Countries:	BAHAMAS, BOLIVIA, BELIZE, CANADA, CHILE, TAIWAN, COLOMBIA, COSTA RICA, DOMINICAN REPUBLIC, ECUADOR, EL SALVADOR, TRINIDAD AND TOBAGO, UNITED STATES, URUGUAY, VENEZUELA, ARUBA, NICARAGUA, PERU, PUERTO RICO, Curaçao, GUAM, GUATEMALA, GUYANA, HAITI, HONDURAS, JAMAICA, KOREA, SOUTH KOREA, PANAMA	**Document ID**:	IK1900172
Availability:	ISIS, FleetISIS, Body Builder, IsSIR	**Revision**:	22
Major System:	ACCESSORIES	**Created**:	11/4/2011
Current Language:	English	**Last Modified**:	7/17/2018
Other Languages:	NONE	**Author**:	Bobby Christopher
Viewed:	23424		

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Title: **Espar Airtronic Heater Diagnostic Guide**

Applies To: **Airtronic Heater, Feature code 16VTV**

CHANGE LOG

07/17/2018 Updated Hyper link to Espar manual
05/10/2018 - Author updated for Feedback Purposes.
12/15/15 - Removed all information about Hydronic D5 unit since a seperate iKnow exists for it (IK1900245). Improved robustness of Airtronic diagnostic and repair procedures. Added pre season maintenance section.
9/8/2015 - Made minor grammatical corrections, added actual table for service parts instead of clickable PDF link, added the special warranty

DESCRIPTION

The Espar diesel-fired heating system provides heat for the cab area without the use of the vehicle engine. When the Espar system is on, the front cab blower will also operate to prevent condensation buildup. The heater may have a short run time if the the vehicle has sat for an extended period of time with battery low state of charge. This document will guide the user through pre season maintenance and diagnosing the Espar Airtronic system on Navistar equipped vehicles. You may refer to the manufacturer's website for additional literature as indicated in diagnostic steps below.

PRE SEASON MAINTENANCE

It is recommended that the Airtronic heaters receive a pre-season check-up to make sure that the heaters are ready for a trouble-free cold weather season. Please use the recommended tools and follow the procedures as outlined in the heater manual while removing and reinstalling the different heater components. It should be noted that periodic heater maintenance is the responsibility of the owner of the heater and is not covered under Espar's warranty.
The heaters should be inspected and repaired by an Espar trained mechanic, as follows:

1. Before initial operation ensure that the heater is not being subjected to external loads by heavy objects being placed over it. This may cause damage to the heater parts and affect its normal operation. Ensure that sufficient clearances, as recommended in the heater manual, are being maintained around the heater, even while the vehicle is in operation.

2. Check the return air inlet port and hot air outlet port for any blockages. Inspect the length of ducting for any damage and replace as necessary. Ensure all ducting connections are secure. Discourage heat sensitive materials from being placed too close to the heater, ducting components, or hot air outlet ports.

3. Check all electrical connections from the heater to the batteries. Check for wear and abrasion along the length of the harnesses. Repair or replace the harness whenever the harness insulation is broken or damaged. Check the battery connections. Clean any corrosion at the terminals. Replace the battery terminals if the corrosion is severe. Check the fuse for corrosion and the correct rating.

4. Remove the glow pin and if necessary, clean it. If the glow pin shows signs of dissimilar color or distortions, replace it. Inspect the glow pin wires for damage and if necessary, replace it. Remember to clean the glow pin chamber and ensure glow pin ventilation hole is clear of any obstructions, then replace the glow pin.

5. Regardless of its condition, remove and replace the glow pin screen every pre-season. Make sure that the new screen is installed correctly. Install the new screen.

6. Check the condition of the exhaust pipe. Look for any holes or breaks in the exhaust piping. Replace if necessary. Ensure the exhaust pipe is securely located and correctly routed.

7. Check the condition of the combustion air intake tube. Clear any blockages. If damaged, replace it. Ensure that the combustion air intake tube is securely located and correctly routed.

8. Ensure mounting angle of the fuel pump is in between 15-35 degrees. An incorrectly mounted fuel pump may lead to excessive carbon issues. Check the fuel lines for possible leaks, loosened clamps, etc. inspect the filter on the suction side fuel pump filter - clean or replace as necessary. Once the entire fuel system has been checked and any issues corrected, it is advisable to do a fuel quantity check.

9. If the fuel quantity result is above specification, then it will be a cause for excessive carbon issues and the fuel pump should be replaced. If the fuel quantity result is within specifications, but on the higher side, then any possible excessive carbon issues may be corrected by increasing the mounting angle of the fuel pump to the near vertical position. If fuel quantity result is below specification, then it is recommended that the fuel pump may be replaced only if the heater repeatedly flames out during operation.

10. If there are complaints about the heater smoking excessively during operation then remove and check the condition of the burner. The burner should be light brown in color. Clean any carbon build up inside the burner tube. Check the inside of the heat exchanger and scrape out any loose carbon.
When reassembling the burner and the heat exchanger, use a new thermal insulator. Likewise, when reassembling the blower motor assembly use a new blower gasket.
Re-assemble the heater and test operation. The heater should be bench tested for 15-20 minutes before returning the heater to the vehicle.
Regardless of the season, run the heater every month for a minimum period of 15 minutes. This will help the heater to burn away any combustion residue in the burner chamber. It will ensure that the fuel in the lines to the heater does not gel and solidify and that the heater will start reliably when heating season arrives.

SYMPTOMS

Diagnostic Trouble Codes:

DTC/Light	Description
N/A	N/A

Customer Observations or Concerns:

Performance:
- No heat in cab
- Espar not working all the time
- Espar intermittent operation
- Espar stops working after a period of time

Noise:
- Abnormal Noise

SPECIAL TOOLS / SOFTWARE

Figure 1: ISO Adaptor ESP2215418900000Z (Used for all Espar Heaters)

Tool Description	Tool Number	Comments
EDiTH Diagnostic Software	Part of EZ Tech software	Manufacturer Tool
ISO Adaptor	ESP2215418900000Z	Manufacturer Tool

To download diagnostic software, go to espar.com and click on "Download Center" and then "Technical Manuals". Click on the link to log in and then create a free account. You will need to activate your account with the link provided in the confirmation email. Once you are logged in, click on "Dealer Area" at the top and then "Downloads". Click on "Diagnostic Tools" under "Downloads" to the left and then click on "EDiTH". There will be a link to download the software.

SERVICE PARTS INFORMATION

Click here for parts. Full unit part numbers can be found on the first page. Individual service parts can be found on page 40 of the manual.

Circuit Diagrams

Diagram	Link
Airtronic with key off operation	PDF
Airtronic with key on or in accessory position	PDF

DIAGNOSTIC AND REPAIR STEP(s)

Click here to view the full Espar Airtronic Manual. It contains detailed information on technical data, installation procedures, heater operation, maintenance, troubleshooting & repair, and heater parts.

Addtional information:

Step	Action	Decision
1	**Operational Checks:** Review operational cards to determine if Espar control equipment is operating as intended Operation Cards Multi Max Digi Max (under voltage shutdown must be set to 11.4 V) Does the heater controller and unit operate as the manufacture intended?	**Yes**. Educate operator with manufacturer operating intentions **No** Step 2

Step	Action	Decision
2	**Diagnostics:**	**Yes**. Educate operator with manufacturer's operating intentions **No**

	Review manufacturer provided troubleshooting manuals posted below to diagnose and repair controller or heater as required (additional resources may be found at Espar.com) Multi Max Controller Digi Max Controller Airtronic Flame Tube Carbon Removal Diagnostic Overview Does the controller and heater operate as manufacture intended?	1. Visit Espar.com 2. Click Download Center 3. Click Technical Manuals 4. Create free username and password 5. Follow additional technical manuals

WARRANTY INFORMATION

Special Requirements:

The following information is necessary for the warranty claim to be processed:
a. Serial Number needs to be listed
b. Hours on Espar System
c. Fault Code Found

Complete Espar system replacement not warrantable, individual system parts need to be replaced.

Warranty Claim Coding:

Group:	19030 - Auxiliary No-Idle HVAC
Noun:	633 - Auxiliary Fuel-Fired Heater

Standard Repair Times:

Description	Chassis	Engine	SRT	Hours
Airtronic/Hydronic Diagnostics	Prostar	All	R19-8013A	Link to Hours
Combustion Air Blower	Prostar	All	R19-7633A-20	Link to Hours
ESPAR Airtronic Heater (Replace)	Prostar	All	T-time	0.5
Overheat Sensor	Prostar	All	R19-7633A-22	Link to Hours
Flame Sensor	Prostar	All	R19-7633A-23	
Glow Pin	Prostar	All	R19-7633A-24	
Fuel Metering Pump	Prostar	All	R19-7633A-25	
Burner Flame Tube	Prostar	All	R19-7633A-26	
O-Ring Sensor	Prostar	All	R19-7633A-28	
O-Ring Heat Exchanger	Prostar	All	R19-7633A-29	
Seal Kit	Prostar	All	R19-7633A-30	

OTHER RESOURCES

Master Service Information Site

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Feedback Information

Viewed:	23423
Helpful:	456
Not Helpful:	336

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