

1999 Corolla Valve Cover Gasket Replacement

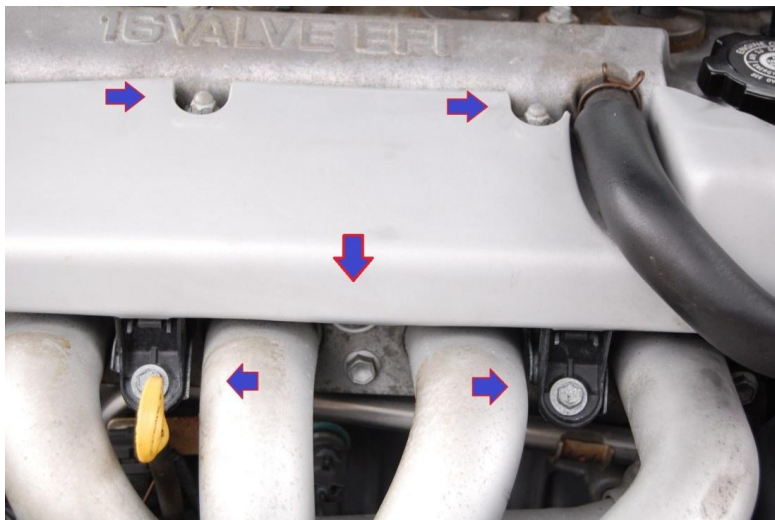
While checking the spark plugs on my 1999 Corolla, I found the each plug sitting in a pool of oil. Oil on the spark plugs usually is indicative of major engine problems. In the Corolla, the plugs are recessed into the valve cover so all that is needed is a valve cover gasket replacement. It looks daunting, but it's very easy with simple tools and only takes about an hour.

Required tools: Safety glasses, 10mm regular socket, 11mm deep well socket, rubber mallet, flat blade screw driver or putty knife, container to hold the bolts, pliers, rags, throttle body cleaner and of course the gasket.

The problem: oil in the spark plug areas and inside the plug wires.



First remove the grey plastic cover on the front of the valve cover by removing 2 -10mm nuts and 3-10mm bolts. Note the nut in the front center. You'll need to remove the black hose on the right as well. Squeezing the hose clamp and pulling toward the front of the car removes it.



Gently remove the plastic cover and lay it to the side & the engine will look like this:

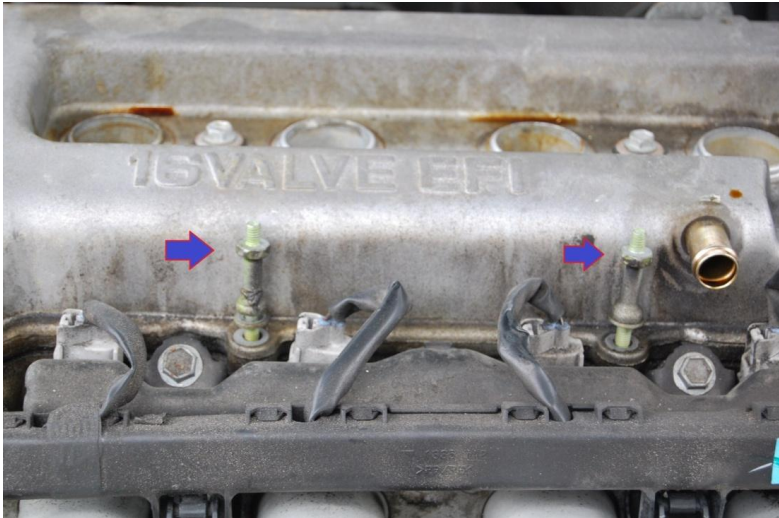


Label each plug wire to the corresponding plug and then remove the plug wires from the valve cover and lay them to the side. It is not necessary to unplug both ends of the plug wires and remove them completely.

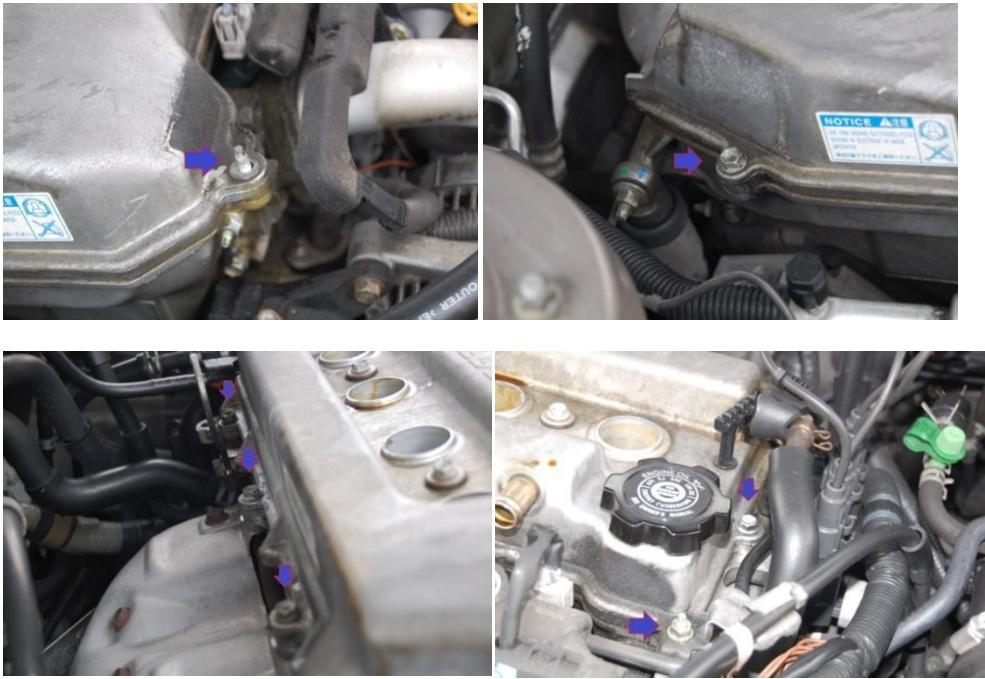
Remove the pcv valve from the driver's side of the valve cover. Grab the hose by the clamp and pull out on the valve. The valve plugs into a round rubber grommet so gently wiggling it back and forth will remove it. This is a good time to clean it by spraying it with throttle body cleaner.



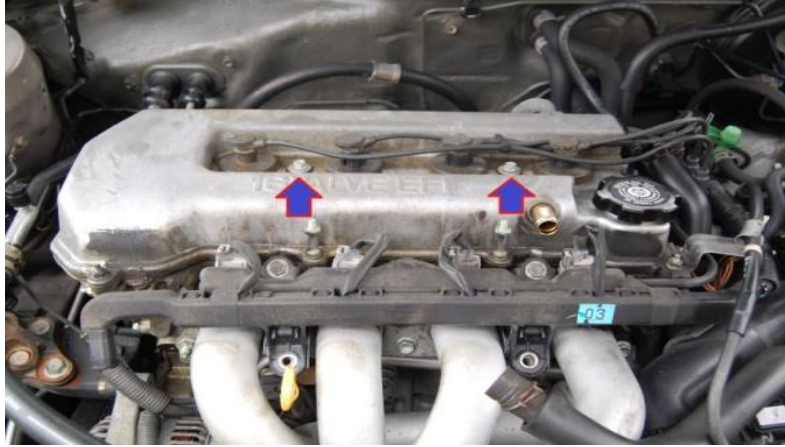
Now the valve cover removal begins. Grab the 11mm deep well socket to remove these 2 bolts:



Now switch to the 10mm sockets and begin removing the valve cover bolts all around the cover:



And lastly loosen the two bolts on the top. They are not removed, just loosened.



Take a rubber mallet and gently tap on the valve cover to break the seal. The gasket doesn't use sealant, so you just need to break the seal. Using a thin flat blade screw driver or putty knife, gently pry up one of the corners of the valve cover. You don't want to mar or dent the metal surfaces so be gentle but firm. Once the seal is broken, the valve cover can be removed, just note one tricky part:

The driver's side front nut also holds the accelerator cable bracket. This bracket doesn't come out entirely, but it moves around so work the valve cover around it. It's not difficult, but it takes two hands & sliding the accelerator cable out of the bracket helps a lot.

Here's what it looks like with the cover removed. Using something lint free, wipe down the edges where the valve cover sits. Remove all the oil and dirt to ensure a leak free seal. Also, this is a good time to remove the spark plugs and let the oil drain back into the engine where it belongs. Clean the plugs with throttle body cleaner apply a small amount of lube (like white lithium grease) to the threads and reinstall. Once done with those steps, cover the top of the engine to keep dirt out.



Remove the old gasket from the cover by pulling it out of the channels and then removing the spark plug gaskets inside the cover. After 138K miles, the spark plug gaskets were brittle and came off in pieces. Wear safety glasses and beware of flying debris when removing the brittle sections of the gasket.



Here's a shot of the gasket and channel.



Before installing the new gasket, make sure there aren't any pieces of the old gasket on the inside. Spray out with throttle body cleaner to remove any debris. Inspect the channel and make sure it is clean and free of dirt. To install the new gasket, press it into the channels around the valve cover and around the spark plug holes. Make sure it's snug, especially around the spark plug holes. You don't want it falling out when you turn it over to install the cover. Here's what the new gasket installed looks like:



Now those famous words “reinstallation is the reverse of removal”. Gently align the valve cover on top of the engine. Install & hand tighten all the bolts in a random order till they are snug. Check as you go along to make sure the gasket is seating properly. Once they all are snug, torque them to 89 inch pounds. Reattach the hose, pcv valve, spark plug wires, & the accelerator cable into the holder. Here’s the finished product, including a fresh coat of paint:



Double check all the connections and ensure there aren’t any parts left over and remove the tools from the engine bay. Start the car and watch the area to ensure there aren’t any leaks. If you cleaned the pcv valve & spark plugs with throttle body cleaner be prepared for a lot of white smoke from the tailpipe till the engine warms up. If all appears well, take a test drive and ensure everything is good.

The legal stuff: This info is meant for information purposes and the reader assumes all responsibility & consequences for the work performed.

By: *Philip Johnsey 2/2010*