NAVISTAR®

FIELD SERVICE CAMPAIGN – 24103

29 April 2024

SUBJECT:
Liquid Line Shut-off Valve Retrofit

MODELS INVOLVED:
IC Bus® Electric CE Series school bus

DEFECT DESCRIPTION:
Certain IC Bus® Electric CE Series school buses may experience liquid refrigerant migrating into the compressor, reducing the electrical insulation below the calibrated threshold, causing no High-Voltage drive mode.

ELIGIBILITY:
This procedure applies ONLY to vehicles marked in the International® Service Portal℠ with FSC 24103. Also complete any other open campaigns listed on the Service Portal at this time.

TOOLS REQUIRED:

CAUTION! To prevent damage to property, it is recommended to use a dedicated machine for POE (polyolester oil) systems. If the machine has been used on PAG (polyalkylene glycol) systems, ensure to flush the lines to prevent cross contamination.

Description	Tool Number	Quantity
Yellow Jacket Refrigerant Management System	Source Locally	1
Ear Clamp Pincers	Source Locally	1
Programmer Panel	GL-P4SGL004	1
Panel Programming Cable	401.00.069	1
Blank USB Drive (1 GB Min)	Source Locally	2
Air Conditioning (A/C) Control Module Software - GL-P6HAP002	P6HNV001 - Version 1.1	1
ECU Software- GL-M1HPA002	M1HNV001 - Version 1.1	2
Battery Charger 55 amp	PSC550CC	1

Table 1 Tool Information

PARTS REQUIRED:
NOTE: For vehicles equipped with front and rear evaporator only.

Part Number	Description	Quantity
4471307C1	VALVE, SOLENOID,12V NC A/C SHUTOFF, ZRVS-B100PBEX-1G-A	2
4497145C1	AIR CONDITIONING (A/C) FITTING, COMMON SHUTOFF, STRAIGHT #8 CLIP	2
4497154C1	AC FITTING, SHUTOFF OUTLET #8 CLIP, FRONT EVAP	1
4497153C1	AC FITTING, SHUTOFF OUTLET #8 CLIP, REAR EVAP	1
4498810C1	SUPPORT, FRONT EVAP	1
4498811C2	SUPPORT, SOLENOID VALVE, REAR EVAP TO CAB	1
4600244C1	SUPPORT, SOLENOID VALVE, REAR EVAP TO VALVE	1
3607293C1	BOLT, M6 X 25, TMS-4518 TYPE I	4
30940R1	SCREW, M5 X 12 PAN HEAD RECESS MACHINE	4
30481R1	WASHER, FLAT, M5 ZN	4
4586615C1	SCREW, HEX SOCKET HEAD CAP, M4X0.7X6MM, ZN-PLTD	4
4531909C91	FRONT EVAPORATOR SOLENOID VALVE HARNESS	1
4531910C91	REAR EVAPORATOR SOLENOID VALVE HARNESS (SWB)	1 (If equipped)
4531911C91	REAR EVAPORATOR SOLENOID VALVE HARNESS (LWB)	1 (If equipped)
3544378C1	M6 HEX FLANGE NUT-TMS-4518 FINISH (Bracket to Bus)	4
31046R1	HEAVY HEX FLANGE HEAD M6 X 20 (Bracket to Bus)	4

Table 2 Parts Information

Part Number	Description	Quantity
30325R1	6.4MM ID, 12.5MM OD, 2MM THICK, B-ZND (Bracket to Bus)	4
Source Locally	IN-LINE FUSE HOLDER	2
ATO5	5A FUSE	2
365680C2	3/8 RING TERMINAL (GRND)	2
2206638C1	#10 RING TERMINAL (POS T2 and T52)	2
Source Locally	HEAT SHRINK	4

Table 2 Parts Information Continued

NOTE: For vehicles equipped with High Performance A/C system dash mounted evaporator, refer to the table below.

NOTE: Dash mounted solenoid valve assembly is only equipped on 4 vehicles. Use the VIN to check and verify if the vehicle has feature code 0048ADL in the International® Service Portal℠ under components before proceeding.

Part Number	Description	Quantity	Feature Code
4497156C1	A/C FITTING, SHUTOFF INLET #8 CLIP, DASH EVAP	1	0048ADL
4498646C1	SUPPORT, SOLENOID VALVE, DASH EVAP	1	0048ADL
3607293C1	BOLT, M6 X 25, TMS-4518 TYPE I	2	0048ADL
30940R1	SCREW, M5 X 12 PAN HEAD RECESS MACHINE	2	0048ADL
30481R1	WASHER, FLAT, M5 ZN	2	0048ADL
4586615C1	SCREW, HEX SOCKET HEAD CAP, M4X0.7X6MM, ZN-PLTD	2	0048ADL
4531908C91	DASH EVAPORATOR SOLENOID VALVE HARNESS	1	0048ADL
3544378C1	M6 HEX FLANGE NUT-TMS-4518 FINISH (BRACKET TO BUS)	4	0048ADL
31046R1	HEAVY HEX FLANGE HEAD M6 X 20 (BRACKET TO BUS)	4	0048ADL

30325R1	6.4MM ID, 12.5MM OD, 2MM THICK, B-ZND (BRACKET TO BUS)	4	0048ADL
Obtain Locally	FUSE, 5A MAXI	1 (Source Locally)	0048ADL

Table 3 Parts Information Continued

WORK INSTRUCTIONS

WARNING! To prevent personal injury or death, or damage to property, NEVER service a high-voltage vehicle without completing High-Voltage Safety training. Before working on vehicle, read and obey all High-Voltage Safety and Lock-Out Tag-Out procedures and information.

WARNING! To prevent personal injury or death, or damage to property, read all information in the Safety Information and High-Voltage Safety sections of the service manual.

WARNING! To prevent personal injury and / or death, or damage to property, park vehicle on hard flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in both directions.

WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent personal injury and / or death, or damage to property, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.

WARNING! To prevent personal injury and / or death, or damage to property, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

1. Park vehicle on a dry and level surface.
2. Put drive mode selector in Neutral and set parking brake.
3. Turn ignition to Key OFF position.
4. Install wheel chocks.

CAUTION! To prevent damage to property, it is recommended to use a dedicated machine for POE (polyolester oil) systems. If the machine has been used on PAG (polyalkylene glycol) systems, ensure to flush the lines to prevent cross contamination.

NOTE: During the recovery of the rear Air Conditioning (A/C) system, go to Step 6 to remove the front and rear evaporators covers.

5. Recover rear Air Conditioning (A/C) system. Refer to appropriate technician manual for instructions.

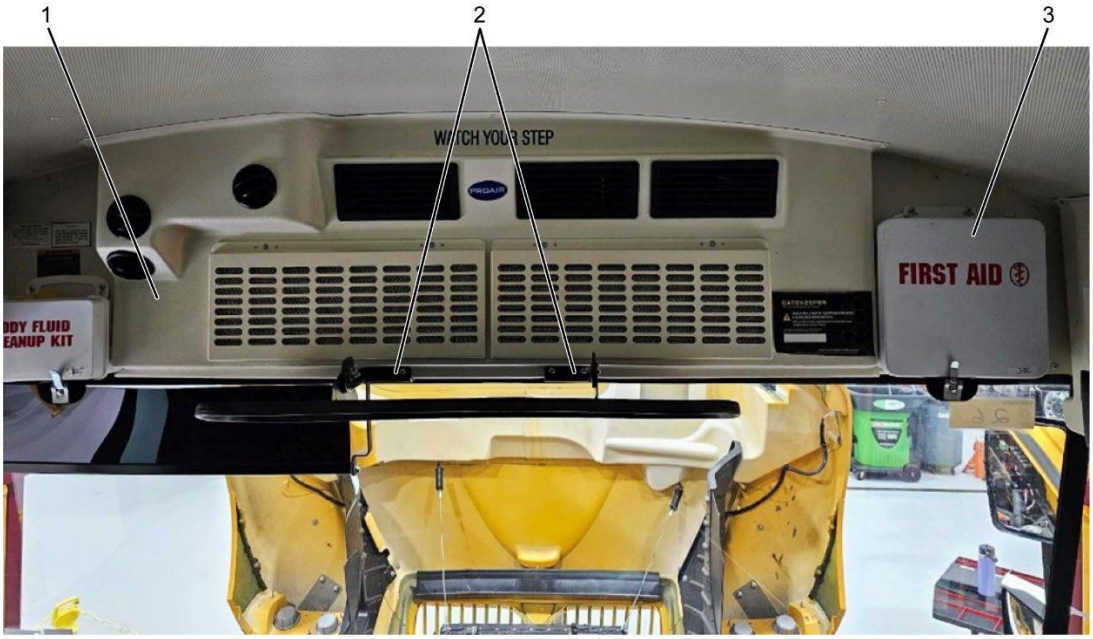

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Figure 1. Front Evaporator Core Cover

1. Front evaporator core cover
2. Mirror assembly
3. First aid kit

6. Remove fasteners from first aid kit (Figure 1, Item 3) and mirror assembly (Figure 1, Item 2) and set aside on clean work bench.

7. Remove front evaporator core cover (Figure 1, Item 1) and set aside on clean work bench.

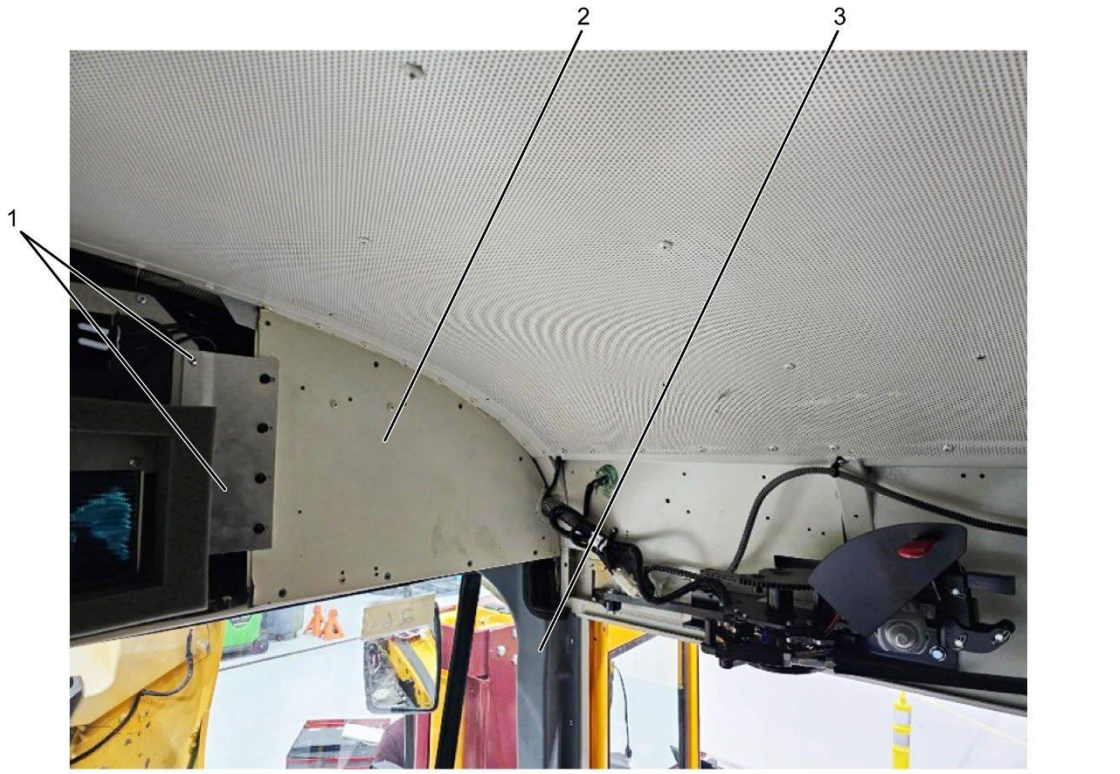

Figure 2. Front Cover

1. Support bracket
2. Passenger-side cover
3. Pillar cover

8. Remove support bracket (Figure 2, Item 1) from passenger-side cover (Figure 2, Item 2) and set aside on clean workbench.

9. Remove fasteners from passenger-side cover (Figure 2, Item 2) and set cover on clean workbench.

10. Remove passenger-side dashboard. Refer to appropriate technician manual for instructions.

11. Route front harness through pillar cover to dash panel.

12. Connect battery charger / maintainer to vehicle battery.

NOTE: The USB flash drive must have a minimum of 1 GB of storage space and must have no other files on it. It is recommended to have two USB flash drives for each program.

13. Download P6HNV001 1.1 file from Table 1 Tool Information onto a USB flash drive.

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Figure 3. A/C Control Module

14. Remove A/C Control Module (Figure 3). Refer to appropriate technician manual for instructions.

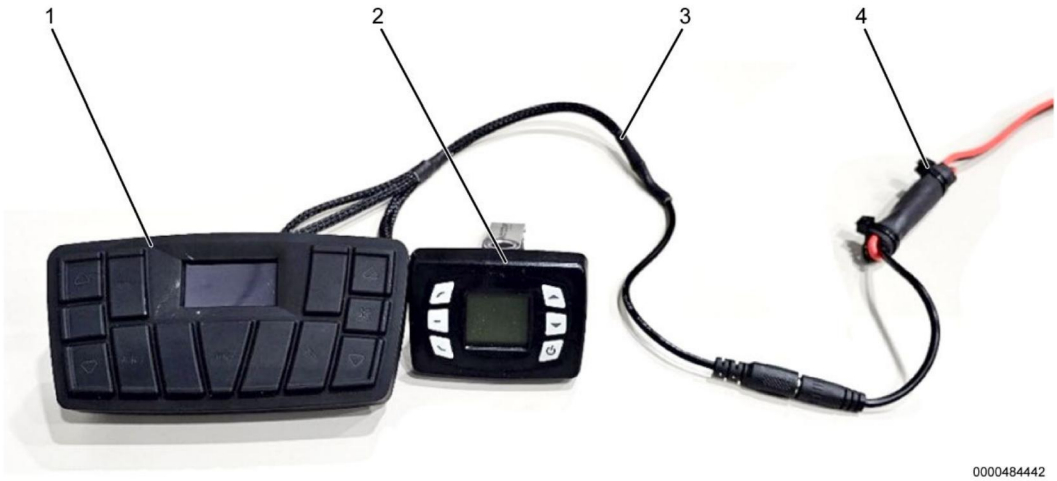

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Figure 4. A/C Control Module Harness (Front View)

1. A/C Control Module
2. Program module
3. Programming harness
4. Power source

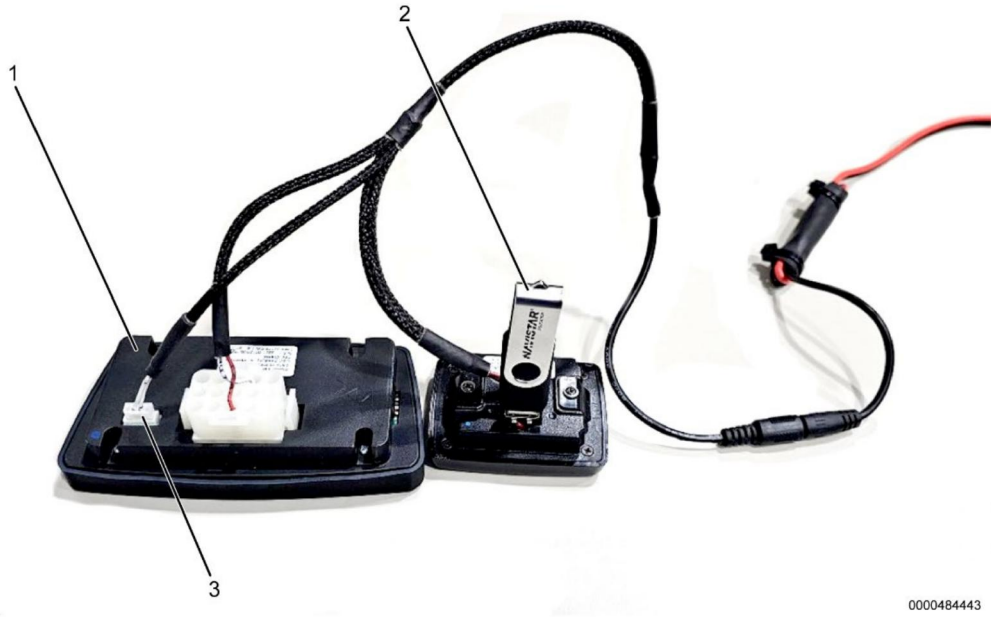

Figure 5. A/C Control Module Harness (Rear View)

1. A/C Control Module
2. Program module w/ USB drive
3. A/C Control Module port

15. Connect programming harness (Figure 4, Item 3) to A/C Control Module (Figure 5, Item 1) and program module (Figure 5, Item 2).

16. Connect 12V DC / 24V DC power source (Figure 4, Item 4) to programming harness (Figure 4, Item 3).

17. Insert USB flash drive into program module (Figure 5, Item 2).

18. Go to **UPDATE SW** and select **P6XXXNNN**.

Figure 6. Programming Mode Display

19. A/C Control Module displays **App Download Running!** (Figure 6).

Figure 7. Software Update Complete

20. Update complete when program module screen displays **Update OK** (Figure 7).

Figure 8. Software Version Display

1. Software version
2. Maintenance button

NOTE: The Maintenance button is also used as the enter button. The Auto 2 button is used to go back. The blower speed fan adjustment arrows on the right are used for scrolling up and down.

21. Press Maintenance button (Figure 8, Item 2) on A/C Control Module.

22. Go to **VIEWS** and select **PANEL**.

23. Verify A/C Control Module displays software version **1.1** (Figure 8, Item 1).

24. Disconnect programming harness (Figure 4, Item 3) from power source.

25. Disconnect harness connector from A/C Control Module (Figure 4, item 1).

26. Install A/C Control Module. Refer to appropriate technician manual for instructions to vehicle.

27. Remove passenger-side dash panels. Refer to appropriate technician manual for instructions to vehicle.

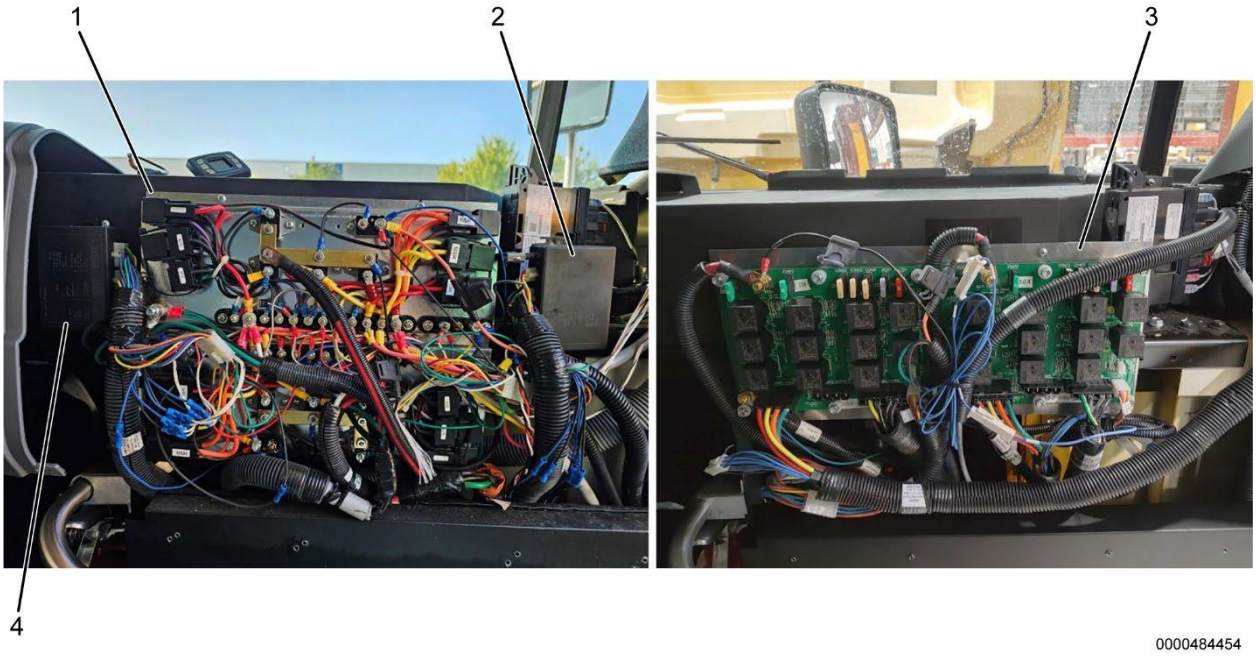

Figure 9. Front and Rear A/C Power Distribution Module (PDM)

1. Option A
2. Rear A/C Module
3. Option B
4. Front A/C Module

NOTE: Location may vary depending on build date. It may be necessary to remove A/C PDM from dash.

28. Locate front and rear Air Conditioning (A/C) Modules (Figure 9, Items 2 and 4).

NOTE: The USB flash drive must have a minimum of 1 GB of storage space and must have no other files on it. It is recommended to have two USB flash drives for each program.

29. Remove P6HNV001 1.1 file from USB flash drive.

30. Download M1HNV001 1.1 file from Table 1 Tool Information onto a blank USB flash drive.

Figure 10. A/C Module

1. USB flash drive port

31. Insert USB flash drive into port (Figure 10, Item 1) of front A/C module (Figure 9, Item 4).

NOTE: When turning ignition to Key ON position, the engine control modules (ECU) will power up and software update will start automatically. If the key is cycled OFF and ON while the USB flash drive is connected, the ECU will restart the updating process.

32. Turn ignition to Key ON position.

33. Wait at least two minutes for update to complete.

34. Turn ignition to Key OFF position.

35. Disconnect USB flash drive from port on front A/C module.

36. Repeat Steps 31 to 35 for rear A/C module (Figure 9, Item 2).

Figure 11. Software Version Display

1. Software version
2. Maintenance button

NOTE: The Maintenance button is also used as the enter button. The Auto 2 button is used to go back. The blower speed fan adjustment arrows on the right are used for scrolling up and down.

37. Press Maintenance button (Figure 11, Item 2) on A/C Control Module.

38. Go to **VIEWS** and select **FRONT**.

39. Verify A/C Control Module displays software version 1.1 (Figure 11, Item 1).

40. Repeat Steps 37 through 39 to verify rear A/C module has software version 1.1. When complete, continue to Step 41.

CAUTION! To prevent damage to property, it is recommended to use a dedicated machine for POE (polyolester oil) systems. If the machine has been used on PAG (polyalkylene glycol) systems, ensure to flush the lines to prevent cross contamination.

41. Recover front Air Conditioning (A/C) system. Refer to appropriate technician manual for instructions.

Figure 12. Rear Evaporator Cover

1. Rear evaporator cover
2. Rear access cover (driver-side)

42. Remove rear evaporator cover (Figure 12, Item 1).
43. Remove rear access cover (Figure 12, Item 2) and set aside on clean work bench.

NOTE: Make sure A/C system is programmed before continuing with procedure.

44. Turn 12V disconnect switch OFF. Refer to appropriate service manual for detailed instructions.
45. Perform High-Voltage Isolation Level 1. Refer to appropriate service manual for detailed instructions.
46. Remove rear evaporator core assembly. Refer to appropriate service manual for detailed instructions.
47. Clean excess oil and grease from A/C fittings, connections, and components.
48. Remove passenger door motor cover.

Figure 13. Passenger-Side Trim Panel

1. Trim panel

NOTE: DO NOT REMOVE the paneling above passenger-side windows. Carefully push down to loosen the top of the panels to install harness.

49. Carefully loosen all trim panels (Figure 13, Item 1) above passenger-side windows.

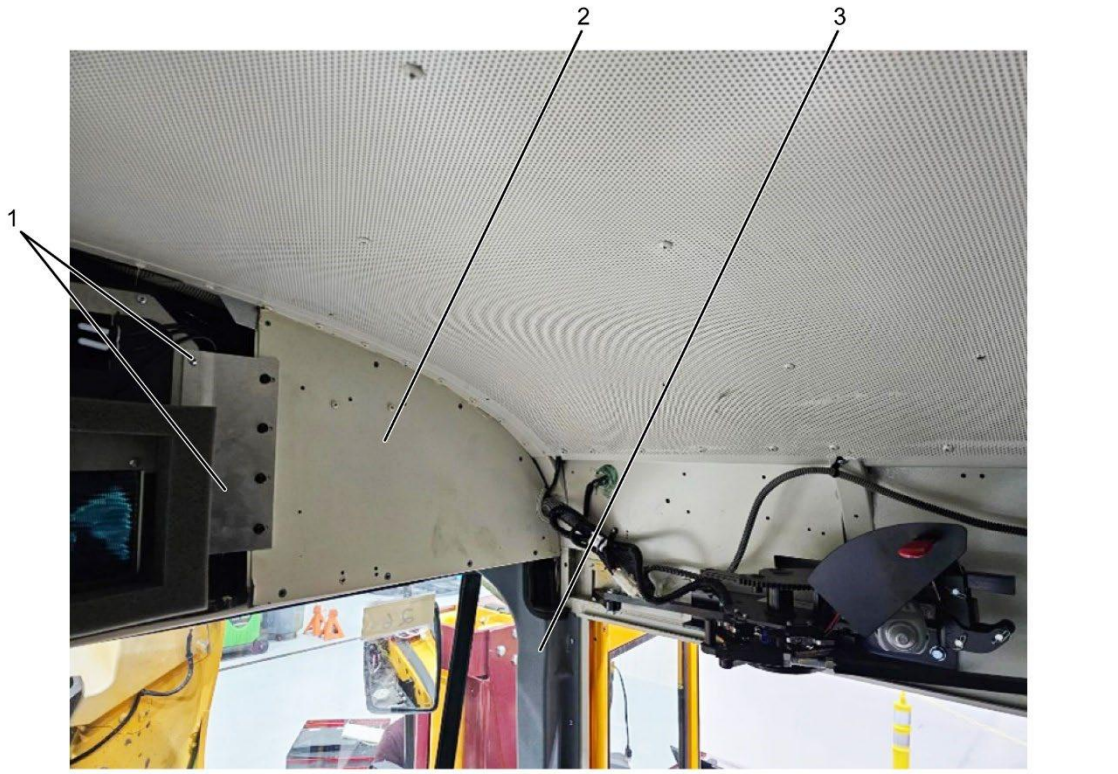

Figure 14. Front Cover

1. Support bracket
2. Passenger-side cover
3. Pillar cover

50. Carefully remove pillar cover (Figure 14, Item 3).

51. Remove support bracket (Figure 14, Item 1) and passenger-side cover (Figure 14, Item 2).

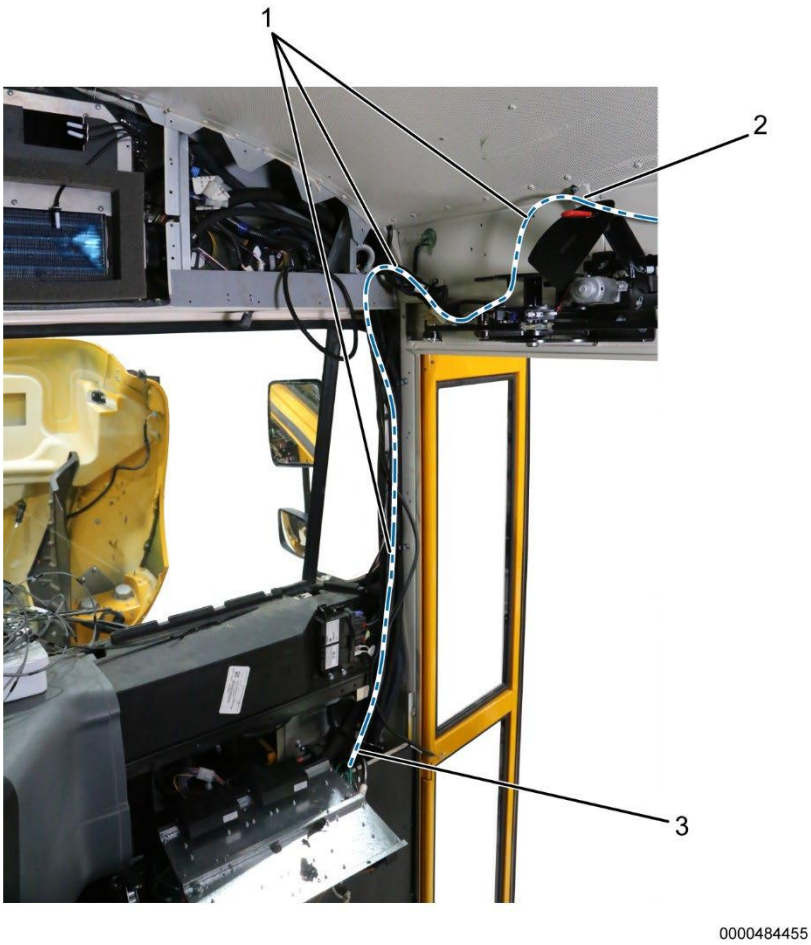

Figure 15. Harness Route Guide

1. Harness route
2. To rear access cover
3. To rear A/C PDM

52. Route harness by following existing wiring harness above passenger door and down the pillar to front and rear A/C PDM (Figure 15, Item 3).
53. Secure harness above passenger door to existing wiring harness.
54. Route rest of harness inside passenger-side trim panel to rear access cover (Figure 15, Item 2).

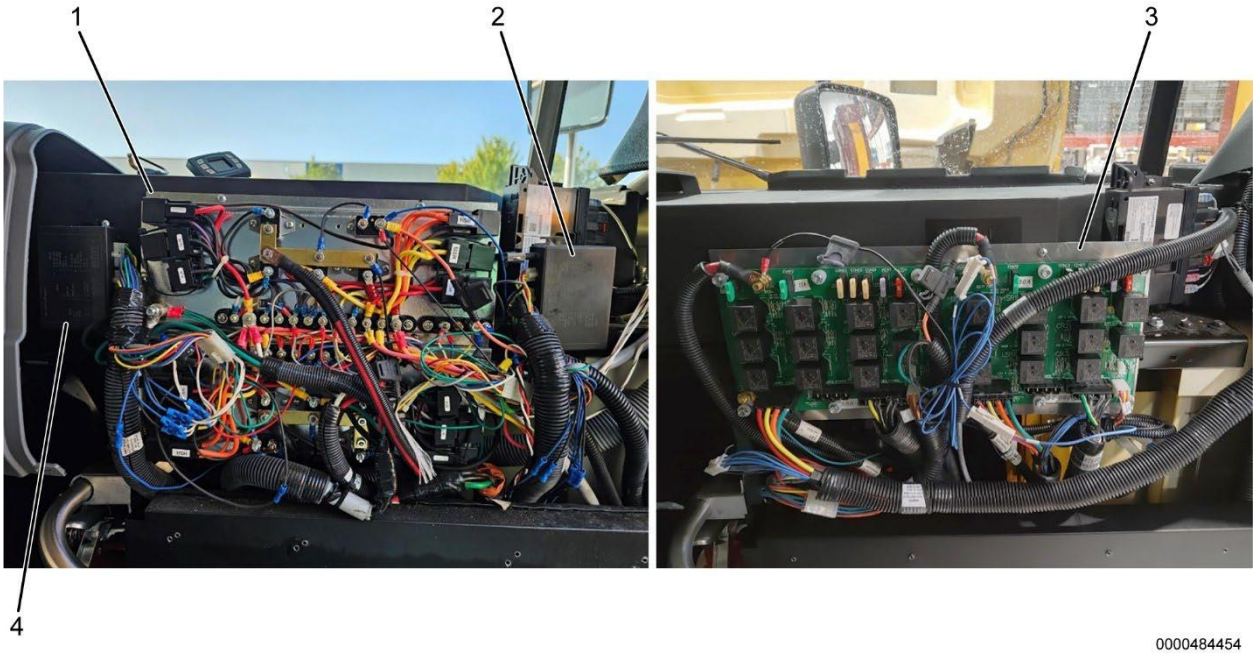

Figure 16. Front and Rear A/C Power Distribution Module (PDM)

1. Option A
2. Rear A/C Module
3. Option B
4. Front A/C Module

NOTE: All four buses with the dash valve will be configured with front and rear A/C option B (Figure 16, Item 3).

55. Determine components located in passenger-side dashboard:

    a. If equipped with option A (Figure 16, Item 1), go to Step 56.

    b. If equipped with option B (Figure 16, Item 3), go to Step 75.

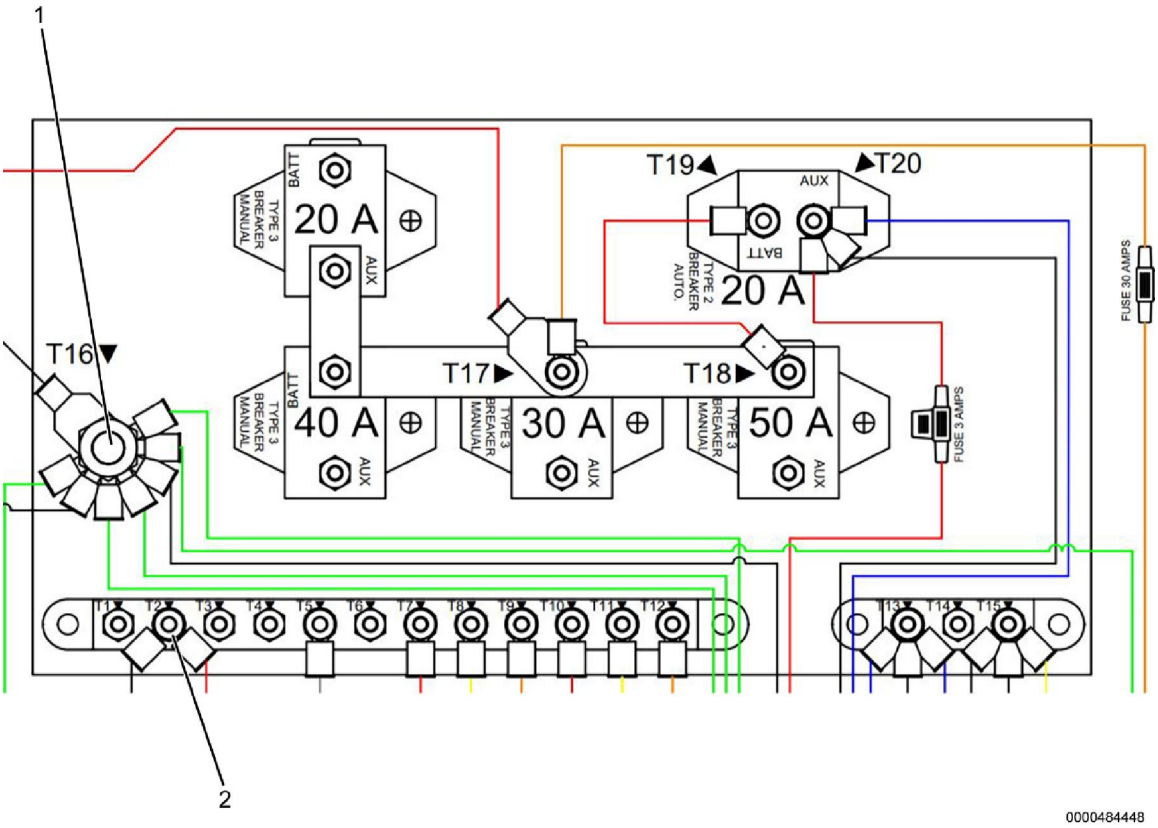

Figure 17. Front A/C PDM Schematic

1. Ground post terminal 16
2. Terminal 2

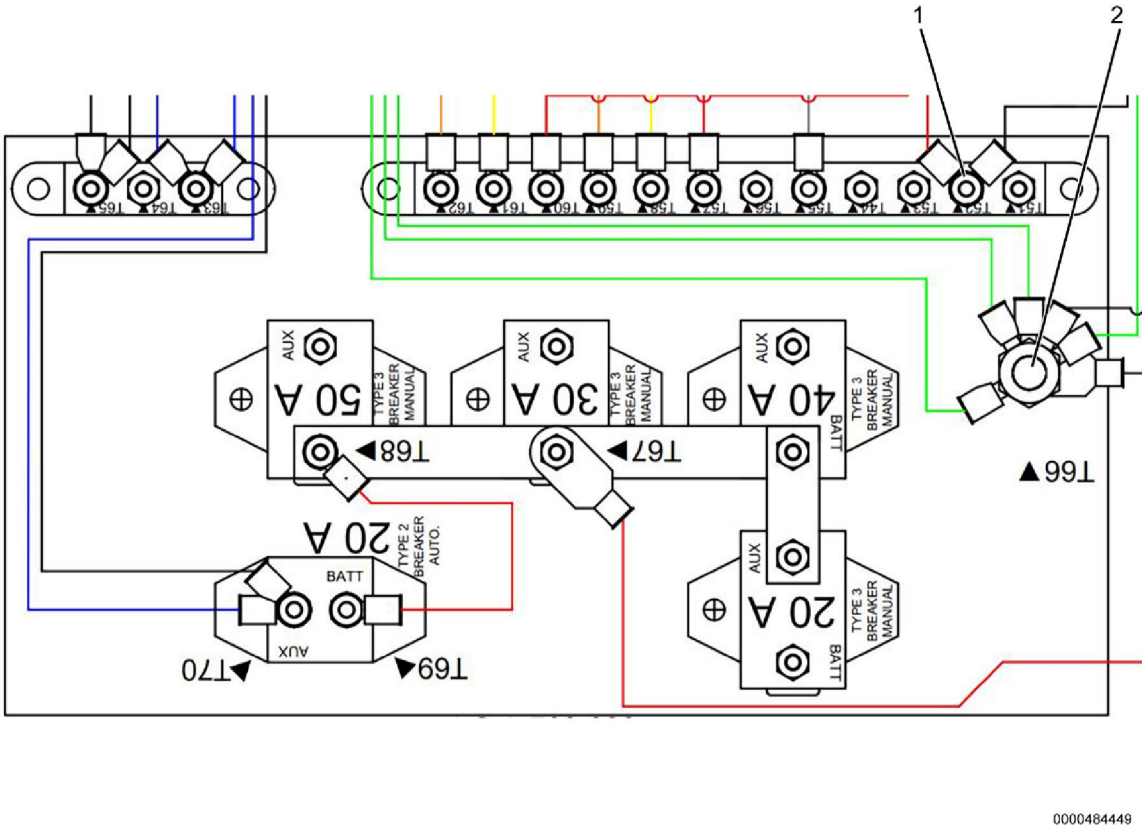

Figure 18. Rear A/C PDM Schematic

1. Terminal 52
2. Ground post terminal 66

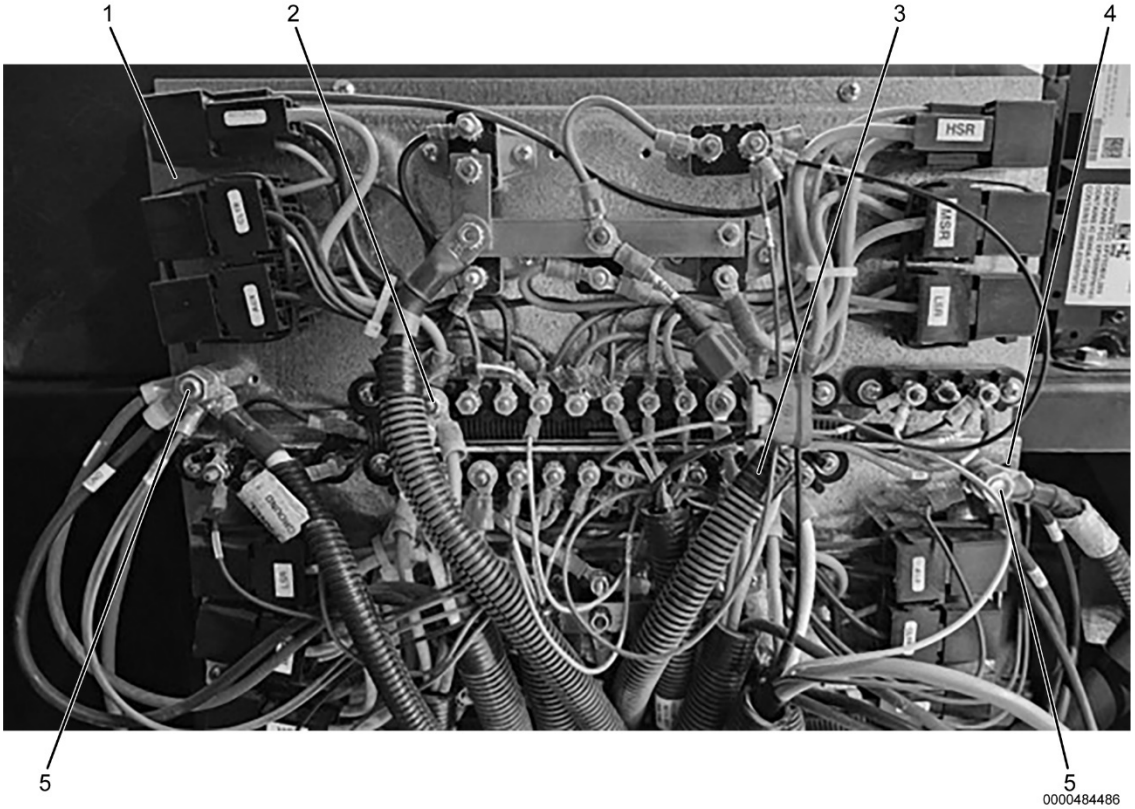

Figure 19. Front and Rear A/C Power Distribution Module (PDM)

1. Front A/C PDM
2. Front A/C terminal 2
3. Rear A/C terminal 52 (behind loom)
4. Rear A/C PDM
5. Ground post terminal 16 and 66 (2)

CAUTION! To prevent property damage, do not install ring terminal until you have verified which circuit board is installed on vehicle.

NOTE: Option A (Figure 16, Item 1) should be option equipped for the following steps.

56. Locate front A/C terminal 2 (Figure 19, Item 2) and ground post terminal 16 (Figure 19, Item 5) on front A/C PDM (Figure 19, Item 1).

57. Disconnect ground post terminal 16 (Figure 19, Item 5) on front A/C PDM (Figure 19, Item 1).

58. Locate BLACK ground wire on wiring harness for front solenoid valve.

59. Crimp 3/8 ring terminal with heat shrink onto BLACK ground wire.

60. Connect BLACK ground wire to ground post terminal 16 (Figure 19, Item 5) on front A/C PDM.
61. Locate RED wire on wiring harness for front solenoid valve.
62. Crimp #10 ring terminal with heat shrink onto RED wire.
63. Solder and heat shrink 5A fuse holder in with #10 ring terminal to RED wire.
64. Connect RED wire to terminal 2 (Figure 19, Item 2) on front A/C PDM.
65. Locate rear A/C terminal 52 (Figure 19, Item 3) and ground post terminal 66 (Figure 19, Item 5) on rear A/C PDM (Figure 19, Item 4).
66. Disconnect ground post terminal 66 (Figure 19, Item 5) on rear A/C PDM (Figure 19, Item 4).
67. Locate BLACK ground wire on wiring harness for rear solenoid valve.
68. Crimp 3/8 ring terminal with heat shrink onto BLACK ground wire.
69. Connect BLACK ground wire to ground post terminal 66 (Figure 19, Item 5) on rear A/C PDM.
70. Locate RED wire on wiring assembly harness rear solenoid valve.
71. Crimp #10 ring terminal with heat shrink onto RED wire.
72. Solder and heat shrink 5A fuse holder in with #10 ring terminal to RED wire.
73. Connect RED wire to terminal 52 (Figure 19, Item 3) on rear A/C PDM.
74. Go to Step 79.

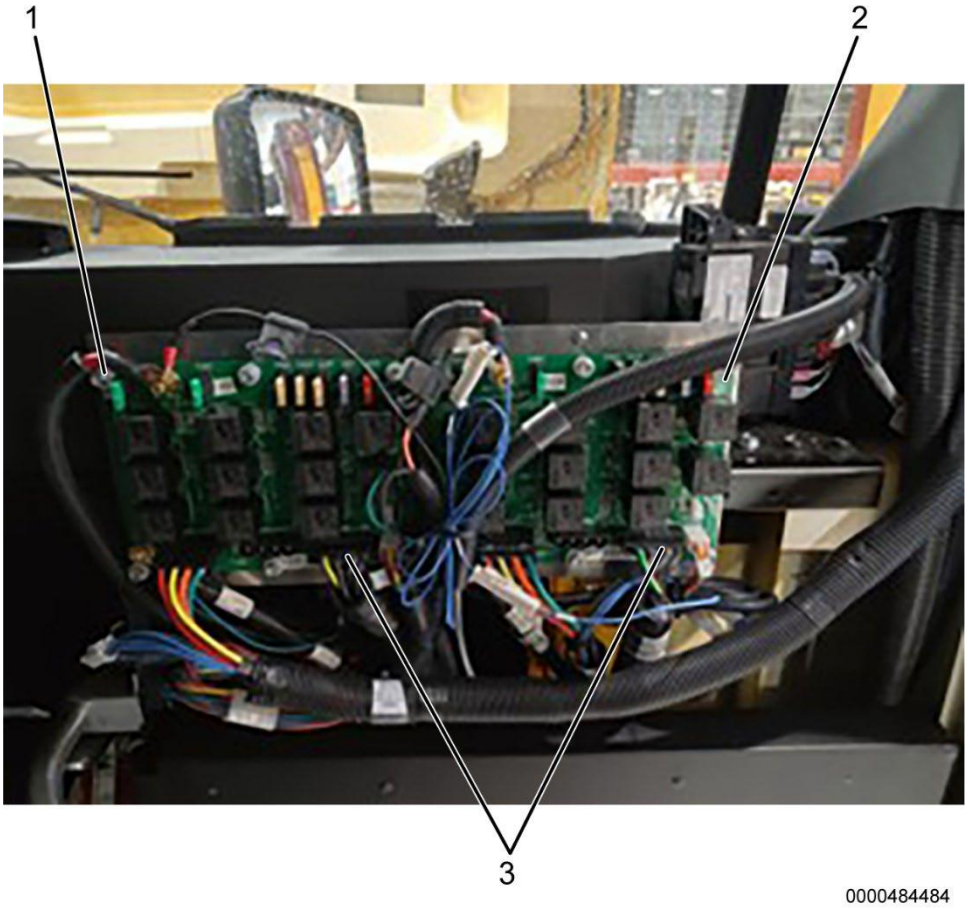

Figure 20. Front and Rear A/C Power Distribution Module (PDM)

1. Front A/C PDM
2. Rear A/C PDM
3. Connector 10 and 54

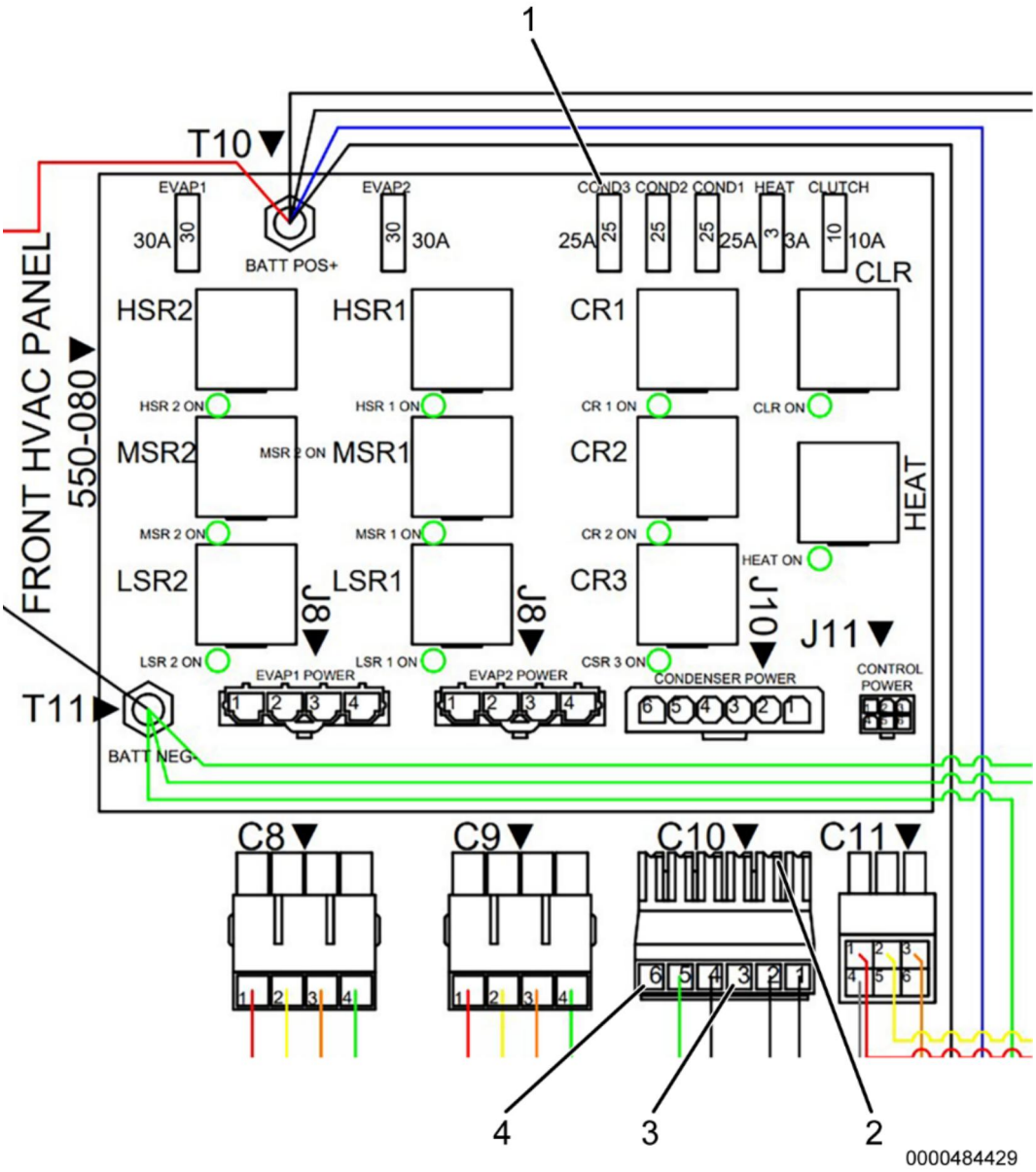

Figure 21. Front A/C Power Distribution Module (PDM)

1. Connector 10
2. Fuse
3. Terminal 3
4. Terminal 6

NOTE: The wiring harness for the front solenoid will have the wiring harness for the dash mounted solenoid.

NOTE: The dash valve harness will work for both the front valve and the dash mounted valve. The harness will be connected to the front A/C PDM (Figure 18, Item 1) to control both valves at the same time.

75. Disconnect connector 10 (Figure 21, Item 1) from front A/C PDM (Figure 20, Item 1).

76. Insert BLACK wire from harness into terminal 6 (Figure 21, Item 4).

77. Insert RED wire into terminal 3 (Figure 21, Item 3).

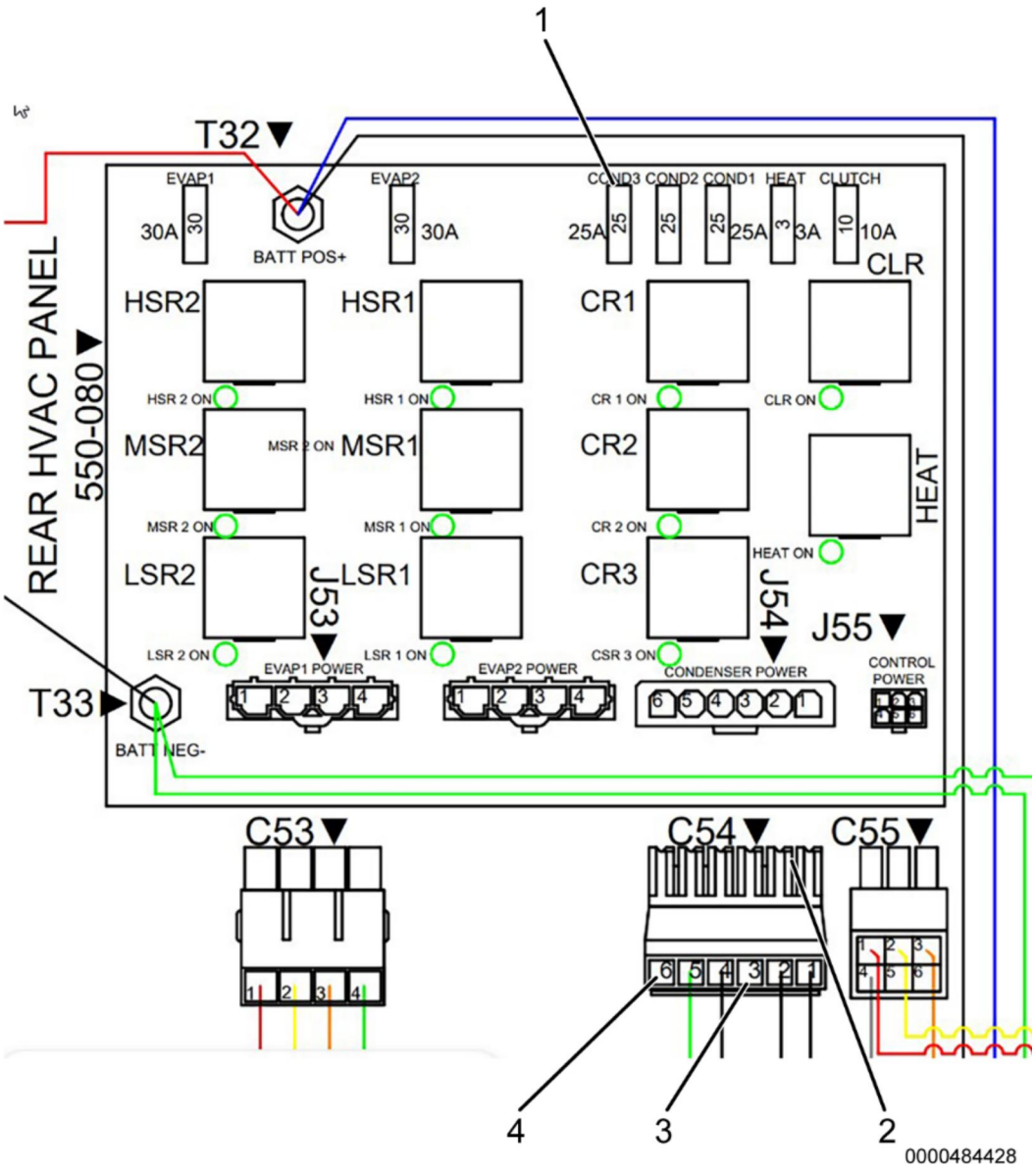

Figure 22. Rear A/C PDM

1. Connector 54
2. Fuse
3. Terminal 3
4. Terminal 6

78. Repeat Steps 75 through 77 for rear A/C PDM (Figure 22), then continue to Step 79.

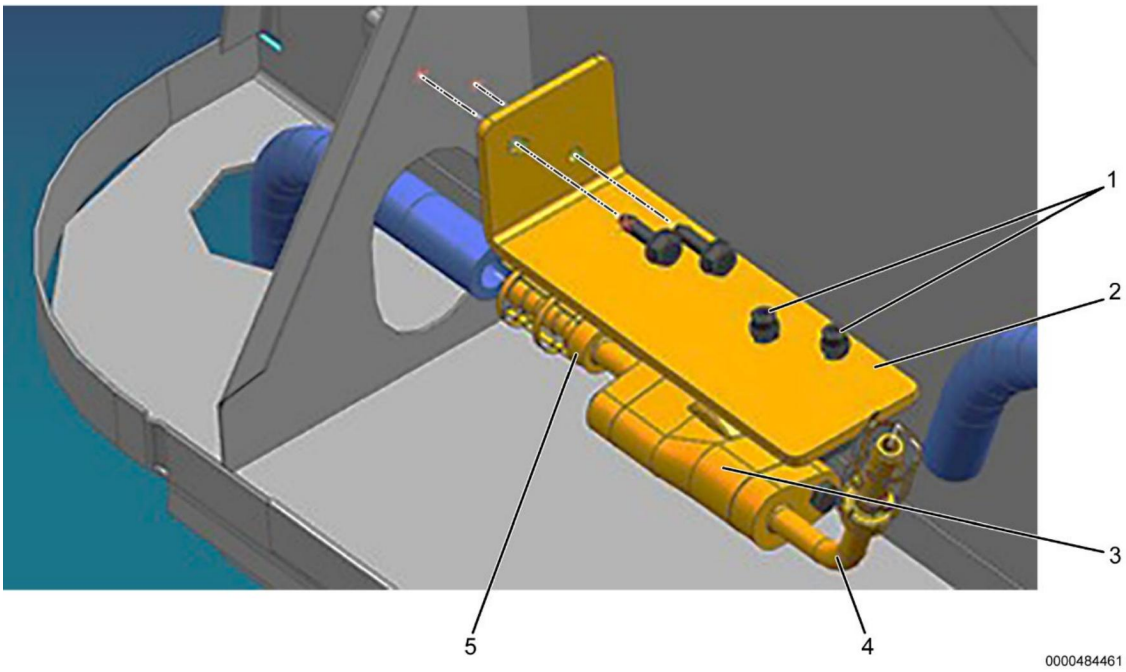

Figure 23. Front Solenoid Valve Assembly

1. Screw and washer (2)
2. Front solenoid valve assembly support bracket
3. Solenoid valve
4. Outlet valve fitting
5. Inlet valve fitting

79. Using two screws and two washers (Figure 23, Item 1), install solenoid valve (Figure 23, Item 3) onto front solenoid valve assembly support bracket (Figure 23, Item 2).

80. Install inlet valve fitting (Figure 23, Item 5) and outlet vlave fitting (Figure 23, Item 4) onto solenoid.

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Figure 24. Rear Solenoid Valve Assembly (Rear View)

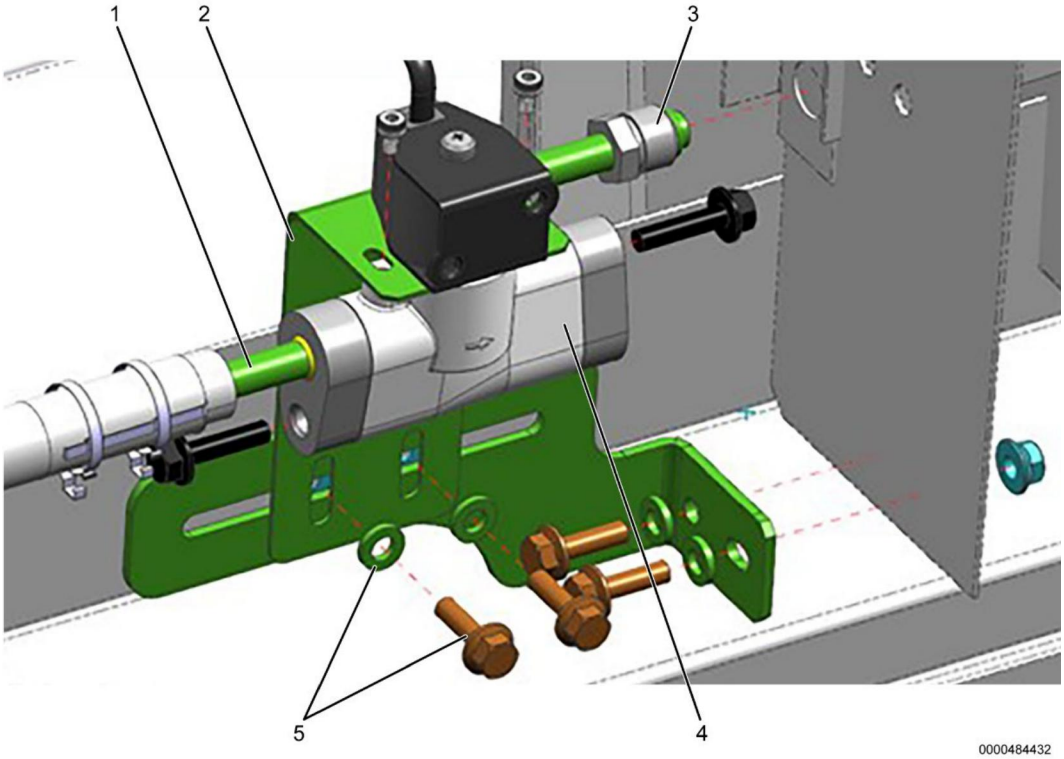

Figure 25. Rear Solenoid Valve Assembly (Front View)

1. Inlet valve fitting
2. Rear evaporator support bracket (2)
3. Outlet valve fitting
4. Solenoid valve
5. Screw and washer (2)

81. Using two screws and two washers (Figure 25, Item 5), install solenoid valve (Figure 25, Item 4) onto support bracket (Figure 25, Item 2).

82. Install inlet valve fitting (Figure 25, Item 1) and outlet valve fitting (Figure 25, Item 3) onto solenoid.

Figure 26. Front Support Brace

1. Front support brace

NOTE: Location of support brace may vary from bus to bus.

83. Locate support brace (Figure 26, Item 1).

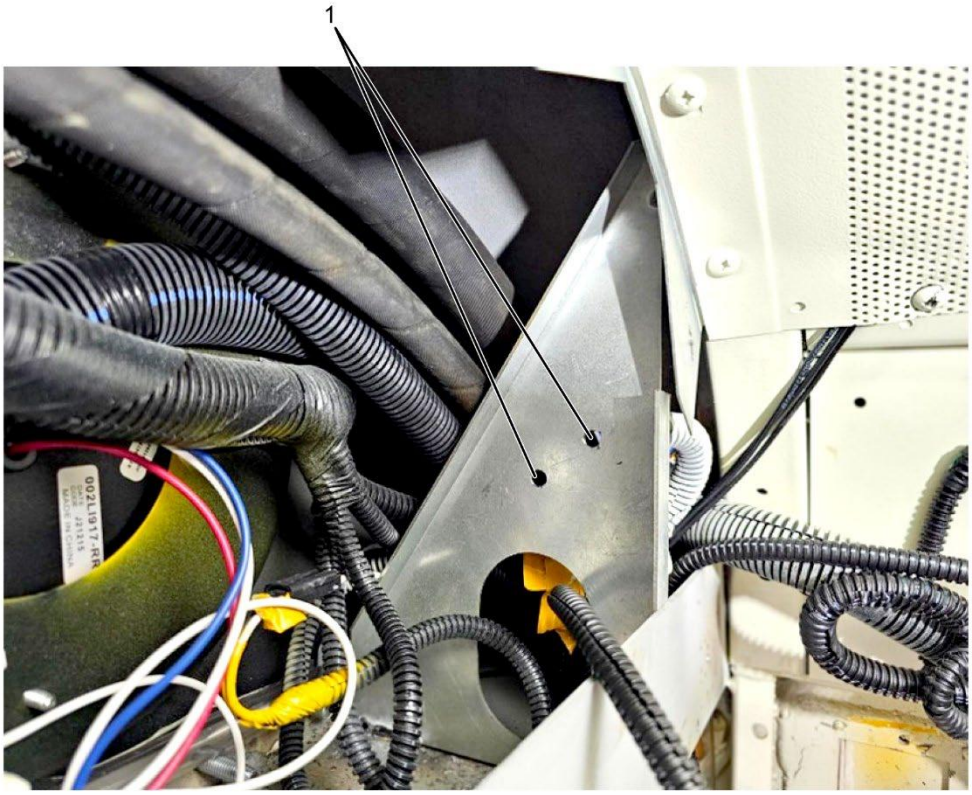

Figure 27. Front Solenoid Valve Mounting Holes

1. Mounting hole (2)

84. Using a marker, mark mounting hole locations (Figure 27, Item 1) on support brace for front solenoid valve assembly support bracket (Figure 25, Item 2).
85. Install 7 mm (0.2756 in) diameter drill bit into drill.
86. Drill two mounting holes in support brace for front solenoid valve assembly support bracket.
87. Debur drilled holes in support brace.

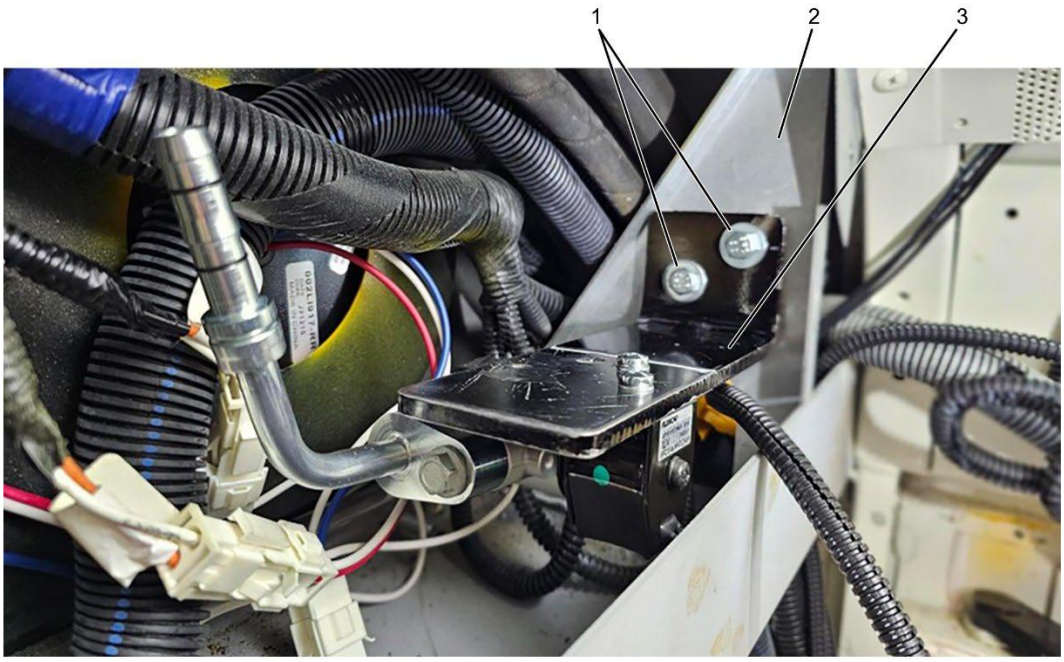

Figure 28. Front Solenoid Valve Mounting Hardware

1. Bolt and washer (2)
2. Front support brace
3. Front solenoid valve assembly support bracket

88. Install front solenoid valve assembly support bracket (Figure 28, Item 3) to front support brace (Figure 28, Item 2).

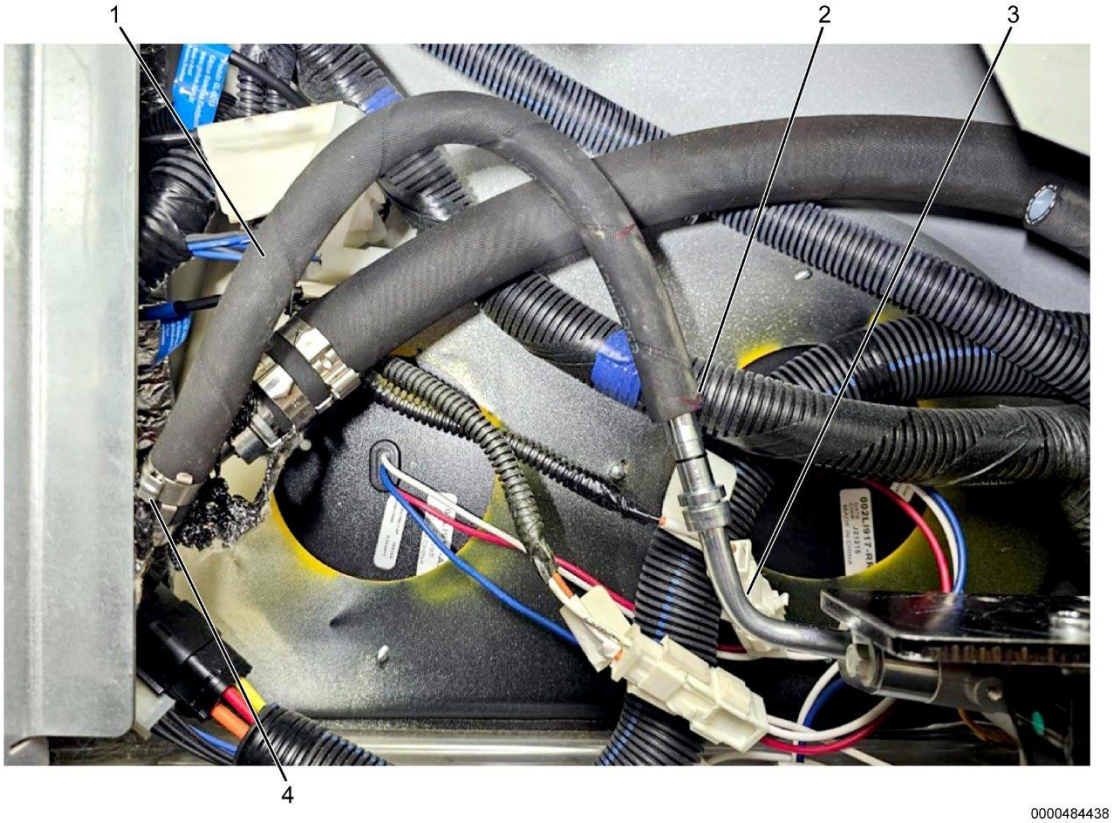

Figure 29. Front Evaporator Hose Connection

1. Front evaporator hose
2. Cut location
3. Outlet valve fitting
4. Evaporator connection

89. Locate front evaporator hose (Figure 29, Item 1) connected to the evaporator.

NOTE: There should be enough hose available to mock up with the fitting to help indicate a cut point.

90. Measure and mark a minimum of 10 in (250 mm) from evaporator connection (Figure 29, Item 4) to valve fitting.

91. Cut front evaporator hose (Figure 29, Item 1).

92. Clean excess oil and grease from A/C fittings, connections, and components.

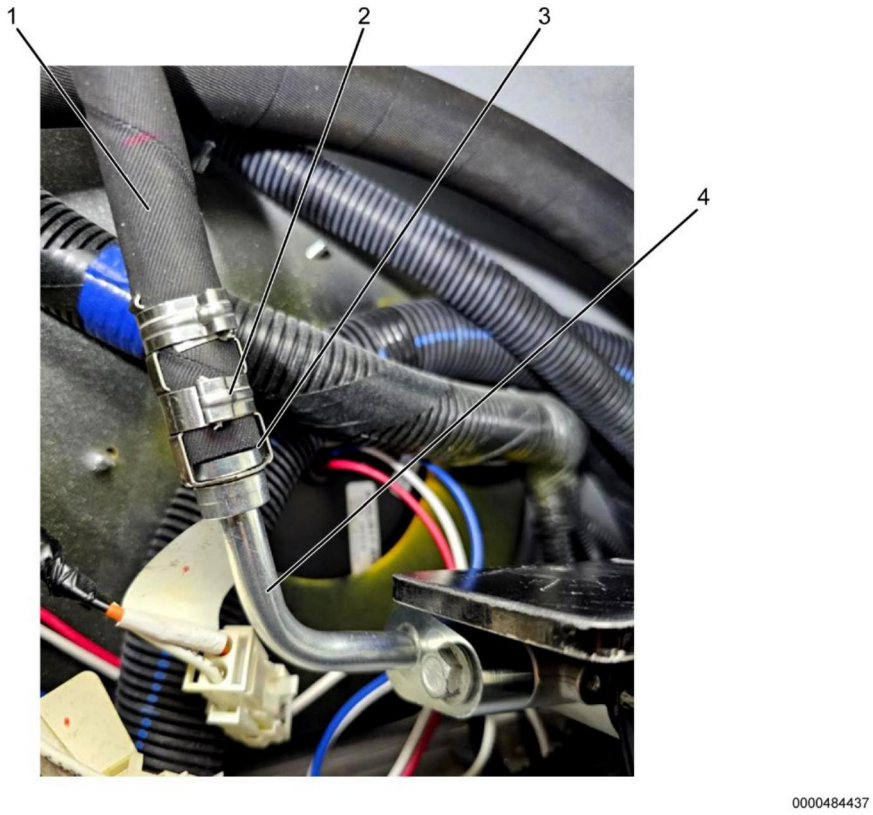

Figure 30. Front Evaporator Hose Connection (Outlet)

1. Front evaporator hose
2. Hose clamp (2)
3. Hose fully seated
4. Outlet valve fitting

NOTE: Ensure the front evaporator hose (Figure 30, Item 1) is fully seated (Figure 28, Item 3) to the bottom of the outlet valve fitting (Figure 30, Item 4).

93. Install front evaporator hose (Figure 30, Item 1) onto outlet valve fitting (Figure 30, Item 4).

94. Install hose clamps (Figure 30, Item 2) onto hose.

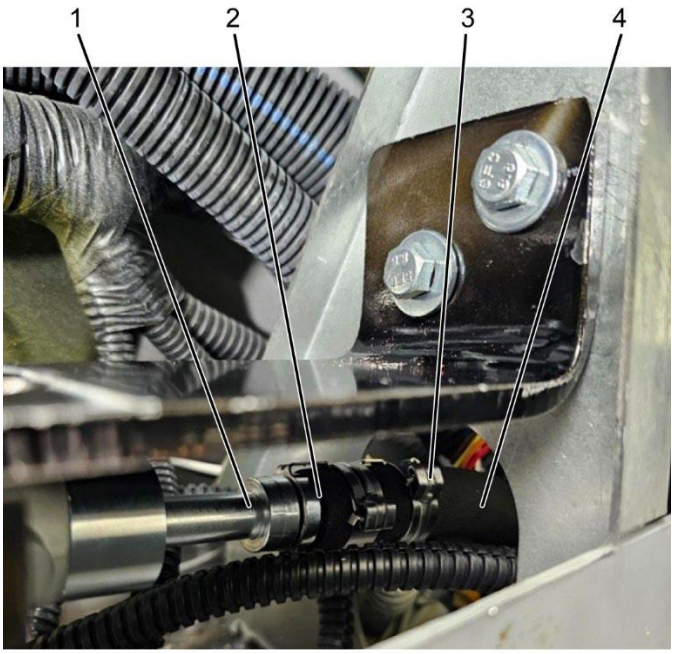

Figure 31. Front Evaporator Hose Connection (Inlet)

1. Inlet valve fitting
2. Hose fully seated
3. Hose clamp (2)
4. Front evaporator hose

NOTE: Ensure the front evaporator hose (Figure 31, Item 4) is fully seated to the bottom of the inlet valve fitting (Figure 31, Item 1).

95. Install front evaporator hose (Figure 31, Item 4) onto inlet valve fitting (Figure 31, Item 1).

96. Install hose clamps (Figure 31, Item 3) onto hose.

97. Connect front evaporator solenoid valve harness to solenoid valve.

98. Route harness down pillar towards the front A/C PDMs.

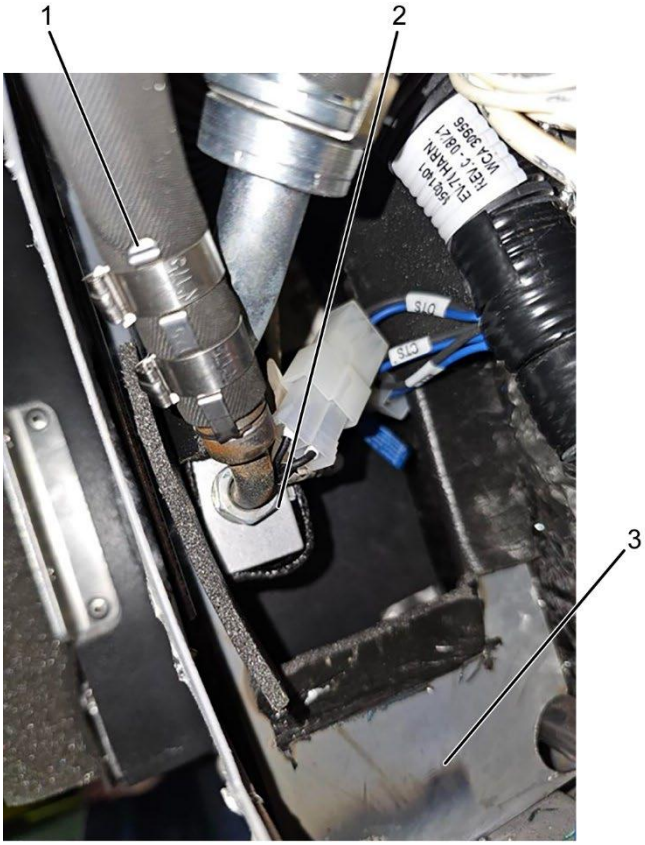

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Figure 32. Rear Evaporator Hose

1. Rear evaporator hose
2. Rear evaporator hose line nut
3. Support brace

99. Remove line nut (Figure 32, Item 2) from rear evaporator and pull evaporator hose (Figure 32, Item 1) out of way.

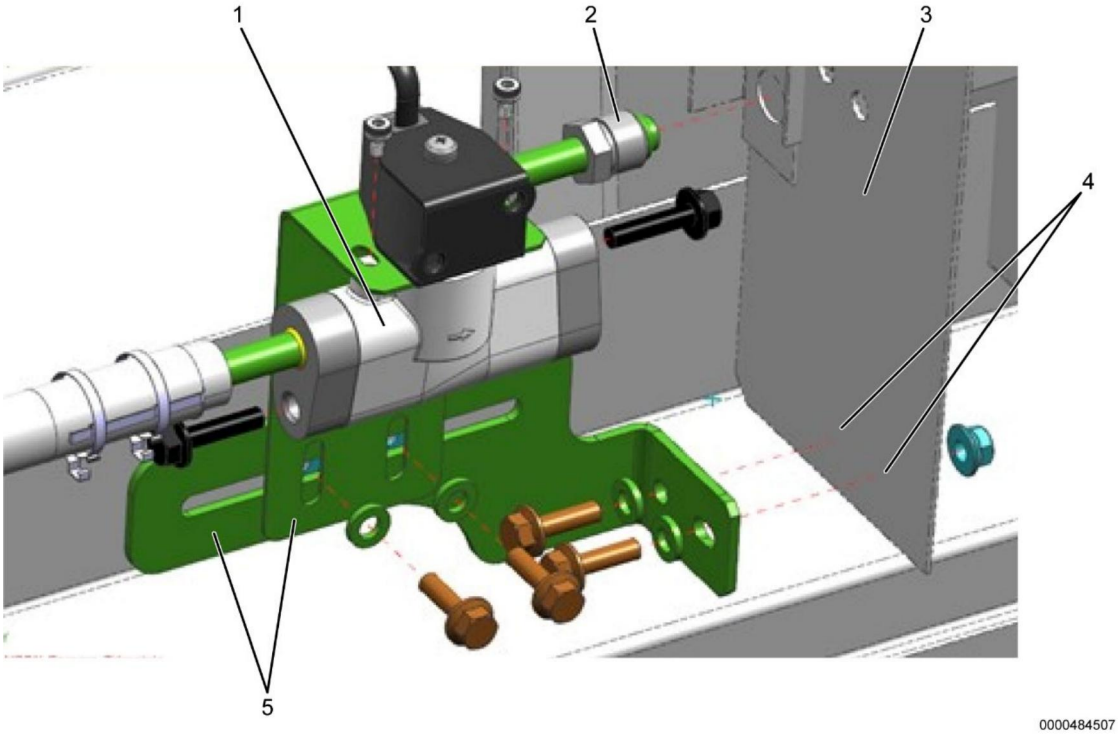

Figure 33. Rear Solenoid Valve Assembly Support Bracket

1. Rear solenoid valve assembly
2. Thermal Expansion Valve (TXV) fitting
3. Support brace
4. Mounting hole location (2)
5. Rear solenoid valve assembly support bracket (2)

NOTE: To aid in installation of rear solenoid valve assembly, hand tighten brackets (Figure 33, Item 5) to be able to adjust brackets when connecting fitting to TXV.

100. Position rear solenoid valve assembly (Figure 33, Item 1) with brackets (Figure 33, Item 5) inside rear access (Figure 12, Item 2) cavity.

101. Install TXV fitting (Figure 33, Item 2) onto TXV.

102. Using a marker, mark mounting hole locations (Figure 33, Item 4) on support brace (Figure 33, Item 3) for rear solenoid valve assembly support bracket (Figure 33, Item 5).

103. Remove rear solenoid valve assembly with brackets.

104. Install 7 mm (0.2756 in) diameter drill bit into drill.

NOTE: Drill from rear evaporator side for more space to fit drill.

105. Drill two mounting holes in support brace for rear solenoid valve assembly support bracket.

106. Debur drilled holes in support brace.

107. Carefully install rear evaporator into position and slide it towards passenger-side.

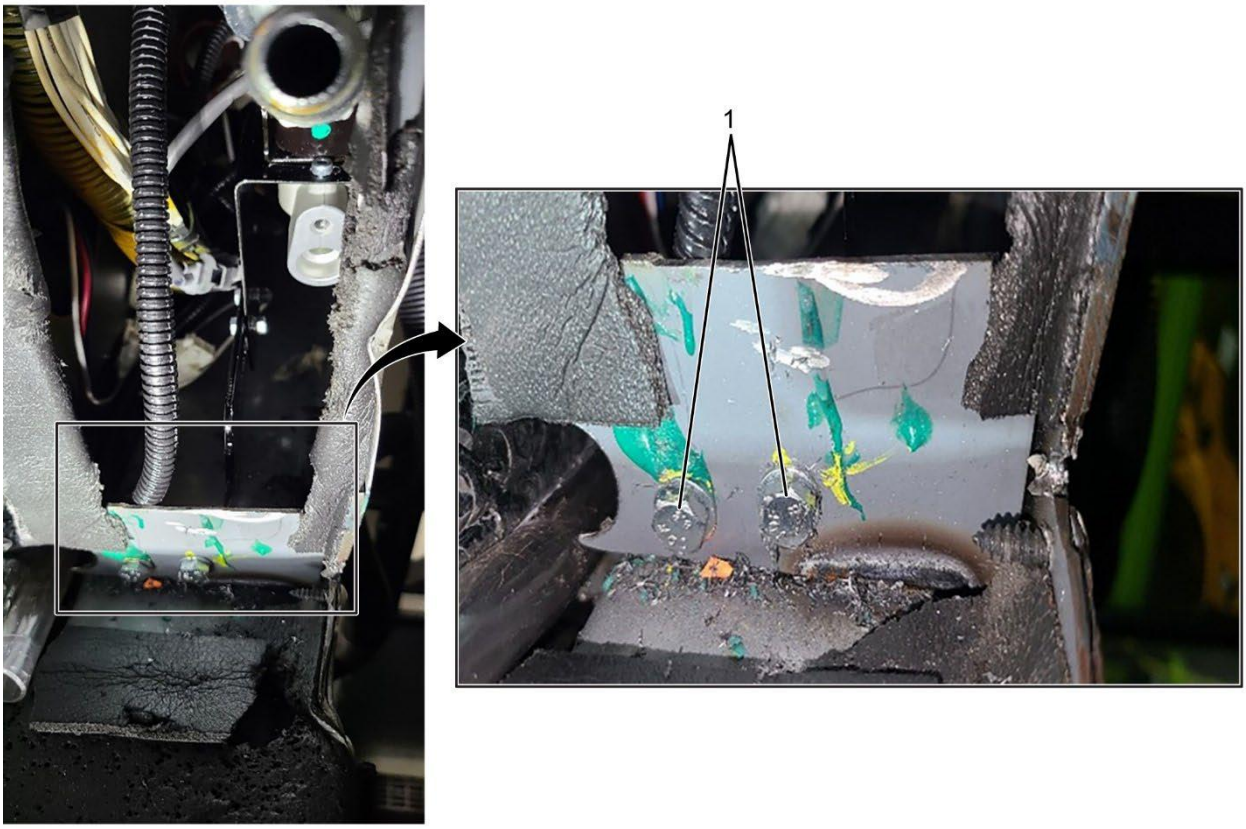

Figure 34. Rear Solenoid Valve Assembly Support Bracket Mounting Location

1. Mounting bolt (2)

108. Using mounting bolts (Figure 34, Item 1), install rear solenoid valve assembly support bracket to support brace.

109. Install rear evaporator core assembly. Refer to appropriate service manual for detailed instructions.

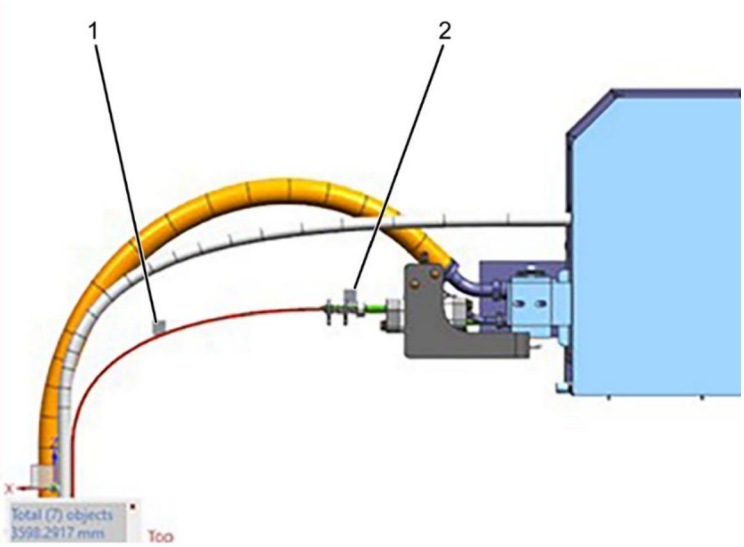

Figure 35. Rear Evaporator Hose Connection

1. Rear evaporator hose
2. Cut location

110. Locate rear evaporator hose (Figure 35, Item 1).

NOTE: There should be enough hose available to mock up with the fitting to help indicate a cut point.

111. Measure and mark rear evaporator hose to inlet valve fitting.

112. Cut rear evaporator hose (Figure 35, Item 1).

113. Clean excess oil and grease from A/C fittings, connections, and components.

114. Install O-ring onto Thermal Expansion Valve (TXV) fitting (Figure 33, Item 2).

115. Connect harness connector to rear solenoid valve assembly.

116. Route harness around rear evaporator core towards passenger-side.

NOTE: Dash mounted solenoid valve assembly is only equipped on 4 vehicles. Use the VIN to check and verify if the vehicle has feature code 0048ADL in the International® Service Portal℠ under components before proceeding.

117. Determine if dash mounted A/C system is equipped:

    a. If equipped, go to Step 118.

    b. If not equipped, go to Step 137.

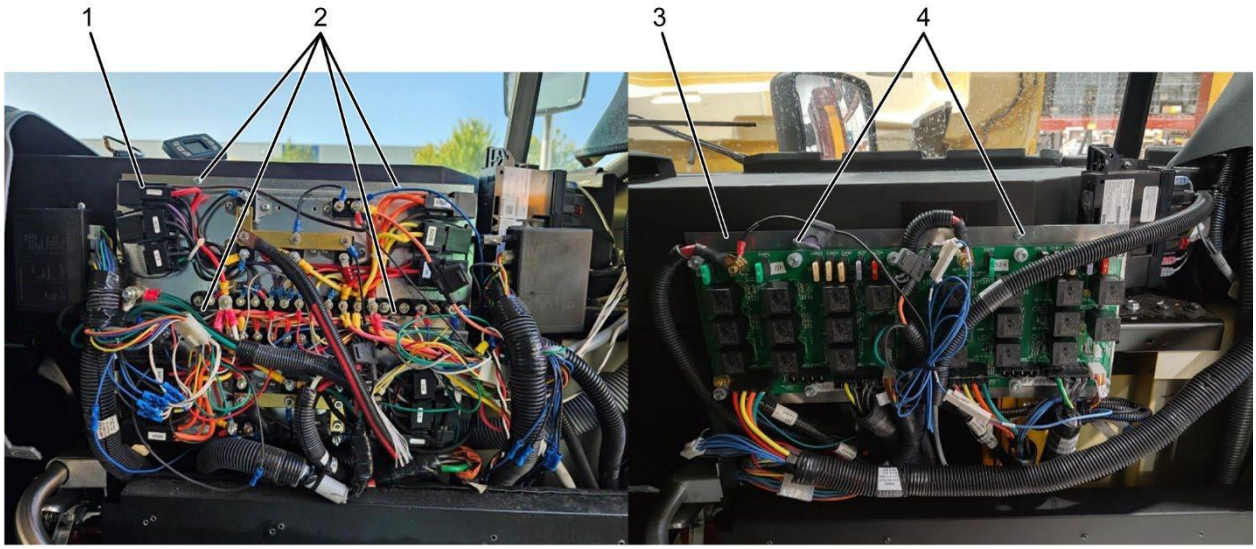

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Figure 36. Front and Rear A/C Power Distribution Module (PDM)

1. Option A
2. Mounting screw (4 total, two not shown)
3. Option B
4. Mounting screw (4 total, two not shown)

118. Remove self-tapping mounting screws (Figure 36, Items 2 and 4) from A/C PDM.

119. Carefully lower A/C PDM.

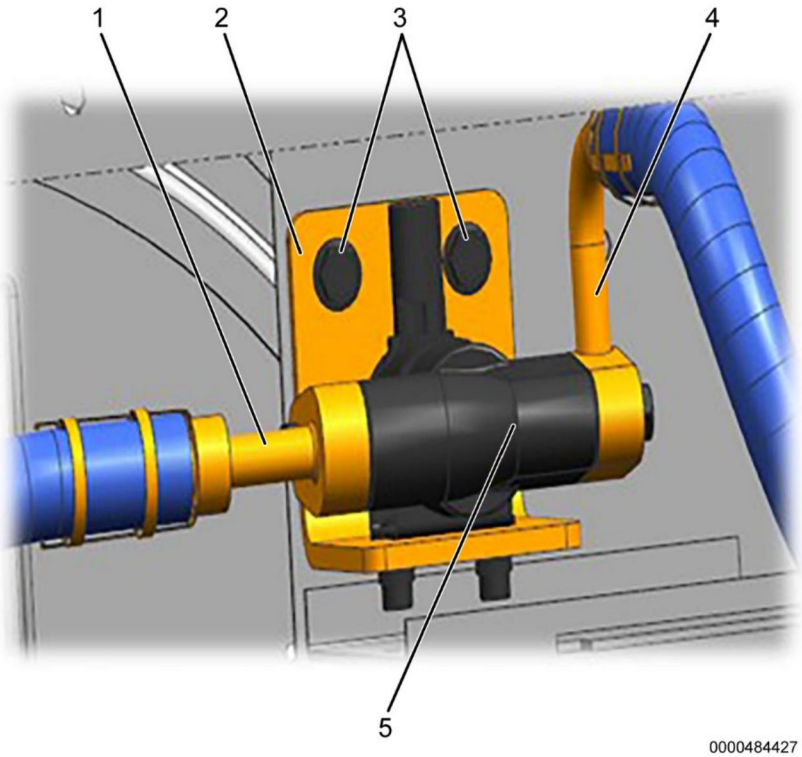

Figure 37. Dash Solenoid Valve Assembly

1. Outlet valve fitting
2. Dash evaporator support bracket
3. Screw and washer (2)
4. Inlet valve fitting
5. Solenoid valve

120. Using two screws and two washers (Figure 37, Item 3), install solenoid valve (Figure 37, Item 5) onto support bracket (Figure 37, Item 2).

121. Install inlet valve fitting (Figure 37, Item 4) and outlet valve fitting (Figure 37, Item 1) onto solenoid.

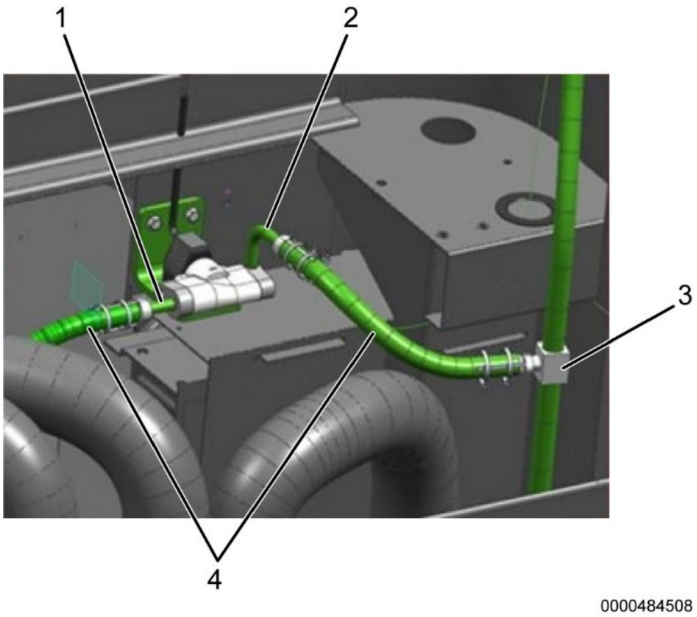

Figure 38. Dash Mounted A/C System Hose Location

1. Outlet valve fitting
2. Inlet valve fitting
3. T-fitting
4. Dash evaporator hose

122. Using a marker, mark mounting hole locations on support brace for dash solenoid valve assembly support bracket.

123. Install 7 mm (0.2756 in) diameter drill bit into drill.

124. Drill two mounting holes in support brace for front solenoid valve assembly support bracket.

125. Debur drilled holes in support brace.

126. Install dash mounted solenoid valve assembly to dash support brace.

127. Locate dash evaporator hose (Figure 38, Item 4) connected to the evaporator.

NOTE: The line to the T-fitting will only need to be cut into two sections. There is no need to remove the line from the T-fitting.

128. Measure and mark a minimum of 10 in (250 mm) from T-fitting (Figure 38, Item 3) to inlet valve fitting (Figure 38, Item 2).

129. Measure and mark a minimum of 20 in (510 mm) from dash mounted A/C TXV to outlet valve fitting (Figure 38, Item 1).

130. Cut hose and discard section.

131. Install dash evaporator hose (Figure 38, Item 4) onto outlet valve fitting (Figure 38, Item 1).

132. Install hose clamps onto hose.

NOTE: Ensure the dash evaporator hose (Figure 38, Item 4) is fully seated to the bottom of the outlet valve fitting (Figure 38, Item 1).

133. Install dash evaporator hose (Figure 38, Item 4) onto inlet valve fitting (Figure 36, Item 2).

134. Install hose clamps onto hose.

135. Connect dash mounted solenoid valve assembly harness to dash mounted solenoid valve.

136. Route harness to front of A/C PDMs.

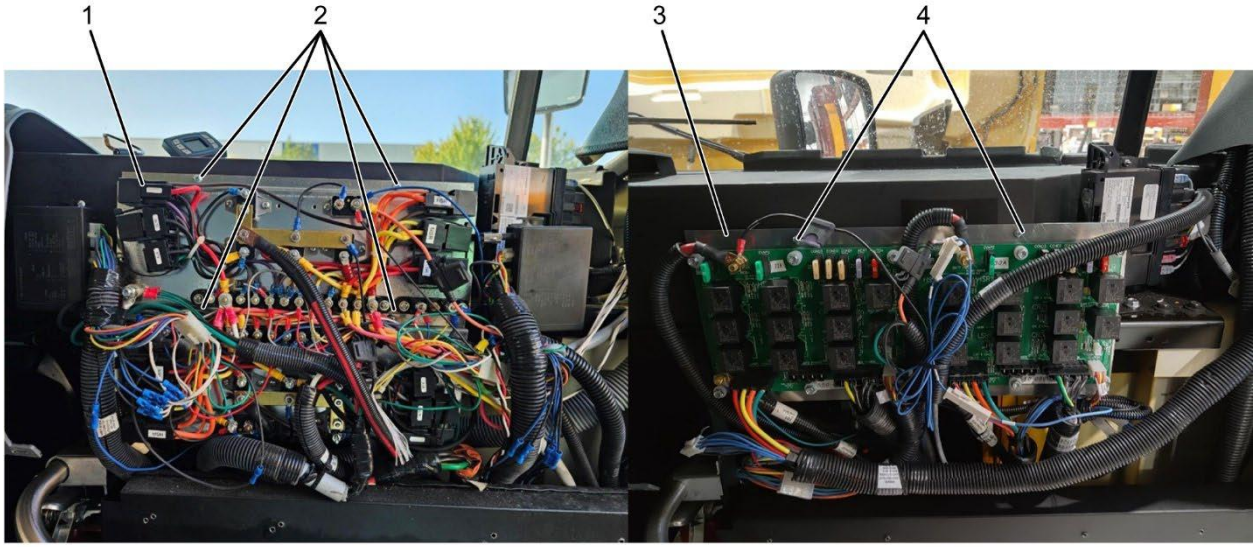

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Figure 39. Front and Rear A/C Power Distribution Module (PDM)

1. Option A
2. Mounting screw (4)
3. Option B
4. Mounting screw (4)

NOTE: When using self-tapping screws, install screws until head is fully seated. Be careful not to overtighten screws.

137. Position A/C PDMs onto dash panel.

138. Install self-tapping mounting screws (Figure 39, Items 2 and 4) to secure A/C PDMs onto dash panel.

139. Verify all connections are connected and all harnesses are routed and protected.

140. Install rear access cover (Figure 12, Item 2).

141. Carefully secure all panels above passenger-side windows.

142. Carefully install passenger-side dash panels. Refer to appropriate technician manual for instructions to vehicle.

143. Carefully install pillar cover.

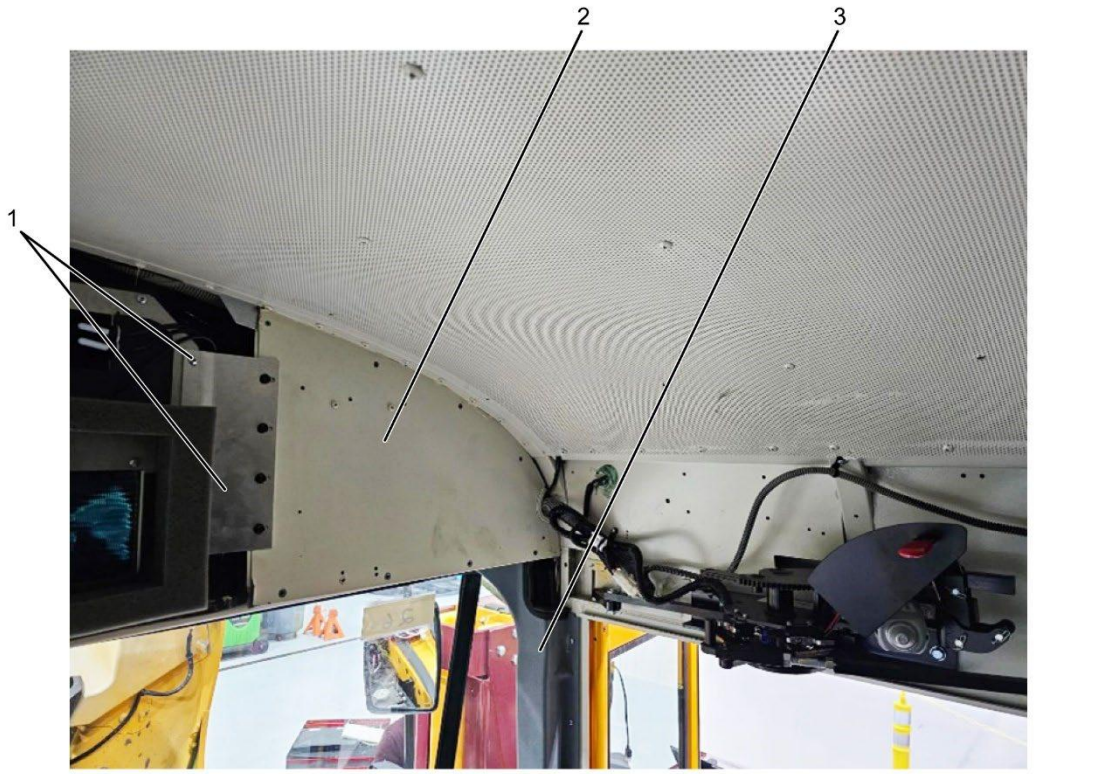

Figure 40. Front Cover

1. Support bracket
2. Passenger-side cover
3. Pillar cover

NOTE: When using self-tapping screws, install screws until head is fully seated. Be careful not to overtighten screws.

144. Install passenger-side cover (Figure 40, Item 2) and support bracket (Figure 40, Item 1).

Figure 41. Front Evaporator Core Cover

1. Front evaporator core cover
2. Mirror assembly
3. First aid kit

145. Install front evaporator core cover (Figure 41, Item 1). Refer to appropriate technician manual for instructions to vehicle.

146. Install first aid kit (Figure 41, Item 3) and mirror assembly (Figure 41, Item 2).

147. Install all appropriate Manual Service Disconnects (MSD) that were removed in Step 45. Refer to appropriate service manual for detailed instructions.

148. Turn ON 12V disconnect switch. Refer to appropriate service manual for detailed instructions.

149. Turn ON high-voltage disconnect switch. Refer to appropriate service manual for detailed instructions.

150. Turn ON front A/C system to full cold and max blower speed.

Figure 42. A/C Control Module

1. Test mode

NOTE: The Maintenance button is also used as the enter button. The Auto 2 button is used to go back. The blower speed fan adjustment arrows on the right are used for scrolling up and down.

151. Go to **Test Mode** (figure 42, Item 1).

152. Select **Enter** by pressing Maintenance button.

Figure 43. Test Mode Access Code

153. Input access code 2453 and press Enter.

Figure 44. Test Mode Menu Display

154. The A/C control module displays test mode menu.

Figure 45. Condenser Option

155. Select **Condenser OFF** to turn on the condenser fans.

CAUTION! To prevent damage to property, it is recommended to use a dedicated machine for POE (polyolester oil) systems. If the machine has been used on PAG (polyalkylene glycol) systems, ensure to flush the lines to prevent cross contamination.

NOTE: Do not turn OFF the 12V disconnect. The condenser fans need to be ON for the front and rear solenoids to be open and allow the refrigerant to flow through the entire A/C system.

156. Evacuate front and rear A/C systems. Refer to appropriate service manual for detailed instructions.

NOTE: Do not turn OFF the 12V disconnect. The condenser fans need to be ON for the front and rear solenoids to be open and allow the refrigerant to flow through the entire A/C system.

157. Perform leak down test on front and rear A/C systems.

158. Charge front and rear A/C systems. Refer to appropriate service manual for detailed instructions.

159. Exit A/C control module out of test mode.

160. Verify operation of front and rear A/C systems.

161. Disconnect battery charger / maintainer from vehicle battery.

162. Remove wheel chocks.

LABOR INFORMATION

Operation number must appear on all claims.

Operation Number	Description	Time
A40-24103-1	Front and rear A/C valve installation	3.9 hrs
A40-24103-2	Dash valve installation	1.0 hrs

Table 4 Labor Information

WARRANTY CLAIMS

Warranty claim expense is to be charged to Warranty. Claims are to be submitted in the normal manner, making reference to Field Service Campaign 24103.

Section 7 of the Warranty Policy and Procedures Manual contains further information related to the submission and processing of AFC / Recall claims.

As with all claim submissions, items acquired locally must be submitted in the “Other Charges” tab. The cost of any bulk items (such as a bag of cable tie straps, roll of wire, barrel of oil, or tube of silicone) should be prorated for the cost of the individual pieces / amount used during each repair.

To make sure that this important improvement is made in a timely manner, all claims for 24103 activity must be submitted by 29 April 2025 or within the normal warranty period for the component, if after 29 April 2025.