

How to Change the Volvo V8 Starter

A recently acquired 2010 Volvo XC90 V8 had a history of no crank (engine not spinning) problems. Starter #3 was installed a week before I purchased the vehicle from a clearly frustrated owner who'd invested thousand of donuts in her mechanic.

At times the engine would crank and other times not. At first, the issue appeared to be a heat soak related, but a bit more investigation with a multimeter pointed to a defective starter motor. I purchased a Chinese rebuilt starter and resolved to install it before the warm weather dissipated.

The swap was accomplished over two days and required 8-10 hours. Why? Because I used the opportunity to test and clean battery and starter cable connectors, engine to frame grounds, the throttle body, intake manifold and pressure washed 10 years of grime from the engine.

The V8's starter is located dead center top of the engine and much plumbing has to be removed to secure access.

The V8.



Disconnect the battery, and then remove the cables to the ECU, the air cleaner and its plenums.



Remove throttle body and clean.





Disconnect the power cable and start signal wires from solenoid. Remove power starter power cable at fuse box terminal. Now, clean and polish the power cable terminals. Check the connectors for corrosion. Should it be present either remake connectors or replace power cable. Vehicles driven in road salt conditions typically have corrosion inside the connector beneath the insulation which is not detectable without close inspection. Such corrosion will prevent the flow of high current electricity to the starter which results in the starter/battery replacement without ameliorating a no-start condition. Polished cable connectors.



Remove the strut tower support bar and rear engine mount to facilitate access to the starter.



Remove rear motor mount



Carefully remove water (yellow arrow) and vacuum (green arrow) hoses and water by pass device. Be ABSOLUTELY certain to mark the PCV vacuum hose to prevent accidental connection of a water line to the manifold intake. If incorrectly reconnected, you'll pump coolant into the engine upon restart and push coolant into the PVC system. Not good!



Remove the two fasteners attaching the starter to the bell housing.



Lift starter, turn sideways, and push wire harnesses aside and carefully lift it out. The extraction process shouldn't take more than 60 seconds. I used a bungee cord to lift and hold the wire harness and hoses aside to gain clearance.

Carefully clean all surfaces and use a good gasket sealer on the water intake housing and a very light coating on both surfaces of the throttle body metal gasket. Clean the grime from the inside of the intake manifold. Reverse the process to install the replacement starter.

Epilogue

Rebuilt starter #4 returned to vehicle to reliable service. Forensic analysis of "rebuilt" starter #3 revealed the armature was defective. One thousand miles later, the engine has not failed to crank.

Many shops will "throw" a replacement starter and battery at this problem, placating the owner, without correcting the underlying condition, electrically compromised cables and/or connectors. You must find a mechanic with exceptional diagnostic skills.

Remember, service writers and techs are motivated to "sell" parts. Why? The more parts purchased the greater the service writer's and tech's commission. The inability of the tech to correctly diagnose and resolve a condition the first time frustrates the owner, results in vehicle dumping, brand dissatisfaction and needless expense. Volvos are extremely reliable when serviced knowledgeably and correctly.

On that note, Volvo no longer awards 100K, 200K, 300K, 400K and 500K mile badges. I wonder why? BTW, there is not a good crop of young technicians as most kids want a job working with their thumbs and not spinning wrenches despite being able to earn upwards of \$125K annually.



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He'll respond pleasantly to questions about your Volvo.