Table of Contents

Hydraulic Oil and Filter Change

The hydraulic pump for your cooling fan takes 30+ HP at high engine speed/high fan speed.

Filter elements degrade with age as well as use. They are not expensive, nor is this a difficult job.

- Remove the reservoir canister lid.
- Siphon out the oil so you don't mix unfiltered oil “clean/filtered” oil.
- Remove the wing nut holding the washer and filters in place.
- Install new filter(s), the washer and wing nut
- Fill with the proper oil and replace the lid.
- System will self bleed after you fill the reservoir with new oil. Yes, check fluid level after running it and air is out of system.

It is better to siphon off the old oil in the hydraulic reservoir before replacing the filter element(s). That way, dirty fluid and dirt in the bottom of the reservoir does not go to the middle (filtered fluid area). It also makes filter replacement a LOT less messy.

Be sure to fill using the correct fluid, which will be listed on the reservoir and owners manual.

Full Hydraulic Oil and Filter Change Walk Through

We did the hydraulic filter / oil change today. It took a couple of hours, including time to buff off light rust and repaint. Went well with no surprises and no mess. As with previous oil changes, we buy inexpensive new empty Lowe’s 5 gallon plastic containers with very tight fitting lids. Used oil in sealed container is just dropped off for recycling without waiting for empty container back.

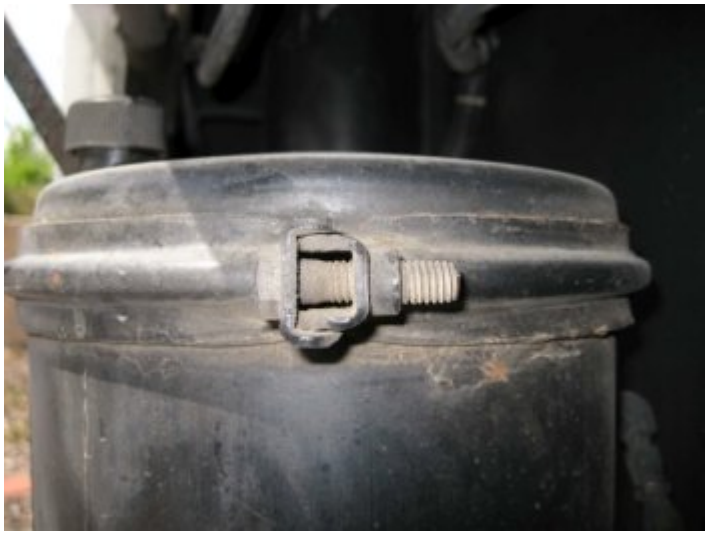
Poured in 4 gallons of Delo 400 15w40 regular engine oil, which 3 gallon boxes were on sale at Costco. Will top off oil though dip stick hole in a few days, with probably another quart or two after oil cools.

Was nice to have a new gasket. Old gasket looks OK, but rubber is many years old.

You can easily do the job yourself.

New rubber gasket (Double Bevel O-Ring seal - Cummins # 999-55A) showing its size

Outside bottom of hydraulic tank showing where drain plug is located. Cover must come off to replace filters and it is easy to pump out oil from tank without removing drain plug. Drain plug does not need to be touched.



Cover clamp showing right side's bolt. Before removing cover. Note how rear clamp fits inside front clamp, which is reverse of left side. Remove bolt to remove cover clamps

Cover clamp showing left side's bolt. Before removing cover. Note how front clamp fits inside rear clamp. Remove bolt to remove cover clamps.

Using an inexpensive disposable drill pump, suck out oil with a cutoff garden hose placed inside tank. Another cutoff garden hose is used to flow oil into an inexpensive disposable 5 gallon bucket that can be securely covered for disposal

Inexpensive drill pump from Lowe's or Home Depot with male hose threads on both sides makes it easy work to suck out all oil in tank. This type of pump also works great to suck out bottom of fuel tank to check for water in fuel tank. Not worth cleaning pump after using, as its seals will not hold up after pumping petroleum products and it will continue to smell. We just threw away the drill pump with the rags and empty oil gallon containers.

Close-up of gasket showing chamfered top and bottom outer corners

With both bolts removed, cover clamps can be removed with a small amount of force from a flat screwdriver. Rust and dirt may be between clamps and tanks, but will not fall into tank while cover is in place.

(Clamp Assembly (2pc+Bolts) - Cummins # Q-53087) The inside of clamps should be sanded to remove any corrosion. A good cover to tank seal is important to prevent oil leaks after clamps are tightened. Good time to clean up outside of clamps so inside and outside of clamps can be painted. Note that rear clamp has captive nuts, while front clamp has bolt holes.

Uncovered tank full of oil with old filters held down in place with spring & wing nut

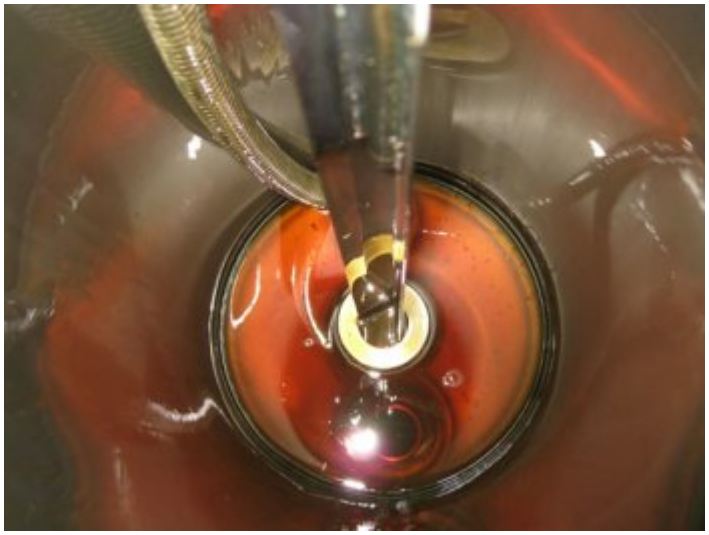
Upside down (Cover Assembly - Cummins # Q-80132) shows dip stick tube. Edges of cover should be sanded to remove any rust as the inner edge seals to the rubber gasket. Laying in the cover are three loose pieces:

1. concave filter cap that sits on top of filters and forces the top filter to be centered
2. spring that compresses down on cap and keeps wing nut from loosening
3. wing nut which forces spring pressure down to keep filters in close contact with each other.

Spring and wing nut hold-down small diameter filter cap, which holds the three stacked filters tightly in place. Very important to hold down spring with other hand when removing wing nut to keep spring and wing nut from flying out or falling into bottom of tank. Anything falling into tank could accidently slip into the large hose at bottom of tank, potentially causing a major problem. Same caution when replacing spring and wing nut over new filters.

Upside concave filter cap which fits between top filter and spring

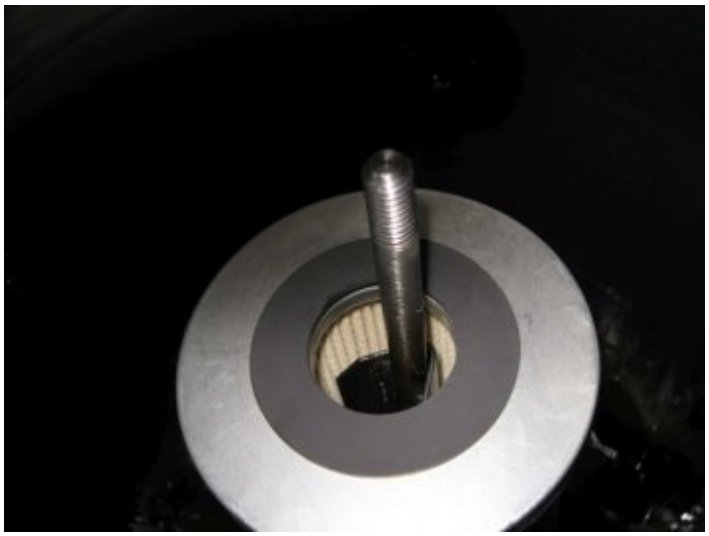
Center filter guide post is not removable. Note the wide metal welded to center post, which forces filter center hole to center on post. Bottom filter seals to a raised round flat platform. (drill pump suction hose is visible in background)



Empty tank with most of oil pumped out. I stuck the hose down into the big bottom hose fitting to get a little more.There is still old oil in all the hoses to the radiator fans and the long run up to the front power steering gear and the hydraulic pump. Center post is a wide angle piece of metal used to center filters over raised round center filter platform. Drill pump suction hose shows in rear.

Nelson 84101B Filter

Last of three filters on the way to sitting on top of other filters. Each filter slips over center post



Top filter centered on guide post, before cap, spring & wing nut. Note top threads limit how far down wing nut can be tightened.

Concave cap partly in place. Note filter cap center that contacts the bottom of the spring.

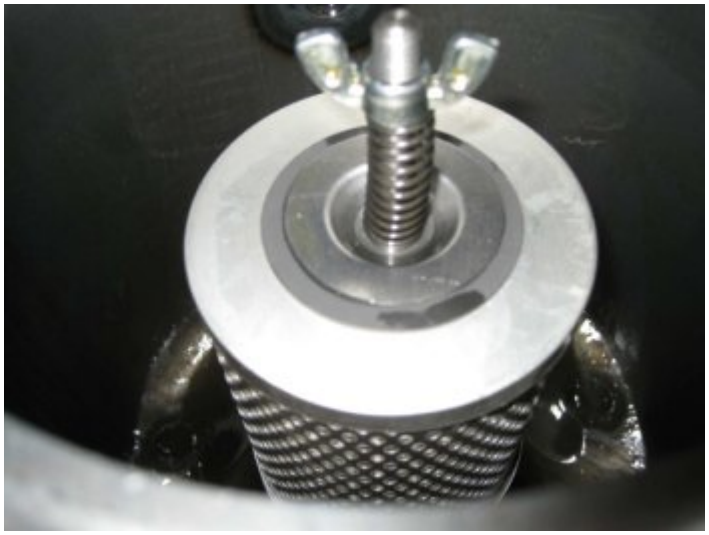
Complete filter installation. Three filters on filter guide post with centering cap in place. Spring and wing nut keep filters in place, sealed to each other forcing all fluid to go through filters.

New gasket in place but not seated all the way down. When cover is placed on tank it seals against gasket forcing it

down and toward center of tank. Gasket is needed to keep oil from leaking out between cover and tank. New gasket is recommended with filter change.

New gasket in place. Forward facing part of gasket is not seated all the way down.

Tank with filters installed and gasket in place, ready for adding 4-1/2 gallons of 10w40 diesel engine oil.



Filters mounted in place looking down into tank before adding 10w40 oil

by Barry & Cindy, Original Topic Thread