



UPFITTER INTEGRATION

UI BULLETIN # 79 C

**SUBJECT: Power Take-Off (PTO)
Subsystem Features**

MODELS AFFECTED:

**C/K 3500 Heavy Duty
Chassis Cab Chevrolet Silverado
and GMC Sierra**

MODEL YEAR(S):

2007 – 2013

DATE: 12/05/2006

REV. DATE: 01/07/2013

ADVISORY:

This bulletin provides a brief description of the PTO option offered on Heavy Duty Silverados and Sierras. The PTO Subsystem option includes all of the components & wiring for a tested, functional system as ordered from the factory.

The bulletin shows the location of the following components included with the option:

1. New Driver control switch.
2. New PTO module
3. New 16-way connector for user interface.

The bulletin contains the following sections:

1. System Overview.
2. Detailed Functional Description
3. Standard vs. Optional Features

Note: This bulletin addresses the “All New” not the “Classic” C/K truck.
The PTO option can’t be added or retrofitted if not included as ordered!

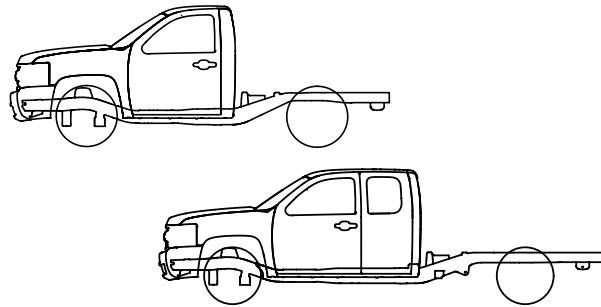
General Motors Upfitter Integration

<http://www.gmupfitter.com> • 1-800-875-4742 (Upfitter Hotline)

System Overview

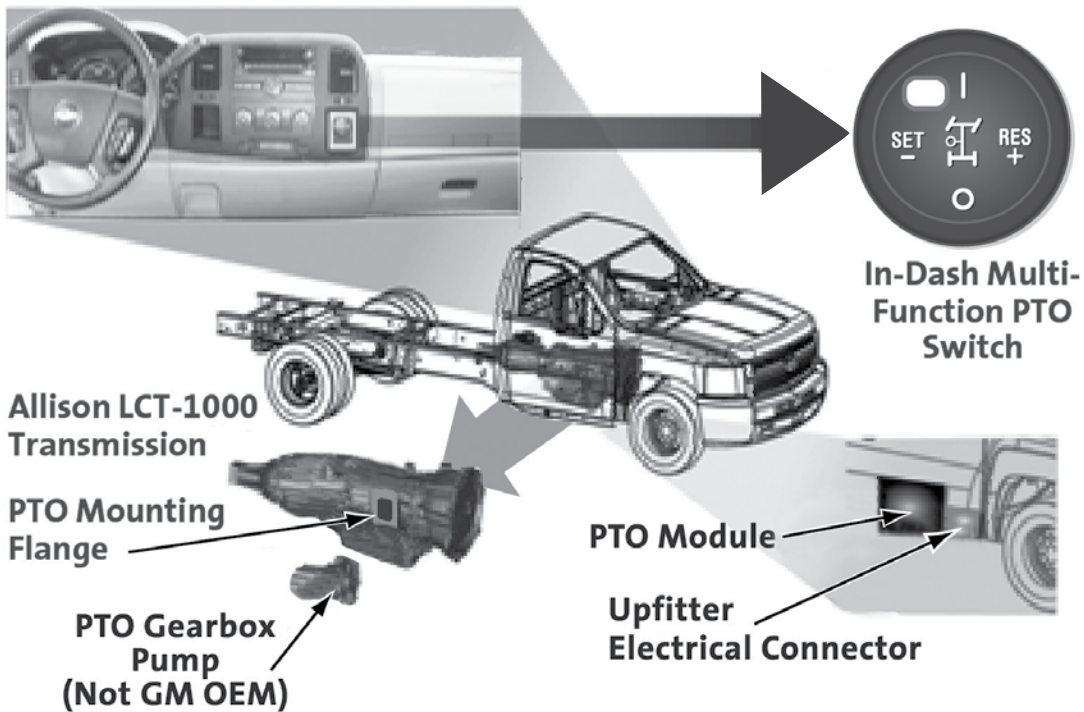
Vehicle Configuration

- HD cab-chassis trucks
- Regular (03) and extended (53) cabs
- Duramax (6.6L) diesel engine with the Allison LCT-1000 transmission



PTO Location

- Factory-installed in-dash PTO switch
- Upfitter electrical connector for single-point interface with PTO sub-system
- No new PTO gearbox/pump necessary – fits in the same location as on the previous model



Types of PTO Operation

- Stationary
- Preset – Factory Installed
- Variable – Dealer Option
- Mobile Variable – Dealer Option

PTO vs. Cruise Control

- Whereas Cruise Control manages **vehicle** speed, PTO controls **engine** speed
- **Cruise Control:** *Engine* speed can vary up and down, but *vehicle* speed remains constant
- **PTO:** In mobile variable mode *vehicle* speed can vary up and down, but *engine* speed remains constant

Detailed Functional Description






Please note:
The icons below
are part of the
In-Dash Multi-Function
PTO Switch

Stationary Preset PTO





(Factory Installed)

Applications: Dumping, Liftgates, etc.

- Three PTO Speeds
 - **Standby (800 RPM):**
 Achieved when the button is initially depressed 
 - **Preset #1 (1250 RPM):**
 With PTO active, this speed is reached by pressing 
 - **Preset #2 (1700 RPM):**
 With PTO active, this speed is reached by pressing 
- Standby & Preset Speeds can be altered by a GM Service Technician using a Tech 2
- Remote Operation is optional in this mode



Stationary Variable PTO *(option)*

Applications: Dumping, Liftgates, Bucket Trucks, etc.

- Functions similar to cruise control
- Initially PTO is engaged at Standby (800 RPM)
- PTO Speed Adjustment Features
 - **Set/Resume:**
 - Choose engine speed using accelerator pedal, press to maintain this engine speed 
 - Resume after dropping out of PTO (e.g. after traffic signal) by pressing 
 - **Tap Up/Tap Down:**
 - Increments engine speed UP using 
 - and DOWN by pressing 
 - Default increment is 100 RPM

Stationary Variable PTO *(option)*

(continued)

- **Ramp Up/Ramp Down:**
 - Ramps engine speed gradually while 
 - or 
 - buttons are pressed
- Increment and Ramp Rate can be altered by a GM Service Technician using a Tech 2
- Remote Operation is available in this PTO mode

Mobile Variable PTO *(option)*

Applications: Salt & Fertilizer Spreaders, Street Sweepers, Plow Blades, etc.

- Possible alternative to a Central Hydraulic System
- Functions similar to Stationary Variable PTO
- Can be used at speeds up to 80 mph; however, the default maximum speed is 50 mph.
- Remote Operations is **not** available in this PTO mode



Remote Operation

- Available in Stationary PTO modes only
- Allows operator to utilize PTO features from a Remote Operation pendant
- Remote options are accessed through after-market PTO controls attached to the OEM PTO Upfitter connector
- Remote Engine Start/Shutdown
 - Start requires multiple switch actions to initiate engine starting
 - Shutdown has 3 modes of operation
 - + Operator remote switch
 - + Timed auto shutdown
 - + Critical engine conditions

Detailed functional description continued on next page

Detailed Functional Description

Stopping PTO

- Two methods:
 - Ramp-to-Off**
 - Achieved by pressing 
 - Engine speed ramps down to base idle
 - PTO disengages and shuts off
 - Suspend/Resume**
 - Achieved by pressing the brake pedal
 - Engine speed drops to base idle (no ramp)
 - PTO disengages, but previous PTO speed retained in memory; can resume after brake is released or by pressing 

Stationary Preset PTO

- Fast blink:** Indicates PTO in the process of engaging
- Solid:** PTO is engaged
- Slow blink:** PTO is suspended, but PTO speed is retained in memory



PTO Load Control (Option)

- Provides operator with greater control over engagement of PTO
- Load can be programmed to remain enabled all the time (e.g. when stopped at a traffic signal)
- Load may be engaged within a programmed RPM range
- No other OEM has this feature**

STANDARD vs. OPTIONAL FEATURES

	Enabled	Disabled		Enabled	Disabled
Stationary Preset PTO <i>Standard Configuration</i>			Stationary Variable PTO (Cont'd) <i>Optional Configuration†</i>		
• In-Cab PTO Controls	<input type="radio"/>		• Remote Operation Controls		
• Remote Operation Controls		<input checked="" type="checkbox"/>	- Pedal Position Switch (PPS)	<input type="radio"/>	<input checked="" type="checkbox"/>
• Engine Run Time in PTO		<input checked="" type="checkbox"/>	- PPS Voltage	Min & Max Calibrateable	
• Load Feedback		<input checked="" type="checkbox"/>	Mobile Variable PTO <i>Standard Configuration</i>		
• Initial PTO Speed	800 RPM		• Action after brake pedal is released?	Return to Base Idle	
• Preset Speed #1	1250 RPM		• Load Feedback		<input checked="" type="checkbox"/>
• Preset Speed #2	1700 RPM		• Initial PTO Speed	800 RPM	
<i>Optional Configuration</i>			<i>Optional Configuration†</i>		
• In-Cab PTO Controls	<input type="radio"/>	<input checked="" type="checkbox"/>	• Action after brake pedal is released?	Return to PTO Standby	
• Remote Operation Controls	<input type="radio"/>	<input checked="" type="checkbox"/>	• Load Feedback	<input type="radio"/>	
- Relay (not OEM)	<input type="radio"/>	<input checked="" type="checkbox"/>	• Initial PTO Speed	Calibrateable	
- Engine Start Switch	<input type="radio"/>	<input checked="" type="checkbox"/>			
- Engine Shutdown Switch	<input type="radio"/>	<input checked="" type="checkbox"/>			
- Set Switch	<input type="radio"/>	<input checked="" type="checkbox"/>			
- Set Switch Type	Momentary or Latched				
• Engine Run Time in PTO	<input type="radio"/>				
• Load Feedback	<input type="radio"/>				
• Initial PTO Speed	Calibrateable				
• Preset Speed #1 & #2	Calibrateable				
Stationary Variable PTO <i>Standard Configuration</i>					
• In-Cab PTO Controls	<input type="radio"/>				
• Remote Operation Controls		<input checked="" type="checkbox"/>			
• Engine Run Time in PTO		<input checked="" type="checkbox"/>			
• Load Feedback		<input checked="" type="checkbox"/>			
• Initial PTO Speed	800 RPM				

○ = Enabled X = Disabled

† = Optional features include those listed for Stationary Preset PTO excluding Preset Speed #1 & #2 calibrateability.