



# UI BULLETIN #53

**SUBJECT:** Power Take Off (PTO) & High Idle

**MODELS AFFECTED:** C/K 3600 Cab Chassis, 3500, 2500 HD and 3500 HD with the 8.1L (L18) Gas & 6.6L (LB7) Diesel Engine

**MODEL YEAR(S):** 2001 to 2006

**DATE:** 2/11/02

**REVISION DATE:**

**PAGE:** 1 of 28

## ADVISORY

The purpose of this bulletin is to provide upfitters an Specialty Vehicle Manufacturers (SVM's) with information regarding the PTO and High Idle options available on select GM Light Duty trucks. This bulletin also provides an overview of the Power Take Off (PTO) options, control modes, schematics, approved PTO suppliers, installation of the PTO accessory kit and Fast Idle switch.

### Note:

**If planning on installing a transmission mounted Power Take Off unit on a C/K 3600 Cab Chassis truck, follow the installation procedure provided by the PTO manufacturer. This bulletin is intended to provide information that is not provided in the GM Service Manual or by the PTO manufacturer.**

## TABLE OF CONTENTS

Page 2	Overview
Pages 3-4	PTO Information
Pages 5-6	PTO Preset Mode
Page 7-8	PTO Variable Mode
Page 9-10	High Idle Procedure for C/K 2500HD & 3500 series trucks with 8.1L (L18) Gas Engine
Page 11-12	High Idle Procedure for C/K 2500HD & 3500 series trucks with 6.6L (LB7) Diesel Engine
Page 13-14	PTO/High Idle Procedure for 3500HD (15,000 GVWR) with 8.1L (L18) gas Engine
Page 15-16	Fast Idle Switch Installation on 8.1L (L18) Gas Engine
Page 17	PTO Schematic for 8.1L (L18) Gas Engine on C/K 3600 Cab Chassis
Page 18	PTO Schematic for 6.6L (LB7) Diesel Engine on C/K 3600 Cab Chassis
Page 19	PTO Schematic for 8.1L (L18) Gas Engine on 3500HD (15,000 GVWR)
Page 20-21	PTO Switch, PTO Relay & PTO Interface Connectors
Page 22	PCM & ECM Connectors for 8.1L (L18) and 6.6L (LB7) Diesel Engines
Page 23-28	PTO Programming Guide



## OVERVIEW

### **POWER TAKE OFF (PTO)**

Power Take Off (PTO) provisions have been provided as standard content on the C/K 3600 Cab Chassis trucks with the 8.1L (L18) gas engine and 6.6L (LB7) Duramax diesel engine. These provisions are included in two forced RPO's, M1F and PTO.

**The M1F and PTO options are not available on C/K 3600 Cab Chassis trucks with the 6.0L (LQ4) engine. M1F and PTO are not available options on 2500HD and 3500 models.**

### **HIGH IDLE**

High Idle is also available when a PTO device is not utilized but increased engine speed is required. The Preset and Variable Mode controls operate in the same manner as the PTO controls. **Wiring provisions for in-cab PTO Control switch is provided in most of the Light Duty trucks with the 8.1L (L18) gas or 6.6L (LB7) diesel engines only.**

### **FAST IDLE**

Fast Idle provides an elevated engine speed control to one setting. It is not to be used if any hydraulic application is intended. Fast Idle requires hard-wiring into the Powertrain Control Module (PCM) and the use of a momentary type switch.

**The Fast Idle option is available on the 8.1L (L18) Gas engine only.**



## PTO INFORMATION

### **RPO - M1F OPTION**

RPO - M1F is a forced option that provides for PTO mounting space for transmission mounted PTO's. PTO mounting space is for the right hand side of the transmission.

RPO - M1F includes the following:

- Revised Underbody Structure (RH side).
- Unique Front Floor Cover Panel (RH side) contoured to allow for PTO mounting.

### **RPO - PTO OPTION**

RPO - PTO is a forced option on C/K 3600 trucks with L18 or LB7 engines that provides engine speed and PTO engagement controls.

RPO - PTO includes the following:

- PTO control software in the Powertrain Control Module (PCM) on the gas engine and in the Engine Control Module (ECM) on the diesel engine.
- Wiring provisions for in-cab PTO Control switch.
- Upfitter PTO Interface Connector, which is located at the left side of the transmission. This connector provides access to PTO engage, feedback and engine shut down circuits as well as remote access to PTO SET switch.

### **GM APPROVED PTO KITS**

Two North American PTO suppliers, Chelsea Auxiliary Power Products and Muncie Power Products, offer the PTO installation kits. The kits are designed specifically for the C/K 3600 trucks. The PTO kits in addition to normal PTO content include plumbing, heat shields, PTO control switch and PTO interface wiring harness. Both PTO suppliers offer PTO kits to accommodate both the Allison 1000 automatic transmission and the ZF 6-speed manual transmission. GM recommends that these kits be used for PTO installations on the C/K 3600 Cab Chassis.

### **PTO ACCESSORY KIT**

GM Service Parts Organization offers a PTO Accessory Kit (**Part Number 12497678**) that contains the PTO control switch and PTO interface wiring harness. The PTO Accessory kit is required when PTO/High Idle speed control is desired but the PTO supplier kits are not utilized. The PTO accessory kit is available from your local GM dealer.

The following parts are included in the PTO Accessory Kit:

- PTO control switch
- Instruction sheet
- PTO interface wiring harness (includes a mating connector to the PTO interface connector and approx. 3 ft. of blunt cut wires.)

#### **Please Note:**

**The PTO accessory kit can be installed on GM Light Duty trucks with the 8.1L (L18) gas or 6.6L (LB7) diesel engines only. Wiring provisions for in-cab PTO Control switch is provided in most of the Light Duty trucks with the L18 or LB7 engines only.**



## PTO INFORMATION (CONT.)

### **PTO CONTROL SWITCH**

The PTO option includes a provision for a dash mounted PTO control switch. This switch is supplied with the Chelsea and Muncie PTO kits mentioned above or it can be purchased as part of the PTO accessory kit.

The PTO control switch has three positions:

- OFF
- ON
- SET

Additional PTO control is available if the vehicle is equipped with cruise control. The Cruise Control stalk controls the following functions:

- PTO SET speed
- PTO RESUME speed

### **PTO INTERFACE CONNECTOR**

A PTO Interface connector is located on a bracket attached on the left-hand side of the transmission above the left-hand side PTO opening. The PTO interface connector provides access to the following circuits for remote PTO operation:

- PTO Engine Shut Down (Light Blue)
- PTO Remote Enable Switch (Light Green)
- Ground (Black)
- PTO Feedback (Yellow)
- PTO Relay Switch Control (White)
- Cruise Control SET Switch Input (Dark Blue)

### **PTO OPERATING SPEED CONTROL**

Two PTO operating speed control modes are available with the 8.1L (L18) gas and 6.6L (LB7) diesel engines. The PCM/ECM may be programmed to one of the following modes:

- Preset - Up to two preset PTO operating speeds.
- Variable - Allows variable PTO speeds while vehicle is stationary or moving.

### **PTO ENGAGEMENT**

PTO engagement is controlled through the use of the in-cab PTO control switch. When PTO engagement is desired, the user selects the ON position. The PCM/ECM then activates the PTO relay once proper operating criteria are met. The fused PTO relay feed is accessible at the PTO interface connector discussed above.

### **PTO ENGINE SHUTDOWN**

Provisions are included in the PTO interface connector to allow for engine shut down while in the PTO operation mode. This feature requires the installation of a normally closed ground switch that when opened, will shut down the engine. This feature must be activated by a Tech II diagnostic tool.



## PTO - PRESET MODE (FACTORY DEFAULT SETTING)

PTO Preset speed control mode is used for stationary applications. This mode provides a default standby speed of 800 or 850 rpm (depending on the engine/transmission combination) and two PTO control speeds: PTO Set speed of 1250 rpm, and PTO Resume speed of 1700 rpm. Please note that the standby speed (800/850 rpm) is not to be used as a PTO control speed. Vehicles that are not equipped with cruise control will not have the Resume speed capability.

PROGRAMMABLE PARAMETERS	FACTORY SETTING (RPM)	MINIMUM VALUE (RPM)	MAXIMUM VALUE (RPM)
PTO Max. Engine Speed	2200	L18 - 2100 LB7 - 950	L18 - 4200 LB7 - 3100
PTO Standby RPM	Auto/Manual L18 - 800/850 LB7 - 800/800	Normal engine idle will override if higher than requested PTO base idle	1300
PTO Set Speed	1250	PTO Standby Speed	PTO Max. Engine Speed Setting
PTO Resume Speed	1700	PTO Set Speed	PTO Max. Engine Speed Setting
PTO Max. Engage Speed	1000	950	PTO Max. Engine Speed Setting

## PTO PRESET MODE FUNCTION CHART

The following chart shows how to toggle between the two PTO speeds through the Cruise **SET** and **RES** switches.

PRESENT PTO STATE	PRESSING	RESULTING PTO STATE
PTO Standby Speed	SET	PTO Set Speed
PTO Standby Speed	RES	PTO Resume Speed
PTO Set Speed	SET	PTO Standby Speed
PTO Set Speed	RES	PTO Resume Speed
PTO Resume Speed*	SET	PTO Set Speed
PTO Resume Speed	RES	PTO Standby Speed

\* On L18 Gas Engines, PTO Set must be selected prior to requesting PTO Resume Speed.



## PTO PRESET MODE (CON'T.)

### PTO ENGAGE CONDITIONS FOR PTO PRESET MODE

- To engage the PTO, the following conditions must be met:
- Engine must be running.
- Transmission must be in park or neutral.
- Park Brake must be set (for Manual Transmission only).
- Vehicle speed must be zero.
- Brake or Clutch must not be depressed.

### PROCEDURE FOR ENGAGING PTO WITH MANUAL TRANSMISSION

1. Set parking brake.
2. Shift the transmission into neutral (N).
3. Turn the PTO switch to the **ON** position. The engine speed will increase to the PTO Standby Speed. The PTO is engaged when the LED on the PTO Control switch changes from blinking to steady state.
4. Press either the **SET** or **RESUME** switch on the cruise control or turn the PTO switch to the **SET** position. The engine speed will jump to the PTO SET or RESUME speeds.

### PROCEDURE FOR ENGAGING PTO WITH AUTOMATIC TRANSMISSION

1. Shift the transmission into Park (P).
2. Turn the PTO switch to the **ON** position. The engine speed will increase to the PTO Standby Speed. The PTO is engaged when the LED on the PTO Control switch changes from blinking to steady state.
3. Press either the **SET** or **RESUME** switch on the cruise control or turn the PTO switch to the **SET** position. The engine speed will jump to the PTO SET or RESUME speeds.

**Torque Converter Clutch (TCC) lockup is not available in Neutral. TCC lockup is available in Park with engine RPM above 1100 RPM.**

#### NOTE:

**If any input from the brake pedal or clutch pedal is detected, PTO operation will be interrupted. For L18 gas engine, the standby speed will again be established only after a toggle of the control switch to the SET position. For the LB7 diesel engine, the standby speed will be established with the release of the brake pedal or clutch pedal.**



## PTO - VARIABLE MODE

PTO Variable Speed Control Mode can be used for both stationary and mobile applications. This mode allows PTO to be controlled in a fashion similar to which cruise control controls vehicle speed. The operator is able to hold an engine RPM (between 800 and 2200) with the **SET** switch on the cruise control stalk or the PTO switch. The operator can "tap up" to increase engine speed in 100 rpm increments with the **RESUME** switch on the cruise control stalk or "tap down" to decrease engine speed with either **SET** switch (on the cruise control stalk or the PTO switch). Vehicles not equipped with cruise control will not have the "tap up" or "tap down" capability.

PROGRAMMABLE PARAMETERS	FACTORY SETTING (RPM)	MINIMUM VALUE (RPM)	MAXIMUM VALUE (RPM)
PTO Max. Engine Speed	2200	L18 - 2100 LB7 - 950	L18 - 4200 LB7 - 3100
PTO Standby RPM	Auto/Manual L18 - 800/850 LB7 - 800/800	L18 - 650 LB7 - 600 Normal engine idle will override if higher than requested PTO Base idle	1300
PTO Max. Engage Speed	1000	950	PTO Max. Engine Speed

## PTO - VARIABLE MODE FUNCTION CHART

SWITCH	SET	RESUME (w/ Cruise only)
PRESSED ONCE	Engine speed will decrease by 100-rpm decrements and will maintain new engine speed value. Engine speed can be decreased down to PTO Standby RPM speed value, all further <b>SET</b> inputs will be ignored.	Engine speed will increase by 100-rpm increments and will maintain new engine speed value. Engine speed can be increased up to the PTO Max. Engine Speed value, all further <b>RESUME</b> inputs will be ignored.
HELD	Decelerates engine speed down to the PTO standby speed value.	Increases engine speed up to the PTO max. engine speed value.



### **PTO SPEED CONTROL IN VARIABLE MODE (WHILE MOBILE):**

1. Vehicle speed greater than 5 mph.
2. Foot off brake pedal (and/or off clutch for manual transmission).
3. Turn the PTO switch to the **ON** position. The engine speed will increase to the PTO Standby Speed. The PTO is engaged when the LED on the PTO control switch changes from blinking to steady state.
4. Obtain the desired engine speed with gas pedal and pressing **SET** on the PTO switch or the cruise control stalk.
5. The **SET** and **RESUME** switches can then be used to adjust the engine speed in 100-rpm increments.

### **USING PTO SPEED CONTROL IN VARIABLE MODE (WHILE STATIONARY):**

1. Vehicle speed must be zero.
2. Foot off brake pedal (and/or off clutch for manual transmission).
3. Turn the PTO switch to the **ON** position. The engine speed will increase to PTO Standby Speed. The PTO is engaged when the LED on the PTO control switch changes from blinking to steady state.
4. Obtain the desired engine speed with gas pedal and pressing **SET** on the PTO switch or the cruise control stalk.
5. The **SET** and **RESUME** switches can then be used to adjust the engine speed in 100-rpm increments.

### **NOTE:**

**If any input from the brake pedal or clutch pedal is detected, PTO operation will be interrupted. PTO Variable mode may be re-enabled by pressing the RESUME switch. Engine speed will increase to the speed prior to disabling.**





## HIGH IDLE PROCEDURE FOR C/K 2500HD & 3500 SERIES TRUCKS WITH 8.1L (L18) GAS ENGINE

High Idle can be obtained by using the 8-pin PTO connector behind the dash and the PTO accessory kit. The PTO connector can be found behind the passenger air bag defeat switch. It should be taped to the IP harness directly behind the passenger air bag defeat switch. Mount the PTO switch next to the passenger air bag defeat switch.

**The PTO interface wiring harness included with the PTO Kit is not needed unless a requirement for remote operation is desired.**

Connect the Tech 2 scan tool and reprogram the Powertrain Control Module (PCM). See the PTO Programming Guide section for instructions on how to get to the PTO programming screen.

**Remember to program to either the Preset PTO or Variable PTO Mode when using the PTO switch.**

The changes that need to be made are as follows:

<b>PTO Max. Engine Speed</b>	<b>2200 RPM</b>
<b>PTO Standby Speed</b>	<b>800 RPM</b>
<b>PTO Set Speed</b>	<b>1250 RPM</b>
<b>PTO Resume Speed</b>	<b>1700 RPM</b>
<b>PTO Max. Engage Speed</b>	<b>1000 RPM</b>
<b>PTO Shutdown</b>	<b>NO</b>
<b>PTO Engage Relay</b>	<b>NO</b>
<b>PTO Feedback</b>	<b>NO</b>

**NOTE:**

**If the reprogramming of the PCM is not performed, the High Idle function will not work.**



### **HIGH IDLE PROCEDURE FOR C/K 2500HD & 3500 SERIES TRUCKS WITH 8.1L (L18) GAS ENGINE (CON'T.)**

To engage the High Idle, set the Park Brake (manual transmission only) or put the truck in PARK (automatic transmission only), turn the switch to the **ON** position. Move the PTO switch to the **SET** position or press the **SET** switch on the cruise control stalk, if equipped. The SET input ramps up the engine speed to 1250 RPM. By pressing the cruise control, **RES/ACC** switch the engine speed will increase to the PTO Resume Speed setting and any **SET** input will decrease the engine speed to the PTO Set Speed setting.

If the truck does not have the cruise control option, only the PTO Set Speed is available. The PTO/High Idle settings can only be changed with a Tech 2 scan tool. The Tech 2 scan tool can be purchased from GM by calling 1-800-GM-TOOLS.

**The PTO accessory kit is available from your local GM dealer.**

**If any problems should arise, check and clear any DTC's with a Tech 2 and make sure that the brake switch and tail lamps are functioning correctly.**

#### **NOTE:**

**In certain cases the PTO wiring and connector will not be installed behind the passenger side air bag switch. If this is the case, the system will need to be hard-wired into the PCM and a switch or switches (no cruise control) will need to be used. Please call the Upfitter Integration Hotline at 1-800-875-4742 for more information.**



## HIGH IDLE PROCEDURE FOR C/K 2500HD & 3500 SERIES TRUCKS WITH 6.6L (LB7) DIESEL ENGINE

High Idle can be obtained by using the 8-pin PTO connector behind the dash and the PTO accessory kit. The PTO connector can be found behind the passenger air bag defeat switch. It should be taped to the IP harness directly behind the passenger air bag defeat switch. Mount the PTO switch next to the passenger air bag defeat switch.

**The PTO interface wiring harness included with the PTO Kit is not needed unless a requirement for remote operation is desired.**

Connect the Tech 2 scan tool and reprogram the Engine Control Module (ECM). See the PTO Programming Guide section for instructions on how to get to the PTO programming screen.

**Remember to program to either the Preset PTO or Variable PTO Mode when using the PTO switch. When the PTO settings are initially read, the settings will show values of 6000+ rpm. Select the Change Options menu and continue with the reprogramming of the ECM.**

The changes that need to be made are as follows:

<b>PTO Max. Engine Speed</b>	<b>2200 RPM</b>
<b>PTO Standby Speed</b>	<b>800 RPM</b>
<b>PTO Set Speed</b>	<b>1250 RPM</b>
<b>PTO Resume Speed</b>	<b>1700 RPM</b>
<b>PTO Max. Engage Speed</b>	<b>1000 RPM</b>
<b>PTO Shutdown</b>	<b>NO</b>
<b>PTO Engage Relay</b>	<b>NO</b>
<b>PTO Feedback</b>	<b>NO</b>

**NOTE:**

**If the reprogramming of the ECM is not performed, the High Idle function will not work.**



### **HIGH IDLE PROCEDURE FOR C/K 2500HD & 3500 SERIES TRUCKS WITH 6.6L (LB7) DIESEL ENGINE (CON'T.)**

To engage the High Idle, set the Park Brake (manual transmission only) or put the truck in PARK (automatic transmission only), turn the switch to the **ON** position. Move the PTO switch to the **SET** position or press the **SET** switch on the cruise control stalk, if equipped. The SET input ramps up the engine speed to 1250 RPM. By pressing the cruise control, **RES/ACC** switch the engine speed will increase to the PTO Resume Speed setting and any **SET** input will decrease the engine speed to the PTO Set Speed setting.

If the truck does not have the cruise control option, only the PTO Set Speed is available. The PTO/High Idle settings can only be changed with a Tech 2 scan tool. The Tech 2 scan tool can be purchased from GM by calling 1-800-GM-TOOLS.

**The PTO accessory kit is available from your local GM dealer.**

**If any problems should arise, check and clear any DTC's with a Tech 2 and make sure that the brake switch and tail lamps are functioning correctly.**

#### **NOTE:**

**In certain cases the PTO wiring and connector will not be installed behind the passenger side air bag switch. If this is the case, the system will need to be hard-wired into the ECM and a switch or switches (no cruise control) will need to be used. Please call the Upfitter Integration Hotline at 1-800-875-4742 for more information.**



## **PTO/HIGH IDLE PROCEDURE FOR 3500HD (15,000 GVWR) WITH 8.1L (L18 GAS ENGINE)**

High Idle can be obtained by using the 8-pin PTO connector behind the dash and the PTO accessory kit. The PTO connector is located behind the dash near the Radio and Instrument cluster. Connect the PTO switch to the PTO connector. Mount the PTO switch on any available panel near the radio or below the HVAC controls. The PTO switch does not have a specific mounting location like the GMT800 trucks.

**The PTO interface wiring harness included with the PTO kit is not used on the 3500HD truck.**

Connect the Tech 2 scan tool and reprogram the Powertrain Control Module (PCM). See the PTO Programming Guide section for instructions on how to get to the PTO programming screen.

**Remember to program to either the Preset PTO or Variable PTO Mode when using the PTO switch.**

The changes that need to be made are as follows:

<b>PTO Max. Engine Speed</b>	<b>2200 RPM</b>
<b>PTO Standby Speed</b>	<b>800 RPM</b>
<b>PTO Set Speed</b>	<b>1250 RPM</b>
<b>PTO Resume Speed</b>	<b>1700 RPM</b>
<b>PTO Max. Engage Speed</b>	<b>1000 RPM</b>
<b>PTO Shutdown</b>	<b>NO</b>
<b>PTO Engage Relay</b>	<b>NO</b>
<b>PTO Feedback</b>	<b>NO</b>

### **NOTE:**

**If the reprogramming of the PCM is not performed, the High Idle function will not work.**



### **PTO/HIGH IDLE PROCEDURE FOR 3500HD (15,000 GVWR) WITH 8.1L (L18 GAS ENGINE (CON'T.))**

To engage the High Idle, set the Park Brake (Manual transmission only) or put the truck in Park (Automatic transmission only), and turn the switch to the **ON** position. Move the PTO switch to the **SET** position or press the **SET** switch on the cruise control if equipped. The SET input ramps up the engine speed to 1250 RPM. By pressing the cruise control, **RES/ACC** switch the engine speed will increase to the PTO Resume Speed setting and any **SET** input will decrease the engine speed to the PTO Set Speed setting.

If the truck does not have the cruise control option, only the PTO SET Speed is available. The PTO/High Idle settings can only be changed with a Tech 2 scan tool. The Tech 2 scan tool can be purchased from GM by calling 1-800-GM-TOOLS.

**The PTO accessory kit is available from your local GM dealer.**

**NOTE:**

**If any problems should arise, check for and clear any DTC's with a Tech 2 scan tool and make sure that the brake switch and tail lamps are functioning correctly.**



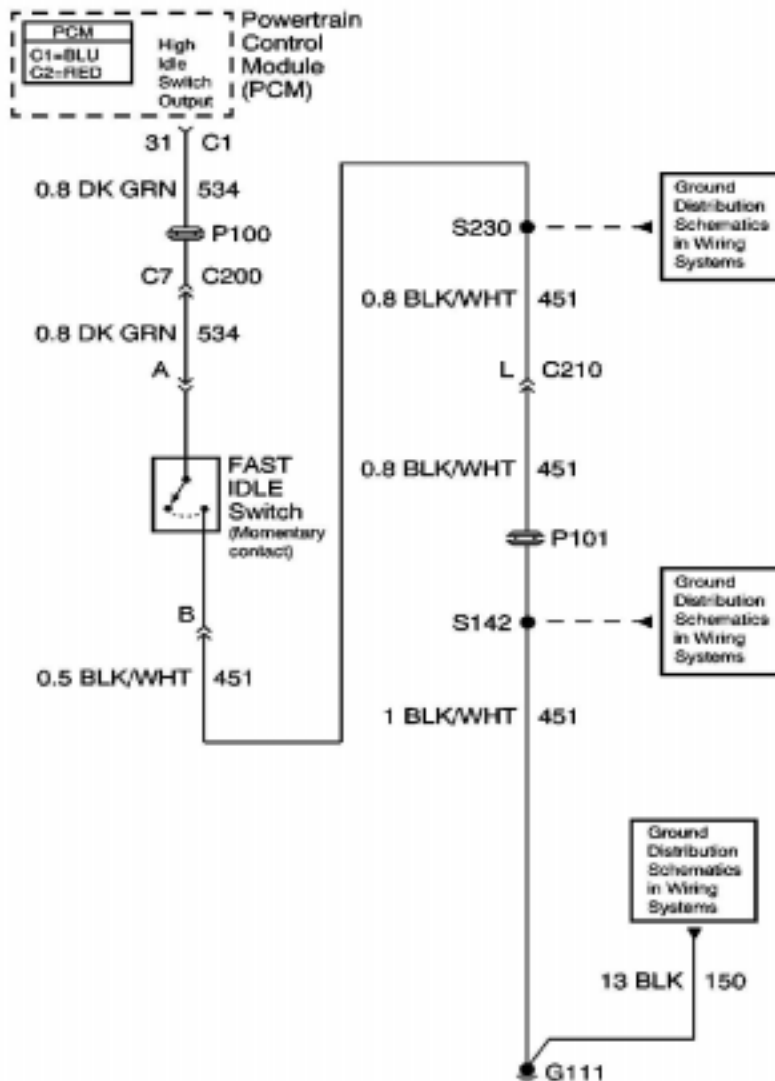
## FAST IDLE SWITCH INSTALLATION ON 8.1L (L18) GAS ENGINE

**NOTE:**

The fast idle switch input is available on all GM trucks with the 8.1L (L18) Gas engine. The fast idle switch input is not available for the 6.6L (LB7) Diesel engine.

**NOTE:**

The use of the fast idle switch is not recommended if any type of hydraulic application is intended.





**FAST IDLE SWITCH INSTALLATION ON 8.1L (L18) GAS ENGINE (CON'T.)**

**Procedure for Fast Idle Operation on 8.1L (L18) Gas Engine**

1. Reprogram the PCM using the Tech 2. See the PTO Programming Guide section for instructions on how to get to the PTO programming screen.
  - a. Reprogram to the **Fast Idle Mode** by pressing the Change Options key and selecting **PTO Fast Idle Mode**.
  - b. Scroll down and change the **PTO Feedback** and **PTO Engage relay settings** to **NO**.
  - c. If more than 1250 rpm is required, change the **PTO Standby Speed setting**.
2. Follow the schematic on the previous page and hardwire into pin 31 of the Blue connector in the PCM.
  - a. By momentarily grounding pin 31, the engine idle will increase to the PTO Standby Speed setting.
  - b. Momentarily grounding pin 31 again will cancel the Fast Idle operation and return the engine speed to base engine idle speed.

**NOTE:**

**If any problems should arise, check and clear any DTC's with a Tech 2 and make sure that the brake switch and tail lamps are functioning correctly.**

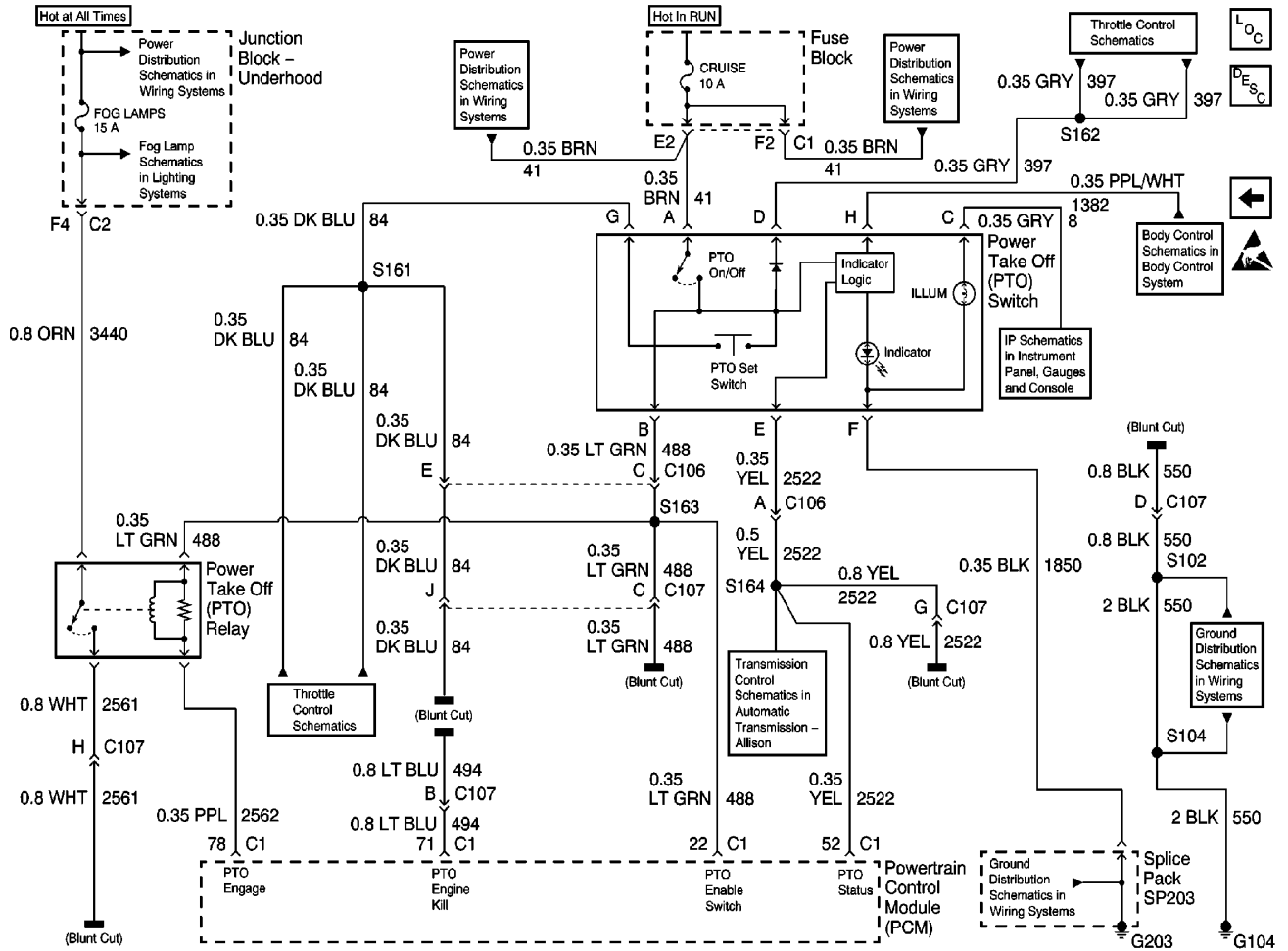
**PLEASE CALL THE**  
**UPFITTER INTEGRATION HOTLINE**  
**AT 1-800-875-4742**  
**WITH ANY QUESTIONS**  
**PERTAINING TO THIS BULLETIN**



# UI BULLETIN #53 (Cont'd)



## PTO SCHEMATIC FOR 8.1L (L18) GAS ENGINE ON C/K 3600 CAB CHASSIS





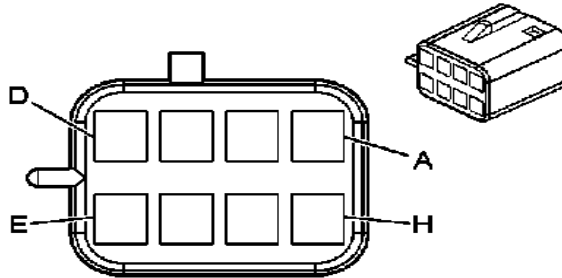


# UI BULLETIN #53 (Cont'd)



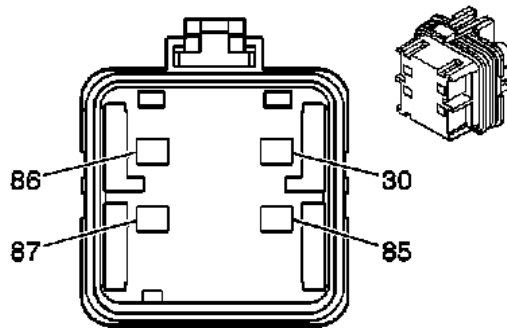
## PTO SWITCH, PTO RELAY & PTO INTERFACE CONNECTORS

### PTO Switch



Connector Part Information			12186098 8-Way F Metri-Pack 150 Series (LT GRY)
Pin	Wire Color	Circuit No.	Function
A	BRN	41	Ignition 3 Voltage
B	LT. GRN	488	Power Take Off - Enable Switch
C	GRY	8	Instrument Panel Lamp Supply Voltage
D	GRY	397	Cruise Control On Switch
E	YEL	2522	Power Take Off - Status (Feedback)
F	BLK	1850	Ground
G	DK. BLU	84	Cruise Control Set/Coast Switch
H	PPL/WHT	1382	LED Dimming Signal

### PTO Relay located backside of Underhood-Junction Block

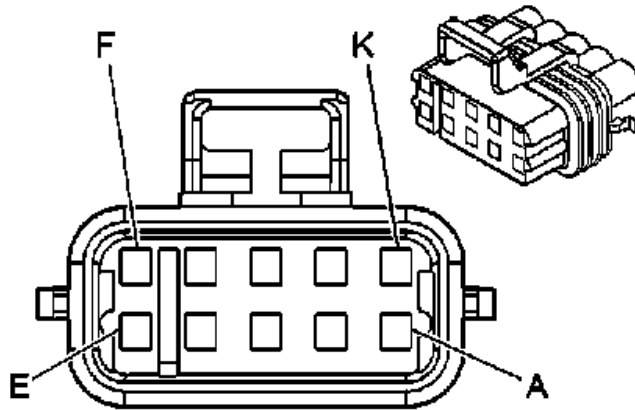


Connector Part Information			12129716 4-Way F Metri-Pack 280 FLX LK (MD GRY)
Pin	Wire Color	Circuit No.	Function
30	ORN	3440	Battery Positive Voltage
85	LT. GRN	488	Power Take Off - Enable Switch
86	PPL	2562	Power Take Off - Relay Engage
84	WHT	2561	Power Take Off - Relay Signal



## PTO SWITCH, PTO RELAY & PTO INTERFACE CONNECTORS (CON'T.)

**PTO Interface Connector located on the Transmission**  
**PTO Interface connector is only present on C/K 3600 series trucks**



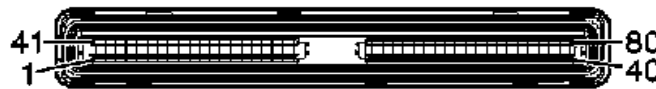
Connector Part Information			12177081 10-Way F M/P 280 Series sealed (NAT)
Pin	Wire Color	Circuit No.	Function
A	N/A	N/A	Not Used
B	LT. BLU	494	Power Take Off - Engine Shutdown Signal
C	LT. GRN	488	Power Take Off - Enable Switch
D	BLK	550	Ground
E F	N/A	N/A	Not Used
G	YEL	2522	Power Take Off - Status (Feedback)
H	WHT	2561	PTO Relay Switch Control Signal
J	DK. BLU	84	Cruise Control Set/Coast Switch

# UI BULLETIN #53 (Cont'd)



## PCM & ECM CONNECTORS FOR 8.1L (L18) GAS AND 6.6L (LB7) DIESEL ENGINES

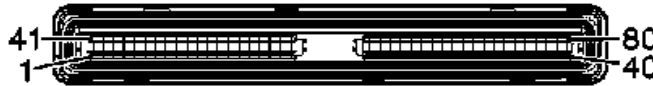
### Blue PCM Connector on 8.1L Gas Engine



Connector Part Information			12191489 80-Way F Micro-Pack 100W Sealed (NAT)
Pin	Wire Color	Circuit No.	Function
22	LT. GRN	488	Power Take Off - Enable Switch
31	DK. GRN	534	High Idle Switch Signal
52	YEL	2522	Power Take Off - Status (Feedback)
71	LT. BLU	494	Power Take Off - Engine Shutdown Signal
78	PPL	2562	Power Take Off - Relay Engage

### ECM Connector on 6.6L Diesel Engine

**Note: Both connectors are used on the 6.6L engine.**



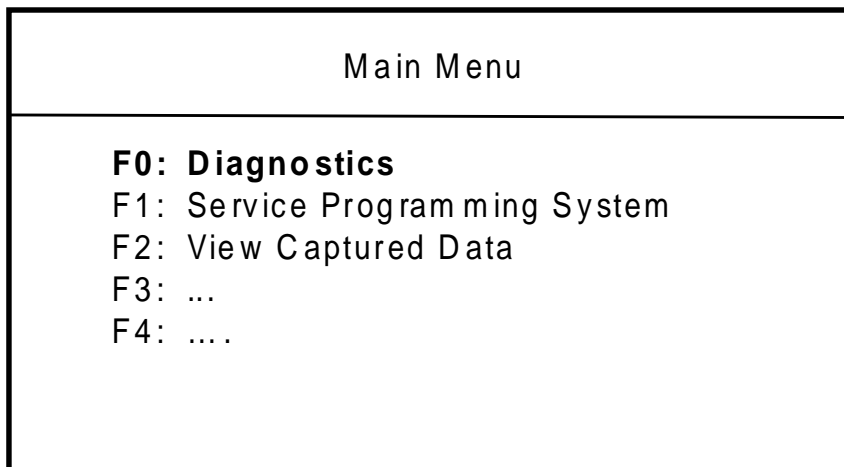
Connector Part Information			12191489 80-Way F Micro-Pack 100W Sealed (NAT)
Pin	Wire Color	Circuit No.	Function
71 (C1)	LT. GRN	488	Power Take Off - Enable Switch
N/A	N/A	N/A	High Idle Switch Signal - NA on Diesel Engine
13 (C2)	YEL	2522	Power Take Off - Status (Feedback)
56 (C2)	LT. BLU	494	Power Take Off - Engine Shutdown Signal
37 (C2)	PPL	2562	Power Take Off - Relay Engage



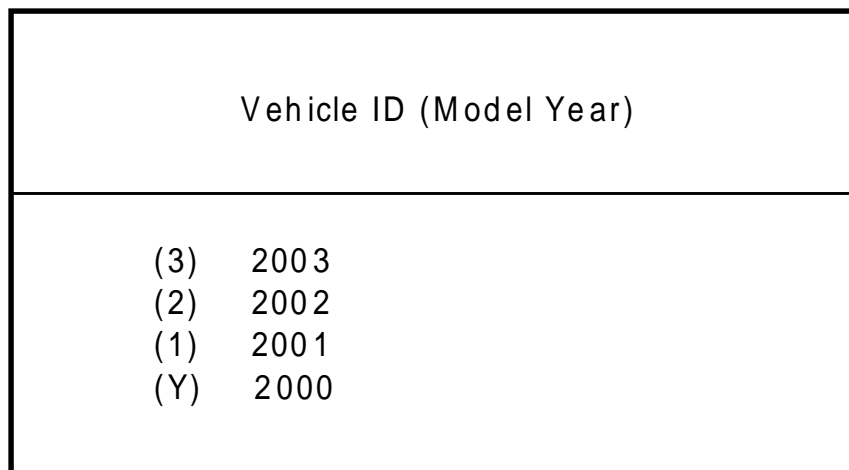
## PTO PROGRAMMING GUIDE

This section shows how to get to the PTO options menu to reprogram the PCM/ECM for PTO and / or High Idle operation with the Tech 2.

1. Connect the Tech 2 to the vehicle.
2. Select the **Diagnostics** option from the Main menu.



3. Select the **Model Year** from the Vehicle ID menu.





## PTO PROGRAMMING GUIDE (CON'T.)

4. Select the **LD Truck, MPV, Incomplete** option from the Vehicle ID menu.

Vehicle Identification
Passenger Car <b>LD Truck, MPV, Incomplete</b> Medium Duty Truck Saturn

5. Select the **Powertrain** option from the System Selection menu.

System Selection Menu
200* LD Truck, MPV, Incomplete  <b>F0: Powertrain</b> F1: Body F2: Chassis F3: Diagnostic Circuit Check





## PTO PROGRAMMING GUIDE (CON'T.)

6. Select the **Engine type** from the Vehicle ID menu.

Vehicle ID Select one of the following LT Duty Truck Engine types
(1) V8 LB7 Diesel (G) V8 L18 (G) V8 L18 3500HD

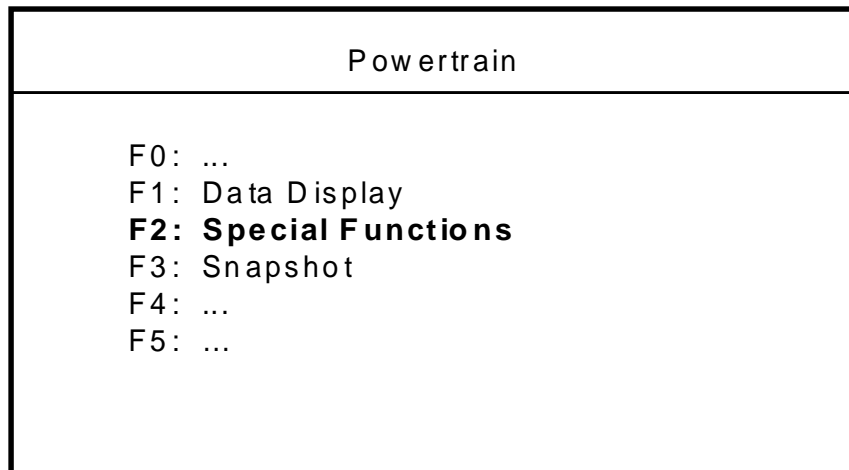
7. Select the **Transmission type** from the Vehicle ID menu.

Vehicle Identification Select one of the following Transmissions
5 Speed Automatic Trans (M74) 4 Speed Automatic Trans (MT1) Manual Trans (ML6) Other

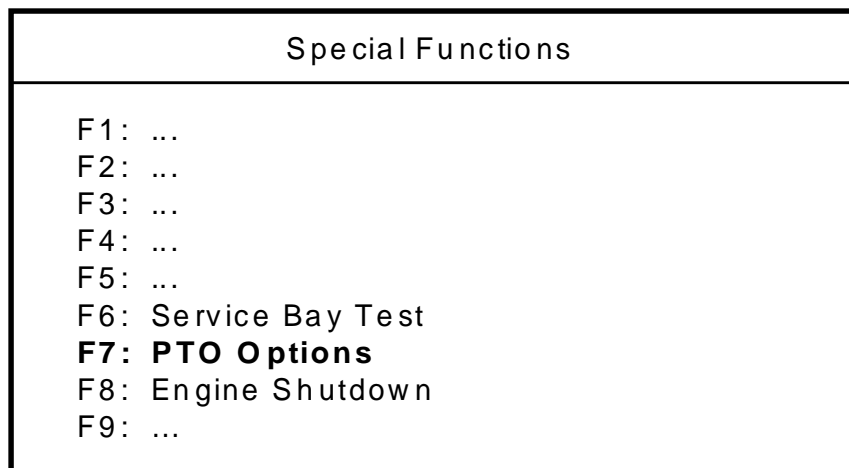


## PTO PROGRAMMING GUIDE (CON'T.)

8. Select the **Special Functions** option from the Powertrain menu.



9. Select the **PTO options** from the Special Functions menu. The Current PTO settings screen will be displayed.





## PTO PROGRAMMING GUIDE (CON'T.)

- Press the **Change Options** key and then select the desired PTO Operating Mode. Refer to pages 3-9 for PTO mode information.

PTO Option
F0: Fast Idle ( <b>Option N/A on 6.6L Diesel</b> )
F1: Preset PTO Speed Control
F2: Variable PTO Speed Control

- Scroll through the Current PTO settings, make any necessary changes and press the **Reprogram Options** key when done to complete the programming. **The values shown below are the default settings.**

PTO Option	
Current PTO Settings	
PTO Fast Idle Option	Preset
PTO Max. Engine Speed	2200 RPM
PTO Standby Speed	800 RPM
PTO Set Speed	1250 RPM
PTO Resume Speed	1700 RPM
PTO Max. Engage Speed	1000 RPM
PTO Engine Shutdown	No
PTO Engage Relay	Yes
PTO Feedback	Yes



## PTO PROGRAMMING GUIDE (CON'T.)

12. The Current PTO settings screen will again be displayed. Make sure that the changes made are shown on this screen. If settings did not change, repeat the procedure. If settings are correct, power down the Tech 2 and disconnect from the vehicle.

PTO Option	
Current PTO Settings	
PTO Fast Idle Option	Preset
PTO Max. Engine Speed	2200 RPM
PTO Standby Speed	800 RPM
PTO Set Speed	1250 RPM
PTO Resume Speed	1700 RPM
PTO Max. Engage Speed	1000 RPM
PTO Engine Shutdown	No
PTO Engage Relay	No
PTO Feedback	No