### IMPORTANT CUSTOMER SATISFACTION CAMPAIGN

This notice applies to your vehicle. Refer to the provided list.

Original Equipment Manufacturer Customer Satisfaction Campaign benefiting Altec installed equipment.

Dear Altec Owner,

This notice is sent to you in accordance with the National Traffic and Motor Vehicle Safety Act and the Canada Motor Vehicle Safety Act.

Altec Industries, Inc. has received notification from an Original Equipment Manufacturer (OEM) that a condition exists. This condition relates to the operation or customer satisfaction of the unit when equipped with an Altec aerial device or equipment.

Refer to the attached documentation that follows this letter. If you have additional questions, please contact your Altec Account Manager. You may also contact the OEM using the contact information provided in the attached recall notice.

If you had this repair performed before you received this letter, you may be eligible to receive reimbursement for the cost of obtaining a pre-notification remedy of the problem associated with this recall.

If you have sold or retired the unit, update the records through Altec Connect. If you have leased this equipment to another person or company, you are required by Federal Law to forward a copy of this notice to the lessee by first class mail within ten (10) days of the receipt of this notice.

We appreciate your assistance in following this action in the interest of your continued satisfaction with Altec products.

Thank you for your immediate attention on this important matter.

# PAttec COMPONENT/SUPPLIER RECALL CSR-3032-A

# Power Take-off Control Module: Programming and Setup (Chevrolet Service Bulletins 22-NA-075 & 22-NA-101)

**Units Affected:** Certain 2019 to 2022 Chevrolet Silverado 4500HD, 5500HD, and 6500HD vehicles. Verify your unit is affected by reviewing the attached list or accessing Altec Connect.

**Background:** Altec is committed to providing our customers reliable products from initial delivery throughout the useful life of the machine.

Some Customers may comment that the power take-off (PTO) will kick out and/or disengages intermittently. In addition, some customers may comment on one or more of the following:

- Rapid engine surge at high altitude
- Engine stall when operating the PTO (engine denied request)
- PTO is active (active 50-55 HP) high torque PTO

General Motors (GM) Engineering has developed an update for the above conditions. Refer to the included service bulletins from GM for more information.

**Customer Action:** Contact your local Chevrolet Medium Duty Truck Dealer to complete the software updates described in Service Bulletins 22-NA-075 and 22-NA-101. Completion of these updates will require programming as described in K44, Document ID-5616767, which is also included with this notice.

This update is not classified as a recall. However, Altec suggests completion of this update for your continued satisfaction with your Altec equipment. Reprogramming the chassis ECM can affect the operation of your Altec equipment. Follow the instructions in K44, Document ID-5616767, to ensure the chassis parameters are properly set for operation of the Altec equipment.

**Requirements:** Altec is not able to perform this repair. The work must be completed by an authorized Chevrolet Medium Duty Truck Dealer.

**Completion and Warranty:** This repair is not covered under the Altec Warranty Policy. Reprogramming of the Altec parameters following these updates will be at the customer or dealer's expense. Follow the instructions in K44, Document ID-5616767, to prevent additional reprogramming costs.

#### **Altec Contact Info:**

Altec Connect: connect.altec.com/login

Phone: 1-877-GO ALTEC (1-877-462-5832) | Options: 1 - Parts; 2 - Shop Service; 3 - Mobile Service;

4 - Technical Support; 5 - Global Rental Service Request; 6 - Chassis Repair

Altec Use Only			
Inspection labor	0 hr		
Repair labor	0 hr		
Account #	NA		
Travel	Not included		
NHTSA code	1		
Prime fail P/N	NA		
Doc ref	NA		

Altec Use Only				
Description	Part No.	Qty	Warranty	
-	-	-	-	

Page 1 of 1 Released: November 9, 2022

2022 Chevrolet Silverado 4500HD, 5500HD and 6500HD | Silverado 4500HD, 5500HD, and 6500HD Service Manual 14731008 Transmission | Power Take-Off | Repair Instructions | Document ID: 5616767

## K44 Power Take-off Control Module: Programming and Setup

**Table 1:** Power Take-Off Module Programmable Parameters **Table 2:** Recommended Settings For PTOM Parameters

#### **Copy and Restore**

#### Copy:

When replacing the Power Take-Off module (PTOM) prior to disconnecting any electrical connections it is recommended that the Copy portion of the PTOM Copy and Restore procedure is run using the GDS2 Scan Tool. This application is available under Module Diagnostics>(K44) Power Take-Off Module>Configuration/Reset Functions>PTO Operation Mode>Copy and Restore. Follow the steps for copying the PTO settings. Once the Copy function is complete the PTOM can now be disconnected and replaced.

#### **Restore:**

Once the PTOM has been replaced and all electrical connections have been made, the Restore portion of the procedure can be performed. This portion restores any settings that may have been set in the removed PTO module and may have been unique for the vehicle's usage and/or application.

#### Note:

If communications by GDS2 with the to be replaced PTO module cannot be established, the settings, beyond the factory defaults, will need to be reconfigured to the customers requirements for proper PTO operation. This may be accomplished as noted in the Module Setup section below.

#### **Programming**

The power take-off module (PTOM) requires no programming or setup. When the PTOM is replaced, all programmable parameters will be defaulted back to factory settings.

#### **Module Setup**

The power take-off module requires that several parameters be setup according to customer requirements. Refer to the table below for available parameters and recommended setting. Refer to the GM Upfitter Integration website, <www.gmupfitter.com>, for the latest Power Take Off (PTO) Operating Description and Application Guide bulletin, which has extensive information about the power take-off system.

Note: When programming the PTO control module be sure to verify the ECM PTO options (stationary, variable or mobile) are synchronized with the PTOM. Example, if the PTOM is set to stationary mode then the ECM must also be set to stationary mode. If the two modules are not synchronized no PTO idle up will occur. The critical parameters are listed below:

- Remote engine shutdown
- Maximum PTO engine speed

#### **Power Take-Off Module Programmable Parameters**

Parameter	Available In Mode	Factory Default Setting	

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Parameter	Stationary Preset			Factory Default Setting
	Stationary Preset	Stationary Variable	Mobile	
PTO Mode	X	Х	Х	Preset
PTO In-Cab Control	Y	Y	Υ	Enabled
PTO Remote Control	Y	Y	N	Disabled
Type Of (Exterior) Set Switch Operation	Υ	Y	N	Momentary
Press "ON" Then Go To Preset 1 Speed	Υ	N	N	Disabled
PTO Standby RPM	Υ	Y	Υ	850 RPM
PTO Preset 1 Speed	Υ	Y	Υ	1250 RPM
PTO Preset 2 Speed	Υ	Y	Υ	1700 RPM
Maximum PTO Operating Speed	Υ	Y	Υ	2100 RPM
Tap Step	N	Y	Υ	100 RPM
Ramp Rate	Υ	Y	Υ	200 RPM/Sec
Maximum Vehicle Speed	N	N	Υ	129 KPH (80 MPH)
Minimum Remote Accelerator Voltage	Υ	Y	N	0.25 V
Maximum Remote Accelerator Voltage	Y	Y	N	4.75 V

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Parameter		Factory Default Setting		
,	Stationary Preset	Stationary Variable	Mobile	-
Action When Remote Set Switch Transitions To Low Voltage (<1.66 V)	Υ	N	N	Go to Set Speed 1
Remote Set Switch Transition To Open State (Between >1.66 V And <3.33 V)	Y	N	N	Go to Standby Speed
Remote Set Switch Transition To High Voltage (>3.33 V)	Υ	N	N	Go to Set Speed 2
Remote Engine Start	Υ	Y	N	Disabled
Remote Engine Shutdown	Υ	Y	N	Disabled
Load Feedback	Υ	Υ	Υ	Disabled
Engage Relay	Υ	Υ	Υ	Disabled
Keep Relay Engaged During Braking	N	N	Y	Disabled
Action After Brake Is Released	N	N	Y	RETURN TO BASE IDLE RPM
Auto Engine Shutdown Timer	Y	Y	N	Disabled
Engine Shutdown Due To Critical Engine Condition	Υ	Y	N	Disabled
Engine Shutdown Warning	Υ	Y	N	Disabled

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Parameter		Factory Default Setting		
	Stationary Preset	Stationary Variable	Mobile	
Set Low Fuel Level For Engine	Υ	Υ	N	Disabled
Maximum PTO Engine Speed	Υ	Y	Υ	1800 RPM
Maximum PTO Engage Speed	Υ	Y	Υ	1500 RPM

### **Recommended Settings For PTOM Parameters**

Programmabl Parameter	<sup>e</sup> Preset	Variable	Mobile	Range	Notes
PTO Mode	Default	Available	Available	-	_
PTO In-Cab Control	Enable/Disable	Enable/Disable	Enable/Disable	_	-
PTO Remote Control	Enable/Disable	Enable/Disable	Enable/Disable	-	-
Type Of (Exterior) Set Switch Operation	Momentary/Lat	c <b>lMog</b> nentary/Lat	្ <b>រMog</b> nentary/Lat	ching —	_
Press "ON" Then Go to Preset 1 Speed	Disabled	Enable/Disable	N/A	N/A	In cab ON switch. Remote enable after arming.
PTO Standby RPM	Within Range	Within Range	Within Range	Base Idle- 3100 RPM	Base idle overrides if higher.
PTO Preset 1 Speed	Within Range	RPM Capture Or Tap Down	RPM Capture Or Tap Down	Above Standby– 3100 RPM	Set (-) switch internal. Set switch external-disabled in mobile. Both can be enabled

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Programmabl Parameter	<sup>e</sup> Preset	Variable	Mobile	Range	Notes
PTO Preset 2 Speed	Within Range	Resume Or Tap Up	Resume Or Tap Up	Above Standby– 3100 RPM	Set (+) switch internal. Set switch external- disabled in mobile. Both can be enabled simultaneously.
Maximum PTO Operating Speed	Within Range	Within Range	Within Range	Base Idle- 3100 RPM	
Tap Step	Within Range	Within Range	Within Range	4-500 RPM	_
Ramp Rate	Within Range	Within Range	Within Range	4–1000 RPM/Second	Setting applies to remote switch inputs and remote throttle (Potentiometer inputs.
Maximum Vehicle Speed	N/A	N/A	Within Range	30 KPH (19 MPH) to 129 KPH (80 MPH)	Applies to mobile only.
Minimum Remote Accelerator Voltage	N/A	Within Range	N/A	0-2.5 V	Remote throttle must be enabled for parameter to apply.
Maximum Remote Accelerator Voltage	N/A	Within Range	N/A	2.5-5.0 V	Remote throttle must be enabled for parameter to apply.
Action When Remote Set Switch Transitions To Low Voltage (<1.66 V)	See Range	N/A	N/A	Go To Standby, Set 1 Or Set 2	Defines PTO system action when remote set switch input goes low.

Programmabl Parameter	<sup>e</sup> Preset	Preset Variable		Range	Notes
Remote Set Switch Transition To Open State (Between >1.66 V And <3.33 V)	See Range	N/A	N/A	Go To Standby, Set 1 Or Set 2	Defines PTO system action when remote set switch input goes to open state.
Remote Set Switch Transition To High Voltage (>3.33 V)	See Range	N/A	N/A	Go To Standby, Set 1 Or Set 2	Defines PTO system action when remote set switch input goes to +5 V reference.
Remote Engine Start	Enable/Disable	Enable/Disable	N/A	_	Requires remote switches.
Remote Engine Shutdown	Enable/Disable	Enable/Disable	N/A	I	Requires remote Switches.
Load Feedback	Enable/Disable	Enable/Disable	Enable/Disable	ı	Requires remote wiring.
Engage Relay	Enable/Disable	Enable/Disable	Enable/Disable	1	Requires remote relay.
Keep Relay Engaged During Braking	N/A	N/A	Enable/Disable	I	П
Action After Brake Is Released	N/A	N/A	Return to base idle RPM — Return to standby RPM	_	_
Auto Engine Shutdown Timer	Enable/Disable	Enable/Disable	N/A	4 minutes — 7 hours	_

Programmabl Parameter	e Preset Variable		Mobile	Range	Notes
Engine Shutdown Due To Critical Engine Condition	Enable/Disable	Enable/Disable	N/A	I	Oil Pressure, Hot Engine, Hot Transmission, Low Oil, Low Fuel, Diesel Particulate Filter Regeneration Required
Engine Shutdown Warning	Enable/Disable	Enable/Disable	N/A	7 minutes	If PTO operation is continued when critical engine conditions are present, a horn chirp warning will occur after 2 to 5 minutes. The engine will be shutdown 2 minutes after the horn warning.
Set Low Fuel Level For Engine	N/A	Enable/Disable	N/A	15–25 % Fuel Level	_
Maximum PTO Engine Speed	Within Range	Within Range	Within Range	950-3100 RPM	_
Maximum PTO Engage Speed	_	_	-	Base Idle- 1800 RPM	_



# Service Bulletin

Bulletin No.: 22-NA-075

Date: April, 2022

# **TECHNICAL**

**Subject: Engine Control Module Update** 

Brand:	Model	Model Year: VIN:		Engine:	Transmission:		
Dianu.	Wodel.	from	to	from	to		
Chevrolet	Silverado 4500HD, 5500HD, 6500HD	2019	2020			L5D	

Involved Region or Country	North America
Additional Options (RPOs)	
Condition	Some customers may comment on one or more of the following:  Rapid engine surge in high altitude  Engine stall with operating the PTO (engine denied request)  PTO is active (active 50–55 HP)
Cause  The cause of the condition may be a software anomaly.  GM Engineering has developed an update for the above conditions.	
Correction	Please check for and install the latest Engine Control Module (ECM) update. If no updates are available, continue with normal SI diagnostics.

#### **Service Procedure**

**Caution:** Before downloading the update files, be sure the computer is connected to the internet through a network cable (hardwired). DO NOT DOWNLOAD or install the files wirelessly. If there is an interruption during programming, programming failure or control module damage may occur.

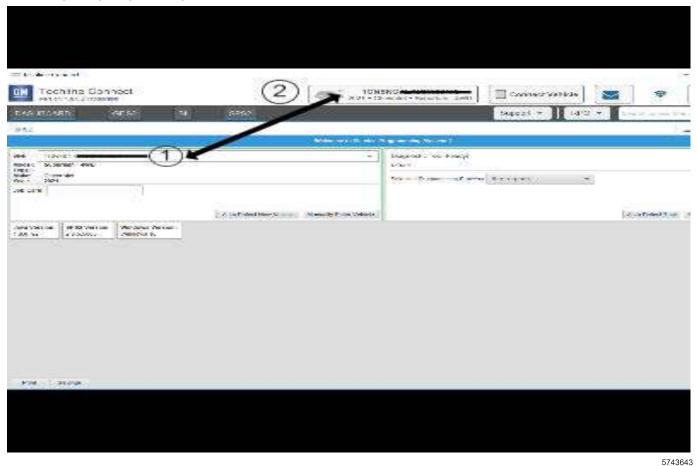
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. Install a GM Authorized Programming Support Tool to maintain system voltage. Refer to <a href="www.gmdesolutions.com">www.gmdesolutions.com</a> for further information. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Follow the on-screen prompts regarding ignition power mode, but ensure that anything that drains excessive power (exterior lights, HVAC blower motor, etc) is off
- Clear DTCs after programming is complete.
   Clearing powertrain DTCs will set the Inspection/ Maintenance (I/M) system status indicators to NO.

Important: The service technician always needs to verify that the VIN displayed in the TLC left side drop down menu and the top center window match the VIN plate of the vehicle to be programmed prior to using Service Programming System 2 (SPS2) for programming or reprogramming a module.

- For the TLC application, service technicians need to always ensure that the power mode (ignition) is "ON" before reading the VIN from the vehicle's VIN master module and that they do not select a VIN that is already in the TLC application memory from a previous vehicle.
- If the VIN that shows up in the TLC top center window after correctly reading the VIN from the vehicle does not match the VIN plate of the vehicle, manually type in the VIN characters from the vehicle VIN plate into the TLC top center window and use these for programming or reprogramming the subject module with the correct vehicle VIN and software and/or calibrations.
- The Engine Control Module (ECM) is the master module (for VIP vehicles) that TLC reads to determine the VIN of the vehicle. If the VIN read from the vehicle by TLC does not match the VIN plate of the vehicle, the ECM also needs to be reprogrammed with the correct VIN, software and calibrations that match the vehicle's VIN plate.

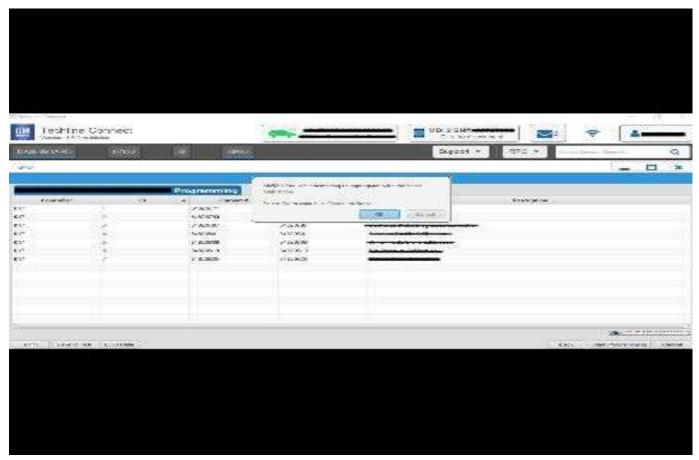
 The Body Control Module (BCM) is the master module (for GEM vehicles) that TLC reads to determine the VIN of the vehicle. If the VIN read from the vehicle by TLC does not match the VIN plate of the vehicle, the BCM also needs to be reprogrammed with the correct VIN, software and calibrations that match the vehicle's VIN plate.

**Caution:** Be sure the VIN selected in the drop down menu (1) is the same as the vehicle connected (2) before beginning programming.



**Important:** If the vehicle VIN DOES NOT match, the message below will be shown





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**Important:** Techline Connect and TIS2WEB screens shown above.

**Important:** If the same calibration/software warning is noted on the TLC or SPS Summary screen, select OK and follow screen instructions. After a successful programming event, the WCC is located in the Service

Programming System dialogue box of the SPS Summary screen. No further action is required. Refer to the Warranty section of the bulletin.

1. Reprogram the Engine Control Module. Refer to K20 Engine Control Module: Programming and Setup in the Service Manual.





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**Note:** The screenshots above are an example of module programming and may not be indicative of the specific module that is being programmed. Module selection and VIN information have been blacked out.

**Important:** To avoid warranty transaction rejections, you **MUST** record the warranty claim code provided on the Warranty Claim Code (WCC) screen shown above on the job card. Refer to callout 1 above for the location of the WCC on the screen.

2. Record Warranty Claim Code on job card for warranty transaction submission.

### **Warranty Information**

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
*2810075	Engine Control Module Reprogramming with SPS	Use Published Labor Operation Time

Important: \*To avoid warranty transaction rejections, carefully read and follow the instructions below:

- The Warranty Claim Code must be accurately entered in the "SPS Warranty Claim Code" field of the transaction.
- When more than one Warranty Claim Code is generated for a programming event, it is required to document all Warranty
  Claim Codes in the "Correction" field on the job card. Dealers must also enter one of the codes in the "SPS Warranty Claim
  Code" field of the transaction, otherwise the transaction will reject. It is best practice to enter the FINAL code provided by
  SPS/SPS2.

#### Warranty Claim Code Information Retrieval

If the Warranty Claim Code was not recorded on the Job Card, the code can be retrieved in the SPS2 system as follows:

- Open TLC on the computer used to program the vehicle.
- 2. Select and start SPS2.
- 3. Select Settings.
- 4. Select the Warranty Claim Code tab.

The VIN, Warranty Claim Code and Date/Time will be listed on a roster of recent programming events. If the code is retrievable, dealers should resubmit the transaction making sure to include the code in the SPS Warranty Claim Code field.

Version	1
Modified	Released April 05, 2022



Bulletin No.: 22-NA-101

Date: May, 2022

# **TECHNICAL**

Subject: PTO (Power Take-Off) Kicks Out or Intermittently Disengages Unwanted

Brand:	Model:	Model Year:		VIN:		Engine	Transmission:
	Wiodei.	from	to	from	to	Engine:	Transmission.
Chevrolet	Silverado 4500HD, 5500HD, 6500HD	2019	2022				

Involved Region or Country	United States, Canada, Mexico	
Additional Options (RPOs)		
Condition	Some customers may comment that the PTO (Power Take Off) will kick out and/or disengages intermittently.	
Cause	The cause of the condition may be a software concern with the Power Take Off Control Module (PTOM).	
Cause	The condition may happen if the wheel speed sensor has noise or shows movement with the PTO engaged.	
Correction	Reprogram the Power Take-Off Control Module.	

#### Service Procedure

**Caution:** Before downloading the update files, be sure the computer is connected to the internet through a network cable (hardwired). DO NOT DOWNLOAD or install the files wirelessly. If there is an interruption during programming, programming failure or control module damage may occur.

- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. Install a GM Authorized Programming Support Tool to maintain system voltage. Refer to <a href="www.gmdesolutions.com">www.gmdesolutions.com</a> for further information. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Follow the on-screen prompts regarding ignition power mode, but ensure that anything that drains excessive power (exterior lights, HVAC blower motor, etc) is off

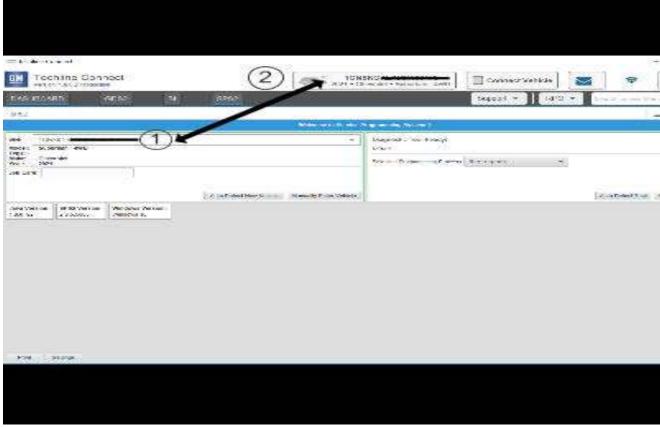
- Please verify that the radio time and date are set correctly before inserting USB drive into vehicle for programming, otherwise an error will result.
- Clear DTCs after programming is complete.
   Clearing powertrain DTCs will set the Inspection/ Maintenance (I/M) system status indicators to NO.

**Important:** The service technician always needs to verify that the VIN displayed in the TLC left side drop down menu and the top center window match the VIN plate of the vehicle to be programmed prior to using Service Programming System 2 (SPS2) for programming or reprogramming a module.

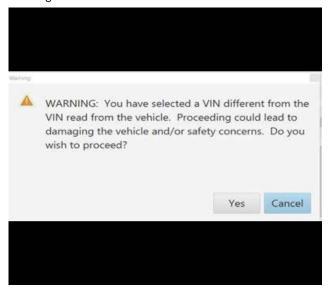
- For the TLC application, service technicians need to always ensure that the power mode (ignition) is "ON" before reading the VIN from the vehicle's VIN master module and that they do not select a VIN that is already in the TLC application memory from a previous vehicle.
- If the VIN that shows up in the TLC top center window after correctly reading the VIN from the vehicle does not match the VIN plate of the vehicle, manually type in the VIN characters from the vehicle VIN plate into the TLC top center window and use these for programming or reprogramming the subject module with the correct vehicle VIN and software and/or calibrations.

- The Engine Control Module (ECM) is the master module (for VIP vehicles) that TLC reads to determine the VIN of the vehicle. If the VIN read from the vehicle by TLC does not match the VIN plate of the vehicle, the ECM also needs to be reprogrammed with the correct VIN, software and calibrations that match the vehicle's VIN plate.
- The Body Control Module (BCM) is the master module (for GEM vehicles) that TLC reads to determine the VIN of the vehicle. If the VIN read from the vehicle by TLC does not match the VIN plate of the vehicle, the BCM also needs to be reprogrammed with the correct VIN, software and calibrations that match the vehicle's VIN plate.

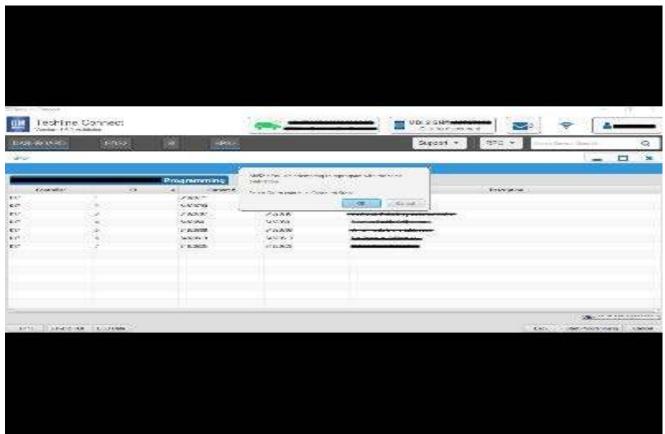
**Caution:** Be sure the VIN selected in the drop down menu (1) is the same as the vehicle connected (2) before beginning programming.



**Important:** If the vehicle VIN DOES NOT match, the message below will be shown



5877000



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**Important:** Techline Connect and TIS2WEB screens shown above.

**Important:** If the same calibration/software warning is noted on the TLC or SPS Summary screen, select OK and follow screen instructions. After a successful programming event, the WCC is located in the Service

Programming System dialogue box of the SPS Summary screen. No further action is required. Refer to the Warranty section of the bulletin.

1. Reprogram the Power Take Off Control module. Refer to K44 Power Take-off Control Module: Programming and Setup in the Service Manual. **Important:** The procedure in SI does not have a process for programming but does have information to capture on the PTO, follow normal SPS programming steps.





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**Note:** The screenshots above are an example of module programming and may not be indicative of the specific module that is being programmed. Module selection and VIN information have been blacked out.

**Important:** To avoid warranty transaction rejections, you **MUST** record the warranty claim code provided on the Warranty Claim Code (WCC) screen shown above on the job card. Refer to callout 1 above for the location of the WCC on the screen.

2. Record Warranty Claim Code on job card for warranty transaction submission.

### **Warranty Information**

For vehicles repaired under the Bumper-to-Bumper coverage (Canada Base Warranty coverage), use the following labor operation. Reference the Applicable Warranties section of Investigate Vehicle History (IVH) for coverage information.

Labor Operation	Description	Labor Time
*2888698	Reprogram Power Take-Off Control Module Reprogramming for Software Anomalies	0.3 hr
*This is a unique Labor Operation for Bulletin use only.		

Version	1
Modified	Released May 12, 2022