

Technical Service Bulletin: TSB240168Released Date: 13-Mar-2025Variable Geometry Turbocharger (VGT) Actuator Calibration Code: Fault Code 1894 or5177

# Variable Geometry Turbocharger (VGT) Actuator Calibration Code: Fault Code 1894 or 5177

### Warranty Statement

The information in this document has no effect on present warranty coverage or repair practices, nor does it authorize TRP or Campaign actions.

### Contents

#### **Product Affected**

Engines:

- X12 CM2450 X137B
- X15 CM2450 X142B
- B6.7 CM2450 B155B

Model Year:

• 2024

**Issue Summary** 

Symptom:

- Fault Code 1894
- Fault Code 5177

Root Cause:

Internal VGT actuator software malfunction

#### Verification

- Verify the variable geometry turbocharger (VGT) actuator installed is part number 6463632 or 6463633.
- Verify the engine build date is between December 2023 and August 2024.

Resolution

- Download the VGT actuator software with the latest revision even if already equipped with the latest revision using the Service Instructions below.
- See corresponding Service Manual. Reference Procedure 010-150 in Section 10.
- Clear fault codes and exit troubleshooting.
- Do not replace the VGT actuator.

#### Service Instructions

- Open INSITE<sup>™</sup> electronic service tool.
- Disconnect from the engine control module (ECM) if connected.
- Select Calibration Selection.
- Select ECM/PDD Code Search.

© Cummins Inc. © Cumn		
To search for the latest ECM/PDD Codes please select ECM/PDD Code Search ECM/PDD Code Search		
To download the calibrations to an ECM and a Programmable datalink device, please select the ECM/PDD button.		
Cumpins inc <sub>ECM/PDD</sub> O Cump		
Figure 1. ECM Calibration Selection Menu.		
Enter PDD Code 6463655 and select Search.		
<ul> <li>After the tool retrieves the calibration history, select Save then Exit.</li> </ul>		

C	Cummins INSITE – D ×			
	Status			
	To see calibration history, click on the Calibration History button. To save the latest calibration files to your computer, click the Save button.			
	Warranty Information         Please refer to the ECM Calibration Guidelines (111-502-002) in Section 2 of the Warranty         Administration Manual to determine if an ECM calibration update can be covered by Cummins         warranty. You can locate the ECM Calibration Guidelines by searching for 111-502-002 in			
C	Please select any option of ECM or PDD for searching the calibration code: O ECM    PDD  ECM/PDD Code: 6463655  Search			
	For PDD, enter Software Part Number. Local/Network search not applicable for PDD.       Save     Calibration History       Help     Exit			
	00r01867			
	Figure 2, ECM/PDD Code Search.			
Conne	ct the electronic service tool to the J1939 data link, located in the vehicle cab. Turn			
keyswitch to ON position.				
Select Connect to ECM IN INSTILE <sup>®</sup> electronic service tool.     Select Calibration Selection				
<ul> <li>Select</li> </ul>				
<ul> <li>Science Low/FDD.</li> <li>Expand the Calibration Workspace until the list of Turbo Actuator Controllers is visible</li> </ul>				
<ul> <li>Select</li> </ul>	<ul> <li>Select the actuator bardware part number on the turbocharger</li> </ul>			
<ul> <li>In the list of calibrations to the right choose calibration 6463655. Right click and choose</li> </ul>				
"Trans	"Transfer to Device" or select on "Send to ECM" button on toolbar.			



© Cumr	C Programmable Datalink Device Calibration ×			
	Instructions			
	Adjusting Turbo Actuator Controller Changes are about to be made to the device. While Adjusting the Turbo Actuator Controller, do not change the key state unless instructed to do so. Click Send to begin download or click cancel to leave the device unchanged.			
	Selected Product Name:			
	Turbo Actuator Controller			
	Selected Hardware Part Number:			
	6463632			
	Selected Software Part Number:			
	6463655			
	Detected Devices			
	V 0x02 6463655 232913366			
© Cumn	nins inc. Send Cancel			
	Detecting Devices			
	Status			
	Please wait while INSITE is checking for compatible devices.			
	Detection Complete. 00r01869			
Figure 4, Pr	ogrammable Device ECM Calibration Download Wizard.			
	baura a membera ala as tha Drammanahla Datalink Davias Oslihustian			
<ul> <li>when Reflash Status shows complete close the Programmable Datalink Device Calibration</li> </ul>				
window.				
Clear Fault Codes and	move vehicle keyswitch to the OFF position for 100 seconds then back			
	move vehicle keyswitch to the off position for foo seconds then back			
to ON.				

• Confirm Fault Code 1894 or 5177 do **not** return and exit troubleshooting.

## **Document History**

Date	Details
2024-8-28	Module Created
2024-12-13	Updated Product Affected list to remove X124B and X134B, symptom section and removed additional statement in verification section that was deemed unnecessary.
2025-3-7	Non-Product Problem Solving (PPS)