

Installation Instructions

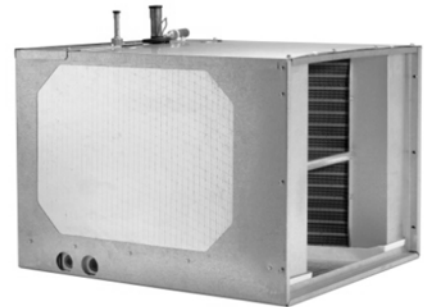
PL Series

Premier Indoor Plenum 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. **Read this installation manual and all "Warning" statements prior to installing the evaporator coil.**

Check coil for shipping damage and verify package contents. 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.



! IMPORTANT !

For proper operation, after brazing, attach and insulate the TXV sensor bulb at a 10 to 2 o'clock position to the main suction line no more than one foot from the suction line connection.

Drain Pans

- Drain pans are made of a polymer that can withstand temperatures up to 450 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

- 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.

Figure 1



Plenum Coils are designed for horizontal applications only. Proper performance requires that the air flow into the wide part of the A and out the tip of the A as shown in Figure 1.

! WARNING !

This product may contain fiberglass wool insulation. Glass wool fibers are known to the State of California to cause cancer. Disturbing insulation during installation, maintenance, or repair may expose you to glass wool fibers and may cause respiratory, skin or eye irritation. For further information on risks associated with fiberglass wool, consult Material Safety Data Sheet available from OEM.



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REFRIGERANT METERING

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. PL series coil are shipped with the TXV sensing bulb uninstalled. 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. 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.**

R-22 TXV Part Numbers		R-410A TXV Part Numbers	
18-36 MBTUH Bleed A/C	65540600	18-36 MBTUH Non-Bleed A/C	65026401
42-60 MBTUH Bleed A/C	65540700	42-60 MBTUH Non-Bleed A/C	65026400
18-36 MBTUH Non-Bleed A/C	99167501	18-36 MBTUH Non-Bleed A/C-HP	65616601
42-60 MBTUH Non-Bleed A/C	99167502	42-60 MBTUH Non-Bleed A/C-HP	65616602
18-36 MBTUH Non-Bleed A/C-HP	65616201		
42-60 MBTUH Non-Bleed A/C-HP	65616202		

! 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.

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 2 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 ADP 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.

Piston Size				
Ton	R-22		R-410A	
	Piston Size	Part #	Piston Size	Part #
1	41	100000035	41	100000035
1.5	53	100000036	49	100000049
2	59	100000037	53	100000036
2.5	67	100000039	59	100000037
3	73	100000041	67	100000039
3.5	80	100000044	73	100000041
4	84	100000045	76	100000042
5	93	100000047	93	100000047

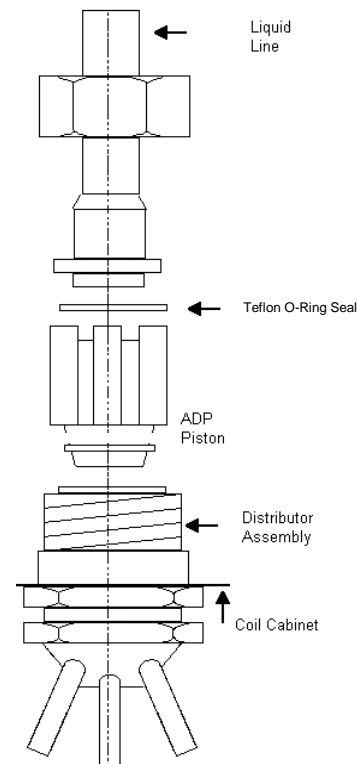


Figure 2 – Metering assembly

FURNACE ATTACHMENT

Align the bottom edges of the coil and furnace—the included furnace mount bracket (Figure 3) may be attached to the coil with 2 screws. Attach coil to furnace flanges using sheet metal screws. Seal according to local codes.

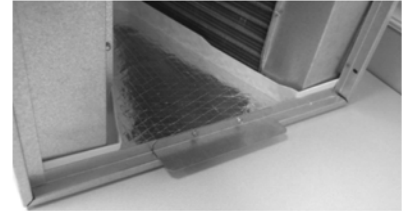


Figure 3 – Furnace attachment

Coil Support Options

1. Support from bottom using furnace stands.
2. Attach hanging straps to back end of sheet metal.

Coil should be level or pitched slightly toward drain connections.

PLENUM CONNECTIONS

Options for Duct Takeoffs

1. Existing or field-fabricated plenum—remove entire end panel and attach to plenum.
2. Flex duct connections—cut holes into coil duct board for duct connections. Use only tab-style takeoffs; adhesive-style takeoffs may delaminate the duct board facing.

Balancing Airflow

- Use the same number and size of takeoffs on the left and right sides of coil.
- Use end takeoffs after the left and right sides are balanced.
- Locate takeoffs as close as possible to the downstream end of plenum coil.

Cutting Duct Takeoffs

- Cut exposed duct board surfaces.
- Do not cut into sheet metal—coil damage will result.
- Duct board is 1" thick; do not cut more than 3/4" deeper to prevent coil damage.
- Cut carefully with sharp cutting tool to minimize delaminating the foil lining; ensure there is no exposed fiberglass in the airstream.

SECONDARY DRAIN PAN

Pan attachment

- Align secondary drain pan tab holes with locator embossments on bottom of coil (Figure 4); pan should be pitched 1/2" toward drain.
 - Attach the secondary pan tabs to the upper pilot holes on the non-drain side of the coil.
 - Attach the secondary pan tabs to the lower pilot holes on the drain side to provide the proper pitch.
- Attach secondary pan with sheet metal screws.
- Route the drain line per local codes.

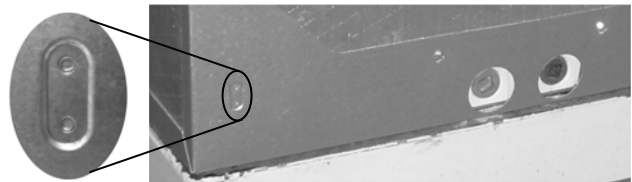


Figure 4 – Locator embossments for secondary pan



CONDENSATE DRAIN

Coils are equipped with multiple drain connections. Determine the drain connections to be used and note the difference between the primary (green) and secondary (red) openings. Drain plugs are provided for all openings; remove and discard the appropriate plugs with 1/2" drive ratchet and verify that remaining plugs are tight (2.5 ft-lbs). Attach drain line to pan with 3/4" male pipe thread PVC fittings. Hand tight is adequate - **Do not over tighten & do not reduce drain line size!**

Route drain(s) line so they will not be exposed to freezing temperatures and do not interfere with accessibility to the coil, air handling system or filter. The drain should be pitched downward 1" per 10' with a 2" trap as close to the coil as possible. If line makes a second trap, or has an extended run before termination, a vent tee should be installed after the trap closest to the pan. See Figure 5.

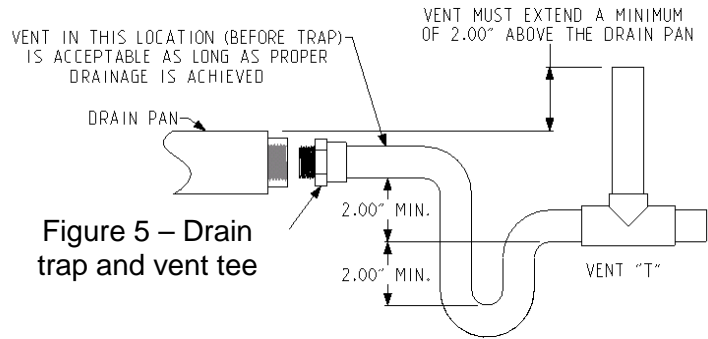


Figure 5 – Drain trap and vent tee

If the coil is located in or above a living space where damage may result from condensate overflow, a separate 3/4" drain must be provided from the secondary drain connection. Run this drain to a place in compliance with local installation codes where it will be noticed when unit is operational. Condensate flowing from the secondary drain indicates a plugged primary drain. Prime the trap with water. Test line for leaks. Test water flow with unit in operation. **A secondary drain pan should also be installed under the unit as specified by most local building codes.**

Drain Configuration Options (these do NOT supersede local codes)

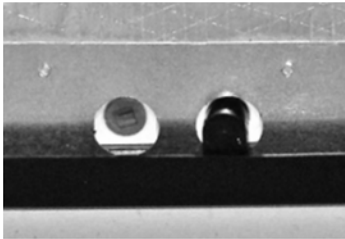


Figure 6 – Drain Nipple

Option	Primary Drain (Green Plug)	Secondary Drain (Red Plug)	Secondary Pan Drain (Black Pan)
1	As shown in Fig 5	Drain to noticeable area per local codes	Route per local codes
2	As shown in Fig 5	Drain into secondary pan using provided drain nipple (see Figure 6)	Route per local codes
3	As shown in Fig 5	Connect with TEE to the secondary pan drain	Route per local codes

REFRIGERANT CHARGING INSTRUCTIONS

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.

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 10 minutes between adjustments.

TXV – Use the subcooling recommended by the outdoor unit instructions, or use the range of 6°F to 15°F subcooling. If equipped, adjust the TXV to 6°F to 10°F superheat.

Fixed Orifice – Use the superheat recommended by the outdoor unit instructions, or use the superheat table below.

Outdoor Air Temp. (°F)	60	65	70	75	80	85	90	95	100	105	110	115
Nominal Superheat (°F)	31	28	25	22	20	16	13	10	8	6	5	5
Minimum Superheat (°F)	28	25	22	20	16	13	10	6	6	4	4	4

For heat pumps initially charged in the cooling mode, final adjustment in heating mode is acceptable if necessary. When charging heat pumps in the heating mode, refer to the outdoor unit charging instructions.