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Title: Big Bore Charge Air Cooler Outlet Temperature Sensor Damaged

Applies To: Prostar 113 Equipped with 2010 Emissions MaxxForce 11/13L and N13 Engines

CHANGE LOG

2015/03/16 - Changed name from intake air teperature sensor to charge air cooler outlet temperature
2015/01/29 - Fixed warranty noun code (Group 16000 to 16003)
2014/12/08 - Revised formatting, new information/procedure for repair
2014/05/01 - Initial Article Release

DESCRIPTION

There are certain applications of ProStar+113 trucks with 2010+ Emissions MaxxForce 11/13 or 2013+ N13 engines, that have interference issues with the Charge Air Cooler Outlet Temperature (CACOT) sensor and the hood. Prior repairs called for bodywork that needed to be performed by a body shop; however, the new repair can be completed in any shop, with minimal downtime. The following document will guide the tech through the diagnostics and repair including the modification and patching of the hood if needed.

SYMPTOMS

Diagnostic Trouble Codes & Dashboard Indicator Lights:

DTC/Light	Description
SPN 2630 FMI 2	CACOT Signal Does Not Agree With Other Sensors
SPN 2630 FMI 3	CACOT Signal Out of Range High
SPN 2630 FMI 4	CACOT Signal Out of Range Low
SPN 2630 FMI 7	CACOT Signal Not Responding as Expected
SPN 2630 FMI 16	CAC Under cooling

Customer Observations or Concerns:

Malfunction Indicator Light

SPECIAL TOOLS

Tool Description	Tool Number	Comments	Instructions
UV Light	Obtain Locally	OR sun light	
Die Grinder	Obtain Locally		

Tools Resource Center

SERVICE PARTS INFORMATION

Kit Description	Part Number	Qty	Notes
Kit, Hood Repair	2514324C91	1	
3M Sanding Pad or equivalent	07480	1	Obtain Locally, needed for roughing patch area
Sensor Assembly, Temperature	3006479C91	1	If damaged

DIAGNOSTIC STEPS

Step	Action	Decision
1	**Check for a damaged Charge Air Cooler Outlet Temperature sensor.** Locate the CACOT sensor on the Engine Throttle Valve (ETV) casting. Is the sensor damaged,broken or is there evidence of rubbing on the hood?	**Yes**. Replace sensor and repair harness as needed. Clear codes. Go to **Step 2**. **No**. Reference the Engine Diagnostic Manual to diagnose the fault.

Figure 1: Damaged CACOT Sensor

Step	Action	Decision
2	**Verify hood to sensor contact.** • Inspect the inside of the hood for markings from rubbing the CACOT sensor. See figure #2 below for an example of hood rubbing marks. • Are there witness marks on the hood?	**1**. Yes. Proceed to hood modification procedure, below. **2**. No. Diagnostic is finished.

Figure 2: Rub mark in the hood from CACOT sensor contact (air inlet cowl).

REPAIR STEPS

1. Remove the three bolts securing the driver side front inner fender to the hood.

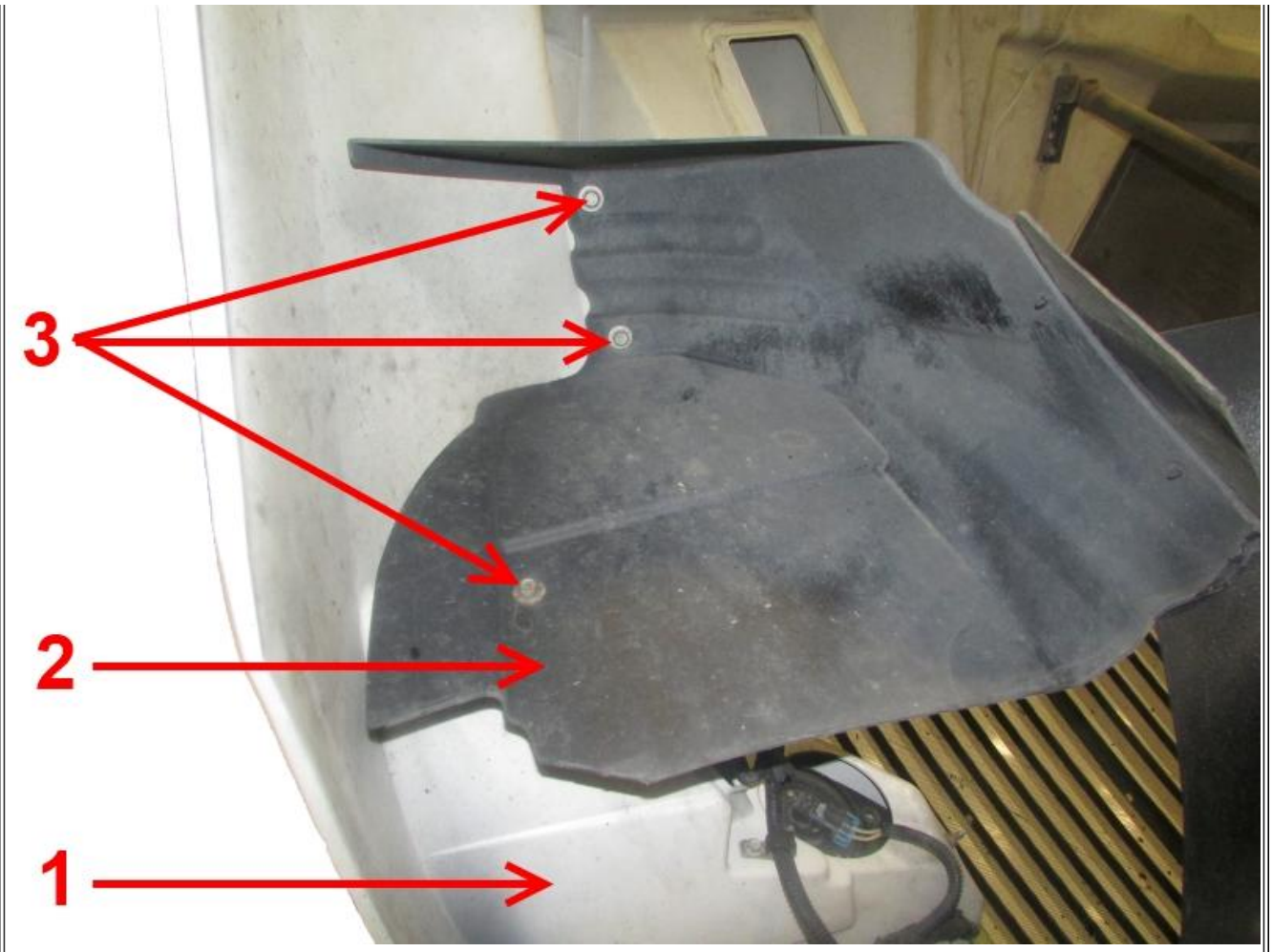

Figure 3: Removal of inner fender.

Item 1: Hood
Item 2: Front Inner Fender
Item 3: Mounting Screws

2. Fold the template from the kit, as instructed, and secure it to the air inlet cowl on the hood, as shown in **Figure 4.**

NOTE: The template should sit approximately 1.5 inches over the "top right" corner of the air inlet cowl.

Figure 4: Hood modification template

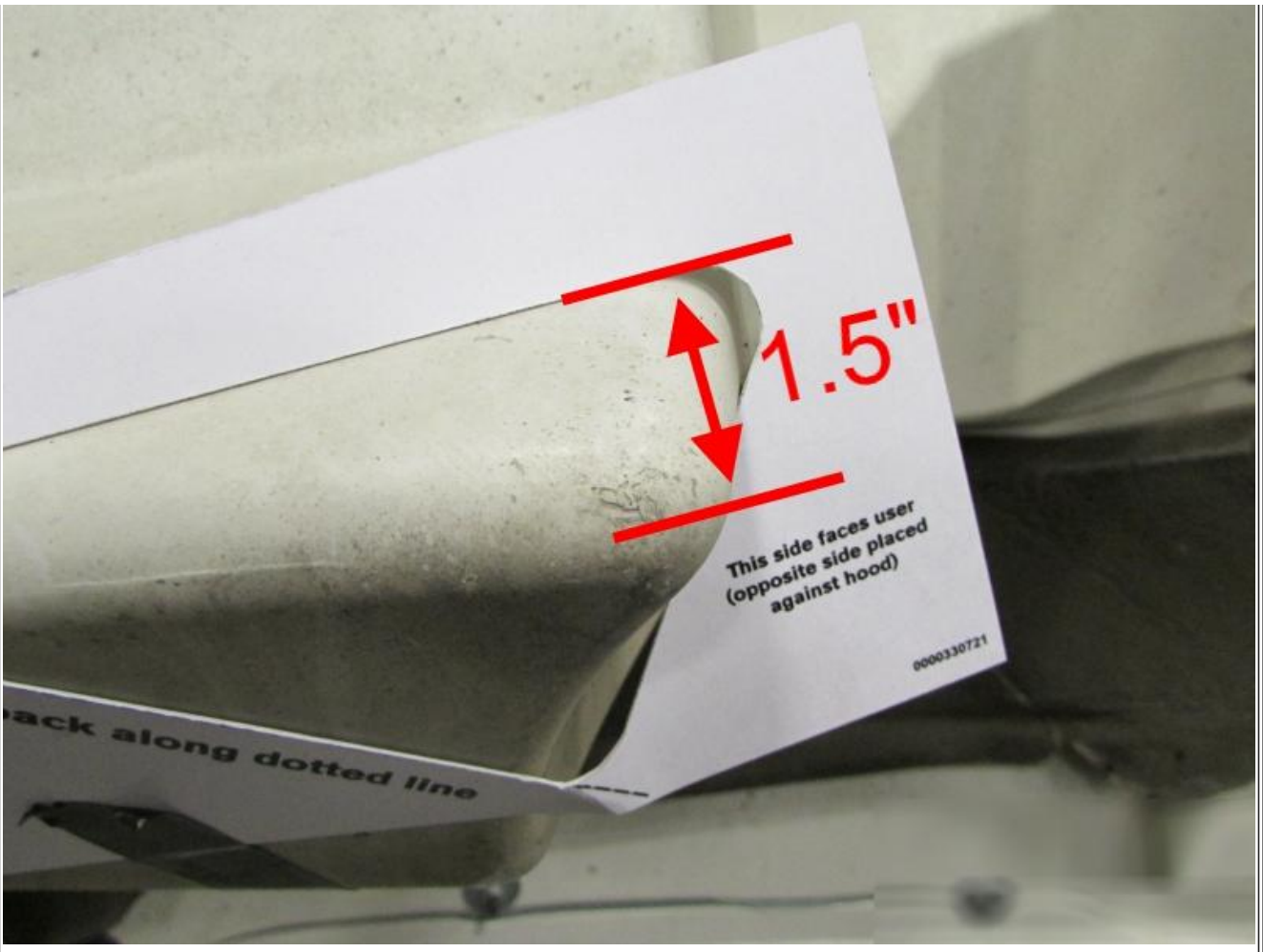

Figure 5: Hood modification template position

3. Use a marker to transfer the outline of the template onto the air inlet cowl.

Figure 6: Template traced on air inlet duct.

4. Use a cut-off wheel die grinder to remove the outlined section of the air inlet cowl.

Figure 7: Die grinder material removal.

5. Use the 3M pad (and tool) to rough up the area (roughly 7x7 inch square) around the removed section.

NOTE: Sandpaper can be substituted, if necessary. Ensure no dirt/debris are still on the cowl and the surface finish is rough.

Figure 8: Sanding/roughing of the patch area.

6. Use an air gun to clean the dust from the patch area.

7. Cut a section of the Easy Patch into a 6 x 6 inch square.

8. Remove the Easy Patch backing and apply to the air inlet duct, as shown in **Figure 9**. Form the patch into place (pressing firmly) and then remove the protective plastic film.

Figure 9: Patch placed and formed.

9. Allow the patch to dry with UV light for 10 minutes. Alternatively, let the hood/patch sit in direct sunlight for 10 minutes (drying times will vary depending on lighting conditions). Once dry, the patch will no longer be "tacky" and will be similar hardness to the cowl parent material.

10. Reinstall the front inner fender

WARRANTY INFORMATION

Claim Requirements/Approvals:

No special requirements.

Warranty Claim Coding:

Group:	16003 - Cab
Noun:	309 - Hood

Standard Repair Times:

Step	Description	Chassis	Engine	SRT	Hours

	CACOT Sensor Replacement	ProStar+113	MF 11/13 or N13	R12-8013U	0.4
	Hood Alteration	ProStar+113	MF 11/13 or N13	R20-1003A	0.8

SRT Manual

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