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Title: MaxxPower No Idle Battery-Powered A/C System Diagnostic Guide

Applies To: Feature code 16UZL

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Change Log

If this iKNow Article is being revised, please type in the text box what has changed in the article. The change log is meant for Dealers to be able to see what has updated/changed in the article.

```
09/29/2014 - Added link to IK1600210 - MaxxPower (0016UZL) Compressor Relay and Power Harness Upgrade
05/21/2014 - Updated "Parts Information" section to include new harness part numbers. Added SRT Information
and links.
```

Description

Diagnostic guide for the MaxxPower A/C system.

- NEW! IK1600210 - MaxxPower (0016UZL) Compressor Relay and Power Harness Upgrade NEW!
  - This article applies to units build prior to June 23, 2014

- For the A/C side, only a few electrical components can be replaced.
- DO NOT REPLACE THE COMPLETE UNIT IF THE A/C IS NOT FUNTIONING.
- Refer to the BASIC TROUBLESHOOTING below prior to replacing any components. This will help you identify which component is at fault or any electrical issues.
- Refer to PARTS INFORMATION to properly identify the parts that may require replacement
- The A/C portion of the system is listed below in the parts section.
- The 16UZL No-Idle HVAC system is designed to disengage when the engine is started, and can be turned on with the key in any position.

This battery-powered no idle HVAC system provides heating and cooling of the sleeper area without use of the vehicle engine.

The system is comprised of the no idle HVAC components located in the sleeper HVAC module, a separate fuel operated coolant heater mounted under the sleeper, and four additional batteries housed in a second battery box. The no idle HVAC system shares the air handling assembly and several major components with the truck's standard HVAC system. Most importantly, the shared evaporator core contains refrigerant circuits for both the no idle system and the truck's standard A/C system. With this configuration, some procedures required to service the no idle A/C system will require opening the refrigerant circuit of the truck's standard A/C system.

Trucks equipped with 16UZL No-Idle HVAC system have two separate HVAC systems (Standard Truck A/C and the MaxxPower unit), it is important to identify each clearly, so you are troubleshooting the correct system.

NOTE:

Per the Operators Manual page 10: Run the heater at least once a month during the year (for a minimum of 15 minutes).

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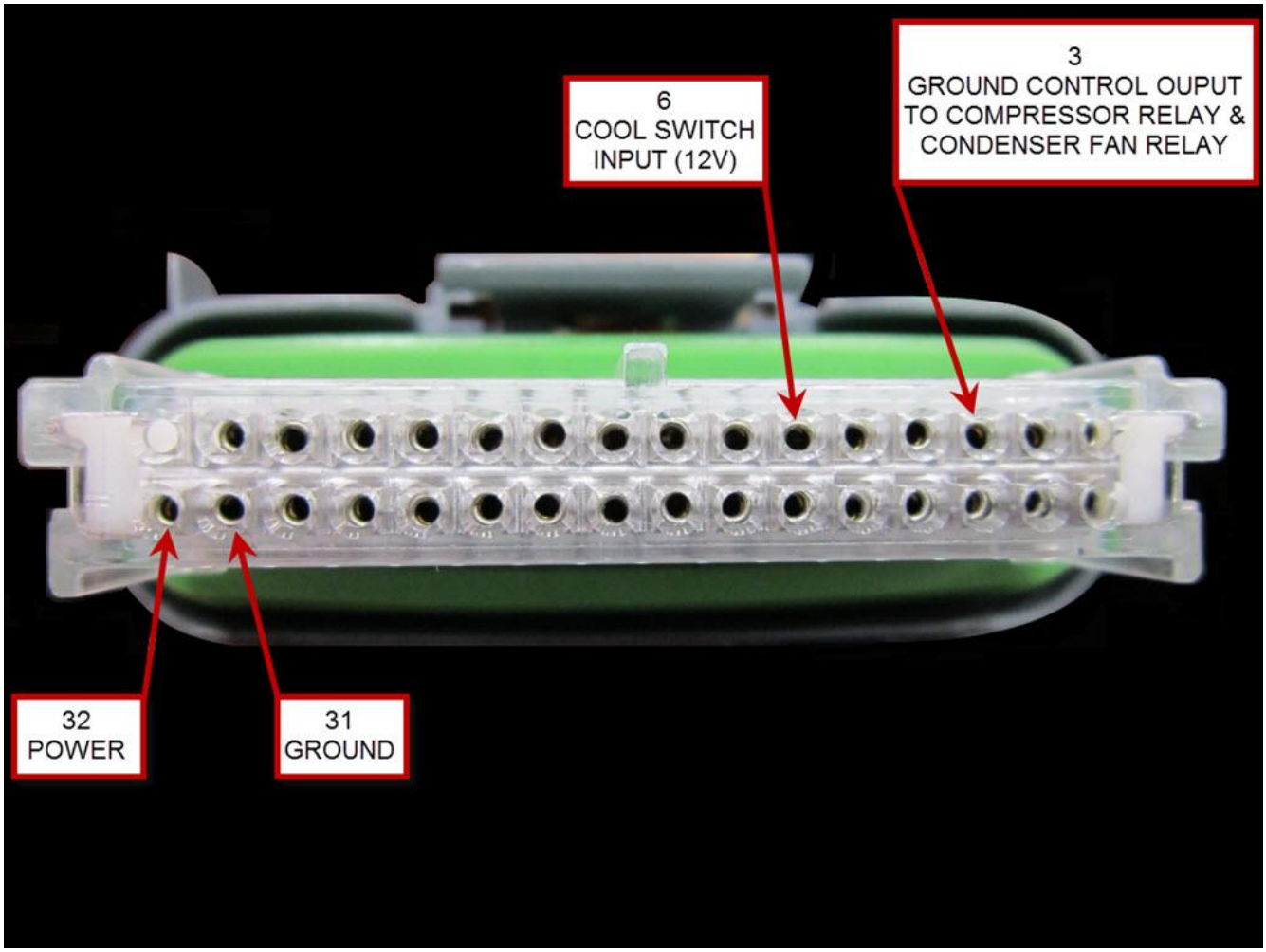
Basic Troubleshooting

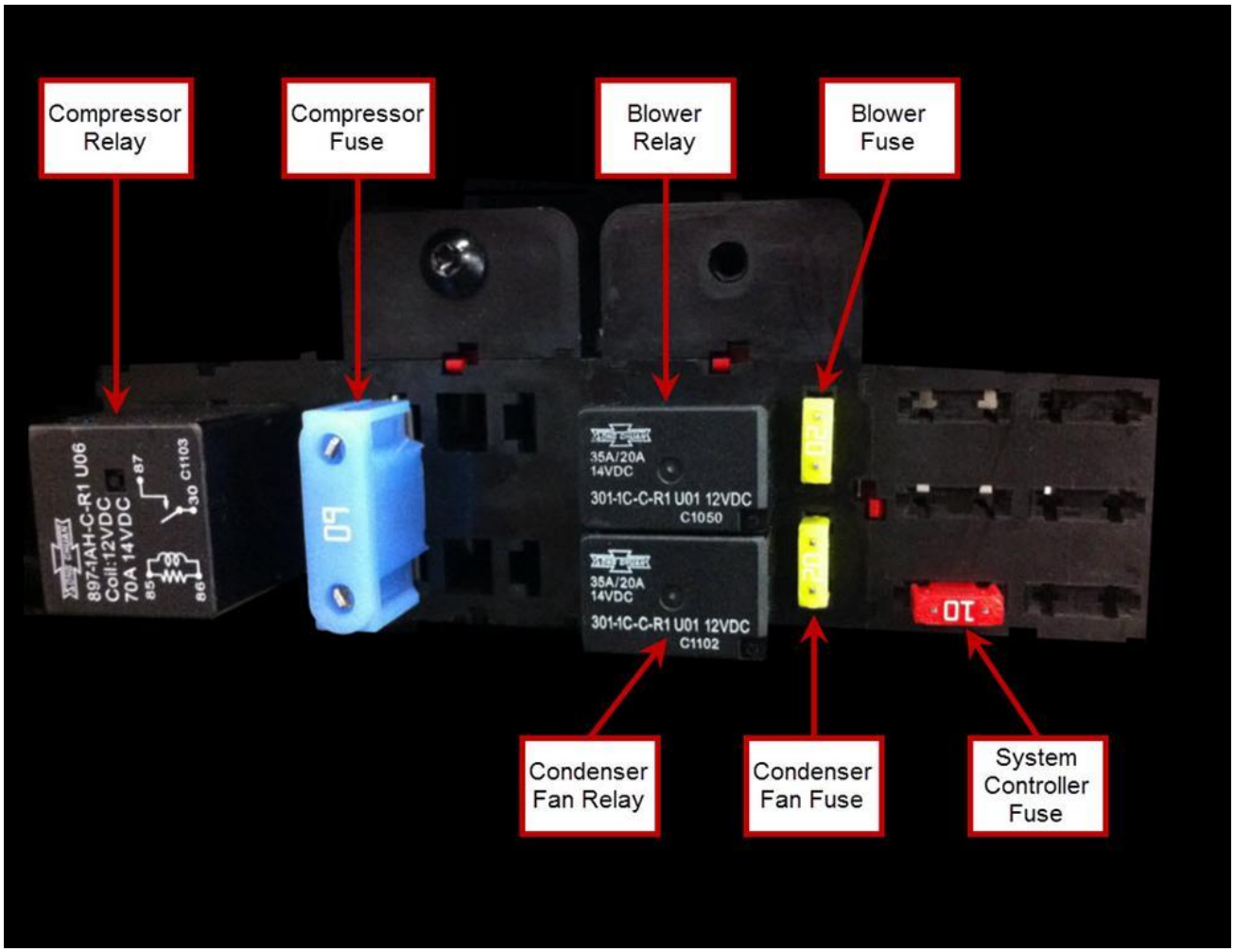
Prior to replacing any components, these basic electrical checks should be performed.

- System will not turn on.
- System starts and cools, but then stops cooling or shuts off.
- Verify proper power and ground is present at the system controller. (Load test the circuits with a headlamp). If the complaint is the system stops cooling, verify you still have power and ground at 31 and 32 when the issue occurs
- Verify 12 volt input to pin 6 from the Cool Switch
- Verify ground control output from pin 3 to the Compressor Relay and Condenser Fan Relay

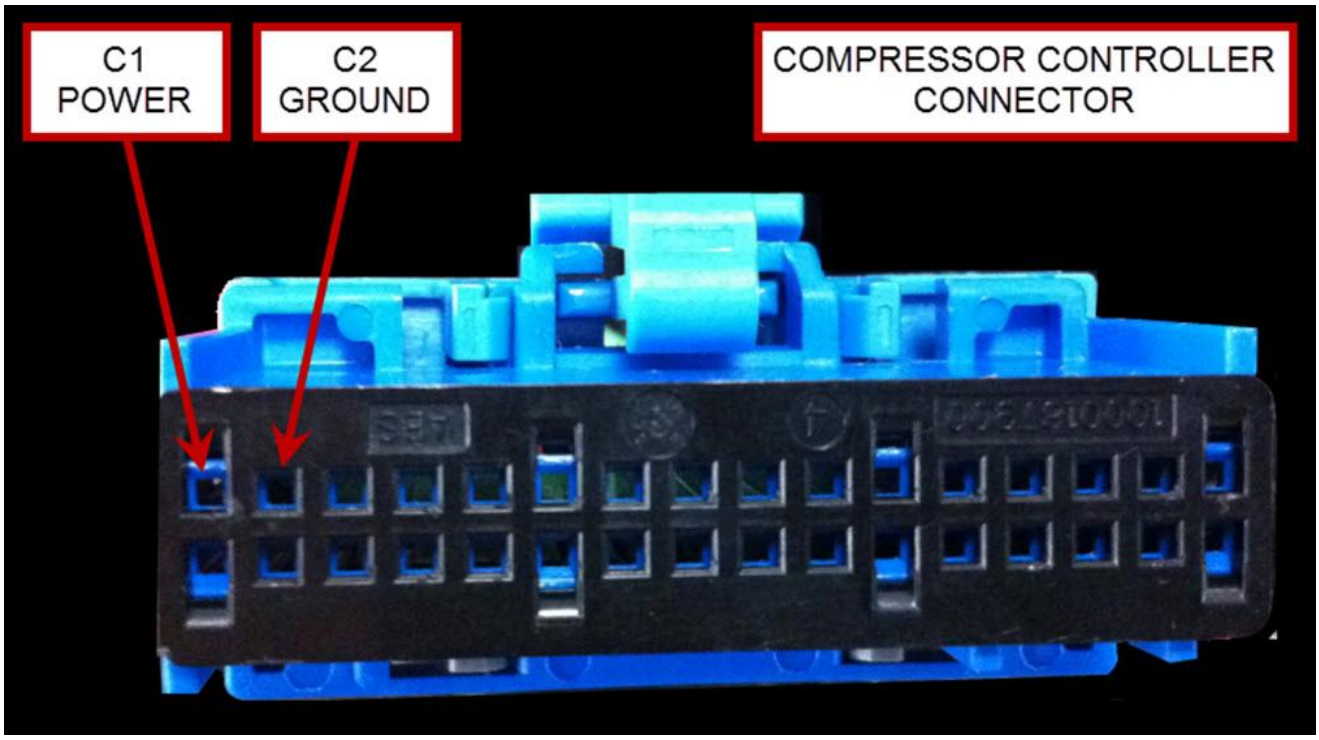
If you have ground control from pin 3 to the relays and the system is still not operating properly, the system controller is not at fault. Continue with further diagnostics.



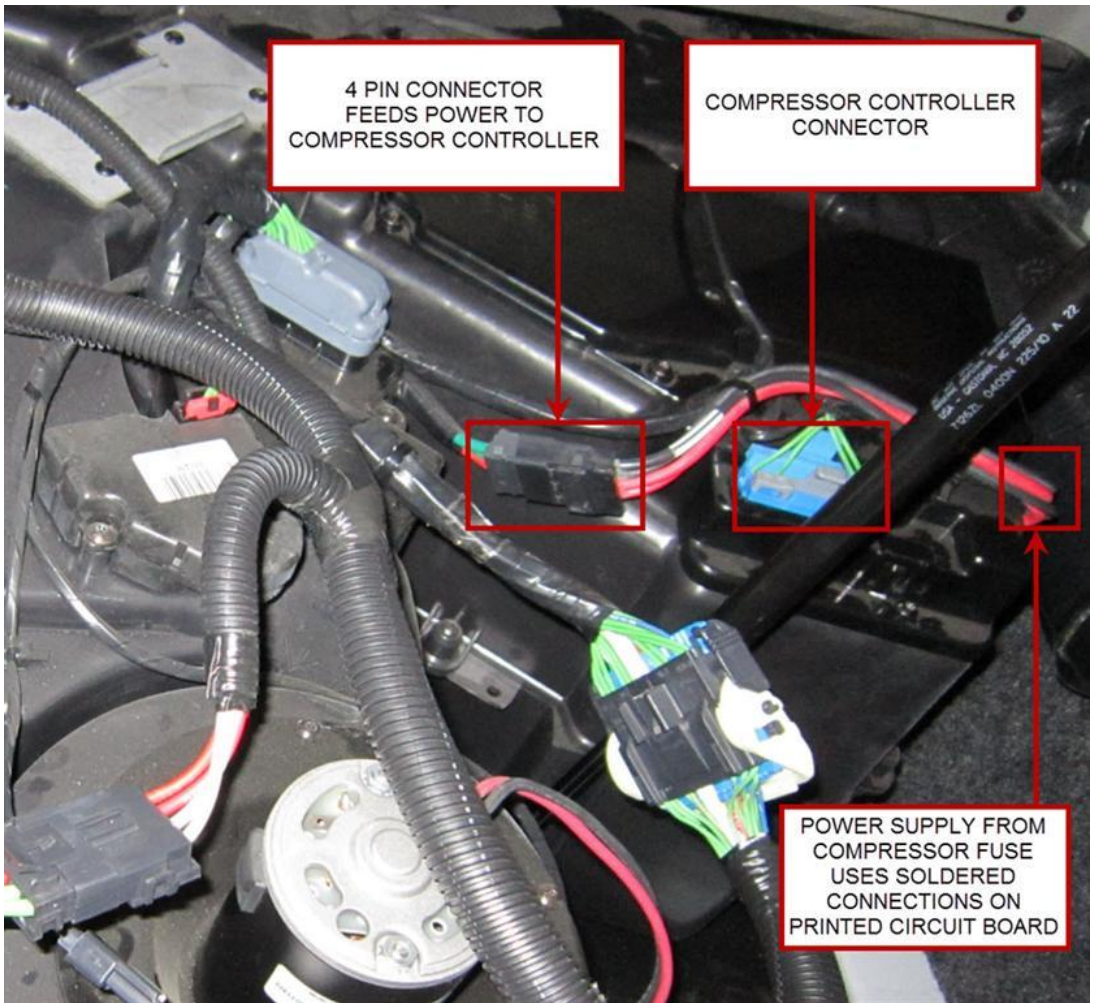
- Verify proper voltage at pin 30 of the Compressor Relay. (Load test the circuit with a headlamp).
  - If you do not have proper voltage at this point, you need to check the truck wiring from the fuses in the battery box to the relay terminal.
- Verify the relay engages and power is present on the output pin 87 to the 60A Maxi Fuse.



- The 60A fuse feeds power to the compressor controller circuit board
- Check the 4 pin connector between the fuse and the compressor controller circuit board, ensuring the terminals are fully seated and locked.
- Verify proper power and ground at pins C1 and C2 of the compressor controller connector. (Load test the circuits with a headlamp).



- Depending on the type of compressor controller, you will have one of the 2 style connectors on the compressor.
- Check for 6 volts cycling on each of the three wires.



Component Identification and Location

Navistar main system fuses • Location: Inside battery box • These fuses are identified on the wiring diagram as F6 and F7	Navistar main system fuses in battery box: 
A: **Compressor Fuse** 60 Amp (Maxi) • This fuse provides short circuit protection for the compressor. • Location: On the control center	A-E: Fuses and Relays

B: **System Controller Fuse** 10 Amp (Mini)

- This fuse provides short circuit protection for the unit controls.
- Location: On the control center

C: **Blower Fuse** 20 Amp (Mini)

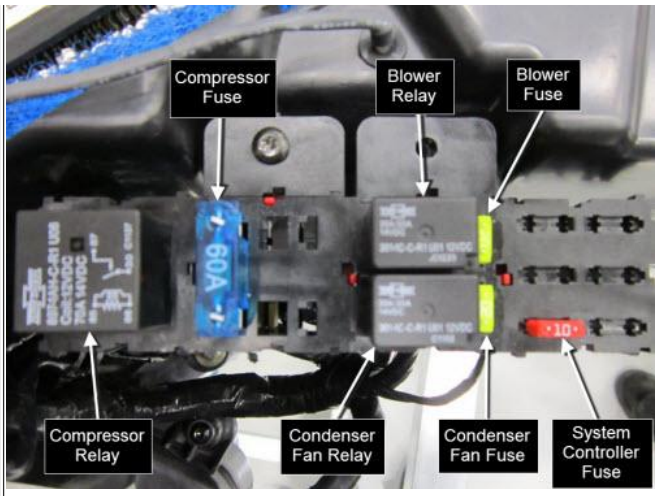
- This fuse provides short circuit protection for the evaporator blower.
- Location: On the control center

D: **Condenser Fan Fuse** 20 Amp (Mini)

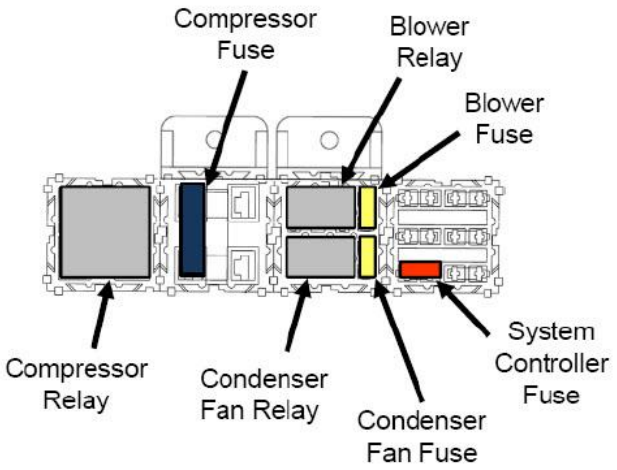
- This fuse provides short circuit protection for the condenser fan.
- Location: On the control center

E: **Relays**

- **Location:** On the control center
- **Compressor Relay**
  - This relay controls the voltage to the compressor controller.
  - (ENGINE OFF MODE)
- **Condenser Fan Relay**
  - This relay controls the voltage to the condenser fan.
  - **(ENGINE OFF MODE)**
- **Blower Relay**
  - This relay controls the voltage to the evaporator blower
  - **ENGINE OFF and ENGINE ON MODE)**



Relay/Fuse Block Layout



F: **Switches / Fan and Temperature Control Display**

- **COOL / No Idle switch:**
  - Lights up and starts the MaxxPower A/C unit at default settings in the parked mode.
- **HEAT / No Idle switch:**
  - Lights up and starts the MaxxPower unit and auxiliary coolant heater at default settings in the parked mode.
- **LED Display:**
  - Allows for temperature and Blower speed adjustment of the MaxxPower unit when operating in A/C or heat mode.
  - Operates like standard Auxiliary HVAC when the engine is running.
  - MaxxPower A/C Unit and Auxiliary Coolant Heater - stop when, engine is started, unit is shut off or batteries are depleted.

F: Switches / Fan and Temperature Control Display:

G: **System Controller** • This device stores the operating program and controls the MaxxPower unit. • Location: Under the bunk, next to blend door motor, under the grey 32 pin connector.	G: System Controller: 
H: **Compressor Controller:** • This device controls the output voltage to the variable speed compressor. • Location: On the top / rear area under the plastic access cover.	H: Compressor Controller: 
I: **Linear Power Module (LPM):** • This module controls the amount of voltage delivered to the evaporator blower creating variable blower speeds. • Location: On the blower wheel housing.	I: Linear Power Module: 
J: **Blend Door Actuator:** • This actuator operates the blend door, changing air flow path through the MaxxPower evaporator coil and heater core. • Location: Under the bunk, near the blower motor.	J: Blend Door Actuator: 
K: **Inlet Temperature Sensor:** • This sensor monitors the return air temperature in front of the evaporator coil. L: **Discharge Temperature Sensor - Freeze Switch:**	K-L: Inlet and Discharge Temperature Sensor:

• This sensor monitors the evaporator outlet temperature as it enters the vehicle duct system.	
M: **Evaporator Blower:** • This blower pulls air through the evaporator coil or heater core and blows conditioned air into the interior of the sleeper. This blower operates with parked (no-idle) and engine driven systems.	M: Evaporator Blower: 
N: **Condenser Fan:** • This blower draws air from outside the truck, through a section of the louvered door on the passenger side and pushes it through the condenser coil to cool the refrigerant flowing through the system. The hot air is exhausted out the same louver panel on the passenger side of the truck.	N: Condenser Fan: 
O:**High Pressure Switch:** • This brazed pressure switch will open and prevent the operation of the compressor due to high internal pressure. It is NOT serviceable.	O: High Pressure Switch: 
P: **Compressor** • This unit is part of the hermetically sealed refrigeration system.	P: Compressor:

	
Q: **Thermal Limit Switch on Compressor:** • This is a normally closed (auto reset) switch to protect the compressor from high temperature.	Q: Thermal Limit Switch on Compressor: 
R: **Evaporator Inlet Filter:** • This filter protects the evaporator coil from dust and debris. • It should be inspected and serviced periodically during routine maintenance.	

Diagnostics Table

Problem	Possible Cause	Corrective Action / See Appendix
Test with Engine OFF **Unit Will Not Run or Turn ON**	1. Loose Connection 2. No power is available at the unit 3. Blown fuse or fuses 4. Check Voltage path to controller and switches 5. Defective Switch on Control panel 6. System Controller Defective 7. Park brake switch defective or wrong logics 8. Broken wire or defective wire harness 9. Check for Fault code	1. Confirm all connections are tight, including ground lugs, and terminals crimped on wires and battery cables. 2. Check ALL batteries for Voltage. Low voltage disconnect is set to 11.8vdc 3. Check all fuses, F6 and F7 are Navistar main system fuses in the battery box. See photo above. 4. Check for 12 volts through fuse F6 continuing through System Controller Fuse to Condenser Fan Relay and Blower Relay Coils, Pin 32 of the System Controller and to the control panel switches as vbat. See appendix, A, B, and J. 5. Check switch continuity. See appendix B. 6. Test System Controller. See Appendix J. 7. Only relevant if key is in the ACC position. Always perform initial diagnostics. Eng OFF / Key OFF see appendix J. 8. Inspect wiring harness and all ground wires. 9. View faults on the information display or check communication using Diamond Logic Builder or Edith
	1. Airflow blockage 2. Compressor Fuse or Relay	1. Clear any blockage from recirculation grill or louvers. Also check condenser inlet and outlet for restriction (outside truck)

Unit Runs- But Does Not Blow Cold Air	3. Compressor Controller connections / defective compressor 4. System Controller 5. High pressure switch 6. Evaporator discharge temp sensor / Freeze switch defective 7. Compressor thermal switch 8. Blend door position 9. Evaporator blower 10. Loss of charge (Refrigerant System not serviceable)	2. Check Compressor Fuse and Compressor Relay. See appendix C, E and K. 3. Confirm all wire harness plugs are connected. Test Compressor Controller. See appendix K. 4. Check System Controller and compressor speed signal from system controller to the compressor controller. See appendix J and K. 5. Check high pressure switch and condenser fan. See appendix D and L. 6. Check sensor. See appendix F. 7. Check normally closed thermal switch. See appendix I. 8. Check Blend door operation. See appendix H. 9. Check Evaporator blower and linear power module (LPM). See appendix M. 10. If all tests check OK, a loss of refrigerant charge may have occurred. NOTE: This unit has a dual core evaporator. It uses refrigerant from the engine driven compressor during engine running mode. If all electrical components work, including the electric refrigerant compressor and the unit does not cool, please call Navistar dealer. You can try operating the unit ENGINE running.
Unit Cycles On and Off	1. Poor electrical connection. 2. Condenser fan inoperative. 3. Air flow blockage causing high pressure or freeze condition	1. Check all electrical connections. 2. Check condenser fan. See appendix L. 3. Check for restricted airflow outside truck at condenser inlet and outlet and at louvers and recirculation grill. Check pressure switch, thermal limit and / or discharge temperature sensor. See appendix D, F and I.
Unit Blows Cold Air, But Low Airflow	1. Check all duct work connections 2. Air flow restricted 3. Evaporator blower motor inoperative	1. Make sure all ducts are connected, sealed and secure 2. Check for airflow at louvers and recirculation grill. 3. Check evaporator blower motor and linear power module. See appendix M.
Unit Runs Correctly, But Less Than Expected Run Time	1. Ground terminal(s). 2. Batteries weak or not charged correctly 3. High amperage draw	1. Inspect and tighten ALL connections. 2. Check batteries for condition and state of charge. See appendix A. 3. Use DC Ammeter to check amps when running. Excessive amperage could signal compressor or internal component issue. Amperage ranges 40 to 75 depending on conditions.
Unit is Noisy or Vibrates	1. Evaporator Blower motor. 2. Condenser fan motor. 3. Compressor mounting. 4. Compressor internal.	1. Check evaporator blower. See appendix M. 2. Check Condenser fan. See appendix L. 3. Check rubber compressor mounts. See appendix N. 4. If rubber compressor mounts check out acceptable, and compressor vibrates excessively, call Navistar Dealer.
ENGINE RUNNING **Blower Motor Runs - But Does Not Blow Cold Air (Unit will be operating on Engine system, not the MaxxPower system)**	1. Airflow blockage 2. Blend door 3. Engine driven system charge level.	1. Clear any blockage from recirculation filter, grill or louvers. Also check condenser inlet and outlet for restriction (outside truck). 2. Check blend door operation. See appendix H. 3. Check refrigeration charge level and engine driven compressor.

Appendix

A. Battery Condition and Performance:

- Battery Voltage is critical for system operation. Special attention should be given to both sets of batteries.
- **Attention:** Poor quality batteries or a weak alternator will have a negative impact on **MaxxPower** unit run time. Always maintain the best possible batteries and charging system. Standard alternator 320 Amp.
- Load test and maintain batteries as required by the manufacturer.

B. LED Control Display and COOL - No Idle Switch Testing: Attention! Conduct the initial test with ENGINE OFF/ KEY OFF AND BRAKES SET!!!

- Turn the MaxxPower unit on by pressing the Cool No/Idle momentary switch.
- Pushing the COOL – No Idle momentary switch will signal the MaxxPower unit to start. The led light in the switch will illuminate. At this time the display will also light up and the MaxxPower unit will start at its default setting and will indicate this by the rows of bars showing on the display. Pushing the temperature or blower speed buttons will increase or decrease these settings higher or lower.
- If you are pushing the COOL – No Idle momentary switch and the unit does NOT start, check for 12 volts at the switch terminals. Wire (vbat) should have 12 volts. This voltage comes from the 10 amp System Controller Fuse, through pin A1 of the 30 pin harness connector(5205), then to pin 32 of the System Controller connector. Pushing the COOL No Idle momentary switch sends power from the switch, through pin B13 of the 30 pin harness connector(5205) then to pin 6 of the System Controller connector.
- If you have 12 volts at pin 6 on the System controller and the unit does not start, the System Controller is defective.
- If you have 12 volts at pin 6 and the unit starts but the display does not come on, check for proper voltage at the LED display, pin connection 7 (pos) coming from the Blower Motor Fuse through pin A11 of the 30 pin harness connector(5205). Use pin 8 (neg) at the display, coming from chassis ground, through pin A2 of the 30 pin harness connector(5205), to check for this voltage. You should have 12 volts. Now check the dimmer to panel signal, pin 15 on the display. You should have 1.5V at the controller from pin 18 of the System Controller passing through pin A12 of the 30 pin harness connector(5205). If you do not have the dimmer signal you may have a bad system controller or harness.
- After a few seconds, the display will dim and the bars for temperature and blower speed will not show. As soon as you push the increase or decrease buttons the display will wake up.

C. Relay Testing:

- With relay unplugged, confirm there is a 12 VOLT signal on the sockets where 85 and 30 relay terminals are connected.
- If you do not have 12 VOLTS here check fuses, wiring and battery connections.
- Now, with relay unplugged, check across terminals 85 and 86 on the relay, using an OHM meter. You should have 80 to 100 ohms.
  - This is measuring the resistance through the relay coil. If you do not, replace relay.
- Starting the MaxxPower system…as soon as you turn the COOL – No Idle switch on, terminals 86 on the Compressor Relay and Condenser Fan relay become connected to ground internally on the System Controller pin **3**. Also, the Blower Motor relay terminal 86 connects to ground internally at pin **2** on the system controller. When this happens the relays will pull in the contacts and allow voltage through the relays. You should now have 12 VOLT passing through the relays on spade terminals 87 of the relays. This provides power to the Compressor fuse, Blower Motor fuse, and Condenser Fan fuse, continuing to the evaporator blower motor, condenser fan and the compressor controlling section of the Compressor Controller Assembly.
- With relay plugged in: TURN THE UNIT ON.
- If you do not have 12 VOLT on terminal 87, check across terminals 85 (+) an 86 (-). You should have 12 VOLT. If you do not, you may have a defective harness or system controller. If you have 12 VOLT here and do not have 12 VOLT on terminal 87 your relay is defective. The internal coil of the relay is energized but the contacts are not closing. Replace the relay.
- If you have 12 VOLT on terminal 87 and the compressor, condenser fan or evaporator blower does not run you could have a defective component such as evaporator blower, condenser fan or compressor controller. See testing Evaporator Blower Motor-Appendix M, Condenser Fan-Appendix L, Compressor / Controller-Appendix K.

D. Pressure Switch Testing:

- You must remove the top compressor controller cover of the MaxxPower unit to access the switch.
- **The brazed switch is not removable.**
- This switch is normally closed. When the unit is off for a few minutes, unplug the System Controller and check between pins 28 and 17, you should always have continuity. If you do not, you may have a broken wire, bad connection, high pressure situation or defective switch. If the pressure, harness and connections are ok, the MaxxPower unit will have to be replaced. Call Navistar.

E. Check continuity across fuse body (fuse does not look blown)

- Remove fuse from fuse holder. Using a meter, check for continuity across the fuse. You can check for voltage at and through the fuse using a dc volt meter, with the fuse installed.

F. Discharge Temperature Sensor/Freeze Switch Testing:

- Location: Top of unit, at evaporator blower outlet.
- IF THE SENSOR OR CIRCUIT HAS A SHORT OR OPEN a fault code will be seen on J1939.

- IF THE SENSOR IS DEFECTIVE THE COMPRESSOR WILL NOT OPERATE!
- The freeze switch is a temperature sensor. To verify the condition you will need a Volt/OHM meter.
- If a freeze condition occurs, the unit will stop the compressor. If the freeze condition leaves, the compressor will restart and the MaxxPower unit will continue to run.
- Check resistance (ohms) value at the system controller with the 32 pin connector disconnected. You should read a resistance across terminals 26 (pos) and17 (neg) within the range listed in the Discharge Sensor / Air inlet sensor temp chart found in the "Circuit Diagrams" section of the iKNow article. If you cannot read the resistance, check at the sensor connection. If you read the resistance here, and it's within the range allowed, you have a defective harness.
- If you cannot read the resistance or it is not within the given range, your sensor is defective.

G. Inlet Temperature Sensor:

- IF THE SENSOR OR CIRCUIT HAS A SHORT OR OPEN a fault code will be seen on J1939.
- IF THE SENSOR IS DEFECTIVE THE unit will default to a cab temperature of 70 F and operate accordingly.
- This sensor monitors the return air temperature.
- Check resistance (ohms) value at the system controller with the 32 pin connector disconnected. You should read a resistance across terminals 24 (pos) and 17 (neg) within the range listed in the Discharge Sensor / Air inlet sensor temp chart found in the "Circuit Diagrams" section of this article. If you cannot read the resistance, check at the sensor connection. If you read the resistance here, and it's within the range allowed, you have a defective harness.
- If you cannot read the resistance or it is not within the given range, your sensor is defective.

H. Blend Door Actuator:

- Physical inspection of the door, can be seen through the top of the unit by removing the evaporator blower.
- This actuator motor drives the blend door.
- When in the heat mode the blend door will direct recycled air through the heater core as directed by the Digital Control Panel in order to maintain a preset temperature. The Espar Hydronic coolant heater will provide a constant flow of heated coolant through the heater core for internal bunk heat as well as engine heat.
- First, check for 12 volts (pos) on terminal 10 of the actuator, coming from fuse F4. Ground is terminal 7 on the actuator. If you do not have power here you may have a defective harness or system controller.
- If you have power here, check for the move signal at pin 8 on the actuator, coming from pin 25 of the system controller. This is a variable signal ranging from 11 volts at max cold to 0 volts full heat. If this voltage is not there or the voltage does not change, you have a defective system controller or harness. If this voltage is present and variable, and the door does not operate, you may have a defective actuator or inoperative blend door.

I. Compressor Thermal Limit Switch:

- You must remove the top compressor controller cover of the MaxxPower unit to access the switch.
- This device is a normally closed switch. If the compressor gets too hot, the thermal limit switch will open and the compressor will stop. Checking with a meter you should always have continuity between the two terminals when it is cool.

J. System Controller:

- **Do not attempt to test the controller until you have completely eliminated all other possibilities.**
- The **MaxxPower** System controller is the device that stores the operating program for the system and controls most input and output functions. This controller is powered through the System Controller fuse to pin 32 on the controller. Pin 31 is the ground. If you have 12 volts here, the system controller is waiting for an input from the COOL or HEAT No Idle switch for start up.
- If you do not have 12 volts here, check fuses F6(Battery Box) and System Controller fuse, also check for chassis ground.
- If you have 12 volts here and the unit will not run, check for the input from the COOL No Idle momentary switch at pin 6 on the system controller. If you have this 12 volt signal on pin 6 when the switch is depressed (this is a momentary switch) and the unit does not run, check the sensors, pressure switch, and compressor thermal high limit. Also check battery voltage (LVD). If all safety devices are ok, your controller is defective. Replace the controller.

K. Compressor Controller:

- This device controls the refrigerant compressor
- When the MaxxPower system is powered up, the compressor controller is waiting for the system to call for conditioned air. Once the system calls for conditioned air, the system controller will connect Compressor Relay terminal 86 to ground at pin 3 of the system controller. This will close Compressor Relay contacts and allow main power through the Compressor Fuse to the compressor controller. Even though main power is sent to this controller, it will not start the compressor until it receives a speed signal at pin C16 from the System Controller pin 1. Once it has received the speed signal the compressor controller will start the refrigerant compressor. The compressor will operate as long as the thermal limit on the compressor is closed and the system continues to call for conditioned air.
- Check for 12 VOLT from the 60 amp Compressor Fuse, continuing through the packard connector to the compressor controller. If you have 12 volts here, check for the speed signal at pin C16. You should have a voltage here ranging from 3.2 on high to 3.9 volts on low. If you have this speed signal, you should have voltage out on the three wires connected to the compressor.

- Disconnect the three wires from the compressor. You will have to remove plastic cap from the top of compressor.
- Using a volt meter check each wire, positive on (blue, orange or yellow) negative to battery ground. If you do not have a 6 volt pulse voltage out on each wire, replace the controller. Pulse voltage means the controller will cycle to each colored wire. You should see the voltage appear and disappear continuously
- **Reconnecting the three wires you must connect blue to A, orange to B, and yellow to C**
- If you do have a 6 volt pulse voltage at the compressor and the compressor does not run you have a defective compressor. Call Navistar dealer.

L. Condenser Fan Motor Testing:

- **First do a visual inspection of all blower parts.**
- Condenser fan location: Right side of sleeper.
- Turn the **MaxxPower** unit on; you should have 12 volts across terminals A and B at the condenser fan connector. If you do not have 12 volt at the fan, check the Condenser Fan Fuse and Condenser Fan Relay. If you have 12 VOLTS main power, check for the signal voltage at the condenser fan connector pin C coming from pin 29 of the system controller. You should have between 3.1 volts on low speed and 4.8 volts on high. If all voltages are correct, (the plug needs to be connected in order to read the signal voltages) and the fan does not run, it is defective, and needs to be replaced.
- Using a DC ammeter you can check the amperage draw of the blower. Normal amps approx 6 to 10 Amps.
- **Caution: If attempting to connect blower to an outside power source, internal electronic components are sensitive to arcing or reverse polarity! Damage will occur!!**

M. Evaporator Blower Motor and Linear Power Module Testing:

- **First do a visual inspection of all blower parts.**
- The evaporator blower speed is controlled by the **LPM**, Linear Power Module, item I.
- Turn the **MaxxPower** unit on, you should have 12 volt at the **LPM** pins 6 (pos) and pin 5 (neg), if you do not, check Blower Motor Fuse and Blower Motor Relay. If you have 12 VOLT main power, check for the speed signal voltage on the **LPM** at pin 3 coming from the system controller pin 30. You should have approx. 4.5V at low speed and approx. 2.5V at high speed. If all of these voltages are correct, (the plug needs to be connected in order to read the signal voltages) check the output voltage from the **LPM** pins 1 and 2 going to the blower. You should have approx 6.5V in low and 10.6V in high to the motor depending on the speed signal from the system controller. If all voltages are correct, reconnect the plug.
- If fan does not run, it is defective, and needs to be replaced.
- Using a DC ammeter you can check the amperage draw of the blower. Normal amps will range from 4 to 10 amps.
- **Caution: If attempting to connect blower to an outside power source, internal electronic components are sensitive to arcing or reverse polarity! Damage will occur!!**

N. Compressor Rubber Mounts:

- Visual inspection of the compressor rubber mounts may be necessary if excessive vibration is present. Check for loose mounting nuts. If mounting nuts and captive studs are Ok, vibration could be from the internal part of the compressor.

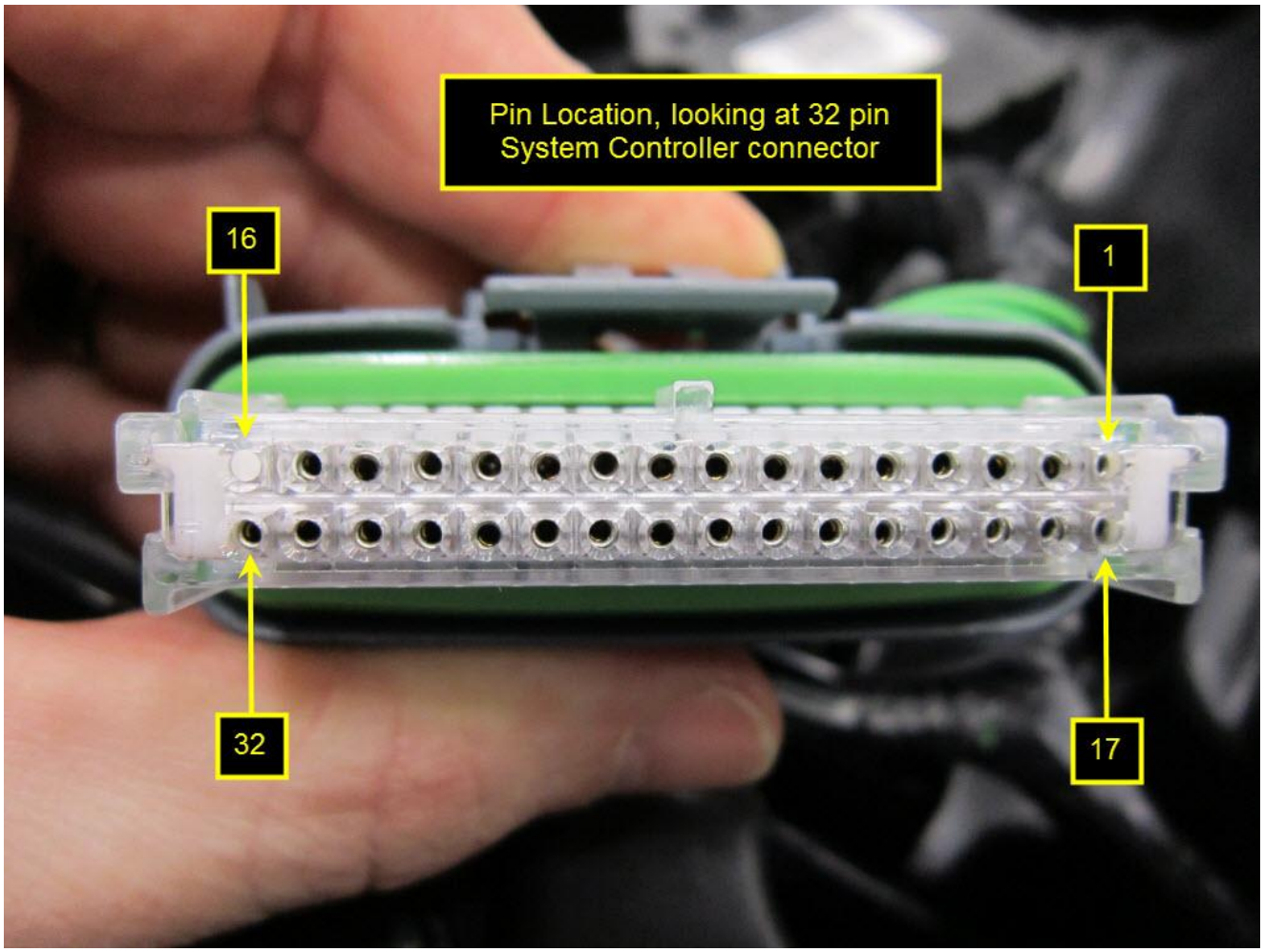
Circuit Diagrams

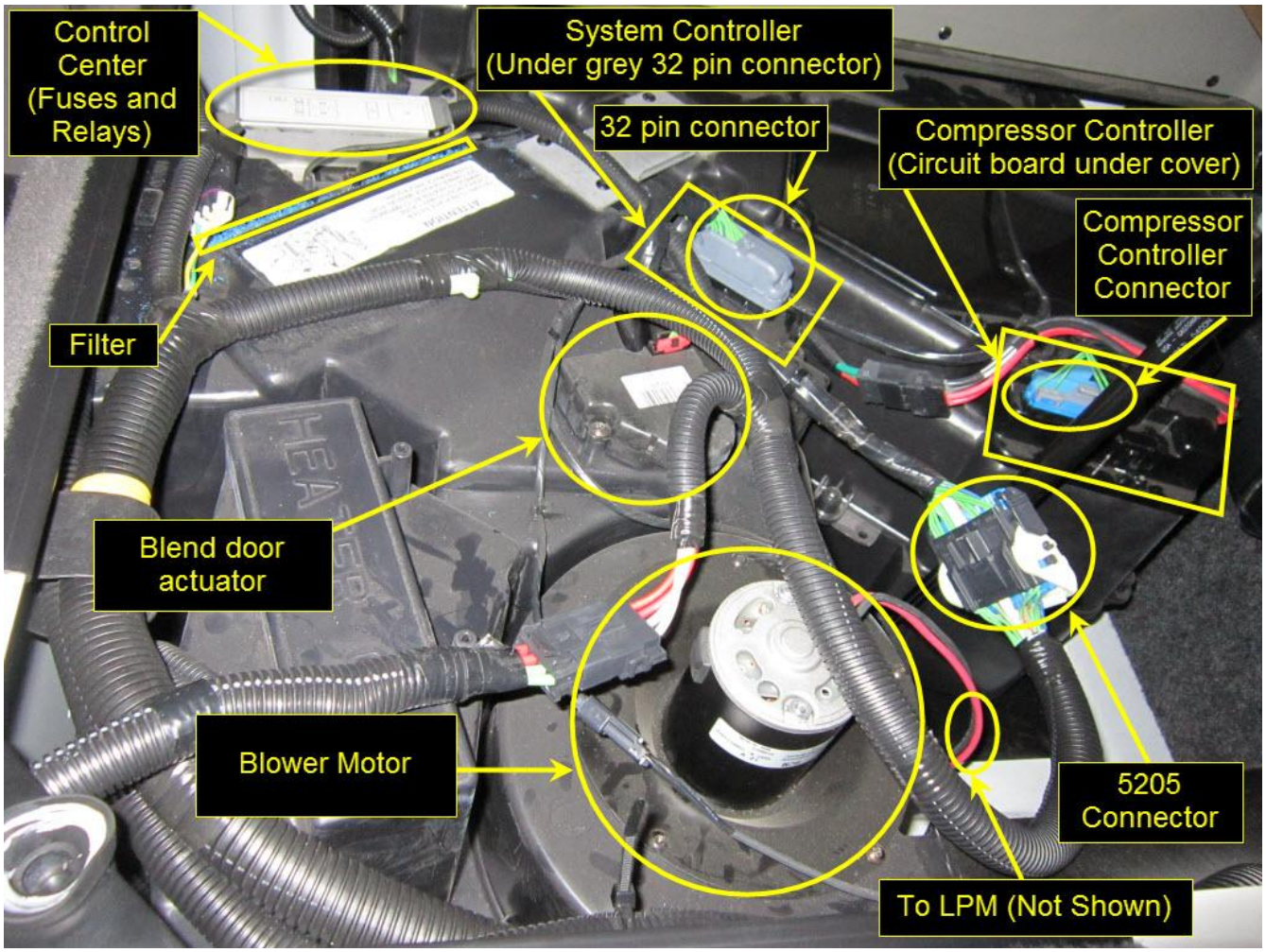
NOTE:

The Bergstrom No-Idle HVAC System uses a Bergstrom harness that connects to the OEM harness. The wiring schematic books will only show the OEM wiring. The PDF below will outline the OEM wiring and show all the Bergstrom wiring. The wiring shown as "A/C UNIT" is where the OEM and Bergstrom harnesses meet.
Also note the OEM wiring has standard sleeper HVAC wiring and all other sleeper wiring configurations. Take time to ensure you're looking at the correct schematic for this system. In the most current schematic book "0000002122" the No-Idle system wiring starts on Ch 12 Pg 15.

- Discharge Sensor / Air inlet sensor temp chart CLICK HERE
- Service Portal Master Service Information CLICK HERE
- MaxxPower HVAC Circuit Diagram (PDF) CLICK HERE

Photos with Call Outs


Pin Location, looking at 32 pin
System Controller connector
16
1
32
17



Service Part(s) Information

- Please refer to IK1600210 - MaxxPower (0016UZL) Compressor Relay and Power Harness Upgrade

Part #	Description	Qty.
2614669C1	Sealed Ref System 12V	1
3685807C1	Condenser Fan	1
3695241C1	Temp Sensor	2
3685810C1	System Controller	1
2614670C1	Compressor Controller (Circuit Board)	1
3685818C1	Blend Door	1
3693481C1	LPM	1
3688223C1	Bunk Blower Motor	1
3688228C2	Harness, Heater 12v No-Idle	1
3838206C92	Cable, Battery	1

NOTE:

REPLACMENT OF NEW REFRIGERANT LOOP 2614669C1 MAY ALSO REQUIRE THE REPLACMENT OF THE NEW CLUSTER BLOCK 2614670C1 AS WELL.

Replacing the Cold Loop

The Bergstrom Maxx-Power air conditioning system has a cold loop replacement housing used to replace the non-serviceable air conditioning components. If the system has lost its refrigerant, if there is a compressor failure, or damage to the evaporator, condenser, or refrigerant lines, the cold loop will need to be replaced.

Selecting the Correct Components

Maxx-Power units built prior to 7/16/2012 were built with flag terminals on the compressors. Due to product improvements, the terminals were changed to a cluster block after 7/16/2012. All cold loop service parts are built with the cluster block style compressor. The cluster block style can be identified by its black color. The flag style compressor is a purple/ blue color. The compressor controller is not compatible between the two units. If the vehicle was built with the flag type compressor (purple/ blue), when replacing the cold loop, the compressor controller will also need to be replaced.

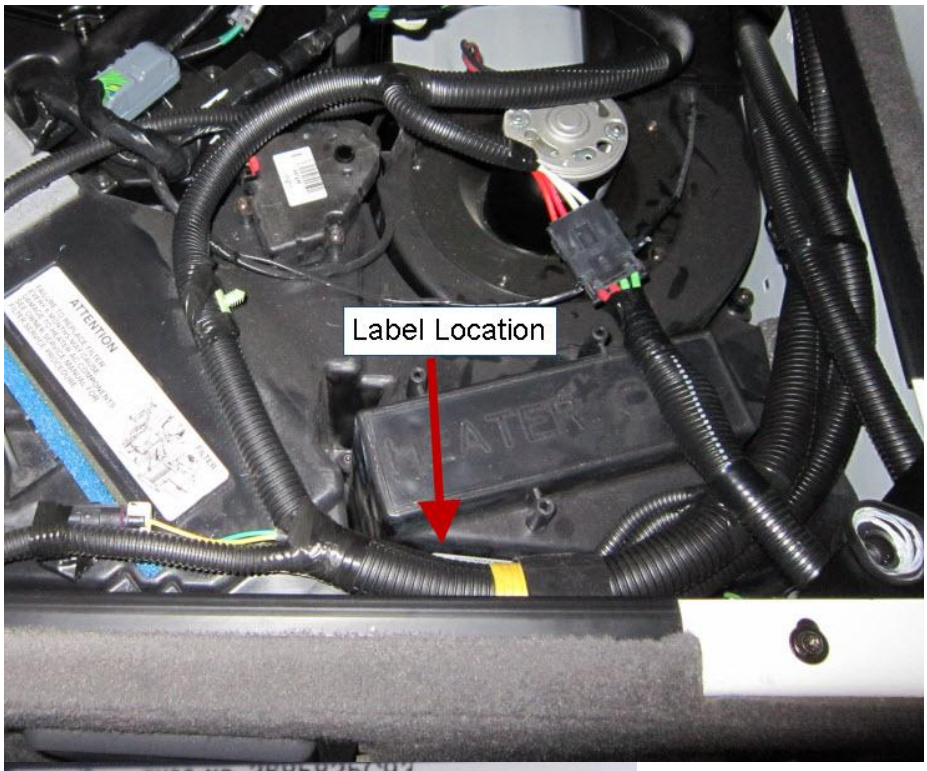
NOTE:

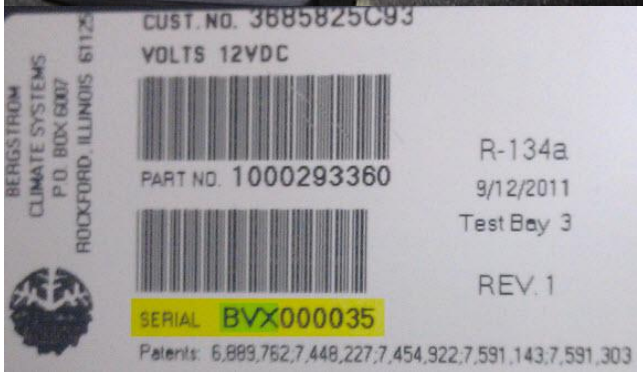
If when removing the old cold loop it is found that the compressor in the unit is the cluster block style (black), the compressor controller should not be replaced.

If you have a failed compressor controller with the Purple (Blue) Compressor, you will need to replace the cold loop with the compressor controller.

Service Parts Based on Serial Number Prefix

The serial number can be found on a tag of the Maxx Power HVAC box. To ensure that the proper components are ordered, the serial number prefix will determine what compressor this vehicle was built with. The tag faces the lower bunk frame front wall, and the serial number will be in the format of BVX000035. Please see the photos below for the tag example and an example position.





S/N Prefix	Complete PN (Original Build)	Cold Loop PN(Updated)	Compressor Controller PN (Required with Cold Loop)	Date Range	Compressor Color (Original Build)
BOA	3685825C92	2614669C1	2614670C1	2/1/2009-8/1/2011	PURPLE (BLUE)
BOB	3685825C92	2614669C1	2614670C1	2/1/2009-8/1/2011	PURPLE (BLUE)
BWA	3685825C93	2614669C1	2614670C1	3/11/2011-6/1/2012	PURPLE (BLUE)
BVX	3685825C93	2614669C1	2614670C1	3/11/2011-6/1/2012	PURPLE (BLUE)
CBU	3685825C94	2614669C1	2614670C1	6/1/2012-7/16/2012	PURPLE (BLUE)
CBV	3685825C94	2614669C1	2614670C1	6/1/2012-7/16/2012	PURPLE (BLUE)
CCF	3685825C94	2614669C1	ORIGINAL IS COMPATIBLE	7/16/2012-1/7/2013	BLACK
CCG	3685825C94	2614669C1	ORIGINAL IS COMPATIBLE	7/16/2012-1/7/2013	BLACK
CCH	3685825C95	2614669C1	ORIGINAL IS COMPATIBLE	1/8/2013-Current	BLACK
CCI	3685825C95	2614669C1	ORIGINAL IS COMPATIBLE	1/8/2013-Current	BLACK

Additional Resources

IK1600210	MaxxPower (0016UZL) Compressor Relay and Power Harness Upgrade
S16043	12V DC No Idle HVAC System (16UZL)
Operator's Manual	12V DC No Idle HVAC System (16UZL)
IK1900156	A/C HVAC Service Resource Center
IK1900208	Parts List for Maxx Power and Espar No Idle Systems

Warranty Information

Warranty Claim Coding:

Group	Noun
19030 - Auxiliary No-Idle HVAC	777 Vehicle, Sub (Rental)***
	778 Towing, Out of Warranty****
	633 Auxiliary Fuel-Fired Heater
	635 Auxiliary Power Unit (APU)
	638 Electric HVAC Module

Standard Repair Time(s):

19-No Idle HVAC Components, Diagnostics			
SRT Description	**SRT Code Link (Model)**		**SRT(hr)**
System Controller Check	R19-8001A	(ProStar)	0.6
	S19-8004A	(LoneStar)	
Compressor Controller Check	R19-8002A	(ProStar)	0.7
	S19-8002A	(LoneStar)	
Temperature Sensor Check	R19-8003A	(ProStar)	0.3
	S19-8006A	(LoneStar)	
Not Cooling (No Air Conditioning) and/or No Heat	R19-8004A	(ProStar)	0.7
	S19-8007A	(LoneStar)	
Blend Door Actuator Check	R19-8005A	(ProStar)	0.6
	S19-8008A	(LoneStar)	
Blower Circuit Check	R19-8006A	(ProStar)	0.4
	S19-8006A	(LoneStar)	
Linear Power Module (LPM) Check	R19-8007A	(ProStar)	0.5
	S19-8010A	(LoneStar)	
Output Air Flow Is Fine, But Air Is Warm	R19-8008A	(ProStar)	0.6
	R19-8011A	(LoneStar)	
Condenser Fan Circuit Check	R19-8009A	(ProStar)	0.8
	S19-8012A	(LoneStar)	
Compressor Check	R19-8010A	(ProStar)	0.6
	S19-8013A	(LoneStar)	

Refrigerant Pressure Switch Check	R19-8011A	(ProStar)	0.5
	S19-8014A	(LoneStar)	
ESPAR Coolant Heater	R19-8012A	(ProStar)	0.6
	S19-8014A	(LoneStar)	
Hydronic Heater Diagnosis	R19-8013A	(ProStar)	0.5
	S19-8016A	(LoneStar)	
Heater Function Test	R19-8014A	(ProStar)	0.5
	S19-8017A	(LoneStar)	

19-No Idle HVAC Components, Replace			
SRT Description	**SRT Code Link (Model)**		**SRT(hr)**
ESPAR Coolant Heater	R19-7633A	(ProStar)	1.0
	S19-7633A	(LoneStar)	
Blower Unit	R19-7633A-20	(ProStar)	0.5
	S19-7633A-20	(LoneStar)	
Coolant Pump	R19-7633A-21	(ProStar)	0.3
	S19-7633A-21	(LoneStar)	
Overheat Sensor w/Cable Section	R19-7633A-22	(ProStar)	0.5
	S19-7633A-22	(LoneStar)	
Flame Sensor	R19-7633A-23	(ProStar)	0.3
	S19-7633A-23	(LoneStar)	
Glow Pin	R19-7633A-24	(ProStar)	0.3
	S19-7633A-24	(LoneStar)	
Fuel Metering Pump	R19-7633A-25	(ProStar)	0.4
	S19-7633A-25	(LoneStar)	
Burner/ Flame Tube	R19-7633A-26	(ProStar)	0.5
	S19-7633A-26	(LoneStar)	
O-Rings, Coolant Pump	R19-7633A-27	(ProStar)	0.3
	S19-7633A-27	(LoneStar)	
O-Rings, Sensors	R19-7633A-28	(ProStar)	0.3
	S19-7633A-28	(LoneStar)	
O-Ring Heat Exchanger	R19-7633A-29	(ProStar)	0.5
	S19-7633A-29	(LoneStar)	
Seal Kit	R19-7633A-30	(ProStar)	0.5
	S19-7633A-30	(LoneStar)	
Electronic Control Unit (ECU) ESPAR Heater	R19-7633A-31	(ProStar)	0.4
	S19-7633A-31	(LoneStar)	
Complete Unit	R19-7638A	(ProStar)	2.5

	S19-7638A	(LoneStar)	
Blower Motor	R19-8638A-20	(ProStar)	0.6
	S19-8638A-20	(LoneStar)	
Condenser Fan	R19-8638A-21	(ProStar)	0.6
	S19-8638A-21	(LoneStar)	
Control Module (A/C Unit)	R19-8638A-22	(ProStar)	0.3
	S19-8638A-22	(LoneStar)	

Hide Details

Feedback Information

Viewed: 8864
Helpful: 34
Not Helpful: 14

No Feedback Found