

UPFLOW/DOWNFLOW COILS

INSTALLATION INSTRUCTIONS

Goodman Manufacturing Company, L.P. © 2005-2006
2550 North Loop West, Suite 400, Houston, TX 77092
www.goodmanmfg.com -or- www.amana-hac.com
P/N: IO-284B Date: June 2006

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

Hazards or unsafe practices could result in property damage, product damage, severe personal injury or death.



CAUTION

Hazards or unsafe practices which may result in property damage, product damage, personal injury or death.



WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.
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" as specified by the Air Conditioning and Refrigeration Institute (ARI) 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. 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:

SERVICE PARTS DEPARTMENT
GOODMAN MANUFACTURING COMPANY, L.P.
2550 NORTH LOOP WEST, SUITE 400
HOUSTON, TEXAS 77092
(713) 861 - 2500

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.

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.

Condensate drain connections are located in the drain pan at the bottom of the coil/enclosure assembly. Use the female (3/4 fpt) threaded fitting that protrudes outside of the enclosure for external connections.

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, now called for by many building codes, has been provided. Pitch the drain line 1/4" per foot to provide free drainage. Install a conden-

sate trap to ensure proper drainage.



CAUTION

If secondary drain is not installed, the secondary access must be plugged.

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.

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.

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 black 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.
5. Remove the tailpiece clamped to the exterior and **slide the 13/16 nut into place.**
6. Braze tailpiece to the line set liquid tube.

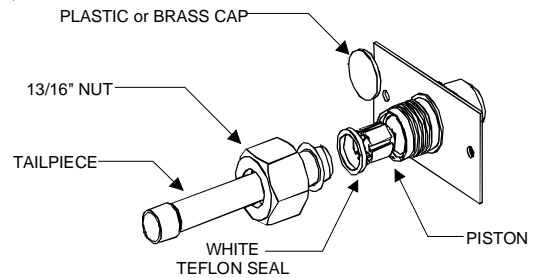


Figure 1

7. 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.
8. **AFTER THE TAILPIECE HAS COOLED**, confirm position of the white Teflon® seal and hand tighten the 13/16 nut.
9. Torque the 13/16 nut to 10-30 ft-lbs. or tighten 1/6 turn.



CAUTION

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

10. Replace suction line grommet and insulation.

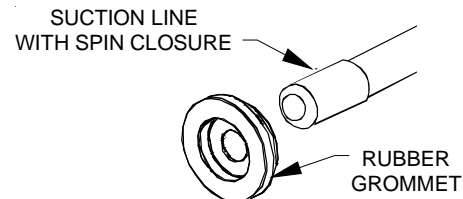


Figure 2

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. Should the plenum and furnace openings be the same size, the filler plates should be removed.

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 nominal widths of 14, 17.5, 21, and 24.5 inches, respectively should be used for this type of application. A field fabricated metal drain pan can also be used for these type of applications. Failure to follow this warning may result in property damage and/or personal injury.

If the uncased coil is to be installed on top of a gas furnace, allow enough space between the top to the furnace and the bottom of the plastic coil drain pan to have a free flow of air.

A minimum of 2.0" distance from the top of the furnace and the bottom of the coil pan is required. The coil should be installed with the line set and drain openings to the front of the furnace.

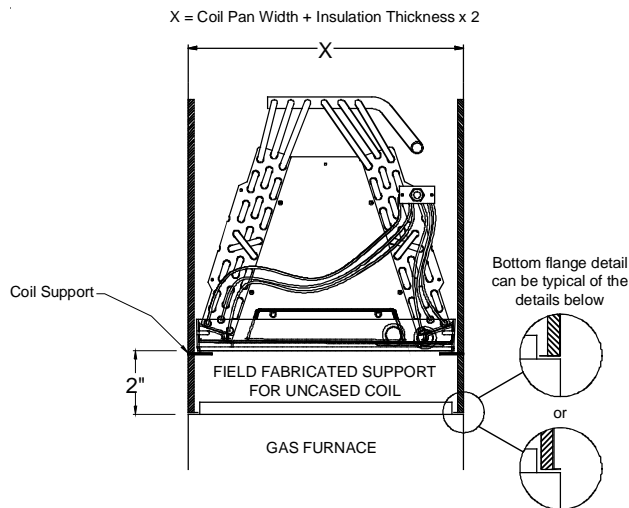


Figure 2

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 approximately 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 the secondary drain 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.

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 (Figure 4). Use Figure 5 as a template for typical drain pipe routing. This figure shows how to avoid interference with vent piping.

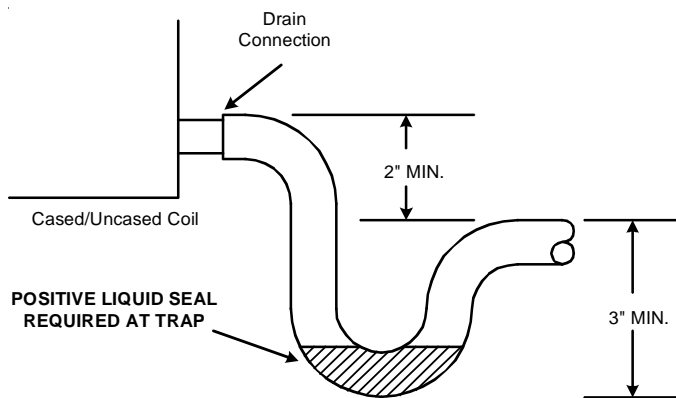


Figure 4

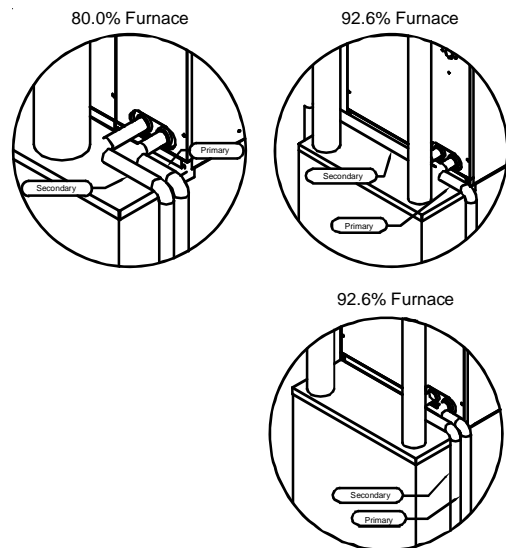


Figure 5

**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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