

HORIZONTAL COILS

INSTALLATION INSTRUCTIONS

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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 individuals meeting the requirements of an "Entry Level Technician", at a minimum, as specified by the Air Conditioning, Heating and Refrigeration Institute (AHRI) may use this information. Attempting to install or repair this unit without such background may result in product 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, electrical characteristics, 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.

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. These regulations may vary by jurisdiction. A certified technician must perform the installation and service of this product. Should you have any questions please contact the local office of the EPA.

Replacement Parts

When reporting shortages or damages, or ordering repair parts, give the complete product model and serial numbers as stamped on the product. 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:

CONSUMER AFFAIRS

GOODMAN MANUFACTURING COMPANY, L.P.

7401 SECURITY WAY

HOUSTON, TEXAS 77040

(713) 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.

Application Information

Coil must be installed downstream (discharge air) of the furnace. Allow a minimum of 18" from the furnace outlet to the coil for adequate transition. This coil is bi-directional coil and can be installed in either the left or right direction. The coil is factory shipped for left-side application. Determine the coil direction by the side that allows the best access.

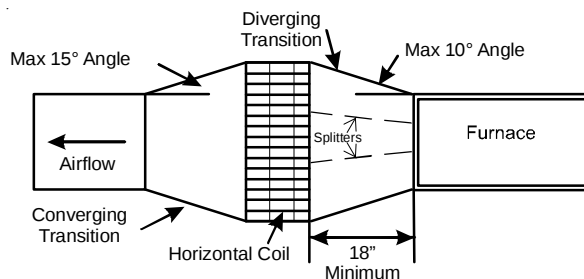


Figure 1



If the coil and furnace combination are not similar in depth and width, a field-supplied transition must be used to center the furnace and coil openings (see Figure 1 above). The coil must not be installed directly onto the furnace outlet (see Figure 2 below).

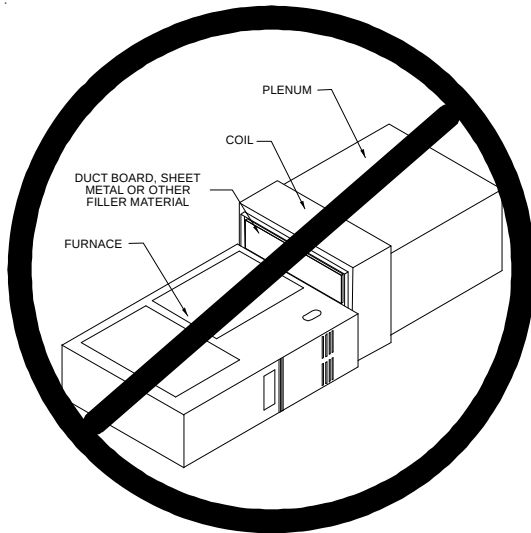


Figure 2

Condensate Drain Piping

In all cooling applications, a secondary drain pan should be provided by the installer and placed under the entire unit with a separate drain line properly sloped and terminated in an area visible to the owner. This secondary drain pan can provide extra protection to the area under the unit should the primary drain plug up and overflow. As expressed in our product warranty, Goodman® 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.

1. Ensure drain pan hole is NOT obstructed.
2. To prevent potential sweating and dripping on to 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 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. It is permissible in this application to use a shallow trap design sometimes referred to as a running trap.

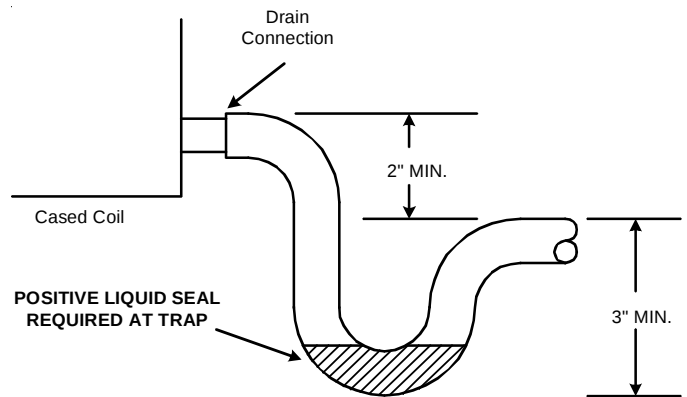


Figure 3

The depth of a running trap should be either 1" or a depth that permits unrestricted condensate drainage without excessive air discharge.

Field experience has shown condensate drain traps with an open vertical Tee between the air handler and the condensate drain trap can improve condensate drainage in some applications, but may cause excessive air discharge out of the open Tee. Goodman® does not prohibit this type of drain but we also do not recommend it due to the resulting air leakage. Regardless of the condensate drain design used, it is the installer's responsibility to ensure the condensate drain system is of sufficient design to ensure proper condensate removal from the coil drain pan.

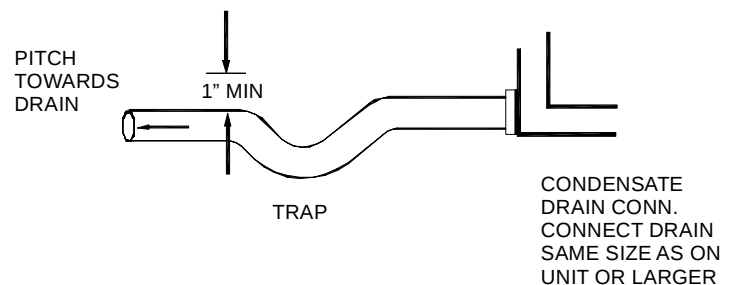


Figure 4



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 field fabricated metal drain pan should be used for these type of applications. Failure to follow this warning may result in property damage and/or personal injury.

Install a trap in the drain line below the bottom of the drain pan (required). 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. Using a wet rag or heatsink material on the short piece to protect plastic drain pan, complete the drain line installation.

Horizontal Coil Water Blow-Off Bracket

This coil is factory shipped with a horizontal water blow-off bracket installed on the left side for "horizontal-left" installation on gas furnaces. If the gas furnace is to be installed horizontal-right, the water blow-off bracket must be moved to the right side. To move the bracket, slide the bracket off the left edge of the drain pan and slide it back on the right (see Figure 5).

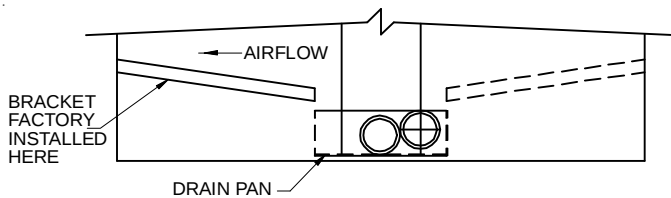


Figure 5

Refrigerant Lines



WARNING

A quenching cloth is strongly recommended to prevent scorching or marring of the equipment finish when welding 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



WARNING

The coil is shipped under pressure. 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.

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 Goodman 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.



CAUTION

To prevent feeder tube damage, hold the distributor body with a 3/4" open end wrench when removing or replacing the 13/16" flare nut.

1. Remove the valve core to allow high pressure tracer gas to escape. No gas indicates a possible leak.
2. Remove the 13/16" flare nut and tailpiece.
3. Unsweat the access fitting on the tailpiece
4. Remove the check piston to verify it is correct and then replace the piston. See piston kit chart in instructions.
5. Use a tube cutter to remove the spin closure on the suction line.
6. Slide the 13/16" flare nut over the tailpiece.
7. Braze tailpiece to the lineset liquid tube.
8. Insert the suction line into the connection, slide the insulation 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" flare nut.
10. Torque the 13/16" flare nut to 7-25 ft-lbs. or tighten 1/6 of a turn. Do not overtighten.



CAUTION

Excessive torque can cause orifices to stick. Use the proper torque settings when tightening orifices.

11. Replace suction line insulation.
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.

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

Quality Makes the Difference!

All of our systems are designed and manufactured with the same high quality standards regardless of size or efficiency. We have designed these units to significantly reduce the most frequent causes of product failure. They are simple to service and forgiving to operate. We use quality materials and components. Finally, every unit is run tested before it leaves the factory. That's why we know. . . **There's No Better Quality.**

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