

Clutch Pump Controller - CPC507-A1

2008-2010 Ford F250-F550 Series - 6.4L Diesel Engines Only

Allows driving vehicle with pump engaged

System Operation

The CPC507-A1 is a Clutch Pump Controller for work trucks. It prevents over revving damage to the pump by monitoring engine RPM and disengaging the clutch when necessary. The CPC507-A1 will also lock the transmission shifter, if in Park, when the Park Brake is applied.

The "clutch pump power" output **activates** the pump when **all** of the following conditions are met:

- Pump Enable Switch On
- RPM less than 1500 RPM

The "clutch pump power" output **deactivates** the pump if **any one** of the following conditions are met:

- Pump Enable Switch Off
- RPM > 2000 for 30 seconds
- RPM > 2500 for 1 second

Installation Instructions

Remove the lower dash panel below the steering column area and find a suitable location to mount the Clutch Pump Controller module. Do not mount the module until all wire harnesses are routed and secure. (The last step of the installation is to mount the module).

Be sure the vehicle's battery is disconnected before proceeding with installation.



Data Link Harness

- Locate the vehicle OBDII Data Link Connector. It will be mounted below the lower left dash panel.
- Remove the mounting screws for the OBDII connector. Plug the red connector from the Clutch Pump Controller Data Link Harness into the vehicle's OBDII connector. Ensure the connection is fully seated and secured with the supplied wire tie.
- Mount the Black connector from the Clutch Pump Controller Data Link Harness in the former location of the vehicle's OBDII connector.
- Attach the Black flying lead eyelet to a suitable chassis ground.
- Secure the CPC harness so that it does not hang below the lower dash panel.



The CPC505-A1 module has several connectors. It is imperative that each harness connector be plugged into the correct module connector, or damage to the module or vehicle may result. The connections are color coded to assist with proper installation.

- Plug the 6-pin "Data Link 1" connector into the Red Data Link 1 cavity on the Clutch Pump Controller module.
- Plug the 6-pin "Data Link 2" connector into the Data Link 2 cavity on the Clutch Pump Controller module.

Control Inputs

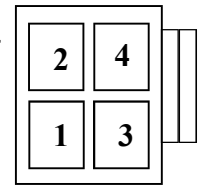
The CPC507-A1 has two active low inputs: "Pump Enable" and "Shift Lock Engage".

- Pump Enable: An installer supplied Clutch Pump control switch must provide a ground signal to the C/P Switch Port pin 1. When this "Pump Enable" input is grounded, and the engine RPM is less than 1500, the clutch pump will activate. A four pin connector is provided with a White wire installed at Pin 1. Attach the White wire to the installer supplied switch that provides a ground signal when activated.

Control Inputs (cont.)

- Plug the 4-pin "Pump Enable" connector into the C/P Switch connector on the Clutch Pump Controller module
- Shift Lock Engage: This is an optional input which can be connected to any number of installer supplied switches (wired in parallel) that provides a ground signal to the I/O Port pin 4 (Green wire to Green marked connector "I/O Port"). If this "Shift Lock Engage" input is grounded and the transmission is in Park, the CPC507-A1 will lock the shifter in Park, even when the Service Brake is depressed. This is a safety feature which can prevent the vehicle from being driven in the event that vehicle equipment is not properly stowed.

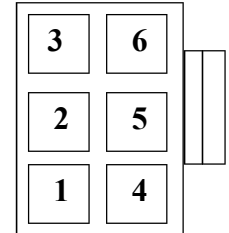
Back of I/O Port And
C/P Switch Port Connectors



Clutch Pump Connector (Yellow)

- Clutch Pump Power: Connect the CLUTCH PUMP connector Pin #2 Orange wire to the Clutch Pump Power lead. This signal activates the Clutch Pump and provides +12V @ 8A max and is internally current limited.
- Clutch Pump Control Power Supply: Attach a 12V, 8A fused power source to the CLUTCH PUMP connector Pin #3 Yellow wire. "Hot in Run" is recommended.
- The six pin connector with these two wires should be plugged into the Yellow marked module connector "CLUTCH PUMP".

Back of CLUTCH
PUMP Connector

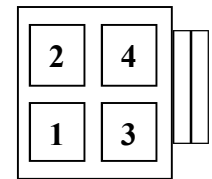


I/O Port Connector (Green)

The CPC507-A1 has 2 additional ground-side outputs capable of sinking 0.5A max each, a 2.2 Hz/mph output, and a Shift lock engage input, on the Green "I/O Port" connector. They are defined as follows:

- I/O Port Pin 1: Output - VSS = 2.2 Hz/mph (Not a ground signal.)
- I/O Port Pin 2: Output - Grounded when TFT > 250°F or ECT > 230°F
- I/O Port Pin 3: Output - Grounded when RPM > 2000 rpm
- I/O Port Pin 4: Input - Shift Lock Engage Input Green wire (explained previously)

Back of I/O Port
Connector



A four pin connector is provided (Green Wire Installed in Pin #4) along with five terminals (two extra). To use any of these outputs, crimp the supplied terminals to installer supplied circuits, and install into the correct connector pin housing. Make sure the terminals are fully seated in the connector. The largest wire that can be used with these terminals is 16 AWG. Snap this connector into the module connector with Green label marked "I/O Port". Note: These circuits are designed for low current use. The outputs can drive one standard automotive relay coil, but any current draw in excess of 0.5A will result in damage to the module.

Module Location

Locate the module in an area away from heat sources. Mount the module with two-sided tape or secure with screws.

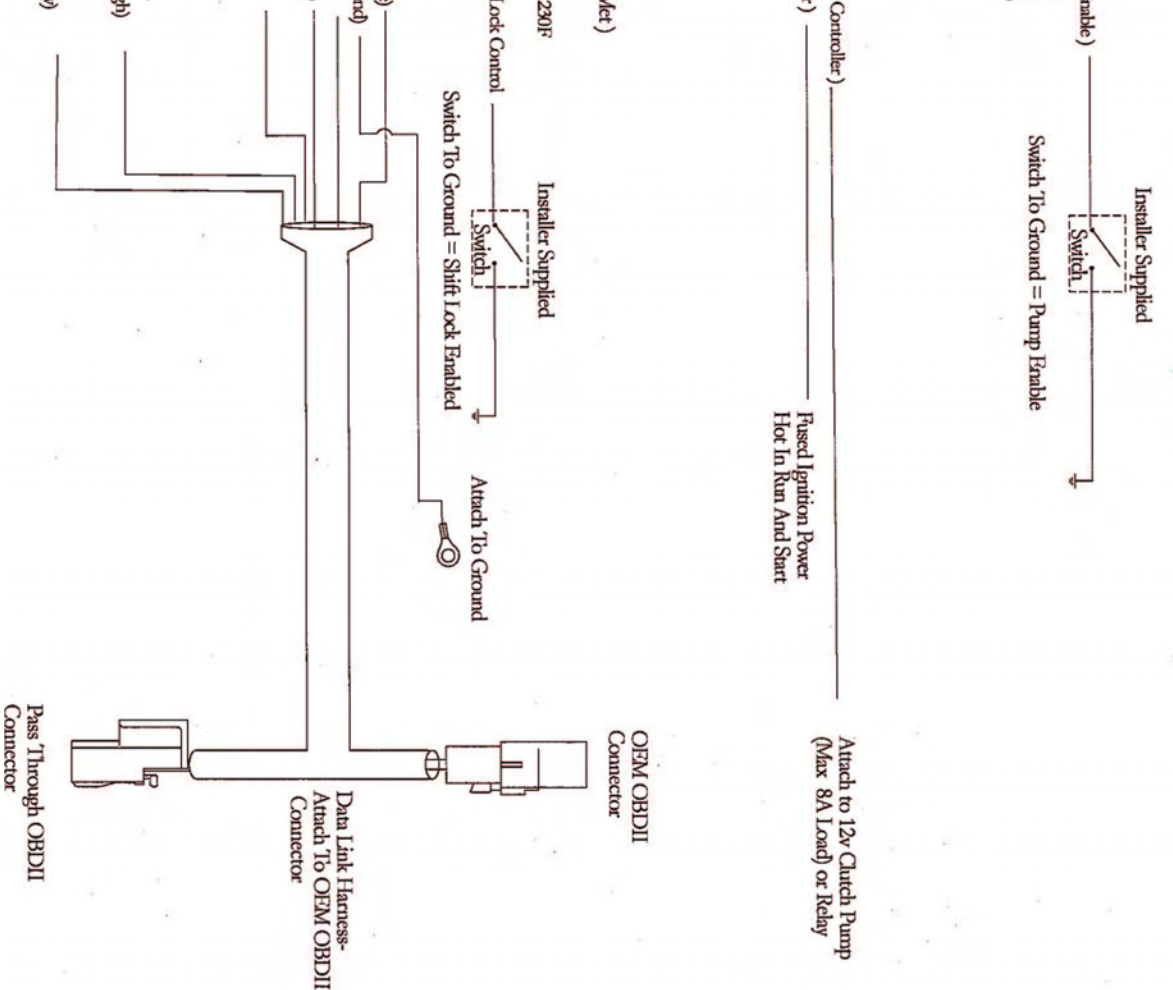
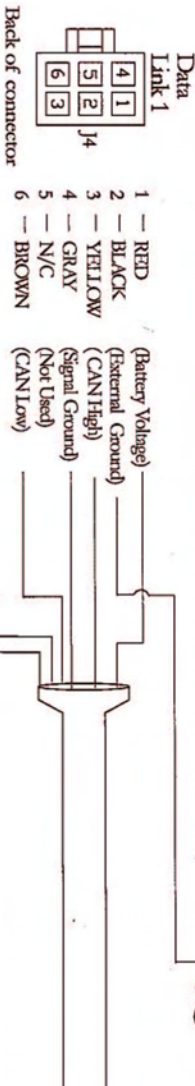
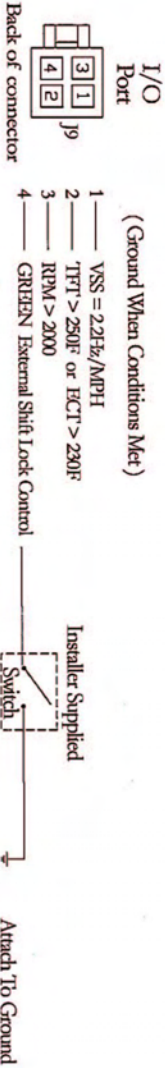
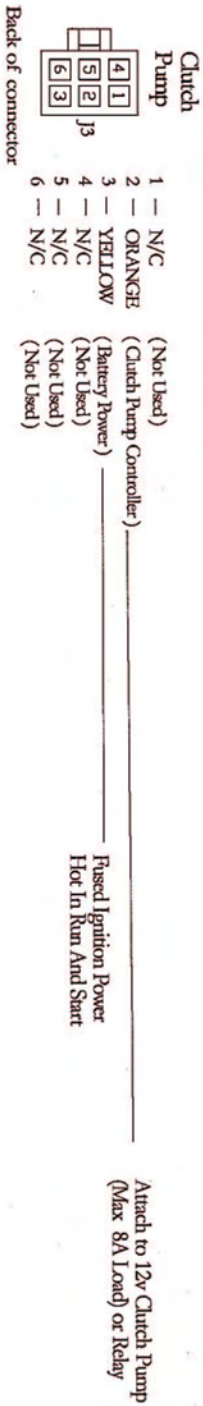
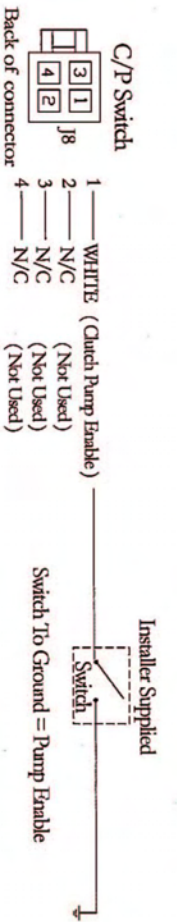
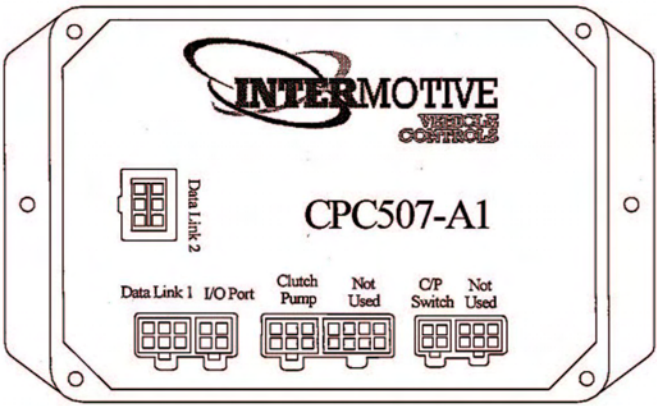
Reinstall the lower dash panel and reconnect the battery.

System Operational Test

Start the engine, set the Park Brake, and activate the Pump Enable switch. The Clutch Pump should activate. With the transmission in Park, and the Park Brake ON, the transmission should be locked in Park. Apply the Service Brake, the transmission still should not shift out of Park. Keeping the Service Brake depressed, release the Park Brake and the transmission should be able to shift out of Park. Make sure the clutch pump continues to operate when in Drive. Shift back into Park. If connected, activate the "Shift Lock Engage" input. With the transmission in PARK, the CPC507-A1 should lock the shifter. Apply the Service Brake, and confirm the shifter is locked in Park. Deactivate the "Shift Lock Engage" input. Apply the Service Brake, the transmission should be able to shift out of Park. If applicable, check installer connected I/O port outputs for ground signals when conditions are met.

If the CPC507-A1 fails any step in the System Operation Test, review the installation instructions and check all connections. If necessary, call

InterMotive technical support @ (530) 346-1801.



Submit product registration at www.intermotive.net

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