

## Transmission Cooler Installation

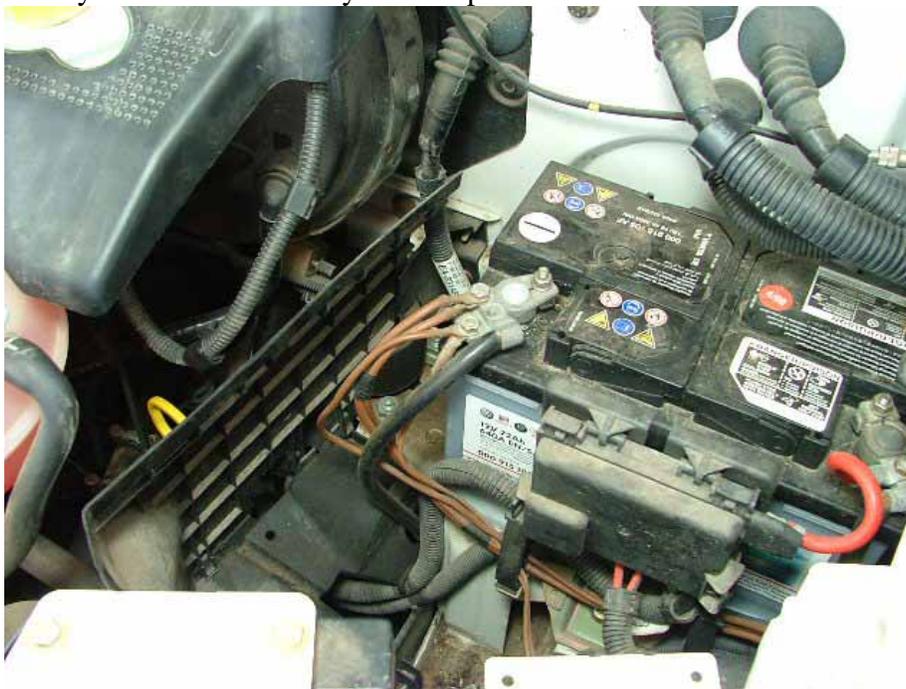
As done on a 2005 Rialta HD using the Tru-Cool 4921-1 and Sonnax adapters

Note: I've tried to include all of the important information, but may update the file occasionally (as noted in page header) to clarify things as they come up for discussion.

1. Hood open, nothing removed



2. Main battery cover off. You may have to pull the cable brackets loose on the left side.



3. Battery left side cover panel removed. It pulls straight up out of the notches of the battery box frame. You can barely see one of the Banjo bolts at the arrow. This is the room you have to work with when you do the installation. It will be mostly one-handed and mostly by touch.



4. Looking at the rear banjo bolt on the original cooler. Chances are that these will be very tight and come loose with a snap, so don't bang your knuckles on something.



5. Upper grill screws that must be removed at arrows. Different on the 140 HP engine.



6. Parts in the Sonnax adapter kit. (Teflon tape is extra.) When installing the brass connectors into the black tubes, don't get them too tight or they will stick into the inside hole and the Banjo bolt won't go in properly. The thin o-rings on the left go between the adapters and the transmission. The thicker ones replace the ones on the Banjo bolts.



7. Tools used for the installation. 3/8" drive ratchet, about 2 feet of extension, a universal joint or wobble adapter, and an 8 mm hex bit. Also a nut driver to tighten the hose clamps, a Phillips screwdriver, 1/2" wrench for brass fittings on Sonnax adapters. I used a utility knife to cut the water hoses on the original cooler after clamping them off so there would be less loss of antifreeze.



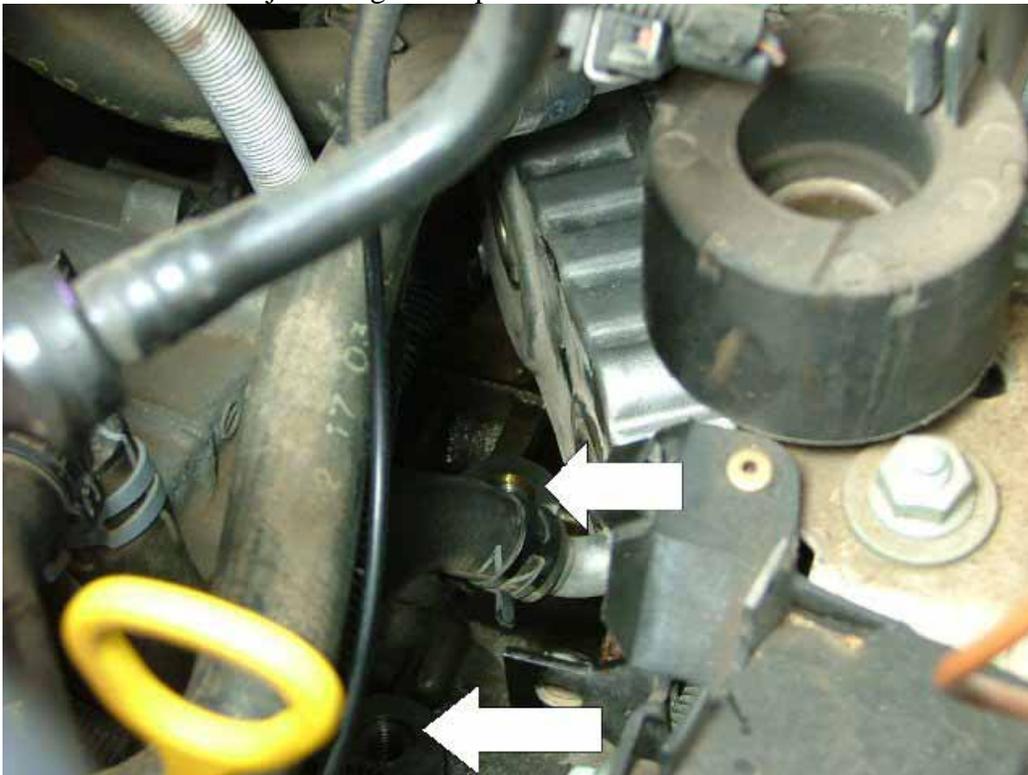
8. Wide hose clamps that I used to attach lines to the cooler (extra, Ideal #5306 or 5006; 5306 is lined to prevent hose damage) instead of the narrow clamps that came with the cooler kit. Recommended torque is 40-50 in/lb.



9. Original cooler pushed to the side after removing the Banjo bolts. Whichever side you can get it to easily move to is fine, just so you have clearance to install the Sonnax adapters. The o-ring fits into the groove around the hole with the threads where the Banjo bolt goes at the arrow.



10. Holes where the Banjo bolts go on top of the transmission.



11. Sonnax adapters installed. I had the best luck installing the one toward the rear of the vehicle first. The real trick is to get the Banjo bolt through the adapter and get it started into the hole without moving the o-ring in the groove. If you begin to get a little frustrated, take a short break and try again. The adapter closest to the back of the vehicle (top in this picture) goes to the top of the cooler and is the output from the transmission.



12. Hose routing beside the radiator to the front. I later added some of the split plastic tubing over the hoses to keep them from rubbing on the metal around the corners. Exact routing to the gap isn't critical, but avoid sharp turns and metal edges.



13. Notch filed in the plastic lower grill to allow the hose clamp to fit.



14. Lower hose attached to the cooler and temporarily installed to check clearance.



15. Both hoses attached to the cooler before sliding into place. Note pads on front to prevent metal-to-metal contact. By leaving a little extra hose, the cooler can be pulled out and moved off to the side. This would be needed when changing spark plugs and the radiator has to be tilted forward.



16. Locations of the pads on the back side of the cooler. I later added pads to the top brackets (top arrows) where the tie wraps were used to keep from rubbing the power steering cooler lines.



17. Cooler in place. End of hose clamp bent straight up to prevent contact with power steering cooler tube. I later added more padding at the top of the cooler fitting (arrow) to keep the hose clamp from touching.



18. Tie wraps installed to hold cooler in place.



19. Trimmed up and nearly ready to go.



20. Water bypass coupling installed between hoses that were removed from the original cooler. Don't disconnect the water lines from the old cooler until you've got the Sonnax adapters installed to prevent the possibility of water getting into the transmission.



I took the rig for a nice test drive before I reinstalled the panels and grill that were removed so I could check for leaks.