



C O M I T A L E N A T I O N A L I N C .

ULTRAMATE™
&
Replacements for
nesbitt
modular roommate
MSI
modular roommate

Installation Instructions

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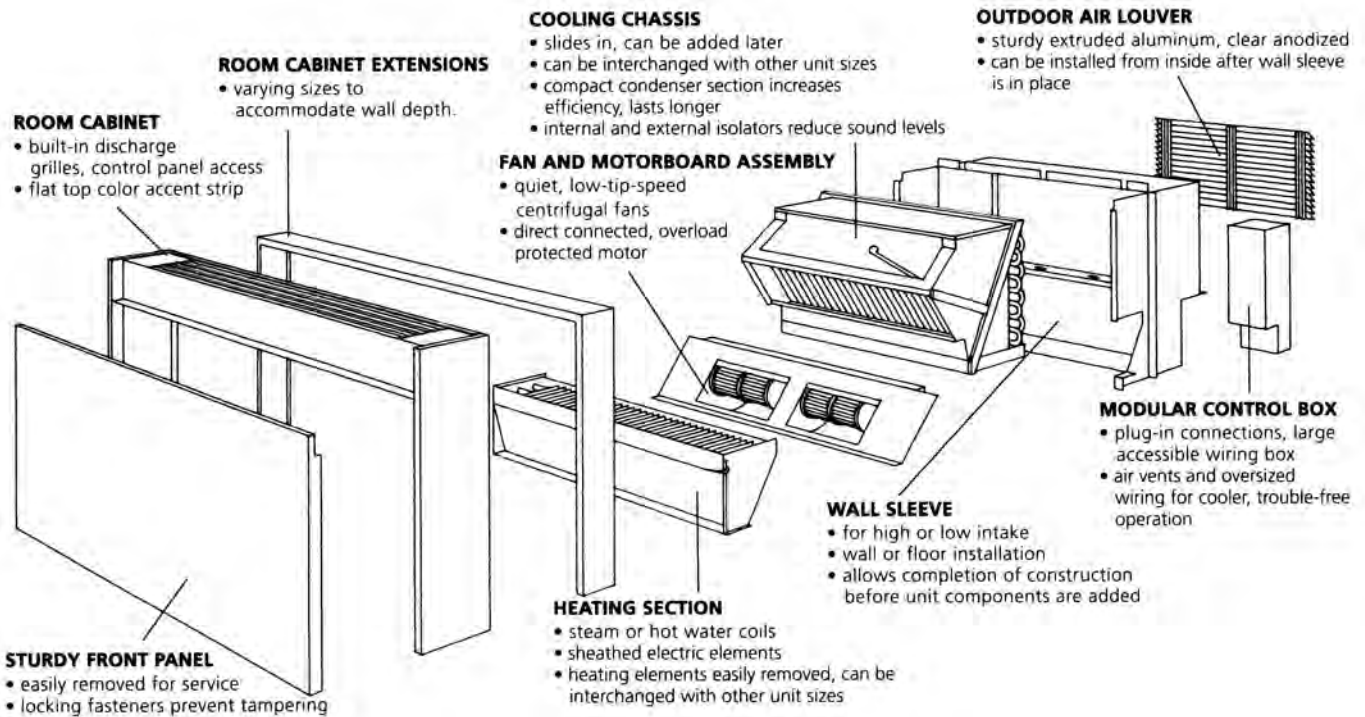
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Original Equipment Manufacturer of
Custom Packaged Terminal Air Conditioners and
National H.V.A.C. Parts Distributor

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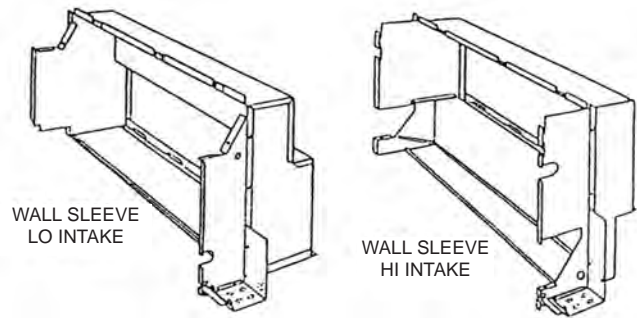
The CNI Modular ULTRAMATE™ air conditioning unit consists of four major functional components—cooling chassis, fan and motorboard assembly, heating section and control system. The cooling chassis is a completely self-contained refrigeration circuit within the compact chassis. The fan and motorboard assembly is removable independent of the heating section. Either an electric heating section or hot water or steam heating coils can be selected. The modular control box features plug-in connections.



Room Cabinet Wall Sleeve Installation

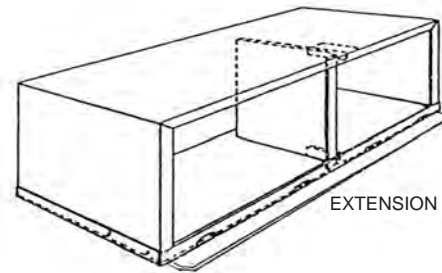
Wall Sleeve

Mounts in the wall. All other components mount in or on this sleeve. It should be built into wall on new building.



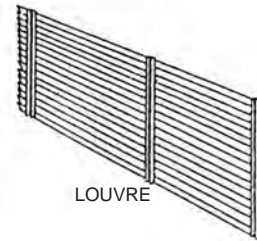
Wall Sleeve Extension (Optional)

Telescopes over the wall sleeve for walls over 14 inches thick. (Maximum 25 inches). It must be installed simultaneously with the wall sleeve.



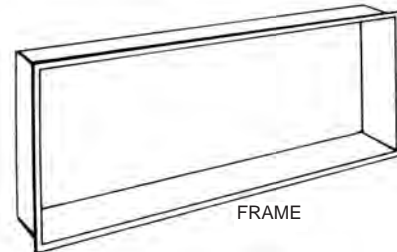
Outdoor Air Louver

Attaches to wall sleeve extension from inside building. May be installed with wall sleeve or before inserting cooling chassis.



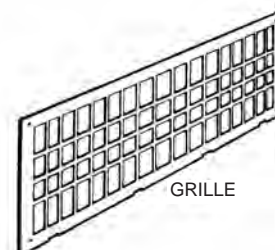
Frame (Optional)

Used to provide a finished appearance around the outside wall opening. "Standard" type telescopes over wall sleeve. "Extension" type telescopes over wall sleeve extension.



Outdoor Air Grille (Optional)

May be used in place of the outdoor air louver.



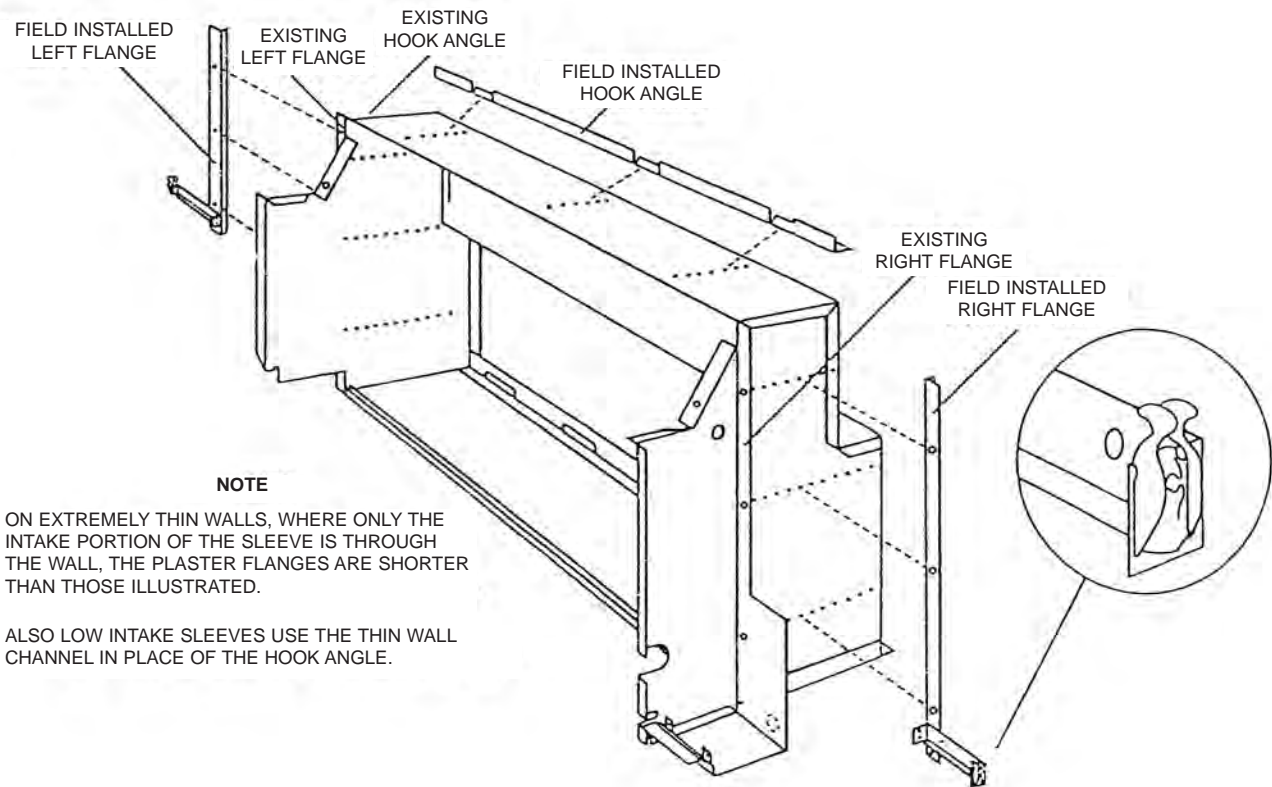
Plaster Flange and Hook Angle Installation

The Wall Sleeve is manufactured with plaster flanges which are used for all walls twelve or more inches thick. When walls are less than twelve inches, two plaster flanges and a hook angle are shipped for field installation. "Drive" rivets are supplied for fast attachment.

Notice that where the factory-installed parts are attached there are rows of holes running to the outside end of the wall sleeve. These holes are spaced at one inch increments.

The flanges and hook angle are to be installed parallel to the existing ones at a distance equal to difference between twelve inches and the finished depth of the wall. Example: Finished wall will be eight inches thick. Twelve minus eight equals four. Therefore, parts are to be installed four holes (inches) away from the existing pieces.

To secure the parts, insert the "drive" rivets and strike the protruding pin with a hammer.





Wall Sleeve Installation

General Instructions

NOTE: When a Wall Sleeve extension or Louver Frame is to be used, read the procedure for their installation before installing the Wall Sleeve.

HIGH INTAKE

On walls 10 to 25 Inches thick, the wall sleeve must be mounted at least 2 1/2 inches above the finished floor line. This allows for a maximum of one inch for carpeting, etc.

On walls less than 10 inches thick, the wall sleeve must be mounted exactly 2 1/2 inches above the finished floor line, and, the bottom of the wall sleeve must be supported by a separately furnished base.

Wall sleeves must be installed perfectly level. Use the bottom of the wall sleeve as a leveling guide.

Do not puncture or drill any holes in the sleeve adjacent to the drip line.

It is absolutely necessary that the plaster flange on the sleeve be installed flush with the finished (plaster) wall line.

After setting sleeve, replace the shipping carton to protect the sleeve while building construction is in progress.

The outdoor louver, when mounted on the wall sleeve, may be flush, or, recessed up to two inches from the exterior wall. Consult architectural drawings.

Wall sleeve must be thoroughly caulked to provide a tight, trouble-free installation.

LOW INTAKE

The wall sleeve may be mounted at the finished floor line, or a maximum of one inch above to allow for carpeting, etc., never below the floor line.

The sleeve must be supported under the entire bottom area.

The sleeve must be installed perfectly level. Use the three dimples on the bottom of the sleeve as leveling guides.

Do not puncture or drill any holes in the bottom of the sleeve.

It is absolutely necessary that the plaster flange on the sleeve be installed flush with the finished (plastered) wall line.

After setting sleeve, replace the shipping carton to protect the sleeve while building construction is in progress.

The outdoor, louver, when mounted on the wall sleeve, may be flush, or, recessed up to two inches from the exterior wall. Consult architectural drawings.

Wall sleeve must be thoroughly caulked to provide a tight, trouble-free installation.

Wall Sleeve Installation

A. NEW MASONRY WALLS

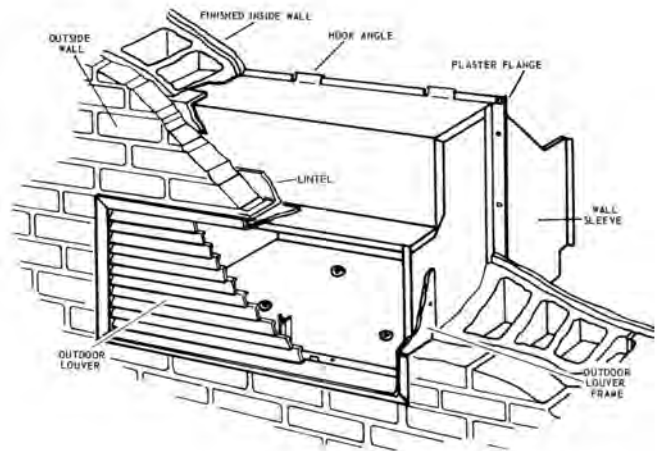
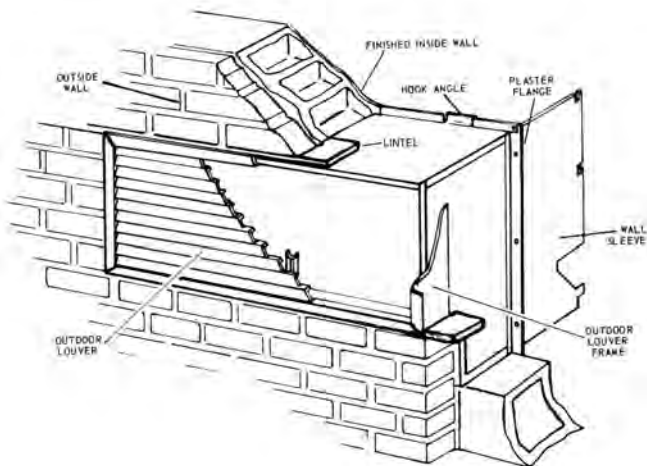
NOTE: When a Wall Sleeve extension or Louver Frame is to be used, read the procedure for their installation before installing the Wall Sleeve.

HIGH INTAKE

- 1) Determine position of the WALL sleeve according to architectural plans and specifications. The bottom of the wall sleeve must be a minimum of 2 1/2 inches above the finished floor line. If wall thickness is less than 10 inches, the wall sleeve must be positioned exactly 2 1/2 inches above the finished floor line and a support base must be attached to the bottom of the wall sleeve prior to the setting of the wall sleeve.
- 2) Provide a soft mortar base for the sleeves, and set the sleeve perfectly level.
- 3) Continue building the wall around the wall sleeve, locating lintels as necessary. The wall sleeve becomes an integral part of the finished wall.
- 4) Caulk the exterior edges to provide a weather-tight seal.
- 5) Plaster the inside of the wall flush with the plaster flanges on the wall sleeve to provide a finished surface.

LOW INTAKE

- 1) Determine position of the WALL sleeve according to architectural plans and specifications. The bottom of the wall sleeve must be even with the finished floor line or, a maximum of one inch above if the floor is to be carpeted.
- 2) Provide a soft mortar base for the sleeves, and set the sleeve perfectly level. Level the sleeve in both directions using the three dimples on the bottom of the sleeve.
- 3) Continue building the wall around the wall sleeve, locating lintels as necessary. The wall sleeve becomes an integral part of the finished wall.
- 4) Caulk the exterior edges to provide a weather-tight seal.
- 5) Plaster the inside of the wall flush with the plaster flanges on the wall sleeve to provide a finished surface.

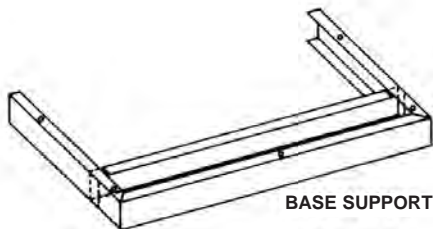


Wall Sleeve Installation

B. EXISTING PANEL WALLS

HIGH INTAKE

- 1) Determine the location of the sleeve on the wall and mark the outline. The bottom of the opening should be 1 3/8 inches above the finished floor line.
- 2) Cut the opening approximately 1/4 inch larger than the sleeve dimension on all sides.
- 3) Apply layer of water-proof mastic on all sides of the panel opening and allow to dry.
- 4) Determine the required depth of the bottom support base (subtract) the wall thickness in inches from 12 inches). Base is furnished in 10 inch depth for use in 2 inch panel wall applications without cutting.



- 5) Cut the base to the required depth and attach to the bottom of the wall sleeve using stainless steel sheetmetal screws (#10 x 3/8")
- 6) Slide the wall sleeve into the opening and level sleeve in both directions. Shim under the base as necessary.
- 7) Anchor the wall sleeve plaster flanges to the inside wall on both sides of the sleeve
- 8) Caulk all exterior edges to provide weather-tight seal.

LOW INTAKE

- 1) Determine the location of the sleeve on the wall and mark the outline.
- 2) Cut the opening approximately 1/4 inch larger than the sleeve dimension on all sides.
- 3) Apply layer of waterproof mastic on all sides of the panel opening and allow to dry.
- 4) Apply a layer of mortar adjacent to the opening to accept the bottom of the wall sleeve.
- 5) Slide the wall sleeve into the opening and grout in place. Level the sleeve in both directions using the three dimples at the bottom of the sleeve.

NOTE: if mortar is not available, fiberglass insulation may be used. Shim, as necessary, to level.

- 6) Anchor the wall sleeve plaster flanges to the inside wall on both sides of the sleeve.
- 7) Caulk all exterior edges to provide a weather-tight seal.



Wall Sleeve Installation

C. EXISTING MASONRY WALLS

HIGH AND LOW INTAKE

- 1) Determine the location of the wall sleeve and mark the outline on wall.
- 2) Cut the opening approximately 1/2 inch larger than the sleeve dimension, on all sides. For a neat installation, the opening in the exterior wall can be made with a diamond tip or carborundum blade in a power saw and finished with mallet and chisel.
- 3) Level the bottom of the opening with a layer of mortar and install lintels as necessary.
- 4) Slide the wall sleeve into the opening and grout into position. Ensure that the wall sleeve has been inserted so the plaster flanges on the wall sleeve are flush with the finished wall line.
- 5) Level the sleeve in both directions using the bottom of the sleeve.
- 6) Anchor wall sleeve to the inside wall using plaster flanges on both sides of the wall sleeve.
- 7) Caulk all exterior edges thoroughly to provide a weather-tight seal.
- 8) Replaster the inside wall flush with the plaster flanges on the wall sleeve for a finished surface.

D. NEW PANEL WALLS

HIGH AND LOW INTAKE

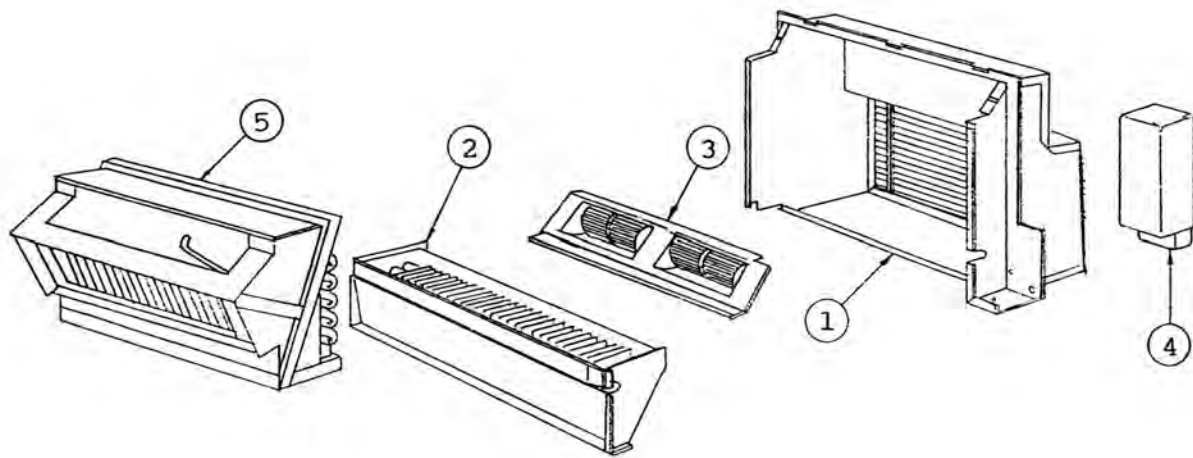
For new panel wall building.

Follow the same procedures outlined for "Existing Panel Walls" with the exception that the opening in the panel wall is normally formed at the time of panel fabrication.

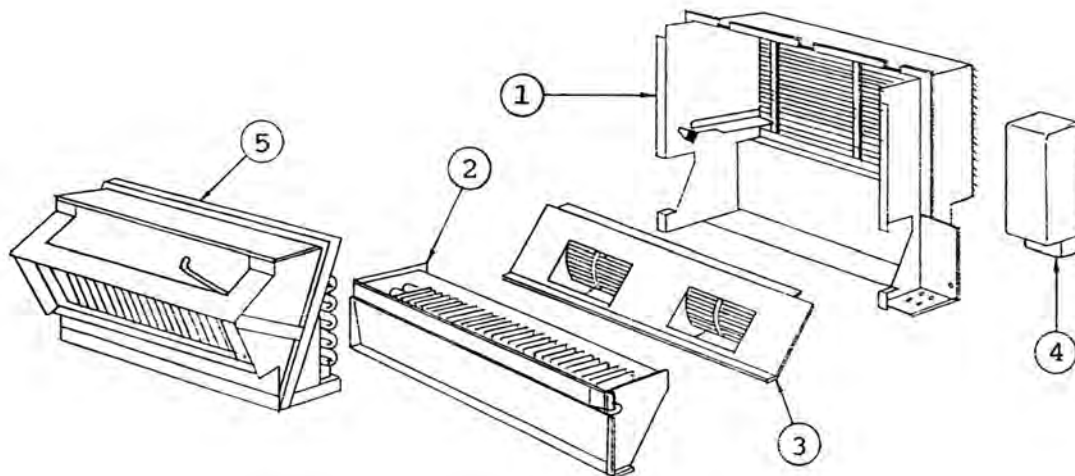
The Heating Section, Motorboard, Control Box and Cooling Chassis Installation

Introduction

1. **Wall Sleeve and Accessories** Previously installed in accordance with publication.
2. **Heating Section**
Factory MTD.
3. **Motorboard**
Factory MTD.
4. **Control Box** Third item to install.
5. **Cooling Chassis** Last item to install.
6. **Heating Only Kit** (Not Shown) The first item installed when a cooling chassis is not used.



Low Intake



Hi Intake



Cooling Chassis Installation

HIGH INTAKE

1. Remove Cooling Chassis from shipping carton and wooden skid.
2. Inspect for concealed shipping damage.
3. Slide Cooling Chassis into Wall Sleeve on horizontal flanges. Ensure that it is fully inserted, and, centered between the two sides of the Wall Sleeve.
4. Connect plug firmly to mating receptacle on Control Box.

LOW INTAKE

1. Remove Cooling Chassis from shipping carton and wooden skid.
2. Inspect for shipping damage.
3. Slide Cooling Chassis into Wall Sleeve, ensuring it is fully inserted. A small amount of lubricant may be used on the three “dimples” at the bottom of the Wall Sleeve to ease the sliding action.

CAUTION: DO NOT DAMAGE HEATING SECTION

4. Connect plug firmly to mating receptacle on Control Box.
5. See Control Box Installation, Step 7

Electrical Connection

In the Junction Box are the power leads, marked L1 and L2, and a ground lug. In cases where multiple units are controlled by a single room thermostat, be certain all units are on a common phase of supply.

The unit must be wired to conform to all prevailing building codes and regulations. The parts required for this installation are not supplied

The Junction Box has knock-out plugs to accommodate either 1/2” or 3/4" fittings.

Piping For Hot Water Or Steam Heat

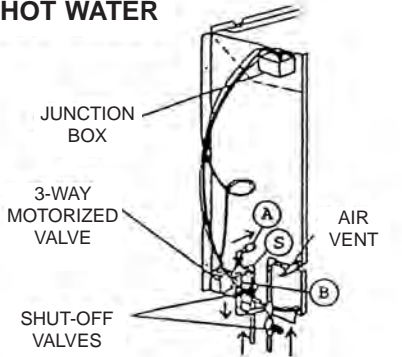
Field piping should be accomplished as shown on the next page. The parts supplied for this installation are; The two or three-way valve, as specified, and:

With Two-Way Valve		With Three-Way Valve	
High Intake	Low Intake	High Intake	Low Intake
1 Straight Fitting 1 Elbow fitting	2 Straight Fittings	3 Elbow Fittings	1 Elbow Fitting 2 Straight Fitting

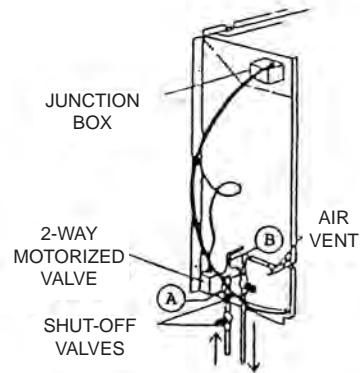
Field Installed Piping

Preferred arrangements

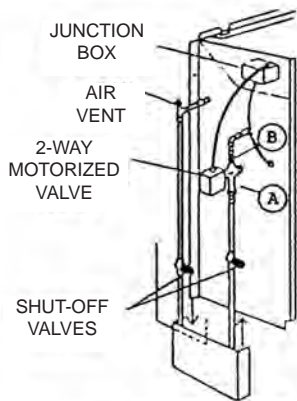
HOT WATER



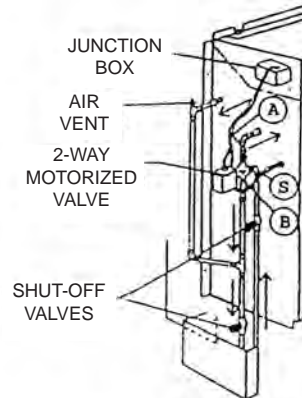
**HI-INTAKE
SAME END, SUPPLY AND RETURN**



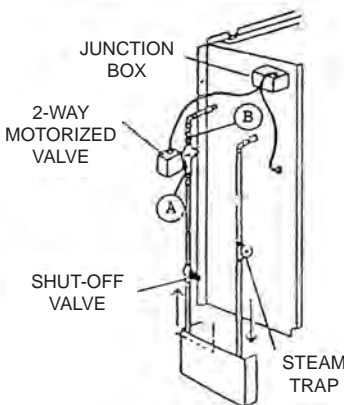
**HI-INTAKE
SAME END, SUPPLY AND RETURN**



**LOW-INTAKE
SAME END, SUPPLY AND RETURN**



**LOW-INTAKE
SAME END, SUPPLY AND RETURN**



**LOW-INTAKE
SAME END, SUPPLY AND RETURN**

NOTES:

1. Motorized Valves and Junction Box are furnished with Heating Section, all other Components are furnished by others.
2. Steam trap-Sarco Type H or equivalent.
3. Steam connections for same end, hi-intake, are similar to that shown for hot water, two-way valve less air vent and with a steam trap replacing the shut-off valve in return.
4. The valve bodies are stamped as follows:

2-way valve "A" (inlet) and "B" (outlet)

2-way valve is stamped "A" (service), "B" (bypass), and "S" (inlet)

Control Box Installation

The Control Box has, as an integral assembly, the power Junction Box and low voltage Junction Box. It also houses the receptacles to receive the power plugs from the Motorboard, Heating Section, and Cooling Chassis.

Emerging from the bottom of the Control Box will be from zero to four control leads.

These may be:

One capillary tube for a Thermostat Bulb (8" copper bulb) used on unit mounted thermostat applications only.

CAUTION: Do not kink capillary tubes or bulbs

HIGH INTAKE

1. Remove Control Box from the shipping carton.
2. Inspect for concealed shipping damage.
3. Uncoil any tubes or cords discussed above.
4. Mount the Control Box by placing the holes in the side channels onto the four tabs extruded from the side of the Wall Sleeve.

NOTE: There are two groups of four holes in the Control Box channels. For Slopetop installations, use the group that mounts it in the lowest position. For Flat-top installations, use the group that mounts it in the highest position.

5. Snap the Room Thermostat Bulb (8"), where used, into the clips provided in the plate below the Control Box. Ensure the bulbs extend as far as possible through the Wall Sleeve toward the center of the unit.

Connect the Heating Section and Motorboard plugs firmly into their mating receptacles on the Control Box.

LOW INTAKE

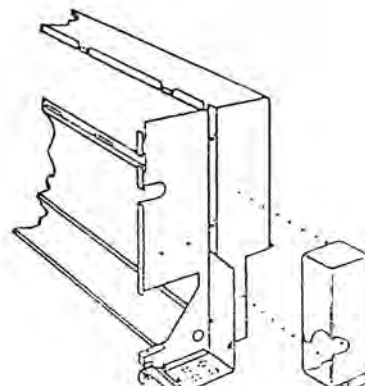
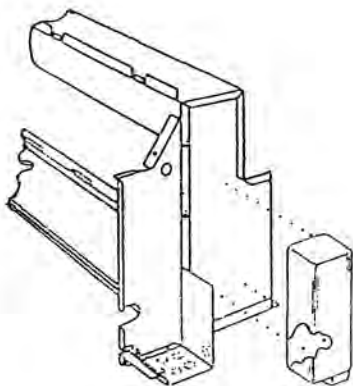
1. Remove Control Box from the shipping carton.
2. Inspect for concealed shipping damage.
3. Uncoil any tubes or cords discussed above.
4. Mount the Control Box by placing the holes in the side channels onto the three tabs extruded from the side of the Wall Sleeve.

NOTE: There are two groups of four holes in the Control Box channels. For Slopetop installations, use the group that mounts it in the lowest position. For Flat-top installations, use the group that mounts it in the highest position.

5. Secure all bulbs and leads to the Control Box. The Cooling Chassis must be installed before they are properly attached. After installing the Cooling Chassis, return to step 7.

6. Snap the Room Thermostat Bulb (8"), where used, into the clips provided in the plate below the Control Box. Ensure the bulbs extend as far as possible through the Wall Sleeve toward the center of the unit.

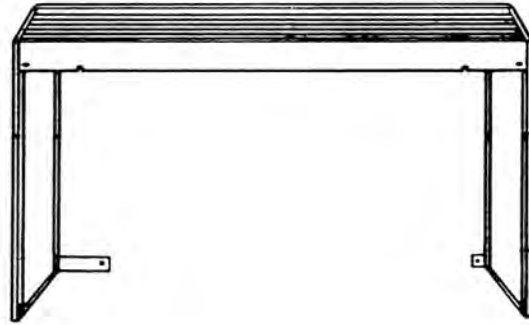
7. Connect the Heating Section and Motorboard plugs firmly into their mating receptacles on the Control Box.



The Room Cabinet Installation

Introduction

2. **Room Cabinet Frame** - Notched front and rear to hang securely from the Wall Sleeve. Tabs at the bottom rear attach to the Wall Sleeve for sidewall support.



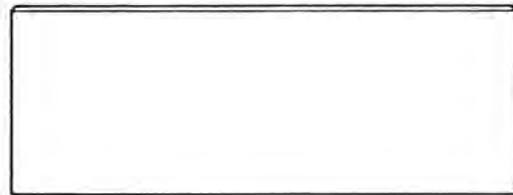
ROOM CABINET
(ALL MODELS)

3. **Kick Plate** - Attached to bottom of Cabinet Frame of low intake models to provide finished appearance.



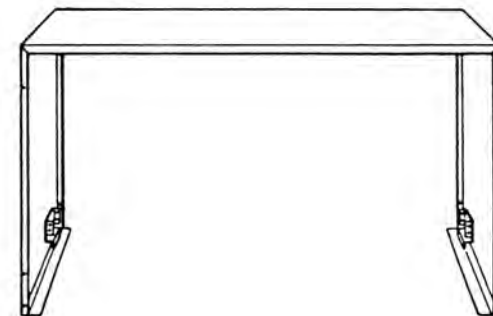
KICK PLATE
(LOW INTAKE ONLY)

4. **Front Panel Top** fits into lip of Accent Strip. Bottom secures to Wall Sleeve with rotary latching devices.



FRONT PANEL
(ALL MODELS)

5. **Room Cabinet Extension** - Attaches to the rear of the Cabinet Frame with four sheet metal screws and three clips. Used only when wall thickness is less than twelve inches.

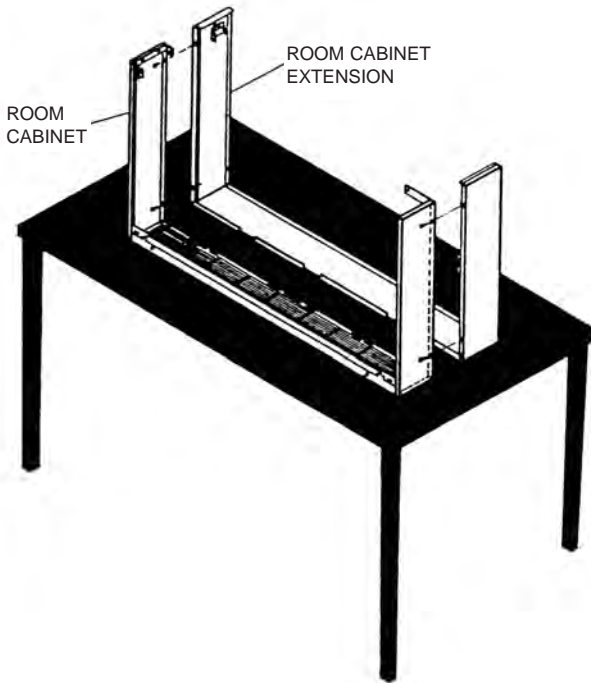


ROOM CABINET
EXTENSION
(WHEN REQUIRED
11 DEPTHS)

Assembly, Room Cabinet to Extension

For installations not requiring Extensions (i.e. walls are twelve or more inches thick), skip to 'Room Cabinet Installation'.

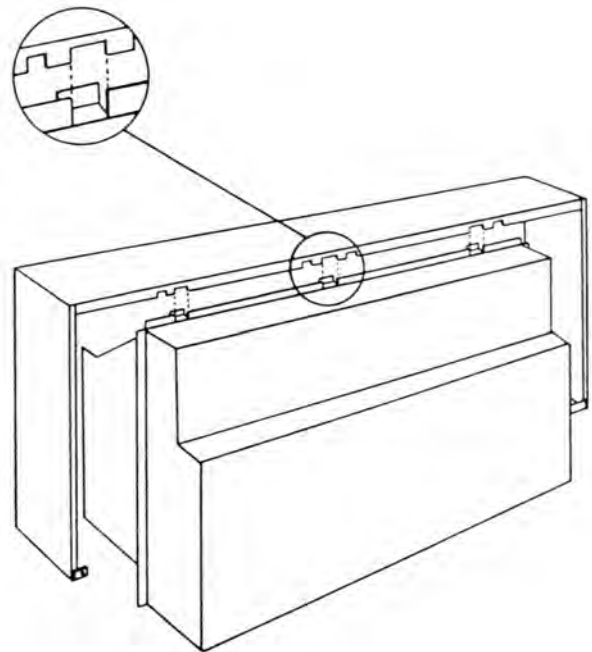
1. Place Cabinet and Extension upside-down, with the front of the Extension against the back of the Cabinet. Use a large, flat, padded surface.
2. Secure the two pieces together with four sheet metal screws, as shown



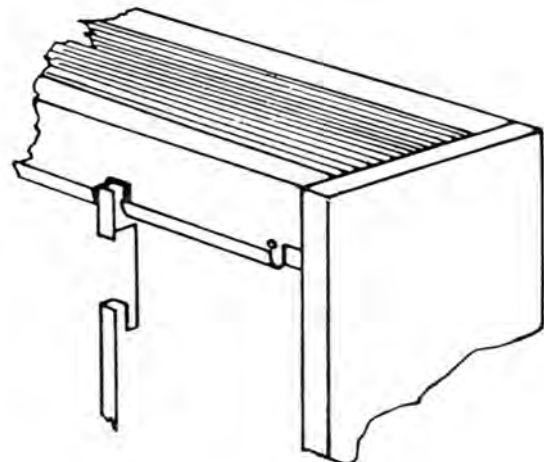
Room Cabinet Installation

If an Extension is to be used, it must first be attached to the Cabinet.

1. Raise the Cabinet over the installation.
2. Lower the Cabinet onto the installation, insuring that:
 - a. The rear flange notches seat into the three offset hooks in the horizontal strip (Hook Angle) on the top of the Wall Sleeve.



- b. The notches in the front of the Cabinet seat into the two notches on the protruding vertical flanges of the Wall Sleeve.





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