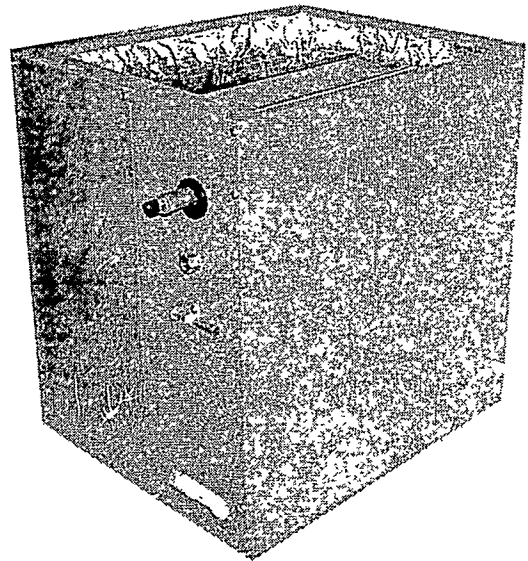
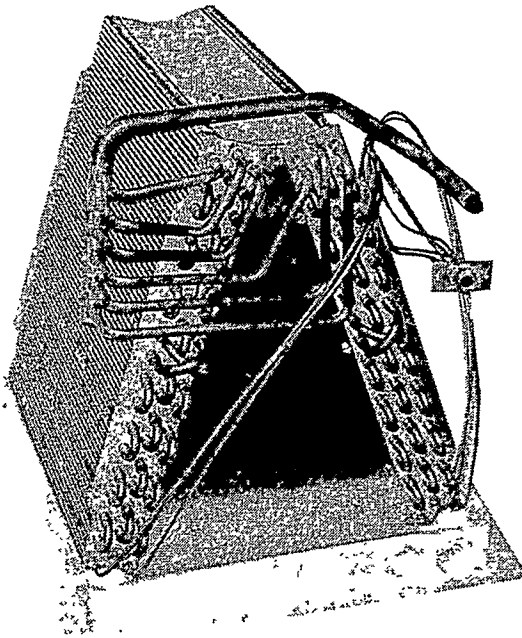


# INSTALLATION & OPERATING INSTRUCTIONS FOR UPFLOW/DOWNFLOW COILS



All information contained herein is subject to change without notice.

10-236

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## INTRODUCTION

### Checking Product Received

Upon receiving the product, inspect it for damage from shipment. Claims for damage, either shipping or concealed, should be filed immediately with the shipping company. Check the product to determine if it is correct. In the event an incorrect product is shipped, it must be returned to the supplier and must NOT be installed. The manufacturer assumes no responsibility for installation of incorrectly shipped products.

### Before Beginning Installation

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.

## REPLACEMENT PARTS

### Ordering 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

## IMPORTANT SAFETY INSTRUCTIONS

### Recognize Safety Symbols, Words, and Labels

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

 <b>DANGER</b> IMMEDIATE HAZARDS WHICH <u>WILL</u> RESULT IN PROPERTY DAMAGE, PRODUCT DAMAGE, SEVERE PERSONAL INJURY AND/OR DEATH.
 <b>WARNING</b> HAZARDS OR UNSAFE PRACTICES <u>COULD</u> RESULT IN PROPERTY DAMAGE, PRODUCT DAMAGE, SEVERE PERSONAL INJURY AND/OR DEATH.
 <b>CAUTION</b> HAZARDS OR UNSAFE PRACTICES WHICH <u>MAY</u> RESULT IN PROPERTY DAMAGE, PRODUCT DAMAGE, AND/OR PERSONAL INJURY.

## CODES AND REGULATIONS

"The United States Environmental Protection Agency ("EPA") has issued various regulations regarding the introduction and disposal of refrigerants in this unit. Failure to follow these regulations may harm the environment and can lead to the imposition of substantial fines. Because these regulations may vary due to the passage of new laws we suggest that any work on this unit be done by a certified technician. Should you have any questions please contact the local office of the EPA."

This product is designed and manufactured to permit installation in accordance with national codes. It is the installer's responsibility to install this unit in accordance with national codes and/or prevailing local codes and regulations.

## APPLICATION INFORMATION

1. Coil must be installed upstream (discharge air) of the furnace.
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.

Condensate drain connections are located in the drain pan at the bottom of the coil/enclosure assembly. The threaded fitting protrudes outside of the enclosure for connecting externally.

1. Drain hole in the drain pan must be clear.
2. Insulate drain line to prevent sweating and dripping. Use armaflex or similar material.

A Secondary Condensate Drain Connection, now called for by many building codes, has been provided. The drain line is to be pitched 1/4" per foot to provide free drainage. A condensate trap should be installed to insure proper drainage.

## SPECIAL INSTRUCTIONS

This indoor coil contains the flowrate distributor assembly, which consists of a flare nut, distributor body, copper tubes feeding the coil, and the internal flow check piston. It is essential that the indoor and outdoor sections be properly matched. When matching the indoor coil with other than the matching outdoor section, the flow check piston in the indoor section should be

changed to match the outdoor section to obtain rated performance as specified in our sales specification sheets. (See Piston Kit Chart - PKC-00S).

A piston size that is too small will cause starving and one that is too large will cause flooding. If a combination is used that requires a piston size change, the piston in the distributor on the indoor coil before installing the coil and charging the system following the procedure shown below.

1. Using a back-up wrench on the flare fitting, remove the 3/8" flare nut.
2. Using a back-up wrench on the distributor body, remove the 3/8" flare fitting and Teflon seal.
3. Using the wire provided with replacement pistons, run wire (hooked end) through hole in piston.
4. Hook nose end of piston and lift gently from distributor body.
5. Referring to the Piston Kit Chart, replace piston with one of proper size.
6. Install piston with Teflon seal end of piston in distributor first. Do not force piston into distributor.

**NOTE:** With piston in distributor, seal end should be down and should not be seen looking in end of distributor. Piston must be free to rotate and move up and down. Make sure piston is free to move in distributor body.

7. Replace 3/8" flare fitting with Teflon seal using back-up wrench on distributor body. Torque fitting with 8 to 10 ft. lb. Do not over tighten.
8. Replace 3/8" flare nut using back-up wrench on flare fitting. Torque 3/8" flare nut with 40 to 45 ft. lb.
9. Remove old piston size label from outside of distributor body.
10. Remove new piston size label from the poly bag the new piston came in and install new size label on outside of distributor.
11. Check fittings for leaks after installation, and make sure evacuation and charging of low side are complete.

## TXV MODELS

### Installation Note

The TXV bulb is permanently secured at the factory. To prevent damage, remove the bulb when welding and attach/insulate to the suction line after welding. For the majority of installation, no adjustment to the TXV setting is required. However, if the measured superheat is less than 8o or greater than 20o an adjustment is required. The adjustment stem is at the base of the valve (opposite the diaphragm) under a flair nut. To increase the superheat when measured at the condenser base valve, turn the stem clockwise (↻). Similarly to decrease the superheat, turn the stem counterclockwise (↺). Use a 1/4" refrigeration wrench for this function.

### NOTE FOR QUICK CONNECT COILS INSTALLATION OF PRECHARGED SYSTEM

A brief description follows, for specific instructions refer to the Condensing Unit's Installation and Operating Instructions.

1. Connect lines to evaporator coil before connecting to the condensing units.
  - A. Form tubing so it properly aligns with coil connections.
  - B. Remove plugs and caps from connections.

- C. Check to be sure mating surfaces are clean.
  - D. Lubricate rubber seal with clean refrigerant oil and thread couplings together by hand to be sure they are not cross threaded.
  - E. Tighten connections using backup wrench on evaporator quick connect fitting until coupling bottoms; then tighten 1/6 turn to complete knife edge seal.
2. Connect lines to condensing unit in the same manner as to evaporator coil. Observe same precautions.
  3. After making all connections and opening valves, check all piping for leaks.

## PLASTIC DRAIN PAN APPLICATION

### CAUTION

DO NOT USE ANY DRAIN PAN OTHER THAN ONE LABELED AS PART NO. BT50765XX WHITE COLOR DRAIN PAN ON AN UPFLOW/DOWNFLOW COIL WHICH WOULD BE APPLIED ON TOP OF A GAS FURNACE.

### CAUTION

DO NOT USE BLACK DRAIN PANS FROM AIRHANDLERS WITH MARKINGS -XXB BECAUSE IT IS MADE OF A LOWER TEMPERATURE PLASTIC NOT DESIGNED FOR PLACING ON TOP OF GAS FURNACES.

If you install your cased/uncased coil on top of a gas furnace the following is required:

### WARNING

EXCESSIVE HEAT MAY DAMAGE DRAIN PAN AND RESULT IN STRUCTURAL DAMAGE TO BUILDING.

Allow enough space between the top to the furnace heat exchanger and the bottom of the plastic coil drain pan to have a free flow of air.

There should be a minimum of 2.0" distance from the sectional heat exchanger and the bottom of the pan. See figure 1.

### UNCASED COIL INSTALLATION RECOMMENDATIONS:

Minimum distance between furnace and coil pan: 2".

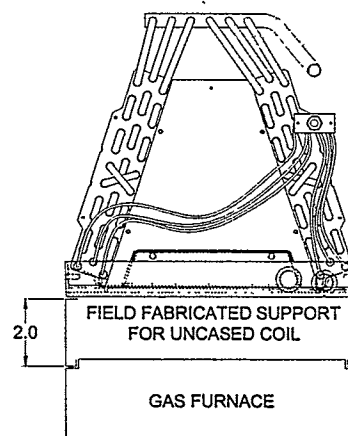
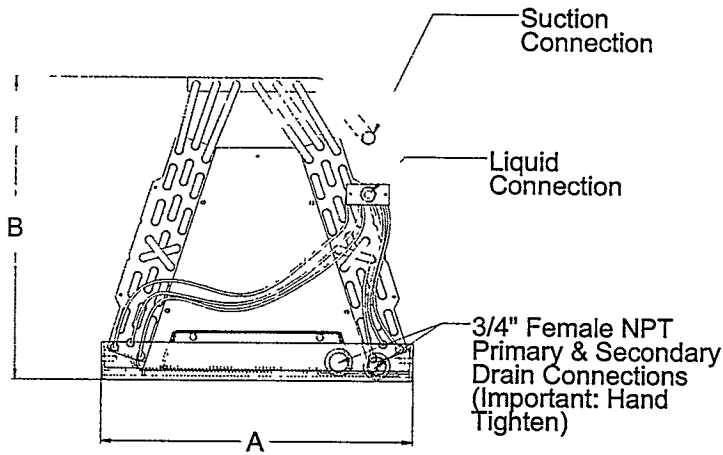
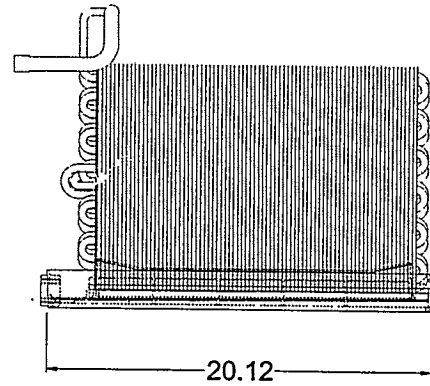


FIGURE 1

**UNCASED UPFLOW/DOWNFLOW EVAPORATOR COILS CA MODELS**



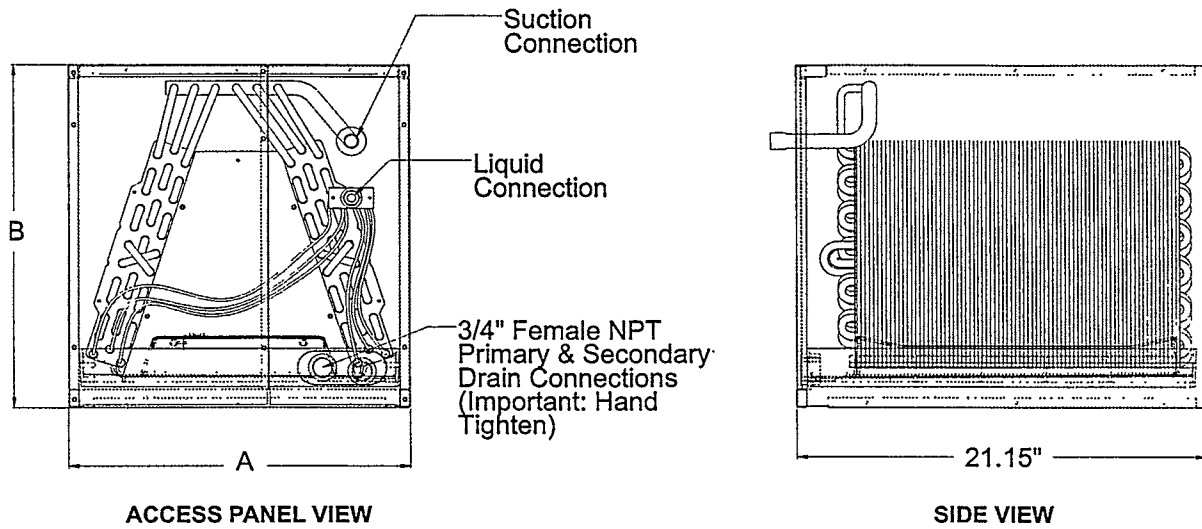
**ACCESS PANEL VIEW**



**SIDE VIEW**

COIL MODEL	DIMENSIONS (INCHES)			SPECIFICATIONS		
	NOMINAL TONS	A	B	NO. ROWS	LIQUID CONN	SUCTION CONN
CAF018A2A	1.5	12.9	16.2	2	3/8	5/8
CAF018B2A	1.5	16.4	16.1	2	3/8	5/8
CAT018B2A	1.5	16.4	17.3	2	3/8	5/8
CAF024A2A	2.0	12.9	16.1	2	3/8	3/4
CAF025B2A	2.0	16.4	16.2	3	3/8	3/4
CAT025B2A	2.0	16.4	17.4	3	3/8	3/4
CAF030A2A	2.5	12.9	18.1	3	3/8	3/4
CAF030B2A	2.5	16.4	16.1	3	3/8	3/4
CAF036A2A	3.0	12.9	20.0	3	3/8	3/4
CAF036B2A	3.0	16.4	20.0	3	3/8	3/4
CAT036B2A	3.0	16.4	20.0	3	3/8	3/4
CAF042B2A	3.5	16.4	19.9	3	3/8	3/4
CAF042C2A	3.5	19.9	21.4	3	3/8	3/4
CAT042B2A	3.5	16.4	19.9	3	3/8	3/4
CAF048B2A	4.0	16.4	23.9	3	3/8	7/8
CAF048C2A	4.0	19.9	23.5	3	3/8	7/8
CAF049C2A	4.0	19.9	23.7	3	3/8	7/8
CAF049D2A	4.0	22.9	23.7	3	3/8	7/8
CAT049C2A	4.0	19.9	23.7	3	3/8	7/8
CAT049D2A	4.0	22.9	23.7	3	3/8	7/8
CAF060C2A	5.0	19.9	27.9	3	3/8	7/8
CAF060D2A	5.0	22.9	28.2	3	3/8	7/8
CAT060D2A	5.0	22.9	28.2	3	3/8	7/8
CAF061C2A	5.0	19.9	27.9	4	3/8	7/8
CAF061D2A	5.0	22.9	27.7	4	3/8	7/8
CAT061D2A	5.0	22.9	27.7	4	3/8	7/8

**CASED UPFLOW/DOWNFLOW EVAPORATOR COILS - CU AND CP MODELS**



DIMENSIONS (INCHES)				SPECIFICATIONS		
COIL MODEL	NOMINAL TONS	A	B	NO. ROWS	LIQUID CONN	SUCTION CONN
CUF018A2A	1.5	14	18	2	3/8	5/8
CPF018B2A	1.5	17.5	18	2	3/8	5/8
CPT018B2A	1.5	17.5	22	2	3/8	5/8
CUF024A2A	2.0	14	18	2	3/8	3/4
CPF025B2A	2.0	17.5	18	3	3/8	3/4
CPT025B2A	2.0	17.5	22	3	3/8	3/4
CUF030A2A	2.5	14	18	3	3/8	3/4
C*F030B2A	2.5	17.5	18	3	3/8	3/4
CPT030B2A	2.5	17.5	22	3	3/8	3/4
CUF036A2A	3.0	14	22	3	3/8	3/4
C**036B2A	3.0	17.5	22	3	3/8	3/4
CPF036C2A	3.0	21	26	3	3/8	3/4
C**042B2A	3.5	17.5	22	3	3/8	3/4
C*F042C2A	3.5	21	26	3	3/8	3/4
CUF048B2A	4.0	17.5	26	3	3/8	7/8
CUF048C2A	4.0	21	26	3	3/8	7/8
CP*049C2A	4.0	21	26	3	3/8	7/8
CP*049D2A	4.0	24.5	26	3	3/8	7/8
CUF060C2A	5.0	21	30	3	3/8	7/8
C**060D2A	5.0	24.5	30	3	3/8	7/8
CUF061C2A	5.0	21	30	4	3/8	7/8
C**061D2A	5.0	24.5	30	4	3/8	7/8

**NOTE: DO NOT USE THIS COIL ON OIL FURNACES OR ANY APPLICATIONS WHERE THE TEMPERATURE ON DRAIN PAN MAY EXCEED 300°F. A FIELD FABRICATED METAL DRAIN PAN SHOULD BE USED IN THIS APPLICATION.**

The usage of these coils/drain pans must be strictly adhered to, so as to avoid any possibility of using a low temperature material in a high temperature application.

The 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 PVC pipe or metal and should not be over torqued to prevent damage to drain pan connection. If secondary

drain line is required it must be run separately from the primary drain and should end where it is easily seen. Water coming from this line means the coil primary drain is plugged and needs clearing.

A trap must be installed in the drain line below the bottom of the drain pan. If a copper drain line is used, solder a short piece of pipe to connector before installing a drain fitting. Again do not over torque the 3/4" copper connector to the plastic drain connection. Use a wet rag or heat sink material on the short piece to protect plastic drain pan, when completing drain line.

**CASED COIL APPLICATION OPTIONS**

COIL MODEL NO.	NOMINAL COIL WIDTH	FURNACE MODEL NO.			
		14"	17 1/2"	21"	24 1/2"
C*F018A2A	14	X			
C*F018B2A	17.5		X		
C*T018B2A	17.5		X		
C*F024A2A	14	X			
C*F025B2A	17.5		X		
C*T025B2A	17.5		X		
C*F030A2A	14	X			
C*F030B2A	17.5		X		
C*T030B2A	17.5		X		
C*F036A2A	14	X			
C*F036B2A	17.5		X		
C*T036B2A	17.5		X		
C*F036C2A	21			X	
C*F042B2A	17.5		X		
C*T042B2A	17.5		X		
C*F042C2A	21			X	
C*F048B2A	17.5		X		
C*F048C2A	21			X	
C*F049C2A	21			X	
C*T049C2A	21			X	
C*F049D2A	24.5				X
C*T049D2A	24.5				X
C*F060C2A	21			X	
C*F060D2A	24.5				X
C*T060D2A	24.5				X
C*F061C2A	21			X	
C*F061D2A	24.5				X
C*T061D2A	24.5				X

**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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