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Coding Information

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Title: Symptom 1: No-Idle HVAC Cools but Operates Incorrectly

Applies To: ProStar® and LoneStar®

CHANGE LOG

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

<ul style="list-style-type: none"> 11/21/2014 - Initial Internal Article Release 2/13/2015 - Updated steps 3/6/2015 - Added Warranty and SRT Information

DESCRIPTION

This document will guide the user through the diagnostic steps required to diagnose Symptom 1: No-Idle HVAC Cools but Operates Incorrectly.

SYMPTOM(s)

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

Not Applicable

DTC/Light	Description
Not Applicable	

Customer Observations or Concerns:

- Cools but does not operate correctly
- Excessive Vibration or Noisy Operation
- Runs Correctly, But Less Time Than Expected
- Excessive System Cycling

SPECIAL TOOL(s) / SOFTWARE

Tool Description	Tool Number	Comments	Instructions
Navistar Test Lead Kit	77066-NAV		

[Tools Resource Center](#)

SERVICE PARTS INFORMATION

Not Applicable

Kit Description	Part Number	Quantity Required	Notes
Not Applicable			

DIAGNOSTIC STEP (s)

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, always wear safe eye protection when performing vehicle maintenance.

CAUTION:

To prevent damage to components, do not attempt to connect battery voltage to evaporator blower motor, condenser fan motor, or A/C compressor. Electronic components within the motors are sensitive to arcing and reverse polarity.

NOTE:

Perform all of the following steps Key-OFF and Park Brake set unless otherwise directed.

NOTE:

When disconnecting harness connectors, check for pushed-back and damaged terminals.

NOTE:

After any step where a problem is detected, repair as needed and retest for original concern.

NOTE:

If operator uses No-Idle A/C with ignition switch in ACCESSORY position, verify park brake input logic to system controller is correct.

NOTE:

Vehicles built with or updated to 150A compressor relays do not use fuse F-2; Circuit protection provided by cube fuse located in battery box.

NOTE:

When 12V No-Idle system controller senses battery voltage drop below 11.8V for 10 seconds, system will shut down.

NOTE:

No-Idle A/C faults are transferred to Body Controller (BC) at Key-ON handshake between BC and No-Idle system controller. Inactive faults are not stored in the system controller. Only those faults that are active at handshake are transferred.

Step	Action	Decision
1	OPERATIONAL CHECK: a. Verify all operational checks have been performed.	Yes. Go to Step 2.
	Have all operational checks been performed?	No. Go to No-Idle HVAC Operational Checks in IK1900235 .

Step	Action	Decision
2	REPAIR ORDER REVIEW: a. Review Repair Order.	None match: Return to Operational Check.
	Which of the following matches the customer concern?	Excessive noise or vibration: Go to Step 3.
	<ul style="list-style-type: none"> • Excessive Vibration or Noisy Operation • Short Run Time • Excessively Cycling On / Off • Low Air Flow at Discharge Vent 	Short run time: Go to Step 7.
		Excessively cycling On / Off: Go to Step 10.
		Low air flow at discharge vent: Go to Step 23.

Excessive Vibration or Noisy Operation

Possible Causes:

- Condenser fan assembly damaged
- Fan or blower out of balance
- Evaporator Blower damaged
- Loose or missing compressor mounting locking nuts or bolts
- Failed compressor

Step	Action	Decision
3	VERIFY NOISE / VIBRATION CONCERN: a. Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C. b. Depress digital display speed-up switch to increase evaporator blower speed to highest setting. Note any excessive vibration or noise. c. Depress digital display Temp switch to lower desired Temp to lowest setting. Note any excessive noise or vibration.	Yes. Noise occurs when blower starts: go to Step 4.
	d. When compressor and condenser fan start, note any excessive noise or vibration. e. Depress COOL switch to stop No-Idle A/C.	Yes. Noise occurs only after condenser and compressor start: go to Step 5.
	Is there excessive noise or vibration that occurs after the blower, condenser fan, or compressor start?	No. Noise and vibration do not occur. Discuss concern with customer.

Step	Action	Decision
4	EVAPORATOR BLOWER TEST: a. Unplug 2-way Linear Power Module (LPM) connector. b. Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C. c. Depress digital display Temp switch to lower desired Temp to lowest setting. d. After compressor and condenser fan start, make note of vibration and noise levels. e. Depress COOL switch to stop No-Idle A/C. Did excessive vibration or noise still occur?	Yes. Connect 2-way LPM connector and go to Step 5.
		No. Remove blower. If there is debris in blower or housing, remove debris and repeat Step 4. If there is no debris, replace blower. Assemble unit to run and test for original concern.

Step	Action	Decision
5	CONDENSER FAN TEST: a. Remove condenser fuse (F6). b. Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C. c. Depress digital display Temp switch multiple times to lower desired temperature to lowest setting. d. After compressor starts, make note of any excessive vibration and noise levels. Did excessive vibration or noise still occur?	Yes. Go to Step 6.
		No. Replace condenser fan assembly. Assemble unit to run and test for original concern.

Step	Action	Decision
6	COMPRESSOR INSPECTION: a. Remove compressor controller cover. b. Lightly push compressor sideways to check for excessive movement in rubber mounts. Visually inspect compressor mounts for loose or missing bolts and lock nuts. Are mount bolts or lock nuts loose or missing?	Yes. Replace missing bolts or lock nuts.
		No. Replace refrigerant system. Assemble unit to run and test for original concern.

Runs Correctly, But Less Time Than Expected

Possible Causes:

NOTE:
Do not evaluate run time on weak or partially charged batteries.

- Vehicle and / or No-Idle Absorbed Glass Mat (AGM) batteries weak or not fully charged
- Loose PWR or GND connections at batteries
- Higher than normal amperage draw at evaporator blower, condenser fan, or compressor

Step	Action	Decision
7	BATTERY CONNECTIONS CHECK: a. Check battery power and ground connections on both vehicle batteries and 12V No-Idle AGM batteries. Are all battery connections okay?	Yes. Go to Step 8.
		No. Repair battery connections as needed and then go to Step 8.

Step	Action	Decision
8	BATTERY STATE OF CHARGE CHECK: a. Verify both vehicle batteries and No-Idle AGM batteries are fully charged. Are batteries fully charged?	Yes. Go to Step 9.
		No. Charge both sets of batteries to 100% charge, check charging system, and then go to Step 9.

Step	Action	Decision												
9	AMP DRAW TEST: a. Measure amperage draw of blower, condenser fan, and compressor. b. Compare measurements to nominal readings shown below. Amp draw will vary depending on operating conditions with total system amperage draw of 40 - 75 amps. Is total system draw within 40 - 75 amps? Amperage Draw at 70°F (21°C) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Component</th> <th>Low Speed</th> <th>High Speed</th> </tr> </thead> <tbody> <tr> <td>Blower</td> <td>6A</td> <td>11A</td> </tr> <tr> <td>Condenser Fan</td> <td>6A</td> <td>10A</td> </tr> <tr> <td>Compressor*</td> <td>30A</td> <td>40A</td> </tr> </tbody> </table> *Compressor on time varies by digital display temperature setting. Compressor speed varies by blower speed. Higher blower speed causes the compressor speed to be higher.	Component	Low Speed	High Speed	Blower	6A	11A	Condenser Fan	6A	10A	Compressor*	30A	40A	Yes. Discuss operation with operator. Operator should pre-cool cab and sleeper area with engine driven A/C system and avoid solar loading during use.
		Component	Low Speed	High Speed										
Blower	6A	11A												
Condenser Fan	6A	10A												
Compressor*	30A	40A												
		No. Determine component drawing excessive amperage and replace as needed.												

Excessive System Cycling

Possible Causes:

- Loose electrical connections
- Condenser air flow restricted
- Condenser fan inoperative or damaged
- Restricted ducts
- Thermal switch or compressor overheating
- Pressure switch
- Discharge temperature sensor

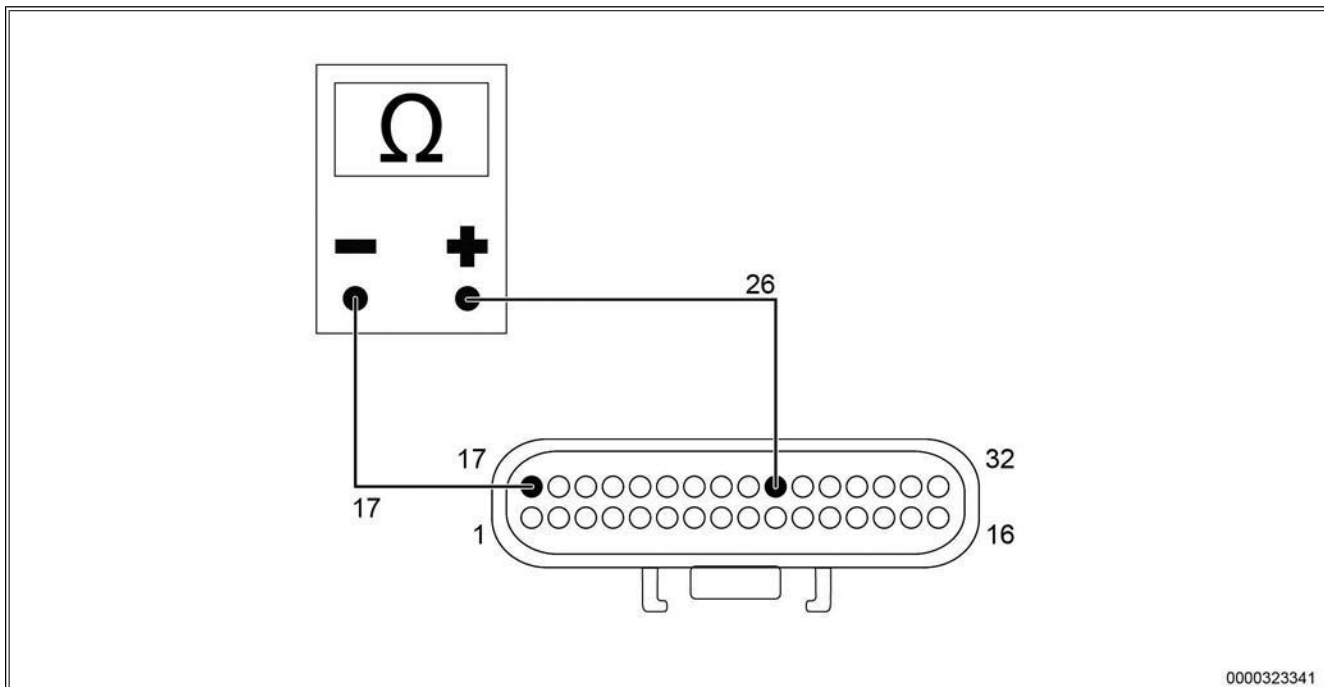
Step	Action	Decision
10	VERIFY EXCESSIVE SYSTEM CYCLING: a. Run engine and use cab A/C to bring cab to a comfortable temperature. b. Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C. c. Monitor compressor / condenser fan operation to check for excessive cycling off and on. Is there excessive cycling?	Yes. Go to Step 11.
		No. Discuss concern with operator.

Step	Action	Decision
11	ELECTRICAL CONNECTIONS INSPECTION: a. Perform the following electrical connector inspections if not completed during operational check: <ul style="list-style-type: none"> • Check both vehicle and No-Idle AGM battery connections for loose, corroded, melted, or damaged wiring or connections • Check all 12V No-Idle harness connections for loose, corroded, melted, or 	Yes. Repair as needed. Assemble unit to run and test for original concern.
		No. Assemble unit to run and then go to Step 12.

	<p>damaged wiring or connectors</p> <p>Are any electrical harness connections loose, corroded, melted, or damaged?</p>	
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Step	Action	Decision
12	<p>CONDENSER FAN OPERATIONAL CHECK:</p> <p>a. Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C.</p> <p>b. Depress digital display Temp-down switch multiple times to lower desired temperature to lowest setting.</p> <p>c. Depress digital display blower speed-up switch multiple times to raise blower speed to highest speed.</p> <p>d. Check condenser fan operation when compressor is operating.</p> <p>e. Depress control panel COOL switch to stop No-Idle A/C.</p> <p>Does condenser fan start with compressor or slightly after?</p>	<p>Yes. Go to Step 13.</p>
		<p>No. Go to Step 19.</p>

Step	Action	Decision
13	<p>CONDENSER FAN AIR FLOW CHECK:</p> <p>a. Check for restricted air flow through condenser grille on vehicle's exterior.</p> <p>b. Visually check through condenser grille for signs of debris.</p> <p>Is air flow through condenser grille restricted or is there debris in the condenser area?</p>	<p>Yes. Remove and clean grille if needed. Assemble unit to run test for original concern.</p>
		<p>No. Go to Step 14.</p>



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Figure 1. 32-Way System Controller Face View.

Step	Action	Decision
14	<p>DISCHARGE TEMPERATURE SENSOR CHECK:</p> <p>a. Use a temperature probe from an A/C machine or a digital thermometer to measure ambient temperature in area of discharge temperature sensor. Record temperature.</p> <p>b. Disconnect No-Idle harness from system controller (Figure 1).</p> <p>c. Use a DMM to measure resistance between pin-26 and pin-17 of the system controller harness connector (Figure 1).</p> <p>d. Plug harness into system controller.</p> <p>e. Locate temperature value from step 14.a on Sensor Temperature Resistance Relationship Chart below.</p> <p>f. Compare measured resistance to the Min - Max range on the chart.</p> <p>Does measured resistance fall within Min - Max range on chart?</p>	Yes. Go to Step 16.
		No. Go to Step 15.

Discharge Sensor / Air Inlet Sensor Temperature Resistance Relationship Chart

Resistance values in Kohms.

Temp (°F)	Temp (°C)	MIN	KΩ	MAX
32.0	0	15.84		16.16
33.8	1	15.05		15.37
35.6	2	14.30		14.62
37.4	3	13.60		13.91
39.2	4	12.93		13.24
41.0	5	12.30		12.61
42.8	6	11.70		12.01
44.6	7	11.14		11.45
46.4	8	10.61		10.91
48.2	9	10.10		10.40
50.0	10	9.62		9.91
51.8	11	9.17		9.46
53.6	12	8.74		9.02
55.4	13	8.34		8.61
57.2	14	7.95		8.22
59.0	15	7.58		7.85

60.8	16	7.24		7.50
62.6	17	6.91		7.17
64.4	18	6.60		6.85
66.2	19	6.30		6.55
68.0	20	6.02		6.26
69.8	21	5.75		5.99
71.6	22	5.50		5.73
73.4	23	5.26		5.48
75.2	24	5.03		5.25
77.0	25	4.81		5.03
78.8	26	4.60		4.81
80.6	27	4.41		4.61
82.4	28	4.22		4.42
84.2	29	4.04		4.23
86.0	30	3.87		4.06
87.8	31	3.71		3.89
89.6	32	3.55		3.73
91.4	33	3.41		3.58
93.2	34	3.26		3.44
95.0	35	3.13		3.30
96.8	36	3.00		3.17
98.6	37	2.88		3.04
100.4	38	2.76		2.92
102.2	39	2.65		2.81
104.0	40	2.55		2.70
105.8	41	2.45		2.59

107.6	42	2.35		2.49
109.4	43	2.26		2.39
111.2	44	2.17		2.30
113.0	45	2.09		2.21
114.8	46	2.00		2.13
116.6	47	1.93		2.05
118.4	48	1.85		1.97
120.2	49	1.78		1.91

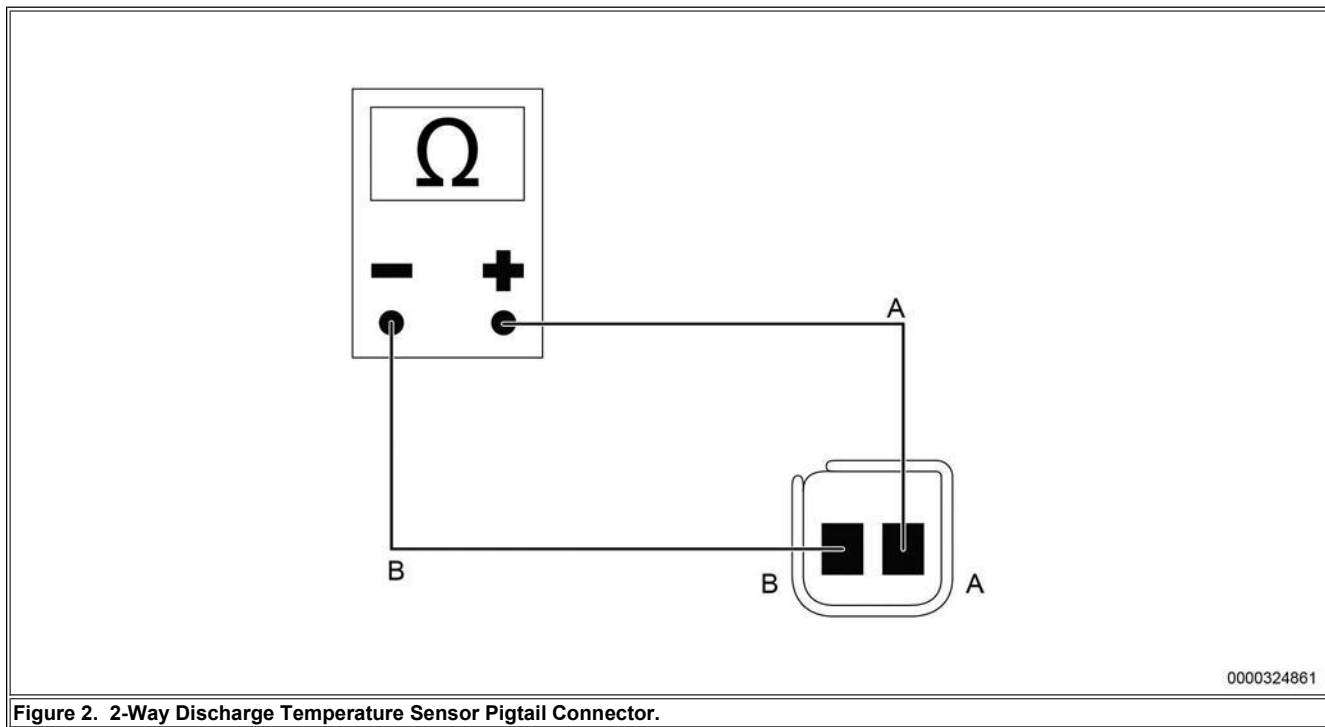
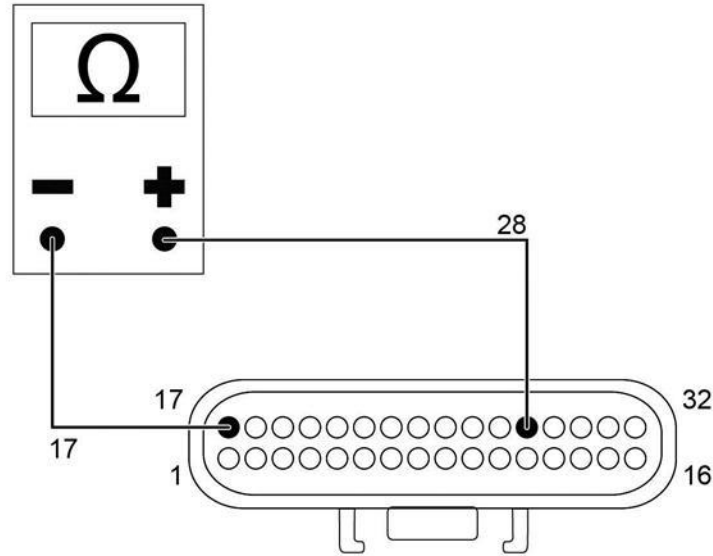


Figure 2. 2-Way Discharge Temperature Sensor Pigtail Connector.

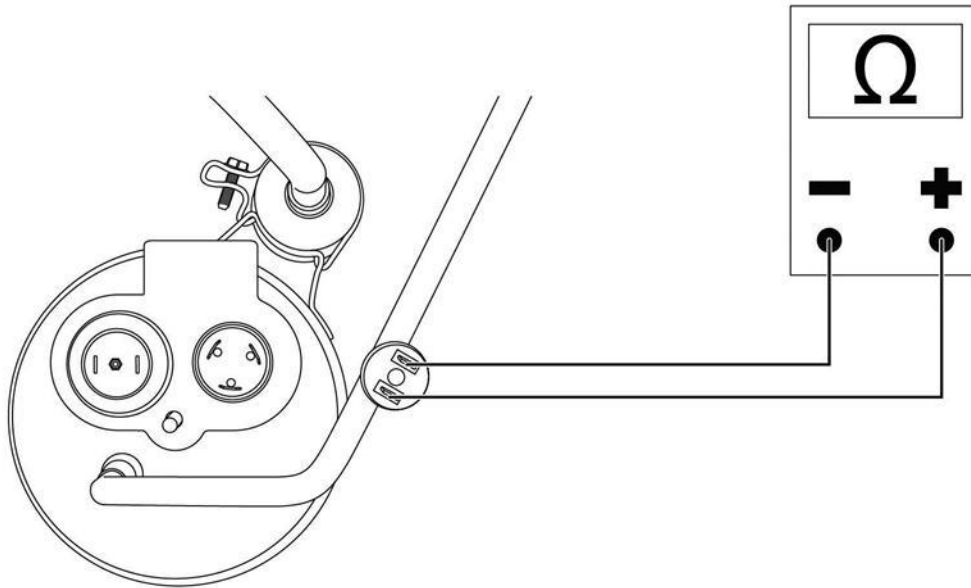
Step	Action	Decision
15	<p>DISCHARGE TEMPERATURE SENSOR CIRCUIT CHECK:</p> <p>a. Disconnect No-Idle harness from discharge temperature sensor. Check connectors for spread or damaged terminals.</p> <p>b. Use a DMM to measure resistance between pin-A and pin-B of discharge temperature sensor connector (Figure 2).</p> <p>c. Using temperature value from Step 14.a, locate Min - Max value on Discharge Sensor / Inlet Sensor Chart.</p> <p>d. Compare measured resistance to the Min - Max range on the chart.</p> <p>Does measured resistance fall within Min - Max range on chart?</p>	<p>Yes. Sensor matches Min - Max value: Replace No-Idle harness. Assemble unit to run and retest for operator concern.</p>
		<p>No. Replace discharge temperature sensor. Assemble unit to run and retest for operator concern.</p>



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Figure 3. 32-Way System Controller Connector Face View.

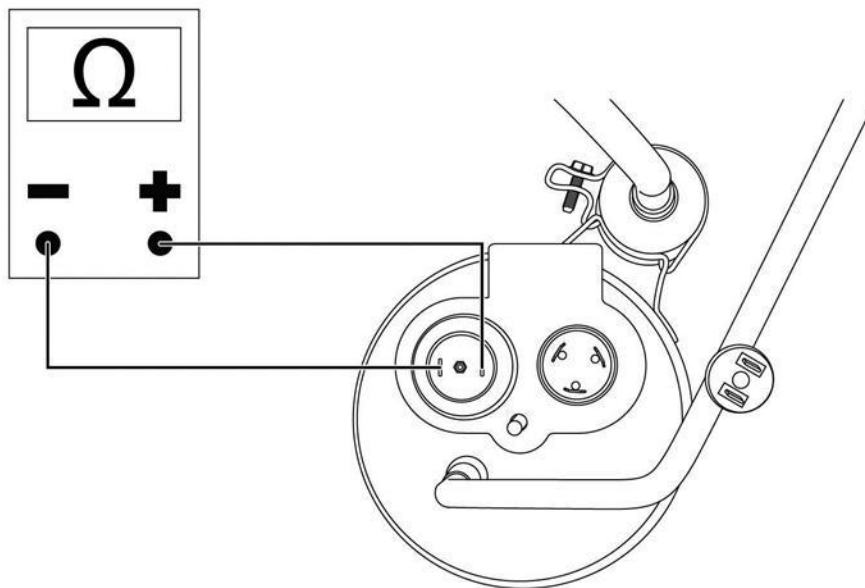
Step	Action	Decision
16	<p>PRESSURE SWITCH CIRCUIT CHECK:</p> <ol style="list-style-type: none"> Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C. Depress digital display Temp switch multiple times to lower desired temperature to lowest setting. When system starts to cycle excessively, wait until compressor cycles off and then depress control panel COOL switch to stop No-Idle A/C. Disconnect No-Idle harness from system controller. Use a DMM to check continuity between pin-17 and pin-28 of system controller connector (Figure 3). <p>Is continuity present between pin-17 and pin-28?</p>	<p>Yes. Connect No-Idle harness to system controller and then go to Step 18.</p> <p>No. Leave system controller disconnected and go to Step 17.</p>



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Figure 4. Pressure Switch.

Step	Action	Decision
17	<p>PRESSURE SWITCH CONTINUITY CHECK:</p> <ol style="list-style-type: none"> Disconnect No-Idle harness from compressor controller. Remove compressor controller cover. Disconnect two wire terminals from pressure switch. Use a DMM to check continuity across pressure switch pins (Figure 4). <p>Is continuity present between two pressure switch pins?</p>	<p>Yes. Replace No-Idle harness. Assemble unit to run and retest for operator concern.</p> <hr/> <p>No. Replace No-Idle sealed refrigerant system. Assemble unit to run and retest for operator concern.</p>



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Figure 5. Thermal Limit Switch.

Step	Action	Decision
18	THERMAL LIMIT SWITCH CHECK:	Yes , and thermal switch wires are not damaged: Reassemble components and go to Step 19.
	a. Remove compressor controller cover. b. Remove nut and plastic cover over thermal limit switch and compressor harness connector. c. Disconnect two wires from thermal limit switch (Figure 5) and inspect wires for damage. d. Use a DMM to check for continuity between two thermal limit switch terminals.	Yes , but one or both of the thermal switch wires are damaged causing an open circuit: Replace the compressor controller. Reassemble the unit to run and retest for operators concern.
	Is continuity present between two thermal limit switch terminals?	No . Continuity is not present between thermal limit switch terminals. Allow thermal limit switch to cool and then retest. If switch is closed after cooling period, check for proper air flow through condenser fan grille and for debris stopping air flow around compressor. If restrictions do not exist, replace thermal limit switch.

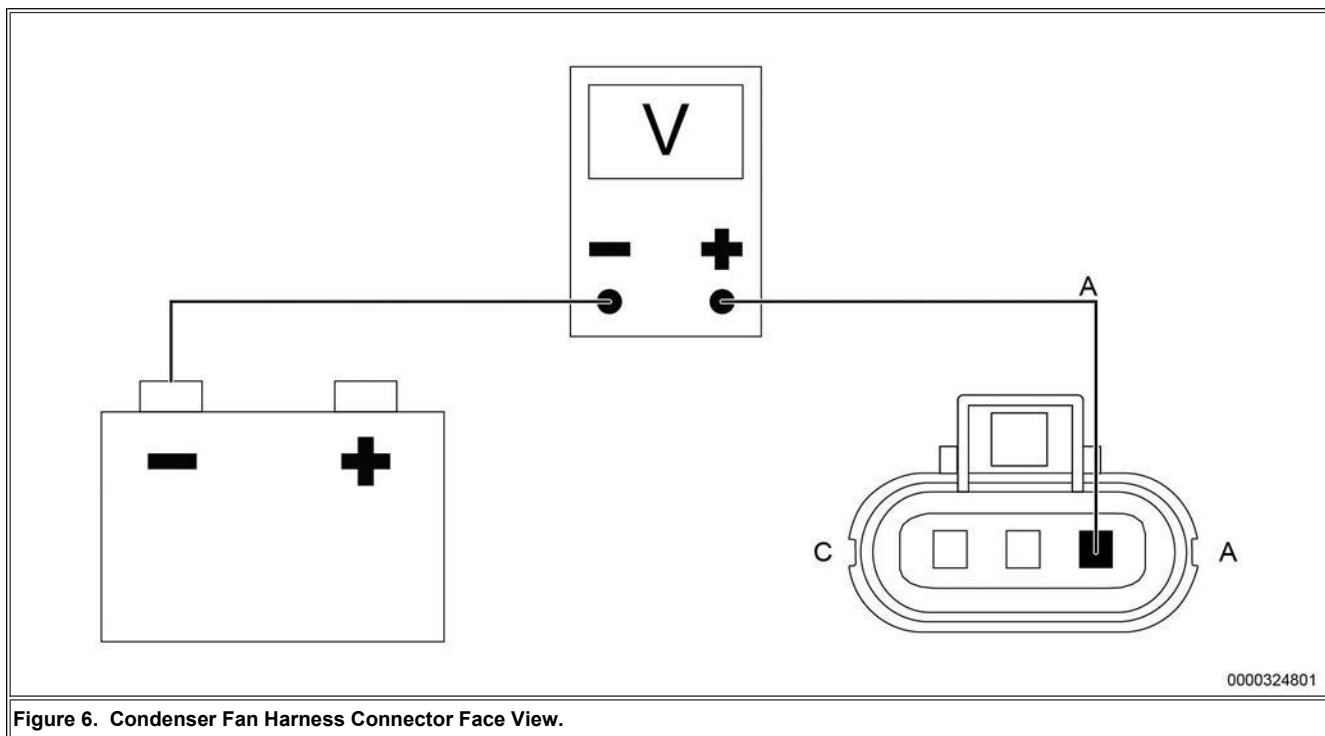
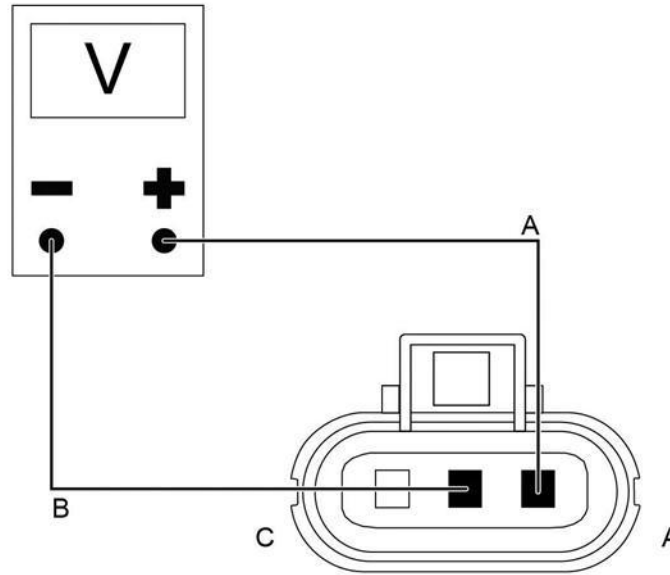


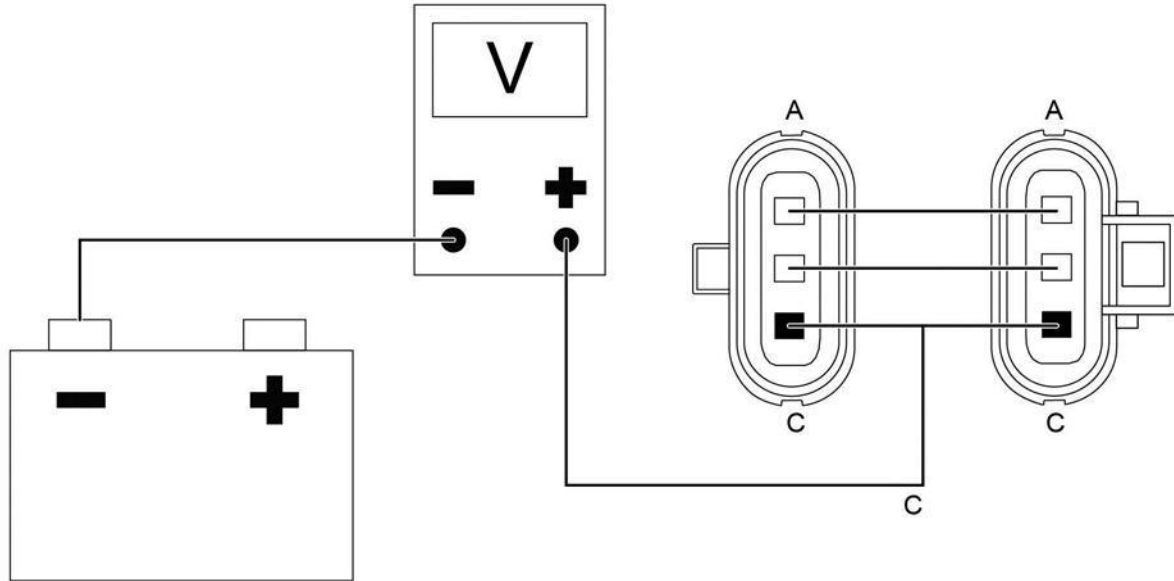
Figure 6. Condenser Fan Harness Connector Face View.



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Figure 7. Condenser Fan Harness Connector Face View.

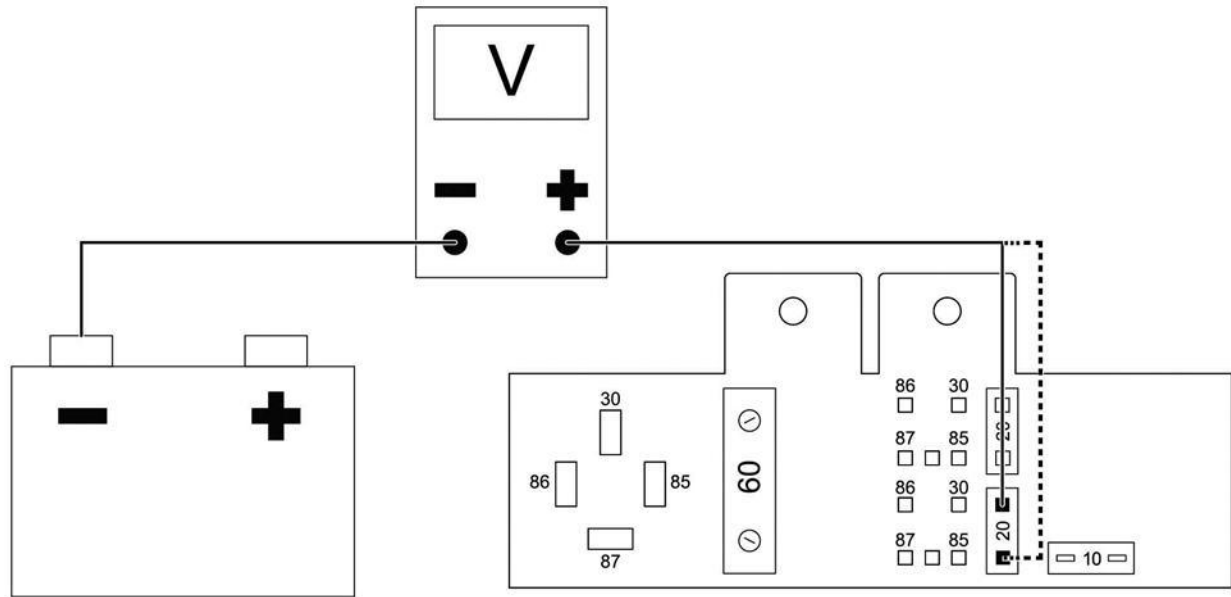
Step	Action	Decision
19	<p>CONDENSER FAN MOTOR PWR / GND CHECK:</p> <ol style="list-style-type: none"> Remove exterior fan grille. Disconnect 3-way condenser fan harness connector from fan motor lead. Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C. Depress digital display TEMP-down switch multiple times to lower desired temperature to coldest setting. Use a DMM to measure the voltage between a 3-way condenser fan connector pin-A and a known good ground (Figure 6). 	<p>Yes. Go to Step 20.</p> <p>No. Both Step 19.e and 19.f voltages are zero or low: Go to Step 21.</p>
	<div style="border: 1px solid black; background-color: #90EE90; padding: 5px; margin-bottom: 5px;"> <p>NOTE:</p> </div> <p>Perform Step 19.f when compressor is running. Listen for compressor start-up or use a DMM to monitor voltage between relay side of fuse (F4) and a known good ground to verify system controller has enabled condenser and compressor relay. Condenser fan and compressor should start at same time or within a few seconds of each other.</p> <ol style="list-style-type: none"> Use a DMM to measure voltage between 3-way condenser fan connector pin-A and pin-B (Figure 7). Leave 3-way condenser fan connector disconnected. <p>Is voltage B+ in Step 19.e and 19.f?</p>	<p>No. Step 19.e voltage is B+ but Step 19.f voltage is low or zero: Replace No-Idle harness. Assemble unit to run and retest for operator concern.</p>



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Figure 8. Condenser Fan Harness Connector Face View.

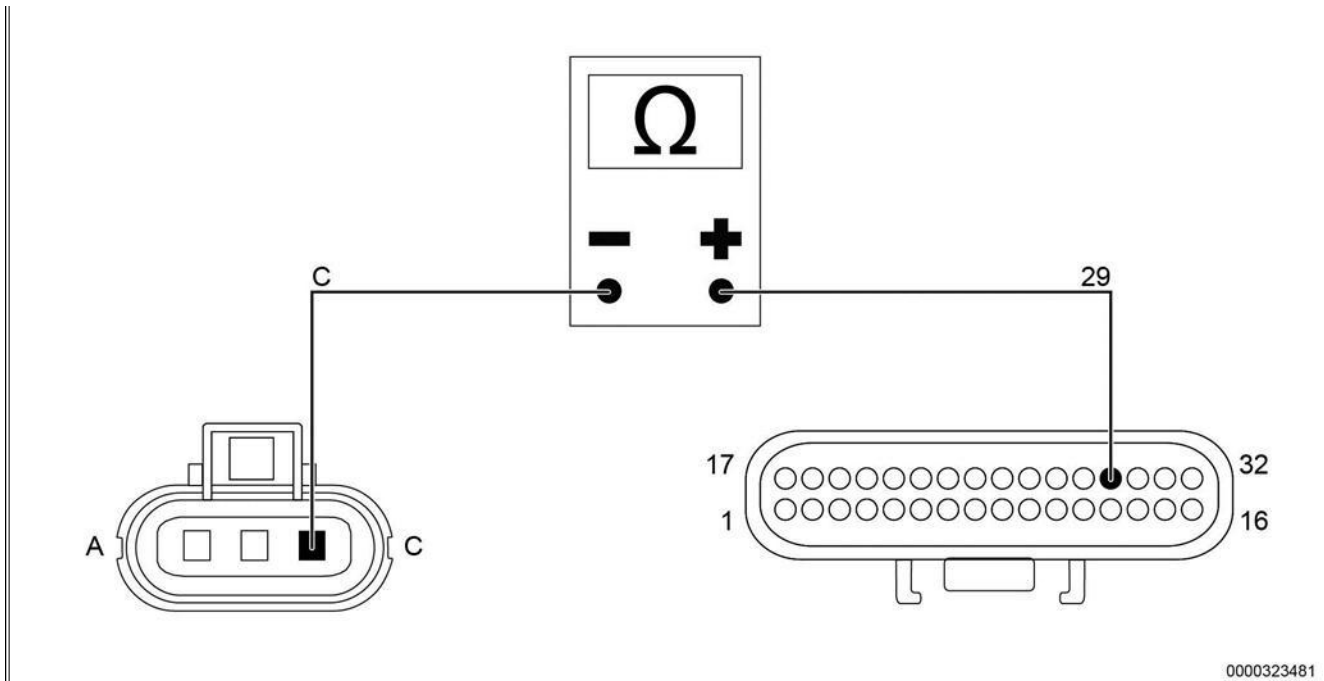
Step	Action	Decision
20	<p>CONDENSER FAN SPEED SIGNAL CHECK:</p> <ol style="list-style-type: none"> Use Navistar Test Lead Kit (77066-NAV) to construct a breakout harness between 3-way condenser fan motor connector and 3-way condenser fan connector. Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C. Depress digital display temperature control switch to coldest setting and blower speed to highest setting. 	<p>Yes. Replace condenser fan assembly. Assemble unit to run and retest for operator concern.</p>
	<div style="border: 2px solid black; background-color: #00FF00; padding: 5px; margin-bottom: 5px;">NOTE:</div> <p>Perform Step 20.d when compressor is running. Listen for compressor start-up or use a DMM to monitor voltage between relay side of fuse (F4) and a known good ground to verify system controller has enabled condenser and compressor relay. Condenser fan and compressor should start at same time or within a few seconds of each other.</p> <ol style="list-style-type: none"> While condenser relay is enabled, use a DMM to measure voltage between test lead pin-C and a known good ground (Figure 8). Depress control panel COOL switch to turn No-Idle A/C off. Remove Navistar Test Lead Kit (77066-NAV) from 3-way condenser fan motor connector and 3-way condenser fan connector. <p>Is voltage on pin-C between 3.1V and 4.8V?</p>	<p>No. Leave condenser fan connector unplugged and go to Step 22.</p>



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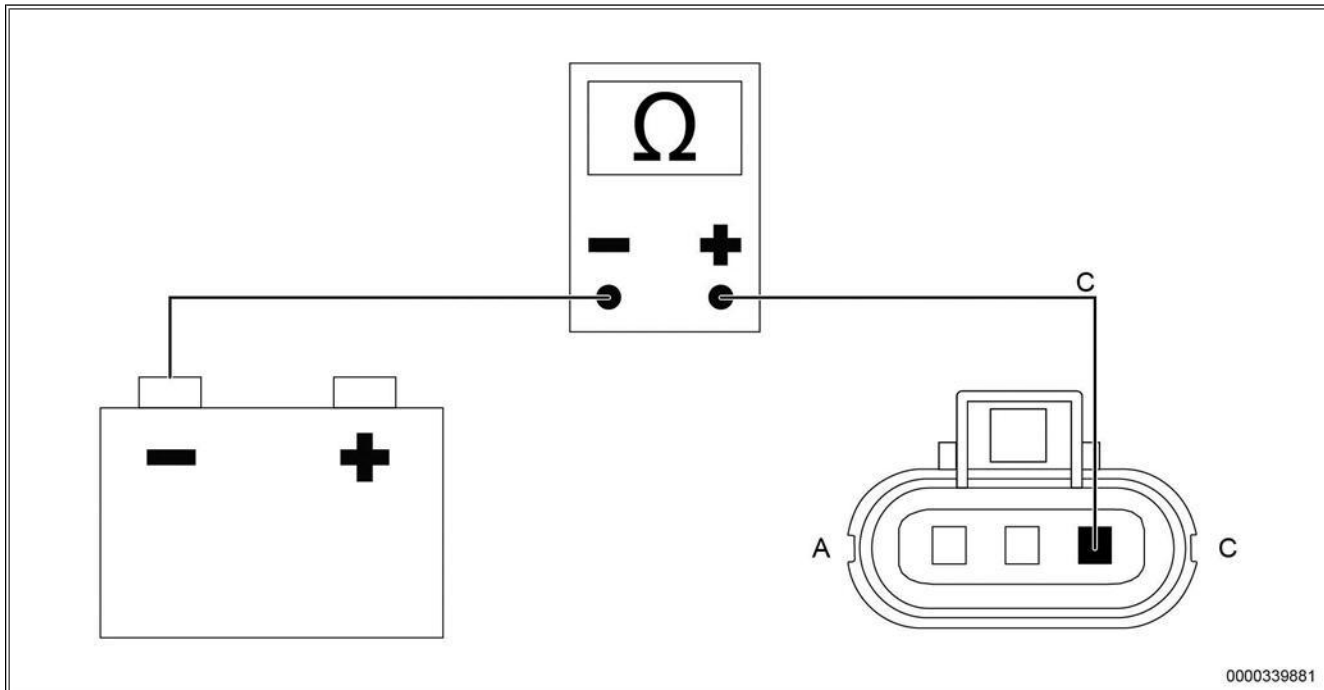
Figure 9. No-Idle Relay / Fuse Panel, Condenser Fuse (F6).

Step	Action	Decision
21	<p>CONDENSER FAN MOTOR PWR / GND CIRCUIT CHECK:</p> <p>a. Use a DMM to measure the voltage on each side of yellow 20A condenser fuse (F6) (Figure 9).</p> <p>Does condenser fuse (F6) have B+ on both sides?</p>	<p>Yes. Replace No-Idle harness. Assemble unit to run and retest for operator concern.</p>
		<p>No. Neither side has B+: Check relay (R4), fuse / relay panel connections, and 30A cube fuse.</p> <p>No. Relay side of fuse (F6) has B+ and fuse is blown: Replace fuse and restart No-Idle unit. If fuse (F6) blows, check for short to ground in harness. If harness is good, replace fan assembly.</p>



0000323481

Figure 10. 3-Way Condenser Fan Connector Face View and 32-Way System Controller Connector Face View.



0000339881

Figure 11. 3-Way Condenser Fan Connector Face View.

Step	Action	Decision
22	<p>CONDENSER FAN SPEED SIGNAL CIRCUIT CHECK:</p> <p>a. Unplug the 32-way system controller connector.</p> <p>b. Use a DMM to check for resistance between 3-way condenser fan connector pin-C and 32-way system controller connector pin-29 (Figure 10).</p> <p>NOTE: Resistance should be less than 5 Ohms.</p>	<p>Yes. Replace system controller. Assemble unit to run and retest for operator concern.</p> <p>No. Replace No-Idle harness. Assemble unit to run and retest for operator concern.</p>

c. Use DMM to check for resistance between 3-way condenser fan connector pin-C and a known good ground (Figure 11).

NOTE:

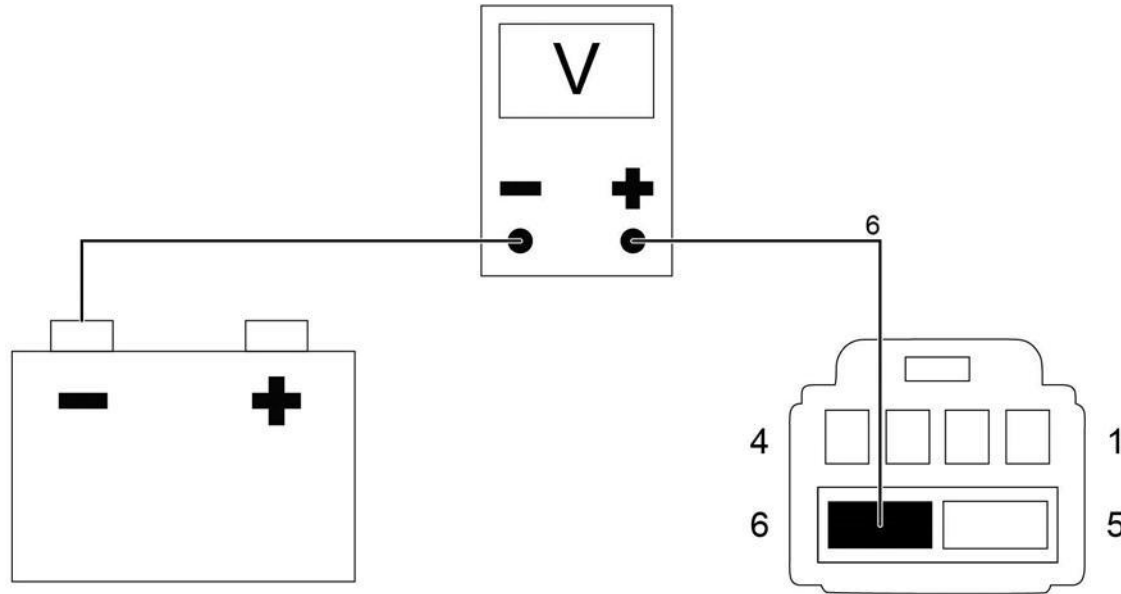
Resistance should be greater than 1000 Ohms.

Is Step 22.d less than 5 Ohms and Step 22.c greater than 1000 Ohms?

Step	Action	Decision
23	LOW AIR FLOW CHECK: a. Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C. b. Depress digital display speed-up switch multiple times to increase blower speed to highest setting. Is air flow from ducts lower volume than normal?	Yes. Go to Step 24.
		No. Discuss operation with operator.

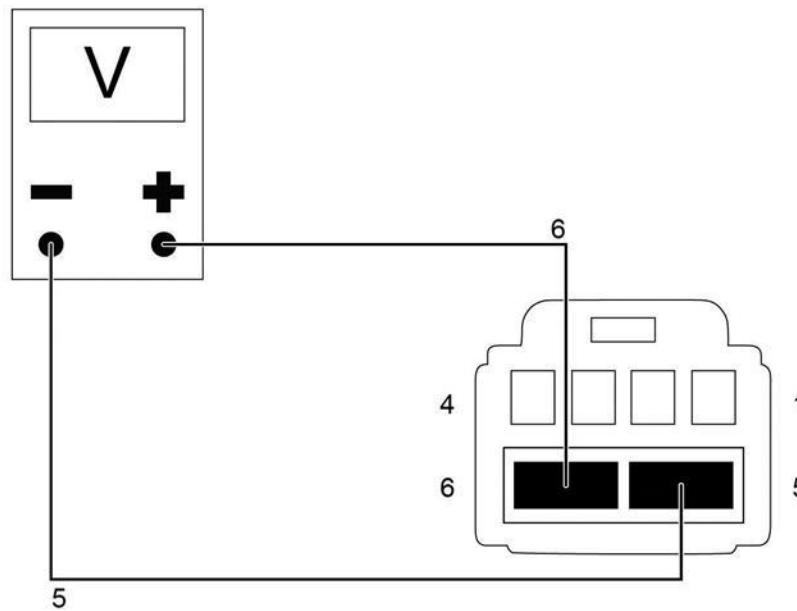
Step	Action	Decision
24	AIR FILTER CHECK: a. Remove air filter and check for plugging. Is air filter restricting air flow?	Yes. Clean air filter and install.
		No. Go to Step 25.

Step	Action	Decision
25	DUCT INSPECTION: a. Check discharge duct work for internal restrictions. Is duct work restricted?	Yes. Repair as needed.
		No. Go to Step 26.



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Figure 12. 6-Way LPM Connector Back View.



0000324601

Figure 13. 6-Way LPM Connector Back View.

Step	Action	Decision
26	<p>LPM PWR / GND CHECK:</p> <p>a. Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C.</p> <p>b. Use a DMM to back probe 6-way LPM connector; measure voltage between pin-6 and a known good ground (Figure 12).</p> <p>c. Use a DMM to back probe 6-way LPM connector; measure voltage between pin-5 and pin-6 (Figure 13).</p> <p>Do Step 26.b and Step 26.c both measure B+?</p>	<p>Yes. Go to Step 27.</p> <p>No. Both Step-C and step-D have less than B+ or zero volts: Go to Step 30.</p>

No. Step 26.b has B+ but Step 26.c has less than B+ or zero volts: Go to Step 31.

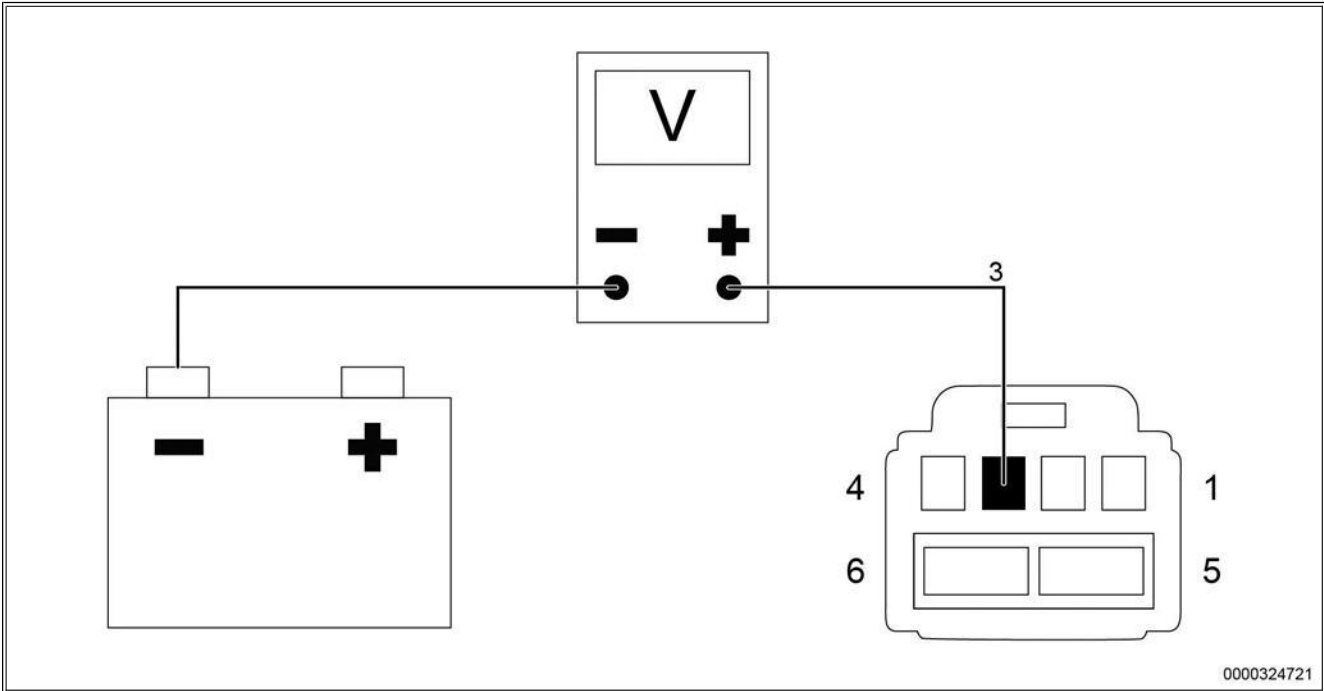
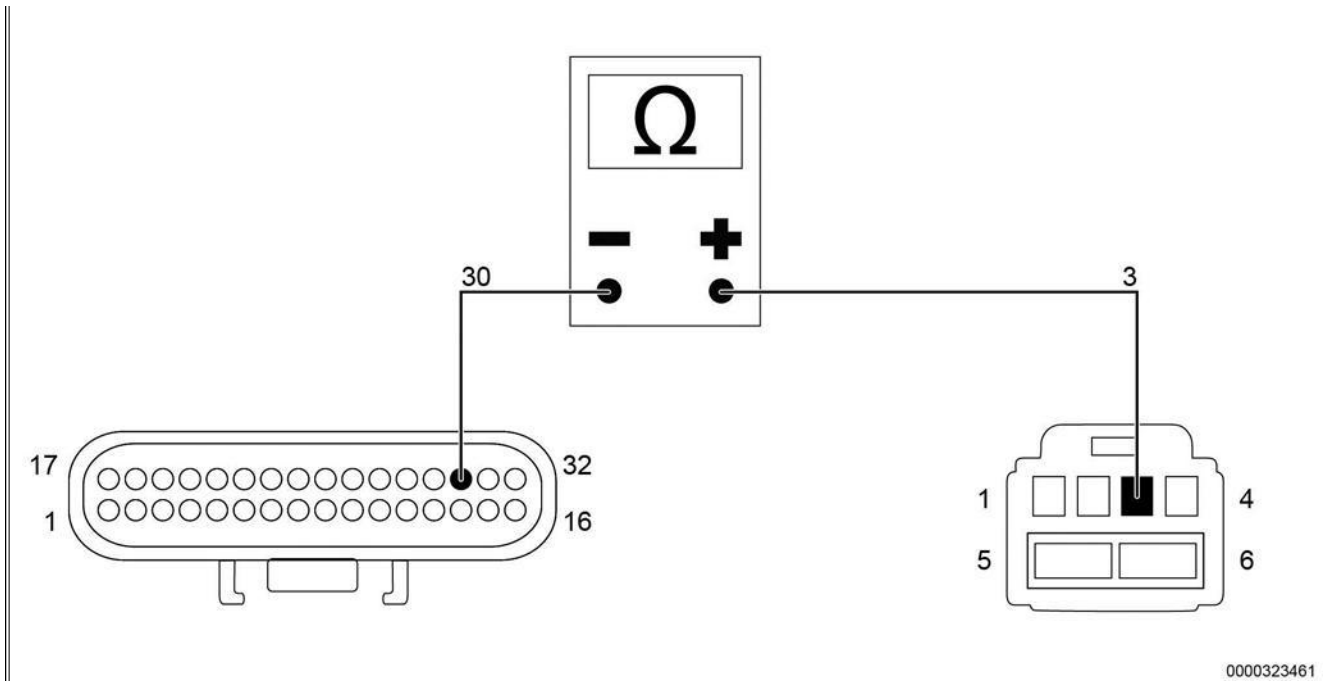


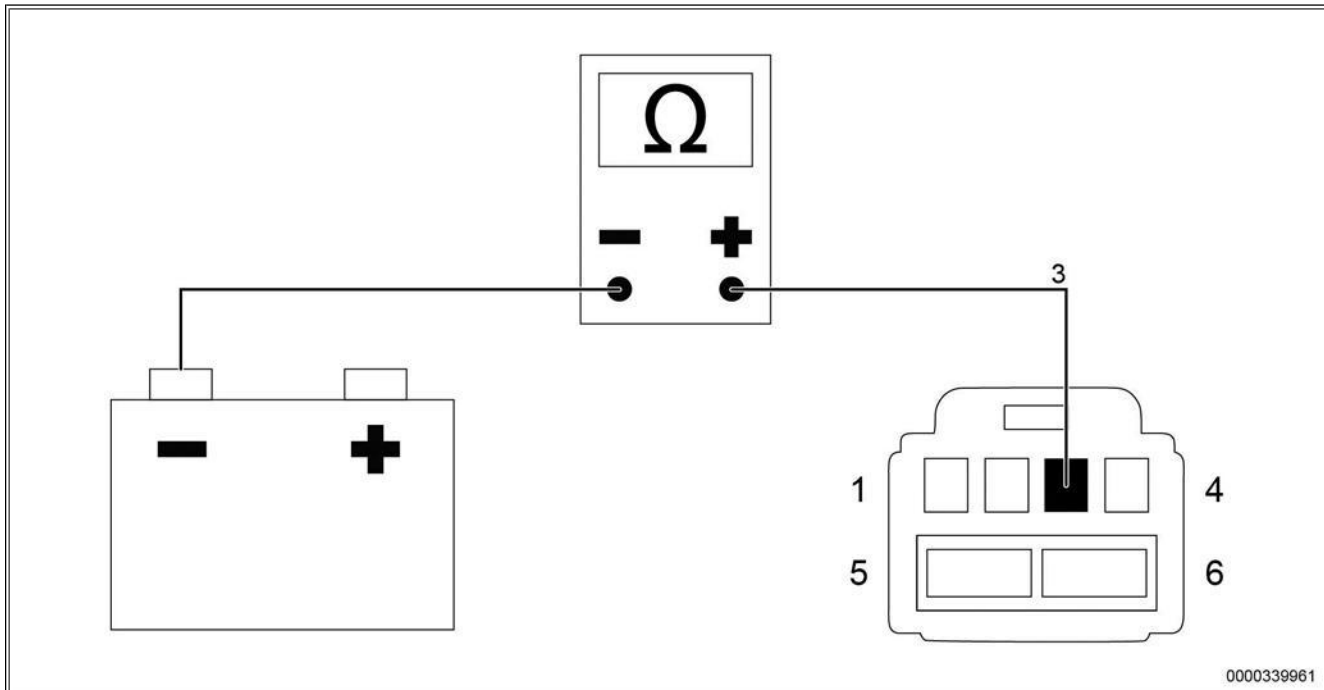
Figure 14. 6-Way LPM Connector Back View.

Step	Action	Decision
27	<p>BLOWER SPEED SIGNAL CHECK:</p> <ul style="list-style-type: none"> a. Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C. b. Depress digital display speed-up switch to increase blower speed to highest setting. c. Use a DMM to back probe 6-way LPM connector; measure voltage between pin-3 and a known good ground (Figure 14). <p>Is voltage on 6-way LPM connector pin-3 between 2.5V (High Speed) and 4.5V (Low Speed)?</p>	<p>Yes. Leave No-Idle unit running and go to Step 29.</p> <p>No. Shut No-Idle unit off and go to Step 28.</p>



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Figure 15. 32-Way System Controller Connector Face View and 6-Way LPM Connector Face View.



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Figure 16. 6-Way LPM Connector Face View.

Step	Action	Decision
28	<p>BLOWER SPEED SIGNAL CIRCUIT CHECK:</p> <p>a. Disconnect 6-way LPM connector.</p> <p>b. Disconnect 32-way system controller connector.</p>	<p>Yes. Replace system controller. Assemble unit to run and retest for operator concern.</p> <p>No. Replace No-Idle harness. Assemble unit to run and retest for operator concern.</p>
	<p>NOTE:</p> <p>Resistance should be less than 5 Ohms.</p>	
	<p>c. Use a DMM to check resistance between 6-way LPM connector pin-3 and 32-way</p>	

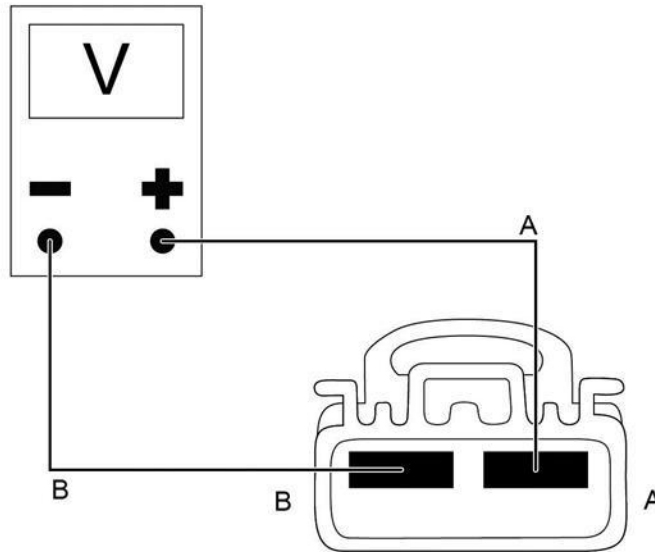
system controller connector pin-30 (Figure 15).

NOTE:

Resistance should be greater than 1000 Ohms.

d. Use a DMM to check resistance between 6-way LMP connector pin-3 and a known good ground (Figure 16).

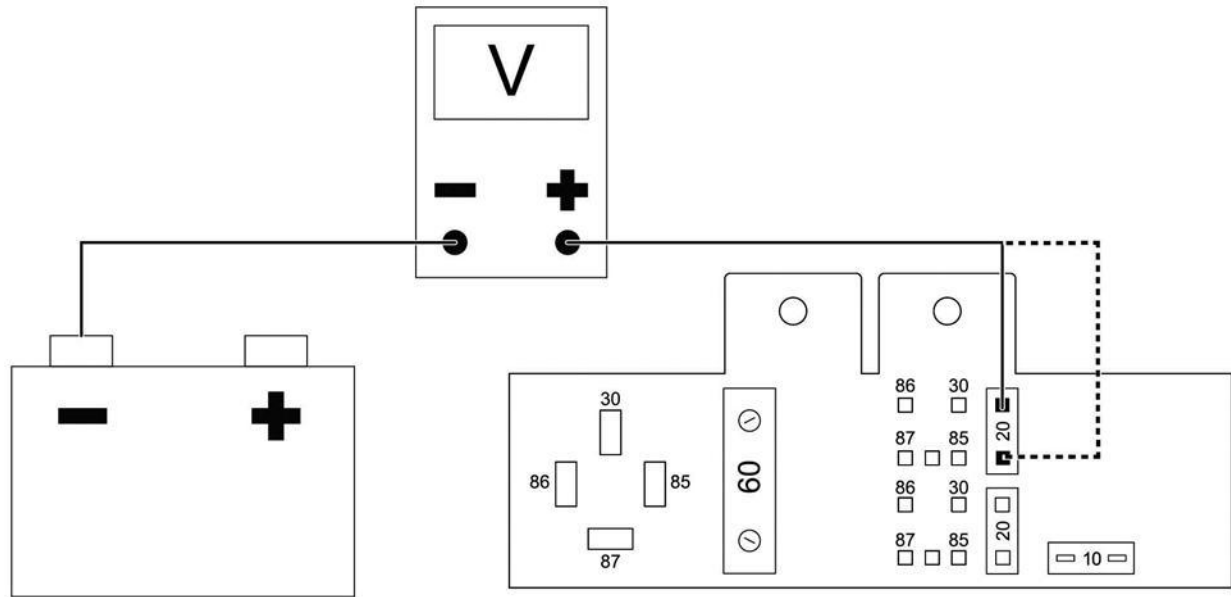
Is Step 28.c measurement less than 5 Ohms and Step 28.d measurement greater than 1000 Ohms?



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Figure 17. 2-Way LPM Connector Back View.

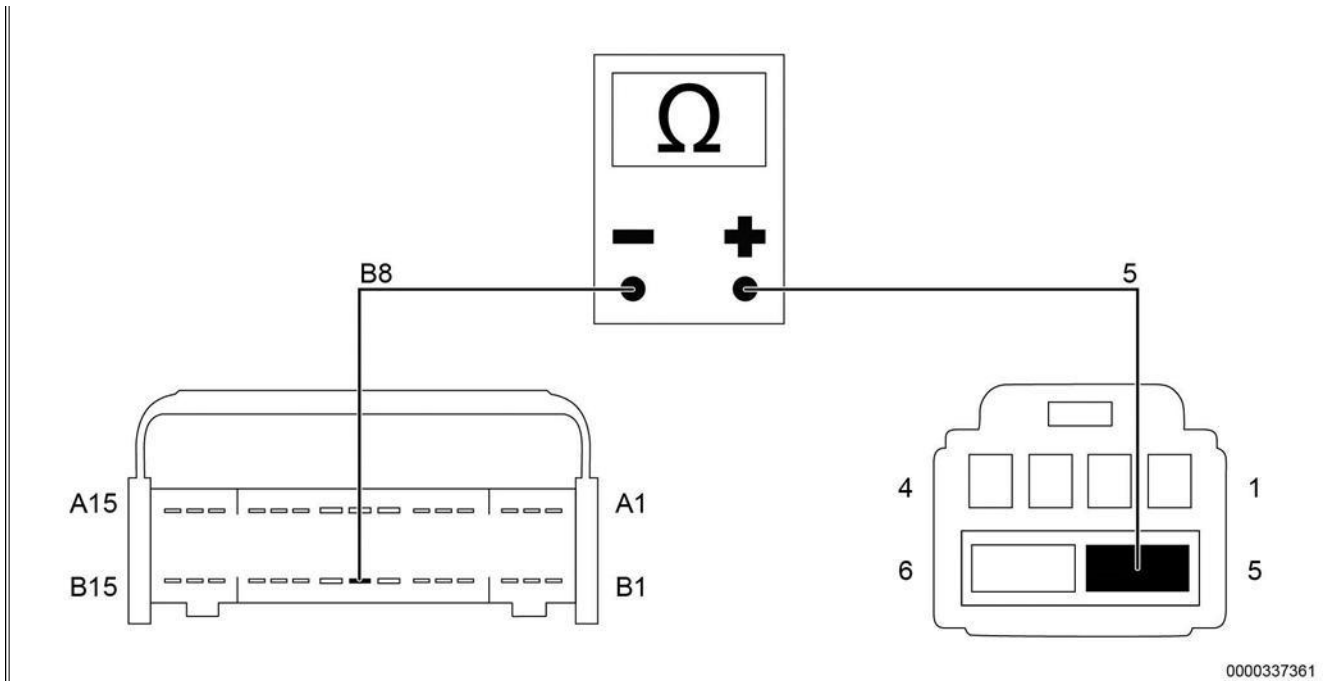
Step	Action	Decision
29	<p>BLOWER MOTOR VOLTAGE CHECK:</p> <p>a. Turn ignition Key-Off and depress control panel COOL switch to start No-Idle A/C.</p> <p>b. Depress digital display speed-up switch to increase blower speed to highest setting.</p> <p>c. Verify 6-way LPM connector and 2-way LPM connector are connected.</p> <p>d. Use a DMM to back probe 2-way LPM connector; measure voltage between 2-way LPM connector pin-1 and pin-2 (Figure 17).</p> <p>Is voltage approximately 6.5V (lowest speed) or 10.6V (Highest Speed)?</p>	<p>Yes. Replace blower. Assemble unit to run and retest for operator concern.</p>
		<p>No. Replace LPM. Assemble unit to run and retest for operator concern.</p>



0000329281

Figure 18. No-Idle Relay / Fuse Panel, Blower Fuse (F5).

Step	Action	Decision
30	<p>LPM PWR CIRCUIT CHECK:</p> <p>a. Use a DMM to check for voltage between both sides of 20A blower fuse (F5) (Figure 18) and a known good ground.</p> <p>Is there B+ on both sides of 20A blower fuse (F5)?</p>	<p>Yes. Replace No-Idle harness as needed. Assemble unit to run and retest for operator concern.</p>
		<p>No. Neither side has B+: Check relay circuits.</p>
		<p>No. Fuse (F5) is blown: Check for short to GND in harness or component.</p>



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Figure 19. Connector 5205 No-Idle Side Face View and 6-Way LPM Connector Face View.

Step	Action	Decision
31	LPM GND CIRCUIT CHECK: a. Stop No-Idle unit. b. Disconnect 6-way LPM connector. c. Disconnect 30-way chassis / No-Idle connector (5205). d. Use a DMM to check continuity between No-Idle side of connector 5205 pin-B8 and 6-way LPM connector pin-5 (Figure 19).	Yes. Check continuity between connector 5205 pin-B8 and battery ground terminal. Repair or replace chassis harness as needed. Assemble unit to run and retest for operator concern.
	Is continuity present between No-Idle side of connector 5205 pin-B8 and 6-way LPM connector pin-5?	No. Replace No-Idle harness. Assemble unit to run and retest for operator concern.

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

- Link to the Coding Manual: [Click Here](#)

Standard Repair Time(s) - ProStar:

Step	Description	Chassis	Engine	SRT	Hours
1 - 6	Excessive Noise or Vibration	ProStar	N/A	R20-1005A	0.2 Hr
1 - 2, 7 - 9	Short Run Time	ProStar	N/A	R20-1005A-20	0.3 Hr
1 - 2, 10 - 22	Excessive Cycling	ProStar	N/A	R20-1005A-21	0.6 Hr
1 - 2, 23 - 31	Low Air Discharge	ProStar	N/A	R20-1005A-22	0.3 Hr

Standard Repair Time(s) - LoneStar:

Step	Description	Chassis	Engine	SRT	Hours
1 - 6	Excessive Noise or Vibration	LoneStar	N/A	S20-1005A	0.2 Hr
1 - 2, 7 - 9	Short Run Time	LoneStar	N/A	S20-1005A-20	0.3 Hr
1 - 2, 10 - 22	Excessive Cycling	LoneStar	N/A	S20-1005A-21	0.6 Hr
1 - 2, 23 - 31	Low Air Discharge	Lonestar	N/A	S20-1005A-22	0.3 Hr

- Link to the Standard Repair Time Manual: [Click Here](#)

Claim SRT Example:

Not Applicable

Claim Comment Suggestion:

Not Applicable

Special Requirement(s):

Not Applicable

OTHER RESOURCES

Circuit Diagrams By Unit Build Date		
MaxxPower No-Idle System Circuit Diagram (PDF)	Units Prior to November 11, 2013	Click Here
MaxxPower No-Idle System Circuit Diagram (PDF)	Units from November 11, 2013 to June 23, 2014	Click Here
MaxxPower No-Idle System Circuit Diagram (PDF)	Units from June 24, 2014 through Current	Click Here

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