

**Subject: Intermittent Slow to Cool HVAC Performance Concerns in High Ambient Temperatures and/or High Humidity Conditions After Start Up, Especially at Low Engine Speeds (Install New Engine Cooling Fan Clutch)**

**Models: 2004-2005 Buick Rainier  
2002-2005 Chevrolet TrailBlazer Models  
2002-2005 GMC Envoy Models  
2002-2004 Oldsmobile Bravada  
2005 Saab 9-7X**

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**This bulletin is being revised to provide repair information for this customer concern. Please discard Corporate Bulletin Number 04-01-38-019 (Section 01 -- HVAC).**

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## **Condition**

Some customers may comment on slow to cool Air Conditioning (A/C) performance or high A/C outlet temperatures after start up or that the A/C system is not cooling sufficiently, especially in high ambient temperatures. This may be an intermittent condition and the performance of the Heating, Ventilation and Air Conditioning (HVAC) system may not meet customer expectations.

## **Cause**

This condition may be caused by the response of the Electro-Viscous (EV) fan clutch and can be related to airflow across the condenser. This low A/C system performance can occur for longer periods of time if the vehicle is allowed to idle or is driven in low speed conditions. The response of the EV fan clutch will affect A/C system performance. As higher road speeds are attained, the increased airflow across the condenser will usually improve A/C system performance and the response of the EV fan clutch. This condition may be more evident after the vehicle has set for a period of time and can be difficult to duplicate. The condition may occur after the vehicle has set for as little as 10 minutes or as long as overnight. It is most prevalent intermittently during the first 15 minutes of operation.

## Correction

<b>Do This</b>	<b>Don't Do This</b>
Replace the EV fan clutch.	Do not replace any other HVAC related parts unless a specific fault is found.

Technicians are to replace the EV fan clutch with a new design part, P/N 15293048, on vehicles built before June 2005. Vehicles built in June 2005 may already have the updated EV fan clutch and it will not need to be replaced. For 2004 model year vehicles and older, update the Powertrain Control Module (PCM) with a software calibration that was developed to improve coolant temperature gauge readings. This new calibration will cause the PCM to command small amounts of additional fan engagement to better control engine coolant temperatures. Model year 2005 vehicles already have this calibration installed. Refer to Corporate Service Bulletin Number 04-06-02-005 for more information about this calibration.

Proper diagnosis of any customer concern is essential. Refer to the Diagnostic Starting Point-Heating, Ventilation and Air Conditioning procedure in SI to begin a diagnosis of any HVAC concerns. Refer to the Diagnostic Starting Point-Engine Cooling procedure in SI to begin a diagnosis of any engine cooling or engine cooling fan concerns. If an attempt is made to diagnose an HVAC system concern, all parameters must be measured. As an example, both the low and high side refrigerant pressure readings must be measured. If only the low side pressure readings were measured, it would appear that the A/C compressor is disengaging at a higher pressure than expected. If both the low and high side pressures were being measured, it would be noted that the A/C compressor is probably disengaging due to the maximum high side pressure cut out point being reached. This occurs to protect the HVAC system from damage. The updated PCM software calibration along with the updated EV fan clutch will improve this condition due to increased air flow across the condenser. The new EV fan clutch has an increased minimum operating fan speed and an improved response time. Additional engine cooling fan noise can be expected with the updated PCM software calibrations.

The last area of customer concern is the operation of the HVAC system blower motor. For vehicles equipped with automatic control HVAC systems (RPO CJ2), the blower motor fan speed will be limited to 80% of maximum when the HVAC system is operating in the automatic mode. To obtain maximum blower motor speed, instruct the customer to manually adjust the blower motor speed to the highest setting.

## Parts Information

<b>Part Number</b>	<b>Description</b>	<b>Qty</b>
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**Subject: HVAC System Inoperative For A Drive Cycle, Poor HVAC System Performance In High Ambient Temperatures (Update HVAC Control Module Software)**

**Models: 2002-2003 Chevrolet TrailBlazer, TrailBlazer EXT  
2002-2003 GMC Envoy, Envoy XL  
2002-2003 Oldsmobile Bravada**

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**This bulletin is being revised to correct the RPO usage information below:**

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**RPO CJ2 = HVAC System Air Conditioner Front, Automatic Temperature Control, Auxiliary Temperature Control**

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**RPO CJ3 = HVAC System Air Conditioner Front, Manual Temperature Control, Auxiliary Temperature Control**

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**Please discard Corporate Bulletin Number 02-01-39-005 (Section 01 -- HVAC).**

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## **Condition**

Some customers may comment about no cold air from the heating, ventilation and air conditioning (HVAC) system during a drive cycle. This concern may occur at any time during the drive cycle and at any temperature setting. The HVAC system operation returns to normal after the vehicle has been keyed to off and restarted. This concern is intermittent and most likely to occur on hot days. This concern may be found on vehicles equipped with manual (*CJ3*) and automatic (*CJ2*) HVAC systems. Other customers may comment about poor HVAC system performance in high ambient temperature conditions. This concern may be present in automatic (*CJ2*) HVAC systems only. An HVAC control module software update was put into all production vehicles beginning in September 2002. Vehicles built in September 2002 and earlier may need this software update.

## Correction

Update the HVAC control module using software available through GM Access beginning September 9, 2002. The update will be fully available October 7, 2002 to all dealers on TIS 2000 CD version 10. This software update addresses both the intermittent no cooling and the poor performance concerns. If the software update does not correct the concerns, perform the HVAC Diagnostic System Check and repair as necessary. If the HVAC control module is replaced with a part from GMSPO, make sure the module has the latest software update. The module may need to be updated even though it is a new part.

**Subject: Air Conditioning (A/C) Inoperative/Intermittent, A/C Blows Warm Air (Replace A/C Low Pressure Cycling Switch)**

**Models: 2003 Cadillac Escalade, Escalade EXT, Escalade ESV**

**2002-2003 Chevrolet TrailBlazer, TrailBlazer EXT**

**2003 Chevrolet Avalanche, Silverado, Suburban, Tahoe**

**2002-2003 GMC Envoy, Envoy XL**

**2003 GMC Sierra, Yukon, Yukon XL**

**2002-2003 Oldsmobile Bravada**

**2003 HUMMER H2**

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## Condition

Some customers may comment that the A/C system is intermittently inoperative or blows warm air.

## Cause

An intermittent inoperative (open) A/C low pressure cycling switch may be the cause. This is an intermittent condition and temperatures may play a critical role if the vehicle is in the failed mode or operating as designed.

## **Correction**

Follow the diagnosis and service procedure below to correct this condition.

1. Park the vehicle inside or in the shade.
2. Open the windows in order to ventilate the interior of the vehicle.
3. If the A/C system was operating, allow the A/C system to equalize.
4. Turn OFF the ignition.
5. Open the hood and install fender covers.

### **Caution:**

- Avoid breathing the A/C Refrigerant 134a (R-134a) and the lubricant vapor or the mist. Exposure may irritate the eyes, nose, and throat. Work in a well ventilated area. In order to remove R-134a from the A/C system, use service equipment that is certified to meet the requirements of SAE J 2210 (R-134a recycling equipment). If an accidental system discharge occurs, ventilate the work area before continuing service. Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
- For personal protection, goggles and gloves should be worn and a clean cloth wrapped around fittings, valves, and connections when doing work that includes opening the refrigerant system. If R-134a comes in contact with any part of the body severe frostbite and personal injury can result. The exposed area should be flushed immediately with cold water and prompt medical help should be obtained.

### **Notice:**

- R-134a is the only approved refrigerant for use in this vehicle. The use of any other refrigerant may result in poor system performance or component failure.
- To avoid system damage use only R-134a dedicated tools when servicing the A/C system.

- Use only Polyalkylene Glycol Synthetic Refrigerant Oil (PAG) for internal circulation through the R-134a A/C system and only 525 viscosity mineral oil on fitting threads and O-rings. If lubricants other than those specified are used, compressor failure and/or fitting seizure may result.
- R-12 refrigerant and R-134a refrigerant must never be mixed, even in the smallest of amounts, as they are incompatible with each other. If the refrigerants are mixed, compressor failure is likely to occur. Refer to the manufacturer instructions included with the service equipment before servicing.

6. Install the J 43600 ACR 2000 Air Conditioning Service Center.

**Important:**

- The ambient temperature must be at least 16°C (60°F) .
- Do not induce additional air flow across the front of the vehicle during the test.

7. Record the ambient temperature displayed on the J 43600.

8. Record readings of the low and high side STATIC pressures. The pressures should be within the specifications listed below.

- Above 16°C (60°F): 345 kPa (50 psi)
- Above 24°C (75°F): 483 kPa (70 psi)
- Above 33°C (90°F): 690 kPa (100 psi)
- If the static pressures are within specification, continue with Step 12.
- If the static pressures are NOT within specifications, refer to Leak Testing (SI Document ID# 1141201).

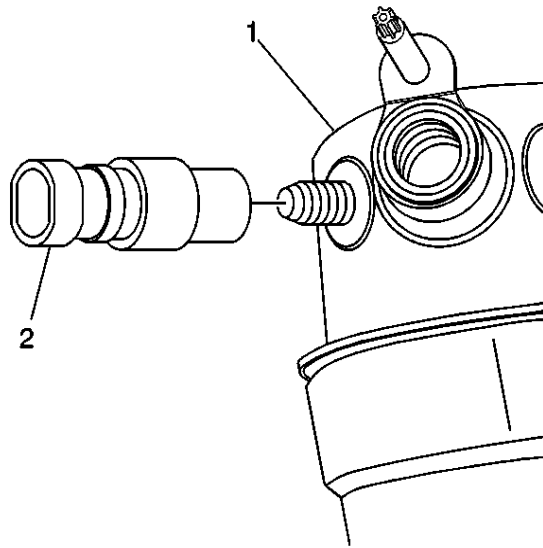
13. Apply the parking brake.

14. Place the transaxle/transmission in PARK.

15. Start the engine.

16. Turn on the A/C system.

17. Inspect the A/C compressor to see if it is operating properly.



18. If the compressor is not operating as designed, tap on the low pressure cycling switch (2) with a small hand tool. The compressor should start operating correctly.
19. If the compressor does not operate correctly after tapping on the low pressure cycling switch (2), disconnect the switch and jumper the lower pressure cycling switch connector with a fused jumper. If the compressor still does not operate properly, refer to HVAC Compressor Clutch Does Not Engage diagnostic in SI.

**Important:** DO NOT USE A/C low pressure cycling switch, P/N 15035084 on the vehicles listed above.

20. If the compressor does operate correctly after tapping on the switch or jumping the low pressure cycling switch connector, replace the low pressure cycling switch (2), P/N 89040362. Refer to Air Conditioning (A/C) Low Pressure Switch Replacement in SI.
21. Perform the Air Conditioning (A/C) System Performance Test in SI.
22. Disconnect the J 43600 ACR 2000 Air Conditioning Service Center.
23. Remove the fender covers and close the hood.

## Parts Information

Part Number	Description	Qty
89040362	Switch, Pressure Cycling	1

