

How to rebuild a steering pump VN-VP-VR by [thebot123](#)

Hey guys,

I've recently rebuilt one of these power steering pumps and I thought I would write up a guide with a few photos and show you how to recondition your own pump! These things are dirt cheap anyway but I had a streak where I went through a couple so now I've got a reco one in the shed ready for when I need it.

It's really not hard at all it is quite simple actually, you only need some simple tools but I must say if you don't have a G Clamp, 1" spanner or socket, assorted screwdrivers and pliers it's going to make it ALOT more harder to get into the pump.

Tools Needed:

Hammer

G Clamp

Needle nose Pliers

Assorted Phillips and flat head screwdrivers (Big and Small)

1" Socket and a ratchet to fit the sucker or spanner

Bench Vice (depending on what you have around)

Air compressor or something to blow out the gunk.

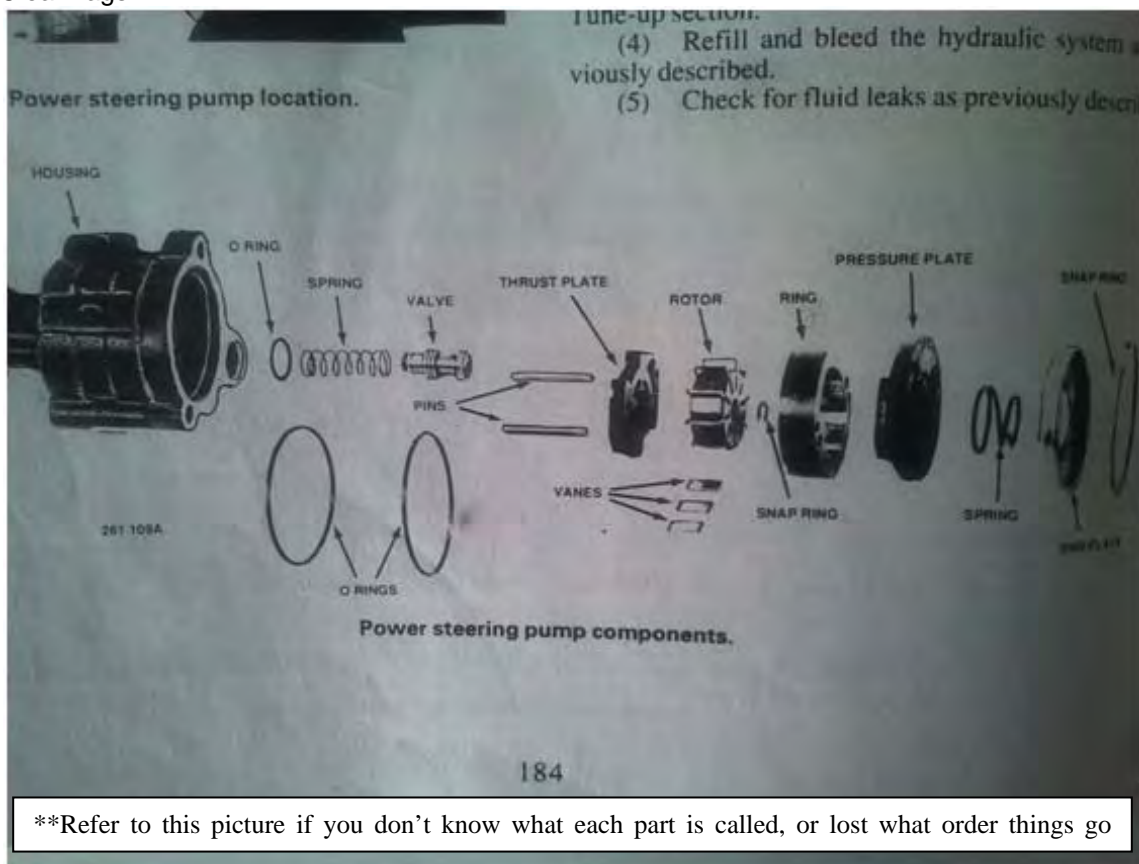
Other assorted items:

Power steering pump rebuild kit (Comes with seals and a bearing)

A dab of power steering fluid

A couple cans of degreaser

Clean rags



1. First thing is to have the pump removed from your car unless you've gone down to the wreckers and picked one up to rebuild just to have as a spare. There's a few write ups on here about removing the pump from the car it's not hard at all its 2 hoses and 6 bolts.
2. Once removed get a nice clear space and put an old towel or rag down and find a suitable container to sit the pump in as it's still going to have fluid in it
3. Get hold of your G Clamp and like the pictures below line the clamp up over the Allen key bolt on the front and the bubble groove on the back plate of the pump and tighten the sh#t out of it so it compresses in but try to keep your clamp straight otherwise it will compress wonky, after that leave it clamped down





4. With the G clamp still holding it down find the small hole on the outside of the pump, it may be filled with grease and crap but its right here on the pump



After you find the hole put a small screw driver into and push and you'll see the snap ring being pushed out a bit, grab another screw driver and get it out just watch your eyes mind had a bit of force when coming out.

5. Once you've gotten the ring out slowly undo the G clamp and move it out the away, now the back plate may be tight as or yours may be loose already if its tight just give it a tap with your hammer and pull the back plate out it should look like this.



Pull the spring out and start to put your parts away in a SAFE container.

6. With the spring out you just have a plate starting at you



now do this next part over a container cause parts can go everywhere, grab the pump and OVER the CONTAINER bang it on your hand if nothing comes out the pump bang it on the table but in the container, I'm serious I had sh#t go everywhere, keep banging the pump in your hand till no loose parts out you should have a pressure plate, a ring, 10x vanes, 2x pins.

7. Now you're looking at the rotor and a little circlip.





This is where you will need a very tiny flat head screw driver and a hammer, pretty much just hammer the little screw driver into the circlip and try pry it out a little bit, when you get a little gap grab another screw driver and pry it out, it'll be bent back later so don't worry about it being a little misshaped but if you completely bugger it just go to wreckers and grab another.

8. With that little clip removed pull out the rotor.





9. Pull off the thrust plate, it should just fall out.





10 Rip out the main shaft of the pump just grab hold it from the front and back pull, other cases may need a tap from the hammer but mine come out pretty good.



An overview of all the parts ripped out so far



11. Grab your 1" socket or spanner and undo the bolt on the back of the pump, I don't have a vice but I did a mission trying to undo this bolt I have heavy sleepers of metal in my yard and there was a slight hole under the sleeper just big enough to jam the pump in wrapped up in a rag (accept for bolt exposed) and I undid it that way if you have a vice you are laughing if not I'm sorry you got to improvise like I did.

12. After the bolt comes off a spring, a valve will come out also, chuck all of it your container accept the housing for the pump and fill it up as much as you can with degreaser.



I don't know why but I threw the old bearing in there lol!

13. Take the housing back to your bench and put it facing upwards toward you, you will see a bearing pry it out with a screw driver or something but don't go psycho on it you'll see the bearing in the picture below.



14. Pull the seals out the pump housing you'll see them on the walls of the pump there will be 2 of them also pull the seal off the 1" bolt valve, now chuck your pump housing in a container and fill it with as much degreaser as you can



I let all my parts soak overnight, and then in the morning I blew them out with the air compressor and then let them sit in the sun on rag. I then decided to re paint my housing so I sandblasted it back and resprayed me housing.

Partially blasted back



Finished Blasting



All rust primed.



All sprayed black, wanted to do silver but didn't have it.



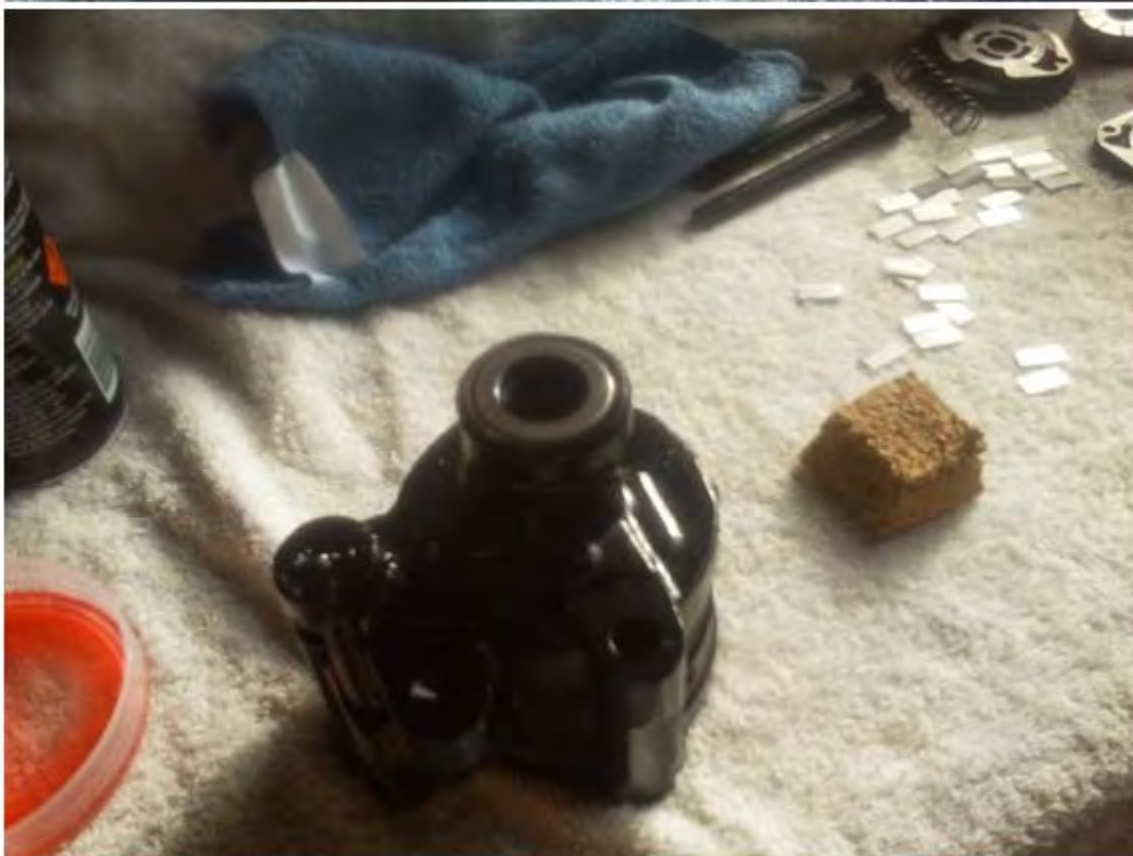
All set up and ready to put it back together (minus the housing it was still drying at this point).



15. Grab the seal kit, and pour a little bit of steering fluid in a container. Make sure all your parts are clean! If you didn't have an air compressor make sure you wiped everything really good.



16. Grab your new bearing and lather it a little bit with steering fluid and put it in the pump where the old one come from, you'll need to tap it in with your hammer but make sure you got something between the bearing and hammer and don't bash it in.



17. Grab one of the big O rings and smear some fluid on it and put it in one of the 2 O ring spots, just seat part of it in and run your finger round in a circle around the pump to make the rest follow in the groove, put the other O ring in the second slot when you're done. (Do not put an O ring in the very last groove towards the back of the pump that is where the snap ring goes)



18. Install the main shaft for the pump and if it's a bit hard just lather her up





19. Chuck the thrust plate in, don't worry it won't stay there until you secure it in with the 2x pins, they simply go into the small holes under the thrust plate.

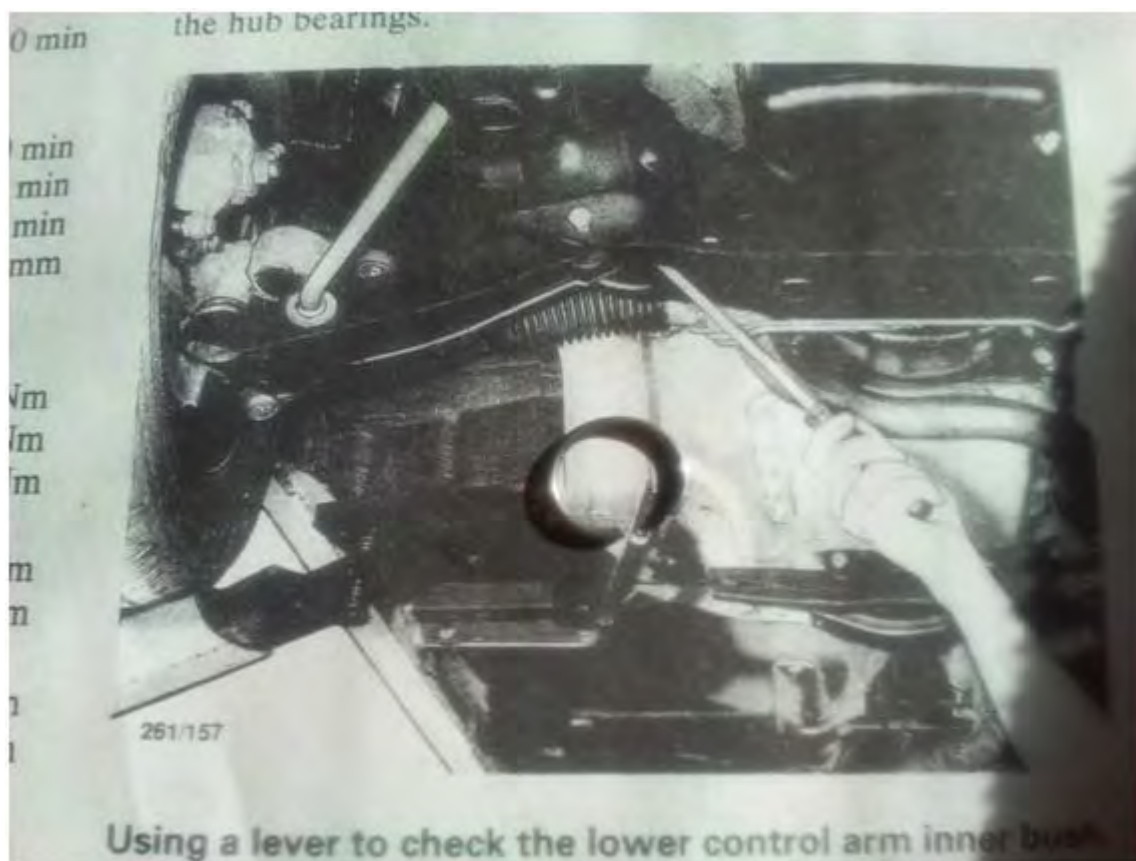




20. Get your rotor and slide it over the shaft and put your circlip on, just use needle nose pliers and squeeze it back to shape around the rotor shaft after that start putting all your vanes in.



Little circlip.



Vanes



All installed on the rotor



21. Install the Ring over the 2 pins it will slide straight in

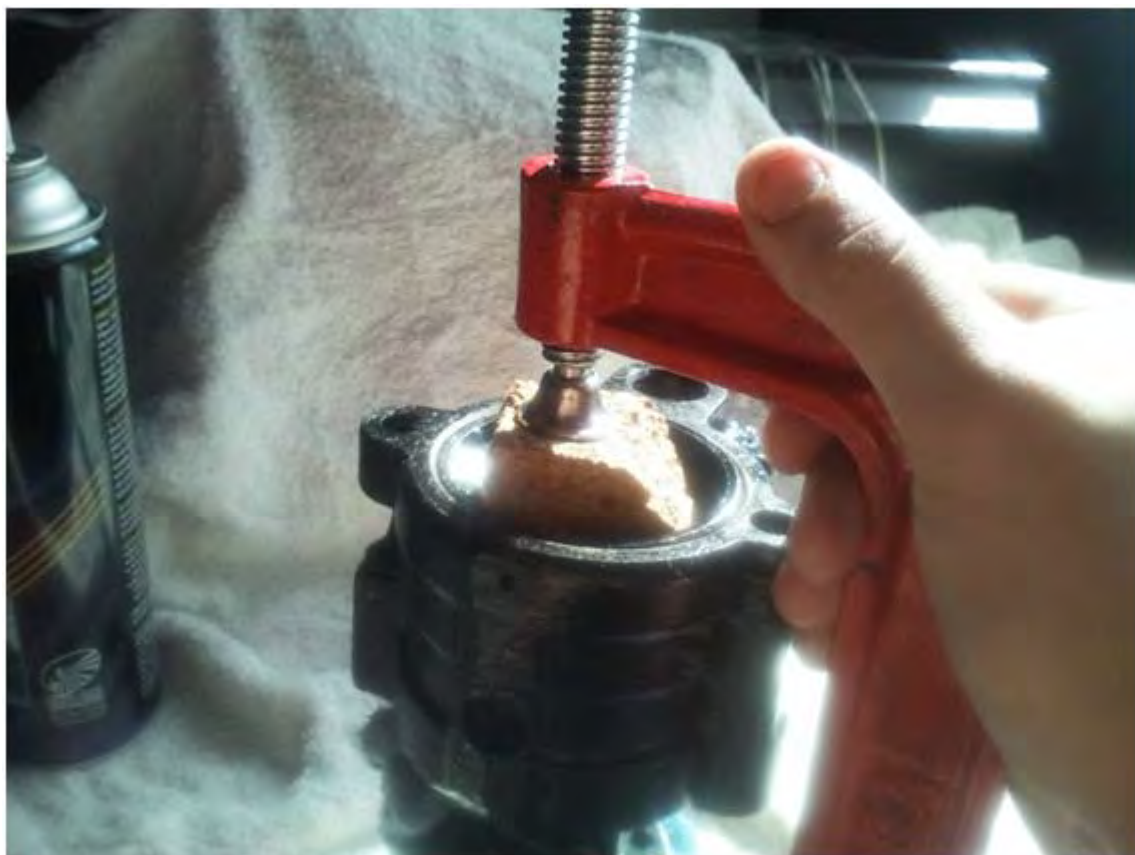


22. Chuck the pressure plate over the top of the ring



23. Chuck the spring in place and the back plate, now the same as earlier use the G clamp to clamp it down and put the snap ring back! It's a lot harder than taking it off. I scratched up the back of my pump with the G clamp





The cork crap didn't work to well I just did it without it



24. Grab the 1" bolt valve thing and put the last seal out of the kit on it, once you've done that put the spring in the hole first, then put the valve in and then the 1" bolt valve. Tighten it up
(Can be a bugger to put back in as well)



I just realised the O ring is in the incorrect position on the bolt in this photo its actually sitting on the thread



This is the correct position for it



25. After all that I resprayed the parts I scratched up, and now I got a recon pump!!



Let me know if I've missed anything or a mistake.
Have fun!