



07-23-2009, 12:39 AM

#2

[RotaryResurrection](#)  
member

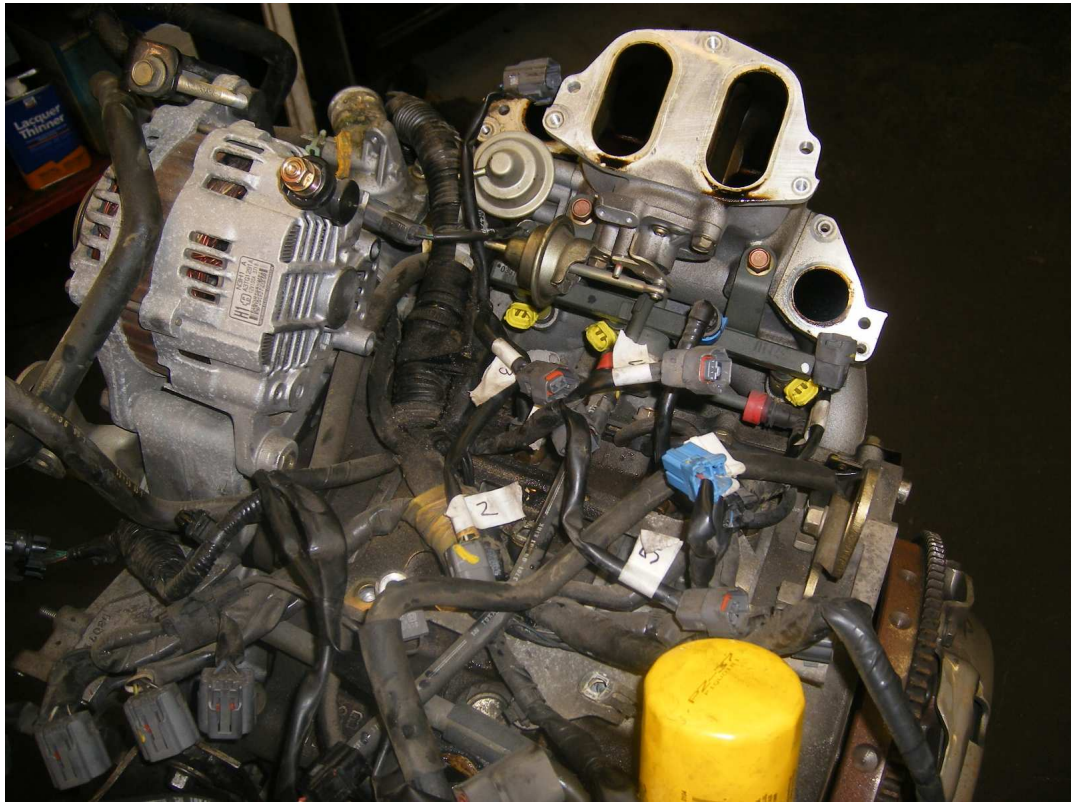


Trader Score: (3)  
Join Date: Feb 2005  
Location: east of Knoxville, TN  
Posts: 1,384

Remove air hose to vacuum splitter at the base of the primary fuel injector rail. BE CAREFUL with the black plastic vacuum splitter...it is going to be brittle and easily broken.



Unplug all 6 fuel injectors (4 for automatic 4port models)...LABEL EACH INJECTOR AND PLUG (or draw yourself a chart etc.) for clarification later as they can be easy to mix up. The connectors are pretty hard to work with and release, and sometimes you will break the release tab. I find that a long pair of needle nose pliers is helpful here. The other approach is to simply leave the harness plugged into all the injectors (so you do not risk damage to the plugs or mixing them up) and pull the lower intake manifold, wiring harness, and both fuel rails/injectors all off as a set. IT is more difficult to work with this way, but it could save you some headache down the road.



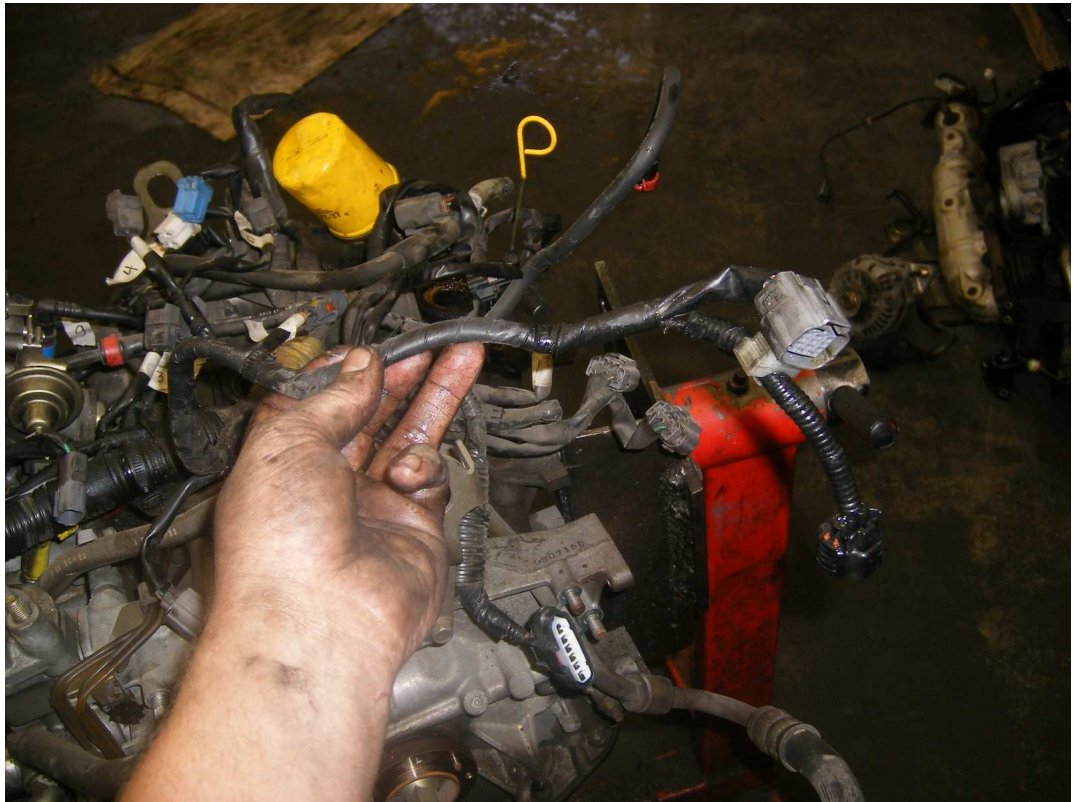
Unplug and remove from bracket, the plug for the microswitch on the port actuator. Unplug coolant temp sensor. Unplug aux port actuator solenoid.  
Remove water pump pulley.



Remove alternator bracket and alternator.



BE CAREFUL OF THE OMP (OIL METERING PUMP) AND THE BLACK PLASTIC POSITION SENSOR ON THE SIDE OF IT. Shops and DIYers are somehow breaking this position sensor during r/r of the engine. I am not sure how, since it does not really come close to anything on the way in or out. Regardless, if you damage the position sensor it cannot be purchased separately to my knowledge, so then you must buy a whole OMP. Mazda retails that part for over \$1000 new, and used ones go for \$200-300 or more so this is a mistake you want to avoid. Unplug OMP connectors, unplug harness from front cover, lift and lay aside with rest of engine wiring harness.



Unbolt harness retaining bracket from top of block (4 bolts total) and remove bracket/harness as a unit (if you unplugged your injectors).



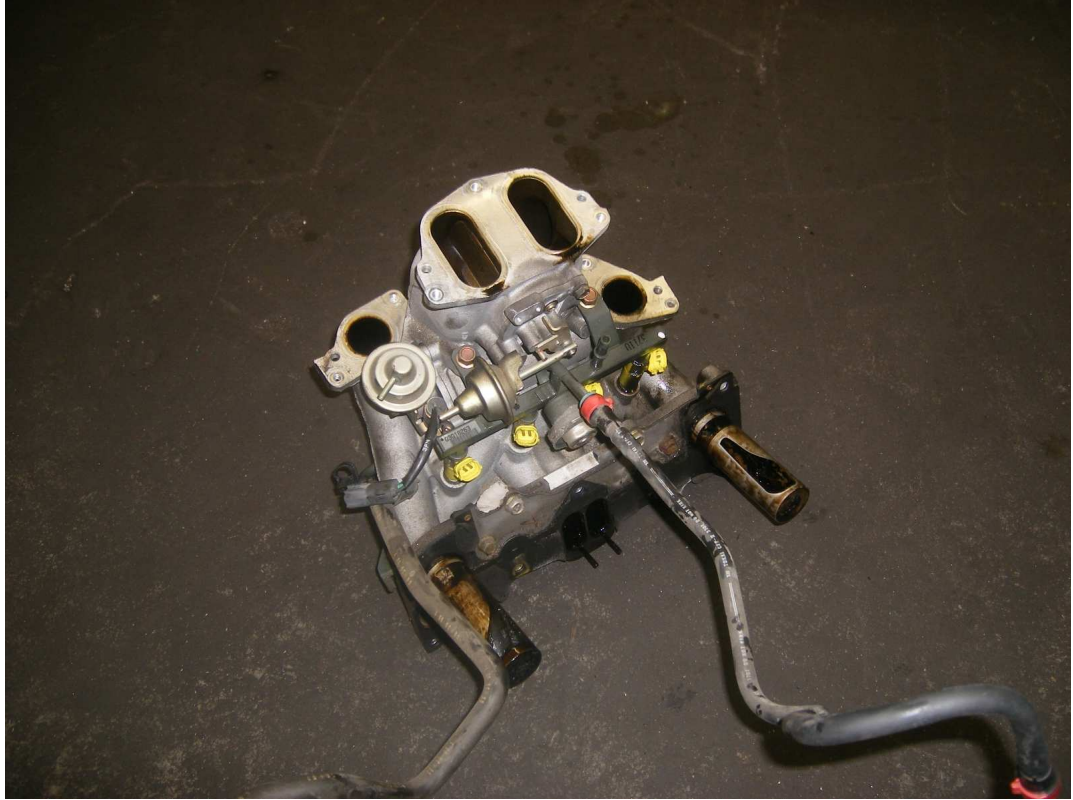
Remove fuel line between primary and secondary fuel rail, at secondary fuel rail blue clip.



Unbolt and remove lower intake manifold, being careful of auxiliary port sleeves that come out of the block with the manifold. Sometimes it takes several tugs and pushes to get these out of the block when they are stuck due to carbon. On rare occasion I find a stuck sleeve that will not come out of the block, and in this case generous amounts of penetrating oil (wd40 etc.) sprayed down the appropriate intake runner and between the block and gasket/manifold, as well as gentle prying and rocking of the manifold will eventually help get it out.

If you are leaving the wiring connected to all the injectors, then pull the manifold halfway out of the block to give yourself enough access to unbolt the primary fuel injector rail then pull it off with the rest of the

wing/manifold.



Remove primary fuel rail/injectors. Note that there are two black rubber grommets/seals that go on the bottom of the primary injectors. These often stick in the holes in the engine block/intermediate iron. Use a small screwdriver or pick to gently fish them out of the block, they are reusable and you need to be sure they are properly seated on the injectors during re-install.

**BE CAREFUL OF THE BLACK PLASTIC VACUUM SPLITTER** mounted under the primary fuel rail. There are 4 vacuum hoses that go to each of the injector nozzles. **DO NOT** try to remove these vacuum hoses from the plastic splitter, or you will likely break one. Instead, remove the vacuum hoses from the injectors themselves, and do it gently. I use needle nose pliers to grip the base of the hose firmly and twist, then gently pull upward while

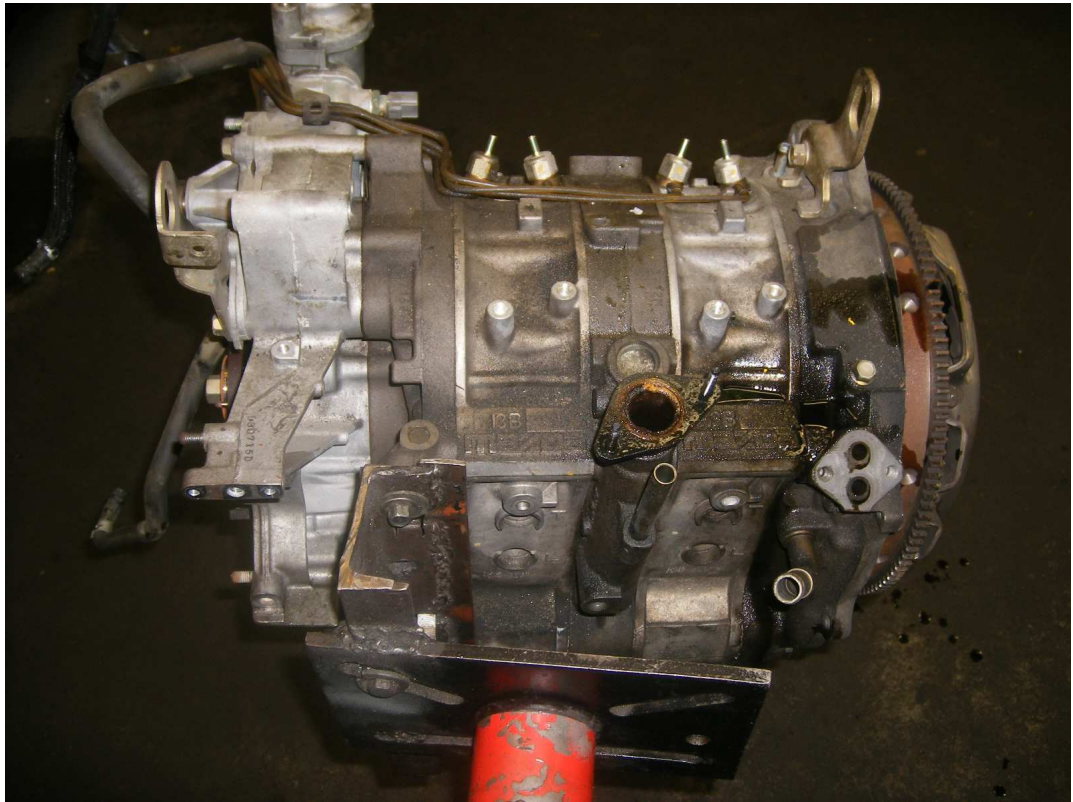
twisting. If you feel you must remove the vacuum hoses from the plastic splitter, use a razor blade to cut into the hose and then peel it off of the plastic nipple.



Remove rear oil cooler line and oil filter pedestal as a unit.



Remove small rear coolant line from passenger side of rear iron.



Remove clutch and flywheel. If you are sending an engine to me (or most other engine builders) you can leave the flywheel in place for me to remove for you, as it requires a special socket to remove, so it is understandable if individuals cannot remove it themselves.





Last edited by RotaryResurrection; 03-20-2014 at 09:28 PM.



07-23-2009, 12:42 AM

#3

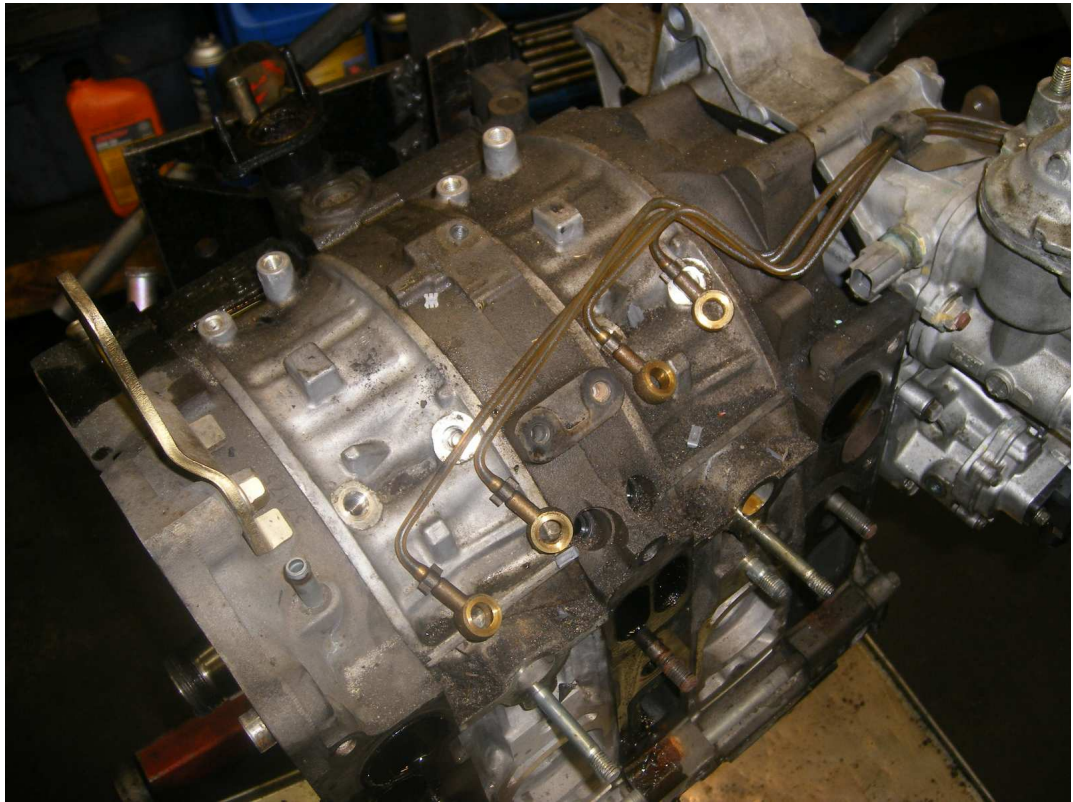
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Remove the oil injector nozzles with a 19mm wrench. BE CAREFUL when loosening them. IF you hit them hard/fast you will likely snap one or more of the plastic oil lines. GENTLY bump your wrench to crack the nozzles only slightly loose, and continue until you are sure you won't break a line. You can use a finger placed against the metal end of the oil line to brace it and keep it from flexing too much during this step. These lines retail for \$55 each from mazda if you do break them.





Remove OMP lines and OMP as a unit. BE CAREFUL OF THE OMP (OIL METERING PUMP) AND THE BLACK PLASTIC POSITION SENSOR ON THE SIDE OF IT. Shops and DIY'ers are somehow breaking this position sensor during removal of the engine. I am not sure how, since it does not really come close to anything on the way in or out. Regardless, if you damage the position sensor it cannot be purchased separately to my knowledge, so then you must buy a whole OMP. Mazda relists that part for over \$1000 new, and used ones go for \$200-300 or more so this is a mistake you want to avoid.



remove the mostat housing and lines as a unit.