

2005+ Legacy Transmission Cooler Installation - 4EAT / 5EAT

WARNING!! - Maintenance and working on your car involves some dangers and risks and may cause injury to you or damage to your vehicle if not done properly and safely. I can not be held responsible for any damage, injury or liability caused by using these instructions. If you are not mechanically inclined, please consult the assistance of a professional.

The #1 cause of automatic transmission failures is overheated transmission fluid. Today's cars generate extremely high under-the-hood temperatures. Add to that the heat generated by an automatic transmission, and you'll see why adding an auxiliary transmission oil cooler is a must for guarding against costly transmission repair.

Automatic transmission fluid cools, lubricates and cleans transmission components. A transmission cooler is basically an auxiliary radiator that provides extra cooling for automatic transmission fluid. When transmission temperatures exceed 200° F, transmission fluid is strained to its limit. Overheated fluid won't properly protect transmission seals and moving parts. When oil temperatures exceed 200° F, oil breaks down, causing seals to crack and leaks to occur.

Many owners' manuals now point out the need for a transmission cooler when towing. In fact, some owner's manuals recommend a cooler if you plan to regularly drive with additional occupants (carpool for instance).

Protect yourself from a costly transmission repair bill with a transmission cooler. Each 20° drop in temperature doubles oil and equipment life, thereby extending the life of your vehicle. Transmission coolers constantly swirl, agitate and cool oil as it flows, to provide maximum heat dissipation and are pressure tested to ensure reliability and durability. Any Automatic transmission can benefit from a transmission cooler, extreme heat is what damages automatic transmissions so anything you can do to help keep it cool will prolong its life. This is extremely important if you use your car fully loaded, or pulling a trailer or with high horsepower applications.

I choose a Hayden brand transmission cooler for my installation. Hayden recommends the following transmission coolers for the 2.5l Subaru's:

Normal Duty – RapidCool #676 (#1676 for the Transaver Plus) 4.0"x0.75"x11.0", for towing up to 2,500 lbs.

Medium Duty – RapidCool #677 (#1677 for the Transaver Plus) 5.5"x0.75"x11.0", for towing up to 3,500 lbs.

Heavy Duty – RapidCool #678 (#1678 for the Transaver Plus) 7.75"x0.75"x11.0", for towing up to 5,000 lbs.

All come with the transmission cooler, 4 feet transmission hose, hose clamps, cooler installation hardware/clips and instruction book. I purchased mine on eBay for \$42.00 shipped, brand new in the box. You will also need to purchase one (1) 3/8" diameter brass barb splicer as shown below and have a few wire ties to complete the install as I have done. Have extra transmission fluid on hand to top off the fluid when finished.



You will also need the following tools:

Small Standard (Flat) Screwdriver, Socket wrench, 10mm, 12mm & ¼" sockets, wire cutters, pliers, scissors and safety goggles.



1) Begin by removing the grille, this is accomplished by opening the hood and removing the 10mm bolts and pop-it's located next to each headlight. Then release the four grille clips from the core support and pull the grille forward and out.



2) Then disconnect the hose from the radiator to the coolant overflow bottle, push the tab to release the bottle and remove it from the vehicle.



3) Remove the two 10mm bolts from the top of the fan, and then disconnect the fan harness at the bottom of the fan. This will allow you to move the fan back and away from the radiator for clearance to install the cooler.



4) Position the cooler and follow the cooler manufacturer's direction to mount the cooler to the condenser / radiator with the supplied hardware / clips. Be sure to leave plenty of room to access the line fittings. I found the best way to mount it was with the fittings facing the driver's side of the car.



5) The hardware consists of plastic straps that fit through the fins in the condenser and radiator and are secured with plastic clips. Again, follow the instructions provided by the cooler manufacturer of the cooler.



6) With the 4 ft hose connect each end to the cooler 1 end at a time, **DO NOT CUT THE HOSE YET, RUN IT IN A LARGE SEMI-CIRCLE TO MAKE THE CONNECTIONS.** Be sure to keep the hose clear of any sharp edges. Luckily the Legacy has a pretty large opening on the driver's side for easy pass through into the engine compartment. Secure the hoses to the cooler fittings with the supplied hose clamps.



7) You may now reinstall the front grille and the engine cooling fan by reversing the steps used to remove them.



8) Put on your safety goggles and move underneath the car and remove the driver's side engine under cover(s) to access the transmission lines at the driver's side frame rail (under the battery). The hose & line towards the rear of the car is the transmission fluid return line, this it the one we will be connecting to so the fluid first flows through the radiator and then through the added transmission cooler.



- 9) Using the pliers remove the factory hose clamp and pull the rubber hose loose from the metal line, be sure to have a catch can handy to catch the transmission fluid that will spill out. Be careful not to get fluid in your eyes, wear your safety goggles!!
- 10) Cut the hose coming from the lower fitting of the transmission cooler with just enough to reach the factory metal line without crimping the hose. Slide the hose onto the metal line and secure it using the factory hose clamp you removed in step #9.



- 11) Insert the 3/8" diameter brass barb splicer into the factory rubber hose as shown and secure with a hose clamp supplied with the transmission cooler kit.



- 12) Find the hose coming from the upper fitting of the transmission cooler and route it to the factory rubber hose with the newly installed 3/8" diameter brass barb splicer. Slide the hose onto the splicer and secure with a hose clamp supplied with the transmission cooler kit.



- 13) Secure the hoses with wire ties, be sure to keep them away from any sharp edges that could puncture the hose and cause a leak. Reinstall the coolant overflow bottle.
- 14) Start the vehicle and check all the connections for leaks, correct any leaks that are found.
- 15) With vehicle running and in Park, check the transmission fluid level. Add fluid as necessary.
- 16) Reinstall lower engine under cover(s)

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