

Installation, Start-Up and Service Instruction

Cased Horizontal Furnace Coil

CD3A
CD3B

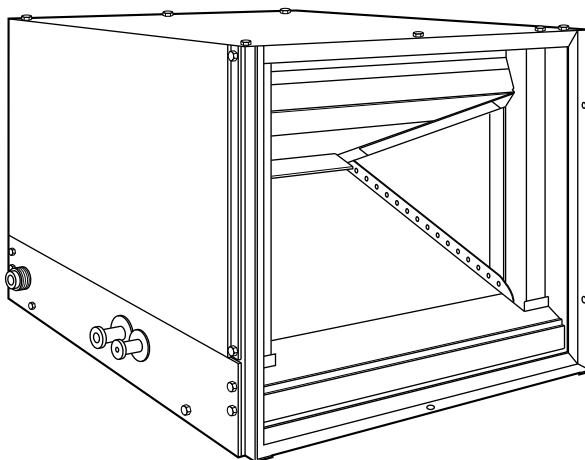


Fig. 1—Model CD3A/CD3B

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NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock or other conditions which may cause personal injury or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions attached to the unit. Consult local building codes and National Electrical Codes (NEC) for special requirements.

It is important to recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal word—DANGER, WARNING, or CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards that **could** result in personal injury or death. CAUTION is used to identify unsafe practices, which **would** result in minor personal injury or product and property damage.

 **WARNING:** Before installing or servicing system, always turn off main power to system. There may be more than one disconnect switch. Turn off accessory heater power if applicable. Electrical shock can cause personal injury or death.

INTRODUCTION

The CD3A/CD3B is a horizontal, multi-use cased furnace coil designed to directly match our horizontal/downflow furnace and attach without any transitions. (See Fig. 1.) With the use of field-supplied transition duct, these furnace coils can also be applied to a number of other similar horizontal furnaces on the market. The CD3A is available in sizes 018 through 060.

The unit can be installed on a working platform, pad secured to ceiling joists in an attic, suspended from hangers on floor joists, installed on blocks, or pads in the crawl space. It is designed to allow airflow in either direction to mate with horizontal-right or horizontal-left furnace installations. (See Fig. 2.)

PROCEDURE 1—MOUNTING COIL

A. Attachment of duct flange components to coil

Table 1 lists the parts packaged together and placed in the coil carton. Remove these items and inventory against the table.

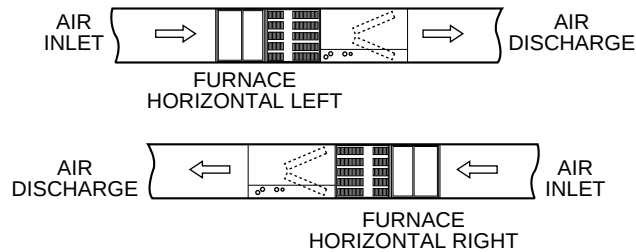


Fig. 2—Airflow Flexibility of Furnace to CD3A/CD3B Coil

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Table 1—Parts List

ITEM	PARTS
Top plate	2
Bottom plate	2
Rear band	2
Duct angle	1
Filler plate (042 and 048 sizes)	1

Use the following procedure to attach the duct flanges (plates, bands, and duct angle) preparatory to mounting the CD3A horizontal coil in either a crawl space or an attic.

1. Position coil as shown in Fig. 3A, then remove corner post screw indicated and lay post aside.
2. Select 2 of 4 identical plates and position so that side with five holes faces inward on casing. Drive screw removed in step 1 through hole in plate into corner post. (See Fig. 3B.)
3. Drive screw removed in step 1 through hole in plate into corner post and install middle screw indicated in Fig. 3B.
4. Repeat steps 2 and 3 at other end of coil to install corner post and middle screws in remaining top plate. (See Fig. 3B.) Note that side of the plate with 5 holes should face inward.
5. Rotate unit 90° so that condensate drain/refrigerant connections side is now on top. Repeat steps 2, 3 and 4 to install 2 bottom plates. (See Fig. 3B.)
6. Return unit to original upright position. Move a rear band into place over a top and a bottom plate. (See Fig. 3C.) Notice that 2 of the large holes on the long surface of the band should fit over an installed sheet metal screw. Make sure that rear band is oriented so that edge of band with most holes faces inward on casing. Use sheet metal screws to install first rear band as shown in Fig. 3C, then repeat for rear band at other end of coil.
7. When coil/furnace orientation has been determined, use 2 sheet metal screws to install duct angle at discharge end of the coil. (See Fig. 3C and 3D.) The duct angle with the 2 plates and a rear band form a duct flange at the discharge end of the coil.
8. The 036, 042 and sizes have a filler plate included in the package to be used when the coil is being coupled with a narrow furnace. Attach filler plate between coil flange and furnace as shown. (See Fig. 5.)

PROCEDURE 2—HORIZONTAL ATTIC INSTALLATION

A. Constructing work platform to support coil/furnace combination

1. Construct working platform, using material in platform that will support the weight of an installer or a service person.
2. Place working platform in front of discharge end of furnace.
3. Secure platform to building joists.

B. Installation of coil

1. Position coil in front of furnace discharge end. The flanges on the coil casing (plates and rear band) should wrap around 3 sides of the furnace and extend over the furnace casing when the coil is moved into position against the discharge end of the furnace. (See Fig. 3D.)
2. Secure coil and furnace together by driving 8 self-tapping screws through coil flanges into furnace casing through holes provided in plates and bands.
3. Make sure that coil is level for proper condensate drainage.
4. Using appropriate fasteners for type of duct being used, connect supply-air duct to coil.

PROCEDURE 3—HORIZONTAL CRAWL SPACE INSTALLATION

As an alternate to the horizontal attic installation, the CD3A/CD3B Horizontal Coil can be installed in a crawl space by mounting on suitable blocks, pads or by hanging from floor joists.

To suspend the CD3A/CD3B:

1. Select and cut to desired length 4 threaded 3/8 in. hanger rods.
2. Drill 1/2 in. holes through pilot holes provided at 4 corners of coil casing, on both top and bottom.
3. Thread 3/8 in. rods through 1/2 in. holes at 4 corners of unit and secure each under casing with 1 x 3/8 in. flat washer and two 3/8 in. nuts. (See Fig. 6.)

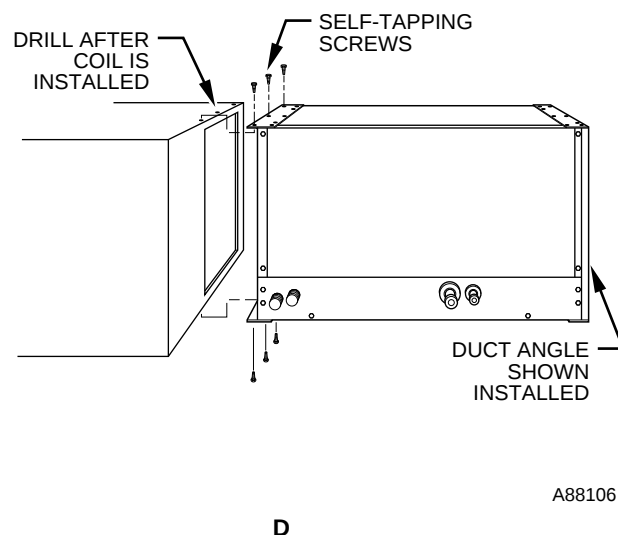
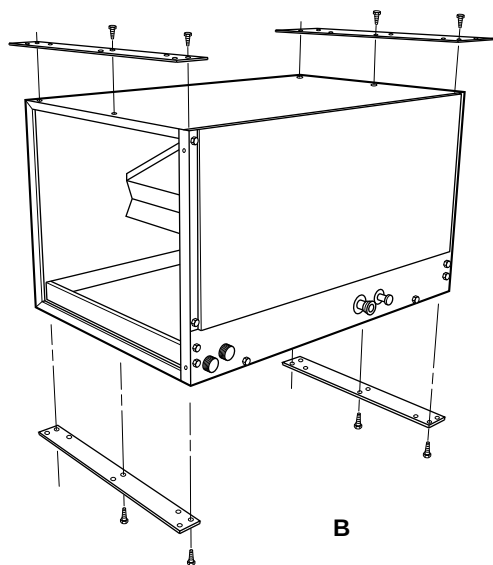
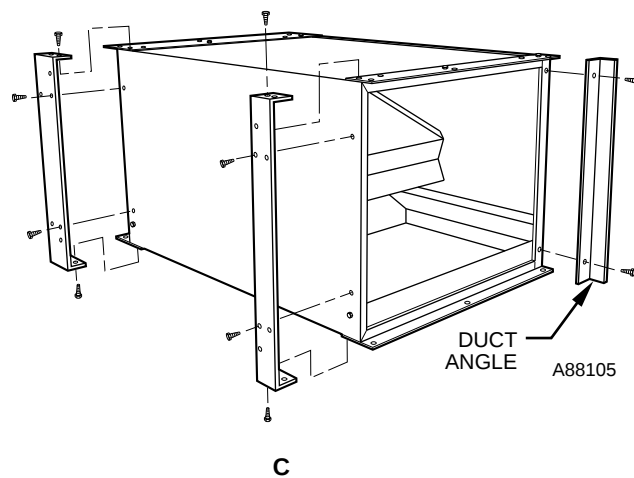
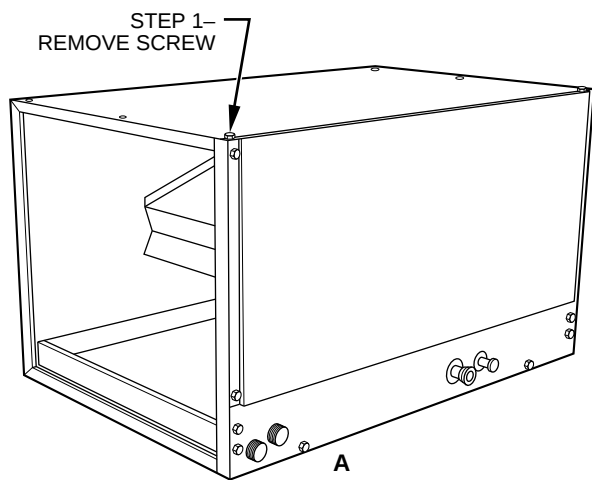


Fig. 3—Duck Flanges Assembly

4. Position coil in front of furnace discharge end. The flanges on the coil casing (plates and rear band) should wrap around 3 sides of the furnace and extend over the furnace casing when the coil is moved into position against the discharge end of the furnace. (See Fig. 3D.)
5. Secure coil and furnace together by driving 8 self-tapping screws through coil flanges into furnace casing through holes provided in plates and bands.
6. Make sure that coil is level for proper condensate drainage.
7. Using appropriate fasteners for type of duct being used, connect supply-air duct to coil.

PROCEDURE 4—METERING DEVICE INSTALLATION

The refrigerant metering device piston shipped with the coil is used for most applications. (See Table 2.) However, for reliable, full capacity operation, the piston specified in the condensing unit Installation Instructions for the combination, should be used. If your combination is not shown, the piston shipped with the coil is correct. Order the proper piston from your dealer.

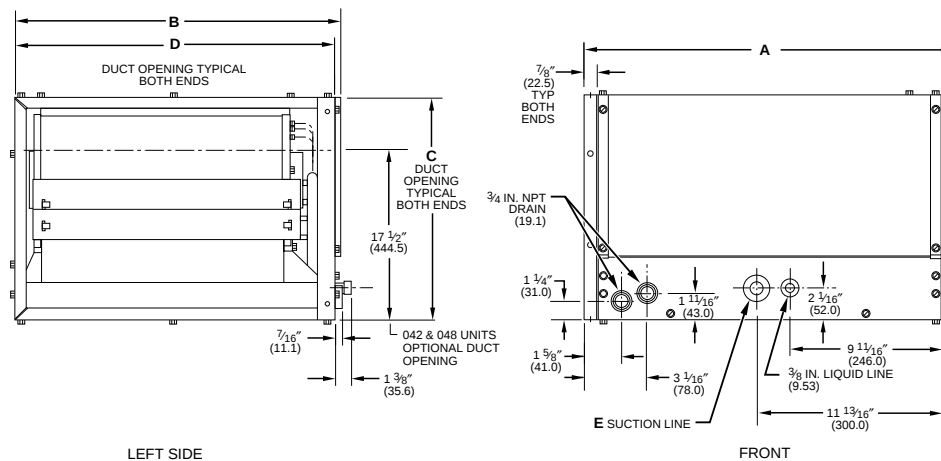
Table 2—Refrigerant Metering Device

MODEL CD3A/CD3B COIL SIZE	PISTON NUMBER
018	52
024	59
030	67
036	70
042	78
048	84
060	90

PROCEDURE 5—CONNECTING REFRIGERANT TUBING

Always recover refrigerant if field-supplied tubing is used, or when sweat connections are made. If field-supplied tubing is used, insulate the entire suction tube.

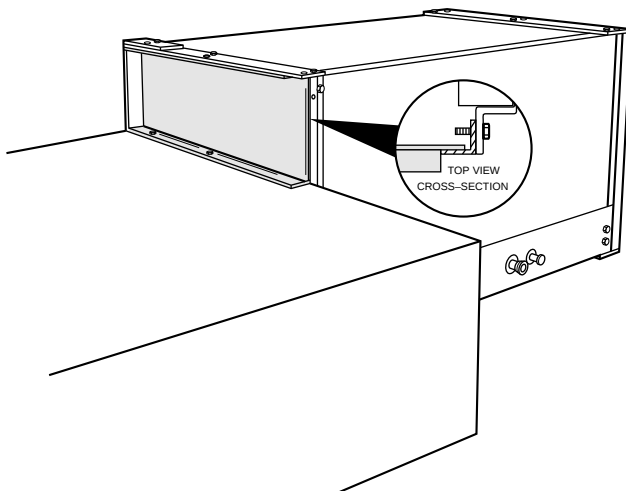
NOTE: Wrap the tubing with a wet rag as close to the rubber grommets as possible before brazing the liquid and suction tubing joints.



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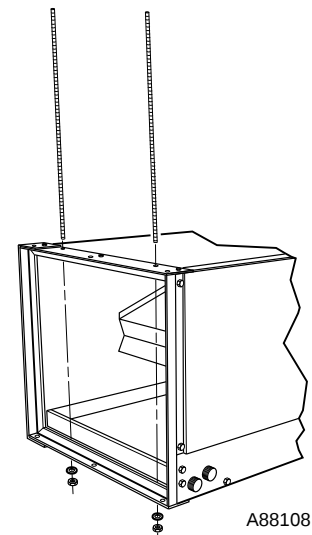
UNIT	A		B		C		D		E	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
CD3A,CD3B 018	23-13/16	605.0	21	533.3	14-3/16	360.5	20-5/8	524.5	5/8	15.88
CD3A,CD3B 024	23-13/16	605.0	21	533.0	14-3/16	360.5	20-5/8	524.5	5/8	15.88
CD3A,CD3B 030	23-13/16	605.0	21	533.3	14-13/16	360.5	20-5/8	524.5	3/4	19.05
CD3A,CD3B 036	30-13/16	782.5	21	533.3	17-1/2	444.5	20-5/8	524.5	3/4	19.05
CD3A,CD3B 042	30-13/16	782.5	21	533.3	21	533.3	20-5/8	524.5	7/8	22.23
CD3A,CD3B 048	30-13/16	782.5	21	533.3	21	533.3	20-5/8	524.5	7/8	22.23
CD3A,CD3B 060	30-13/16	782.5	24	609.3	24-1/2	622.5	23-5/8	600.5	7/8	22.23

Fig. 4—Dimensional Drawing



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Fig. 5—Filler Plate Installation (036, 042 and 048 sizes)



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Fig. 6—Typical Hanger Rod Suspension

PROCEDURE 6—INSTALLING CONDENSATE DRAIN

A 3/4-in. female pipe connection is provided on each coil. Use 7/8-in. OD copper or PVC piping to carry the condensate to an open sump or drain. Pitch the drain piping downward at a slope of 1 in. in 10 ft. Tighten nipple the required amount to seal. Use pipe dope if needed.

Install a trap in the condensate piping near the coil casing. (See Fig. 7.) Prime the trap with water. Check the trap and drain piping for leaks. Insulate the piping when located above a living area to avoid condensate drip.

For applications where the cooling coil is located above the living space, or where structural damage may result from condensate overflow or blowoff, an additional watertight pan of corrosion-resistant metal should be installed beneath the cooling coil to catch any overflow. A separate 3/4-in. drain must be provided from this pan and must be run into an open drain where it can be seen by the owner of the building. The occupant should be informed that when water flows from this pipe, the coil needs servicing. Local codes may call for additional precautions and should be consulted before installation.

SERVICE

Clean and inspect the coil, condensate pan, and drain before each cooling season. Refer to the outdoor unit Installation Instructions for system start-up and refrigerant charging details.

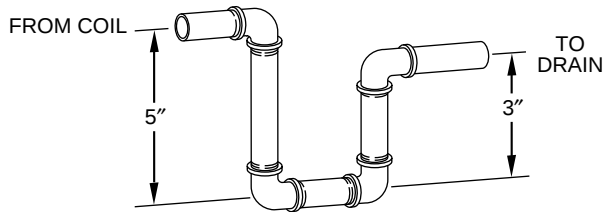


Fig. 7—Typical Condensate Drain Trap

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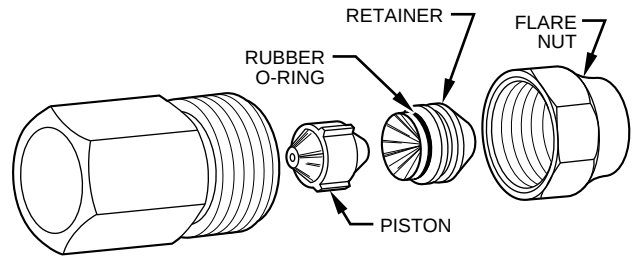


Fig. 8—Refrigerant Metering Device

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PROCEDURE 1—CLEANING COIL AND CONDENSATE PAN ON MODEL CD3A/CD3B

1. Remove front access panel from coil by removing screws securing panel to enclosure.
2. Use vacuum cleaner nozzle to clean face of coil. Be careful not to damage fins.
3. Disconnect condensate drain at drain pan connection.
4. Clean condensate pan with a brush.
5. Hold pail under condensate pan drain connections and flush pan by slowly pouring water on coil. Do not overflow the pan.
6. Reinstall front access panel.

PROCEDURE 2—METERING DEVICE REPLACEMENT OR CLEANING

1. Pump down condensing unit. See “Service Manual Split-System Residential Air Conditioner and Heat Pump”, available from your dealer. Shut off service valves at condensing unit.

⚠ WARNING: Before installation or servicing system, always turn off main power to system. There may be more than one disconnect switch. Turn off accessory heater power if applicable. Electrical shock can cause personal injury or death.

2. Recover remaining refrigerant from tubing and coil through gage port on suction service valve.
3. Remove front panel from coil casing.
4. Using a backup wrench, disconnect refrigerant liquid tube from metering device.
5. Carefully using a knife, pry off retainer which is the flare end of the metering device.
6. Using small wire, pull piston from body of refrigerant metering device. (See Fig. 8.)
7. When cleaning, be careful not to scratch or enlarge opening, as this will affect operation.
8. Install new or cleaned piston in refrigerant metering device body. There is no front or back to piston.
9. Install new retainer Part No. 300499-201 for 018- through 060-size coils.
10. Reconnect refrigerant tube and tighten.

⚠ CAUTION: Use a backup wrench and do not over tighten as deformation of refrigerant metering device body will occur, causing piston to lodge in a partially open or closed position.

11. Pressurize tubing and coil, then leak-check.
12. Purge or evacuate tubing and coil as necessary.

