



## Installation Instructions

# M Series Manufactured Housing Evaporator Coils

### GENERAL

ADP evaporator coils are designed for use with condensing units or heat pump units. These instructions are intended as a general guide and do not supersede local codes in any way. Consult with local authorities having jurisdiction before installation. Installer must comply with all local, state, and federal codes and regulations during installation. **Read this installation manual and all "Warning" statements prior to installing.**

ADP manufactured housing evaporator coils are designed for pull-through configuration with use with many manufactured housing electric furnaces (down-flow and upflow) and gas furnaces (down-flow). ADP offers a selection of other products for other applications.

Check coil for shipping damage and verify the contents of the box containing the evaporator coil. If you should find damage, immediately contact the last carrier. Verify the efficiency or performance requirements, such as SEER, EER, and/or HSPF, are appropriate with the matched condensing or heat pump units. See AHRI ratings directory for more information. Check outdoor unit manufacturer for proper line sizing. **Coils are shipped with a 10 psi dry air holding charge. Puncture rubber plug on suction line to release charge before removing plugs.** The absence of pressure does not verify a leak. Check the coil for leaks before installing or returning it to your wholesaler.

#### Drain Pans

- Drain pans are made of a polymer that can withstand temperatures up to 400 deg. F.
- **Maintain a 3" clearance on drum type heat exchangers and 1½" on sectionalized heat exchangers.**
- Coil should be level, or pitched slightly toward the drain connection.

#### Airflow

- **Airflow face velocity above 350 ft/min is not recommended for downflow applications due to potential water blow-off.**
- Low airflow below 360 CFM per 12,000 BTUH can lead to coil freeze-up problems.
- Improper airflow across the evaporator coil can cause component or system problems.



### SAFETY CONSIDERATIONS

Your safety and the safety of others are very important.

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.



This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and signal word. These signals words mean the following:

**DANGER:** You can be **killed or seriously injured** if you don't immediately follow instructions.

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

**CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in **minor or moderate injury**. Caution may also be used to alert against unsafe practices.

**NOTICE:** Indicates a statement of company policy as the message relates directly or indirectly to the safety of personnel or protection of property.

**IMPORTANT:** More detailed information concerning the statement of company policy as the message relates directly or indirectly to the safety of personnel or protection of property.

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.



Product improvement is a continuous process at Advanced Distributor Products. Therefore, product specifications are subject to change without notice and without obligation on our part. Please contact your ADP representative or distributor to verify details.

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## METERING DEVICE

Coils are suited for R-22 and R-410A refrigerants and can be used with or without a TXV. Replacement TXV part numbers are listed below; see kit instructions for change out or installation. Remove sensing bulb from suction line during brazing to prevent damage from occurring. For optimum performance, attach and insulate the bulb at a 10 to 2 o'clock position outside of the cabinet to the main suction line no more than one foot from the suction line connection. If necessary, the bulb can be installed on a vertical suction line. In this instance, the bulb must be placed before any trap, with the bulb's capillary tube facing upward. When changing a system from AC to heat pump or heat pump to AC, check the current TXV specifications to determine if a TXV replacement is required. **If the evaporator coil contains a non-bleed TXV and is used with a condensing unit containing a reciprocating compressor, a hard start mechanism will be required on the outdoor unit.**

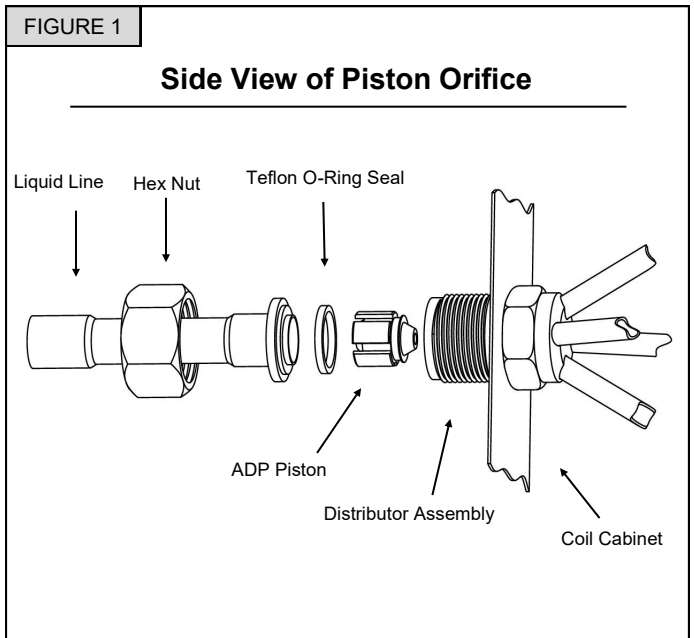
For optimum performance, the piston should be sized to match the recommendation from the outdoor unit manufacturer. If the outdoor unit manufacturer does not recommend a piston size, refer to the piston size chart below.

When changing ADP pistons, refer to Figure 1 and use the following procedure:

1. Loosen hex nut located on liquid line and separate from distributor assembly.
2. Remove the existing piston from inside the distributor assembly.
3. Insert the desired piston into the distributor assembly.
4. Inspect Teflon O-ring and replace if damaged. Ensure Teflon O-ring is in place.
5. Re-install hex nut to body and torque to 10 ft-lbs.

! **IMPORTANT** !

When changing the metering device, ensure the metering device matches the refrigerant type and capacity of the condensing unit. Failure to do so will result in poor performance and possible compressor damage. All coils must be matched properly as listed in the AHRI directory.

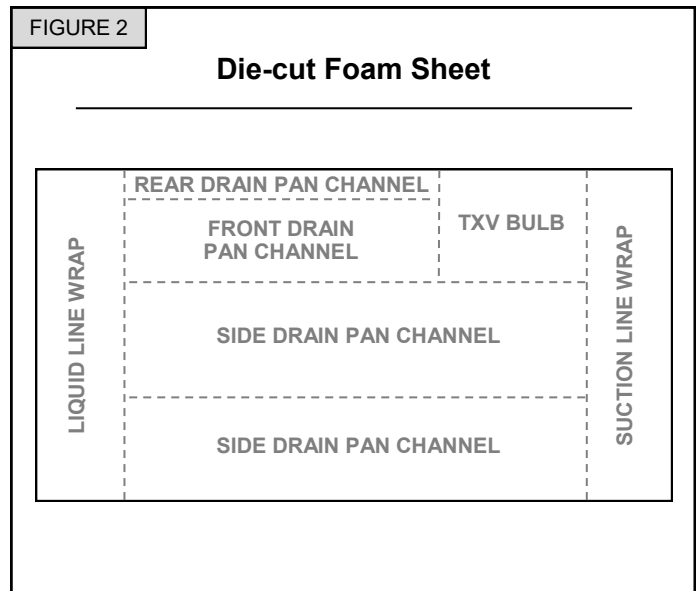


# BOX CONTENTS

Box Contents:

1. Evaporator Coil
2. Accessory Bag
  - Installation Instructions
  - PVC Elbow
  - Condensate Drain Hose
  - Condensate Hose Clamp
  - Die-cut Foam Sheet (Figure 2)

For best performance, wrap the TXV bulb, liquid and suction lines with enclosed foam pieces. Additional pieces are provided to insulate the drain pan to help prevent condensation, in certain applications.

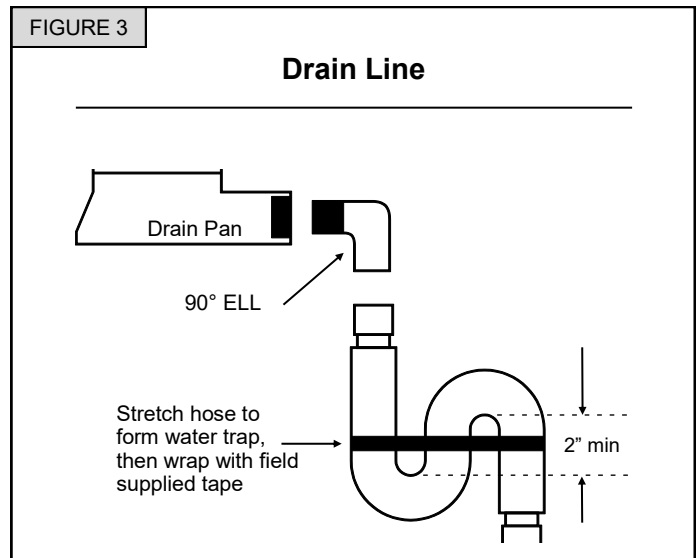


# CONDENSATE DRAIN

Note the difference between the primary and secondary openings. Attach drain line to pan with included 90 degree ELL. Hand tight is adequate—do not over tighten & do not reduce drain line size!

Included drain hose will fit over the PVC fitting and should be secured with included hose clamp; a field supplied PVC fitting can be used if required by code. Route drain line(s) so they will not be exposed to freezing temperatures and do not interfere with accessibility to the coil, air handling system or filter. Stretch hose to form a 2" water trap, then wrap using field supplied tape (Figure 3). Locate trap under home but as close to the coil as possible.

A **WATER TRAP** is required on electric furnace installations, and is recommended for all installations. **Failure to use a water trap can cause improper drainage, leading to a shock hazard or property damage.** Test drain lines with water before running the system.



**IMPORTANT**

The Clean Air Act of 1990 bans the intentional venting of refrigerant (CFC's and HFC's). Approved methods of reclaiming must be followed. Fines and/or incarceration may be levied for non-compliance.

## REFRIGERANT LINE INSTALLATION

ADP recommends installing a filter drier and sight glass in the liquid line. While brazing, purge the system with Nitrogen to prevent contamination. ADP recommends reattaching and insulating the TXV sensing bulb at a 10 to 2 o'clock position on the suction line, outside the coil housing, no more than one foot

from the connection. Evacuate the system to 500 microns to ensure proper air and moisture removal (**Note: Deep evacuation or triple evacuation method recommended**). Open the suction service valve slowly and allow the refrigerant to bleed into the system before opening the liquid service valve.

## REFRIGERANT CHARGING INSTRUCTIONS <sup>1</sup>

When charging in cooling mode, the outdoor temperature should be 60°F or higher. To allow the pressures to stabilize, operate the system a minimum of 15 minutes between adjustments. When adjusting charge to systems with micro-channel outdoor coils, make small (1 ounce or less) adjustments as these systems are very sensitive to refrigerant charge.

**TXV Charging<sup>2, 3, 4</sup>** – Use the charging method recommended by the outdoor unit instructions. Alternatively, ADP recommends charging to 12°F sub-cooling for AC units and 10°F sub-cooling for heat pump units. In addition, if equipped with an adjustable valve, adjust to 10°F superheat.

**Fixed Orifice Charging<sup>2, 3, 4</sup>** – Use the superheat recommended by the outdoor unit instructions. Alternatively, ADP recommends charging to the superheat table below.

Outdoor Air Temp. (°F)	60	65	70	75	80	85	90	95	100	105	110	115
Superheat (°F)	31	28	25	22	20	16	13	10	8	6	5	5

For heat pump units initially charged in the cooling mode, final adjustments to charge in the heating mode are acceptable if

necessary. Some heat pump units require charging in the heating mode. In this case, refer to the outdoor instructions for recommended charging procedures.

If the system is undercharged after the initial charge, add refrigerant until the sight glass is clear and recommended pressures, temperatures, sub-cooling and superheat can be obtained. If the system is overcharged after the initial charge, recover refrigerant until recommended pressures, temperatures, sub-cooling and superheat can be obtained.

### Notes:

1. If any problems or questions regarding charge occur, contact customer service.
2. OEM charging methods vary depending on design and application. Verify all recommended pressures, temperatures, sub-cooling and superheat settings result in the proper charge.
3. ADP coils may require charge compensation due to size variation versus the OEM coil.
4. Temperatures are  $\pm 2^\circ\text{F}$  unless otherwise recommended.

