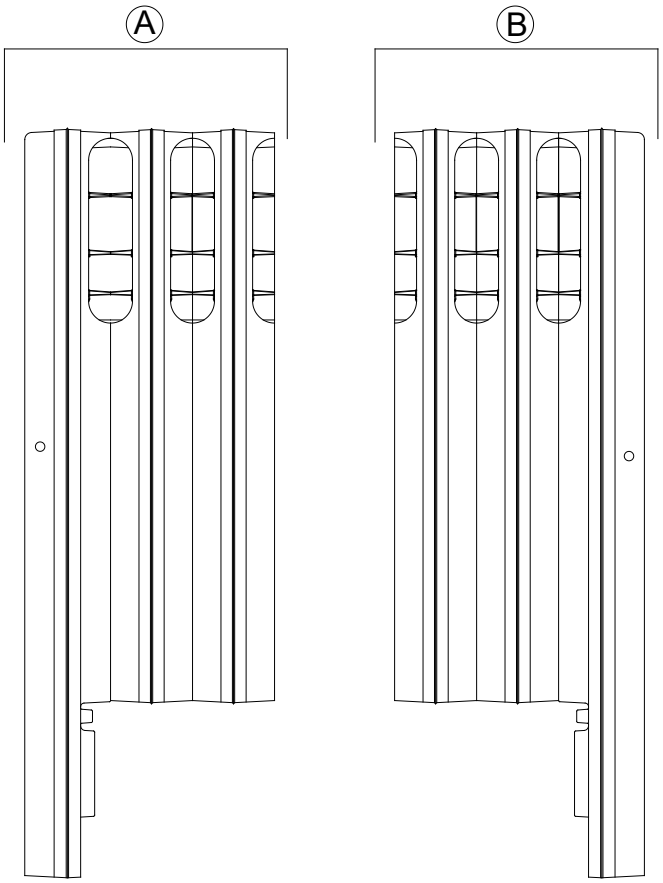

Figure 3-1

3 Adding Section/Resizing *(continued)*

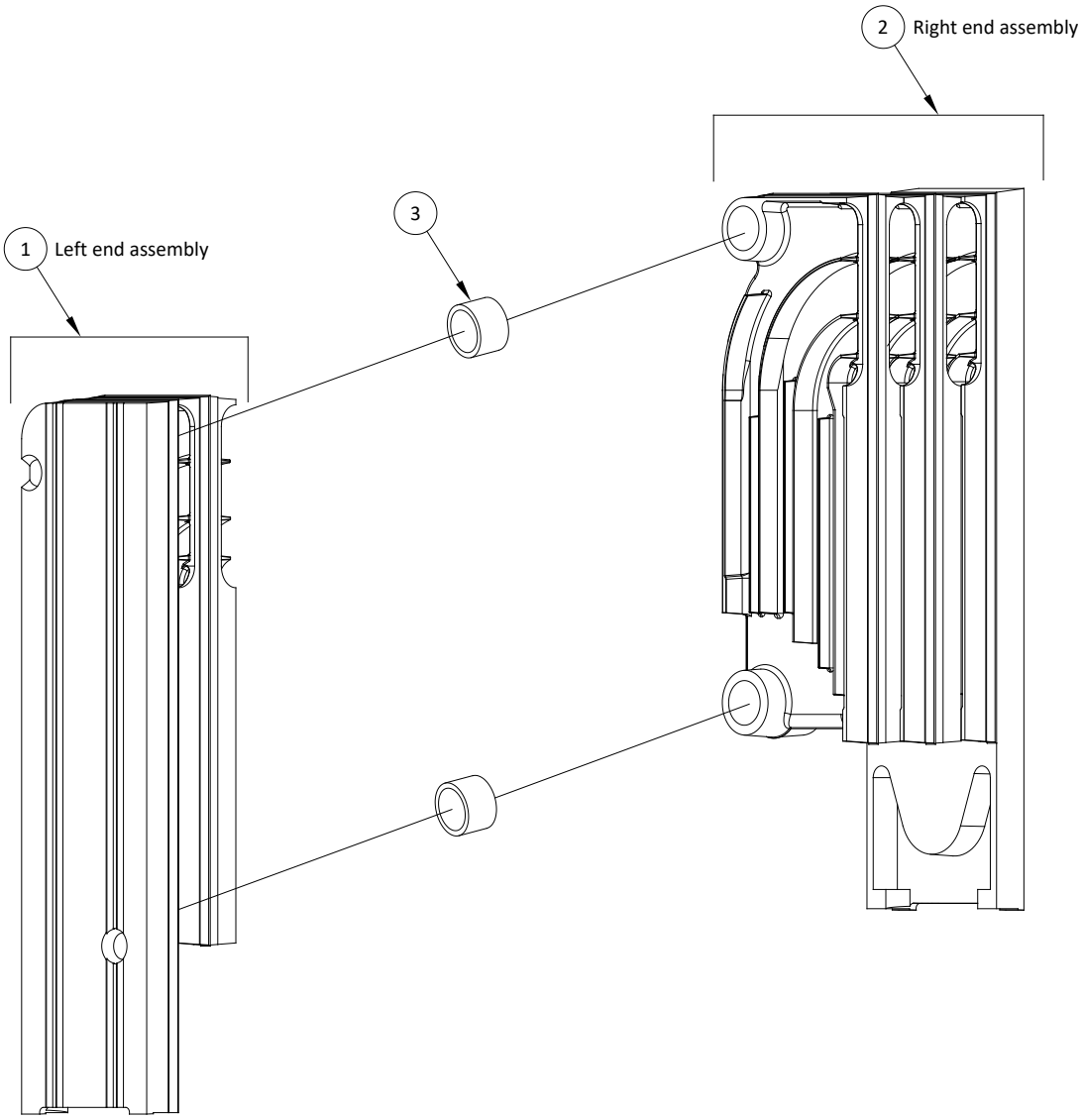

Figure 3-2

3 Adding Section/Resizing *(continued)*

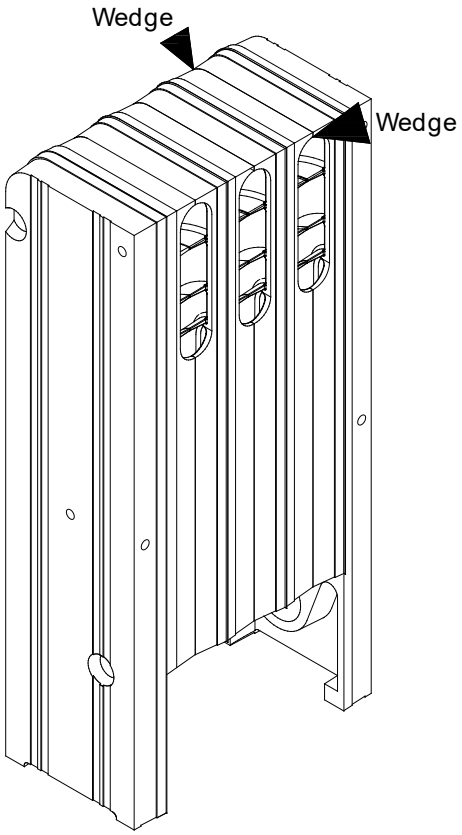

Figure 3-3

4 Grille Installation

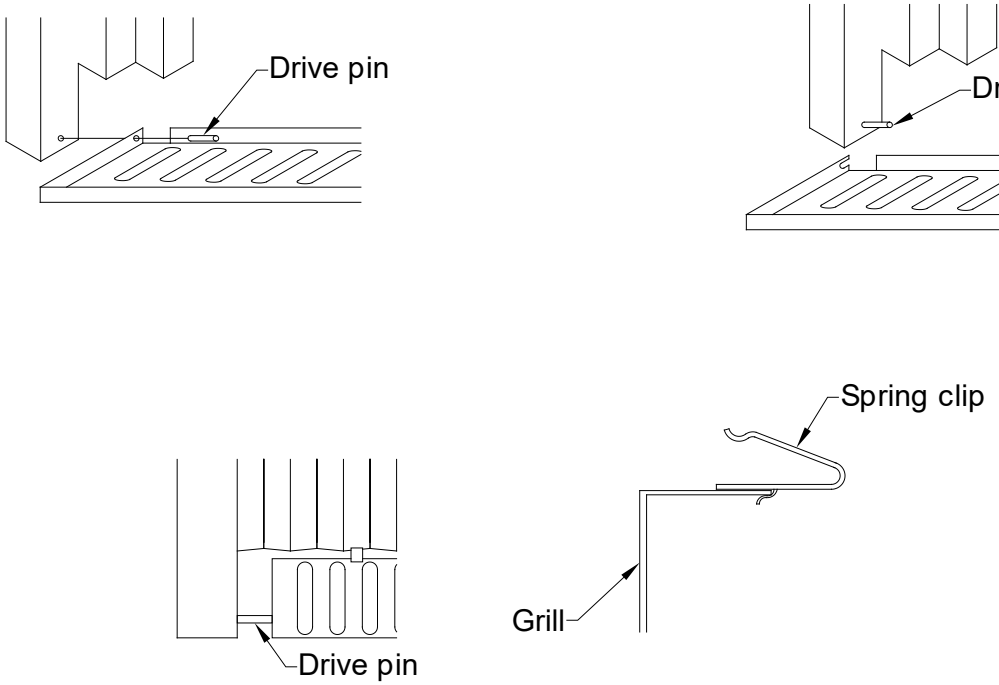

Figure 4-1

⚠ CAUTION

Use caution when drilling in pins. Excessive force may permanently damage radiator.

A. Grille Installation Instructions (Refer to Figure 4-1)

1. Pins furnished are to be driven into Leg Sections to act as hinges.
2. Grilles with hinge pin HOLES at bottom of Grille-Center Grille on opening. Align holes in Grille with holes in Leg Sections and drive pins into place.
3. Grilles with hinge pin SLOTS at bottom of Grille-Center Grille on opening. Slide Grille on pins using notches provided in ends of Grille.
4. Installation of Spring Clips (if not spotwelded to top of Grille):

   If Grille is furnished without Spring Clips, spotwelding at top, loose Spring Clips are furnished in same envelope as Drive Pins, install Clips as follows:

   a. Locate Spring Clip above second slot in Grille from each end and push into place as shown above.

   b. Close Grille and if drag is not felt on both clips, relocate one or both clips until drag is felt. This is necessary because of the uneven space between the top of the Grille and the Radiator.

5. Rotate top of Grille toward Radiator and snap into place.

5 Parts

Number	Description	Quantity
105510-01	Slip Nipple	2
7174201	Intermediate Section	1
7174204	Legged Intermediate Section	1
7074xx	Grille (xx indicates number of Sections up to 30)	1
101394-01	Loctite 592	1

SERVICE RECORD

DATE	SERVICE PERFORMED

SERVICE RECORD

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SERVICE RECORD

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