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**Availability:** ISIS, Bus ISIS, FleetISIS, IsSIR **Revision:** 0  
**Major System:** TRANSMISSION **Created:** 1/9/2020  
**Current Language:** English **Last Modified:** 1/30/2020  
**Other Languages:** NONE **Author:** Gintarus Andriusis  
**Viewed:** 105

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Coding Information

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**Title:** Reduced ISB Exhaust Brake Efficiency

**Applies To:** Bus, MV, HV, DuraStar, vehicles with Allison 1000/2000 series transmissions

## CHANGE LOG

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

01/30/2020 - Initial Article Release.
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## DESCRIPTION

Driver may notice that the engine braking performance is limited. During braking the transmission does not downshift to a gear low enough to provide expected braking performance.

### NOTE:

The following repair procedure requires changes within Allison TCM parameters - Allison DOC and Allison TCM Reflash is required.

To find nearest Allison certified location use the link below:

- <https://www.allisontransmission.com/sales-service-locator>

## SYMPTOMS

**Diagnostic Trouble Codes & Dashboard Indicator Lights:**

DTC/Light	Description
No Faults or Warning Lights	

**Customer Observations or Concerns:**

- Weak/ineffective exhaust braking

## SPECIAL TOOLS / SOFTWARE

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Tool Description	Tool Number	Comments	Instructions
Allison DOC			
Allison TCM Reflash			

## SERVICE PARTS INFORMATION

Kit Description	Part Number	Quantity Required	Notes
Not Applicable			

## DIAGNOSTIC STEPS

Step	Action	Decision
1	<b>DIAGNOSTIC:</b> Verifying the complaint	<b>Yes:</b> Go to Step 2
	Does the vehicle seem to have weak engine brake due to the transmission not downshifting properly? <b>YES/NO QUESTION?</b>	<b>No:</b> End of Diagnostics - This repair procedure does not apply

Step	Action	Decision
2	<b>DIAGNOSTIC:</b> Verifying vehicle build date	<b>Yes:</b> Proceed to Repair Steps
	Does the vehicle have a built date of 11/02/2018 through 10/11/2019? <b>YES/NO QUESTION?</b>	<b>No:</b> End of Diagnostics - This repair procedure does not apply

## REPAIR STEPS

The following repair steps will walk through the procedure to update the J1939 Reception: EBC1 Engine Retarder Selection setting to allow for proper engine brake and preselect functionality.

### PROCEDURE:

Figure 1 - ACCT Main Page

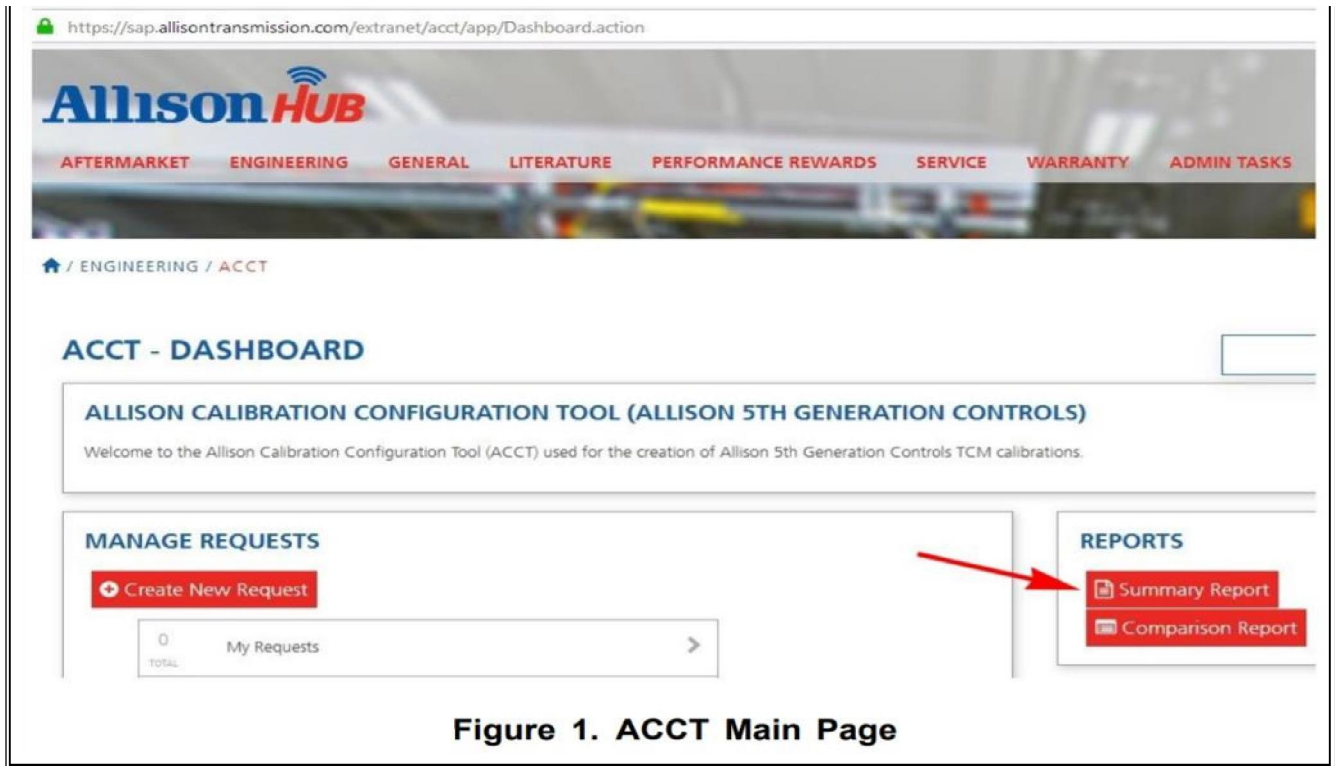


Figure 2 - Summary Report Generation

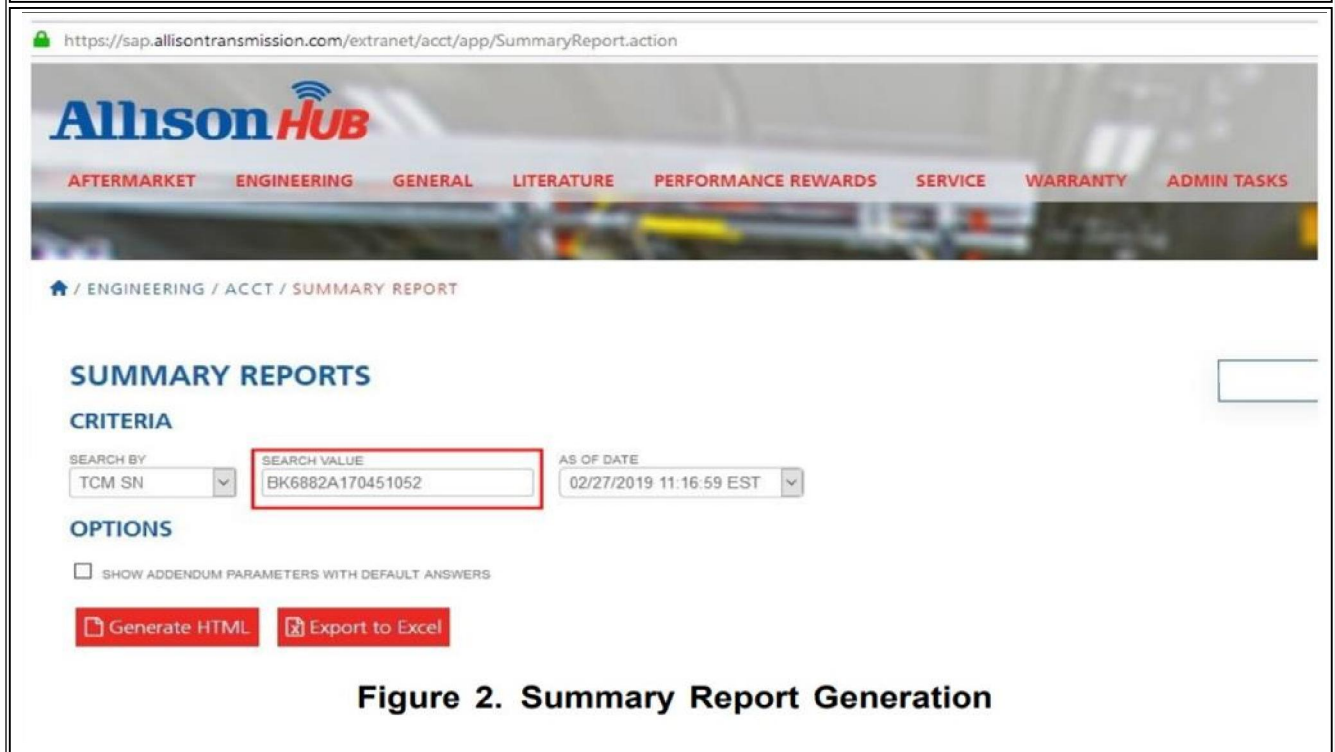


Figure 3 - Summary Report Verification

Features & Options - Interfaces			
GPIO Wire	Parameter	Setting	
I:102/157 O:104	ENGINE BRAKE INTERFACE [22000]	PRIMARY ON-VEHICLE PROTOCOL [1]	
	ENGINE BRAKE: Minimum Preselect Range [22020]	2ND RANGE [2]	
	ENGINE BRAKE: Alternate Minimum Preselect Range [22030]	6TH RANGE [6]	
	ENGINE BRAKE: Automatic Preselect Optimization [22040]	NONE [0]	
	J1939 RECEPTION: EBC1 Engine Retarder Selection [28040]	ENABLED [1]	
	HILL HOLD INTERFACE [30600]	DISABLED [0]	
	PTO DRIVE INTERFACE 1 [27030]	GPI C1 & GPO G1 IF DEFINED IN SELECTED GPIO PACKAGE [1]	
	PTO DRIVE INTERFACE 1: Maximum Engine Speed for Engagement [27040]	900	900 (std) 500 (min) 2600 (max)
	PTO DRIVE INTERFACE 1: Maximum Engine Speed for Operation [27050]	4000	4000 (std) 375 (min) 5000 (max)
	PTO DRIVE INTERFACE 1: Maximum Output Speed for Engagement [27060]	250	250 (std) 50 (min) 6000 (max)
	PTO DRIVE INTERFACE 1: Maximum Output Speed for Operation [27070]	300	300 (std) 60 (min) 6000 (max)
	PTO DRIVE INTERFACE 1: Torque Limiting [27082]	DISABLED [0]	
	PTO DRIVE INTERFACE 1: Torque Limit [27083]	1084	1084 (std) 100 (min) 1084 (max)
	PTO DRIVE INTERFACE 1: Drive Ratio (Percentage of Engine Speed) [27084]	120	120 (std) 75 (min) 200 (max)
	PTO DRIVE INTERFACE 2 [27090]	DISABLED [0]	
	REVERSE INHIBIT WITH PRESELECT REQUEST INTERFACE [27150]	DISABLED [0]	
	RETARDER [20000]	NOT PRESENT [0]	

**Step 1:** Using Allison TCM Reflash software, enter the TCM Serial Number or VIN into the 5th Generation Controls database. The system will correct the calibration setting for the TCM when the calibration is downloaded. Reprogram the TCM with the updated calibration.

**NOTE:**

- Do NOT use Allison DOC to upload the calibration file from the TCM or to change any TCM settings prior to reflashing the TCM. Uploading or changing the calibration file with Allison DOC will overwrite the corrected parameters in the Allison database.

**Step 2:** If the internet access was not available when reflashing the TCM, log-on to Allison TCM Reflash as soon as internet access is available. Go to the File menu and select Upload Logs to return verification (VER) file(s) to the Allison database. This will allow confirmation of the new settings and ensure that future service events will use the proper settings.

**Step 3:** Wait 10 - 20 minutes before proceeding to Step 4. This will ensure adequate time for system processing of the returned verification (VER) file(s). Since Allison DOC does not display this parameter, ACCT (Allison Calibration Configuration Tool), which is available on the Allison HUB, must be used to confirm that the parameter was set properly during the Allison TCM Reflash event.

**Step 4:** Using ACCT, verify that the parameter 28040: J1939 EBC1 Engine Retarder Selection is set to Enabled [1] on the Calibration Summary Report.

1. Choose Summary Report from ACCT main page on the Allison HUB. Refer to Figure 1.
2. Enter the TCM Serial Number in the Search Value field. Wait for the As of Date field to populate. Then, Click Generate HTML. Refer to Figure 2
3. Verify that parameter 28040: J1939 Reception: EBC1 Engine Retarder Selection is set to Enabled [1] in the Features and Options - Interfaces section of the Calibration Summary Report. Refer to Figure 3. If it is Disabled [0], proceed to Step 5. If it is set to Enabled [1], proceed to Step 6.

**Step 5:** If the parameter 28040: J1939 Reception: EBC1 Engine Retarder Selection is set to Disabled [0], then a new calibration will be required to correct the issue. Submit a change request in ACCT or send the TCM serial number and a description of the issue to [calibration\\_support@allisontransmission.com](mailto:calibration_support@allisontransmission.com) - Use the title "Navistar 28040 Change". A Calibration Support Service Engineer will provide a Road Ready assembly number with the correct setting.

1. Using Allison TCM Reflash, enter the new Road Ready assembly number as the TCM assembly number in the 5th Generation Controls database. Load the calibration into the TCM.
2. Repeat Steps 2 through 4

**Step 6:** Include the following step if TCMs are going to be removed from vehicles and put into a different vehicle as a part of this action.

1. Using the Reprogramming feature in Allison DOC, program the new VIN into the TCM (this can only be done with the TCM connected to the vehicle).

**Step 7:** Service Procedure is complete, verify the repair.

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## **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

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## **OTHER RESOURCES**

[Master Service Information Site](#)

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