



CVT Transmission Cooler for 2014+ Forester and 2013+ Crosstrek/Impreza

2024-09-25

PSP-OIL-204

Thank you for purchasing this PERRIN product for your car! Installation of this product should only be performed by persons experienced with installation of aftermarket performance parts and proper operation of high performance vehicles. If vehicle needs to be raised off the ground for installation, the installer must use proper jacks, jack-stands and/or a professional vehicle hoist for safety of the installer and to protect property. If the vehicle is lifted improperly, serious injury or death may occur! Please read through all instructions before performing any portion of installation. If you have any questions, please contact our tech department prior to starting installation. We can be reached in any of the following methods:

Email Tech@PERRIN.com

Instant Chat off the main page of www.PERRIN.com

Or simply call our tech team at 503-693-1702



WARNING: This product can expose you to chemicals including Lead which is known to the State of California to cause cancer birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

GENERAL MODIFICATION NOTE

Modifications to any vehicle can change the handling and performance. As with any vehicle extreme care must be used to prevent loss of control or roll-over during sharp turns or abrupt maneuvers. Always wear seat belts, and drive safely, recognizing that reduced speeds and specialized driving techniques may be required. Failure to drive a vehicle safely may result in serious injury or death. Do not drive a vehicle unless you are familiar with its unique handling characteristics and are confident of your ability to maintain control under all driving conditions. Some modifications (and combinations of modifications) are not recommended and may not be permitted in your state or country. Consult the owner's manual, service manual, instructions accompanying these products, and local laws before purchasing and installing these modifications. You are responsible for the legality and safety of the vehicle you modify using these components.

SPECIAL NOTES:

- Installation of this part will require additional CVT oil to be added to the transmission. It is very important to use the correct CVT oil and proper fill procedures or damage to the transmission can occur. Follow the factory service manual or take car to dealer to have this done. The transmission can handle small changes to the oil level, so it is ok to take care for a test drive or to drive the car to the dealership to get the oil topped off.
- Make sure car has not been running for at least 3 hours to ensure oil has cooled off and drained from the OEM warmer/cooler.
- You will need a high quality 10.0mm or 25/64" drill that can be used to drill into steel. Read through all instructions regarding drilling bumper beam.

Parts Included with the PERRIN CVT Oil Cooler:

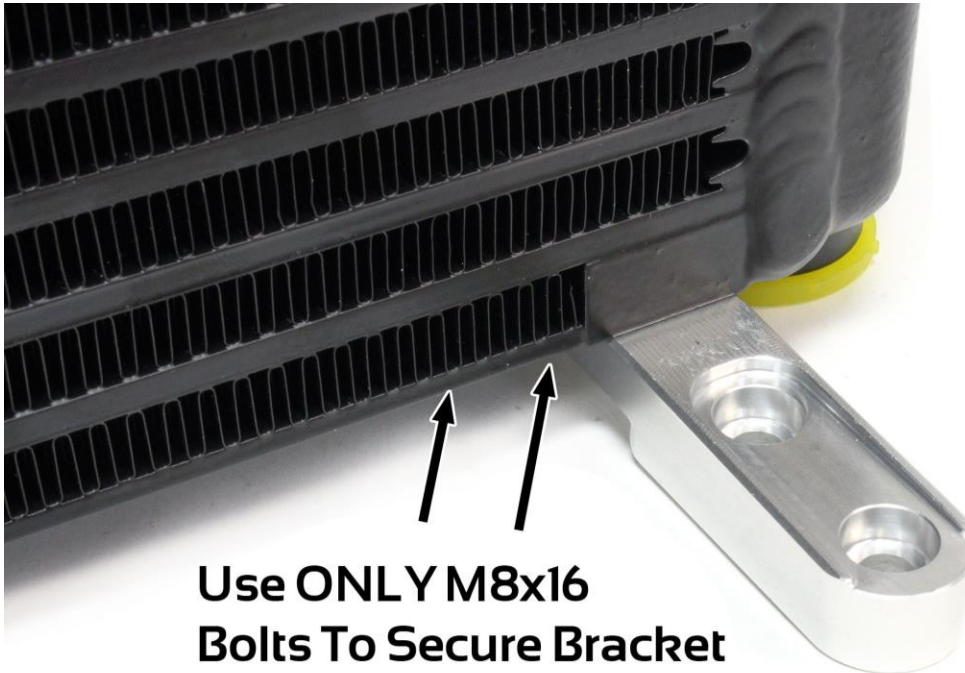
QTY	Part Number	Description
1	X-PSP-OIL-005P	Oil Cooler Core PERRIN 8 Row x 250mm Wide w/ M22 Inlets
1	X-PSP-OIL-100stencil	Stencil for all PERRIN Oil Coolers
2	X-PHP-OIL-001SL	Oil Cooler Bracket for Bumper Beam Clear Anodized
2	X-CON-M22PL06-45	Fitting for M22 45 Degree x -6 Push On Type
1	X-PSP-BDY-400-1ZINC	Rivet Nut Tool for M6 and M4 Zinc Plated
4	X-ASM-ITR-202	Spacer Round Type Alum .450"x .875" (EDP 725)
2	X-BLT-M618WF-SS	M6 x 18 Fender Washer SS
6	X-BLT-M6X14.7NRA	M6 Rivet Nut Heavy Duty Aluminum
1	X-BLT-M6X20CH10.9-Z	M6 X 20 Hex Head Bolt 10.9
4	X-BLT-M6X25CSB-SS	M6 X 25 Button Head Socket Cap Screw SS
4	X-BLT-M8X16CSB-SS	M8 X 16 Button Head Cap Screw SS
4	X-BLT-M8X30CSB-SS	M8 X 30 Button Head Cap Screw SS
2	X-CON-013	Plastic 3/8" 90 Degree
1	X-CON-023	Plastic 3/8"-3/8" Straight
8	X-CLAMP-002	Clamp Size 2 or 8-16mm
6"	XTRM-002	Door Edge Trim
12.5	X-HOS-128	3/8"ID Transmission Oil Hose (27061)
20	X-BLT-CT080B-18	Zip Tie 8" Long

WHICH WAY IS THE RIGHT WAY?

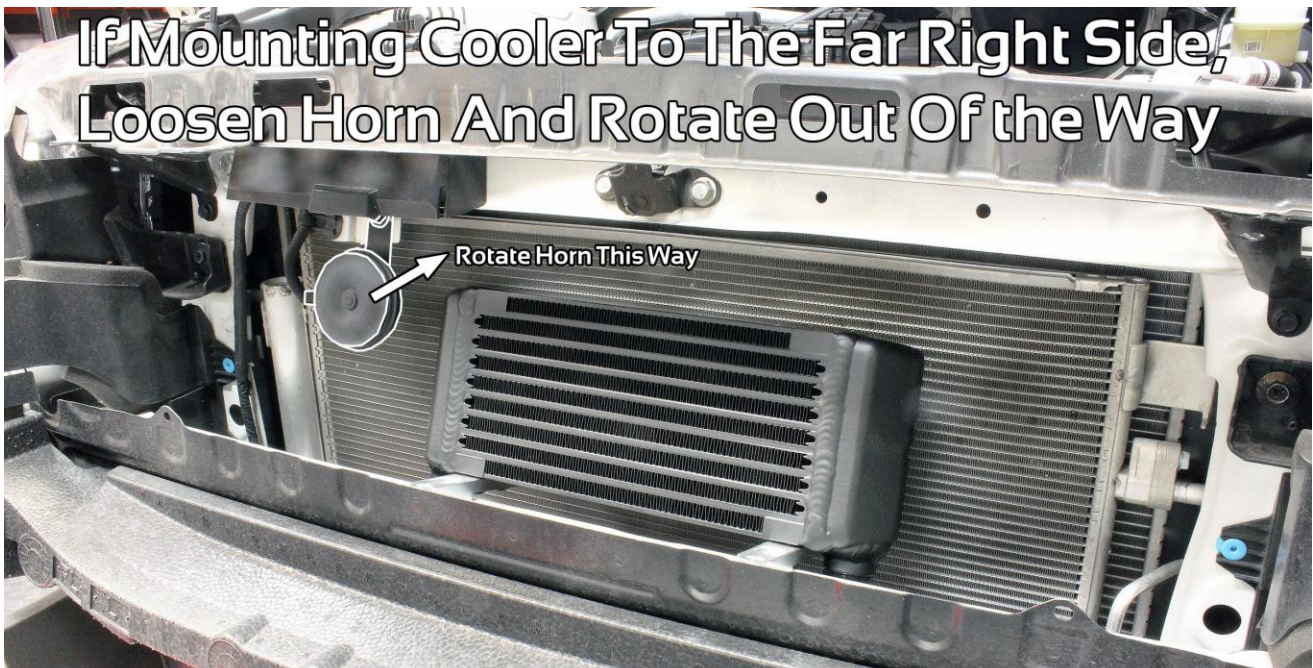
In ALL situations, when describing left and right sides of the vehicle it is always as though you are sitting in the driver's seat looking forward. Example of a US Market Vehicle: If standing in front of the car, looking at the engine bay, the drivers side is described as the LEFT side the vehicle.

Mounting of PERRIN CVT Cooler Core

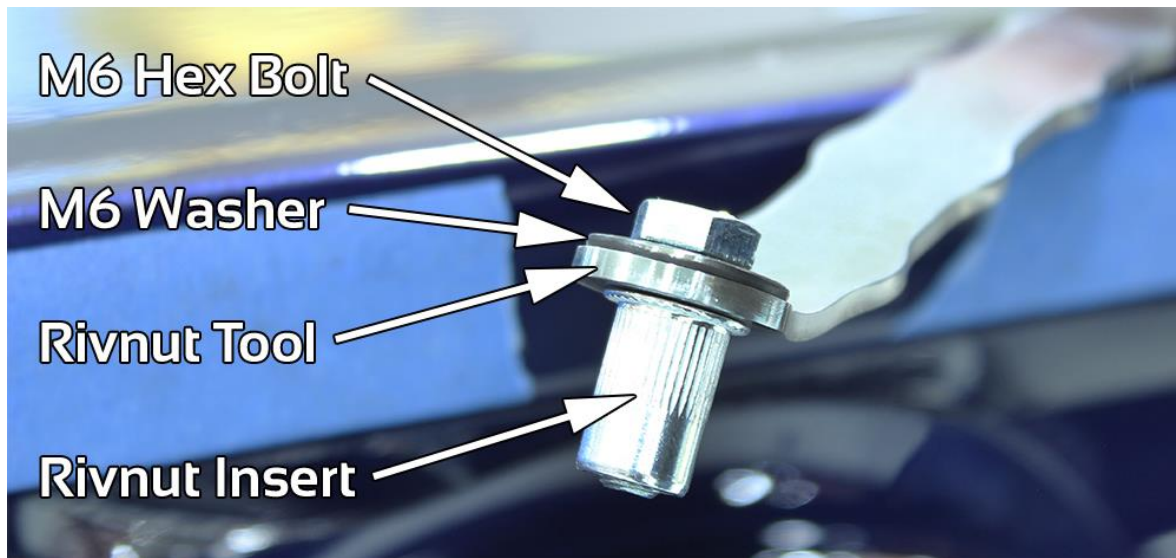
1. Let the vehicle cool off for at least 3 hours to ensure transmission oil is cool and will not burn you.
2. Remove front bumper from car. Follow the factory service manual for more detailed instructions as this step will vary greatly from each car.
3. Apply a small amount of oil or grease to threads on 45 degree bent swivel fittings and inside of oil cooler, then thread fittings into core and tighten to 30ft-lbs.
 - a. **NOTE: Take time while threading it in, to ensure it does not get cross threaded. The fitting seals using an O-ring and seal as soon as the fitting is bottomed out. Given that info, and that the fittings are hard to get an actual torque wrench on, as long as the fittings are tightened slightly more than hand tight, they will not leak or come loose over time.**
4. Install mounting brackets to PERRIN transmission cooler as shown. Secure brackets using supplied M8x16 bolts (not the longer M8x30 bolts as these will damage the core).



5. The PERRIN CVT Cooler can be mounted anywhere along the bumper beam. Mounting it in the center is the easiest method, but it will interfere with a future PERRIN Engine Oil Cooler installation. With that said, we recommend mounting it to the far right. On some models, this will require the horn to be loosened and rotated out of the way.
 - a. Set cooler with brackets onto the beam, using a pencil or sharpie, reach through any one of the (4) holes and mark the location on the bumper beam. Set assembly aside. **NOTE: Do this step as accurately as possible as this will affect how the oil cooler fits to the bumper beam. And yes, you are only doing this to one of the (4) holes. The remaining (3) holes will be done in later steps.**

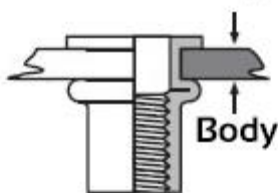


6. Drill hole in bumper beam using a high quality 10mm or 25/64" drill bit that is meant to drill steel. **NOTES ABOUT DRILLING:**
 - a. If using the exact drill to start with we highly recommend using a center punch to start hole.
 - b. Alternatively, you can start with a smaller hole (such as a 1/8") then drill hole to the correct size.
 - c. A high quality step type drill that has a 11/32" step in it can also work if you are unable to get the proper sized drill. Take care to slowly step up to this size and NOT to go over this or the rivet nut will NOT work.
 - d. Most importantly is to use some oil while drilling hole. This will help keep drill sharp while drilling through the tough steel.
7. With the first hole drilled in beam, assemble first rivet nut using supplied hardware and tool.



8. Install (1) M6 fender washer onto M6x20 hex bolt, apply grease to threads and under head of bolt, install bolt through supplied tool, and install supplied M6 Rivet nut (with flange side facing tool). See picture above.
9. Install rivet nut fully into hole on bumper beam.
 - a. While holding tool and rivet nut tightly against the bumper beam, slowly tighten M6 bolt. **NOTE: You will feel some force on the wrench for the first couple of turns, then it will get much easier.**
 - b. Continue to tighten M6 bolt (while holding the tool steady) until the turning force becomes much harder, and/or stops. **NOTE: During this stage, the rivet nut is compressing and biting into the wing from the inside.**
 - c. Once the bolt/rivet nut have hit this stopping point, remove screw, washer, and tool and check that flange of rivet nut is sitting flush with the bumper beam.

Rivet Nut Shown Compressed



Visual Representation Of When Tool Stops During Installation



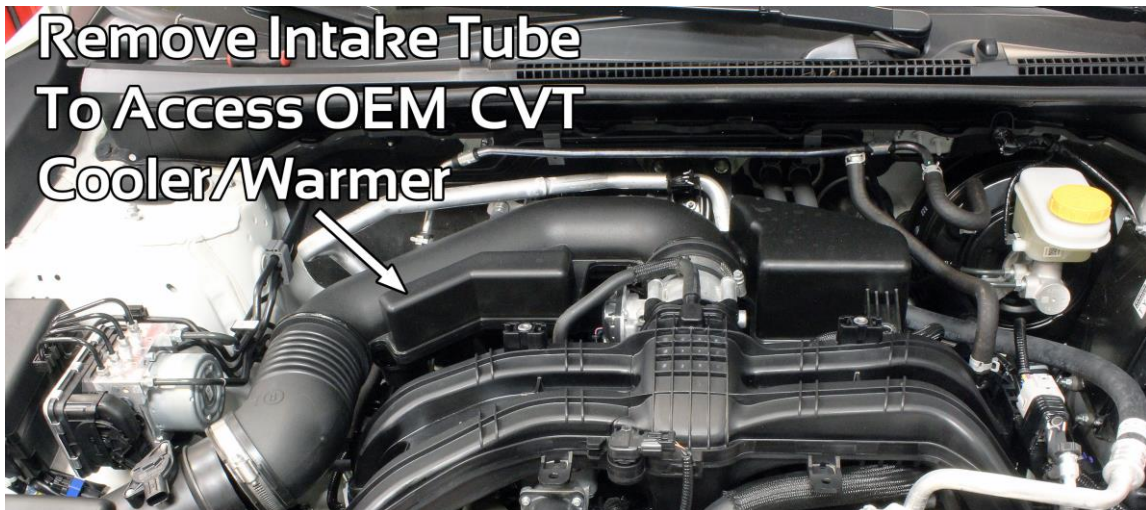
10. Mount oil cooler to bumper beam using supplied M6x25 bolt and rivet nut installed into bumper beam.
11. Align oil cooler to bumper beam again, and using a pencil or sharpie, reach through any of the remaining holes in the brackets and mark the location on the bumper beam.
12. Follow the same above steps and install another rivet nut into the marked location. Repeat these same steps for the two remaining holes. **NOTE: If holes do not all line up during any of the above steps, loosen the (4) M8 bolts holding the brackets to the bottom of the oil cooler, reinstall M6x25 bolts and tighten brackets to the bumper beam. Use an M6 hex wrench and tighten oil cooler bolts from the bottom, then fully tighten into bumper beam. Once aligned, proceed with next steps.**

13. Remove PERRIN CVT Cooler from bumper beam.

- a. If this is being installed on a Forester model or would like to mount the PERRIN CVT Cooler slightly higher, remove mounting brackets from core, and install supplied spacers between brackets and core, then use supplied M8x30 bolts to secure brackets to PERRIN Core.



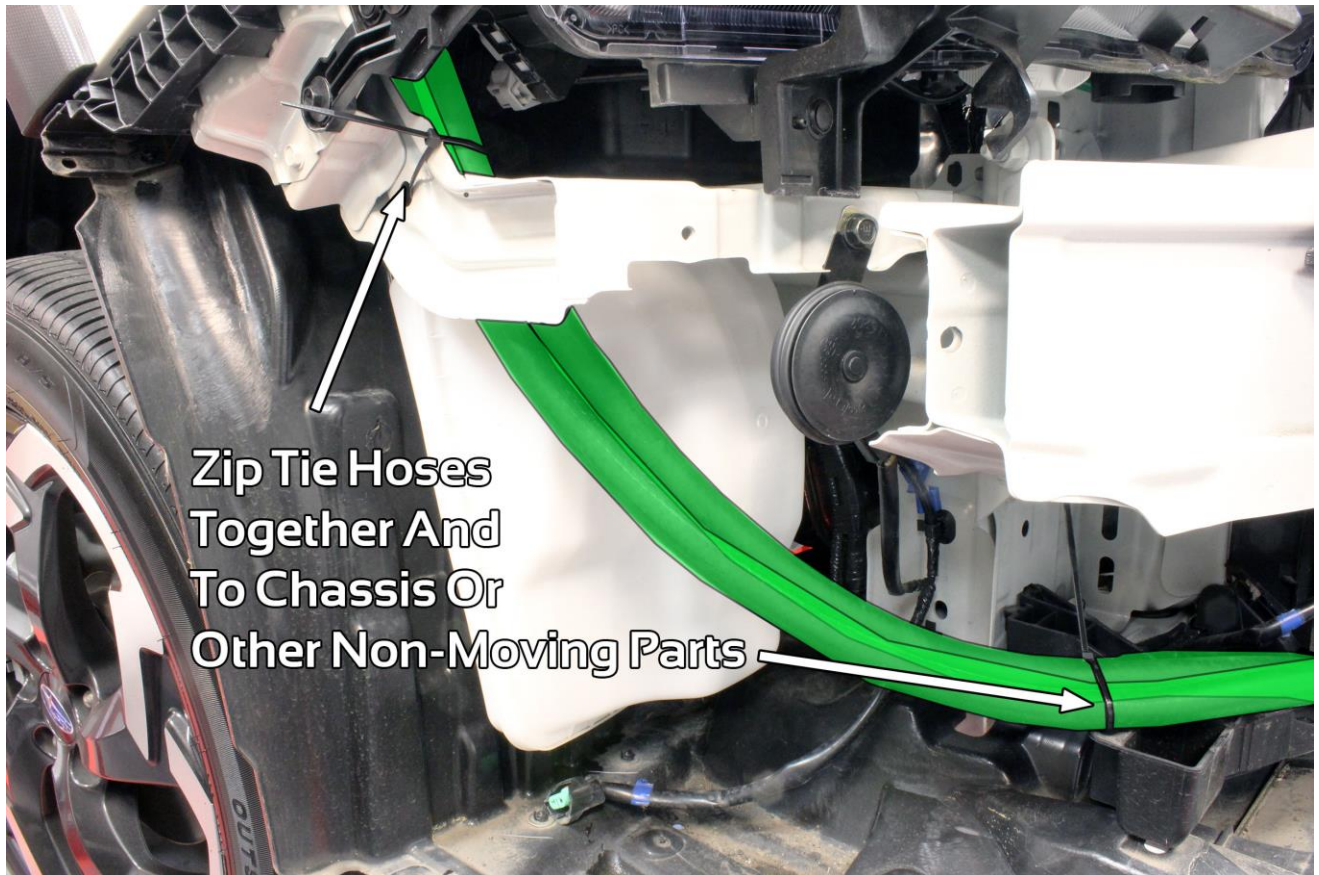
14. Apply a small amount of grease or oil to barbed fittings, then install entire loop of supplied 3/8" transmission hose to each fitting. Secure each hose to fitting using supplied hose clamp. **NOTE: Hose must be pushed onto fitting until they completely stop at the small floating washer, or they will not be properly sealed.**



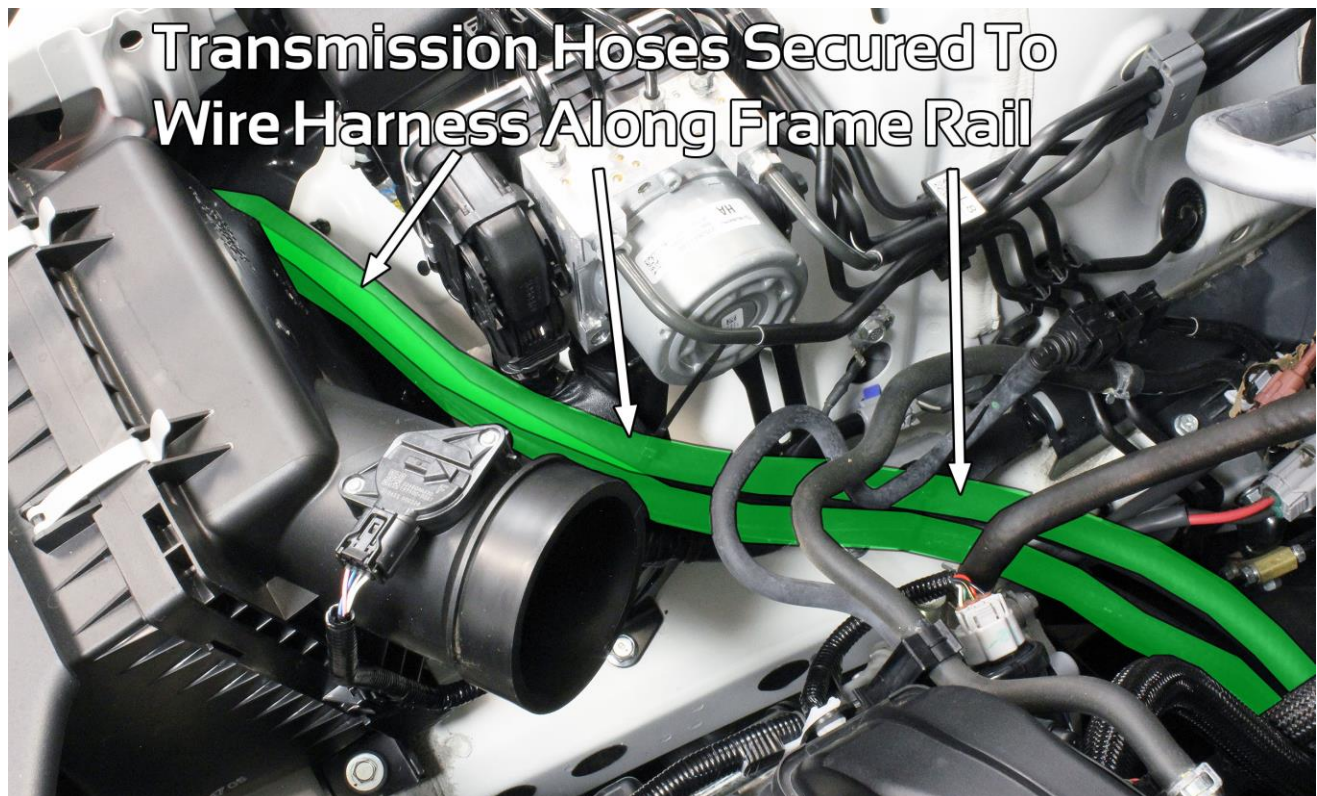
Route Hose To Engine Bay

1. Loosen hose clamps securing intake tube to engine then remove tube from engine bay.
2. Locate OEM CVT cooler/warmer on the right side of the transmission. It will either be bolted to the transmission using a bracket or bolted directly to the side of the transmission case. The above picture shows the general location, and it is showing the style of OEM cooler that is bolted directly to the side of the transmission.



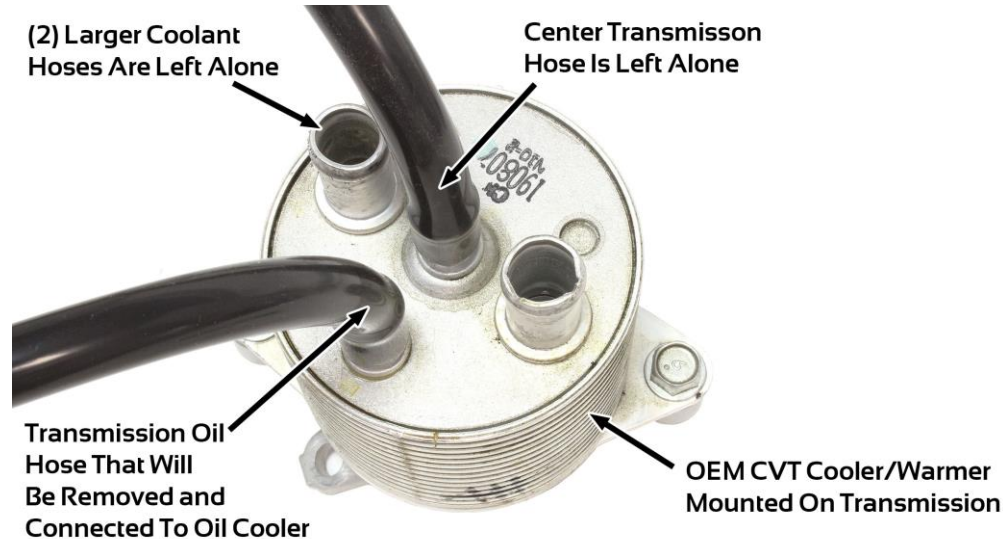


3. Route hose from PERRIN CVT Cooler to OEM CVT cooler/warmer. This step will vary greatly depending on the car.
 - a. Route hoses in a smooth direction from PERRIN CVT Cooler and up into engine bay.
 - b. Route hoses along smooth non-sharp edges and next to places that have holes where they can easily be zip tied to.
 - c. Following the frame rail and other electrical harnesses works best to allow for places to secure hoses to.
 - d. Use supplied zip ties to hold hoses together and to secure hoses to places along the route.
 - e. Keep in mind you will have to cut this hose in half and you will be able to reroute the hose if needed.
 - f. Included is some edge trim that can be used to protect hose from sharp edge that it may pass by.



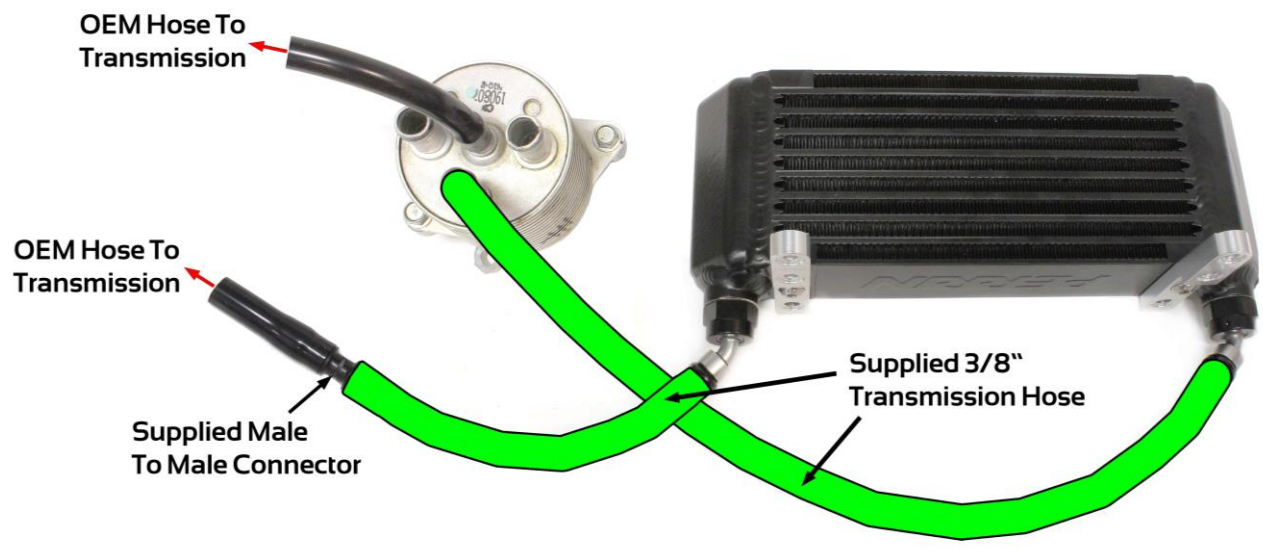
Connecting PERRIN CVT Cooler to Transmission

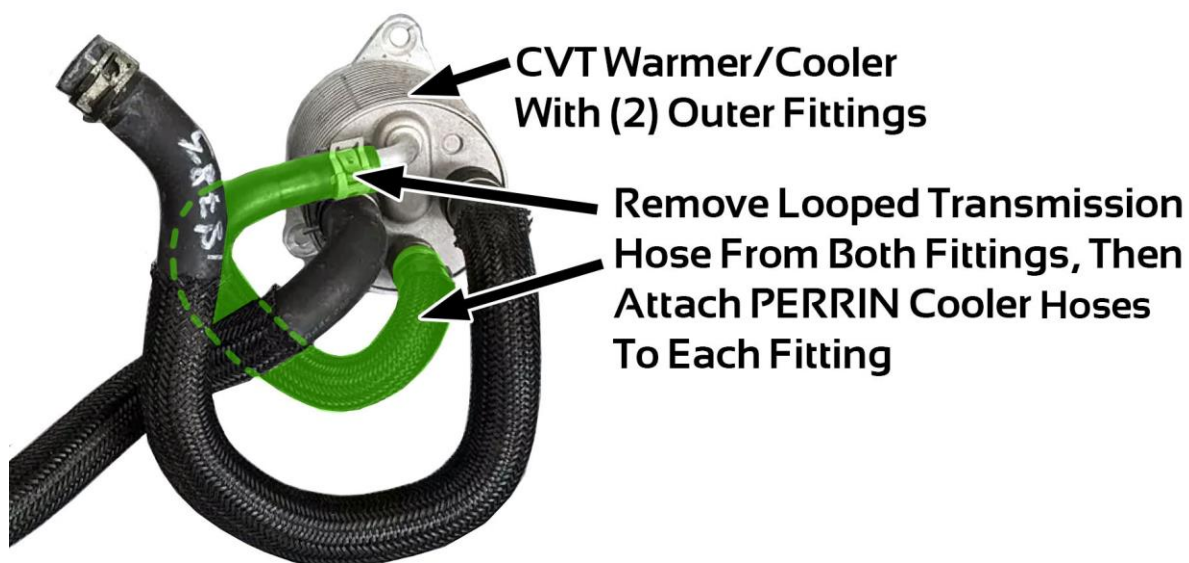
Using the pictures below, determine which OEM CVT cooler/warmer you have on your transmission. The install methods are slightly different but generally the same, where the PERRIN CVT Cooler is placed "in-line" with one of the OEM transmission oil cooler hoses coming off the OEM cooler/warmer. Regardless of which style you have, the hose connecting methods are the same. Make sure to use supplied hose clamps at all connection points. While these hoses do not operate at extreme pressures, it is important to install the hose clamps behind the small beads on all fittings. Make sure all hose routing is done so hoses are not pinched off or kinked in any way. Included are 2 90 degree plastic fittings to help with routing around tight areas.



Bracket Mounted OEM CVT Cooler Instructions

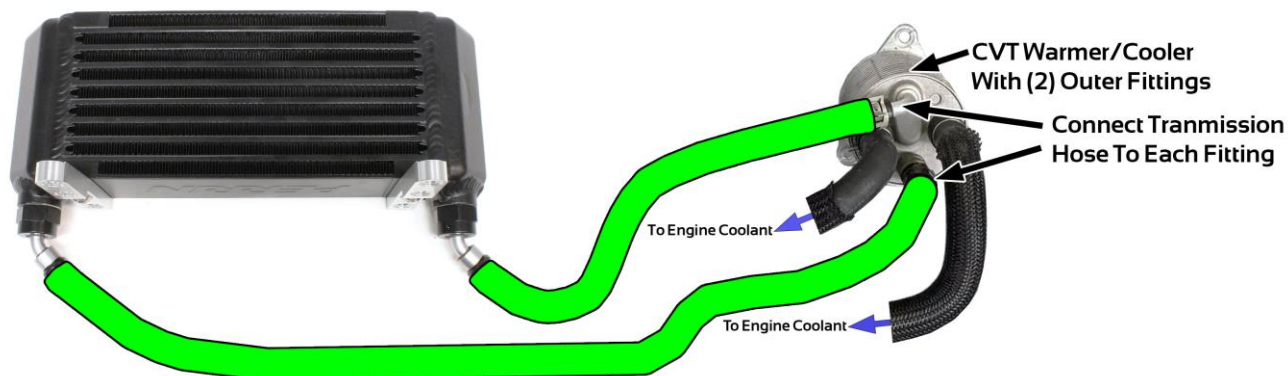
Most common is the CVT cooler/warmer that is bolted on a bracket that is bolted to the transmission case. These coolers look like the picture above and below. There are 2 large coolant hoses and then (2) smaller transmission oil hoses that connect to the transmission. The hose that the PERRIN CVT Cooler intersects with is the one that is on the outside of the cooler as shown. On these models, you will remove the outer hose from the cooler/warmer, connect supplied 3/8" transmission hose to cooler, run the hose to the PERRIN CVT Cooler, and back to the hose that is left open. Think of it as a 12 foot loop from the OEM CVT cooler/warmer, to the PERRIN CVT Cooler, and back to the hose. See picture below for an overview of this.





Direct Mounted OEM CVT Cooler Instructions

The second style is where CVT cooler/warmer is bolted directly to the transmission without a bracket. These coolers look like the picture above. There are 2 large coolant hoses and then the transmission oil fittings are connected with a loop. On these models, you simply remove the looped hose and connect the PERRIN CVT Cooler to each fitting using the supplied 3/8" transmission hose. See picture below for an overview of this.



First Start After Installation

1. Reinstall intake tube that was removed earlier. Start your car like normal and let it run for 5 seconds, then shut engine off. **Thoroughly inspect all oil lines and connections for leaks.** If no leaks are found, start engine, let it run for at least 5 minutes. During this time check all hoses and fittings for leaks. If any are found, stop engine and fix, then retest.
2. If no leaks are found, reinstall bumper back to car in the reverse order it was removed.
3. Take car for 15min test drive and check to make sure that there are no visible oil leaks. If any leaks are found, stop and repair.
4. The PERRIN CVT Cooler will require the CVT oil to be topped off. Follow factory service manual as to the procedures how to check the oil level and properly fill it up. Do not drive car under high loads or for extended periods of time without having this procedure done.

Questions, Comments and Suggestions Contact: Tech@PERRIN.com

Visit Our Website for Instant Chat Options at www.PERRIN.com

Call Our Tech Team at 503-693-1702