Knock Sensor Replacement
2004 Acura TL

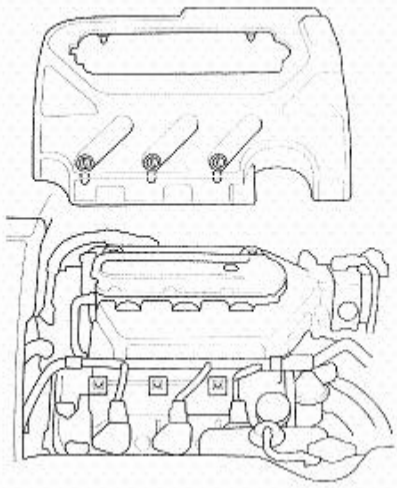
Tools Required:

¼ Torque Wrench, inch-lbs
http://buy1.snapon.com/catalog/item.asp?P65=&tool=all&item_ID=55248&group_ID=953&store=snapon-store&dir=catalog
8mm, 10mm, 12mm ¼ sockets
3" and 1" extensions
Long nosed, Long handled pair of pliers
http://buy1.snapon.com/catalog/item.asp?P65=&tool=hand&item_ID=6909&group_ID=761&store=snapon-store&dir=catalog
Several Rags
Dab of clean oil

Procedure:

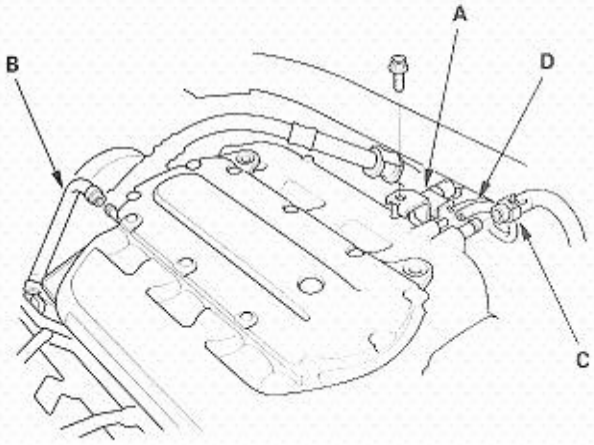
1. Disconnect Battery
2. Follow 3G Garage C-001 (9-3 and 9-4) to remove intake manifold using correct sequence.

1. Remove the intake manifold cover.

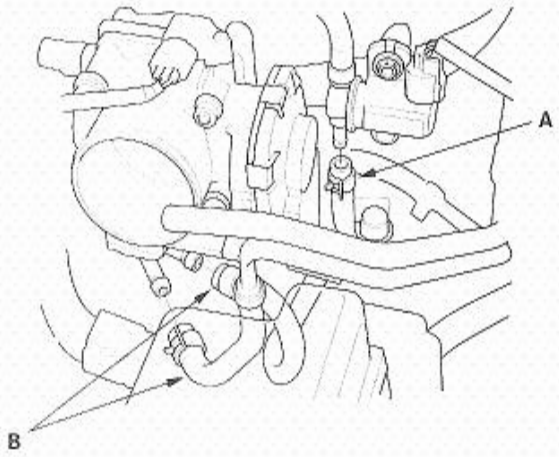


2. Remove the air intake duct.

3. Remove the engine mount control solenoid valve (A), positive crankcase ventilation (PCV) hose (B), brake booster vacuum hose (C), and vacuum hose (D).



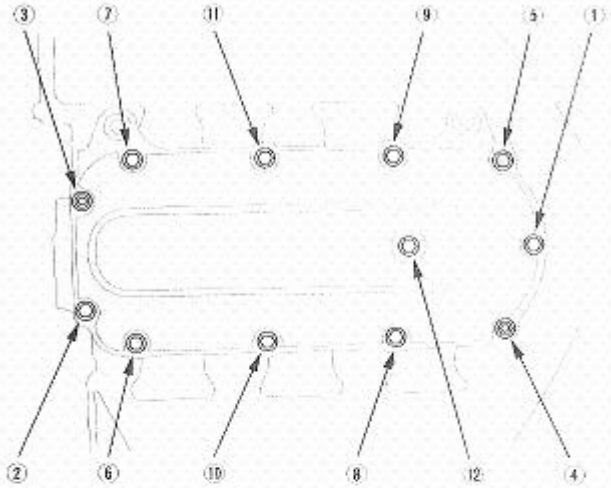
4. Remove the evaporative emission (EVAP) canister purge hose (A) and water bypass hoses (B), then plug the water bypass hoses.



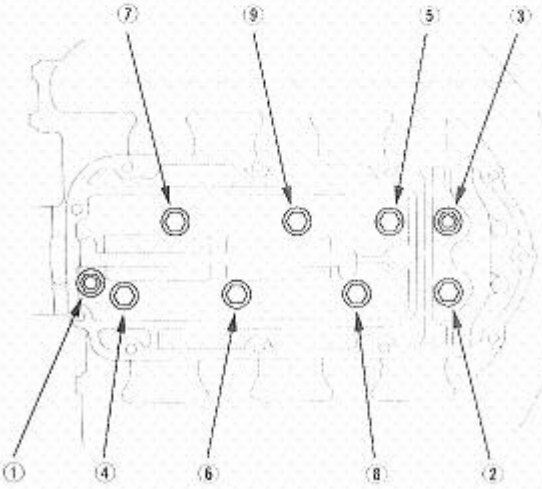
5. Remove the engine wire harness connectors and wire harness clamps from the intake manifold.

- Intake air temperature (IAT) sensor connector
- Idle air control (IAC) valve connector
- Throttle actuator connector
- Manifold absolute pressure (MAP) sensor connector
- Evaporative emission (EVAP) canister purge valve connector
- Intake manifold runner control (IMRC) solenoid valve connector

6. Remove the upper cover mounting bolts and nuts sequentially in two or three steps.



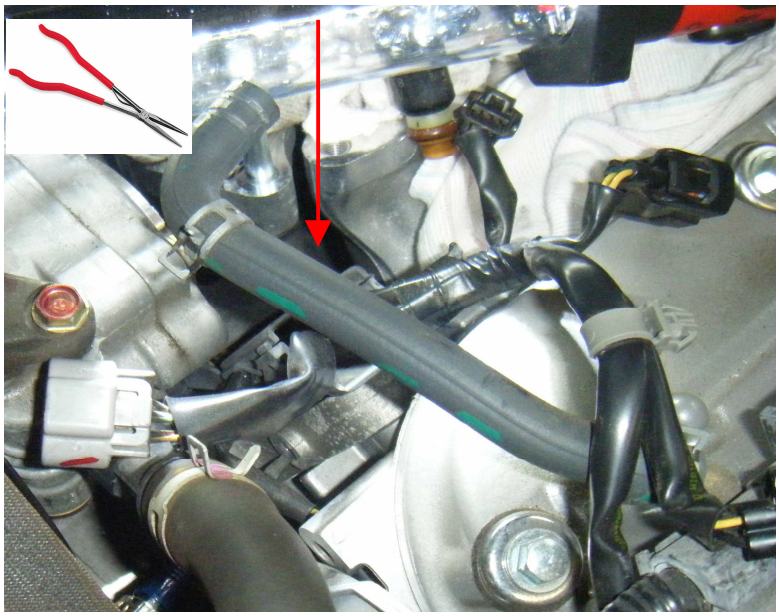
7. Remove the intake manifold mounting bolts and nuts sequentially in two or three steps.



Cover the intake ports with a rag to prevent any foreign objects from falling in.

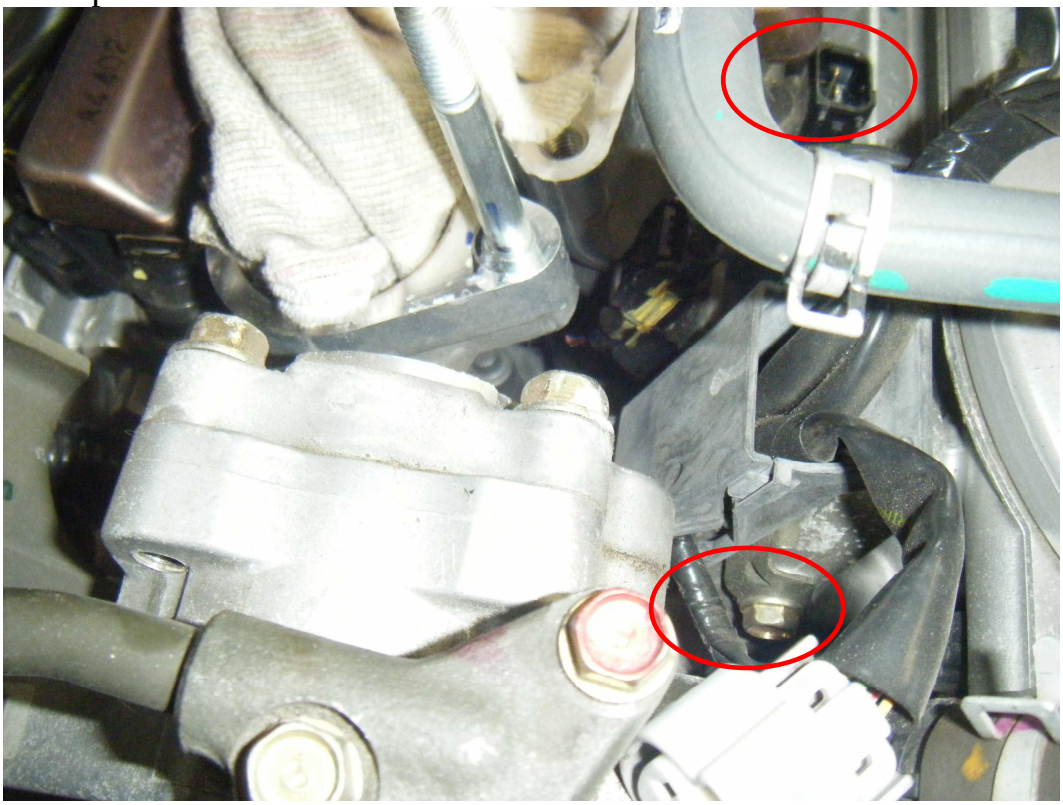
3. Disconnect the 8mm Fuel rail mounting bolts, unplug injectors, and ease injectors out by pulling gently. You do not have to disconnect the fuel feed, just remove the fuel rail mounting bolts and Move the rail 1-2 inches up and out of the way. Cover the holes with a rag to prevent debris from falling into the head.

4. Use a long handled, long-nosed pair of pliers to reach between the two intake runners and squeeze and pull the knock sensor plug out. Try to remember which direction the plug was facing – this will make replacement easier.

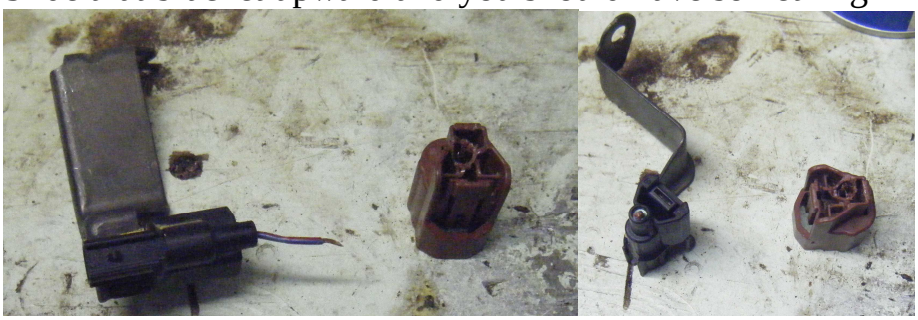


5. You now have one side of the chewed harness. Hopefully yours has more wire left than mine did:

6. Shown here are the other end of the harness and the bolt holding the bracket that holds that harness. Unplug the circled harness (shown already unplugged) and remove the 10mm circled bolt. Be careful not to drop the bolt into never-never land below.



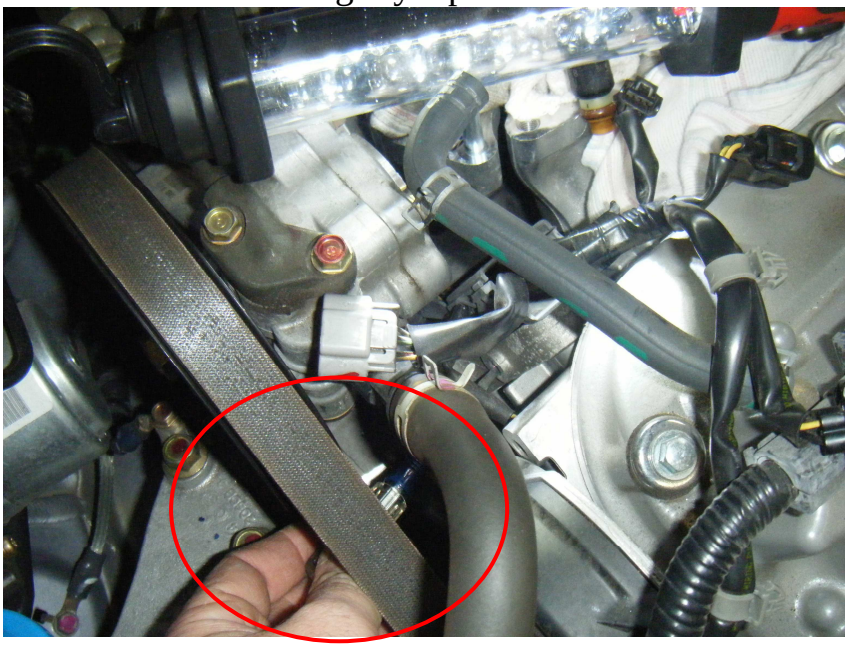
7. Slide that bracket upward and you should have something like this:



8. At this point, you can choose to repair the wire or buy a new one. Acura was going to take several days to get a new one, so I repaired mine. I used 18g wire, some careful soldering, and some plastic sheathing. In either case, I suggest smearing the outside with Black high-temp silicone RTV and cayenne pepper mixture.

9. Use the long pliers to plug the sensor back in. I routed mine different than the original – over the intake runner I was reaching through, but this is optional.

10. Slide the bracket back down into its home and carefully replace the bolt. You'll need to lightly tape it to the socket.



11. Use clean oil on the injector o-rings and gently put them back into place. Re-install Fuel Rail Mounting bolts and reconnect the knock sensor harness plug to the bracket. Plug the injectors back in.

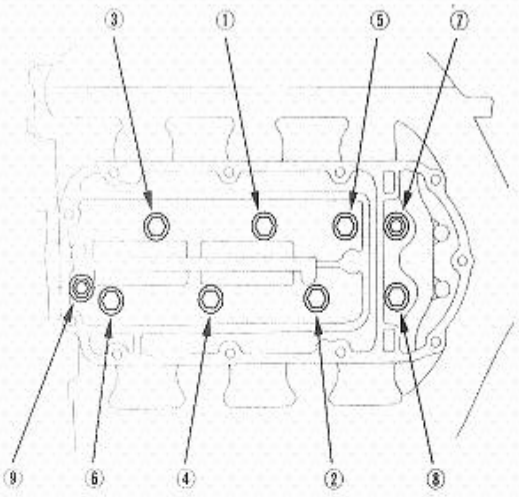
12. Follow the 3G Garage C-001 to re-install intake manifold with correct torque and sequence.

    16 ft-lbs = 192 inch-lbs for intake manifold (Nine 12mm bolts)
    8.7 ft-lbs = 105 inch-lbs for intake manifold cover (Twelve 10mm bolts)

Installation

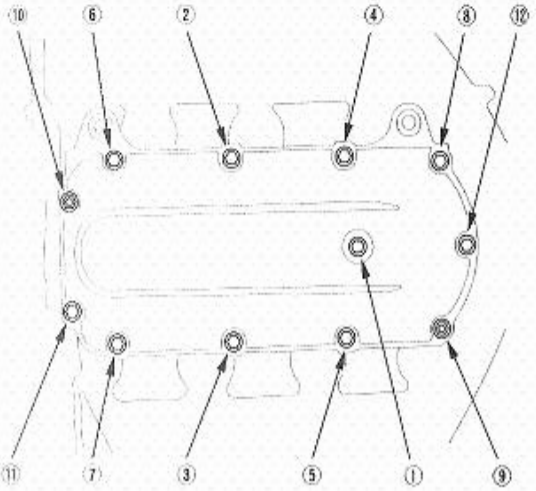
1. Install the intake manifold. Tighten the bolts and nuts sequentially in two or three steps. Always use a new intake manifold gasket.

   Specified torque:
   8 x 1.25 mm
   22 N·m (2.2 kgf·m, 16 lbf·ft)

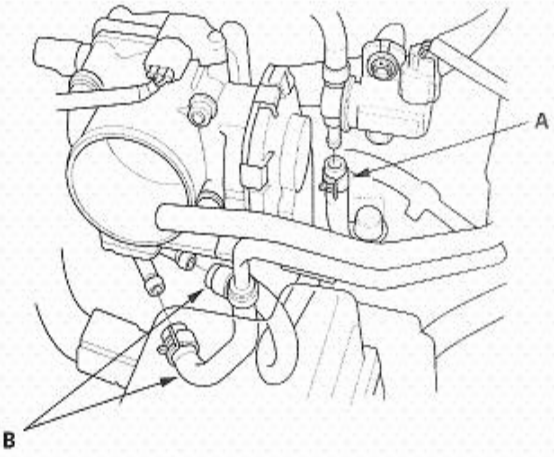


2. Install the upper cover. Tighten the bolts and nuts sequentially in two or three steps. Always use a new gasket.

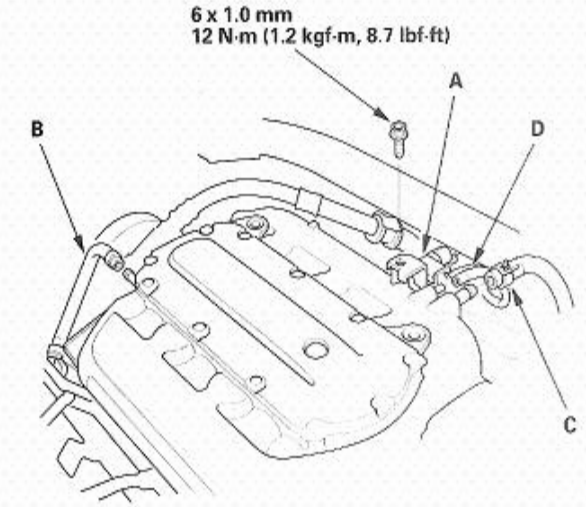
   Specified torque:
   6 x 1.0 mm
   12 N·m (1.2 kgf·m, 8.7 lbf·ft)



3. Install the EVAP canister purge hose (A) and water bypass hoses (B).

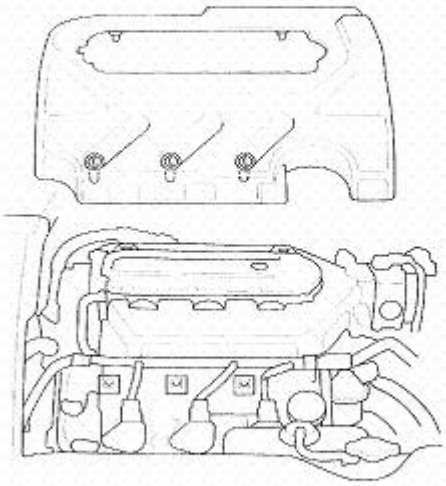


4. Install the engine mount control solenoid valve (A), positive crankcase ventilation (PCV) hose (B), brake booster vacuum hose (C), and vacuum hose (D).



I did not replace the gaskets, because they looked good and I had to wait two days on new ones ordered at Parts store. Mine did not leak (yet).

5. Install the intake air duct.
6. Clean up any spilled engine coolant.
7. After installation, check that all tubes, hoses and connectors are installed correctly.
8. Install the intake manifold cover.



9. Refill the radiator with engine coolant, then bleed air from the cooling system with the heater valve open (see step 8 on page 10-7).

I did not lose enough coolant to have to replace any. Only a few drops.

13. Reconnect the battery.

14. For your amusement – this is what I found near the knock sensor wire (Yes those are chicken bones, and chewed wire/sheathing)