ALLISON LCT1000
LATE & HARSH SHIFTS

COMPLAINT: A 2005 Chevrolet 2500 HD with 6.6 Liter Diesel Engine and the Allison LCT 1000 Transmission has a complaint of late and extremely harsh up and down shifts after a used TCM was installed. The scan tool reveals DTCs P1688 for Unmanaged Engine Torque Signal Delivered to TCM and P1779 for Engine Torque Signal Below Lower Limit Detected. This complaint was not present before the used TCM was installed.

CAUSE: This vehicle is equipped with the Duramax 6.6 Liter Diesel Engine, the used TCM that was installed was programmed for a vehicle with an 8.1 Liter Gasoline Engine. The incorrect programing is what is causing the late and harsh shift conditions as well as the codes that were set.

CORRECTION: Erase the TCM programming for the 8.1 Liter Engine and program the TCM for the 6.6 Liter Diesel Engine application.

SERVICE INFORMATION:

After some research, it was discovered that these codes can only be set by a TCM that is programmed for an 8.1 Liter Gasoline Engine.

When retrieving the diagnostic procedure for both of these codes, step 5 of the procedure suggests that the proper software and calibration be verified as seen in figure 1.

Many Thanks to Larry at Walkers Service Center in Fayetteville, AR for sharing his experience with ATSG which made this bulletin possible.

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Step	Action	Value	Yes	No
Schematic Reference: Automatic Transmission Controls				
1	Did you perform the Diagnostic System Check-Vehicle?	—	Go to Step 2	Go to Diagnostic System Check -Vehicle
2	1. Install a scan tool. 2. Turn ON the ignition, with engine OFF. 3. **Important:** **Before clearing the DTC, use the scan tool in order to record the Freeze Frame and Failure Records for reference. The clear Codes Info will erase data.** Record the DTC Freeze Frame and Failure Records. 4. Turn OFF the ignition. 5. Disconnect the TCM C1 Connector (Gray). 6. Inspect the C1 Connector Terminal 16 for a pulled back, unlocked terminal or visible terminal damage. Did you find and correct a condition?	—	Go to Step 8	Go to Step 3
3	1. Disconnect PCM Connector C2 (Red). 2. Inspect Terminal 5 for a pulled back, unlocked terminal or visible terminal damage. Did you find and correct a condition?	—	Go to Step 8	Go to Step 4
4	1. Turn OFF the ignition. 2. Disconnect TCM connector C1 (Gray) and PCM Connector C2 (RED). 3. Using a DMM, test the delivered torque signal circuit between Terminal 16 of the TCM and Terminal 5 of the PCM for a short to ground. Did you find and correct a condition?	—	Go to Step 8	Go to Step 5
5	**1. Verify that the PCM has the proper model year software and calibration. This wiring option is only used with the 8.1 Liter Gasoline Engine.** **Was the software and calibration current and proper for the engine?**	—	Go to Step 7	Go to Step 6
6	Install the correct PCM Calibration. Is the calibration complete?	—	Go to Step 8	—
7	Replace the PCM. Did you complete the replacement?	—	Go to Step 8	—
8	Perform the following procedure in order to verify the repair. 1. Select DTC. 2. Select Clear Info. 3. Operate the vehicle under the following conditions: > Vehicle at operating temperature. > Engine speed greater than 200 rpm. > All conditions met for 2 seconds. 4. Select specific DTC. 5. Enter DTC P1779. Has the test run and passed?	—	System OK	Go to Step 1

Figure 3