

Installing Warn Hubs (or any locking hubs) Ford 1999-2004 Superduty Pickup truck

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Pre-introduction –

My name is Kenny Gallo, I am not a certified mechanic in any way shape or form. I work on my truck as a hobby. I wrote this install article as a guide to those who want to attack this job. I take NO responsibility for anything that goes wrong with your install. Its up to the person doing the job to make sure they are doing it right. This is how I did mine, it is pretty easy and forward, use torque specs where applicable.

Introduction:

Ford makes a workhorse of a pickup truck. They use solid axle setups in their super duty line and this is a very beefy setup. One problem is when offroading or plowing, the user with automatic locking hubs may be left stranded in 2wd. The reason for this is because the vacuum line system for hubs, even though an older technology, is still lacking in my opinion. They are not as immune to dirt and water as manual locking hubs are. So what if you have to get out to lock your hubs to go in 4wd, I don't mind and once you try a nice hub upgrade, you will know the hub is locked if you used to have trouble with the auto ones!

Testing:

So how do you know if you need new hubs? I suppose if you have automatic ones, my answer is already yes change them. But you could test to make sure they are not working.

The way to test the hubs are as follows: Run the truck in a drive way, drive up and down the drive way with 4x4 selected on the switch, hubs should be in "auto" selection not "lock". After driving back and forth about 50 ft each direction about twice you can be pretty sure the hubs have had enough time to engage.

Now put the truck in park and jack up the front of the truck. Spin one wheel; the other wheel should spin if the hubs are locked. If one wheel spins and nothing else happens, then check the light on the cluster. Does it say 4x4? Or 4wd high or something like that – if yes then the auto hubs are defective. If the light is not on the cluster, you may have a problem with your transfer case, and that needs to be looked at first (beyond the scope of this article). Now have somebody hold the wheel on the other side and try to spin yours, it should not spin, since the transfer case is also engaged. If this is not what happens, go manually lock the hubs and try again, if it works now, put in some good hubs.

Replacement options:

So it looks like you need hubs or want to remove the crappy auto ones and install some nice new hubs. For me there's one option – WARN, there's other ones like super winch. Or you can get a factory ford one that is manual but again, spend the extra money to get what is good. I personally like the warn premiums, all metal construction – 9/10 turn locking to make sure shes locked – I love them.

Parts needed:

- 1. Set of new Hubs from your choice of manufacture**

Tools Needed:

- 1. Pliers**
- 2. Needle nose pliers**
- 3. allen key or nut driver (sometimes comes with the hubs)**

Install instructions:

Installing warn hubs is an easy and fun experience; it is even more of a great old time with a buddy. You can drink and have them do it, or you can switch off. This job for both front locking hubs is only a 1.5 – 2 beer job. (Seriously folks, I would not drink when doing anything with the truck, cause you know you want to test it after words, and I have been in the woods with my truck after a few – its not pretty!

OUCH!



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Figure 1 – Dent. Please learn from my mistake.

Moving along:

1. Get your parts and tools together



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2. Remove old hub, clean out old grease and rust, do not spray anything though because the sealed assembly is right there. Test the sealed assy by spinning the short shaft and feeling for roughness (the short shaft will only spin if the other wheel is off the ground, the other hub is unlocked or the transfer case is disengaged. No need to remove the wheel, I had this picture left over from another install.



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Notice the snap ring towards the top of the hub, squeeze it together and remove it, then wiggle the hub up and down and pull to remove it.



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Careful for the spring – it may go “boooing” you don’t need it anymore but who wants to step on that with bare feet?



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Hub removed; there is the inside, very simple.

3. Install new hub after applying a pretty good amount of high temp wheel bearing grease – I do this to displace water if any ever got in there and it can, I will explain later. If installing worn hubs you will use the retainer almost like a spring to hold the hub inside the wheel hub “housing”.



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check for fit before greasing the locking hub – they say not to grease it but I do anyway, just a little not a ton.



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Warn hub retainer ring, bend up the tap at the end of the ring about 5 – 10 degrees to make it possible to grab it again in the future. I have heard of people using two of these retainers to keep the hub in the housing tighter, but I don't see the difference on mine.

4. Install new hub cover use the allen key they provide, do not go crazy with the tightness, there is no real force this way and over tightening a cap will only make you break a screw. Make sure the hub cover is lined up on the hub properly.



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I ran out of pictures, but I installed the hub cover here and the hub cap, install is done, now clean up the vac lines.

5. Test new hub by turning CW and CCW making sure it does not bind
6. Repeat for the other side
7. Remove vacuum lines or PLUG the vac lines from above in the engine compartment. There is a vacuum solenoid near the vac canister on the passenger side engine compartment. I completely removed mine and mounted my SPAL fan controller there.
8. I plugged the knuckle with a 1/8" NPT nipple and completely removed the vac lines. If I ever want auto hubs again, it will be time consuming to put it all back in
9. Go somewhere that you need 4wd, use it and make sure it works, if you get more traction in 4wd then in 2wd then its working.

Pics for fun and reference:



Me holding my warn lockout hub after about a year of use – covered in grease but still working great





Sealed assy picture (removed from truck – backside) There is a needle bearing right there that has gone bad on me in the past, it is a Torrington B-2110 bearing and it casues the short shaft to have a grumble when rotating it. If your short shaft has a grumble – best get it checked out



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If your truck is missing your short shaft main knuckle seal – it will look like this behind the sealed assy

Here is what it looks like when the main seal is replaced



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You can tell if your main seal is ok by checking from the U-joint side of the short shaft. IF there is a ton of play or does not appear to be a main seal, then water will get in back there (happened to me) and ate up my warn hub. Warn replaced it for free, and asked me to really check why it happened I found it but it was nice of them to help me out.

Conclusion:

Learning by doing is the best kind of learning out there. With this truck (my first new automobile) I have learned more by doing then I could have possibly learned in a book. Somebody once told me that a day without a lesson is a day wasted.

Best of luck and if there are specific questions, look me up, shoot me an email.
Mercury (Kenny)