General Information

A new blend door design is available for retrofitting in the HVAC unit for Cascadia vehicles to correct complaints of either “no heat” or “no air flow out the defrost vents” due to binding blend doors. This repair is intended as an option for vehicles outside of normal warranty to provide an alternative to replacing the entire HVAC unit to correct blend door binding.

Parts

Parts are available through PDCs. See Table 1.

<table>
<thead>
<tr>
<th>Parts</th>
<th>Description</th>
<th>Quantity</th>
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<tr>
<td>VCC T1030983G</td>
<td>Blend Door</td>
<td>3</td>
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Table 1, Parts Required

Heater and Air Conditioner Housing Blend Door Replacement Procedures

1. Park the vehicle on a level surface, turn off the engine, and apply the parking brakes. Chock the tires.
2. Disconnect the batteries at the negative cables.
3. Raise the hood.
4. Recover the refrigerant from the air conditioning system. See Section 83, Subject 220 in the Cascadia Workshop Manual for instructions.
5. Remove the dash access panels and supports listed below. See Fig. 1 and Fig. 2. See Section 60.06 in the Cascadia Workshop Manual for instructions.
   - HVAC cover panel
   - Lower-cover panel
   - Glove box
   - Glove box brace
6. Remove the cab HVAC control module, and disconnect the wire harness.
1. Lower Cover Panel
2. HVAC Cover Panel
3. Glove Box Assembly
4. Control Module

Fig. 1, Access Panels

Fig. 2, Glove Box Brace
NOTE: The upper steering column clamshell panel is attached to a "skirt" that is permanently attached to the dash panel.

7. Remove the steering column bolster panel, and clamshell. See Fig. 3.

8. Remove the dash panel above the accelerator pedal (if applicable).

**WARNING**

Do not allow the weight of the steering column to hang unsupported on the frontwall bearing. The bearing, or bearing housing, could be damaged. A severely damaged steering driveline support at the frontwall could cause a loss of vehicle control, which could lead to personal injury or property damage.

9. Remove the fasteners that hold the steering column in place, and lower the column to rest on the driver’s seat. See Fig. 4. See Group 46 in the Cascadia Workshop Manual for the procedure.
10. Remove the A-pillar covers.
11. Remove the passenger side door opening tread-plate.
12. Remove the trim panel between the top of the dash and the windshield. See Fig. 5.

NOTE: Look for additional wires that may need to be unplugged to allow dash movement due to routing differences and options.
13. Remove the fasteners that hold the dash in place.

14. Raise the dash enough to provide clearance, and suspend it securely out of the way. See Fig. 6.
15. Remove the right-hand lower A-pillar cover panel.
16. Remove the right side floor duct.
17. Remove the floor distribution duct.
18. Remove the windshield wiper arms. See Section 82.00, Subject 100 in the Cascadia Workshop Manual for instructions.
19. Remove the HVAC fresh-air intake screen. See Fig. 7.

20. Remove the rain tray. See Section 82.00, Subject 100 in the Cascadia Workshop Manual for instructions.
21. Place a drain pan under the vehicle, clamp the coolant lines to prevent excessive drainage from the cooling system, then disconnect the coolant lines from the heater core. Allow the heater core to completely drain into the pan. See Fig. 8.

![Fig. 8, Coolant Lines](image)

22. Remove the nuts and bolts that hold the J-block to the HVAC intake duct. See Fig. 9.

**IMPORTANT:** Under no circumstances should the refrigerant lines remain uncapped for longer than five minutes. Water and dirt can damage the refrigerant system. Do not blow shop air through refrigerant lines since shop air is wet (humid).

23. Disconnect the refrigerant lines from the thermal expansion valve, and cap the lines immediately to prevent contamination of the system. See Fig. 10.
1. J-Block Mounting
2. J-Block
3. Thermal Expansion Valve Connecting Nut and Bolt
4. Thermal Expansion Valve

Fig. 9, Junction Block and Thermal Expansion Valve

1. Screw (2)
2. Washer
3. Nut
4. Refrigerant Lines to J-Block
5. Seal
6. Stud
7. Thermal Expansion Valve
8. Refrigerant Lines to Evaporator

Fig. 10, Thermal Expansion Valve Installation
24. Disconnect the wiring harness from the assembly. See Section 83, Subject 210 in the Cascadia Workshop Manual for instructions.

25. Remove the intake duct.

26. Remove the wire harness connections from the SAM cab, and cut the tie straps to allow the harness to be moved.

27. Remove the six nuts (three inside and three outside) that hold the assembly in position on the frontwall. See Fig. 11.

28. Remove the assembly from the frontwall.

29. Remove the HVAC unit from the cab and place it securely on the work bench with the defrost, floor, & temperature actuators (stepper motors) facing up. See Fig. 12.
30. Remove the fasteners for the three actuators and set the actuators aside.
31. Remove the fasteners from the Heater core cover and set the cover aside. See Fig. 13.

32. Remove the sixteen fasteners for the housing halves.
33. Release the three housing assembly clips and separate the housings. See Fig. 14.
34. Replace the three doors with updated doors and check for correct fit between the doors and housing. See Fig. 15.

35. Carefully reassemble the housing halves while aligning the three doors, baffle, evaporator core and heater core into position, then secure with sixteen fasteners.

36. Reinstall the actuators and the heater core cover and secure with the fasteners.

37. Position the HVAC assembly on the frontwall, and install the nuts. Tighten 10 to 12 lbf-ft (14 to 16 N-m).

38. Connect the coolant lines.

39. Install the intake duct.
40. Using new seals, connect the refrigerant lines to the thermal expansion valve. Tighten 11 to 15 lbf·ft (15 to 20 N·m).

41. Connect the wiring harness.

42. Add refrigerant oil to the system to replace the oil wasted during the replacement process. See Section 83.02, Subject 120 in the Cascadia Workshop Manual for instructions.

43. Start the evacuation. Evacuate and charge the refrigerant system. See Section 83.02, Subject 220 in the Cascadia Workshop Manual for instructions.

44. Install the defrost and right-hand foot well ducts.

45. Install the right-hand lower A-pillar cover and tread plate.

46. Install the dash. See Section 60.06 in the Cascadia Workshop Manual for instructions.

47. Install the steering column. See Group 46 in the Cascadia Workshop Manual for the procedure.

48. Install the steering column clamshell and bolster panel.

49. Connect the main harness to the SAM cab and secure it.

50. Install the glove box brace.

51. Install the dash panels. See Fig. 1.

52. Install the controller.

53. Install the rain tray.

54. Install the windshield wiper arms. See Section 82.00, Subject 100 in the Cascadia Workshop Manual for instructions.

55. Install the HVAC fresh-air intake screen.

56. Connect the batteries.

57. Check the coolant level, and add coolant as needed.

58. Leak check the refrigerant connections that were disconnected during the service.

Warranty

This is an informational bulletin only, warranty does not apply.