

## **What is a CPS?**

It's short for Camshaft Position Sensor. Ford calls it a Synchronizer or CMP sensor. International calls it a CAMP sensor. Since a diesel doesn't have an ignition system so to speak, it needs a way to verify that the motor is turning. It does this by counting revolutions of the camshaft, and relaying that info back to the computer that all is well, keeps dumping in fuel! When the CPS goes bad, the computer thinks there is a problem and basically shuts the truck off. It could be intermittent (runs fine at cruise, but wont idle) or it could be absolute. (Truck just died! no reason!) There is no timeline, no precursor, no warning. You could go 100k miles, or 10k miles between failures.

## **Failure Symptoms:**

One sign of a failed CPS is your Tachometer will not move while cranking the engine over. This is on long extended cranking. Short cranking, on a good CPS will not register either. If you have an AIC (APCM) installed, it may not registered RPM's either. The Tachometer gets its reference from the CPS sensor and if it's not sending a signal, no tachometer.

Before blaming your CPS for the truck not starting, check the following: Are you getting fuel to the fuel bowl, is the filter clean, is there enough OIL in the engine (low oil = no high pressure oil pump), if the truck is CHIPPED, remove it, clean it and reinstall, some have come loose lately. BATTERIES! They might have enough juice to crank the engine, but not enough to keep the glow plugs hot and the injector driver module firing.

If you have a 2002 or newer truck, the "No TACH Movement during Cranking" troubleshooting trick probably wont work for you. Ford changed how the TACH gets its signal to a computer controller and so it does not move AT ALL until the truck is fully running. However, if the truck was running and the TACH falls to zero, start looking into the CPS.

## **How do I fix it?**

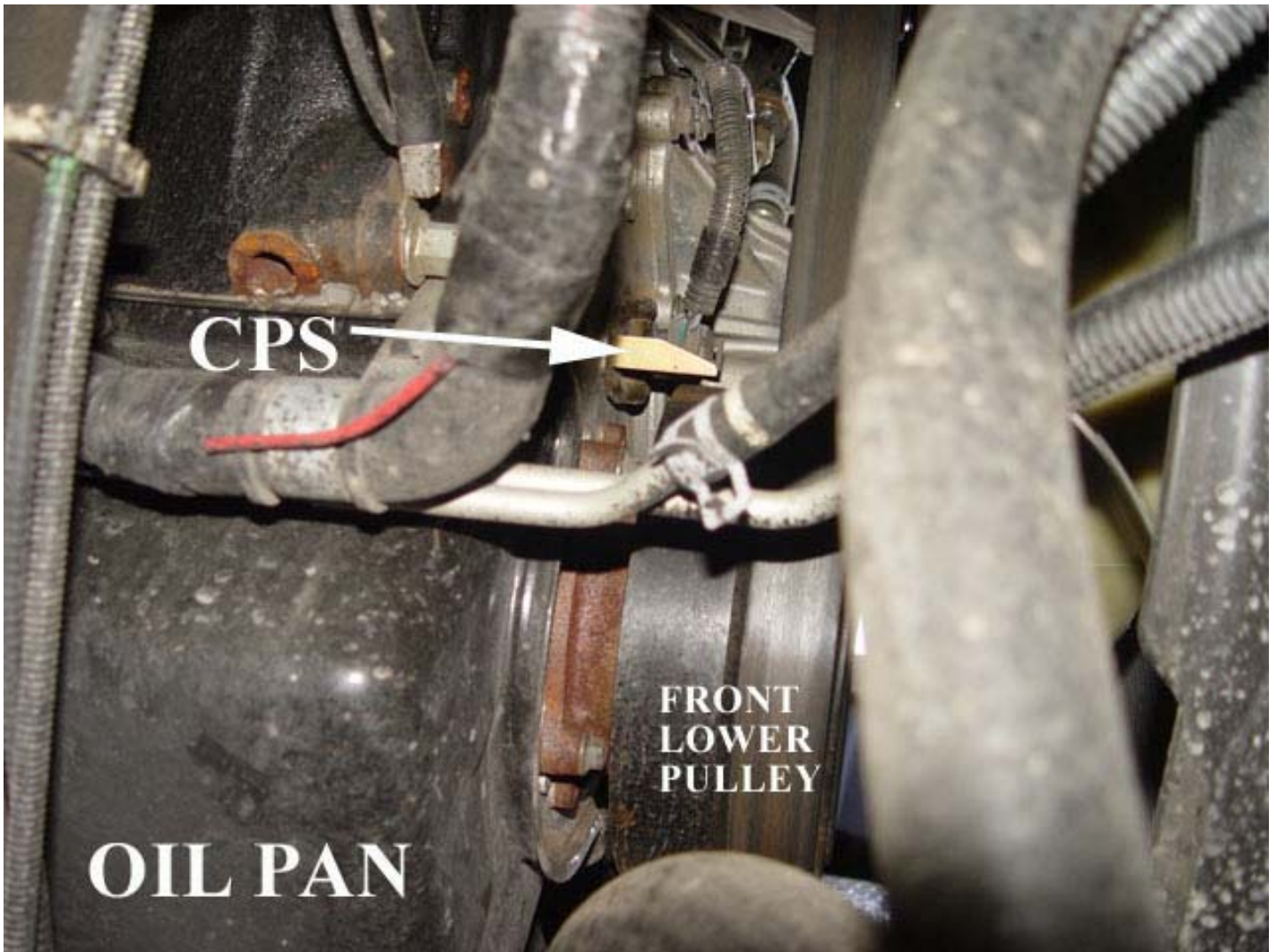
If your OLD CPS has any shims/spacers, you should discard them. The NEW CPS does not need them. SHIMS were used on the older engines to compensate for camshaft endplay.

To fix it, use a 10mm wrench (or socket with a short 3" extension, experiment at home to find the exact tool you think you will need if stranded on the side of the road, at night, in the cold and rain). A flathead screw-driver and a replacement CPS will do the trick.

Locate the CPS. It is on the passenger side of the engine block. It is accessible from under the truck, and located about the 10 o'clock position behind the crankshaft front pulley. Reach up and unplug the wiring harness, remove the 10mm bolt, and GENTLY pry the bad CPS out with the flat screwdriver.

## **Note:**

A select few of you may find an ALTERNATOR while looking under your truck for your CPS. This is part of the Ambulance Package, dual alternators. Your CPS may not be as easy to see or get too, but it's still in the same place.



Re-install opposite of removal and you should have a running truck!

Information provided by <http://FordSuperDutyParts.com>

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