

Serpentine Belt Replacement Step by Step

by Chirpz



The other day while working on my turbo actuator I noticed that my serpentine belt had a lot of cracking. I have heard that some cracking is normal for this type of belt but since my belt had 90,000 miles on it, it was long overdue



What you see here is the original belt. My CRD had 11,000 on it when I purchased it and now it has 90,000.

Replacing the belt was not difficult. I would rate the job a few notches above easy. On a scale of 1 to 10 I would say it is a three. So if your belt needs to be replaced I encourage you to grab your tools and dive in.

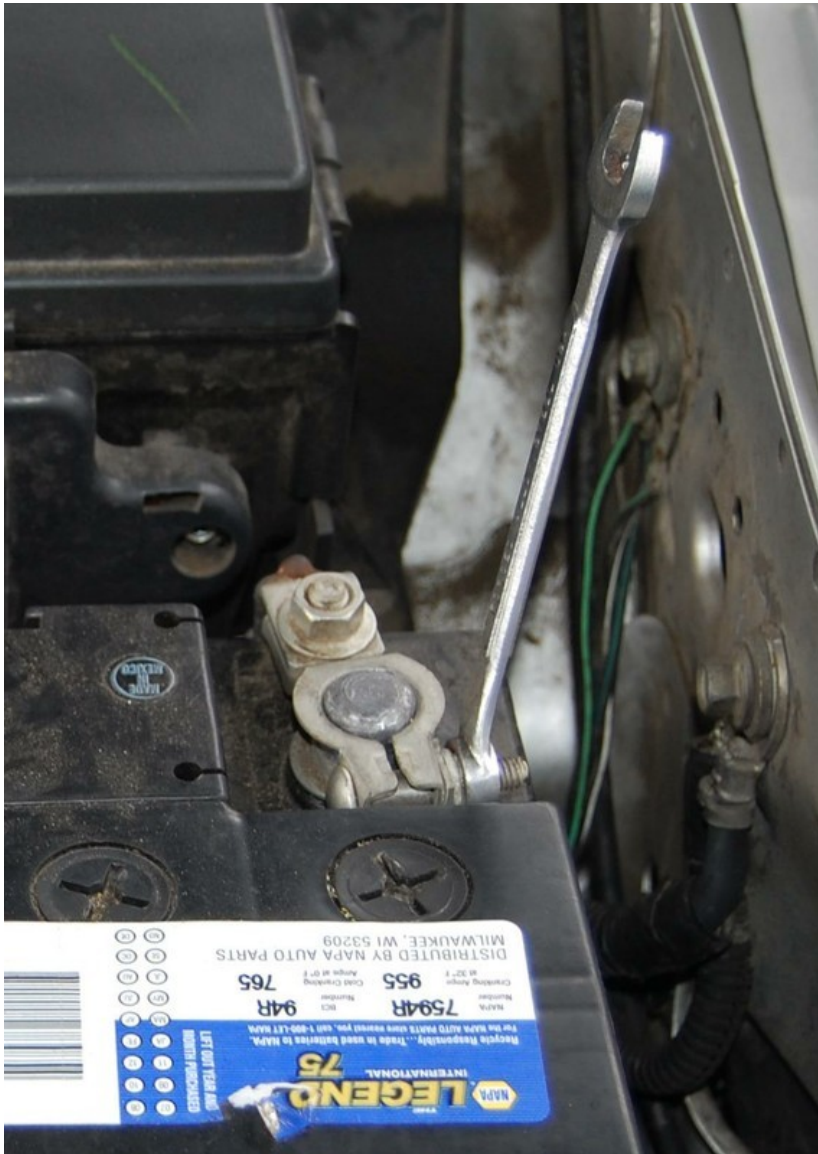
It took me 3 hours, but now that I know how, I think I could do it in 1.

Basic tools: Torx screwdriver set, ratchet, extensions, universal, 5/16" box end wrench, 17mm 12 point socket, 8mm torx socket, 1/2" drive breaker bar that works with 17mm socket, long grabber tool, work light.

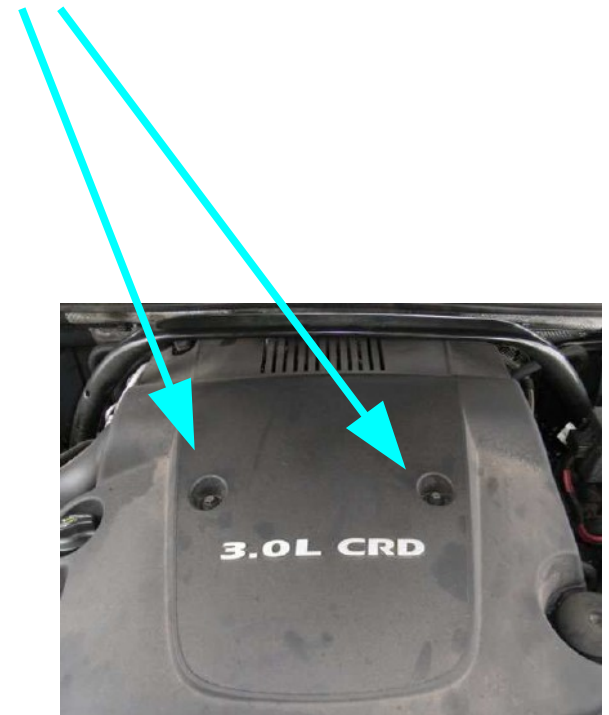


If you don't have an 8mm torx socket a 5/16" will work.

Remove the negative pole of the battery as always.

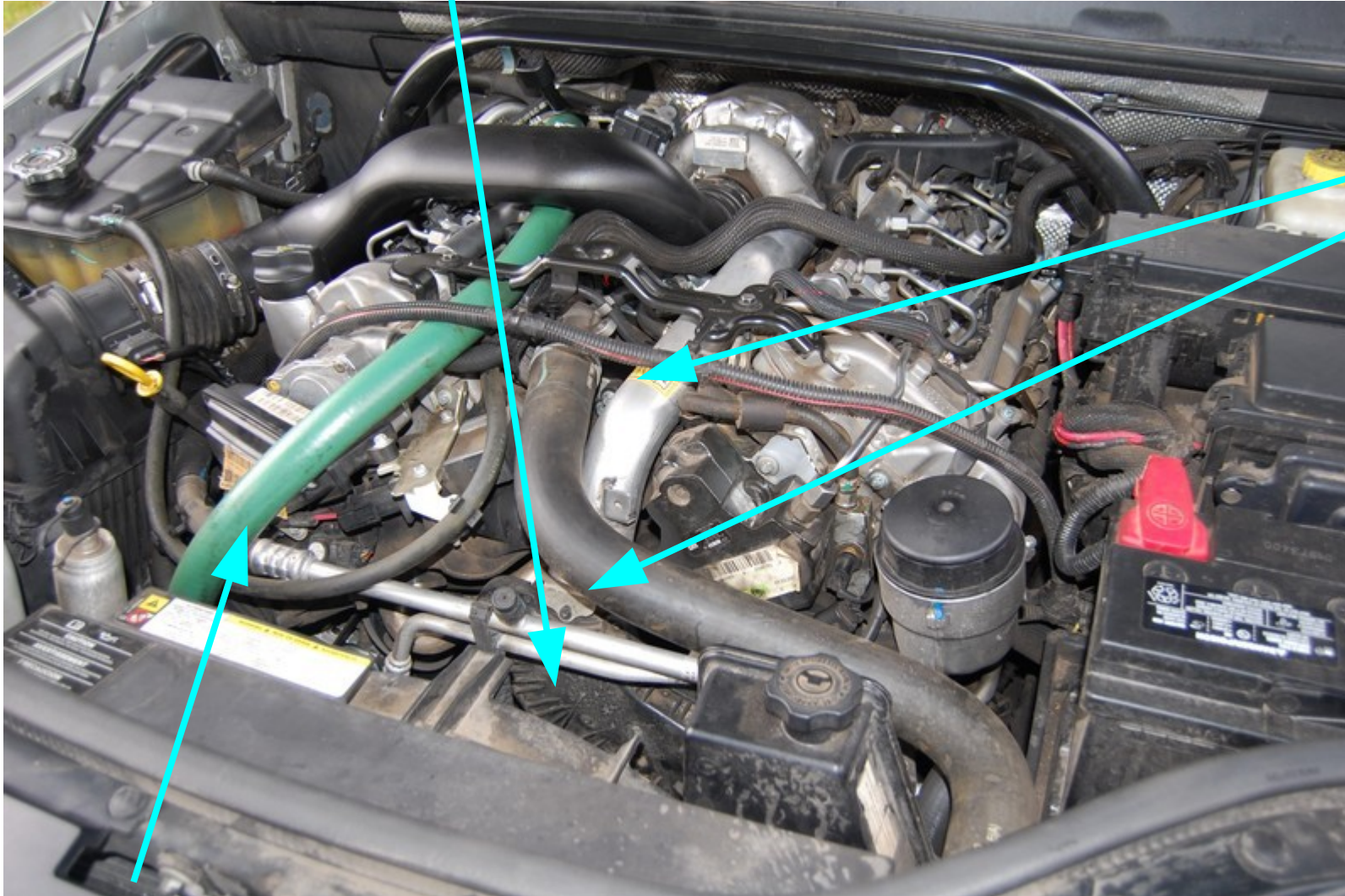


Remove your engine cover and sell it on Ebay. It looks pretty but it traps heat. Remove two bolts and the oil cap. Lift the front of the cover and pull it up and forward.



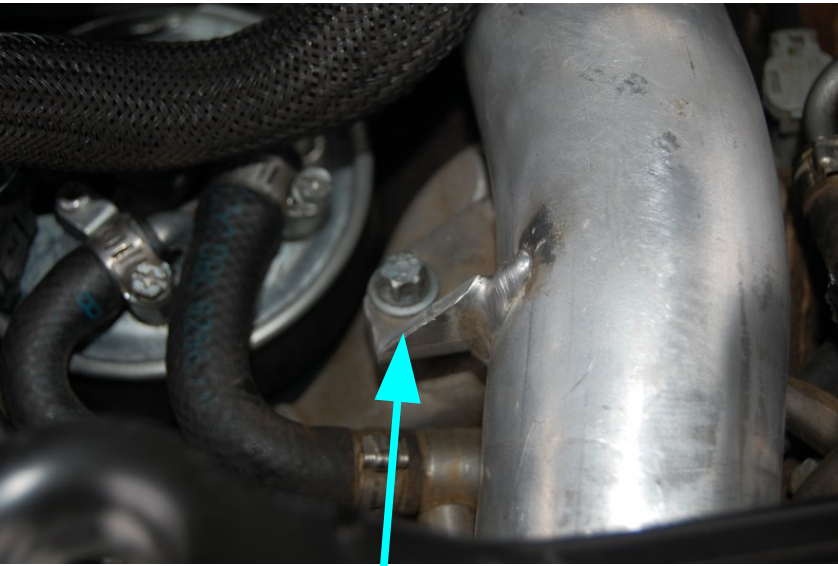
To do this job, you must remove the turbo resonator.
It is located here.

After you get it off, replacing the belt
is pretty easy.



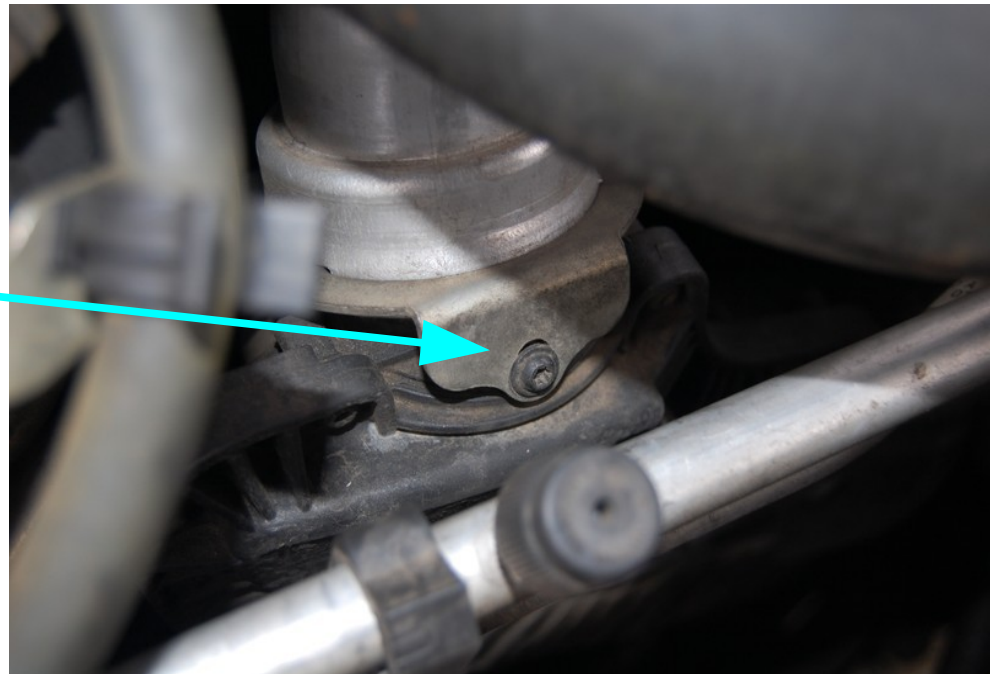
Remove
bolt and
screw so
you can
loosen this
silver pipe.
See next
slide for
details.

My Elephant Hose Mod



Loosen but do not remove the pipe that connects the turbo to the turbo resonator. If you remove this pipe, you risk ruining the O-Ring seal that connects it to the turbo.

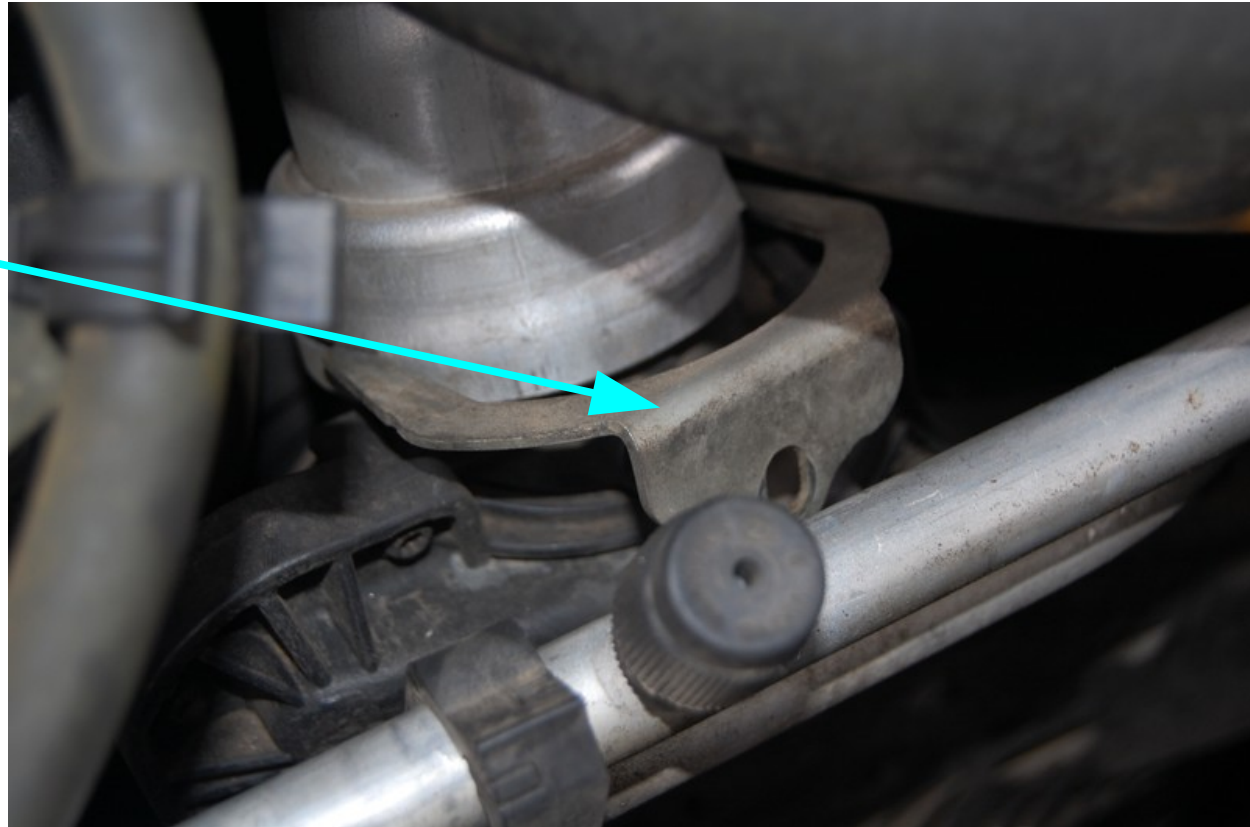
Remove bolt and screw





After you remove the screw, slide the flat C shaped clip off. Slide it straight forward toward the front of the Jeep. You can now lift the silver pipe up a small amount disengaging it from the turbo resonator although it is better to wait until the resonator is loose too.

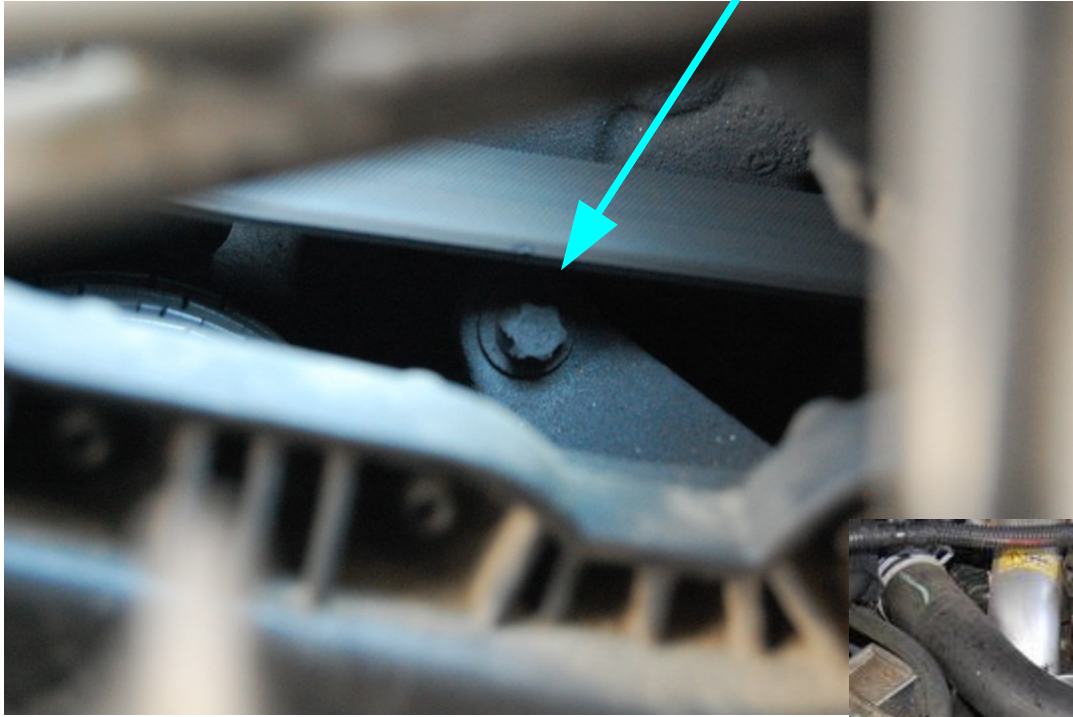
Remove clip
disengage the
pipe.



There are two more 8mm bolts and one more clip that holds the turbo resonator on. To remove the top bolt, use your small ratchet with extensions and universal. After you get it loose you can pull it out with the flexible grabber. This is the most difficult bolt. It is hiding down there right under the belt.



Here is a close up of the upper bolt and belt.



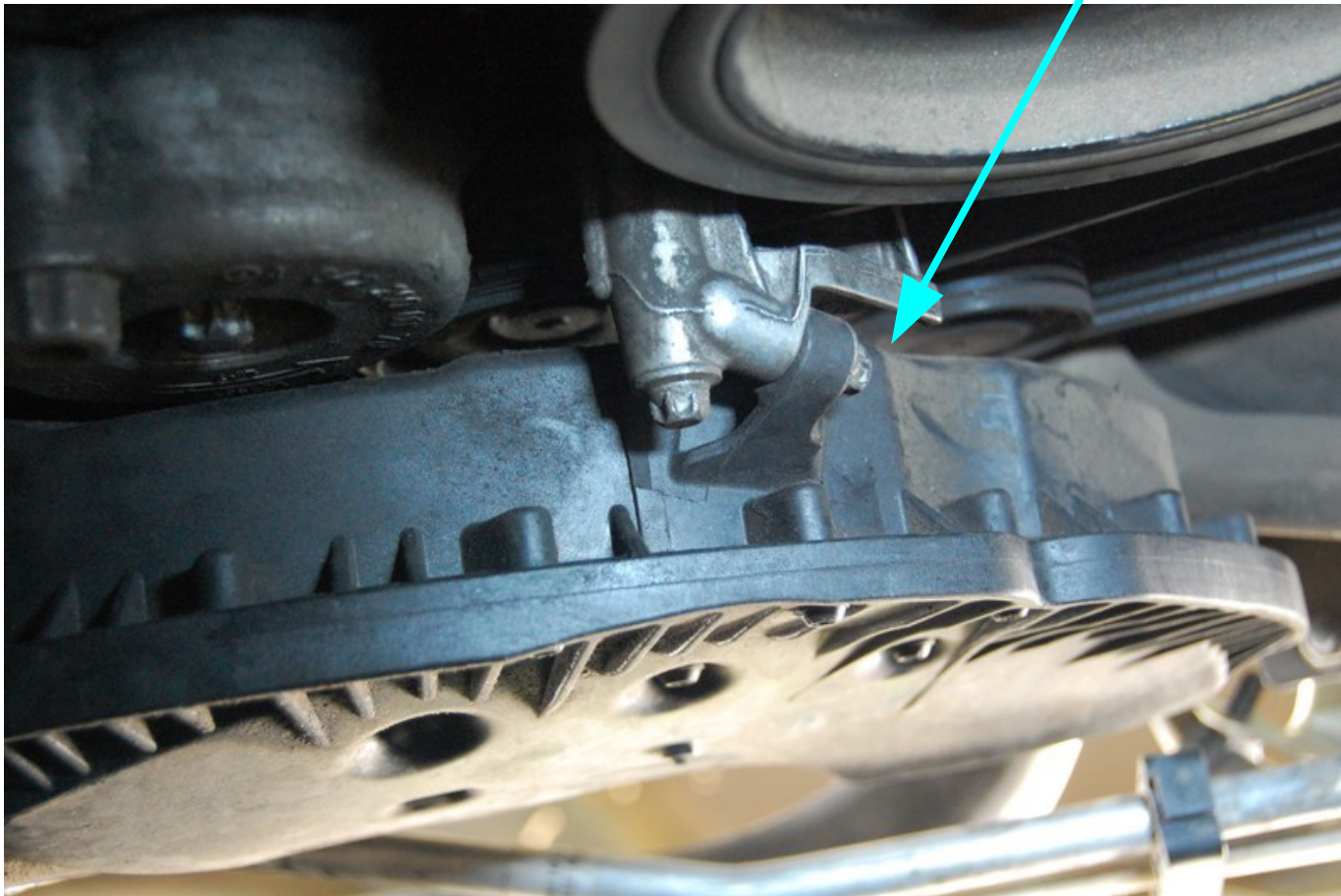
Removing the PITA bolt.



Flexible grabber tool (optional)

If you have a front guard plate*, remove it now. The next steps are performed from beneath the Jeep. Believe me it is way easier to do this job from down below.

Locate the lower resonator mounting screw and remove it.

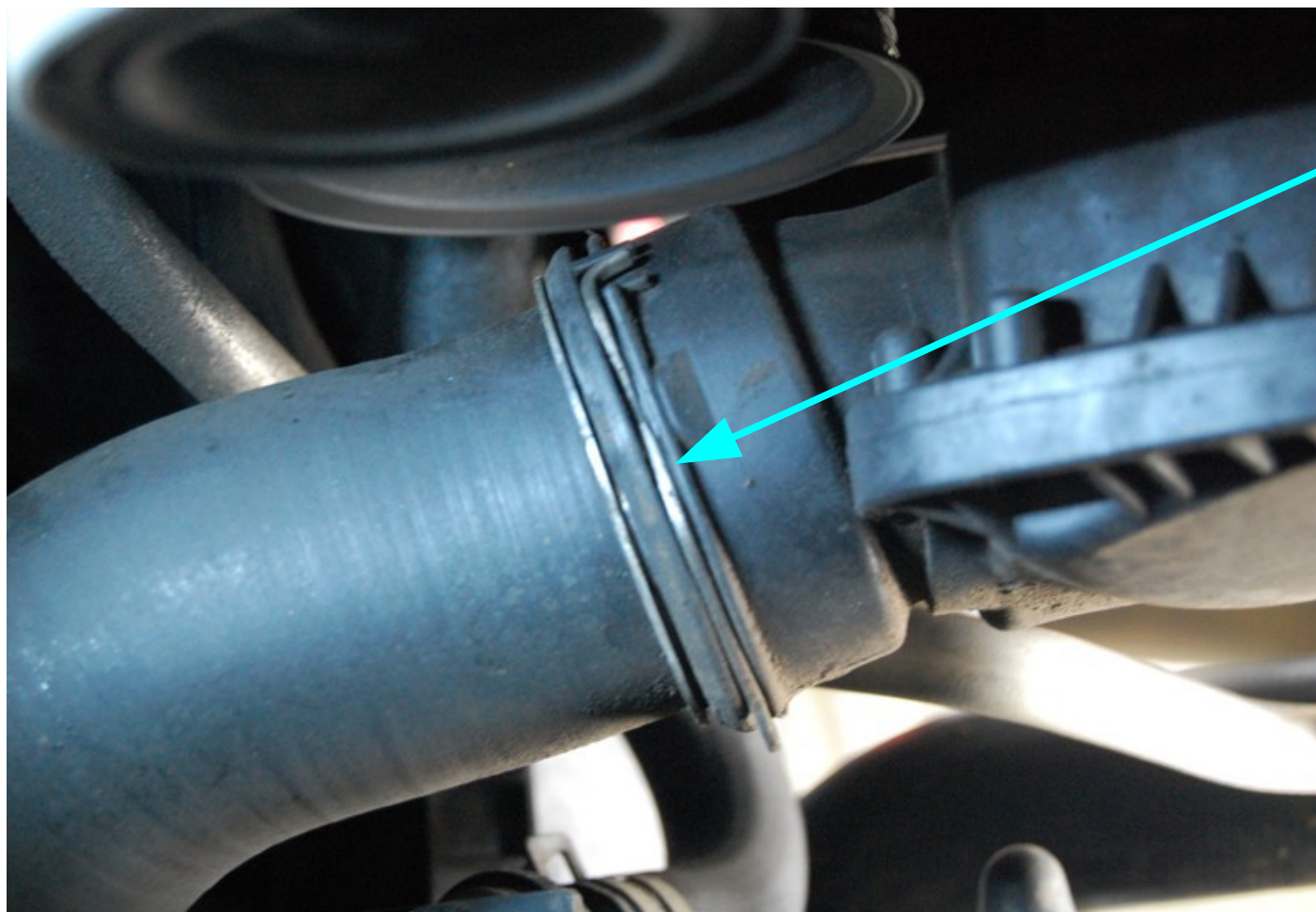


**View is looking
UP from below**

If your Jeep has an air dam, it may be in the way. If so, remove it.

* I am NOT referring to the large skid plate that covers the bottom of the engine. I have a 4x Front Guard.

Locate and remove the spring clip that hold the flexible intercooler pipe to the turbo resonator. Place a hook tool or screw driver under the front of the clip and slip it off. Be careful not to puncture the pipe. It looks like a radiator hose but there is nothing in it.



Bottom Clip

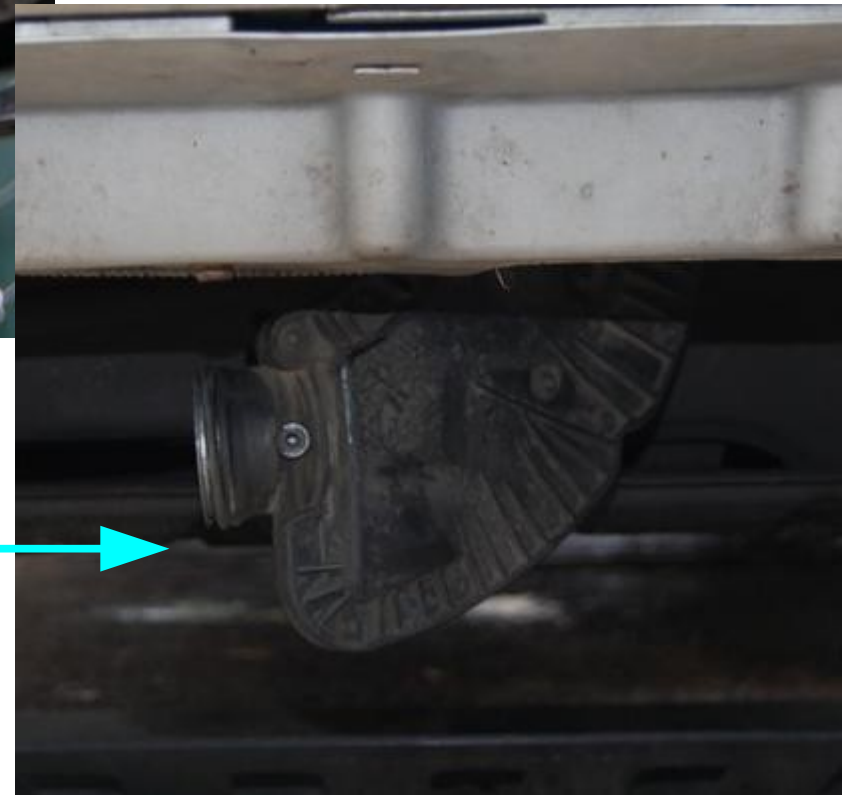


Top clip previously removed



After you remove the clip, pull the intercooler pipe off of the resonator.

You can now rotate the resonator and wiggle it out from under the Jeep. I flipped it upside down and rotated it front to back.

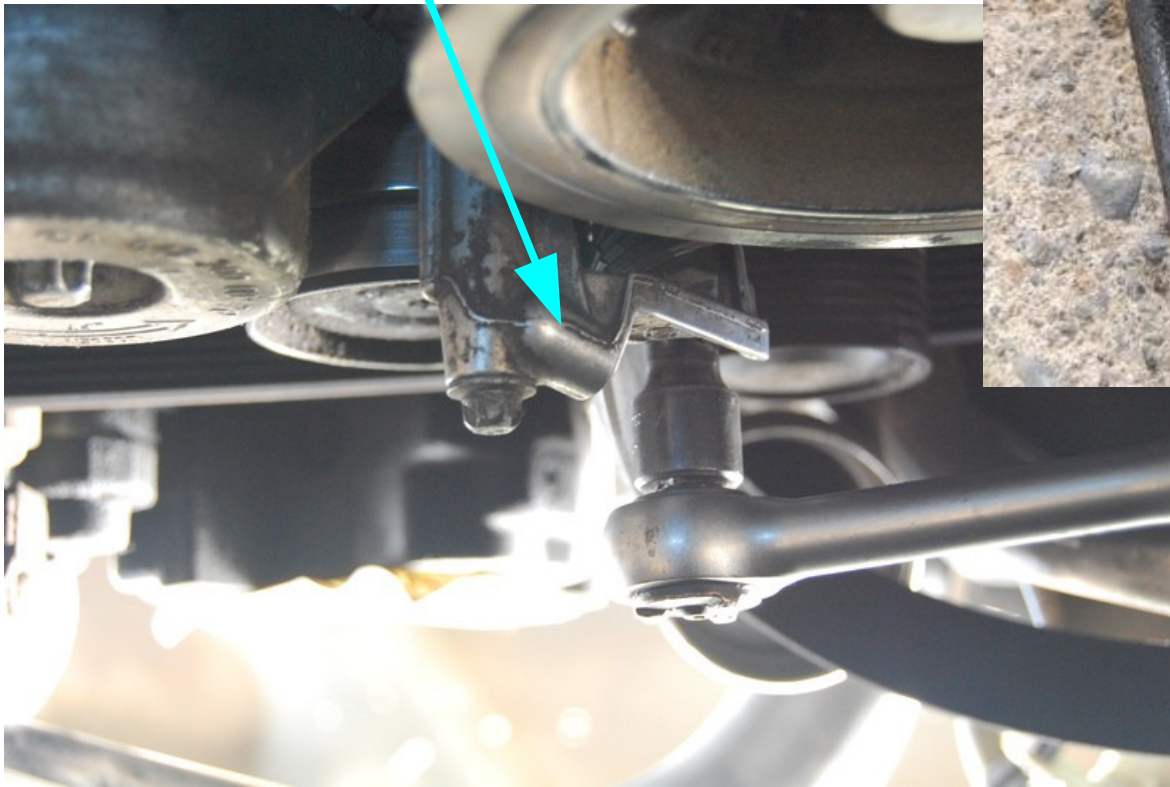


This is the resonator. I thought about gutting it out, but changed my mind. Put the snap ring back on the resonator now. When you replace the intercooler hose, it will just snap into place. If your resonator is all gunky, clean it. Mine wasn't.

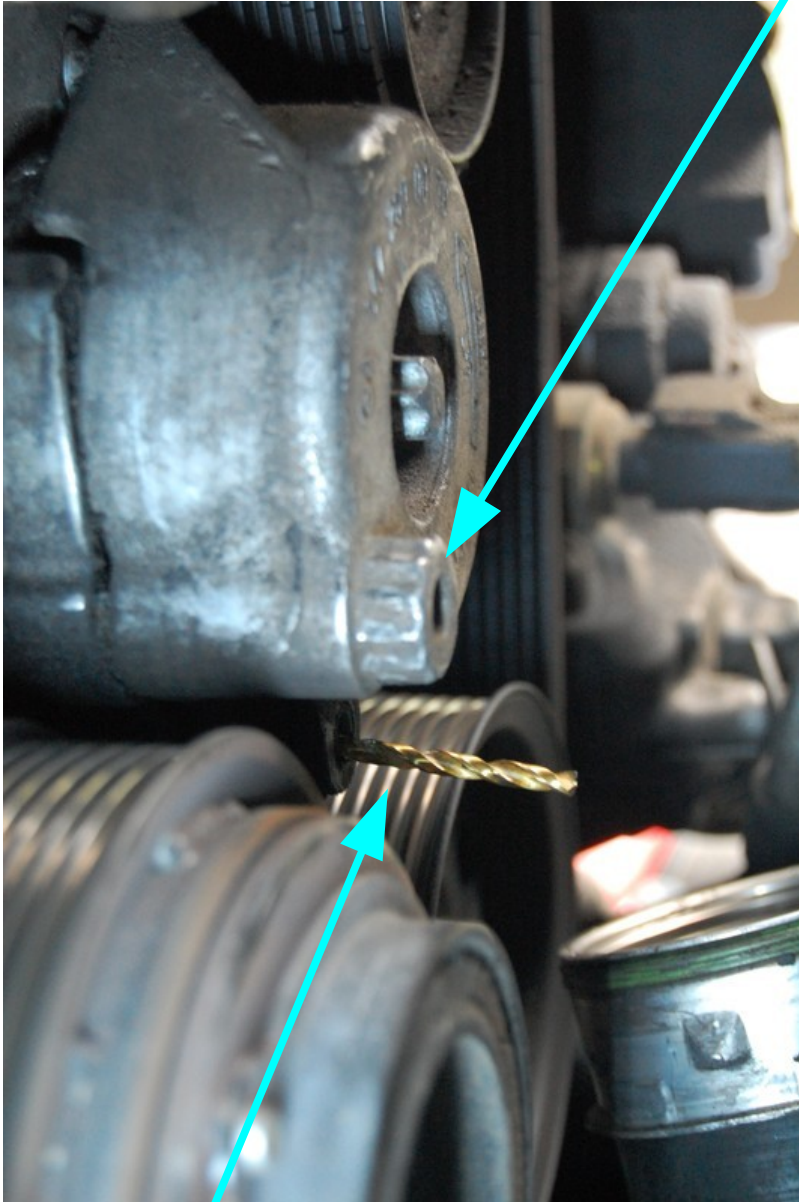


Snap the ring on now.

Remove the mounting bracket that the resonator was attached too. The belt runs through it so it has to come off.



View from below



Drill bit or nail

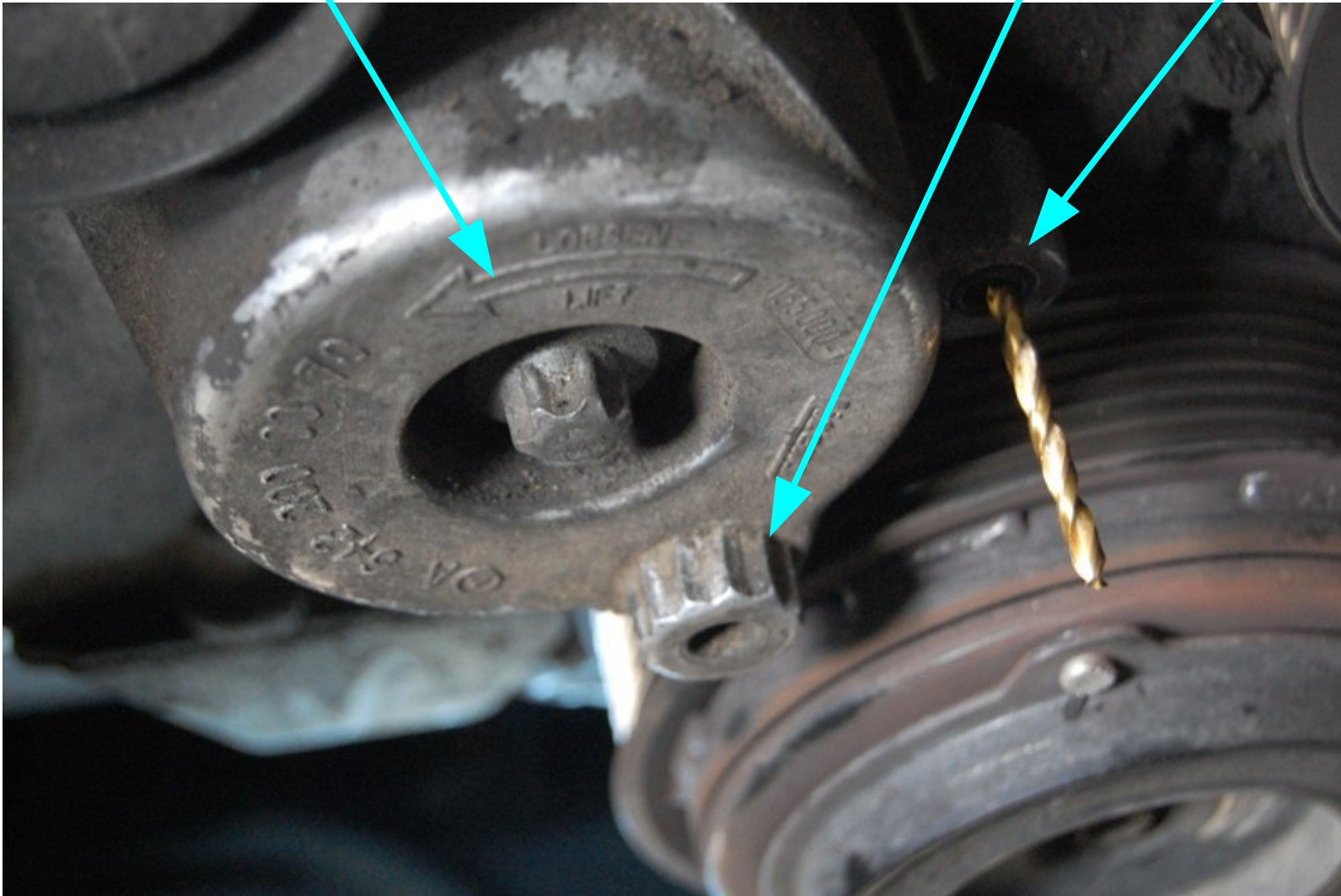
Using the 1/2" breaker and 17mm socket, turn the belt tension device a small amount and place a nail, or drill bit into the locking hole. This will hold the tensioner while you work on the belt. Do NOT remove the tension device or the pulley that is attached to it. You are turning it counter clockwise, moving your wrench from the passenger side toward the driver side. You are only rotating it about 3/8 of an inch but it is a pretty stiff pull.

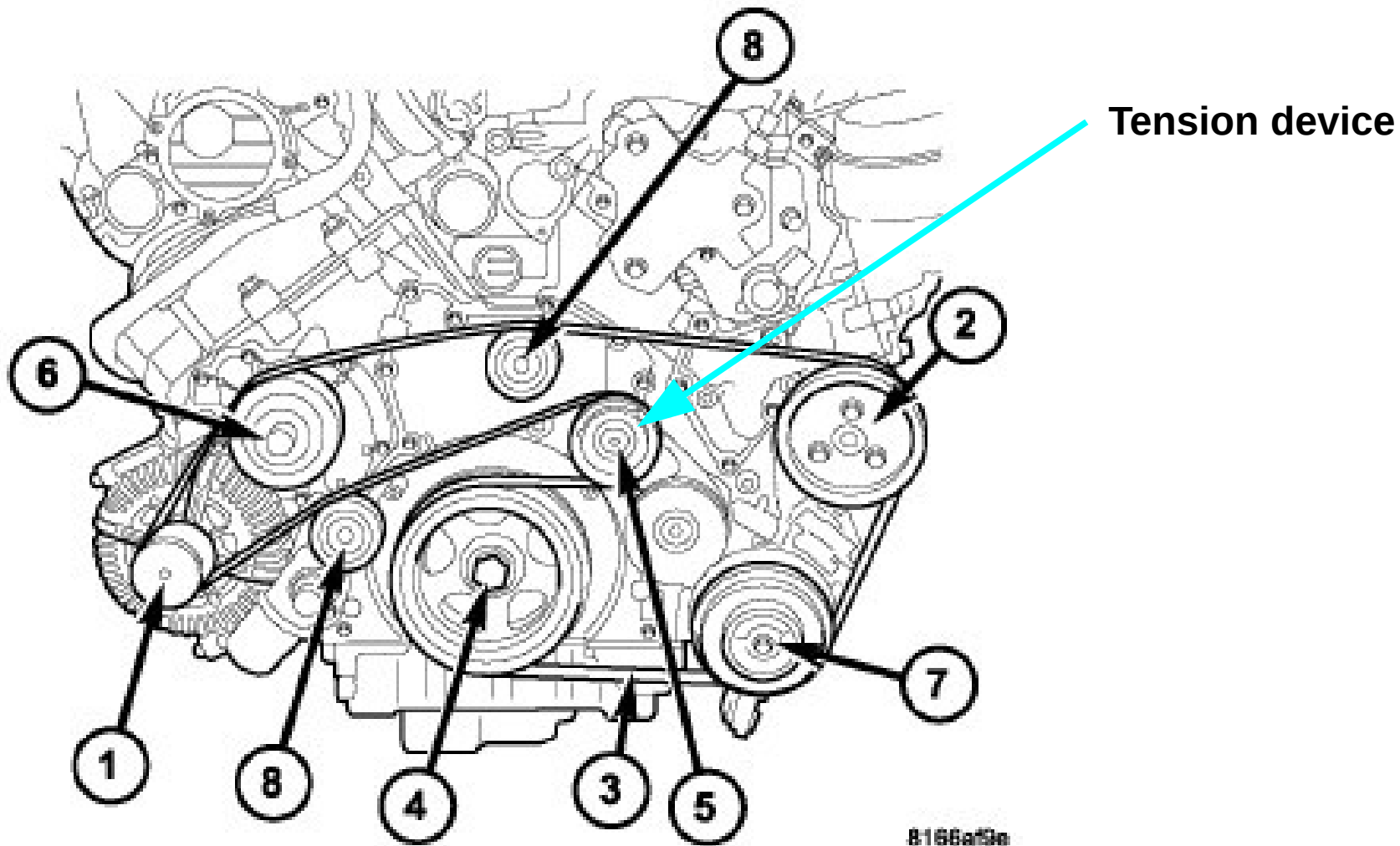
Your nail must be almost the same diameter as the hole or it won't do the job.

Here is another view of the tension device. Socket goes here.

Arrow indicates direction

Locking hole





Compare your belt to the diagram until you fully understand how it goes. Remove the belt. Inspect all pulleys for wear.

Install your new belt. Note that the grooved side of the belt goes against the main engine pulley (#4). Make sure you do not twist the belt. I found it easier to place it around the alternator first. Smooth pulleys contact the back of the belt. Grooved pulleys contact the grooved side of the belt.

Double check your belt routing. Pull the tensioner again with your breaker bar and socket and remove your nail.

Replace the resonator mounting bracket. Wiggle the resonator back into place. Snap the cooler hose back on and make sure it clicks. Replace the lower resonator bolt leaving it a little loose.

Use the gripper to start the top resonator bolt then tighten it with the ratchet leaving it a little loose. Reposition the silver pipe and insert the clip and screw and bolt.

Tighten everything everywhere. Do a test run and observe the belt. All Done.