

Installation Instructions

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

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SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock or other conditions which may cause death, 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, protective clothing and work gloves. Use quenching cloths 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 the current editions of the National Electrical Codes (NEC) NFPA 70.

In Canada, refer to the current editions of the Canadian Electrical Code CSA C22.1.

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 words **DANGER**, **WARNING** and **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 which **could** result in personal injury or death. **CAUTION** is used to identify unsafe practices, which **may** result in minor personal injury or product and property damage. **NOTE** is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

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. Lock out and tag disconnect switch with a suitable warning label.

WARNING



EXPLOSION HAZARD

Failure to follow this warning could result in death, serious personal injury, and/or property damage.

Never use air or gases containing oxygen for leak testing or operating refrigerant compressors. Pressurized mixtures of air or gases containing oxygen can lead to an explosion.

CAUTION

PERSONAL INJURY HAZARD

Failure to follow this caution may result in personal injury.

This coil contains Nitrogen precharge of up to 15 PSI. Release of this pressure through the center of the rubber plugs is required before removing the plugs.

CAUTION

CUT HAZARD

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

IMPORTANT: Nitrogen can leak out through the hole that the needle pierced in the plugs. This does not indicate a leaking coil nor warrant return of the coil.

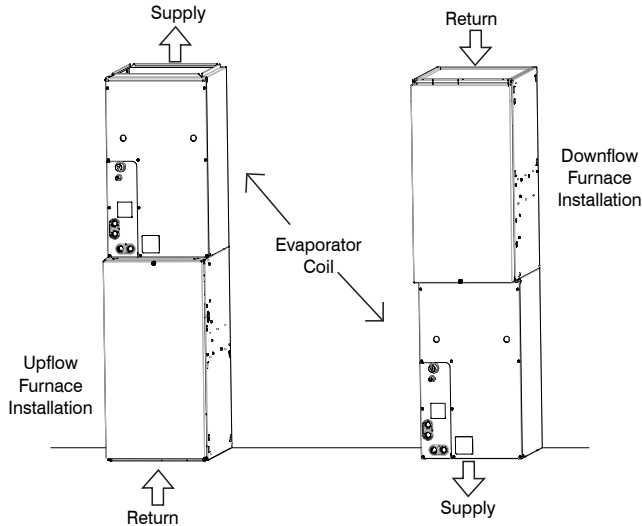
Table 1 – CAPVP Cased Coil Information

| MODEL | SIZE (TON) | FLUSH FIT TO FURNACE WIDTH | COIL CONNECTION TUBE SIZE (IN.) | |
|--------------|------------|----------------------------|---------------------------------|---------|
| | | | Liquid | Suction |
| CAPVP1917ALA | 1.5 | 17-1/2" / 445 mm | 3/8 | 3/4 |
| CAPVP2517ALA | 2.0 | 17-1/2" / 445 mm | 3/8 | 3/4 |
| CAPVP3717ALA | 3.0 | 17-1/2" / 445 mm | 3/8 | 3/4 |
| CAPVP3721ALA | 3.0 | 21" / 533 mm | 3/8 | 7/8 |
| CAPVP4321ALA | 3.5 | 21" / 533 mm | 3/8 | 7/8 |
| CAPVP6124ALA | 5.0 | 24-1/2" / 622 mm | 3/8 | 7/8 |

INTRODUCTION

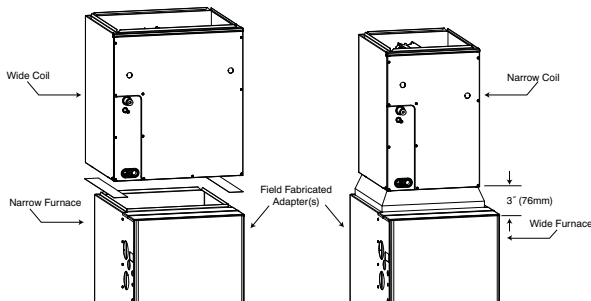
Use this instruction manual to install CAPVP indoor coil on multipoise furnaces. (See Fig. 1.) The CAPVP coil is enclosed in a casing.

CAPVP



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Fig. 1 - Typical Installation Upflow/Downflow Cased Coils



* CAUTION: DO NOT MOUNT COIL LOWER THAN 3" (76mm) MINIMUM OR FURNACE FAILURE MAY RESULT

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Fig. 2 - Adapter(s) Installation When Coil Overhangs or Underhangs Furnace

INSTALLATION

Inspect Equipment

File claim with shipper if equipment is damaged or incomplete.

Select Installation

Upflow CAPVP Coil Installation.

The cased coil is designed to fit furnaces of the same width.

1. Set coil in place on upflow furnace discharge air opening.
2. Ensure coil is level for proper condensate drainage. Do not tip coil toward condensate drain. Coil casing need not be fastened or screwed to furnace.

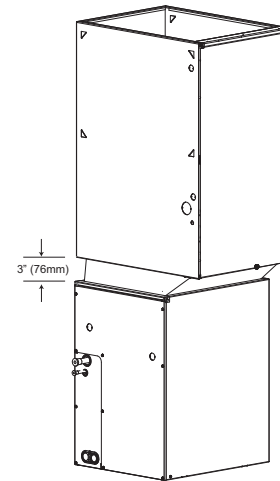
3. When installing wider coil on narrow furnace, create field fabricated adapter. (See Fig. 2.)
4. When installing narrow coil on wide furnace, create field fabricated adapter. (See Fig. 2.)

NOTE: On upflow installations where the indoor coil is placed in an unconditioned space, a 6" (152 mm) wide piece of insulation should be applied and wrapped around the outside of coil casing and supply duct contact point.

See Table 1 for dimensions. Note instructions for placement of coil casing on furnace.

Downflow CAPVP Coil Installation.

IMPORTANT: Installing "A" coils rotated 90° from the front of the furnace in downflow applications can cause water blow off or coil freeze up. This is due to the concentration of air on one coil slab or lack of air on the opposite coil slab. If the airflow is high due to ductwork or other causes, and there is a chance for water blow off, it is recommended that a 3" (76 mm) field-supplied adapter be placed between the coil and the furnace to allow the air to distribute evenly to both coil slabs. (See Fig. 3.)



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Fig. 3 - Downflow Installation With Coil Rotated 90°

1. Set cased coil on supply duct opening.
2. Place field fabricated 3" (76 mm) adapter on coil casing. Adapter should be tapered to fit coil/furnace combination when one of them is larger than the other.
3. Set furnace on adapter.

NOTE: In downflow installation with a 4-way multipoise furnace, break off perforated duct flanges on furnace. See furnace installation instructions.

CONNECT REFRIGERANT PIPING

Use accessory tubing package or field-supplied tubing of refrigerant grade, see Product Data information for ordering. Suction tube must be insulated. Do not use damaged, dirty, or contaminated tubing because it may plug refrigerant flow-control device. ALWAYS evacuate the coil and field-supplied tubing before opening outdoor unit service valves.

CONNECT REFRIGERANT LIQUID AND SUCTION LINES

For matched and mismatched systems, use line sizes recommended in outdoor unit Installation Instructions.

⚠ CAUTION

UNIT OR PROPERTY DAMAGE HAZARD

Failure to follow this caution may result in property damage.

Take precautions to ensure aluminum tubes do not come in direct contact or allow for condensate run-off with a dissimilar metal. Dissimilar metals can cause galvanic corrosion and possible premature failure.

The coil can be connected to outdoor units using accessory tubing packages or field-supplied tubing of refrigerant grade. Always evacuate tubing and reclaim refrigerant when making connections or flaring tubing. Leak check connections before insulating entire suction line.

See Table 1 for coil connection tube size.

1. Remove cabinet access door.
2. Remove rubber plugs, suction plug then liquid plug, from coil stubs using a pulling and twisting motion. Hold coil stubs steady to avoid bending or distorting.
3. Remove tubing plate with rubber grommets and slide plate with grommets onto the refrigerant lines (field line-set), away from braze joints.
4. Fit refrigerant lines into coil stubs. Wrap a heat sinking material such as a wet cloth behind braze joints.
5. Wrap TXV and nearby tubing with a heat-sinking material such as a wet cloth.
6. Use 1/2 psig Nitrogen purge in the suction and out the liquid line.
7. Braze using a Sil-Fos or Phos-copper alloy. Do not use soft solder.
8. After brazing, allow joints to cool. Carefully remove TXV bulb insulation and verify that the TXV bulb is securely fastened with hose clamp. Tighten screw a half-turn past hand tight with TXV bulb placed in the indentation with full contact with the vapor line tube. Re-wrap TXV bulb with insulation.
9. Leak check connections before insulating entire suction line.
10. Slide tubing plate with rubber grommets over joints. Position tubing at center of each grommet to ensure an air seal around the tube. Reinstall cabinet door.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in product damage.

To avoid valve damage to the refrigerant control device while brazing, valves must be wrapped with a heat-sinking material such as a wet cloth.

⚠ WARNING

PERSONAL INJURY HAZARD

Failure to follow this warning could result in personal injury.

Wear eye protection.

Coil is factory charged with 15 psi nitrogen. The coil is under pressure and TXV screen is in place behind liquid line plug. DO NOT removed liquid line plug first; always remove the suction line plug first to depressurize the coil.

REFRIGERANT METERING DEVICE

The CAPVP coil has a factory-installed hard shut-off TXV designed only for use with R-410A refrigerant. Use only with outdoor units designed for R-410A.

NOTE: All TXV'S have preset superheat settings and are **field non-adjustable**.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in product damage.

DO NOT BURY MORE THAN 36" (914 mm) OF REFRIGERANT TUBING IN GROUND. If any section of tubing is buried, there must be a 6" (152 mm) vertical rise to the valve connections on the outdoor unit. If more than the recommended length is buried, refrigerant may migrate to cooler buried section during extended periods of unit shutdown, causing refrigerant slugging and possible compressor damage at start-up.

CONDENSATE LINE CONNECTION

⚠ CAUTION

PROPERTY DAMAGE HAZARD

Failure to follow this caution may result in property damage.

When installing over a finished ceiling and/or living area, install a field-fabricated secondary condensate pan under the entire unit.

The coil is designed to dispose of accumulated water through built-in condensate drain fittings. It is recommended that PVC fittings be used on the condensate pan. Do not over-tighten. Finger tighten plus 1-1/2 turns. Be sure to install plastic plug in unused condensate drain fitting. Two 3/4" female threaded pipe connections are provided in each coil condensate pan.

A trap is not necessary on the condensate line. Consult local codes for additional restrictions or precautions. If local codes require a trap then the following guidelines are suggested to assure proper drainage. Install a trap in condensate line of coil as close to the coil as possible. Make trap at least 3" (76 mm) deep and no higher than the bottom of unit condensate drain opening (See Fig. 4). Pitch condensate line 1" (25.4 mm) for every 10 ft. of length to an open drain or sump. Make sure that the outlet of each trap is below its connection to condensate pan to prevent condensate from

CAPVP

overflowing the drain pan. Prime all traps, test for leaks, and insulate traps and lines if located above a living area.

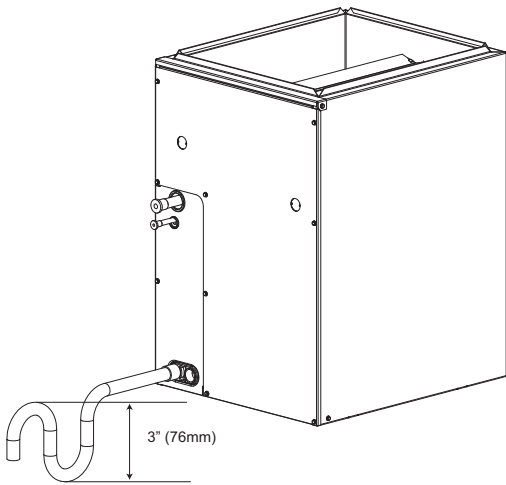


Fig. 4 - Condensate Trap

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NOTE: The unit is shipped from the factory with the horizontal drain connections capped as for vertical installations. For horizontal installations, remove the caps and place them on the vertical drain connections to keep an airtight installation.

NOTE: If unit is located in or above a living space, where damage may result from condensate overflow, a field-supplied, external condensate pan should be installed underneath the entire unit, and a secondary condensate line (with appropriate trap) should be run from the unit into the pan. Any condensate in this external condensate pan should be drained to a noticeable place. As an alternative to using an external condensate pan, some localities may allow the running of a separate 3/4-in. (19 mm) condensate line (with appropriate trap) per local code to a place where the condensate will be noticeable. The owner of the structure must be informed that when condensate flows from secondary drain or external condensate pan, the unit requires servicing or water damage will occur. To further protect against water damage, install a float switch to shut the unit off if the water in the secondary pan gets too high.

NOTE: To avoid drainage problems, test the primary drain line by slowly pouring water into the pan. Check piping for leaks and

proper condensate drainage. Using the secondary drain as explained in the previous note provides further protection against overflow due to a clogged primary drain.

NOTE: In applications where return air humidity levels stay at 70% or above for a prolonged period of time, condensation can form on the bottom of pan and drip.

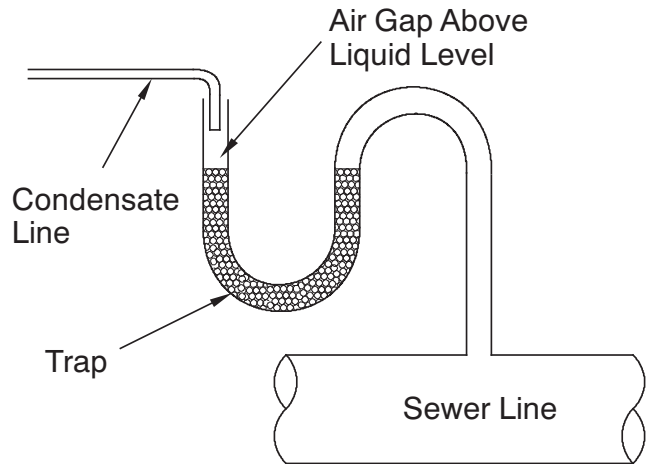


Fig. 5 - Condensate Drain to Waste Line

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WASTE LINE CONNECTION

If the condensate line is to be connected to a waste (sewer) line, an open trap must be installed ahead of the waste line to prevent escape of sewer gases (See Fig. 5).

| | |
|------------------|--|
| ! WARNING | |
| | <p>EXPLOSION HAZARD</p> <p>Failure to follow this warning could result in death, serious personal injury, and/or property damage.</p> <p>Provide trap with air gap in drain line when connecting to waste (sewer) line.</p> |