18-AH64D1-3A-EN

Replacement Coils

Black epoxy coated coil fins COL18627–18628, COL18633, COL18635, COL18639, COL20917, COL20919, COL20921, COL20923, COL20925, COL20927, COL21069–21070, COL21438, COL21442

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.

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.

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Section 1. Safety

WARNING

This information is intended for use by individuals possessing adequate backgrounds of electrical and mechanical experience. Any attempt to repair a central air conditioning product may result in personal injury and/or property damage. The manufacture or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

WARNING

WARNING (Medium/high pressure)

Contains Refrigerant!

System contains oil and refrigerant under high pressure. Recover refrigerant to relieve pressure before opening the system. See unit nameplate for refrigerant type. Do not use non-approved refrigerants, refrigerant substitutes, or refrigerant additives.

Failure to follow proper procedures or the use of nonapproved refrigerants, substitutes, or refrigerant additives could result in death, serious injury, or equipment damage.

Section 2. Overview and Common Steps

These instructions are designed for installing a replacement coil into a previously installed air handler.

The air handler may be installed in one of the following orientations: upflow, downflow, horizontal left or horizontal right.

Actual air handler units and coil configurations may differ from models depicted.

2.1 Common Preparation Steps

- 1. Pump down or recover the refrigerant in the system.
- 2. Turn off high voltage power to the unit.
- 3. Remove the condensate drain lines from the indoor coil. Be prepared to catch any water that might be in the drain line and drain pan.
- 4. Disconnect the refrigerant lines to the indoor coil. Be sure to protect the refrigerant lines so debris does not enter the piping system.
- 5. Remove the air handler's front panels. Retain all screws to reinstall panels in a later step.
- 6. Use Table of Contents to find your air handler model and go to the appropriate section of this Installer's Guide to complete the installation of the replacement coil.
- **Note:** For the TAM8 or AAM8 air handler, disconnect the molex plug to the display assembly before removing the front panel.

WARNING

LIVE ELECTRICAL COMPONENTS! During installation, testing, servicing, and troubleshooting of this product, it may be necessary to work with live electrical components. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

CAUTION

Extreme caution should be exercised when opening the Liquid Line Service Valve. Turn counterclockwise until the valve stem just touches the rolled edge. No torque is required.

A CAUTION

SAFETY HAZARD

Sharp Edge Hazard. Be careful of sharp edges on equipment or any cuts made on sheet metal while installing or servicing. Personal injury may result.



Figure 1 – Replacement Coils

Section 3. TAM7, TAM8, TAM4, GAM5, GAM2, AAM7, AAM8, AAM4 Replacement Coils – Black epoxy coated coil fins COL20917, COL20919, COL20921, COL20923, COL20925, COL20927, COL21069–21070, COL21438, COL21442

Section 3.1 Disassembling Coil in Air Handler:

- **Note:** Blower may be removed to make it easier to remove the air diverter as in illustration. Follow steps in Installer's Guide to remove the blower.
- 1. Remove airflow diverter from the bottom of coil drain pan by gripping the plastic diverter, using your thumbs to spread the top of the diverter slightly outwards, and then pulling down and out through the blower opening as illustrated.



Figure 2 – Remove Coil Airflow Diverter

- 2. Disconnect wires to the EEV motor and sensors inside the coil assembly. Cut the wire ties on those wire harnesses.
- *Important:* Wire ties that held the sensor must be replaced after the coil is placed back into the cabinet.
- 3. Slide Coil assembly out of unit using built-in coil support channels and set aside.
- *Important:* The air handler will have one of two types of EEV flow control assembly. The EEV-2 assembly requires some adjustment of the distributor tubes for installation.
- *Important:* If replacing an older coil with a forward facing distributor, the included adapter will be needed to connect the new coil and existing EEV assembly.



Figure 3 – Remove Coil Assembly

Items to be Retained during Disassembly of the Coil Removed from the Air Handler (Figure 4):

1) All Screws that are removed.

2) All 4 baffles on the unit.

3) Downflow drain pan assembly.

4) Upflow drain pan assembly.

5) Evaporator temperature sensor (ET).

6) Gas temperature sensor (GT).

7) EEV-1 assembly attached at the mechanical fitting

8) EEV-2 assembly attached at the mechanical fitting.

9) Long piece of tubing insulation.

Note: The EEV assembly will be either EEV-1 or EEV-2 (items 7 or 8)

- 4. Lay the coil on its back with the valve facing up.
- 5. Use wire cutters to remove two wire ties attaching the EEV-1 flow control assembly to the coil as shown in Figure 5. Discard the tie cables. Save the screw removed in this step that held the screw-in tie cable for later use.





Figure 6 – Remove wire ties – EEV-2

6. Slide the tubing insulation as far back on the distributor tubes as possible so that the mechanical fitting is visible (See Figure 7).



Figure 7 – Slide insulation

- Carefully cut the wire ties and remove the insulation around the evaporator temperature sensor (ET) and gas temperature sensor (GT). Unclip the sensors from the coil and keep both sensors. Discard the insulation.
- 8. Using two adjustable wrenches, loosen and remove the EEV flow control assembly at the mechanical fitting as shown in Figure 8. Keep this assembly.
- 9. Remove and keep the tubing insulation.



Figure 8 – Remove Sensors and EEV

- 10. Turn the coil upright where it is sitting on the down flow drain pan.
- 11. Remove the upflow drain pan by removing the four screws attaching it to the coil (See Figure 0). Keen drain pan and four across
 - 9). Keep drain pan and four screws.



12. Remove the down flow drain pan by removing four screws as shown in Figure 10. Lift the coil from the downflow drain pan. Keep the drain pan and four screws.

Figure 9 – Remove upflow drain pan



Figure 10 – Remove downflow drain pan



Figure 11 - Remove four baffles

13. Remove the four baffles from the coil. Keep baffles.

Section 3.2 Process of Assembling Replacement Coil:

- 1. Attach the four baffles to the replacement coil. Air baffles attach to the tube sheet in the same place they were removed.
- **Note:** The wider baffles will be on the front side of the coil.



Figure 12 – Attach Baffles

- 2. Set the replacement coil on top of the downflow drain pan assembly. Attach the downflow drain pan assembly to the two bottom coil brackets using four screws as shown in Figure 13.
- *Note:* The white coil gasket must be inside of the drain pan.



Figure 13 – Attach Downflow Drain Pan



Figure 14 – Attach upflow drain pan

- 3. Attach the upflow drain pan using the four screws as shown in Figure 14.
- **Note:** The white coil gasket must be inside of the drain pan.

- 4. Lay the replacement coil on its back with the mechanical fitting facing up for better access.
- Use wire cutters to remove the wire tie holding 5. the stub tube in place.
- 6. Using two adjustable wrenches, remove the stub tube assembly as shown in Figure 15 and discard.
- Note: Be careful not to damage the fins during this step.



Figure 15 - Remove stub fitting



Figure 16 - Put insulation in place



Figure 17 – Put EEV-1 flow control in place 18-AH64D1-3A-EN

Note: Replace O-rings with the O-rings provided in the document pack.

- 7. Cover the opening on the coil fitting with tape to prevent debris from entering the coil.
- Take the saved piece of tubing insulation 8. removed from the distributor on the old coil and slide it onto the distributor on the new coil.
- 9. With the tubing insulation slid down on the distributor as shown in Figure 16, remove the tape from the coil fitting and put the EEV flow control in place.
- Note: The supplied adapter may be installed during this step, if needed.
- Note: The EEV-1 flow control must be put in place so that the check valve is in the location shown in relation to the gas line as shown in Figure 17.

Note: For the EEV-2 flow control assembly, adjustments to the distributor and tubes are needed. The termination of the liquid line must be three inches from the gas line and must be at the same vertical height. Use care when bending tubes to not cause any ruptures.

 Using two adjustable wrenches, attach and tighten the EEV flow control assembly at the mechanical fitting as shown in Figure 19. <u>Tighten the fitting approximately 1/2 a turn</u> <u>past finger tight.</u>

Important: Correct tightening of the couplings is very important. Under- or over-tightening may result in a coupling leak.

11. Slide the tubing insulation over the distributor fitting.



Figure 18 – Put EEV-2 flow control in place



Figure 19 – Attach EEV

12. Using the snap-in tie cable and the screwin tie cable provided, along with the screw removed earlier, to secure the EEV-1 flow control assembly in the correct location as shown in Figure 20. The EEV-2 control has two screw in cable ties. See right side of Figure 20.



Figure 20 – Attach tie cables

- **Note:** Make sure the wiring on the gas temperature sensor points upward.
- 13. Clip the gas temperature sensor (GT) to the suction line. Place supplied insulation over the sensor and secure with field supplied tie wrap as shown in Figure 21.
- **Note:** The evaporator sensor location may vary from coil to coil depending on the location of the distributor tube that has the larger diameter transition from the coil.
- **Note:** Make sure the wiring on the evaporator sensor points toward the center of the coil.
- 14. Clip the evaporator temperature sensor (ET) to the 3/8" part of the distributor tube. There is one distributor tube that steps down from 3/8" to 1/8". Place supplied insulation over the sensor and secure with field supplied tie wrap as shown in Figure 21.



Figure 21 – Attach gas and evaporator temperature sensors

- 15. See Figure 22 for image of completed coil.
- 16. Go to Section 7 to complete installation of replacement coil.



Figure 22 – Completed assemblies

Section 4. GAT2 Replacement Coils – Black epoxy coated coil fins COL18633, COL18635, COL18639

Section 4.1 Disassembling Coil in Air Handler:

- **Note:** Blower may be removed to make it easier to remove the air diverter as in illustration. Follow steps in Installer's Guide to remove the blower.
- 1. Remove airflow diverter from the bottom of coil drain pan by gripping the plastic diverter, using your thumbs to spread the top of the diverter slightly outwards, and then pulling down and out through the blower opening as illustrated.



Figure 23 – Remove Coil Airflow Diverter

2. Slide Coil assembly out of unit using built-in coil support channels and set aside.



Figure 24 – Remove Coil Assembly

Items to be Retained during Disassembly of the Coil Removed from the Air Handler (Figure 25):

- 1) All Screws that are removed.
- 2) All 4 baffles on the unit.
- 3) Downflow drain pan assembly.
- 4) Upflow drain pan assembly.
- 5) TXV assembly attached at the mechanical fitting.
- 6) Sensor bulb clip





- 3. Lay the coil on its back with the valve facing up.
- 4. Use wire cutters to remove two wire ties attaching the TXV flow control assembly to the coil as shown in Figure 26. Discard the tie cables. Save the screw removed in this step that held the screw-in tie cable for later use.



8. Using two adjustable wrenches, loosen and remove the TXV flow control assembly at the mechanical fitting as shown in Figure 28. Keep this assembly.



Figure 28 – Remove TXV

- 9. Turn the coil upright where it is sitting on the down flow drain pan.
- Remove the upflow drain pan by removing the four screws attaching it to the coil (See Figure 29). Keep drain pan and four screws.

11. Remove the down flow drain pan by removing four screws as shown in Figure 30. Lift the coil from the downflow drain pan. Keep the drain pan and four screws.



Figure 29 – Remove upflow drain pan



Figure 30 – Remove downflow drain pan

12. Remove the four baffles from the coil. Keep baffles.



Figure 31 – Remove four baffles



Figure 32 – Attach Baffles



Figure 33 – Attach Downflow Drain Pan

Section 4.2 Process of Assembling Replacement Coil:

- 1. Attach the four baffles to the replacement coil. Air baffles attach to the tube sheet in the same place they were removed.
- **Note:** The wider baffles will be on the front side of the coil.

- 2. Set the replacement coil on top of the downflow drain pan assembly. Attach the downflow drain pan assembly to the two bottom coil brackets using four screws as shown in Figure 33.
- *Note:* The white coil gasket must be inside of the drain pan.

- 3. Attach the upflow drain pan using the four screws as shown in Figure 34.
- *Note:* The white coil gasket must be inside of the drain pan.



Figure 34 - Attach upflow drain pan

- 4. Lay the replacement coil on its back with the mechanical fitting facing up for better access.
- 5. Using two adjustable wrenches, remove the stub tube assembly as shown in Figure 35 and discard.
- *Note:* Be careful not to damage the fins during this step.



Figure 35 – Remove stub fitting



Figure 36 - Put TXV in place

- *Note:* Replace O-rings with the O-rings provided in the document pack.
- 6. Insert the new TXV flow control into the coil.
- *Important:* Do not disturb the position of the distributor lines.

7. Using two adjustable wrenches, attach and tighten the TXV flow control assembly at the mechanical fitting as shown in Figure 37. Tighten the fitting approximately 1/2 a turn past finger tight.

Important: Correct tightening of the couplings is very important. Under- or over-tightening may result in a coupling leak.



9. Remove cap and valve core.

Important: The valve core must be removed from the replacement coil to ensure proper operation of the air handler.



Figure 39 – Remove the cap and valve core

- 10. Connect the equalizer line to the new coil as shown in Figure 40.
 11. Clip the TXV sensing bulb to the coil suction line tube as shown in Figure 40. Cover with piece of provided insulation. Secure insulation with field supplied cable tie.
 Equalizer line
 TXV sensing bulb
- 12. See Figure 41 for image of completed coil.
- 13. Go to Section 7 to complete installation of replacement coil.



Figure 40 – Attach the equalizer line and TXV sensing bulb

Figure 41 - Completed assembly

Section 5. GAF2 Replacement Coils – Black epoxy coated coil fins COL18627

Section 5.1 Disassembling Coil in Air Handler:

Note: Follow steps in Installer's Guide to remove the air handler panels.

1. Pop off any wire ties from unit harnesses that are attached to the coil.



Figure 42 – Remove Air Handler Doors

2. Slide Coil assembly out of unit using built-in coil support channels and set aside.



Figure 43 – Remove Coil Assembly

Items to be Retained during Disassembly of the Coil Removed from the Air Handler (Figure 44):

- 1) All Screws that are removed.
- 2) Both baffles on the unit.
- 3) Upflow drain pan assembly.
- 4) TXV assembly attached at the mechanical fitting.
- 5) Heater plate
- 6) Heater baffle
- 7) Braze Plate
- 8) Sensor Bulb Clip
- 9) Rear Baffle





- 3. Lay the coil on its back with the valve facing up, if desired.
- 4. Remove the TXV bulb from the suction line.
- 5. Disconnect the equalizer line at the flare nut.



Figure 46 – Remove Braze Shield

the braze shield.

6.

7. Using two adjustable wrenches, loosen and remove the TXV flow control assembly at the mechanical fitting as shown in Figure 47. Keep this assembly.



Figure 47 – Remove TXV



Figure 48 – Remove Heater Plate



Figure 49 – Remove Heater Baffle

8. Remove the heater plate by removing the three screws. Retain parts.

9. Remove the heater baffle. Retain baffle and screws.

- 10. Turn the coil upright so the drain pan is on top.
- Remove the upflow drain pan by removing the four screws attaching it to the coil (See Figure 50). Keep drain pan and four screws. Note: two screws are on the opposite side and not visible in the illustration.



Figure 50 – Remove Upflow Drain Pan



Figure 51 – Remove Side Baffles



Figure 52 – Remove Rear Baffle

12. Remove the two baffles from the coil. Keep baffles.

13. On the opposite side of the coil, remove the large one-piece baffle from the coil. Keep the baffle and screws.

Section 5.2 Process of Assembling Replacement Coil:

- 1. Remove the shipping bracket as shown in the inset illustration and discard.
- 2. Attach the rear baffle to the replacement coil using the screws removed earlier .



Figure 53 – Attach Rear Baffle

3. Attach the two baffles to the replacement coil. Air baffles attach to the tube sheet in the same place they were removed.



Figure 54 – Attach Side Baffles



Figure 55 – Attach Upflow Drain Pan

4. Attach the drain pan using the four screws removed earlier.

5. Using two adjustable wrenches, remove the stub tube assembly as shown in Figure 56 and discard.



Figure 56 – Remove Stub Fitting from Replacement Coil



Figure 57 – Attach Heater Baffle



Figure 58 – Attach Heater Plate

6. Attach the heater baffle.

8. Attach the heater plate using the three screws removed in earlier step.

- **Note:** Replace O-rings with the O-rings provided in the document pack.
- 6. Put the TXV in place and using two adjustable wrenches, attach and tighten the TXV flow control assembly at the mechanical fitting as shown in Figure 59. <u>Tighten the fitting approximately 1/2 a turn past finger tight.</u>

Important: Correct tightening of the couplings is very important. Under- or over-tightening may result in a coupling leak.

- *Important:* Do not disturb the position of the distributor lines.
- 9. Turn the coil upside down and install the braze shield.



Figure 59 – Install new TXV



Figure 60 – Attach Braze Shield

Figure 61 - Remove the cap and valve core

- 10. Lay the coil on its back with the valve facing up, if desired.
- 11. Remove cap and valve core.

Important: The valve core must be removed from the replacement coil to ensure proper operation of the air handler.



- 13. See Figure 63 for image of completed coil.
- 14. Go to Section 7 to complete installation of replacement coil.



Figure 63 - Completed assembly

Section 6. GAF2–36M Black epoxy coil COL18628

Section 6.1 Disassembling Coil in Air Handler:

- *Note:* Follow steps in Installer's Guide to remove the air handler panels.
- 1. Pop off any wire ties from unit harnesses that are attached to the coil.



Figure 64 – Remove Air Handler Doors

2. Slide Coil assembly out of unit using built-in coil support channels and set aside.



Figure 65 – Remove Coil Assembly

Items to be Retained during Disassembly of the Coil Removed from the Air Handler (Figure 66):

- 1) All Screws that are removed.
- 2) Both baffles on the unit.
- 3) Upflow drain pan assembly.

4) EEV assembly attached at the mechanical fitting.

- 5) Heater plate
- 6) Heater baffle
- 7) Braze Plate
- 8) Evaporator temperature sensor (ET).
- 9) Gas temperature sensor (GT).
- 10) Rear Baffle
- 3. Lay the coil on its back with the valve facing up, if desired.
- 4. Use wire cutters to remove the snap-in cable tie attaching the EEV flow control assembly to the coil as shown in Figure 67. Pop out snapin cable tie and discard.





Figure 68 – Remove Evap Temp and Gas Temp Sensors

6. Remove the heater plate by removing the three screws. Retain parts.



Figure 69 – Remove Heater Plate



Figure 70 – Remove Heater Baffle



Figure 71 – Remove EEV

7. Remove the heater baffle. Retain baffle and screws.

8. Using two adjustable wrenches, loosen and remove the EEV flow control assembly at the mechanical fitting as shown in Figure 71. Keep this assembly.

- 9. Turn the coil upright so the drain pan is on top.
- Remove the upflow drain pan by removing the four screws attaching it to the coil (See Figure 72). Keep drain pan and four screws. Note: two screws are on the opposite side and not visible in the illustration.





Figure 72 – Remove Upflow Drain Pan



Figure 73 - Remove Side Baffles



Figure 74 - Remove Rear Baffle

12. On the opposite side of the coil, remove the large one-piece baffle from the coil. Keep the baffle and screws.

13. Turn the coil upside down and remove the braze shield. Retain screws.



Figure 75 – Remove Braze Shield

Section 6.2 Process of Assembling Replacement Coil:

1. Attach the braze shield to the new replacement coil using the screws removed earlier .



Figure 76 – Attach Braze Shield



Figure 77 – Attach Rear Baffle

- 2. Remove the shipping bracket as shown in the inset illustration and discard.
- 3. Attach the rear baffle using screws removed earlier.

4. Attach the two baffles to the replacement coil. Air baffles attach to the tube sheet in the same place they were removed.



Figure 78 – Attach Side Baffles

5. Attach the drain pan using the four screws removed earlier.



Figure 79 – Attach Upflow Drain Pan



Figure 80 – Remove Stub Fitting from Replacement Coil

- 6. Using two adjustable wrenches, remove the stub tube assembly as shown in Figure 80 and discard.
- *Note:* Be careful not to damage the fins during this step.

- **Note:** Replace O-rings with the O-rings provided in the document pack.
- Put the EEV in place and using two adjustable wrenches, attach and tighten the EEV flow control assembly at the mechanical fitting as shown in Figure 81. <u>Tighten the fitting</u> <u>approximately 1/2 a turn past finger tight.</u>
- *Important:* Correct tightening of the couplings is very important. Under- or over-tightening may result in a coupling leak.
- *Important:* Do not disturb the position of the distributor lines.
- 8. Install the heater baffle with screws removed earlier.



Figure 81 – Attach EEV Assembly



Figure 82 – Install Heater Baffle



Figure 83 – Attach Heater Baffle

9. Attach the heater plate using the three screws saved earlier.

- 10. Lay the coil on its back with the valve facing up, if desired.
- 11. Secure the EEV flow control assembly to the coil as shown in Figure 84 using the supplied snap-in cable tie.



Figure 84 – Secure EEV Assembly

Note: Make sure the wiring on the gas temperature sensor points upward.

- 12. Clip the gas temperature sensor (GT) to the suction line. Place supplied insulation over the sensor and secure with field supplied tie wrap as shown in Figure 85.
- **Note:** The evaporator sensor location may vary from coil to coil depending on the location of the distributor tube that has the larger diameter transition from the coil.
- *Note:* Make sure the wiring on the evaporator sensor points toward the center of the coil.
- Clip the evaporator temperature sensor (ET) to the 3/8" part of the distributor tube. There is one distributor tube that steps down from 3/8" to 1/8". Place supplied insulation over the sensor and secure with field supplied tie wrap as shown in Figure 85.



Figure 85 – Attach Evap Sensor (ET) and Gas Temp Sensor (GT)

- 15. See Figure 86 for image of completed coil.
- 16. Go to Section 7 to complete installation of replacement coil.



Figure 86 – Completed assembly

Section 7. Reconnecting new coil assembly

- 1. Put the new coil assembly into the air handler using care not to damage any of the coil components.
- 2. Reconnect the sensor wires and EEV stepper motor wiring.
- 3. Use field supplied wire ties to hold the cabinet wiring harness.

Important: Field provided wire ties that held the EEV and sensor wiring harness must be replaced after coil is placed in cabinet. Wires must be taut to avoid the heater when installed in a downflow application.

Note: Wet rags must be applied to all braze joints before and during heating to prevent overheating of internal coil components.

- 4. Remove the braze cap from the suction line.
- 5. Remove the rubber plug from the liquid line.
- 6. Reconnect the field refrigerant piping.
- 7. For the GAF2 models, reattach any wire harnesses to the coil heater baffle using the snap in ties.
- 8. Pressure test the refrigerant system using dry nitrogen. Test all connections for leaks to ensure integrity of the refrigerant piping system.
- 9. Reconnect the condensate drain piping.
- 10. Install the front panels of the unit removed in earlier steps.
- 11. Pull a vacuum on the refrigerant system to 500 microns or less.
- 12. Refill the system with new refrigerant or release the charge from the outdoor unit to the refrigerant piping system.
- 13. Start outdoor unit and set refrigerant charge per the outdoor unit installation instructions.

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