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Title: Rear A/C Blows Warm Air

Applies To: ProStar and LoneStar

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

10/2/2014 - Initial Article Release

DESCRIPTION

This document is supplemental to IK1900228 and addresses Rear A/C Blows Warm Air.

SYMPTOM(s)

Rear A/C Blows Warm Air.

Diagnostic Trouble Code(s) & Dashboard Indicator Light(s):

DTC/Light	Description
Not Applicable	

Possible Causes:

- Rear blend door actuator
- Rear blend door or housing damage
- Rear HVAC temperature sensor
- Rear Thermal Expansion Valve (TXV)
- Rear HVAC controller

Customer Observations or Concerns:

- Malfunction Indicator Lamp (MIL)
- No rear A/C control from sleeper
- Rear A/C not blowing cold enough
- No air flow through rear vent

SPECIAL TOOL(s) / SOFTWARE

Tool Description	Tool Number	Comments	Instructions

Diamond Logic Builder (DLB)			

Tools Resource Center

SERVICE PARTS INFORMATION

Kit Description	Part Number	Quantity Required	Notes
Not Applicable			

DIAGNOSTIC STEP(s)

WARNING:

To prevent property damage, personal injury, and / or death, read all safety instructions in the "Safety Information" section of the Service Manual or Diagnostic Manual.

WARNING:

To prevent property damage, personal injury, and / or death, park vehicle on a hard, flat surface, turn engine off, set parking brake, and install wheel chocks to prevent vehicle from moving in either direction.

WARNING:

To prevent personal injury and / or death, make sure engine has cooled before removing components.

NOTE:

The following procedures are ONLY VALID if A/C system is fully charged and A/C system checks in IK1900228 were performed.

When a failed circuit or component is detected, repair as needed and retest for original problem.

Step	Action	Decision
#1	**Blend Door Operation**: a. Turn ignition Key-ON. b. Use Diamond Logic Builder (DLB) to command a rear HVAC Door Calibration. c. Gain access to rear blend door actuator. d. Sweep rear control panel temperature switch through all settings while monitoring blend door actuator collar. Does collar move through 45° of rotation?	**Yes**. Go to Step 5. **No**. Go to Step 2.

Step	Action	Decision

#2	**Blend Door Actuator**: a. Turn ignition Key-OFF. b. Disconnect blend door actuator connector (5212). c. Turn ignition Key-ON. d. Measure voltage at connector 5212 pin-5 to ground while operating rear control panel temperature switch through all settings. Does Step 2.d measure 10.5 - 13.5V?	**Yes**. Go to Step 4. **No**. Go to Step 3.

Step	Action	Decision
#3	**Blend Door Signal**: a. Turn ignition Key-OFF. b. Disconnect rear HVAC controller connector (5210). c. Check continuity of circuit H77TMA (connector 5210 pin-11 to connector 5212 pin-5) and H77TFB (connector 5210 pin-9 to connector 5212 pin-7). Do both circuits have continuity?	**Yes**. Replace rear HVAC controller. **No**. Repair circuits as needed.

Step	Action	Decision
#4	**Blend Door Operation**: a. Turn ignition Key-OFF. b. Remove blend door actuator from HVAC housing. c. Check condition of actuator collar and blend door shaft. d. Rotate blend door by hand to check for free movement. Does blend door operate freely and rotate through 45° of rotation?	**Yes**. Replace actuator. If system still blows warm air, go to Step 5. **No**. Disassembly rear HVAC housing as required to determine blend door issue. Repair as needed.

Step	Action	Decision
#5	**Rear HVAC Discharge Temp Setting**: a. Turn rear HVAC blower ON. NOTE: **Do not allow thermometer to touch duct.** b. Insert a thermometer into rear HVAC discharge duct. c. Start DLB. d. "Watch" Rear_HVAC_Discharge_Temp_SettingSignal. Does DLB value agree with measured duct temperature?	**Yes**. If rear A/C still blows warm air, inspect refrigerant piping to sleeper evaporator for restrictions (look for cold spots in pipes) or restricted or failed rear TXV. **No**. Go to Step 6.

Step	Action	Decision
#6	**Rear HVAC Temp Sensor Voltage**: a. Turn rear HVAC blower OFF. b. Turn ignition Key-OFF. c. Disconnect rear HVAC temperature sensor connector (5213). d. Turn ignition Key-ON.	**Yes**. Go to Step 7.

	e. Measure voltage from rear HVAC Temp sensor connector 5213 pin-1 to pin-2. Is there 10.5 - 13.5V between pin-1 and pin-2?	**No**. Inspect for an open or shorted circuit H77TSA (controller pin-13 to Temp sensor connector pin-1) or circuit H77TSB (controller pin-12 to Temp sensor connector pin-2).

Step	Action	Decision
#7	**Temp Sensor Resistance**: a. Turn ignition Key-OFF. b. Disconnect rear HVAC controller connector (5210). c. Measure resistance from pin-12 to pin-13 of harness connector 5210. d. Compare measured resistance and current temperature to Thermistor Cross Reference Table. Is Step 7.c measurement correct for the temperature? **Thermistor Cross Reference Table.**	**Yes**. Sensor circuit works correctly. If rear A/C still blows warm air, inspect refrigerant piping to sleeper evaporator for restrictions (look for cold spots in pipes) or restricted or failed rear TXV.
		No. Go to Step 8.

TEMP (C°)	TEMP (F°)	MIN Ω (kohms)	NOMINAL Ω (kohms)	MAX Ω (kohms)
-15	5	35.03	35.67	36.32
-10	14	26.65	27.06	27.48
-5	23	20.46	20.72	20.98
0	32	15.84	16.00	16.1
5	41	12.30	1.46	12.61
10	50	9.66	9.771	9.91
15	59	7.589	7.22	7.856
20	68	6.025	6.144	6.265
25	78	4.86	0.922	5.030
30	86	3.874	3.68	4.064

Step	Action	Decision
#8	**Temp Sensor Circuits**: a. Disconnect rear HVAC temperature sensor connector (5213). b. Measure resistance in circuit H77TSA (pin-13 connector 5210 to pin-1 connector 5213). c. Measure resistance in circuit H77TSB (pin-12 connector 5210 to pin-2 connector 5213). Do both circuits have continuity?	**Yes**. Replace rear HVAC temperature sensor.
		No. Repair circuits as needed.

REPAIR STEP(s)

Not applicable

REMOVAL PROCEDURE:

Not Applicable

INSTALLATION PROCEDURE:

Not Applicable

WARRANTY INFORMATION

Warranty Claim Coding:

Group:	19030 - Auxiliary No-Idle HVAC
Noun:	638 - Electric HVAC Module

Standard Repair Time(s):

Step	Description	Chassis	Engine	SRT	Hours
1	Blend Door Operation	ProStar/LoneStar	All	T-Time	0.3
2	Blend Door Actuator	ProStar/LoneStar	All	T-Time	0.1
3	Blend Door Signal	ProStar/LoneStar	All	T-Time	0.1
4	Blend Door Operation	ProStar/LoneStar	All	T-Time	0.4
5	Rear HVAC Discharge Temp Setting	ProStar/LoneStar	All	T-Time	0.1
6	Rear HVAC Temp Sensor Voltage	ProStar/LoneStar	All	T-Time	0.1
7	Temp Sensor Resistance	ProStar/LoneStar	All	T-Time	0.2
8	Temp Sensor Circuits	ProStar/LoneStar	All	T-Time	0.1

OTHER RESOURCES

Master Service Information Site

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