

# INSTALLATION MANUAL

## G\*FD SERIES FULL-CASED "A" COILS UPFLOW/COUNTERFLOW/HORIZONTAL COOLING/HEAT PUMP

### MODELS:

ORIFICE METERING DEVICE - G\*FD024S14 - G\*FD060S24  
FACTORY INSTALLED TXV - G\*FD024S14T - G\*FD060S24T



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## SECTION I: SAFETY



This is a safety alert symbol. When you see this symbol on labels or in manuals, be alert to the potential for personal injury.

Understand and pay particular attention to the signal words **DANGER**, **WARNING**, or **CAUTION**.

**DANGER** indicates an **imminently** hazardous situation, which, if not avoided, **will result in death or serious injury**.

**WARNING** indicates a **potentially** hazardous situation, which, if not avoided, **could result in death or serious injury**.

**CAUTION** indicated a potentially hazardous situation, which, if not avoided may result in minor or moderate injury. It is also used to alert against unsafe practices and hazards involving only property damage.

### WARNING

*Improper installation may create a condition where the operation of the product could cause personal injury or property damage.*

*Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual for assistance or additional information, consult a qualified installer or service agency.*

### CAUTION

*This product must be installed in strict compliance with the enclosed installation instructions and any applicable local, state, and national codes including, but not limited to building, electrical, and mechanical codes.*

### WARNING

*The furnace area must not be used as a broom closet or for any other storage purposes, as a fire hazard may be created. Never store items such as the following on, near or in contact with the furnace.*

1. Spray or aerosol cans, rags, brooms, dust mops, vacuum cleaners or other cleaning tools.
2. Soap powders, bleaches, waxes or other Cleaning compounds; plastic items or containers; gasoline, kerosene, cigarette lighter fluid, dry cleaning fluids or other volatile fluid.
3. Paint thinners and other painting compounds.
4. Paper bags, boxes or other paper products

*Never operate the furnace with the blower door removed. To do so could result in serious personal injury and/or equipment damage.*

## SECTION II: GENERAL INFORMATION

This instruction covers the installation of the following coils with 80 or 90 AFUE furnaces or N1AH and N1VS air moving systems.

The coils have sweat connect fittings. All sweat coils are shipped with a helium holding charge.

## SECTION III: INSPECTION

As soon as a coil is received, it should be inspected for possible damage during transit. If damage is evident, the extent of the damage should be noted on the carrier's delivery receipt. A separate request for inspection by the carrier's agent should be made in writing. See Local Distributor for more information.

## SECTION IV: CLEARANCES

Clearance must be provided for:

1. Refrigerant piping and connections.
2. Maintenance and servicing access.
3. Condensate drain line.
4. Filter removal.

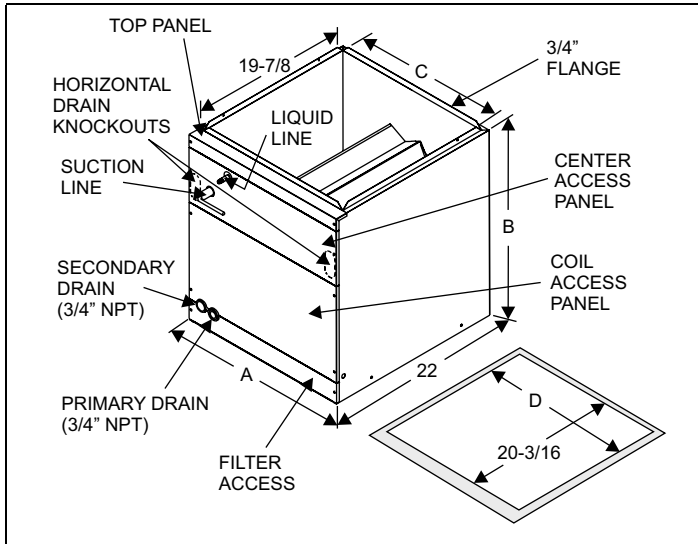


FIGURE 1: Coil Dimensions

Model	A	B	C	D	Refrigerant Line Size <sup>1</sup>		Factory Installed Metering Device
					Liquid	Vapor	
G2FD024S(H)14	14-1/2	23	13-3/8	13-1/2	3/8	5/8	61
G2FD024H14T	14-1/2	23	13-3/8	13-1/2	3/8	5/8	1TV0701
G2FD024(S,H)17	17-1/2	23	16-3/8	16-1/2	3/8	5/8	61
G2FD024H17T	17-1/2	23	16-3/8	16-1/2	3/8	5/8	1TV0701
G2FD035(S,H)14	14-1/2	23	13-3/8	13-1/2	3/8	5/8	65
G2FD035H14T	14-1/2	23	13-3/8	13-1/2	3/8	5/8	1TV0701
G2FD030(S,H)17	17-1/2	23	16-3/8	16-1/2	3/8	5/8	65
G2FD030H17T	17-1/2	23	16-3/8	16-1/2	3/8	5/8	1TV0701
G2FD036(S,H)17	17-1/2	28	16-3/8	16-1/2	3/8	3/4	75
G2FD036H17T	17-1/2	28	16-3/8	16-1/2	3/8	3/4	1TV0702
G2FD036(S,H)21	21	23	19-7/8	20	3/8	3/4	75
G2FD036H21T	21	23	19-7/8	20	3/8	3/4	1TV0702
G2FD042(S,H)21	21	23	19-7/8	20	3/8	3/4	78
G2FD042H21T	21	23	19-7/8	20	3/8	3/4	1TV0702
G2FD046(S,H)17	17-1/2	28	16-3/8	16-1/2	3/8	3/4	78
G2FD046H17T	17-1/2	28	16-3/8	16-1/2	3/8	3/4	1TV0702
G2FD048(S,H)21	21	28	19-7/8	20	3/8	7/8	84
G2FD048H21T	21	28	19-7/8	20	3/8	7/8	1TV0703
G2FD048(S,H)24	24-1/2	28	23-3/8	23-1/2	3/8	7/8	84
G2FD048H24T	24-1/2	28	23-3/8	23-1/2	3/8	7/8	1TV0703
G2FD060(S,H)24	24-1/2	28	23-3/8	23-1/2	3/8	7/8	90
G2FD060H24T	24-1/2	28	23-3/8	23-1/2	3/8	7/8	1TV0703
G2FD061H24	24-1/2	33	23-3/8	23-1/2	3/8	7/8	90

(H) = Models available with a factory installed horizontal drain pan option.

Note: G2FD061H24 available only with a factory installed horizontal drain pan.

1. Refrigerant line sizes may require larger lines for extended line lengths. See York bulletin #690.01-AD1V for details.

## SECTION V: LIMITATIONS

These coils should be installed in accordance with all national and local safety codes. Check the Table 1 & 2 for operating limitations.

TABLE 1: Entering Air Temperature Limits

WET BULB TEMP. (°F)		DRY BULB TEMP. (°F)	
MIN.	MAX.	MIN.	MAX.
57	72	65	95

TABLE 2: Coil Air Flow Limits

Coil Size	Outdoor Unit Tons	CFM Limits	
		Minimum	Maximum
024	1-1/2	525	675
	2	700	900
030	2	700	900
	2-1/2	875	1125
035	3	1050	1260
036	2-1/2	875	1125
	3	1050	1350
042	3	1050	1350
	3-1/2	1225	1575
046	3	1050	1350
	3-1/2	1225	1575
	4	1400	1680
048	3	1050	1350
	3-1/2	1225	1575
	4	1400	1800
060	4	1600	1800
	5	1750	2250

## SECTION VI: COIL METERING DEVICES

This coil will have a metering device installed at the factory.

**If the model number is of the following format:**

G2FDXXX(S,H)XXT - This coil will have a TXV metering device installed at the factory. Please refer to the TXV Metering Device section for installation notes.

**If the model number is of the following model series:**

G2FDXXX(S,H)XX - The coil will have an orifice installed in the distributor housing. Please refer to the Orifice Metering Device section for selection & installation notes.

### TXV METERING DEVICE

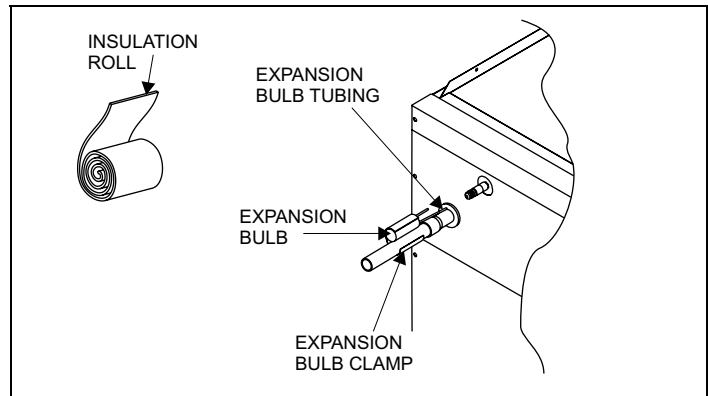


FIGURE 2: TXV Bulb Installation

Please refer to Figure 1 to verify which TXV is installed in this coil and that this is a valid system match for the AC or HP unit installed.

The TXV is fully brazed into the coil assembly of this coil at the factory. The temperature sensing bulb will need to be attached to the coil suction header line external to the cabinet after the line set is brazed to the coil.

- Make sure the TXV bulb is outside of the cabinet. Excess tubing should remain inside the cabinet.
- Take caution not to apply high temperatures to the TXV assembly or equalizer line while brazing.
- Attach field line sets and braze to coil connections. Replace access panels & secure.
- Secure the TXV bulb to the suction line with the clamp provided. Choose a horizontal location as close to the cabinet as possible, but not directly on the brazed connection joint. Refer to Figure 2.
- The bulb should be in direct contact with the coil suction line along the length of the bulb.
- If the suction line is 3/4" or 5/8" diameter - position the bulb near the top of the copper tube as shown. If the tube is 7/8" diameter - position the bulb near the bottom of the tube. Refer to Figure 3.
- Wrap the clamp, bulb & line securely with insulation provided.

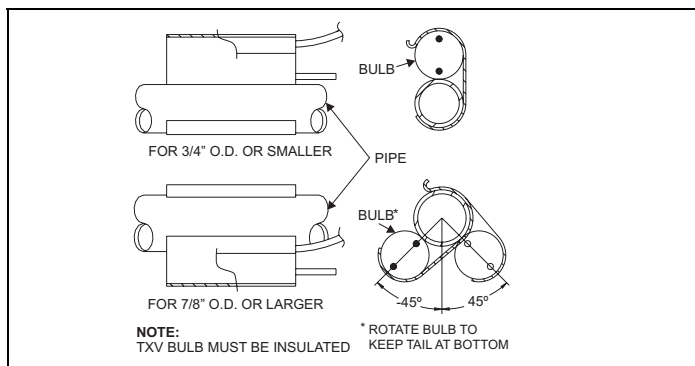


FIGURE 3: Bulb Location

### Orifice Metering Device

All non-TXV coils will have an orifice installed in the fitting between the liquid line connection and distributor. See Figure 4. The factory installed orifice is identified on the unit data plate, also listed in Figure 1.

The orifice that is shipped with the coil is based on the "most sold" combination, but it may have to be changed, depending on the capacity and efficiency of the outdoor unit, elevation differences of the indoor and outdoor sections, and/or long total line lengths. An additional orifice is shipped with the outdoor unit in the literature packet for most requirements. Other sizes must be ordered from the parts department if required. See outdoor unit technical data sheet for approved combinations.

### Orifice Installation

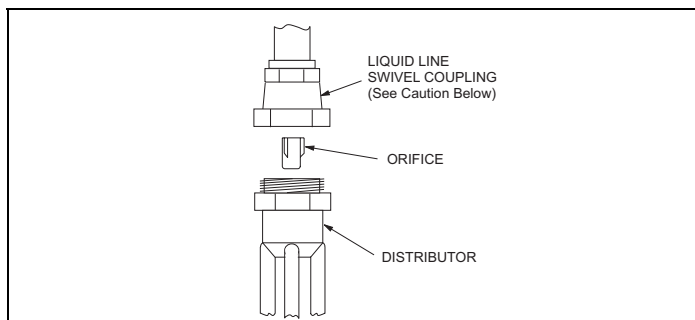


FIGURE 4: Orifice Installation

A standard orifice is pre-installed in the unit and is marked on the unit data plate. Refer to the outdoor unit instruction and application data to determine the proper orifice required for your particular system combination and piping conditions.

If the orifice sizes match, nothing further is required and the refrigerant lines may be connected per the outdoor unit instruction. However, if another orifice should be used, change the orifice in the coil with the following procedure:

### WARNING

*Coil is under 30 PSIG inert gas pressure. Relieve pressure from schrader valve on liquid line side.*

### CAUTION

*This fitting is a right-hand thread, turn counter-clockwise to remove.*

1. Remove the liquid line fitting using 3/4" wrenches, and remove the pre-installed orifice with a small diameter wire or paper clip.
2. Remove the new orifice from the packet and verify that it is the correct number required. Install this orifice with the rounded end toward the coil and the flat end outward per Figure 9.
3. Thread the liquid line fitting back in place on the coil. Tighten the fitting hand tight and turn an additional 1/8 turn to seal.

### CAUTION

*Use 3/4" wrenches to turn fittings. Using pliers will cause internal damage to the fitting.*

**NOTE:** This procedure should be done within 2 minutes to keep air and contaminants from entering the coil. If the orifice cannot be replaced and the coil resealed within 2 minutes, then it should be temporarily closed to air using masking tape (short term delay) or plugging/ capping (long term delay). There is no need to purge the coil if this procedure is done within the time limit.

4. Mark the data plate with the orifice installed.

## SECTION VII: COIL INSTALLATION

### FURNACE ASSEMBLY - UPFLOW

These coils are factory shipped for installation in either upflow or downflow applications with no conversion.

1. Position the coil casing over the furnace opening as shown in Figure 3 (Upflow). For G2FD046 only, remove drain pan extension from top flange.
2. Place the ductwork over the coil casing flange and secure. See sections on "Orifice Selection", "Refrigerant Line Connections" and "Condensate Drain Connections".

**NOTE:** When installing this coil with an oil furnace, a minimum of six inches clearance should be maintained from the top of the heat exchanger.

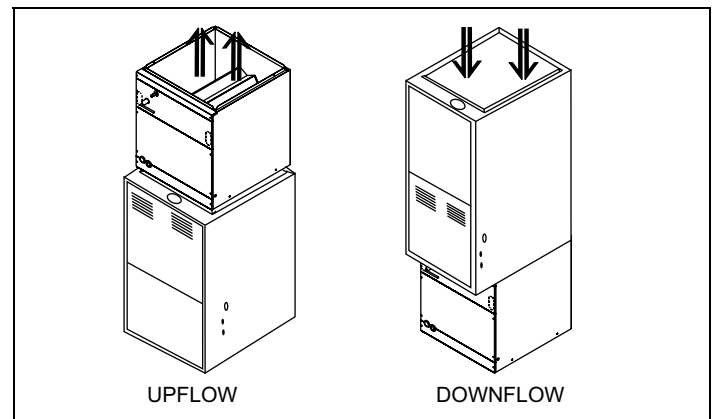


FIGURE 5: Vertical Applications

## FURNACE ASSEMBLY - DOWNFLOW

These coils are factory shipped for installation in either upflow or downflow applications with some conversion.

If the coil is used with a furnace of a different size, use a 45° transition to allow proper air distribution through the coil.

1. Position the coil casing over the furnace opening as shown in Figure 5 (Downflow). For G2FD046 only, remove drain pan extension from top flange.
2. Place furnace on top of coil casing attaching the duct flanges to the supply air end of the furnace. For furnaces with matching cabinet widths, it will be necessary to form furnace flanges up.
3. See sections on "Orifice Selection", "Refrigerant Line Connections" and "Condensate Drain Connections".

When this coil is used in a downflow application, a 1DB0311BK downflow baffle kit accessory may need to be installed to prevent potential condensate blow off. Each kit consists of 10 pieces that make up 5 kits. Two (2) baffles should be installed on each coil.

If drain pan baffles are installed - they must be removed prior to installing downflow baffles. See Figure 6.

### CAUTION

*Baffles should be installed prior to installation of the coil.*

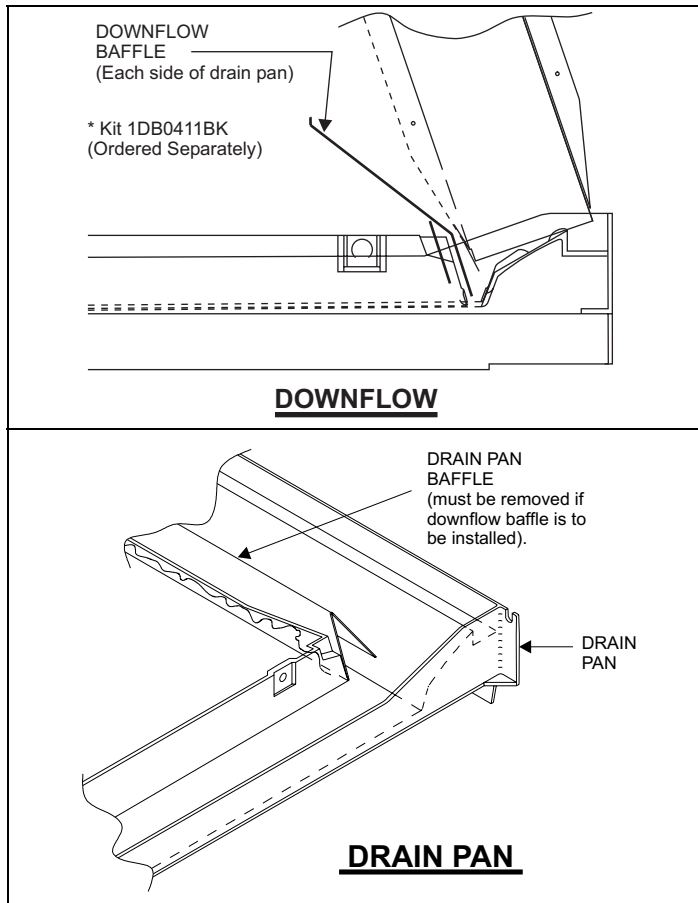


FIGURE 6: Baffles

The following coils have the drain pan baffles factory installed

G2FD048S(H)24(T)	G2FD036S(H)21(T)
G2FD060S(H)24(T)	G2FD042S(H)21(T)
G2FD061(H)24(T)	G2FD048S(H)21(T)
	G2FD046S(H)17(T)

## FURNACE ASSEMBLY - HORIZONTAL

These coils are supplied ready to be installed in a right hand horizontal position when a horizontal pan is factory installed. If unit requires field installation of a horizontal pan or requires left hand positioning of a factory installed horizontal drain pan, the unit must have the pan installed in the correct position. If the coil does not have a factory installed horizontal drain pan, this requires the use of either a 1HP0623 Kit for all 23-inch tall units, or 1HP0628 for all 28-inch tall units (Refer to Figure 7).

NOTE: Models bearing an "H" indicates the unit has horizontal drain pan factory installed in position "A" (Refer to Figure 7).

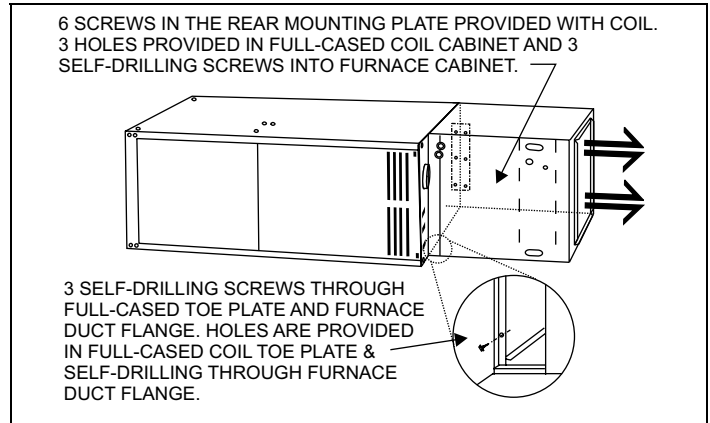


FIGURE 7: Horizontal Left or Right Application - (Right Shown)

To install the horizontal drain pan, perform the following steps:

1. Remove coil access panel, center access panel and top panel.

NOTE: Installation of the horizontal drain pan must be made before installation to the duct system and brazing of the refrigerant connections.

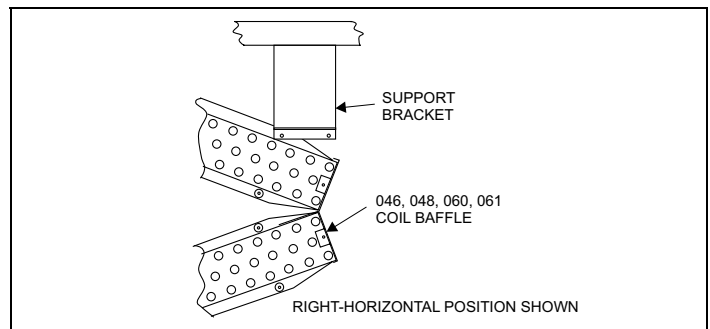


FIGURE 8: Horizontal Application Baffle/Support

To rotate baffle for left-hand airflow, remove the coil assembly from the unit (remove front two screws holding the coil support bracket and the two screws holding the drain pan). For G2FD060/061, remove both end sheet baffles. Remove four screws in coil baffle and remove the coil baffle and rotate ends.

Re-secure the baffles and reinstall the coil assembly ensuring that the rear of the drain pan is secured under the back flange of the unit. Reinstall the coil support bracket on the right side of the coil.

### CAUTION

*Models G2FD046S17 & G2FD048, 060, 061 have a coil baffle and support bracket factory installed for right hand horizontal application (Refer to Figure 8. For left hand applications the coil support bracket must be moved to the right side of the coil, and the coil baffle must be rotated to avoid water blow-off. G2FD046 only has a water guard attached to the rear of the coil. For left hand position, the water guard should be repositioned to the other side.*

2. Horizontal drain pans have 4 plugged drains. Remove plugs from only the connections being used.
3. Use removed plug to plug primary of upflow drain pan.

NOTE: If this step is overlooked, it can lead to a water problem later. Position horizontal pan, as required in either "A" or "B" position as shown in Figure 9, locking it into the vertical drain pan as shown.

4. Attach horizontal pan with 2 screws provided in the coil. Insure the drain pan is laying flat against the insulation of the cabinet.
5. Remove the correct oval knockout for the opening for the horizontal drain connections. For G2FD046 only, install horizontal drain pan extension as shown above.
6. Re-position and replace access panels.

NOTE: Attach tie plate to rear of the coil and to furnace as shown in Figure 5.

7. See sections on "Orifice Selection", "Refrigerant Line Connections" and "Condensate Drain Connections".

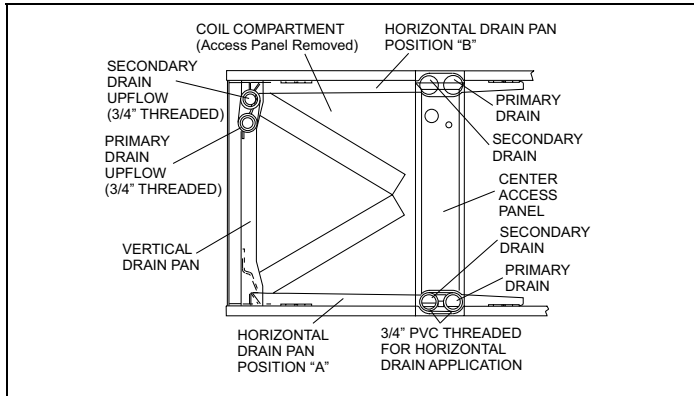


FIGURE 9: Horizontal Drain Pan

## SECTION VIII: SECTION VIII DUCT CONNECTIONS

Air supply and return may be handled in one of several ways best suited to the installation. Upflow, horizontal or downflow applications may be used.

The vast majority of problems encountered with combination heating and cooling systems can be linked to improperly designed or installed duct systems. It is therefore highly important to the success of an installation that the duct system be properly designed and installed.

Use flexible duct collars to minimize the transmission of vibration/noise into the conditioned space.

### WARNING

*Use 1/2" screws to connect ductwork to unit. If pilot holes are drilled, drill only through field duct and unit bottom flange.*

Where return air duct is short, or where sound is liable to be a problem, sound absorbing glass fiber should be used inside the duct. Insulation of duct work is a must where it runs through an unheated space during the heating season or through an uncooled space during the cooling season. The use of a vapor barrier is recommended to prevent absorption of moisture from the surrounding air into the insulation. The supply air duct should be properly sized by use of a transition to match unit opening. All ducts should be suspended using flexible hangers and never fastened directly to the structure. Duct work should be fabricated and installed in accordance with local and/or national codes. This includes the standards of the National Fire Protection Association for Installation of Air-Conditioning and Ventilating Systems, NFPA No. 90B.

### CAUTION

*Equipment should never be operated without filters.*

## SECTION IX: CONDENSATE DRAIN CONNECTIONS

All drain lines should be pitched away from unit drain pan and should be no smaller than the coil drain connection.

Route the drain line so that it doesn't interfere with accessibility to the coil, furnace, air handling system or filter and will not be exposed to freezing temperatures.

Instruct the owner that the evaporator coil drain pan should be inspected and cleaned regularly to prevent odors and assure proper drainage.

NOTE: When the coil is installed in an attic or above a finished ceiling, an auxiliary drain pan must be provided under the coil as is specified by most local building codes.

Coils should be installed level or pitched slightly toward the drain end. Suggested pitch should not exceed 1/4-inch per foot of coil.

If the coil is provided with a secondary drain it should be piped to a location that will give the occupant a visual warning that the primary drain is clogged. If the secondary drain is not used it must be capped.

### CAUTION

*Threaded drain connections should be hand tightened, plus no more than 1 turn.*

**DO NOT** use Teflon™ tape, "pipe dope", or other sealants. The use of a sealant may cause damage and premature failure of the drain pan.

NOTE: If the coil is installed in a draw-thru application (modular air handler), it is recommended to trap the primary and secondary drain line. If the secondary drain line is not used, it must be capped.

## SECTION X: REFRIGERANT LINE CONNECTION

### WARNING

*Coil is under 30 PSIG inert gas pressure. Relieve pressure from schrader valve on liquid line side. Stub adapters are available to adapt sweat connections to quick connections. Connect lines as follows*

See the outdoor unit installation instructions for the procedure to install field supplied tubing for systems with sweat fittings. Stub adapters are available to adapt sweat connections to quick connections.

Connect lines as follows:

NOTE: Route the refrigerant lines to the coil in a manner that will not obstruct service access to the coil, air handling system, furnace flue or filter.

1. Suction line connections are made outside the center access panel. Cut off the suction line as close to the end as possible. Center access panel can be removed and slid over the suction line during brazing.
2. Cut the liquid line at the groove in the bell, removing the schrader fitting.
3. Braze the suction line. Re-attach the center access panel, if it has been removed.
4. Braze the liquid line.
5. Install supplied grommets on both the suction and liquid lines to complete the air seal.

Lines should be sound isolated by using appropriate hangers or strapping.

When field supplied lines are used be sure to insulate the liquid line under any conditions where the ambient temperature is greater than the liquid line temperature.

## SECTION XI: COIL CLEANING

If the coil needs to be cleaned, it should be washed with Calgon Coilclean (mix one part Coilclean to seven parts water). Allow solution to remain on coil for 30 minutes before rinsing with clean water. Solution should not be permitted to come in contact with painted surfaces.

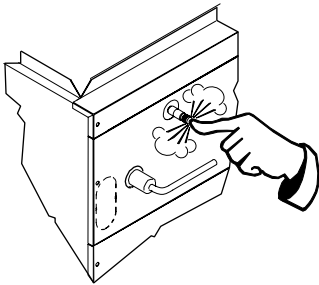
**NOTES**



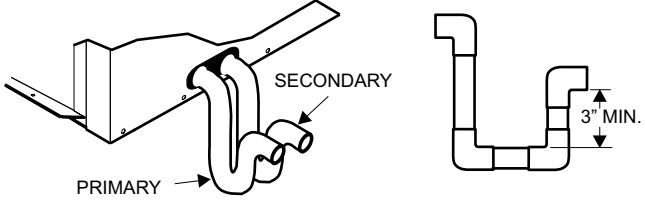
INSTALLATION CHECK LIST

Recommended Installation Procedures

Was the coil still under pressure when received?

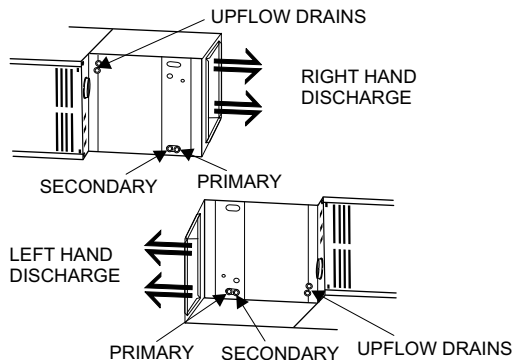


Were the primary and secondary drains trapped correctly?



Check SECTION VI -  
Was the correct orifice size installed per the outdoor unit instruction?  
Was the TXV bulb installed correctly? Refer to Page 2 & 3.

Were all drains trapped or plugged?



FOR G2FD046 ONLY

