Common Mistakes Made While Installing a Goodman High Efficiency Furnace

And How to Easily Avoid Them

Common Mistake # 1: Venting

- Some customers install the air intake screen that comes with the furnace on the flue/vent pipe, although it doesn't belong there. *Make sure there isn't a screen installed on the flue/vent pipe* (the one that blows the exhaust outside). The screen should be installed outside the home on the air *intake pipe only*.
- Some customers wrongly install a 2" vent pipe when they need to have a 3" vent pipe. Your furnace will require a 2 or 3 inch vent pipe depending on your furnace size even though all of the furnaces have a 2 inch opening where the vent pipe connects. *Verify that you are using the correct size pipe by checking the tables below.* If the diagram shows your furnace requires a 3 inch pipe, then you will need to use a 3 inch to 2 inch PVC reducer to connect the larger pipe to the furnace. This can be purchased in the plumbing section of a hardware store along with the PVC pipe.

Non -D irect Vent (Single Pipe) Maximum Allowable Length of ∀ent/Flue Pipe (ft) ^{(1) (2)}											
Models (kBtu_Tons)	Pipe Size ⁽⁴⁾	Number of Elbows ^{(3) (5)}									
	(inc.)	2	3	4	5	6	7	8			
045_3	2	68	65	62	59	56	53	50			
070_3	2	68	65	62	59	56	53	50			
070_4	2	46	43	40	Not Recommended						
090_4	2	16	13	10	Not itecommended						
	3	68	65	62	59	56	53	50			
090_5	3	68	65	62	59	56	53	50			
115_5	3	68	65	62	59	56	53	50			

Direct Vent (Dual Pipe) Maximum Allow able Length of Vent/Flue & Combustion Air Intake Pipe (ft)											
Unit Input (Btu)	Vent/Flue/Air Intake Termination	Pipe Size ⁽⁴⁾	Number of Elbow s (1)(2)(3)(5)						0		
		(in.)	2	3	4	5	6		8		
045_3	Standard	2	68	65	62	59	56	53	50		
	Alternate	2	55	52	49	46	43	40	37		
070_3	Standard	2	68	65	62	59	56	53	50		
	Alternate	2	55	52	49	46	43	40	37		
070_4	Standard	2	46	43	40	Not Recommended					
	Alternate	2	33	30	27	Not recommended					
090_4	Standard	3	68	65	62	59	56	53	50		
	Alternate	3	55	52	49	46	43	40	37		
090_5	Standard	3	68	65	62	59	56	53	50		
	Alternate	3	55	52	49	46	43	40	37		
115_5	Standard	3	68	65	62	59	56	53	50		
	Alternate	3	55	52	49	46	43	40	37		

Common Mistake # 2: Condensation Drains

- Every furnace will require two condensation drain connections coming from inside the furnace. If you have completed your installation and notice that you only have one drain line coming from inside the furnace compartment to the drain reservoir, double check how the drains should be connected by referring to the condensation drain connection diagrams on the following pages. <u>Drains must be connected exactly as shown in the diagrams for your furnace configuration for the furnace to operate.</u> If the drains aren't connected properly, usually the furnace will run for about 20 minutes before shutting down.
- Some customers install the condensation drain lines before removing the rubber plug from the "front cover drain port". The rubber plug there (usually black) has a hole in the middle of it so some customers assume that it's not a plug. Just make sure that this plug is removed to allow for normal condensation drainage.
- There is also a 90 degree vent pipe elbow (diagram calls it "rubber elbow" although it is actually plastic) connected to the vent motor in the furnace's burner compartment. This 90 degree elbow has a drain spout coming off the bottom of it (called "rubber elbow drain port" in diagram). This is likely where one of your drain lines will connect. For most models, the bottom of this drain port needs to be cut off ¼ inch from the bottom before you can attach the next drain piece to it ("tube 1" in diagram).
- Some customer's forget to fill the drain reservoir with water. The manual calls this the drain trap "purge". Simply fill the drain reservoir with water until water overflows into the drain line. You only need to do this once upon initial startup.

Common Mistake # 3: Electrical Connection

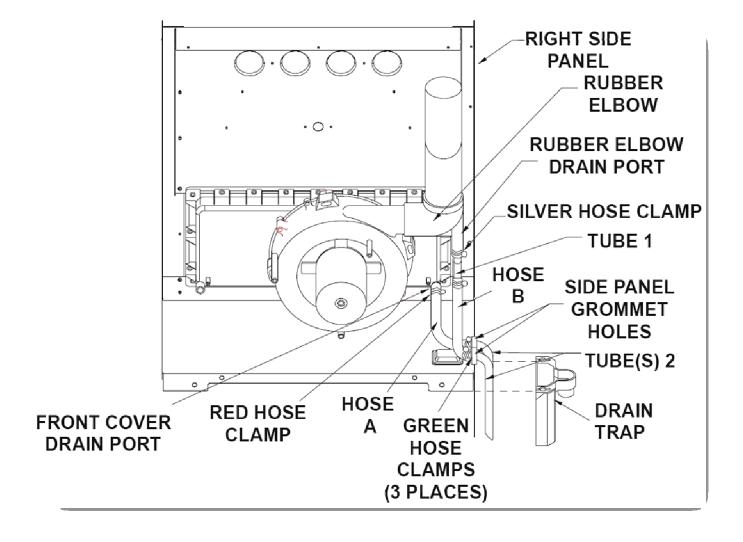
• Some customers forget to install a properly grounded ground line to your furnace. The supply voltage line to your furnace must have three conductors total: hot, neutral and ground. *Your furnace will not operate if there isn't a ground wire properly installed.* Make sure the ground line is connected back to your home's electrical service panel or to a cold water line and that the line polarity is correct (that the black and white wires aren't switched).

Common Mistake # 4: Gas/Propane Supply

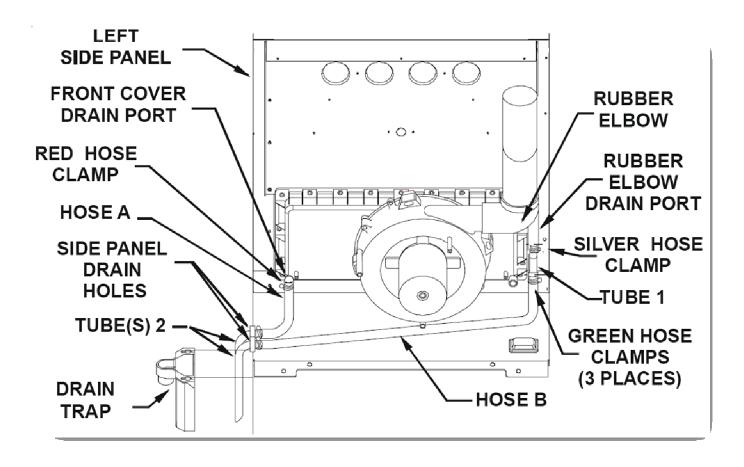
• Even though your furnace has a ½ inch connection for the gas supply line, your gas line may need to be larger on its way to the furnace. If you have additional appliances that use gas/propane or if your pipe is running a long distance, please refer to the gas/propane line size diagram in your installation manual. Often a correct installation will have a ¾ inch gas line running up near to the furnace then reduced down to ½ inch before it enters the furnace.

Condensate Drain Connection Diagrams

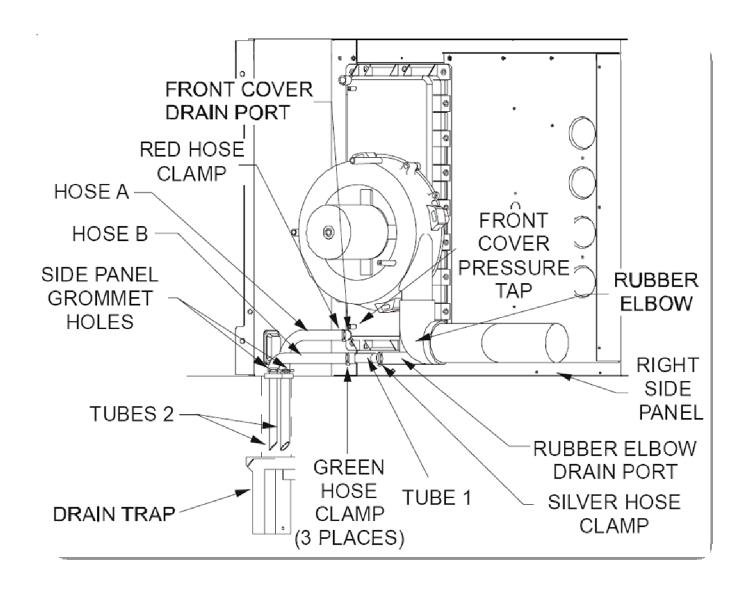
Upflow/Downflow "Standard" - Right Side Drain Connection



Upflow/Downflow "Standard" - Left Side Drain Connection



Horizontal - Right Side Down Drain Connection



Horizontal – Left Side Down Drain Connection

