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Title: Required PTO Wiring for CF 500 and CF 600 Models with Automatic Transmission Code 13ADL

Applies To: Installing a PTO in a CF 500 / CF 600 Model with automatic transmission, Code 13ADL

DESCRIPTION

The following information is required when installing a PTO in a CF 500 / CF 600 Model with automatic transmission, Code 13ADL.

SERVICE PROCEDURE

WARNING:

To prevent unexpected movement of the vehicle and possible serious personal injury or death, park the vehicle on a flat, level surface, set the parking brake, turn the engine off and chock the wheels to prevent vehicle from moving in both directions.

CAUTION:

Installing a transmission-mounted PTO without the proper electrical connections to the transmission may result in transmission failure.

To minimize the risk of transmission damage, PTO controls must be integrated into the vehicle wiring.

PTO Request - Applying vehicle battery voltage to the "PTO Request" wire will (1) place the transmission in PTO mode and (2) elevate idle engine idle speed when certain conditions (described below) are met. This wire MUST be part of the PTO control system; failing to do so may result in PTO clutch wear due to low hydraulic pressure, resulting in rapid contamination of transmission fluid and internal transmission damage.

Remote PTO Enable - One of the two available remote PTO engine wires MUST also be part of the PTO control system. The wire must be connected to the PTO Request circuit.

Conditions for PTO Elevated Idle:

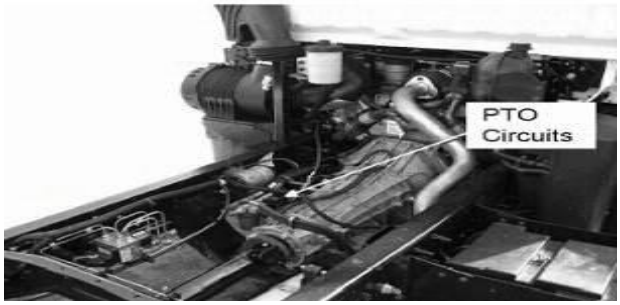
1. Park brake applied
2. Service brake released
3. Transmission in PARK position
4. Vehicle speed = 0
5. Engine speed below 1200 RPM

PTO Enable - An output wire is available that indicates when the elevated idle is active. The "PTO Enable" output should be used to prevent PTO engagement when conditions are not optimal for PTO performance and/or when engagement of the PTO may cause damage to the transmission.

PTO Engaged - An input wire is available to control the PTO lamp in the instrument cluster. Applying vehicle battery voltage to the "PTO Engaged" wire will illuminate the PTO lamp.

"PTO Request", "PTO Enable", "PTO Engaged" , and the remote engine **PTO** signals are blunt cut wires supplied with the vehicle and are located behind the cab on the left frame rail near the transmission. All other PTO components are to be supplied by the body builder.

Engine Programming - The engine programmable parameter "PTO-CONTROL" must be set to either "1: REMOTE OPERATION ONLY" or "3: REMOTE AND IN-CAB OPERATION" for PTO installations. This parameter is set to "3: REMOTE AND IN-CAB OPERATION" from the factory.



CF Series PTO Wiring

Circuit Intent	Wire Name	Description
Input (VPWR)	PTO Request	Blunt cut wire Circuit No. 2335, wire color Violet/Light Green. Applying vehicle battery voltage to this wire will request the transmission to enter PTO mode and will elevate engine speed if conditions are met.
Output	PTO Enable	Blunt cut wire Circuit No. 2334, wire color Brown/Yellow. A low-side driver, changing from open-circuit to ground indicating the elevated idle (PTO) is active. Intended for turning on a relay coil. Maximum current is 1 amp.
Input (VPWR)	PTO Engaged	Blunt cut wire Circuit No. 2336, wire color Red/Orange. Applying vehicle battery voltage to this wire will activate the PTO lamp in the instrument cluster, and removing vehicle battery voltage will deactivate the PTO lamp.
Input (VPWR)	ECM Remote Preset PTO Enable	Blunt cut wire Circuit No. 2231, wire color Light Blue/Red. Applying vehicle battery voltage to this wire will enable the Remote Preset PTO engine operation. This input, or ECM Remote Variable, is required for PTO.
Input (VPWR)	ECM Remote Variable PTO Enable	Blunt cut wire Circuit No. 2232, wire color Red/Light Blue. Applying vehicle battery voltage to this wire will enable the Remote Variable PTO engine operation. This input, or ECM Remote Preset PTO Enable, is required for PTO.

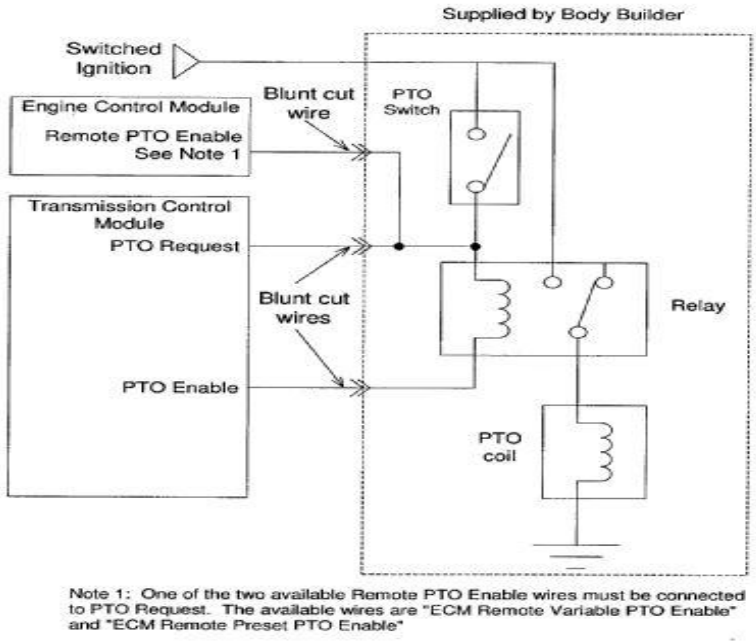


Figure 1. Example Wiring Diagram for Stationary PTO Operation

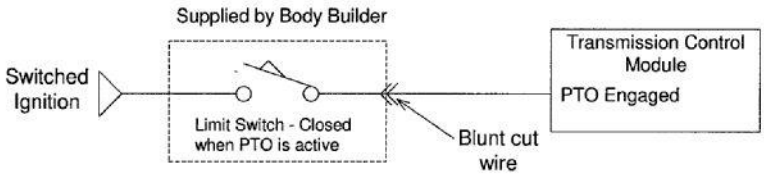


Figure 2. Example Wiring Diagram for PTO Lamp

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