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Document ID: IK1300189

Availability: ISIS, FleetISIS, NotSIR

Revision: 2

Major System: TRANSMISSION

Created: 1/21/2022

Current Language: English

Last Modified: 9/14/2023

Other Languages: NONE

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Viewed: 334

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Coding Information

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Title: HV Enhanced Transfer Case Cooling Up-fit

Applies To: HV

Change Log

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

09/12/2023 - Updated Meritor retrofit document for enhanced cooling
06/10/2022 - Updated visibility
03/09/2022 - Initial Article Release.

Description

This article is to walk through transfer case enhanced cooling up-fit on HV model vehicles equipped with MTC4208/4210 transfer cases

Symptoms

Customer Observations or Concerns:

- Oil leak under the vehicle
- Excessive noises coming from the transfer case area
- Transfer case engagement/functionality concerns

Special Tools / Software

Tool Description	Tool Number	Comments	Instructions

Not Applicable			
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Service Parts Information

Part Description	Part Number	Quantity Required	Notes
Transfer Case Enhanced Cooling Up-fit Kit	KIT2967	1	Bring XLEV Spec transfer case to XLEC Spec (compatible with MTC4208 and MTC4210)
Transfer Case Cooler	2522542C91	1	Larger cooler for enhanced cooling
Cooler Relocation Bracket - Long side	2522565C1	1	1 of 2 Required for larger cooler mounting and relocation
Cooler Relocation Bracket - Short side	2522566C1	1	2 of 2 Required for larger cooler mounting and relocation
Bracket to bracket bolt	40222R1	2	For cooler relocation
Bracket to bracket nut	3535554C1	2	For cooler relocation
Cooler to bracket nut	30986R1	4	For cooler relocation
Zip Ties	306132C1	2	For cooler relocation

Diagnostic Steps

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

WARNING! To prevent property damage, personal injury, and / or death, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.

WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent property damage, personal injury, and / or death, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent property damage, personal injury, and / or death, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

Figure 1 - Melted Speed Sensor



Step	Action	Decision
1	DIAGNOSTIC:	Yes: Continue to Step 2

Identify if an overheat condition within the transfer case has occurred (common observation would be an oil leak and/or melted speed sensor as shown in Figure 1 above)

YES/NO QUESTION?

Has an overheat condition occurred?

*****NOTE*** Every overheat condition is different, and depending on severity of overheat, a replacement of the transfer case may be required as the internal bearings can be affected. In less severe overheat situations, just a replacement of a speed sensor may suffice**

No: This iKNow document does not apply, reference Meritor service manual for appropriate diagnostics

Figure 2 - EC Spec Transfer Case

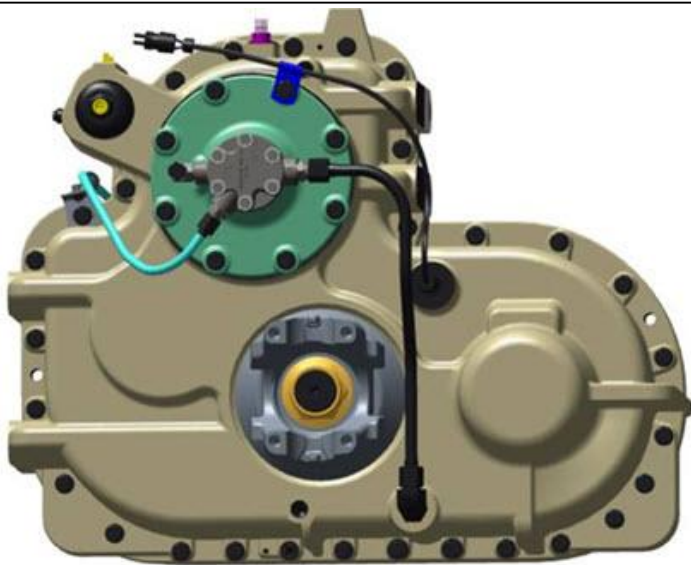
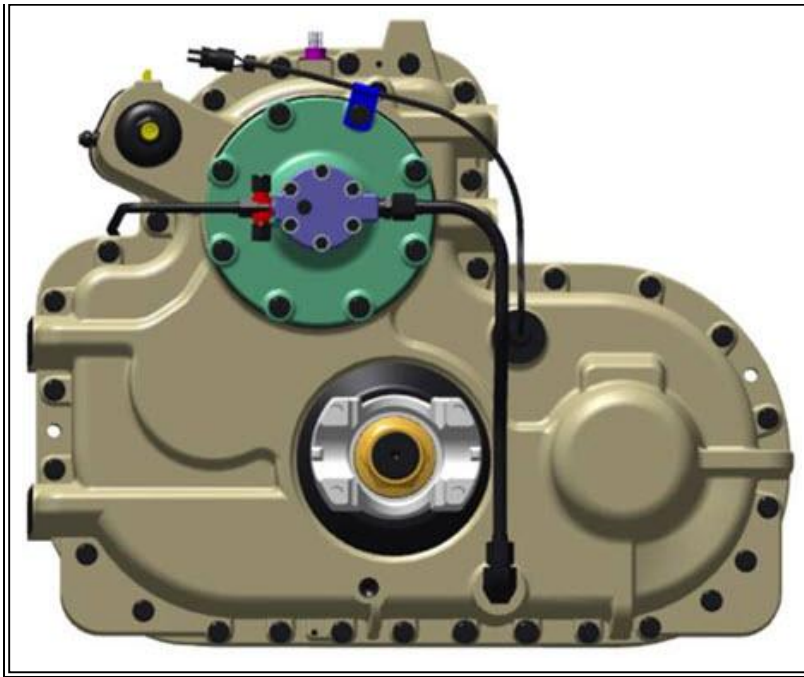


Figure 3 - EV Spec Transfer Case



Step	Action	Decision
2	DIAGNOSTIC: Using Figure 2 and Figure 3 above, identify if the unit is equipped with an EV or EC Spec Transfer Case (differences in the pump cover) YES/NO QUESTION? Is the unit equipped with an EC Spec Transfer Case?	Yes: Continue to Step 3
		No: Continue to Repair Steps - Transfer Case Enhanced Cooling Retrofit Procedure

Step	Action	Decision
3	DIAGNOSTIC: Identify transfer case cooler location, if the cooler is located in front of the unit or if it is located in the back behind the transfer case YES/NO QUESTION? Is the cooler located behind the transfer case in the back of the unit?	Yes: Continue to Step 4
		No: End of repair - if an overheat condition is still present, refer to Meritor service manual to assure proper oil fill

Step	Action	Decision
4	DIAGNOSTIC:	Yes: Continue to Repair Steps - Transfer Case Cooler Retrofit Procedure

Identify if the upgraded cooler has been installed.	
Original location being directly behind and blocked by the cross member mounted to the frame with straight horizontal brackets	
An upgraded cooler location being dropped down below the frame rail for enhanced air flow	
YES/NO QUESTION?	No: End of repair - if an overheat condition is still present, refer to Meritor service manual to assure proper oil fill
Is the cooler located in line with frame on straight horizontal brackets directly behind the cross member?	

Repair Step(s)

***Note - for optimal cooling, the transfer case needs to be at EC spec and the cooler needs to be located either in the front of the vehicle or retrofitted below the frame rail with the larger cooler

Transfer Case Enhanced Cooling Retrofit Procedure

1. This procedure will require part number KIT2967 to up-fit the XLEV spec transfer case to XLEC spec
2. Follow the attached Meritor procedure (click on the link) - [TRANSFER CASE OPTIMIZED-PERFORMANCE OIL PUMP CONVERSION PROCEDURE](#)
3. Return back to diagnostic steps to identify if a cooler retrofit is also required

Transfer Case Cooler Retrofit Procedure

1. Follow the attached cooler relocation procedure (click on the link) - [Transfer Case Oil Cooler Retrofit Instructions](#)
2. End of repair

Warranty Information

Warranty Claim Coding:

Refer to the [Warranty Coding Manual](#) for Group and Noun Codes.

Standard Repair Time(s):

Refer to the [SRT Manual](#) for Repair Times

Other Resources

[Master Service Information Site](#)

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