SECTION 7 — CLIMATE CONTROLS

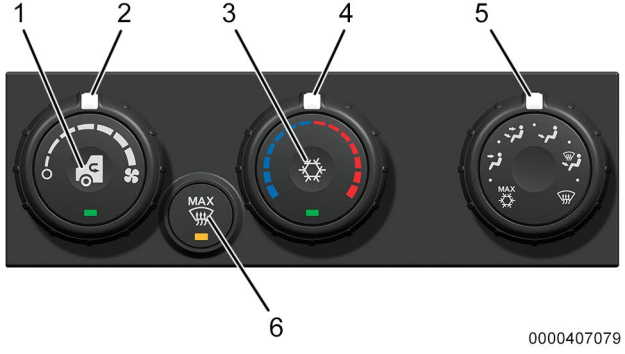
Climate Control

NOTE: Heating, Ventilation, and Air Conditioning (HVAC) control units may vary depending upon the HVAC options chosen at time of purchase.

NOTE: Not all vehicles come with air conditioning; for vehicles without A/C, outside air recirculation can be used to cool the cab.

Your vehicle may be equipped with one of two climate control systems. Depending on the options chosen at the time of purchase, your vehicle may be equipped with a standard HVAC system or an Automatic Climate Control system.

Standard HVAC System



1. Recirculation button
2. Blower speed control dial
3. A/C button (optional)
4. Temperature control dial
5. Mode control dial
6. MAX defrost

Blower Speed Control

Use this control to regulate the amount of air provided to the vents in any mode you select. Turn the knob clockwise to increase fan speed. Turning the control to the OFF position will shut OFF the fan but may not prevent outside air from entering the vehicle. Turning OFF the blower speed control also turns OFF the A/C compressor. The button in the middle of the dial controls the recirculation and fresh air in the cab.

Temperature Control

Use the temperature dial control to regulate the temperature of the air discharged from the vents. The BLUE area of the control indicates cooler temperatures, while the RED area indicates warmer temperatures. The center button of the dial controls the ON / OFF mode for the air conditioning.

Quick Settings

The A/C system is equipped with two quick setting options for easy access of the maximum defrost (MAX defrost) and maximum cooling (MAX A/C [optional]). modes. Pressing the MAX Defrost button will turn on the A/C and activate fresh hot air at a high blower speed to be output from the vents. Moving the dial to the MAX A/C setting will turn on the A/C and activate maximum cold air temperature, recirculation, and a high blower speed. The MAX A/C and the MAX Defrost can be overridden by adjusting the blower, temperature, or recirculation settings. However, if the control is in MAX A/C or MAX Defrost mode prior to key OFF, when the key is moved to the key ON position, then the system will return to default MAX A/C or MAX Defrost operation unless the blower is OFF.

Recirculation Button

NOTE: Continuous use of the recirculate mode may make the inside air stuffy. Use of this mode for longer than 15–30 minutes is not recommended unless outside conditions require it.

This button selects fresh air or recirculated air. The air will be recirculated when the light on the button is illuminated. Recirculation is locked out in defrost, mix, and adjacent dot positions. Use recirculation to block out any outside odors, smoke, or dust and to cool the interior rapidly upon initial startup in very hot or humid weather. This button is located in the center of the fan speed dial.

MAX Defrost Button

Pressing this button will direct the majority of the airflow to the windshield, while maintaining airflow to the side window outlets. A small amount of airflow is directed to the floor outlets. Temperature will be set to full hot and the blower will be set to high. The A/C will be active and the inlet door will force fresh air into the cab to reduce humidity levels and moisture buildup on the windshield. Temperature and blower speed can be changed by adjusting the corresponding dial. If the MAX defrost button is illuminated prior to key OFF, then the system will return to high blower, fresh air, A/C ON and full heat when the key is moved to the key ON position if the control is set to any other setting except blower OFF.

A/C Button (If Equipped)

The A/C can be selected at any time, in any mode or temp to cool and / or dehumidify the cab air. The A/C is turned ON when the light on the button is illuminated. To turn the A/C button ON or OFF, push the button in the center of the temperature dial.

The heater / defroster systems can be operated simultaneously with the air conditioner. Select the A/C button, adjust the temperature and mode to a comfortable setting, and the air conditioner will remove humidity while the heater keeps the cab at a comfortable temperature.

Operation with Blower OFF

The temperature, recirculation button, and mode will continue to be adjustable even after the blower is turned OFF if the key is ON. Pressing the recirculation button will close the fresh air door, eliminating outside air from entering the vehicle.

Heater Only (If Equipped)

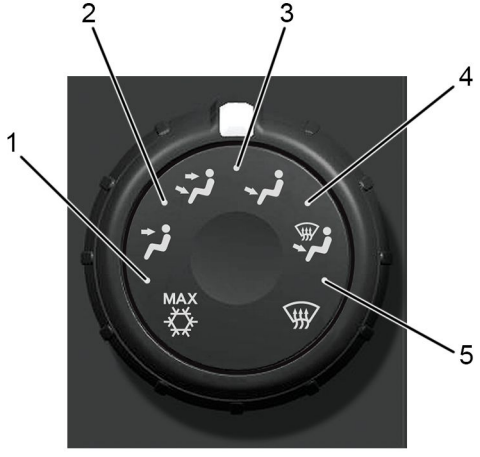
Certain models are available with a heater only option. The heater only options do not come with air conditioning. These units have a similar control head but eliminate the MAX A/C button and MAX A/C Mode Control dial position.

Mode Control

NOTE: Not all control units will have MAX A/C or related mode dial positions. The control unit options may vary depending on the options chosen at the time of purchase.

The dot between the mode control icons is an additional mix position between the two modes.

Use this control to direct the flow of air as follows:



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Item	Description
	**MAX Air Conditioning Mode (optional)** In this mode, the majority of the airflow is directed to the panel air outlets and the air is recirculated inside the vehicle while the rest of the air is directed to the floor. A/C is turned ON, blower is set to high, temperature is set to full cold, and the inlet door is set to recirculation. The blower speed, temperature, and the inlet door can be adjusted using the dials. Use this mode to block out any outside odors, smoke, or dust and to cool the interior rapidly upon initial startup in very hot or humid weather.
1. Dot	In this optional mode, the majority of the air flow is directed to the panel air outlets while the rest of the air is directed to the floor. The A/C is ON, and sets to full cold, recirculation, and medium blower speed. The blower speed, temperature, and the inlet door can be adjusted using the blower speed dial.
	**Vent Mode** In this mode, the majority of the airflow is directed to the panel air outlets, while the rest of the airflow is directed to the floor outlets.
2. Dot	This mode is a mix of the majority of the air directed to the panel air outlets and the rest to the floor outlets.
	**Bi-Level Mode** The bi-level mode is a split of equal airflow between the panel air outlets and the floor outlets.

Item	Description
3. Dot	This mode is a mix of some of the air directed to the panel air outlets and the majority to the floor outlets.
	**Floor Mode** In this mode, the majority of the airflow is being directed to the floor outlets. Smaller amounts of air will be directed to the windshield and side windows to help maintain clear windows.
4. Dot	This mode will increase airflow to the windshield, with some airflow being directed to the side window outlets and the floor outlets. The A/C will be active and the inlet door will force fresh air into the cab to reduce humidity levels and moisture buildup on the windshield.
	**Mix Mode** In this mode, half of the airflow is directed to the defrost and side window air outlets and half of the airflow is directed to the floor air outlets, while A/C air will be active and the inlet door will force fresh air into the cab to reduce humidity levels and moisture buildup on the windshield.
5. Dot	In this mode, there will be an increase in airflow to the windshield, maintaining airflow to the side window air outlets. The A/C will be active and the inlet door will force fresh air into the cab to reduce humidity levels and moisture buildup on the windshield.

Item	Description
	**Defrost** In this mode, the majority of the airflow is directed to the windshield and side window air outlets, while a small amount is directed to the floor outlets. The A/C will be active and the inlet door will force fresh air into the cab to reduce humidity levels and moisture buildup on the windshield.
To remove stale air or smoke while air conditioner is operating, you may want to open a vent window for a short period of time. Always park in the shade when possible. If your vehicle has been parked in the sun with the windows up, remove the overheated air inside by driving with windows down and the air conditioner ON for one or two city blocks.	

WARNING

To prevent personal injury and / or death, or damage to property, never drive the vehicle unless the windshield and all other windows are clear. A fogged, ice / snow covered, or dirty windshield or window limits vision, which could cause an accident. To improve defroster efficiency, remove ice and / or snow by hand from the windshield and windows with a non-metallic scraper.

CAUTION

To prevent damage to property and to clear system of humid air, operate blowers for 30 seconds at high speed, with the AIR FLOW / AIR CONDITIONER knob on the normal heating position before selecting the Defrost position. This will prevent fogging the glass, which can occur if humid air is blown onto a cool windshield.

NOTE: The vehicle may be equipped with heater shutoff valve(s) to prevent hot coolant from circulating through the heater core(s). Closing the valve(s) during hot weather operation will improve A/C system performance. If the valves are shut off, in-cab temperature adjustment may become limited. In addition, when shutoff valves are closed, defrosters will produce only cold air.

Auxiliary Heaters

The Midship / Rear heater switches provide blower speed control for the passenger compartment heaters and are located on the left-side switch panel. The control switch is labeled OFF / LO / HI.

Defrost Operating Instructions

The defroster blower is controlled by the three-position (OFF / LO / HI) DEFROST fan switch, located on the left-side switch panel. Press the switch to the desired position to control blower speed.

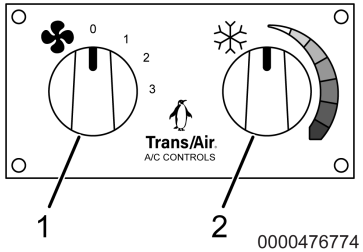
In this mode, the majority of the airflow is directed to the windshield and side window air outlets, while a small amount is directed to the floor outlets. The A/C will be active and the inlet door will force fresh air into the cab to reduce humidity levels and moisture buildup on the windshield. If equipped, the optional stepwell heater may be turned on for added air flow to the entry door glass.

Integrated Air Conditioning System (IC Air)

This vehicle may be equipped with an optional skirt-or roof-mounted, factory-installed integrated air conditioning (IC Air) system. Before operating the system, become familiar with the climate control system operating controls.

Becoming familiar with your IC Air climate control system operating controls will enable you to realize maximum system performance and maintain a comfortable environment for you and your passengers.

The system controls consist of two rotary switches, one controlling the evaporator fans and the other controlling the thermostat. The following illustration identifies both switches of the control system.



Item #	Name	Functional Description
1	System OFF / Fan Speed control: This control has four positions: 0 thru 3	• The 0 position is the system OFF position. • Position 1 = Low evaporator fan speed. • Position 2 = Medium evaporator fan speed. • Position 3 = High evaporator fan speed.
2	Air Conditioning Temperature Control	Clockwise = Cooler Counterclockwise = Warmer.

Circulation Fans

WARNING

To prevent personal injury and / or death, or damage to property, wait until the motor cools off before repositioning the fan motor. It can become extremely hot when operated in normal ambient temperatures for long periods of time.

Some buses are equipped with circulation fans. The controls are labeled RIGHT FAN and LEFT FAN and are located on the left-side switch panel driver console. Each fan has OFF / LO / HI speed control.

Each fan can be positioned in several directions. First, turn its fan control switch to the OFF position and then grasp the cage and pivot fan to the desired position to reposition the fan.

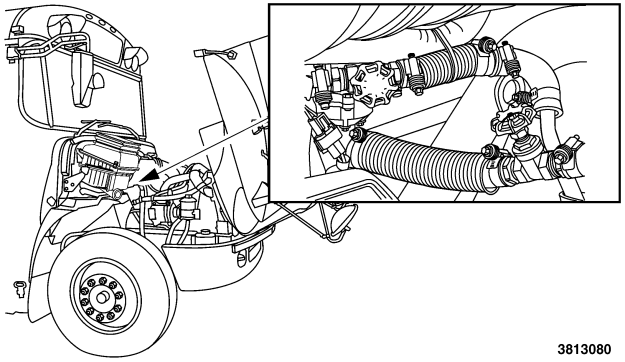
Heater Booster Pump

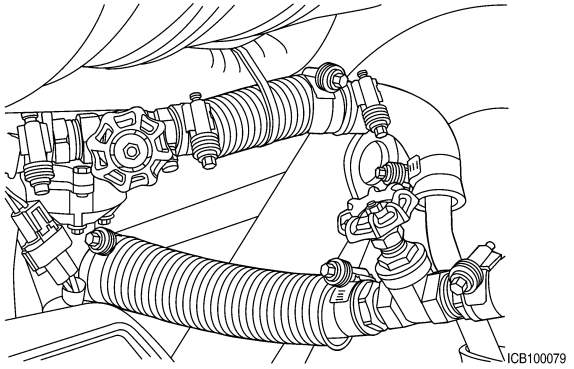
The heater booster pump assists coolant flow from the engine and increases heater performance. Turn the heater booster pump ON to provide the vehicle with additional interior heat.

NOTE: Do not use the heater booster pump unless the heater cutoff valve is manually opened.

Heater Cutoff Valve

NOTE: The illustration is for reference only and may differ from the actual vehicle.





Typical Heater Cutoff Valve

The heater cutoff valve for the coolant supply is under the hood.

Turn the heater cutoff valves ON (counterclockwise) whenever the heater is used.

Turn the heater cutoff valves OFF (clockwise) to stop hot coolant from being routed into the bus on hot days.

Air Conditioning Service Checks

Heater System

Check all heating / cooling fans for operation. Ensure that Heater cutoff valves are opened / closed during appropriate cold / warm months for greatest passenger comfort. Maintain heat exchanger air filters (if equipped). The driver-side heater filter is located behind the grille near the floor, to the left-side of the driver's seat. The optional stepwell heater filter is located inside the stepwell on the AFT side wall. Under-seat heaters may have an optional filter on the top surface of each heater box. Heater booster pumps should not be run dry for more than 30 seconds. This may cause the seals to fail.

Integrated Air Conditioning (IC Air) System

The following conditions require the immediate attention of your nearest authorized IC Air Service Center.

- Vibration and / or noise from engine compartment
- Oil around refrigeration hose connections
- Water dripping from evaporator and / or air ducts
- Vibration and / or noise from the evaporator area
- Noticeable decrease in system performance
- Reduced air flow (this condition is normally a result of dirty or clogged evaporator filters).

CAUTION

To prevent component damage, avoid leaving excess dirt and debris in the filter housing when removing and / or replacing any HVAC filters, excess dirt and debris can cause damage to the HVAC system.

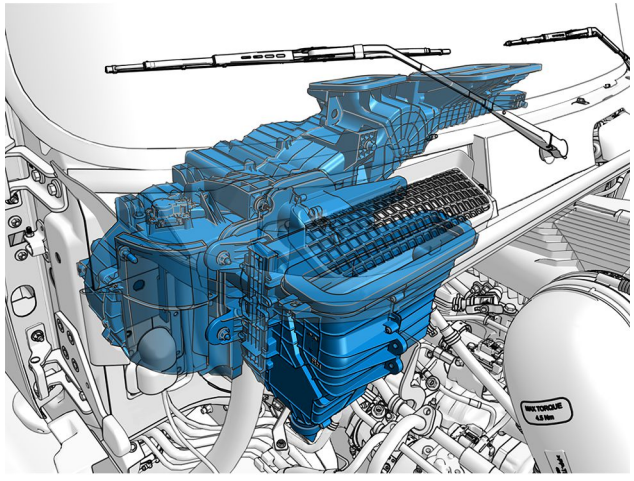
Have your air conditioning system serviced according to the maintenance intervals. The refrigerant charge, cleanliness of condenser core, cab filter, and belt condition are essential to air conditioning performance.

Remove the fresh air filter once each season and check for things like dirt and lint. Replace if necessary. Vehicles operating in unusually dusty conditions may require inspecting and replacing the air filter(s) more often.

To reduce costs, the filter may be carefully rinsed with a soap solution and reused. Be sure to wash and rinse both sides and be sure to keep the spray head at least 6 inches away from the filter to prevent damage.

Correct airflow may be restored by either replacing the filter(s), which can be done without tools, or by cleaning the filters.

HVAC Filters



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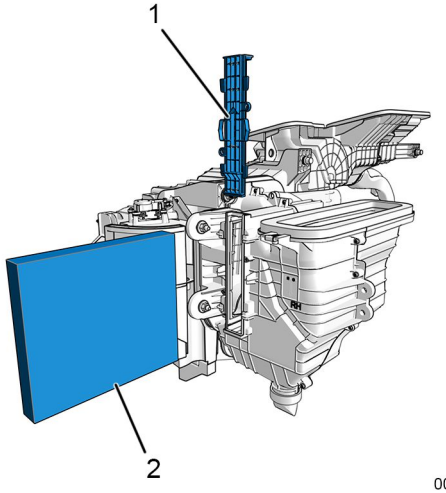
Side Access HVAC Filter



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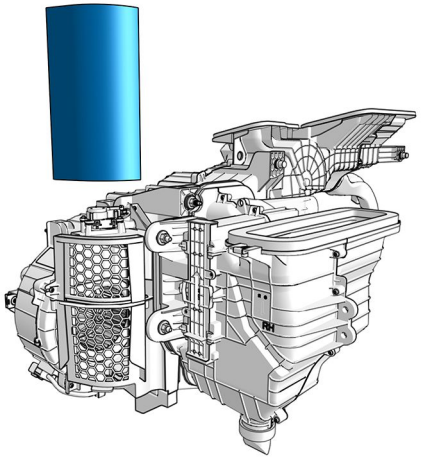
1. Filter access door
2. Air filter

Cab Fresh Air HVAC Filter Replacement – Side Access

1. Unlatch and remove filter access door.
2. Remove filter by pulling filter out of air intake housing.
3. Install new filter by sliding filter into air intake housing.
4. Install filter access door and latch in place.

Recirculation Filter

The recirculation filter is mounted on the right-side of the HVAC unit, which is located in-cab under the right-side instrument panel.



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Cab Recirculation HVAC Filter Replacement

There are two ways to replace this filter: pulling the filter up and out of the housing or pulling the filter down and out.

1. In order to pull the filter up and out of the filter housing, gain access through the Power Distribution Module (PDM) located on the passenger-side underneath the instrument panel.
2. To pull the filter down and out of the filter housing, gain access from the passenger-side foot well; this requires removal of the passenger-side trim panel.