

PTO 101

Introduction. This information was collected from numerous posts on the Country Coach Yahoo Group site. Many list members contributed, especially George Harper, Bob Handren and Roger Uhlich, who all provided photographs. PTO 101 was edited by Lee Zaborowski.

Photographs are high resolution so you can enlarge them on your computer screen or print out good copies.

The worn shaft splines are also courtesy of George Harper's 2004 Allure with a Cummins 400 ISL at 43,000 miles.

Here is the information you are asking for. This problem has been beat to death but is still apparently not understood by all. Unless you know for sure what is installed in your rig you may have a time bomb under your bed. The fix is relatively cheap, especially if compared to the costs after a failure/breakdown.

Country Coach (CC) apparently started using the Power Take-Off (PTO) around 2003-4. Until you look for the PTO, you don't know. There is some confusion with the limited CC PTO recall list. Even if a coach is not on the recall list there is no guarantee of no problem. Country Coach choose to recall the Magna/Affinity models with the Cummins engine as those particular models have both pumps (power steering & engine cooling) driven by this transmission mounted dry PTO. If it fails, you instantly lose power steering.

As time has passed we have seen, for example, that quite a few Inspires, 2005 for sure, and Intrigues also have either the same dual pump arrangement and/or the dry PTO. Those have yet to be recalled despite many conversations with NHTSA. Furthermore, this is a motor and transmission issue rather than only Country Coach model issue.



From the left, PTO, hydraulic system pump, power assist pump.



PTO with two pumps on passenger side of coach.



PTO showing single hose connection.

If you have a PTO it can be on either the passenger or driver's side of the Allison transmission. If you see a rectangular plate bolted to the center (round) part of the transmission housing this is the cover where a PTO installation would be - if so equipped. A majority are on the passenger side.

The easiest way to locate a PTO is to find your big hydraulic system reservoir, usually in the rear compartment near the engine. Look at the bottom of this fairly large cylinder and you will see two thick rubber hoses, follow these hoses. If you have a PTO they will run towards the front of the coach past the engine to the vicinity of the transmission. The vast majority of PTOs are manufactured by Parker-Chelsea and they paint the housings bright red. Attached to this red housing will be one or two hydraulic pumps. One pump is for the steering assist and the other supplies the pressure for the hydraulic system, usually the engine cooling fan.

To determine if the PTO has a wet design count the number of small diameter (~3/8" OD) hoses attached to it. If there is one hose from the Allison transmission this lubricates the PTO drive gears but not the pump drive shaft. If there is a "T" and two lines this should be a "wet" design and the second line provides lubrication for the pump's drive connection (see photographs).

The following is provided for information purposes only! To find a local Chelsea-Parker dealer/distributor go to:

<http://tinyurl.com/parkerpto>

There is a link to find a local distributor at this website. The local business may be able to suggest a facility to perform the conversion to a wet kit. SEEK COMPETENT SERVICE SOURCES. THIS INFORMATION IN NO WAY CONSTITUTES DI-



PTO removal in process, note single lubrication line.



Data plate.



Worn PTO output shaft.

RECTIONS ON HOW TO PER-
FORM THIS WORK.

If your CC has a PTO it probably has the following Model Number Designation.

267XGFJP-M5XK

If you have ANY other model number the following part numbers and information may not be correct.

SEEK COMPETENT ASSISTANCE.

If you are interested in what this means, using Chelsea-Parker Bulletin HY25-2267-M1/US:

267 = Basic model

X = Standard Mounting

G = Gear Ratio 31/41

F J= Right Hand Helix Gear

P = Pressure Lubrication = NOT
WET LUBRICATION

M = Shifter Type = Constant Mesh

5 = Assembly arrangement (There are 4 possibilities – if you do the Wet Kit installation yourself put it back together the same way!)

XK = Output Type = S.A.E. "B" 2 or 4 bolt

The wet kit for this model PTO is Chelsea-Parker Part Number 328591-141X.

You will also need the gasket that goes between the PTO and the Allison Transmission. This is Chelsea-Parker Number 35-P-74.

In addition it has been reported by other CC owners that up to 6 quarts of Transynd transmission fluid may be lost when the PTO is removed.

One dealer has reported at least 7 of their customers driving 2005 Magna's and Affinities, powered by C13 Cats, have all had PTO failures like clockwork at 30,000 miles. On these coach's, if it matters, the PTO is trans mounted and only drives engine cooling. Another interesting



Close-up of old, worn output shaft, VERY close to failing.



Worn pump input shaft.



Wet Kit contents.

fact is when these failed at 30,000 miles it was catastrophic and wiped out the pumps. Pumps are spendy and can take many weeks to have one built.

Why NHTSA is allowing Country Coach to only cover those two models is hard to understand or rationalize. One fella, who lives out east, driving a 2005 Inspire with a C9 Cat, had a catastrophic failure in Oregon. They were on the way to Alaska when his dry PTO failed. It wiped out his pump and since he could not immediately pull over they feathered it along a few miles. In doing so the engine got hot (but not hot enough for the ECM to shut it off) and his radiator cracked in a manner which allowed engine coolant to enter his transmission fluid, and it ruined his Allison transmission. He paid \$20,000.00 or so for a new transmission, wet kit, radiator, and pump. He was out of service 6 weeks living at Pacific Allison. The scary part is Pacific Allison had no idea what a wet kit was and almost put it back together the same way. He had 30,000 miles too!

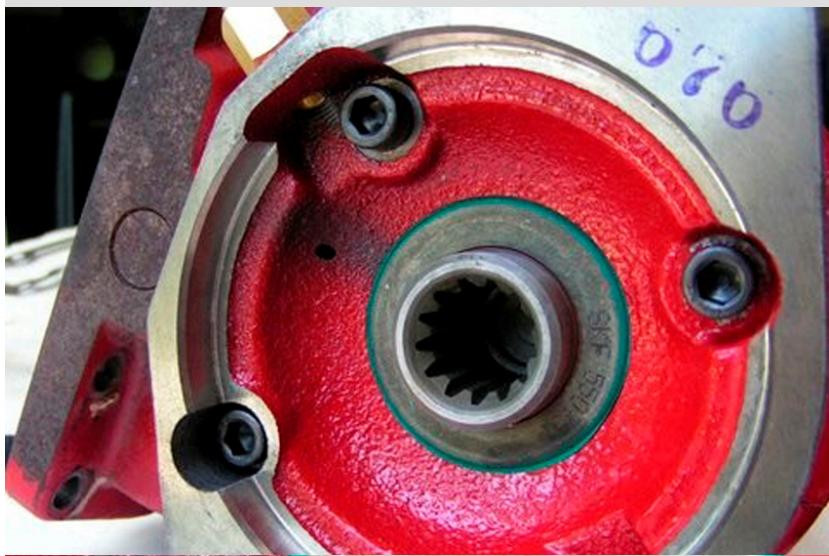
No one is aware of any list from CC or anyone else with the coaches that have the dry PTO installed and that's the problem. Only some coaches with a dry PTOI are being recalled. No one knows for sure about any of the others. This is also why John Davis (jd@jdrv1.com) is collecting information on his website to see if there is a definite pattern and if so what it is.

At this time there is only one way to know - look.

A free or next to free inspection may show that you don't even have a PTO. If you do and it is not wet lubricated the cost to change that is about \$1,000, significantly less if you DIY. That's a lot cheaper than the ~\$4k in damages one owner reported to this list plus the potential problems of lost



New PTO output shaft and hose.



Wet kit installed – new housing and output shaft.



Close up of new PTO output shaft splines.

steering assist under bad road conditions or at a minimum a ruined trip, and a much bigger bill.

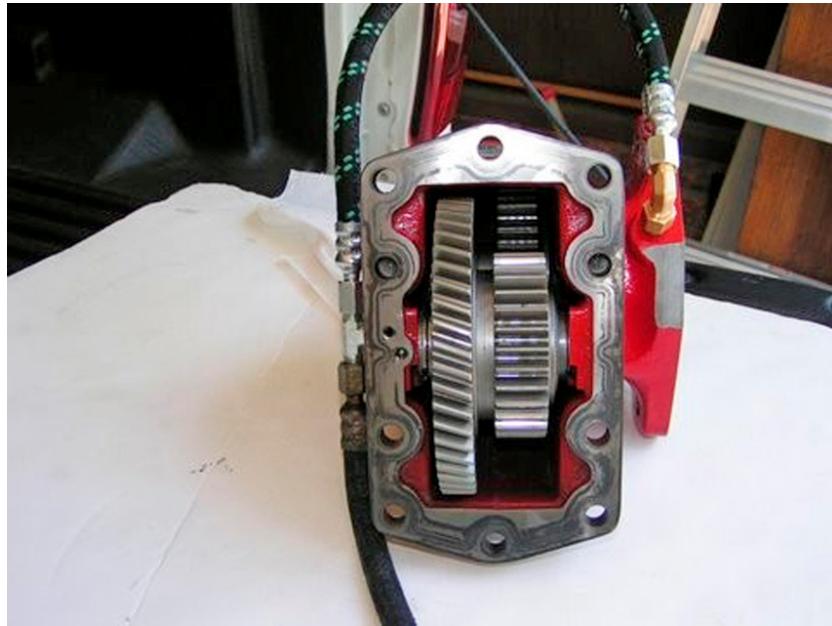
Bottom line is anyone that has a dry Chelsea PTO better get the wet kit installed. Per Chelsea, it will fail around 30,000 miles if it's dry. You can spend a little now, insurance per say, and probably never have a problem. The alternative is at some point it will fail leaving you stranded and possibly causing a tow and a new pump, costing 5 times or more what the wet kit is and ruining a trip.

In Closing. In addition to the photographs provided here, there is another set of excellent pictures by Herb Strandberg, located at –

<<http://groups.yahoo.com/group/Country-Coach-Owners/photos/album/306454719/pic/list>>

The website of John Davis RV Service (<http://www.jdrv1.com/>) is another excellent source of information – see ‘Hot Topics Chassis’ for more Chelsea PTO detail, NHTSA recall information, a partial list of coaches with PTO related problems, and how to purchase the PTO wet kit and other parts.

The primary priority of this whole PTO issue is Safety. Just, please, know what you are driving for sure. Don't guess. All it takes is a look!



Wet kit installed, note “T” fitting and two lines. One goes to the transmission the other the PTO/pump drive connection.