



Cased Aluminum Coils "Dedicated Upflow / Downflow"

Upflow / Downflow models:

5PXCA001AS3HAA 5PXCBD006AS3HAA
 5PXCA002AS3HAA 5PXCC007AS3HAA
 5PXCBD003AS3HAA 5PXCD008AS3HAA
 5PXCBD004AS3HAA 5PXCC009AS3HAA
 5PXCC005AS3HAA 5PXCD010AS3HAA

Downflow only models:

5PXCBD03AS3HDA 5PXCCD07AS3HDA
 5PXCBD04AS3HDA 5PXCCD09AS3HDA
 5PXCCD05AS3HDA 5PXCDD10AS3HDA
 5PXCBD06AS3HDA

ALL phases of this installation must comply with NATIONAL, STATE AND LOCAL CODES

IMPORTANT — This Document is **customer property** and is to remain with this unit. Please return to service information pack upon completion of work.

IMPORTANT — These instructions do not cover all variations in systems nor provide for every possible contingency to be met in connection with the installation. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to your installing dealer or local distributor.

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literatures and on the tags, stickers, and labels, and that are attached to the equipment.

⚠ WARNING

SAFETY HAZARD!
This coil shall only be connected to an outdoor unit suitable for use with refrigerant R-454B.

⚠ WARNING

SAFETY HAZARD!
This appliance is not to be used by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instructions concerning the use of appliance by a person responsible for their safety.

⚠ WARNING

RISK OF FIRE!
Flammable refrigerant used. To be repaired only by trained service professional. Do not puncture refrigerant tubing. Dispose of properly in accordance with federal or local regulations.

⚠ WARNING

PRESSURIZED REFRIGERANT!
Failure to follow this Warning could result in personal injury.
System contains oil and refrigerant under high pressure. Recover refrigerant to relieve pressure before opening the system. Do not use non-approved refrigerants or refrigerant substitutes or refrigerant additives.

⚠ WARNING

HAZARDOUS VAPORS!
Failure to follow this caution could result in property damage or personal injury. Equipment corrosion damage. To prevent shortening its service life, the unit should not be used during the finishing phases of construction or remodeling. The low return air temperatures can lead to the formation of condensate. Condensate in the presence of chlorides and fluorides from paint, varnish, stains, adhesives, cleaning compounds, and cement creates a corrosive condition which may cause rapid deterioration of the cabinet and internal components.

⚠ WARNING

RISK OF FIRE!
Failure to following this warning could result in serious injury, death, or property damage.
The following requirements apply to the room where the cased coil is installed:

- All combustion appliances located in the same room that have continuous pilot lights are equipped with an effective flame arrest.
- Auxiliary devices which may be a potential ignition source, such as hot surfaces or electric switching devices, shall not be installed in the connecting ductwork unless they have been approved by the manufacturer or declared suitable with the refrigerant used.
- All indoor field-made joints of the field piping have been checked for refrigerant leaks after charging using an electronic leak detector calibrated for R-454B having a sensitivity of 5 grams per year or better.
- The room is constructed to ensure that should any refrigerant leak it will not stagnate and create a fire hazard.

⚠ WARNING

WARNING!
This product can expose you to chemicals including lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www. P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

Installer's Guide

⚠ CAUTION

SHARP EDGE HAZARD!

Failure to follow this caution could result in property damage or personal injury. Be careful of sharp edges on equipment or any cuts made on sheet metal while installing or servicing.

⚠ CAUTION

COIL IS PRESSURIZED!

Coil is pressurized with approximately 8-12 psi dry air and factory checked for leaks. Carefully release the pressure by removing the rubber plug on the liquid line. If no pressure is released, check for leaks.

Important: Installation of this unit shall be made in accordance with the National Electric Code, NFPA No. 90A and 90B, and any other local codes or utilities requirements.

Important: Cased coils do not require repositioning of the refrigerant leak detection sensor for upflow or downflow installations. Horizontal applications require sensor repositioning. See conversion instructions section for details.

Note: This unit is a PARTIAL UNIT AIR CONDITIONER, complying with PARTIAL UNIT requirements of Standard UL 60335-2-40/CSA 22.2 NO. 60335-2-40, and must only be connected to other units that have been confirmed as complying to corresponding PARTIAL UNIT requirements of this Standard.

Note: There is no declared maximum altitude for operating the appliance.

Note: Charging of the refrigerating system shall be according to the instructions provided by the manufacturer of the outdoor unit.

Note: Unit not to be used with oil drum type furnaces.

Note: Both the drain pans and the refrigerant detection sensor installed on this unit are designed to be heat resistant to temperatures produced by all residential Trane and American Standard furnaces.

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A. GENERAL:

These coils are designed for use in combination with a heat pump or cooling outdoor section using **R-454B REFRIGERANT**.

The 5PXC equipment has been evaluated in accordance with the Code of Federal Regulations, Chapter XX, Part 3280 or the equivalent. Equipment is suitable for manufactured (mobile) home use. The height of the Furnace, Coil and discharge duct work must be 7 ft. or less.

Inspect the coil for shipping damage. Notify the transportation company immediately if the coil is damaged.

B. APPLICATION INFORMATION:

Note: 5PXC upflow coils may be installed in Upflow, Downflow, Horizontal Right with kit, and Horizontal Left with kit. 5PXC downflow coils may be installed in Downflow and Horizontal Right with kit.

1. FURNACE AND COIL

The coil MUST BE installed downstream (in the outlet air) of the furnace.

2. INDOOR UNIT AIRFLOW

Indoor unit must provide the required airflow for the heat pump or cooling combinations approved for these coils.

Important: Review your installation requirements. Check the table on the outline drawings and note all dimensions for your coil before beginning the installation.

Note: The manufacturer recommends installing ONLY A.H.R.I approved, matched indoor and outdoor systems. Some of the benefits of installing approved matched indoor and outdoor split systems are maximum efficiency, optimum performance, and the best overall system reliability.

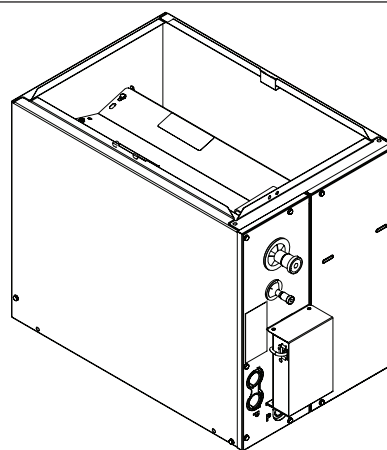


Figure 1

C. INFORMATION ON SERVICING:

All replacement parts shall be in accordance with the manufacturer's specifications.

Prior to Beginning Work

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating system, the following shall be completed prior to conducting work on the system:

- Work shall be undertaken under a controlled procedure to minimize the risk of a flammable gas or vapor being present while the work is being performed.
- All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.
- The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e., non-sparking, adequately sealed or intrinsically safe.
- If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.
- No person carrying out work in relation to a refrigerating system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.
- Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.
- The following checks shall be applied to installations using flammable refrigerants:
 - marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;
 - refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

Repairs to Electrical Components

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance.

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of

the equipment, so all parties are advised.

Initial safety checks shall include:

- that capacitors are discharged; this shall be done in a safe manner to avoid possibility of sparking;
- that no live electrical components and wiring are exposed while charging, recovering or purging the system;
- that there is continuity of earth bonding.

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

Detection of Flammable Refrigerants

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable for all refrigerant systems:

- Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.
- Bubble method leak detection fluids are suitable for use, but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

It is not recommended to detect leaks using fluorescent method agents due to the uncertainty in dye formulations and how these may react with refrigerants at high compression and discharge temperatures.

If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.

Removal and Evacuation

When breaking into the refrigerant circuit to make repairs - or for any other purpose - conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed, since flammability is a consideration. The following procedure shall be adhered to:

- safely remove refrigerant following local and national regulations;
- evacuate;
- purge the circuit with inert gas (optional for A2L);
- evacuate (optional for A2L);
- continuously flush or purge with inert gas when using flame to open circuit;
- and open the circuit.

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The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants.

This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

The outlet for the vacuum pump shall not be close to any potential ignition sources, and ventilation shall be available.

Charging Procedures

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the refrigerating system.

Prior to recharging the system, it shall be pressure tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

See installation instructions below for further details.

Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e., special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant. If in doubt, the manufacturer should be consulted.

In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak free disconnect couplings and in good condition.

The recovered refrigerant shall be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from a system, it shall be carried out safely.

Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.

1. Become familiar with the equipment and its operation.
2. Isolate system electrically.
3. Before attempting the procedure, ensure that:
 - a. Mechanical handling equipment is available, if required, for handling refrigerant cylinders;
 - b. All personal protective equipment is available and being used correctly;
 - c. The recovery process is supervised at all times by a competent person;
 - d. Recovery equipment and cylinders conform to the appropriate standards.
4. Pump down refrigerant system, if possible.
5. If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
6. Make sure that cylinder is situated on the scales before recovery takes place.
7. Start the recovery machine and operate in accordance with instructions.
8. Do not overfill cylinders (no more than 80 % volume liquid charge).
9. Do not exceed the maximum working pressure of the cylinder, even temporarily.
10. When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
11. Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

Equipment shall be labelled stating that it has been decommissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing flammable refrigerant, ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

D. RECOMMENDATION

If a coil is part of the total system installation, use the Installer's Guide packaged with the furnaces, outdoor sections, and thermostat for physically installing those components.

Important: If installing the coil in the horizontal position, you **MUST** use the horizontal kit listed below for this coil model number and follow the instructions in the installation guide provided with the conversion kit.

Note: 5PXC upflow coils may be installed in Upflow, Downflow, Horizontal Right with kit, and Horizontal Left with kit. 5PXC downflow coils may be installed in Downflow and Horizontal Right with kit.

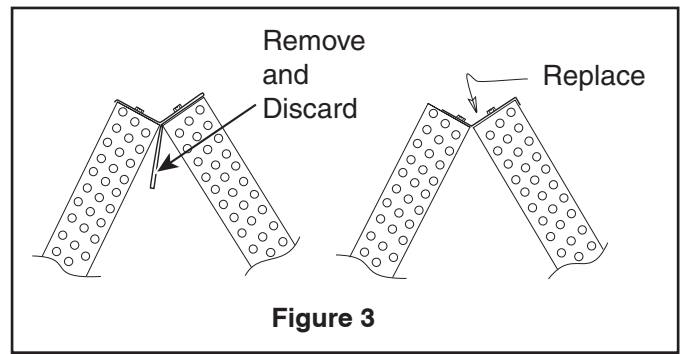
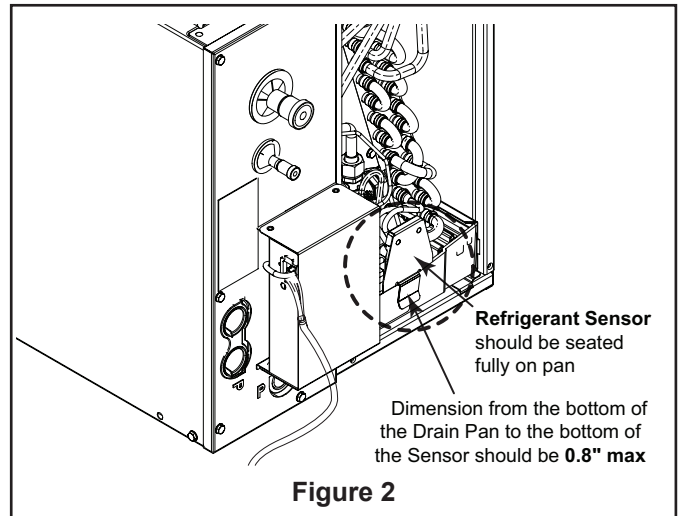
Model Number	Horizontal Kit No.
5PXCA001AS3HAA 5PXCBD003AS3HAA 5PXCBD03AS3HDA	BAYCONV18B
5PXCA002AS3HAA 5PXCBD004AS3HAA 5PXCC005AS3HAA 5PXCBD04AS3HDA 5PXCCD05AS3HDA	BAYCONV23B
5PXCBD006AS3HAA 5PXCC007AS3HAA 5PXCD008AS3HAA 5PXCBD06AS3HDA 5PXCCD07AS3HDA	BAYCONV27B
5PXCC009AS3HAA 5PXCD010AS3HAA 5PXCCD09AS3HDA 5PXCCD10AS3HDA	BAYCONV30C

E. FURNACE IN UPFLOW POSITION:

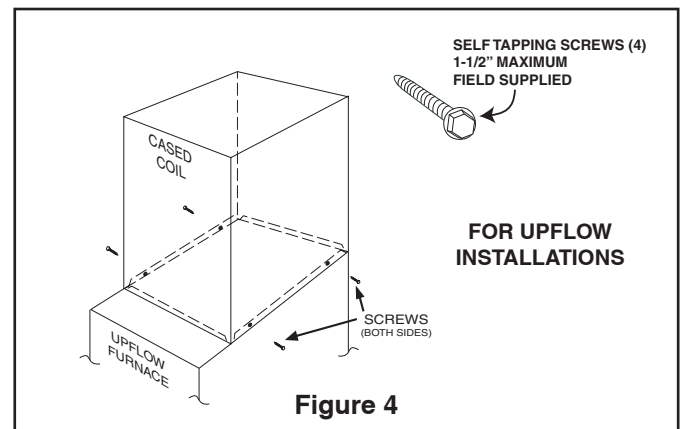
IMPORTANT: Only upflow/downflow coils may be installed in the upflow position -

5PXCA001AS3HAA, 5PXCA002AS3HAA,
5PXCBD003AS3HAA, 5PXCBD004AS3HAA,
5PXCC005AS3HAA, 5PXCBD006AS3HAA,
5PXCC007AS3HAA, 5PXCD008AS3HAA,
5PXCC009AS3HAA, 5PXCD010AS3HAA

1. UPFLOW COIL CONVERSION: Ensure the refrigerant sensor is attached to the primary pan per Figure 2. The sensor should face inward toward the coil and may be positioned anywhere of the front lip of the pan. Ensure the mounting bracket is seated as far down on the pan as possible.
2. EFFICIENCY OPTIONS FOR UPFLOW INSTALLATIONS: While not required, optional removal of some coil components will maximize airflow efficiency.
 - a. Remove the coil by sliding the coil out of the enclosure.
 - b. On models 5TXCC005, 5TXCB006, 5TXCC007, 5TXCD008, and 5TXCC009 only, remove the factory installed two-piece baffle assembly from the top of the coil by removing the 5/16" hex head screws and discard the inner water management baffle. See Figure 3. Replace only the top baffle using the same screws previously provided.
 - c. On model 5TXCC009 only, remove the two outer water management baffles by removing the 5/16" hex screws and discard. See Figure 7.



3. UPFLOW GAS FURNACE:
 - a. Apply gasket material (duct seal field supplied) to ALL mating surfaces between the furnace and the coil case.
 - b. Set the coil case on top of the furnace. Connect the furnace and ductwork to the coil case using field supplied screws. See Figure 4.
 - c. Seal for air leaks as required.



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F. FURNACE IN DOWNFLOW POSITION:

1. **DOWNFLOW COIL CONVERSION:**
 - a. Ensure the refrigerant sensor is attached to the primary pan per Figure 2. The sensor should face inward toward the coil and may be positioned anywhere of the front lip of the pan. Ensure the mounting bracket is seated as far down on the pan as possible.
 - b. On 5PXCDD010AS3HCA and 5PXCDD10AS3HDA, installing the water diverter baffles is required for water management in downflow installations. Install the two outer water baffles closest to the drain pan using the provided 5/16" hex screws. See figure 7.
2. **EFFICIENCY OPTIONS FOR DOWNFLOW INSTALLATIONS:**

While not required, optional removal of some coil components will maximize airflow efficiency.

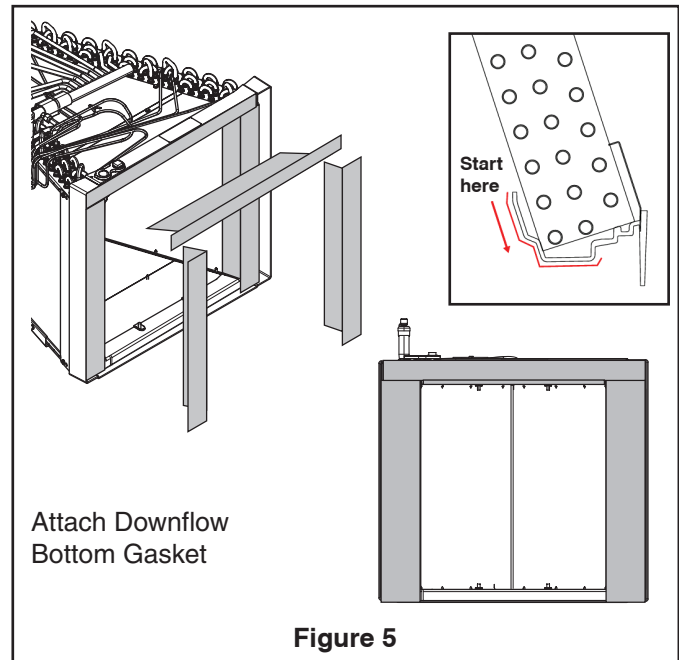
 - a. Remove the coil by sliding the coil out of the enclosure.
 - b. On models 5PXC*05, 5PXC*06, 5PXC*07, 5PXC*08, and 5PXC*09 only, remove the factory installed two-piece baffle assembly from the top of the coil by removing the 5/16" hex head screws and discard the inner water management baffle. See Figure 3. Replace only the top baffle using the same screws previously provided.
3. **DOWNFLOW GASKET INSTALLATION (OPTIONAL):**

For unusually humid applications that expect prolonged operation above 70% RH, it is recommended to use the BAYGSKT001A0 gasket kit to prevent water from forming on the bottom of the drain pan and dripping into the supply ductwork.

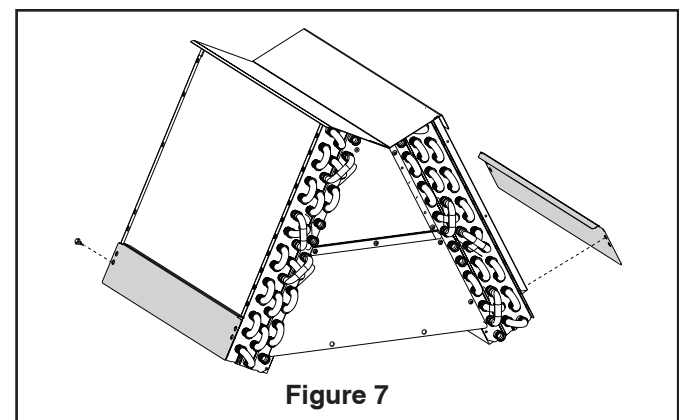
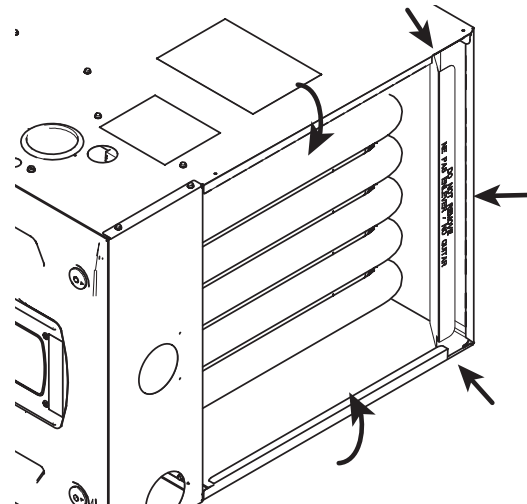
 - a. Lay the coil on its back side.
 - b. Locate the 4" wide gasket material found in BAYGSKT001A0.
 - c. Attach the 4" gasket material to three sides of the bottom of the drain pan as shown. Make sure to start by matching up the edge of the gasket material to the inner edge of the drain pan by the coil fins and working outwards.
 - d. The gasket material can be cut or ripped easily so that it can be tailored to fit. The gasket material must cover the three sides along the entire length of the coil as shown in Figure 5.
4. **DOWNFLOW GAS FURNACE:**

When a coil is used with a downflow furnace, a subbase is not required between the coil case and combustible flooring.

 - a. Place the coil case on the furnace supply air plenum.
 - b. Secure the coil case to the plenum.
 - c. Set the furnace on top of the coil case, making sure that the back side of the discharge opening is snug up against the duct flange at the top rear of the coil case.
 - d. Secure the coil case to the furnace and seal for air leaks as required.



Note: When installing coil onto an S-Series furnaces in downflow configuration, bend the flanges downward for a flush fit.



G. MAXIMUM AND MINIMUM AIRFLOW SETTINGS:

Note: Water blow-off could occur in certain installation positions if the airflow setting exceeds the maximum values listed.

Maximum airflow setting, CFM				
Coil	Upflow	Horizontal Left ¹	Horizontal Right ¹	Downflow
5PXCA001	900	800	900	750
5PXCA002	1350	1125	1350	1200
5PXCBD003	1125	1000	1125	925
5PXCBD03	N/A	N/A	1125	925
5PXCBD004	1350	1200	1350	1100
5PXCCD04 / 5PXCCD05	N/A	N/A	1350	1100
5PXCBD006 / 5PXCC007 / 5PXCD008	1800	1600	1800	1475
5PXCBD006 / 5PXCCD07 / 5PXCCD08	N/A	N/A	1800	1475
5PXCC009 / 5PXCD010	2250	2000	2250	1850
5PXCCD09 / 5PXCCD10	N/A	N/A	2250	1850

¹ Only with BAYCONV Kit.

When a refrigerant leak of the indoor coil is detected, the refrigerant leak detection system turns on the blower of the furnace to dilute leaked refrigerant.

The installer must verify that the indoor airflow setting is sufficient to dilute leaked refrigerant. The nominal airflow settings for first-stage cooling, first-stage heat pump, and first-stage furnace heat should not be less than shown in the minimum airflow table below.

Note: The airflow setting should be verified by comparison to the airflow at the lowest listed external static pressure for the setting. Refer to the airflow table provided by the manufacturer of the furnace.

Minimum Airflow Setting	
System refrigerant charge (lb) +	Minimum Airflow Setting (CFM)
less than 4	no minimum
4	108
5	135
6	162
7	189
8	216
9	244
10	271
11	298
12	325
13	352
14	379
15	406
16	433
17	460
18	487
19	514
20	541

+ The system refrigerant charge is the total system charge which is marked on the system according to the instructions provided by the manufacturer of the outdoor unit.

H. PRESSURE DROP TABLE:

PRESSURE DROP CHARACTERISTICS FOR COOLING AND HEAT PUMP COILS AIRFLOW (CFM) VS. PRESSURE DROP ACROSS WET COIL								
PRESSURE DROP (INCHES OF WATER COLUMN)								
Model	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4
5PXCA001AS3HAA	225	340	430	510	585	650	715	775
5PXCA002AS3HAA	300	475	620	750	870	980	1085	1185
5PXCBD003AS3HAA	350	525	665	790	900	1000	1095	1185
5PXCBD004AS3HAA	440	655	825	970	1100	1220	1330	1435
5PXCC005AS3HAA	520	775	970	1145	1300	1440	1570	1695
5PXCBD006AS3HAA	430	645	815	965	1095	1220	1335	1445
5PXCC007AS3HAA	510	760	965	1140	1300	1445	1580	1710
5PXCD008AS3HAA	580	870	1100	1305	1485	1650	1805	1950
5PXCC009AS3HAA	490	740	945	1120	1280	1425	1565	1695
5PXCD010AS3HAA	555	835	1065	1265	1445	1615	1770	1915
5PXCBD03AS3HDA	340	510	645	760	870	965	1055	1140
5PXCBD04AS3HDA	435	645	810	950	1080	1200	1305	1410
5PXCCD05AS3HDA	510	760	955	1125	1275	1415	1540	1665
5PXCBD06AS3HDA	405	605	765	905	1035	1150	1255	1360
5PXCCD07AS3HDA	480	715	910	1075	1225	1360	1490	1610
5PXCCD09AS3HDA	480	720	920	1095	1250	1395	1525	1655
5PXCCD10AS3HDA	540	815	1040	1235	1410	1575	1725	1870

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I. INSTALLING / BRAZING REFRIGERANT LINES:

⚠ WARNING

RISK OF FIRE!

Failure to following this warning could result in serious injury, death, or property damage.

The following requirements apply to the room where the cased coil is installed:

- All combustion appliances located in the same room that have continuous pilot lights are equipped with an effective flame arrest.
- Auxiliary devices which may be a potential ignition source, such as hot surfaces or electric switching devices, shall not be installed in the connecting ductwork unless they have been approved by the manufacturer or declared suitable with the refrigerant used.
- All indoor field-made joints of the field piping have been checked for refrigerant leaks after charging using an electronic leak detector calibrated for R-454B having a sensitivity of 5 grams per year or better.
- The room is constructed to ensure that should any refrigerant leak it will not stagnate and create a fire hazard.

⚠ CAUTION

Do NOT open refrigerant valve at the outdoor unit until the refrigerant lines and coil have been brazed, evacuated, and leak checked. This would cause contamination of the refrigerant or possible discharge of refrigerant to the atmosphere.

The following steps are to be considered when installing the refrigerant lines:

- a. Determine the most practical way to run the lines.
- b. Consider types of bends to be made and space limitations.
- c. Route the tubing making all required bends and properly secure the tubing before making final connections.

Note: Refrigerant lines must be isolated from the structure and the holes must be sealed weather tight after installation.

Important: Do not unseal refrigerant tubing until ready to fit refrigerant lines.

There is only a holding charge of dry air in the indoor coil, therefore no loss of operating refrigerant charge occurs when the sealing plugs are removed.

Note: TXV bulb MUST be protected (wrapped with wet rag) or removed, while brazing the tubing. Overheating of the sensing bulb will affect the functional characteristics and performance of the comfort coil.

Capillary tubes will come out the top of bulb when positioned correctly.

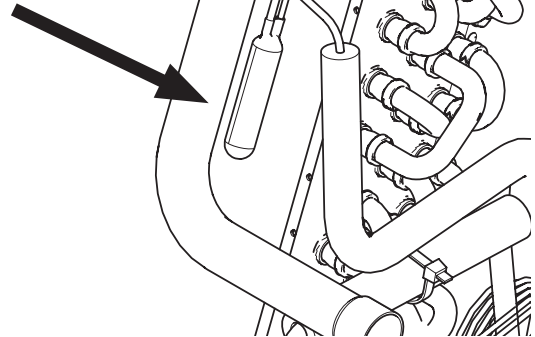


Figure 8

Note: TXV bulb MUST be protected (wrapped with wet rag) or removed, while brazing the tubing. Overheating of the sensing bulb will affect the functional characteristics and performance of the comfort coil.

1. Clear all A2L sensor wires well away from the braze connections both inside and outside the coil cabinet. If needed, the control box may be removed from the lineset panel by pressing outward on snap and rotation out for clearance. See Figure 9.

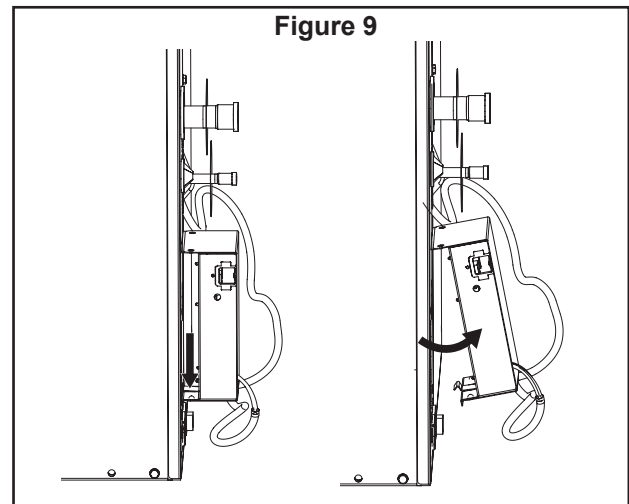


Figure 9

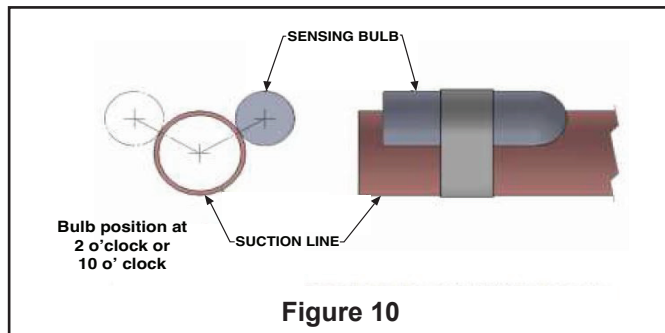
2. Remove both rubber plugs from the indoor coil.
3. Field supplied tubing should be cut square, round and free of burrs at the connecting end. Clean the tubing to prevent contaminants from entering the system.
4. Run the refrigerant tubing into the stub tube sockets of the indoor unit coil.

PAINTED AREAS OF THE UNIT MUST BE SHIELDED DURING BRAZING.

5. Flow a small amount of nitrogen through the tubing while brazing.
6. Use good brazing technique to make leakproof joints.
7. Minimize the use of sharp 90 degree bends.
8. Insulate the suction line and its fittings.
9. Do NOT allow un-insulated lines to come into contact with each other.

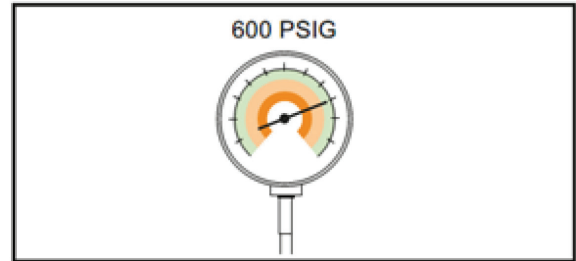
Note: When replacing the TXV bulb, reinstall the bulb in the proper orientation. Some models will use a spring steel clip to attach the TXV bulb, and some models will use a hose clamp. When supplied with a hose clamp, the clamp should be "snug" but not "tight" (clamp screw torque 20 +/- 5 in-lbs).

10. Rewrap the TXV bulb, spring clip or hose clamp, and suction line with insulation after the spring clip is installed. Insulation is provided in the documentation pack for spring clip models.
 11. For optimal performance, the TXV bulb should be relocated outside the coil cabinet after the field line brazing is complete.
 - a. Remove the bulb insulation and bulb clip/hose clamp.
 - b. Lace the TXV bulb through the large coil panel grommet.
 - c. Assemble the TXV bulb to the field provided suction line outside the unit.
 - For models with a hose clamp factory mounted with the bulb, reuse the hose clamp to attach the bulb outside the unit.
 - For models with a factory mounted spring steel clamp with the bulb, discard the spring steel clip and use the hose clamp provided with the documentation pack.
- Ensure the bulb is mounted on a straight, smooth section of the copper line. The bulb should be clear of any field braze joints and located away from any bends in the pipe.
- d. The recommend installation position for the TXV bulb is parallel to the ground (on a horizontal plane). The bulb position should be at 2 o'clock or 10 o'clock. See Figure 10.
 - e. Wrap the bulb and suction with field provided insulation after the hose clamp is installed.

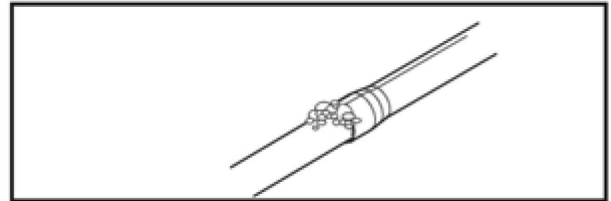


J. PRESSURE TEST:

- Using dry nitrogen, pressurize the field piping and indoor coil to the lower of the maximum operating pressures listed on the name plates of the indoor and outdoor units (likely 600 psi).



- The test pressure after removal of the pressure source shall be maintained for at least one (1) hour with no decrease of pressure indicated by the test gauge, with the test gauge resolution not exceeding 30 psi.
- Check for leaks by using a soapy solution at each field-made joint.

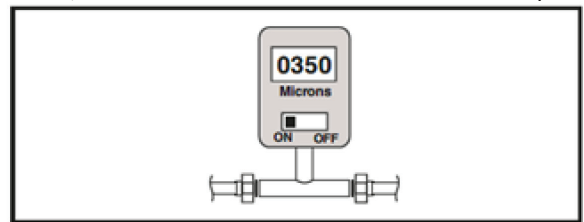


Note: Remove nitrogen pressure and repair any leaks before continuing.

K. VACUUM TEST:

Important: Do not open the service valves until the refrigerant lines and indoor coil leak check and evacuation are complete.

- Evacuate until the micron gauge reads no higher than 350 microns, then close off the valve to the vacuum pump.



- Observe the micron gauge. Evacuation is complete if the micron gauge does not rise above 500 microns in one (1) minute and 1500 microns in ten (10) minutes.
- Once evacuation is complete, blank off the vacuum pump and micron gauge, and close the valve on the manifold gauge set.

All procedures for charging the system with refrigerant shall be according to the instructions provided by the manufacturer of the outdoor unit.

Important: Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks.

After charging the system, all indoor field-made joints of the field piping shall be checked for refrigerant leaks using an electronic leak detector calibrated for R-454B having a sensitivity of 5 grams per year or better.

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L. CONDENSATE DRAIN PIPING:

Condensate drain connections are located in the drain pan at the bottom of the coil/enclosure assembly. The female threaded fitting protrudes outside of the enclosure for external connection. A field fabricated trap is not required for proper drainage due to the positive pressure of the furnace; however, it is recommended to prevent efficiency loss of conditioned air.

1. The drain hole in the drain pan must be cleared of all insulation.
2. Insulate the primary drain line to prevent sweating where dew point temperatures may be met. (Optional depending on climate and application needs)
3. Connect the secondary drain line to a separate drain line (no trap is needed in this line).

M. CLEANING THE COIL:

The two piece door allows removal of the outer casing doors without interference from refrigerant or condensate lines.

The foil covered insulation on 5PXC coils should be wiped down and residual dirt and dust should be vacuumed up to maintain good air quality. See Figure 11.

The manufacturer's recommendation for coil cleaning is to initially use only water to wash away debris that may have collected on and in the coil fin surface. Removing an evaporator coil is the best way to effectively clean a coil that is heavily contaminated. This is accomplished by removing the coil from the cabinet, sealing the liquid and vapor line and using a strong water stream such as from a garden hose, being careful to prevent fin damage. Use chemical cleaners, only when necessary.

Note: Refer to Service Guideline, UN-SVG001C-EN, Evaporator Coil Cleaning and Condensate Drain Maintenance Guidelines for important information on cleaning coils with chemical treatments.

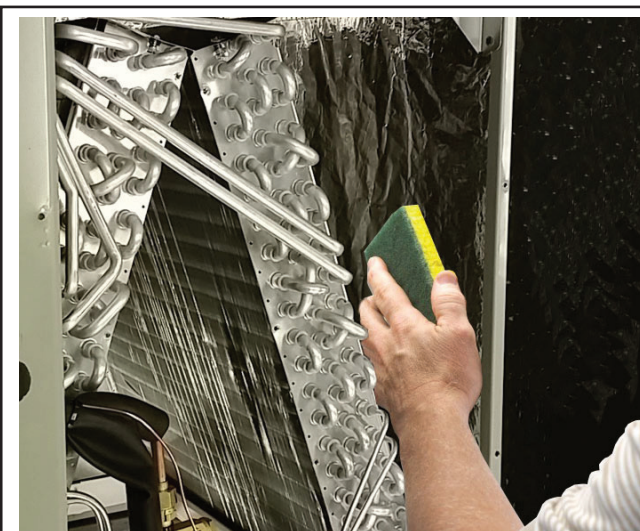


Figure 11

N. REFRIGERANT LEAK DETECTION SYSTEM:

For all tables contained in this section of the manual, the refrigerant charge is the total system charge which is marked on the system according to the instructions provided by the manufacturer of the outdoor unit.

⚠ WARNING

Risk of Fire!

Flammable refrigerant used.

To be repaired only by trained service professional. Do not puncture refrigerant tubing. Dispose of properly in accordance with federal or local regulations. Flammable refrigerant used.

⚠ WARNING

LEAK DETECTION SYSTEM!

Unit must be powered except for service.

To ensure safety of the building occupants, the unit is equipped with a refrigerant leak detection system. The system is comprised of a refrigerant sensor and a mitigation control board. The system automatically detects leaks in the indoor coil and initiates actions to mitigate the risk of ignition of the leaked refrigerant, including:

- Turning on the blower of the indoor unit to dilute leaked refrigerant;
- Fully opening any zoning dampers, when applicable;
- Turning off the compressor of the outdoor unit;
- De-energizing potential sources of ignition connected to the system;
- Energizing an audible alarm, if so equipped.

⚠ WARNING

RISK OF FIRE!

Failure to following this warning could result in serious injury, death, or property damage.

The following requirements apply to the room where the cased coil is installed:

- All combustion appliances located in the same room that have continuous pilot lights are equipped with an effective flame arrest.
- Auxiliary devices which may be a potential ignition source, such as hot surfaces or electric switching devices, shall not be installed in the connecting ductwork unless they have been approved by the manufacturer or declared suitable with the refrigerant used.
- All indoor field-made joints of the field piping have been checked for refrigerant leaks after charging using an electronic leak detector calibrated for R-454B having a sensitivity of 5 grams per year or better.
- The room is constructed to ensure that should any refrigerant leak it will not stagnate and create a fire hazard.

Refrigerant sensors for refrigerant leak detection systems shall only be replaced as specified by the manufacturer.

Minimum Conditioned Space

The installer must verify that the total space conditioned by the system is large enough to safely dilute any leaked refrigerant in the event of a refrigerant leak of the indoor coil.

The minimum space conditioned by the appliance shall be according to Table below. The conditioned space includes any parts of the space connected via an air duct system. The altitude of installation is the altitude above sea level of the site where the equipment is installed.

	Altitude (ft)								
	sea level- 2,000	2,001- 4,000	4,001- 6,000	6,001- 8,000	8,001- 10,000	10,001- 12,000	12,001- 14,000	14,001- 15,000	above 15,000
Charge (lb)	Minimum Conditioned Space (ft ²)								
4	63	66	70	74	79	85	91	94	98
5	79	83	88	93	99	106	113	118	122
6	95	100	105	112	119	127	136	141	147
7	110	116	123	130	138	148	159	165	171
8	126	133	140	149	158	169	181	188	196
9	142	149	158	167	178	190	204	212	220
10	158	166	175	186	198	211	227	235	245
11	173	183	193	205	218	232	249	259	269
12	189	199	211	223	237	254	272	282	294
13	205	216	228	242	257	275	295	306	318
14	221	232	246	260	277	296	318	330	343
15	236	249	263	279	297	317	340	353	367
16	252	266	281	298	317	338	363	377	392
17	268	282	298	316	336	359	386	400	416
18	284	299	316	335	356	380	408	424	440
19	299	315	333	353	376	402	431	447	465
20	315	332	351	372	396	423	454	471	489

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O. WIRING:

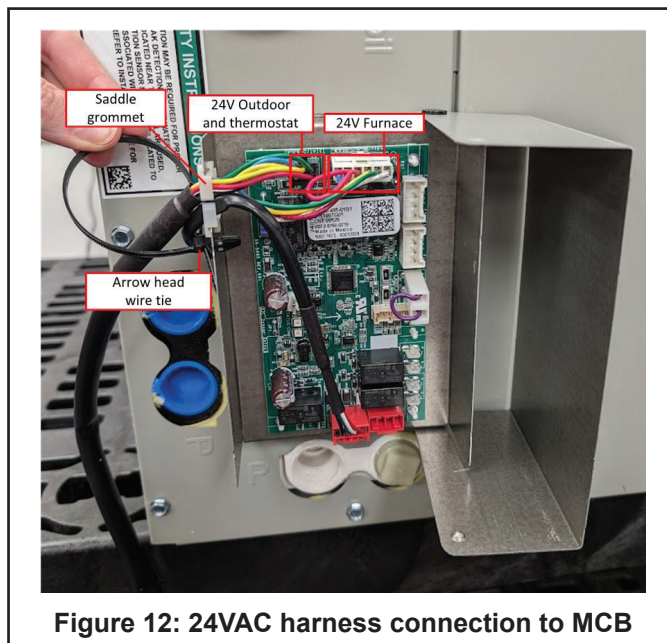
The MCB must be wired to the furnace, thermostat, and outdoor unit in order for the Refrigerant Detection System to function as intended.

For 24VAC systems, use the wiring harness supplied with this guide.

For communicating/Link systems, no harness is provided. Use the extra CAN connectors provided in the HUB kit or communicating furnace and field supplied wiring.

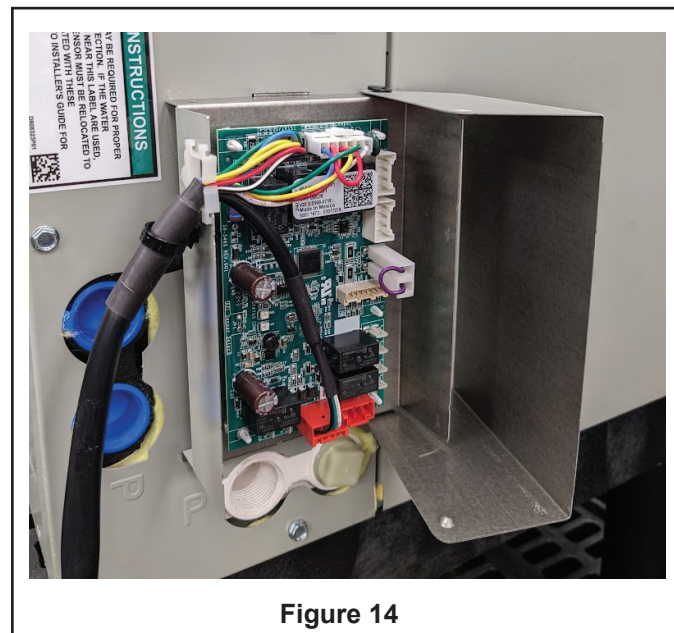
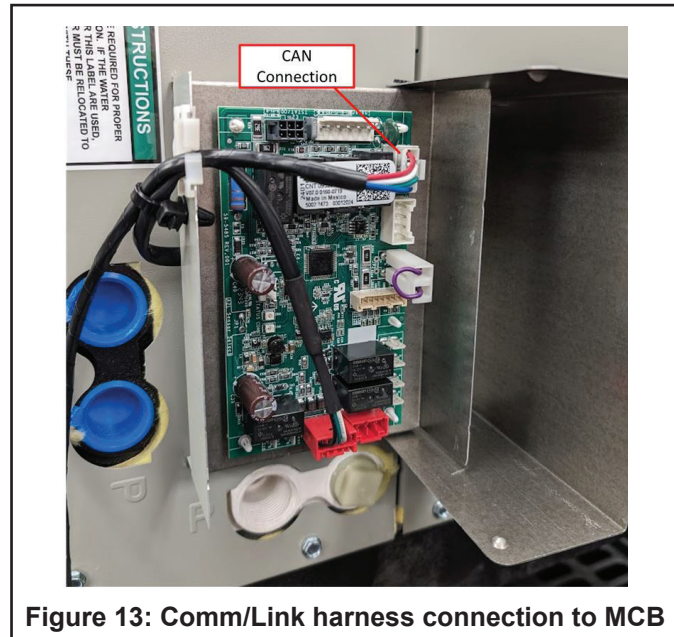
Note: For communicating systems, only the CAN bus connection is required for connection to the furnace, thermostat, and OD.

- **24VAC only:** Connect the white (furnace) connector and the black (Thermostat and OD) connector to the MCB as shown in Figure 12.
- **Communicating/Link only:** Connect the white field supplied CAN harness to the white CAN connector on the MCB as shown in Figure 13.
- Press the harness through the saddle grommet on the side of the MCB control box.
- Insert the arrow head wire tie provided in the documentation pack through the hole on the side of the MCB control box near the saddle grommet.
- Wrap the tie around both the 24V harness/CAN harness and the A2L sensor harness, and pull the wire tie tight. This ensures MCB connections are not strained or damaged due to harness weight. See Figure 14.

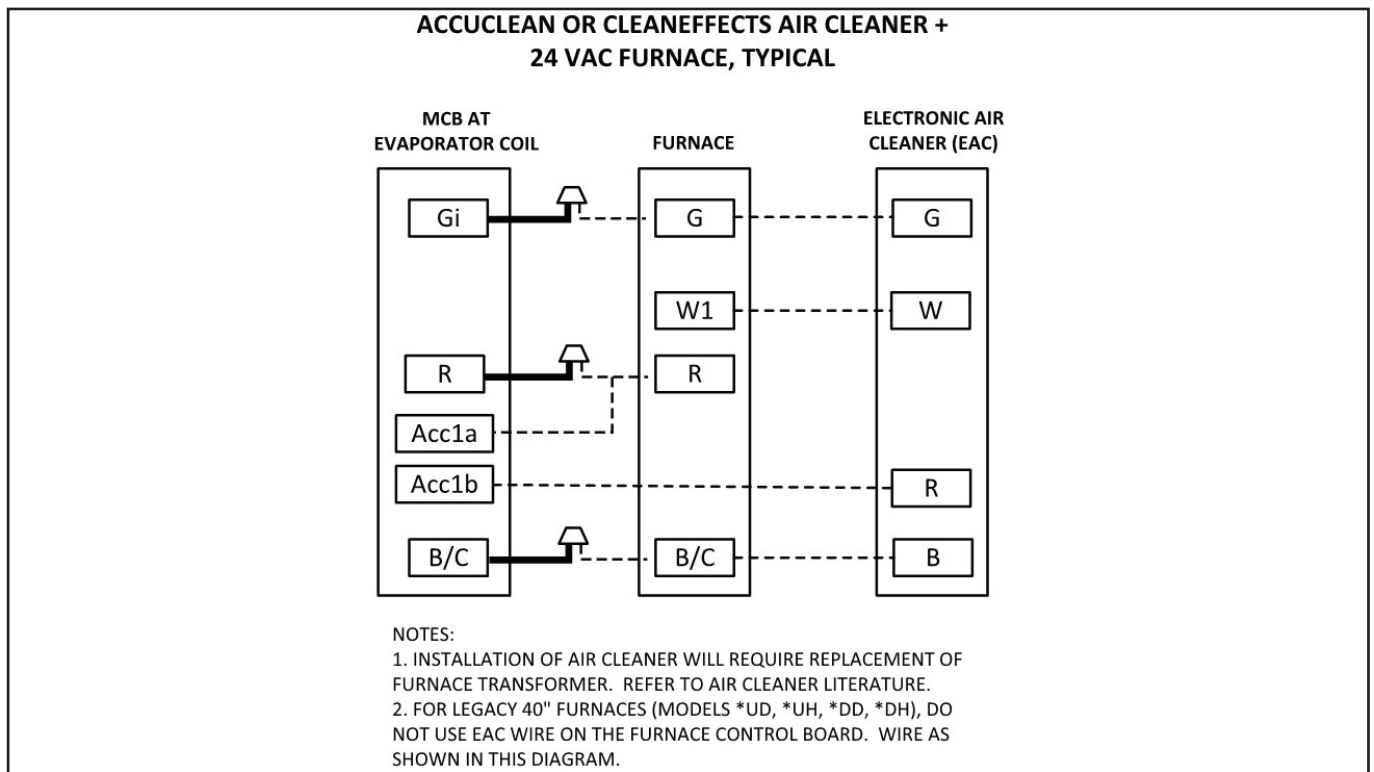
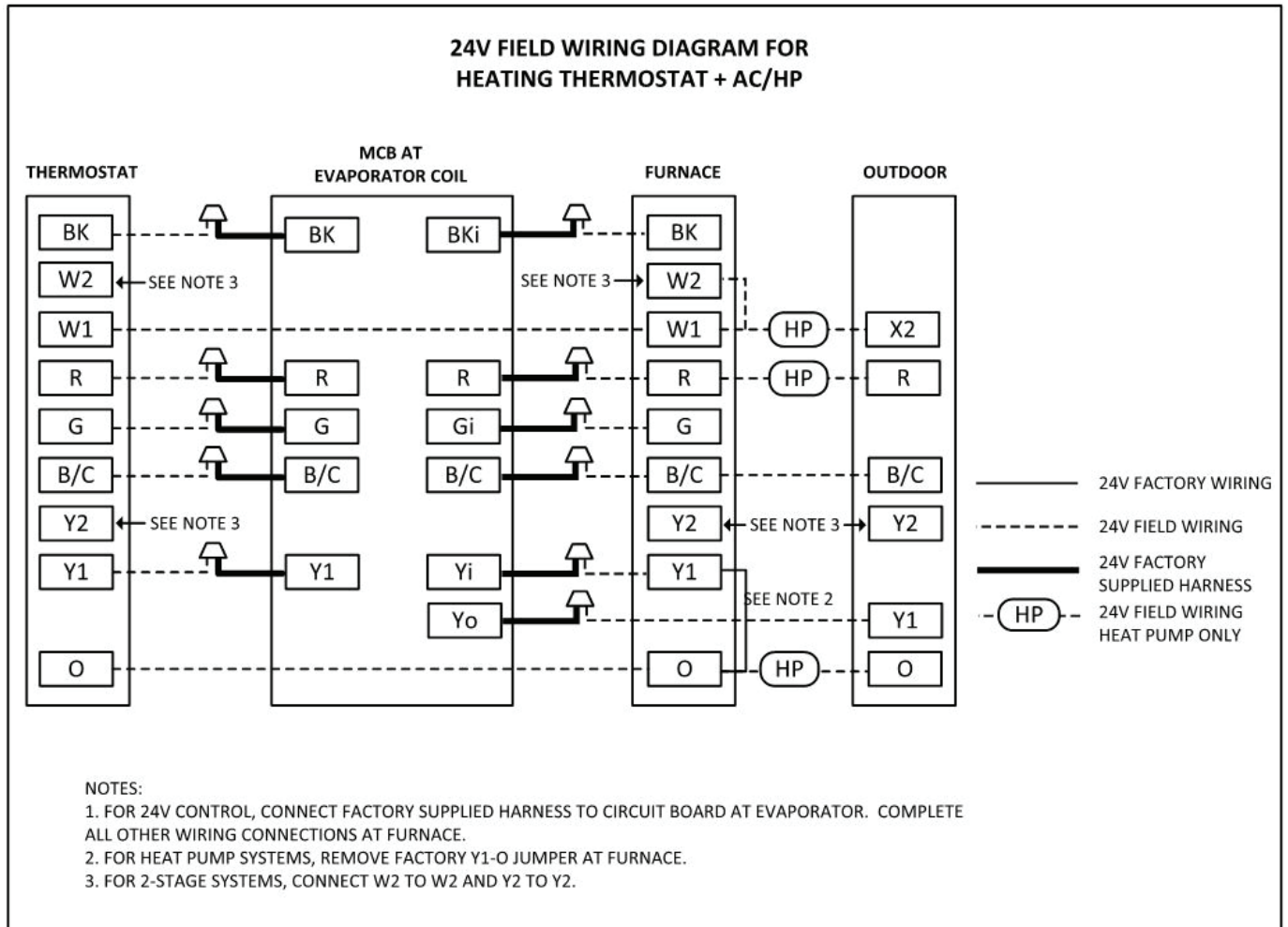


Check that the 24VAC harness is connected properly to the furnace, thermostat, and OD units. See field wiring diagrams in this guide for further information.

1. Wires bundled with "To Furnace" flag label should be wired to the furnace low voltage terminal strip.
2. Wires bundled with "To Thermostat" flag label should be spliced to field provided thermostat wire within the furnace cabinet.
3. Wires bundled with "To Outdoor" flag label should be spliced to field provided outdoor wire within the furnace cabinet.

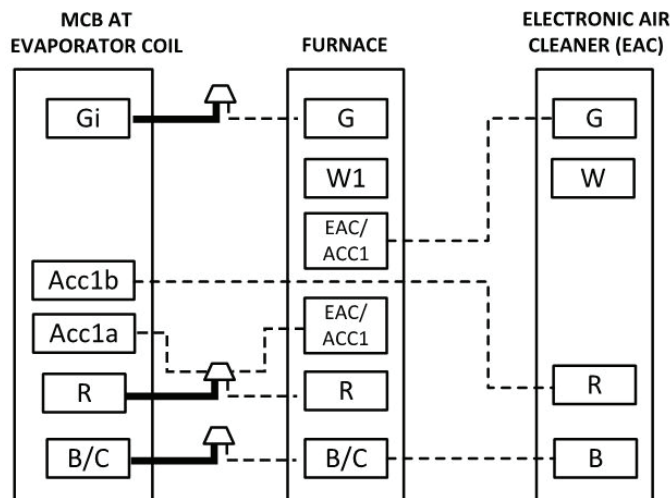


P: FIELD WIRING DIAGRAMS:



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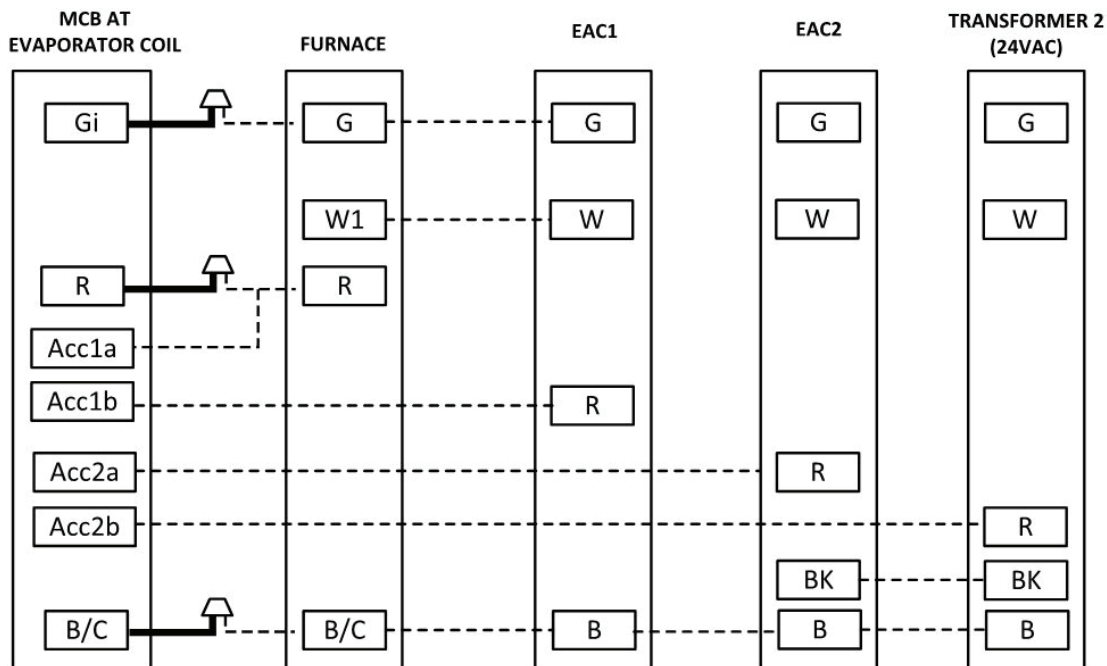
ACCUCLEAN OR CLEANEFFECTS AIR CLEANER + FURNACE WITH DRY CONTACT EAC TERMINALS, TYPICAL



NOTES:

1. INSTALLATION OF AIR CLEANER WILL REQUIRE REPLACEMENT OF FURNACE TRANSFORMER. REFER TO AIR CLEANER LITERATURE.
2. S*X, S*V, A9, L8, OR P0 FURNACE MODELS INCLUDE EAC OR ACC DRY CONTACTS AS SHOWN. (*UD, *UH, *DD, *DH, OR S*B FURNACE MODELS DO NOT UTILIZE DRY CONTACT ACCESSORY CONNECTIONS.)

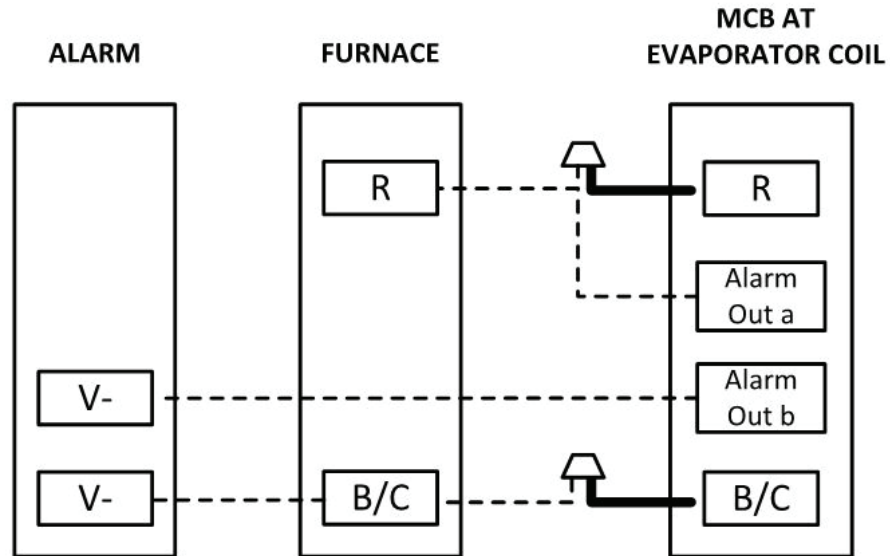
SECONDARY TRANSFORMER OF SECOND ACCUCLEAN OR CLEANEFFECTS AIR CLEANER + 24 VAC FURNACE (IF EQUIPPED)



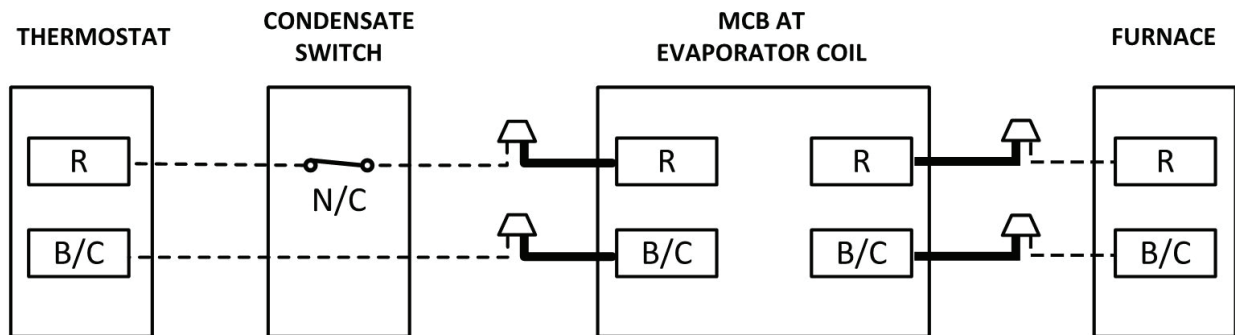
NOTES:

1. REFER TO AIR CLEANER LITERATURE TO DETERMINE IF SECOND AIR CLEANER AND/OR SECONDARY TRANSFORMER IS REQUIRED.
2. SEE THE OTHER AIR CLEANER WIRING DIAGRAMS FOR CONTROL WIRING CONNECTIONS.

AUDIBLE ALARM



CONDENSATE SWITCH, TYPICAL



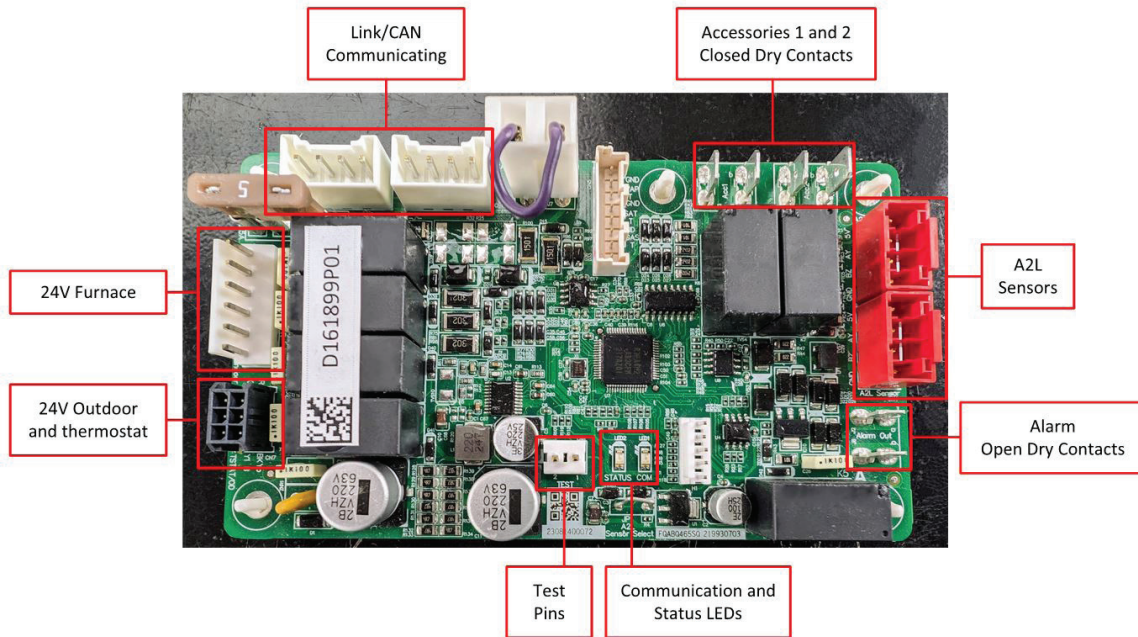
NOTES:

1. DO NOT BREAK R BETWEEN THE MCB AND FURNACE TO ENSURE THE MCB REMAINS POWERED FOR LEAK DETECTION.

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Q. VERIFICATION AND TROUBLE SHOOTING REFRIGERANT DETECTION SYSTEM:

Figure 15. Mitigation Control Board (MCB) Connections



After installation, the installer must verify that the refrigerant leak detection system actuates all mitigating actions listed above.

TEST PINS: Force Test: (See Figure 15)

- The test can be initiated by shorting the two test pins on the header of the mitigation control board inside of the unit.
- The mitigating actions will continue for two minutes with the jumper in place.
- The control will resume normal operation after two minutes or when the jumper is removed.

If any of the mitigating actions are not actuated by the system during the test, please check the following:

- All field wiring connections should be checked against the diagrams in the “Field Wiring Diagrams,” page 13 section of this manual.
- The diagnostic indicators on the mitigation control board should be checked against the diagnostic codes given in Table 1 on page 17.
- Scan the QR code for more information on field troubleshooting of the refrigerant leak detection system.



If the MCB is showing an active alarm at startup (see Table 1 on page 17):

- Check the RED A2L sensor is fully connected at MCB.
- Check the BLACK A2L sensor to sensor harness connection inside the unit and ensure fully connected. (See Figure 16 on how to connect/disconnect the sensor harness.)
 - a. To disconnect the black connector, first pull out the grey tab, and then actively push down on the grey tab while simultaneously pulling the connection apart to get it loose.
 - b. To connect the black connector, press together and push in grey tab to lock.
- Ensure no refrigerant is present.

The MCB will take approximately 20 seconds to reboot when power is cycled in 24VAC mode. The 5 minute mitigation timer can be reset by cycling power to the unit.

Figure 16. Connect/Disconnect sensor harness

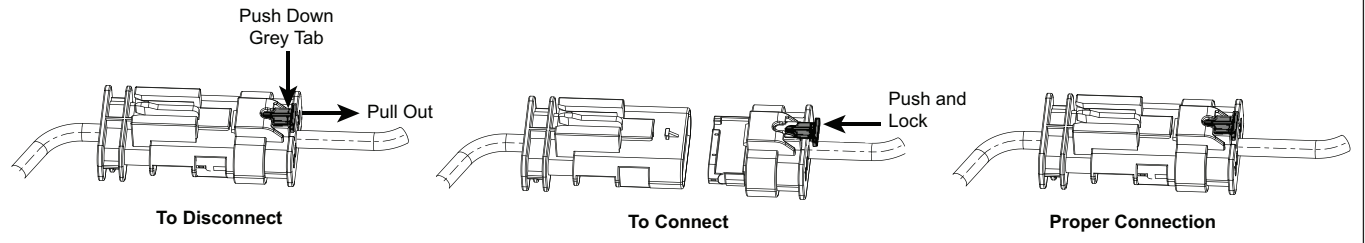


Table 1: MCB Diagnostic Codes

Amber LED	COMM Condition
Off	No Power/Off
On	24V Mode Active, Normal Operation
Node Count	Communication Mode is Active, Normal Operation
Fast Blink	CAN Communication lost

Green LED	Status Condition
Off	No Power/Off
On	Start Up
Slow Blink	Normal Operation
3 Flash	Active Mitigation Alarm - Refrigerant Leak Detected, Loss of Sensor Communication or Sensor Failure
4 Flash	Past Refrigerant Leak Detected, Normal Operation
5 Flash	Past Sensor Communication Error, Normal Operation
6 Flash	Past Sensor Failure or Error, Normal Operation

Note: All past alarm flash codes will remain present for 30 days post occurrence.

Clearing Alarms:

- With power OFF to the mitigation control board, place a jumper across the test pins.
- Turn power ON, wait until the control fully boots up and remove the jumper.

R. CONTROL BOX RELOCATION (OPTIONAL):

The control box may be relocated from the coil cabinet to allow for clearance to braze connections, condensate connections, or other space constraints, with use of extension kit optional accessory BAYMCBHARNESS. To avoid puncturing refrigerant tubes, it is not recommended to screw control box to coil cabinet.

Note: For communicating systems, only the CAN bus connection is required for connection to the furnace, thermostat, and OD.

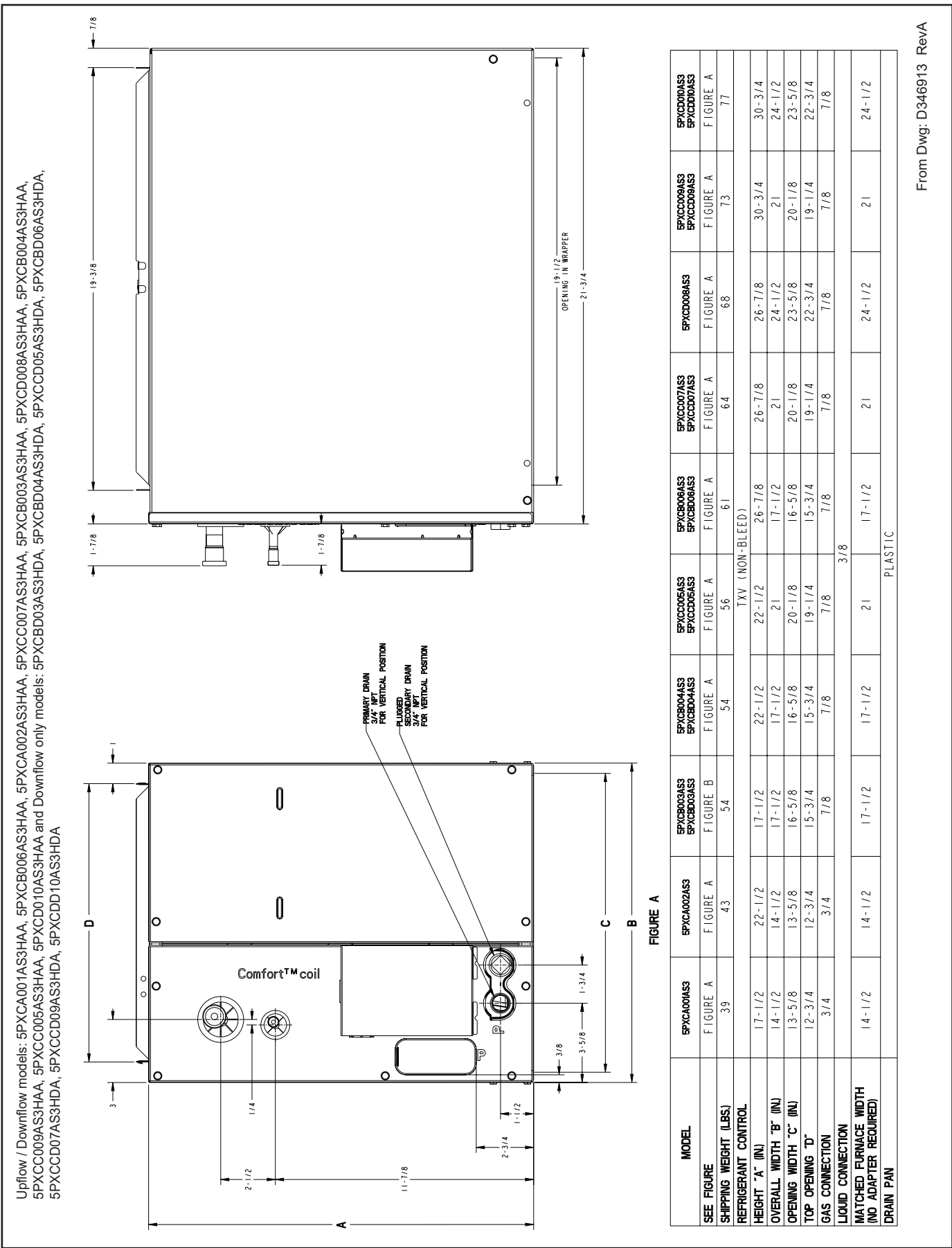
Functional Replacement Parts:

- Mitigation Control Board (MCB)
- A2L Refrigerant Sensor
- 24V Wire Harness
- Refrigerant Sensor Wire Harness

Note: Refer to the evaporator coil model and serial number when ordering MCB replacement parts.

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S. OUTLINE DRAWING:



Technical drawing of the Comfort™ coil unit, showing dimensions and features. The unit is rectangular with a top panel and a bottom section containing the coil and controls.

Dimensions:

- Top Panel:**
 - Width: 10-1/8"
 - Height: 5-1/4"
- Bottom Section:**
 - Width: 10-1/8"
 - Height: 3-1/2"
- Overall Dimensions:**
 - Width: 10-1/8"
 - Height: 15-1/4"

Features and Labels:

- Comfort™ coil:** The main heating/cooling coil.
- Controls:** Located on the right side of the bottom section, including a fan speed control knob and a temperature control knob.
- Drainage:**
 - Ø 3/4 NPT PLUGGED SECONDARY DRAIN FOR VERTICAL POSITION:** Located on the right side of the top panel.
 - Ø 3/4 NPT PRIMARY DRAIN FOR VERTICAL POSITION:** Located on the right side of the bottom section.
- Opening in Wrapper:** Indicated on the right side of the unit.

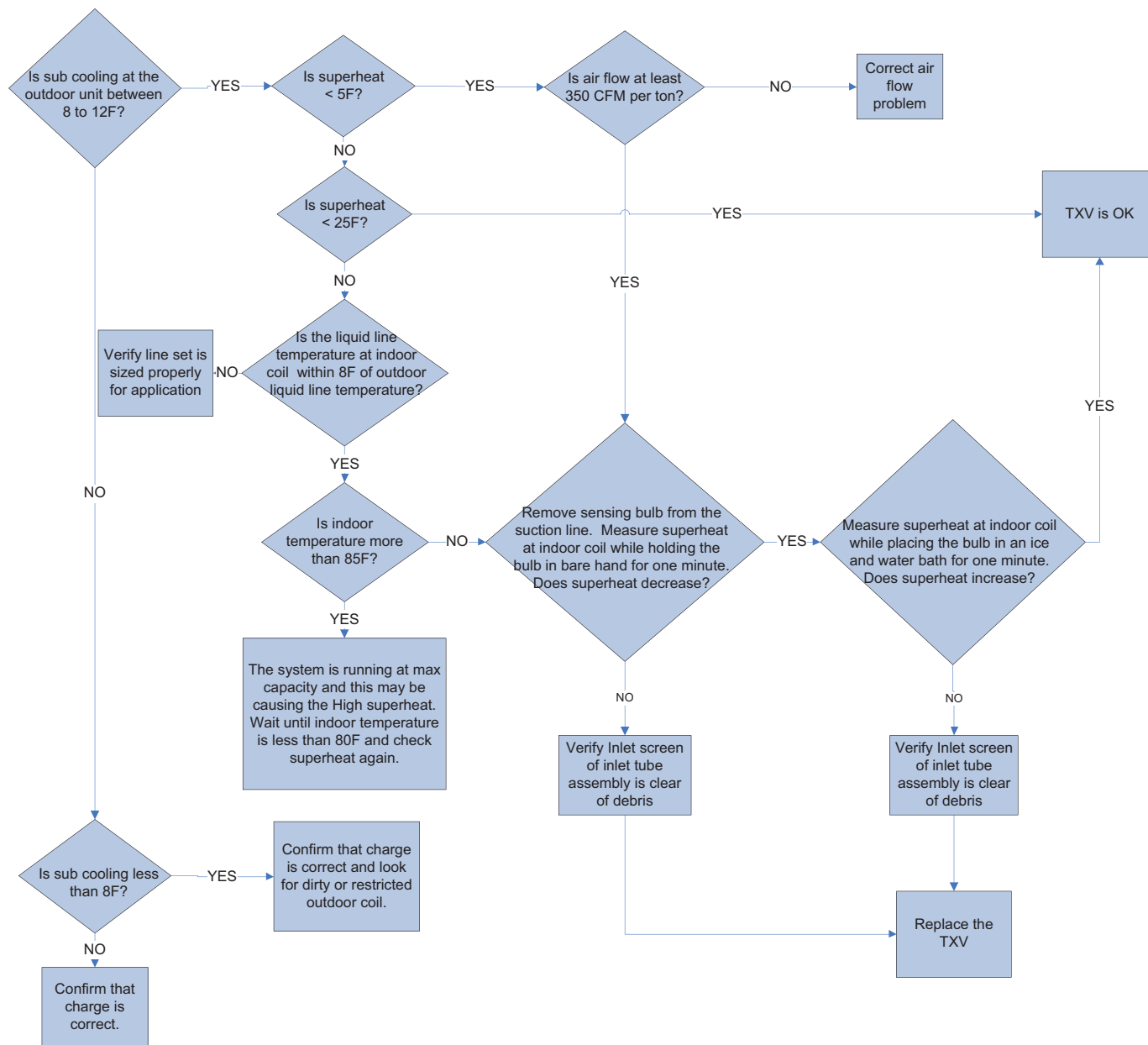
From Dwg: D346913 RevA

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T. TROUBLESHOOTING:

Before starting, insure the blower wheel, indoor and outdoor coils are clean.

Troubleshooting Indoor TXV / Cooling Mode



U. CHECKOUT PROCEDURES:

The final phase of the installation is the system Checkout Procedures. The following list represents the most common items covered in a Checkout Procedure. Confirm all requirements in this document have been met.

☐ All wiring connections are tight and properly secured. ☐ Voltage and running current are within limits. ☐ All refrigerant lines (internal and external to equipment) are isolated, secure, and not in direct contact with each other or structure. ☐ All braze connections have been checked for leaks. A vacuum of 350 microns provides confirmation that the refrigeration system is leak free and dry. Additional refrigerant weight is recorded on a label by the unit nameplate. ☐ If unit is installed in horizontal, the refrigerant sensor is relocated to the horizontal drain pan. ☐ Final unit inspection to confirm factory tubing has not shifted during shipment. Adjust tubing if necessary so tubes do not rub against each other or any component when unit runs. ☐ Ductwork is sealed and insulated.	☐ All drain lines are clear with joints properly sealed. Pour water into drain pan to confirm proper drainage. Provide enough water to ensure drain trap is primed. ☐ Supply registers and return grilles are open, unobstructed, and air filter is installed. ☐ Indoor blower and outdoor fan are operating smoothly and without obstruction. ☐ Indoor blower motor set on correct speed setting to deliver required CFM. "Blower and fan set screws are tight." ☐ Cover panels are in place and properly tightened. ☐ System functions safely and properly in all modes. ☐ Refrigerant leak detection system mitigation actions are verified. ☐ All refrigerant safety procedures have been verified. ☐ Owner has been instructed on use of system and given manual.
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NOTES:

NOTES:

About Trane and American Standard Heating and Air Conditioning
Trane and American Standard create comfortable, energy efficient indoor environments for residential applications.
For more information, please visit www.trane.com or www.americanstandardair.com

The manufacturer has a policy of continuous data improvement and it reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

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