



HORIZONTAL TWO-WAY COIL INSTALLATION INSTRUCTIONS


Important Safety Instructions

The following symbols and labels are used throughout this manual to indicate immediate or potential safety hazards. It is the owner's and installer's responsibility to read and comply with all safety information and instructions accompanying these symbols. Failure to heed safety information increases the risk of personal injury, property damage, and/or product damage.

**WARNING**

HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR
INSTALLING THIS UNIT. MULTIPLE POWER SOURCES
MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY
DAMAGE, PERSONAL INJURY OR DEATH.



**WARNING**

ONLY PERSONNEL THAT HAVE BEEN TRAINED TO INSTALL, ADJUST, SERVICE OR
REPAIR (HEREINAFTER, "SERVICE") THE EQUIPMENT SPECIFIED IN THIS MANUAL
SHOULD SERVICE THE EQUIPMENT. THE MANUFACTURER WILL NOT BE RESPONSIBLE
FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SERVICE OR
SERVICE PROCEDURES. IF YOU SERVICE THIS UNIT, YOU ASSUME RESPONSIBILITY
FOR ANY INJURY OR PROPERTY DAMAGE WHICH MAY RESULT. IN ADDITION, IN
JURISDICTIONS THAT REQUIRE ONE OR MORE LICENSES TO SERVICE THE EQUIPMENT
SPECIFIED IN THIS MANUAL, ONLY LICENSED PERSONNEL SHOULD SERVICE THE
EQUIPMENT. IMPROPER INSTALLATION, ADJUSTMENT, SERVICING OR REPAIR OF
THE EQUIPMENT SPECIFIED IN THIS MANUAL, OR ATTEMPTING TO INSTALL, ADJUST,
SERVICE OR REPAIR THE EQUIPMENT SPECIFIED IN THIS MANUAL WITHOUT PROPER
TRAINING MAY RESULT IN PRODUCT DAMAGE, PROPERTY DAMAGE, PERSONAL
INJURY OR DEATH.

Shipping Inspection

Upon receiving the product, inspect it for damage from shipment. Shipping damage, and subsequent investigation is the responsibility of the carrier. Verify the model number, specifications, and accessories are correct prior to installation. The distributor or manufacturer will not accept claims from dealers for transportation damage or installation of incorrectly shipped units.

Handling

Use caution when transporting / carrying unit. Do not carry unit with hooks or sharp object. The preferred method of carrying the unit after arrival at the job site is to carry by two-wheel hand truck from the back or sides or by hand by carrying at the cabinet corners.

Codes & Regulations

This product is designed and manufactured to comply with national codes. Installation in accordance with such codes and/or prevailing local codes/regulations is the responsibility of the installer. The manufacturer assumes no responsibility for equipment installed in violation of any codes or regulations.

The United States Environmental Protection Agency (EPA) has issued various regulations regarding the introduction and disposal of refrigerants. Failure to follow these regulations may harm the environment and can lead to the imposition of substantial fines. Should you have any questions please contact the local office of the EPA.

Replacement Parts

Inspect the unit to verify all required components are present and intact. Report any missing components immediately to the manufacturer or to the distributor. Make sure to include the full product model number and serial number when reporting and/or obtaining service parts. Replacement parts for this product are available through your contractor or local distributor. For the location of your nearest distributor consult the white business pages, the yellow page section of the local telephone book or contact:

HOMEOWNER SUPPORT
GOODMAN MANUFACTURING COMPANY, L.P.
19001 KERMIER ROAD
WALLER, TEXAS 77484
877- 254 - 4729

Pre-Installation Instructions

Carefully read all instructions for the installation prior to installing product. Make sure each step or procedure is understood and any special considerations are taken into account before starting installation. Assemble all tools, hardware and supplies needed to complete the installation. Some items may need to be purchased locally. Make sure everything needed to install the product is on hand before starting.



System Matches

The entire system (combination of indoor and outdoor sections) must be manufacturer approved and Air Conditioning, Heating, and Refrigeration Institute (AHRI) listed. NOTE: Installation of unmatched systems is not permitted. Damage or repairs due to installation of unmatched systems is not covered under the warranty.

Application Information

Install this coil upstream (discharge air) of the furnace and install downstream (return air) of the air handler. This coil is bi-directional coil and can be installed in either the left or right direction. Determine the coil direction by the side that allows the best access.

Note: These Coils are designed for Indoor installation only.

If the unit is located in an unconditioned area with high ambient temperature and/or high humidity, the coil may be subject to nuisance sweating of the casing. On these installations, a wrap of 2" fiberglass insulations with a vapor barrier is recommended

Clearances

Refrigerant lines must be routed depending on configuration of unit to maintain the required 24" minimum clearance for service. Consult all appropriate regulatory codes prior to determining final clearances. In installations that may lead to physical damage (i.e. a garage) it is advised to install a protective barrier to prevent such damage. Always install units such that a positive slope in condensate line (1/4" per foot) is allowed.

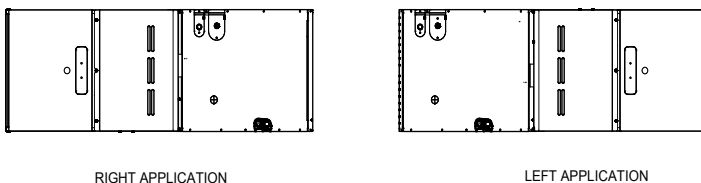


Figure 1
Front View (for Right & Left Hand Application)

Furnace to Coil Attachment

There is no conversion required to reverse from right to left application. Attach the duct flanges to the discharge side of the unit. If the coil and furnace combination are not similar in depth and width, use a field-supplied transition to center the furnace and coil openings (see figure 6).

1. Using the hardware and brackets provided, attach the coil to the furnace then attach the plenum to the coil (Figure 6). Using tape or mastic seal between the coil and furnace and the coil and plenum.

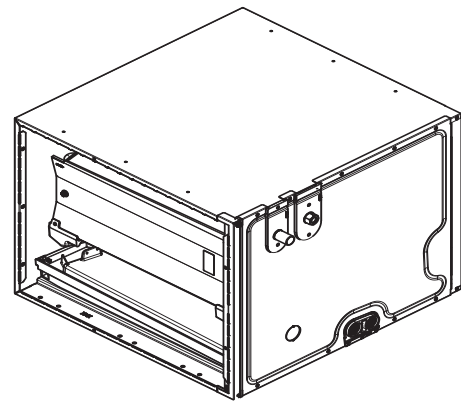


Figure 2
Actual Coil Figure

2. Please use Z-Bracket provided with units to fill the transition gap between furnace & coil when coil is one size larger than furnace. Additional gaps must be filled with insulated tape or putty to prevent air leakage. Figure 3 indicates incorrect coil/furnace attachment method.

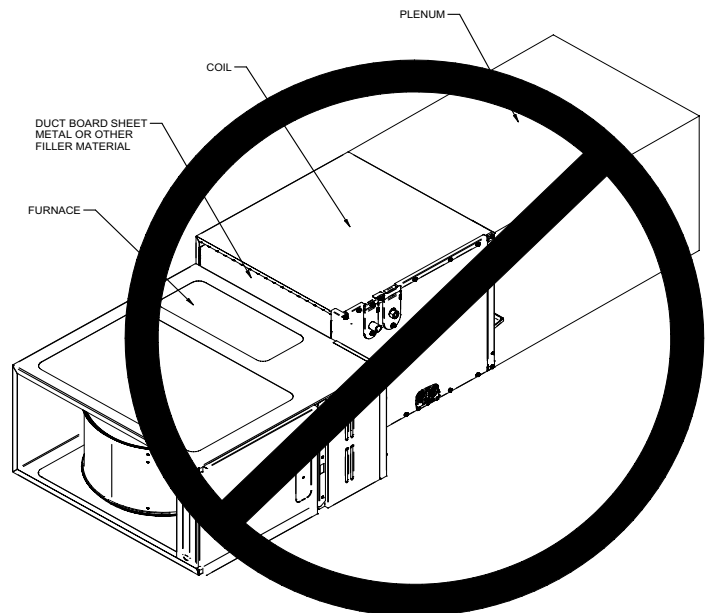


Figure 3
Incorrect Furnace, Coil and Plenum Installation

3. Optionally a transition duct can be used to attach the coil with furnace, if z-bracket is not preferred to be used (see figure 6).



CAUTION

**IF DRAIN PAN EXTENSION IS NOT LOCKED CORRECTLY,
AIRFLOW PATH WILL BE BLOCKED
AND FLOODING MAY OCCUR.**

Drain Pan Extension

1. A drain pan extension is shipped with coil attached with drain pan (Figure 4). This extension is to be used only for horizontal left application (for peak perfor-

mance it is recommended to be removed and used only for higher than normal humid application). **During horizontal right application, this must be removed.** (There are accessories recommended for horizontal right application, see page-4). This extension will have to be locked in position for proper application.

Note: To fully extend the drain pan extension, built in duct flanges on the wrapper must be bended in-ward or outward as needed. Please remove extension caution label during installation, or this may cause blockage.

To lock extension, rotate downward away from drain pan until snaps into position. It will act as an extension for drain pan and must not be left loose or in the path of airflow.

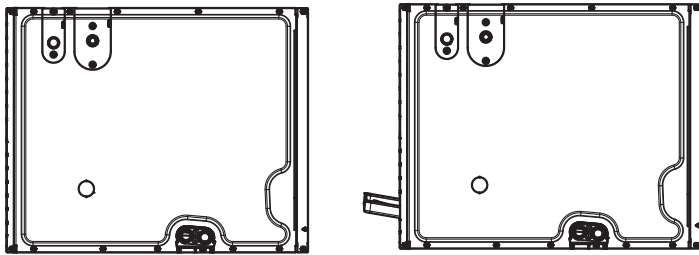


Figure 4A and 4B
Before and After Extension has been Installed

Duct Attachment

This coil's casing is perforated for duct attachment. However, Duct flanges (Qty: 2) are shipped in a box from factory separately for the sides that have rails and perforation can not be used. These flanges are to be used over rails. Remove center rail screw and lay over the flange on top of rails, then attach the screw back on to secure the flange over rails. For horizontal left application there is only one rail (bottom) hence only one duct flange is needed and other can be stored. For horizontal right application there are two rail (top & bottom) and both duct flanges should be used. Duct flanges can also be attached using all three screws for the rails if additional strength is needed.

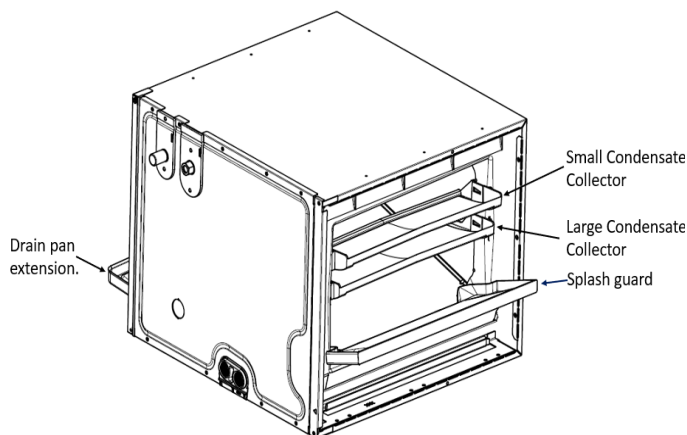


Figure 5
Horizontal Right Accessories Shown

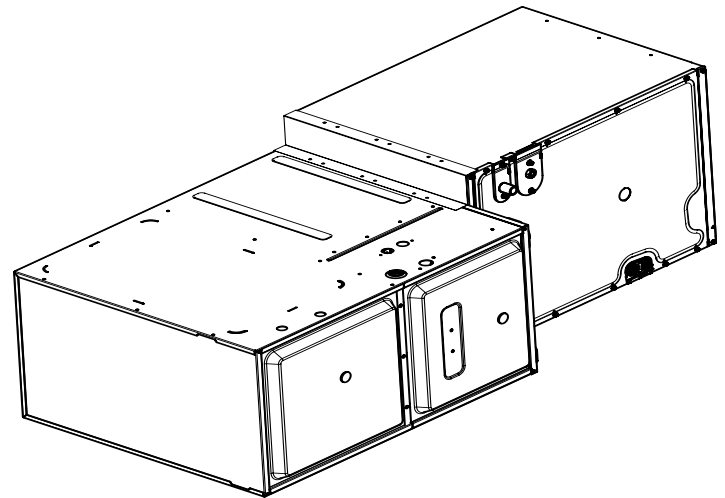
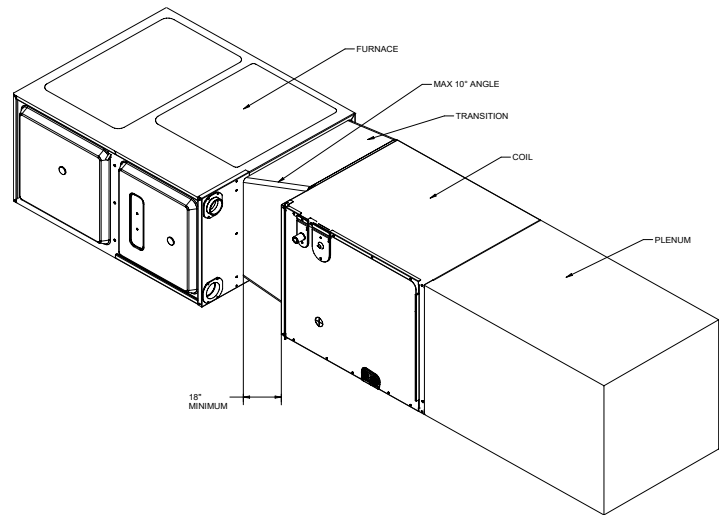
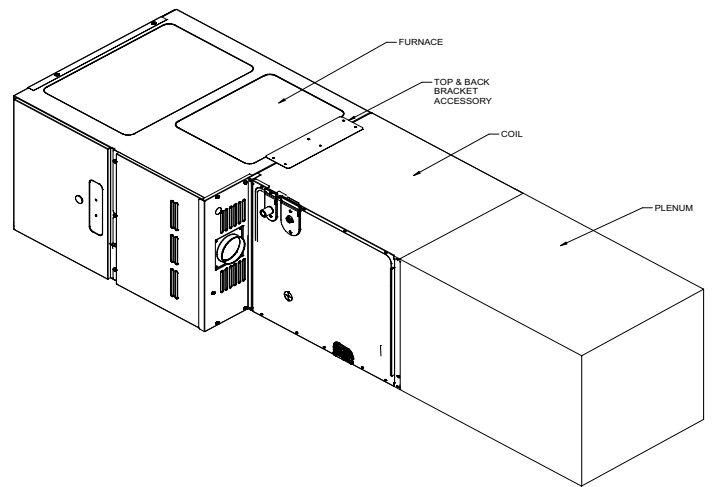


Figure 6
Furnace, Coil and Plenum Installation

Condensate Drain Piping

During cooling application, where damage from condensate overflow may occur, it is **MANDATORY** to install a Secondary drain pan under the entire coil cabinet with a separate drain line properly sloped and terminated in an area visible to the owner to be able to see water discharge. This secondary drain pan can provide extra protection to the area under the unit should the primary drain plug up and overflow. For coils with "A" Cabinets (14" wide), use float switch if secondary drain line is not installed. Refer to product nomenclature from product specification literature to identify coil models with "A" cabinets. As expressed in our product warranty, we will not be liable for any damages, structural or otherwise due to the failure to follow this installation requirement.

The coil drain pan has a primary and an optional secondary drain with 3/4" NPT female connections. The connectors required can be 3/4" NPT male either PVC or metal pipe and should be hand tightened to a torque of no more than 37 in-lbs. to prevent damage to the drain pan connection. An insertion depth between .355 to .485 inches (3-5 turns) should be expected at this torque. If using a copper drain line, solder a short piece of pipe to the connector before installing a drain fitting. DO NOT over torque the 3/4" copper connector to the plastic drain connection. Insulate PVC drain lines/pipes with high heat resistive tape within 1" furnace flue/vent pipe. Foil-Mastic Sealant tape is the preferred wrapping material.

1. Ensure drain pan hole is NOT obstructed.
2. To prevent potential sweating and dripping on finished space, it may be necessary to insulate the condensate drain line located inside the building. Use Armaflex® or similar material.

A Secondary Condensate Drain Connection has been provided for areas where the building codes require it. Pitch the drain line 1/4" per foot to provide free drainage. Insulate drain lines (primary and secondary) located inside the building to prevent sweating. Install a condensate trap in the primary drain line to ensure proper drainage. If the secondary line is required, run the line separately from the primary drain and end it where it can be easily seen.

NOTE: Water coming from this line means the coil primary drain is plugged and needs clearing.



CAUTION

IF SECONDARY DRAIN IS NOT INSTALLED, THE SECONDARY ACCESS MUST BE PLUGGED.

NOTE: Trapped lines are required by many local codes. In the absence of any prevailing local codes, please refer to the requirements listed in the Uniform Mechanical Building Code. A drain trap in a draw-through application prevents air from being drawn back through the drain line during fan operation thus preventing condensate from draining, and if connected to a sewer line to prevent sewer gases from being drawn into the airstream during blower operation. In a blow-through application the drain trap prevents conditioned air from escaping. The installation must include a "P" style trap that is located

as close as is practical to the evaporator coil. See Figure 7 for details of a typical condensate line "P" trap. NOTE: Units operating in high static pressure applications may require a deeper field constructed "P" style trap than is shown in Figure 7 to allow proper drainage and prevent condensate overflow.

Use of a condensate removal pump is permitted when necessary. This condensate pump should have provisions for shutting off the control voltage should a blocked drain occur. A trap must be installed between the unit and the condensate pump.

IMPORTANT NOTE: The evaporator coil is fabricated with oils that may dissolve Styrofoam and certain types of plastics. Therefore, a removal pump or float switch must not contain any of these materials.

Tip: Priming the "P" trap may avoid improper draining at the initial installation and at the beginning of the cooling season.

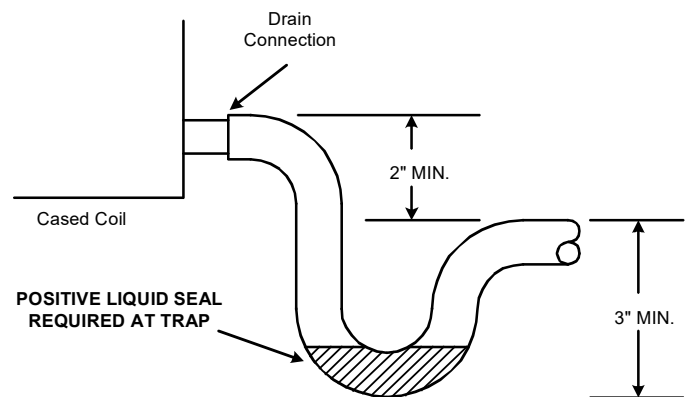


Figure 7
Condensate Drain Trap

Horizontal Right Coil Accessories

In application where the Horizontal coil is installed in the right position, and the return air environment see humidity level above 65% relative humidity coupled with total external static levels above 0.5" e.s.p, a condensate management accessory kit is available for field application. Sold separately, please refer to kit installation instruction IOG-7008.

Refrigerant Lines



WARNING

A QUENCHING CLOTH IS STRONGLY RECOMMENDED TO PREVENT SCORCHING OR MARRING OF THE EQUIPMENT FINISH WHEN BRAZING CLOSE TO THE PAINTED SURFACES. USE BRAZING ALLOY OF 5% MINIMUM SILVER CONTENT.

All cut ends are to be round, burr free, and cleaned. Any other condition increases the chance of a refrigerant leak. Use a pipe cutter to remove the closed end of the spun closed suction line.

To avoid overheating after brazing, quench all welded joints with water or a wet rag.

For the correct tubing size, follow the specification for the condenser/heat pump



CAUTION

THE COIL IS SHIPPED UNDER PRESSURE WITH AN R-410A GAS MIXTURE. USE APPROPRIATE SERVICE TOOLS AND FOLLOW THESE INSTRUCTIONS TO PREVENT INJURY.



CAUTION

APPLYING TOO MUCH HEAT TO ANY TUBE CAN MELT THE TUBE. TORCH HEAT REQUIRED TO BRAZE TUBES OF VARIOUS SIZES MUST BE PROPORTIONAL TO THE SIZE OF THE TUBE. SERVICE PERSONNEL MUST USE THE APPROPRIATE HEAT LEVEL FOR THE SIZE OF THE TUBE BEING BRAZED.

NOTE: Tubes of smaller size require less heat to bring the tube to brazing temperature before adding brazing alloy. The use of a heat shield when brazing is recommended to avoid burning the serial plate or the finish on the unit.

Refrigerant tubing must be routed to allow adequate access for servicing and maintenance of the unit. Do not handle coil assembly with manifold or flowrator tubes. Doing so may result in damage to the tubing joints. Always use clean gloves for handling coil assemblies.

Tubing Size/Length

For the correct tubing size, follow the specification for the condenser/heat pump. Give special consideration to minimizing the length of refrigerant tubing when installing coils. Refer to Remote Cooling/Heat Pump Technical Publication TP-107* Long Line Set Application R-410A for guidelines for line lengths over 80'. Leave a minimum 3" straight in line set from braze joints before any bends.

Tubing Preparation

All cut ends are to be round, burr free, and cleaned. Any other condition increases the chance of a refrigerant leak. Use a pipe cutter to remove the closed end of the spun closed suction line.

Note: To prevent possible damage to the tubing joints, do not handle coil assembly with manifold or flowrator tubes. Always use clean gloves when handling coil assemblies.

Brazing

Braze joints should be made only with the connections provided external to the cabinet. Do not alter the cabinet nor braze inside the cabinet. To avoid overheating after brazing, quench all brazed joints with water or a wet rag.

Special Instructions

This coil comes equipped with a check style flowrator for refrigerant management. For most installations with matching applications, no change to the flowrator orifice is required. However, in mix-matched applications, a flowrator change may be required. See the Piston Kit Chart or consult your local distributor for details regarding mix-matched orifice sizing. If the mix-match application requires a different piston size, change the piston in the distributor on the indoor coil before installing the coil and follow the procedure shown below.

1. Loosen the 13/16 nut 1 TURN ONLY to allow high pressure tracer gas to escape. No gas indicates a possible leak.

2. After the gas has escaped, remove the nut and discard the plastic or brass cap.
3. Remove the check piston to verify it is correct and then replace the piston. See piston kit chart in instructions.
4. Use a tube cutter to remove the spin closure on the suction line.
 - a. DO NOT USE A CUTTING METHOD THAT WOULD RESULT IN THE GENERATION OF COPPER SHAVINGS OR COPPER DUST.
5. Slide the 13/16 nut into place on the tailpiece supplied in the literature bag or with the unit.
6. Insert liquid line into the supplied tailpiece.
7. Braze tailpiece to the line set liquid tube.

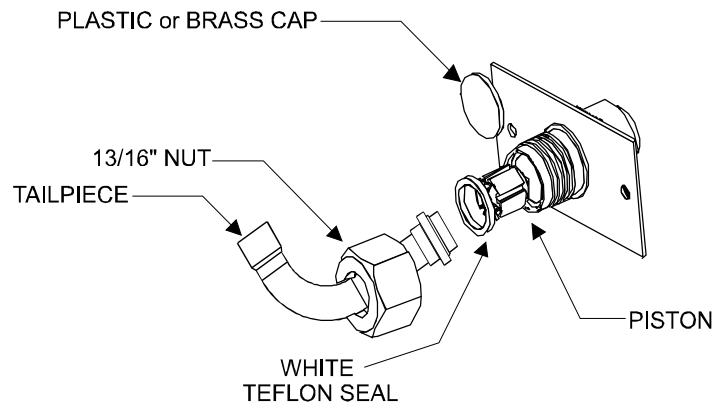


Figure 8
Flowrator

8. Insert the suction line into the connection, slide the insulation and the rubber grommet at least 18" away from the braze joint. Braze suction line.
9. AFTER THE TAILPIECE HAS COOLED, confirm position of the white Teflon® seal and hand tighten the 13/16 nut.
10. Torque the 13/16 nut to 10-25 ft-lbs. or tighten 1/6 turn.
11. Replace suction line grommet and insulation.



CAUTION

EXCESSIVE TORQUE CAN CAUSE ORIFICES TO STICK. USE THE PROPER TORQUE SETTINGS WHEN TIGHTENING ORIFICES.

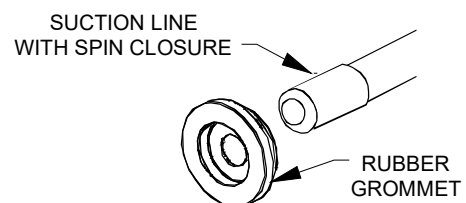


Figure 9
Suction Line Grommet

12. Check fittings for leaks after complete installation. Evacuate and charge on the low side.

NOTE: With the piston in the distributor, the seal end should point inside the distributor body and should not be seen when looking into the end of distributor. Make sure the piston is free to rotate, and move up and down in the distributor body.

IMPORTANT: Note 2 in the Piston Kit Chart does not apply to CH coils.

Filler Plates

Filler plates are supplied on all 17.5, 21, & 24.5 inch chassis to be used for adapting the unit to a furnace one size smaller. If the plenum and furnace openings are the same size, the filler plates must be removed. See Figure 10.

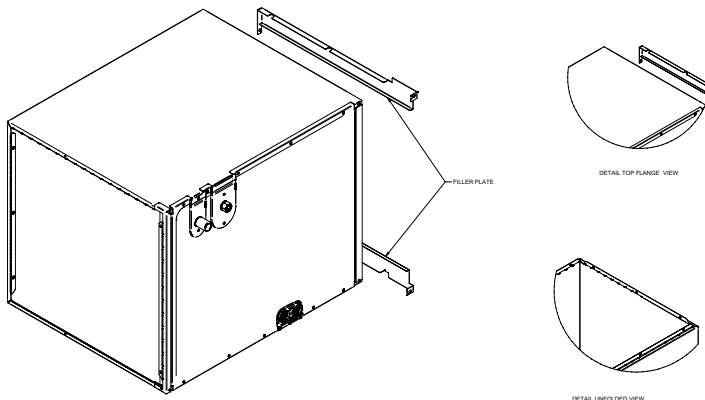


Figure 10
Block-off Plates & Duct Flange Detail

Drain Line and Flue Vent Piping

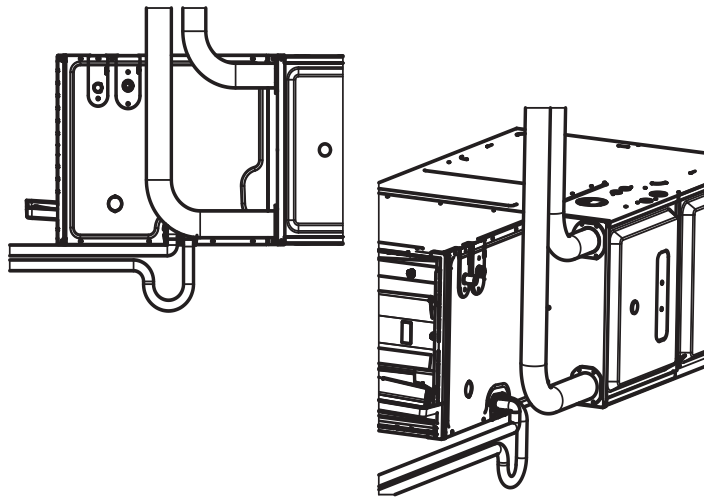


Figure 11
90% Flue Vent & Drain Port

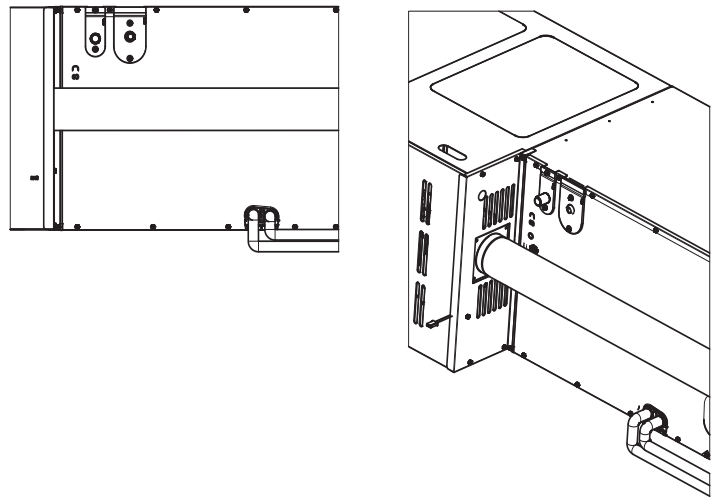


Figure 12
80% Flue Vent & Drain Port

Plastic Drain Pan Application



WARNING

DO NOT USE THE COIL PAN SHIPPED WITH THE UNIT ON OIL FURNACES OR ANY APPLICATION WHERE THE TEMPERATURE OF THE DRAIN PAN MAY EXCEED 300°F. A HIGH TEMPERATURE DRAIN PAN SUCH AS KITS HTP-A, -B, -C AND -D FOR NORMAL CABINET WIDTHS OF 14, 17.5, 21 AND 24.5 INCHES, RESPECTIVELY, SHOULD BE USED FOR APPLICATIONS WHERE THE TEMPERATURE EXCEEDS 300°F AND BELOW 450°F. A FIELD FABRICATED METAL DRAIN PAN CAN ALSO BE USED FOR APPLICATIONS WHERE TEMPERATURE EXCEEDS 300°F. FAILURE TO FOLLOW THIS WARNING MAY RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

NOTE: Water coming from the secondary line means the coil primary drain is plugged and needs immediate attention. Install a trap in the drain line below the bottom of the drain pan. If using a copper drain line, solder a short piece of pipe, minimum 6" length, to the connector before installing a drain fitting.

DO NOT over torque the 3/4" copper connector to the plastic drain connection. Using a wet rag or heatsink material on the short piece to protect the plastic drain pan, complete the drain line installation. Use Figure 7 as a template for typical drain pipe routing. This figure shows how to avoid interference with vent piping.

Return Ductwork

DO NOT TERMINATE THE RETURN DUCTWORK IN AN AREA THAT CAN INTRODUCE TOXIC OR OBJECTIONABLE FUMES/ODORS INTO THE DUCTWORK.

Sealing Along The Panel Gap

IMPORTANT NOTE: To prevent cabinet sweating and airflow leak, apply field provided insulation tape along all joining surfaces between the coil, gas furnace, ductwork and panels. See Figure 13.

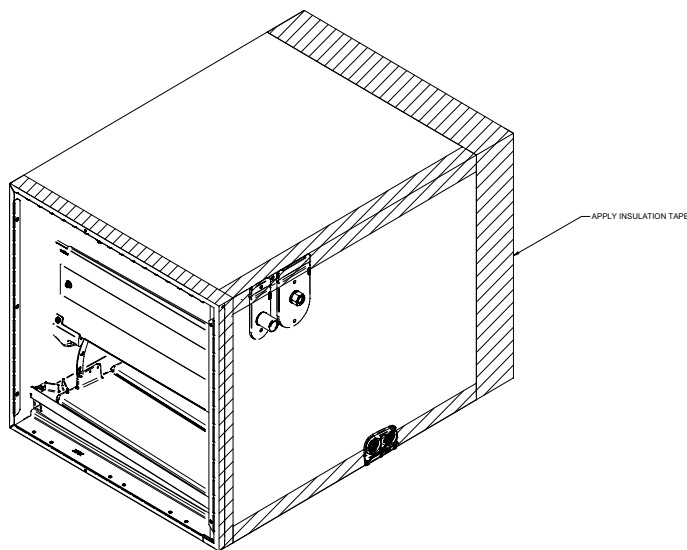


Figure 13
Panel Gap Sealing

Miscellaneous Start-Up Checklist

- . All panels must be in place and secured. For Air Tight application, gasket must be positioned at prescribed locations to achieve 2% leakage.
- . Tubing must be leak free.
- . Condensate line must be trapped and pitched to allow for drainage.
- . Auxiliary drain is installed when necessary and pitched to allow for drainage.

Aluminum Indoor Coil Cleaning **(Qualified Servicer Only)**

This unit is equipped with an aluminum tube evaporator coil. The safest way to clean the evaporator coil is to simply flush the coil with water. This cleaning practice remains as the recommended cleaning method for both copper tube and aluminum tube residential cooling coils.

An alternate cleaning method is to use one of the products listed in the technical publication **TP-109 (shipped in the literature bag with the unit)** to clean the coils. The cleaners listed are the only agents deemed safe and approved for use to clean round tube aluminum coils. TP-109 is available on the web site in Partner Link > Service Toolkit.

NOTE: *Ensure coils are rinsed well after use of any chemical cleaners.*

Top flanges can be bent for ease in installation to the duct flanges.

Air Handler / Coil

Model Number _____

Serial Number _____

ELECTRICAL

Line Voltage (Measure L1 and L2 Voltage)

L1 - L2 _____

Secondary Voltage (Measure Transformer Output Voltage)

R - C _____

Blower Amps _____

Heat Strip 1 - Amps _____

Heat Strip 2 - Amps _____

BLOWER EXTERNAL STATIC PRESSURE

Return Air Static Pressure

IN. W.C. _____

Supply Air Static Pressure

IN. W.C. _____

Total External Static Pressure (Ignoring +/- from the reading above, add total here)

IN. W.C. _____

TEMPERATURES

Return Air Temperature (Dry bulb / Wet bulb)

DB °F _____ WB °F _____

Cooling Supply Air Temperature (Dry bulb / Wet bulb)

DB °F _____ WB °F _____

Heating Supply Air Temperature

DB °F _____

Temperature Rise

DB °F _____

Delta T (Difference between Supply and Return Temperatures)

DB °F _____

Air Handler / Coil - (Inverter Matched)**INVERTER AH / COIL ONLY**

Check EEV and EEV wiring is secure (no adjustment required)

Additional Checks

Check wire routings for any rubbing

Check product for proper draining

Check screw tightness on blower wheel

Check factory wiring and wire connections

Check product for proper clearances as noted by installation instructions

°F to °C formula: (°F - 32) divided by 1.8 = °C

°C to °F formula: (°C multiplied by 1.8) + 32 = °F

THIS PAGE INTENTIONALLY LEFT BLANK

THIS PAGE INTENTIONALLY LEFT BLANK

THIS PAGE INTENTIONALLY LEFT BLANK

CUSTOMER FEEDBACK

We are very interested in all product comments.

Please fill out the feedback form on one of the following links:

Daikin Products: (<https://daikincomfort.com/contact-us>)

Goodman® Brand Products: (<http://www.goodmanmfg.com/about/contact-us>).

Amana® Brand Products: (<http://www.amana-hac.com/about-us/contact-us>).

You can also scan the QR code on the right for the product brand you purchased to be directed to the feedback page.



DAIKIN



GOODMAN® BRAND



AMANA® BRAND

PRODUCT REGISTRATION

Thank you for your recent purchase. Though not required to get the protection of the standard warranty, registering your product is a relatively short process, and entitles you to additional warranty protection, except that failure by California and Quebec residents to register their product does not diminish their warranty rights.

For Product Registration, please register as follows:

Daikin Products: (<https://daikincomfort.com/owner-support/product-registration>).

Goodman® Brand products: (<https://www.goodmanmfg.com/product-registration>).

Amana® Brand products: (<http://www.amana-hac.com/product-registration>).

You can also scan the QR code on the right for the product brand you purchased to be directed to the Product Registration page.



DAIKIN



GOODMAN® BRAND



AMANA® BRAND

NOTE: SPECIFICATIONS AND PERFORMANCE DATA LISTED HEREIN ARE SUBJECT TO CHANGE WITHOUT NOTICE

Visit our websites at **www.goodmanmfg.com** or **amana-hac.com** for information on:

- Products
- Warranties
- Customer Services
- Parts
- Contractor Programs and Training
- Financing Options

19001 Kermier Rd., Waller, TX 77484

© 2020-2021 Goodman Manufacturing Company, L.P.

www.goodmanmfg.com