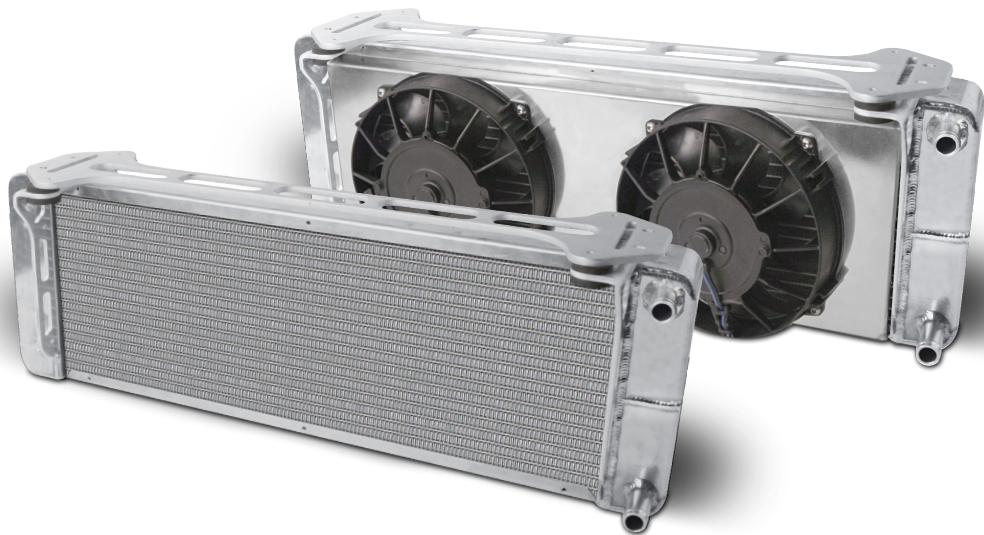




'99-'04 Ford F-150 Lightning/Harley Heat Exchanger Installation Instructions

Part Number: 80249N & 80249N-FS



1. Disconnect the negative battery terminal.



2. Remove the rubber filler between the valance and the lower heat exchanger bracket. This will be reused if you have the fan and shroud kit.



3. Drain the coolant.



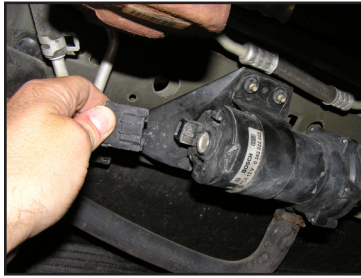
4. Disconnect the lower hose from the factory heat exchanger.



5. Disconnect the upper hose from the coolant pump.



6. Disconnect the coolant pump harness and the resistor connector above the pump.



7. Loosen the two bolts on the clamp securing the coolant pump and rotate upward to lessen the chance of coolant running out.



8. Remove the two bolts securing the lower heat exchanger bracket to the bumper bracket. Save these bolts-You will reuse them. **NOTE** - The lower bracket has two "J" hooks on the front. Swing the heat exchanger down and forward and remove the upper rubber saddles. This will allow you to push the heat exchanger up to unhook the brackets. Remove the lower bracket and heat exchanger.



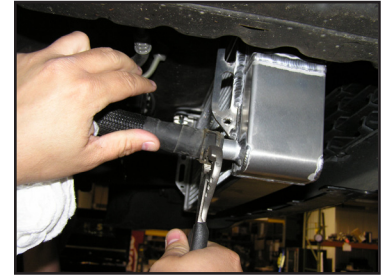
9. Install the aluminum upper bracket and attach using the two factory bolts in the factory holes. Use the two 1/2" long button head bolts and flange nuts supplied in the kit in the front holes. The spread on the OE heat exchanger brackets vary from vehicle to vehicle. They can be easily moved by hand. Tighten the bolts.



10. Install the AFCO HEAT EXCHANGER to the upper bracket and install the four washers and serrated nuts. Tighten the nuts.



11. Attach the lower hose to the lower fitting of the AFCO Heat Exchanger and install the hose clamp.



12. **COOLANT ALERT!!!!** Remove the pump inlet hose and rotate the pump so the outlet points toward the rear and slightly upward. Coolant will come out of the pump unless you rotate the outlet over the top. Also, you may want to shift the pump 1" to the driver's side. This is done to give a little extra clearance on the hose. Tighten the two bolts on the clamp that secure the pump. Reconnect the inlet hose to the pump and install the clamp.



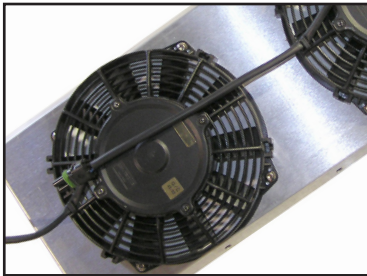
13. Attach one end of the piece of straight hose supplied with the kit to the pump outlet and install the supplied clamp.



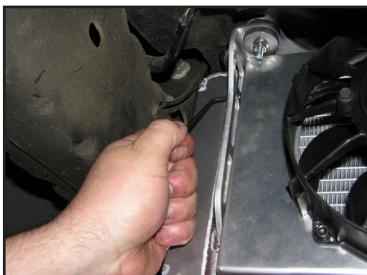
14. Route the hose as shown and attach the other end to the AFCO HEAT EXCHANGER and install the supplied clamp.

IF YOU HAVE PURCHASED THE HEAT EXCHANGER WITH FAN KIT, (80249N-FS) CONTINUE. IF NOT, PLEASE SKIP TO STEP 38.

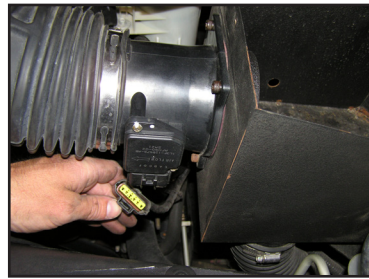
15. Attach the two fans to the shroud using the 8 button head bolts and lock nuts. The wires on the fans should point toward the side of the shroud (as shown below). The bottom of the shroud has the 5 holes punched in it to attach the rubber splash guard.



16. Attach the fan and shroud assembly using the four 3/4" long hex head bolts supplied with the kit. Finger tighten all 4 bolts before tightening with a wrench.



17. Disconnect the MAF(Mass Air Flow) sensor.



18. Remove the air cleaner box assembly.

19. Remove the two bolts securing the cruise control unit and set it aside. Be sure not to kink the cable.



20. Temporarily bring the pump harness back over the top of the frame rail to the area in front of the tire. This will allow you to have a room to splice the harness.

21. Feed the AFCO Fan Control Harness with the weatherpack end down under the radiator coolant reservoir through the opening in the radiator support along side the harness for the coolant pump. The relay end should be at the top next to the fuse box.



22. Remove the fuse box cover. (allows for a little extra room) Use the "xmas tree style" retainer supplied with the kit to attach the fuse holder on top of the relay bracket.



23. Remove the cover on the firewall side of the fuse box that covers the main supply wire terminal to the fuse box.

24. Remove the nut on the terminal and attach the



red fan harness wire and reinstall the nut.



25. Run the harness along side the fuse box and push the retainer installed in step 22 into the predrilled hole in the inner fender.

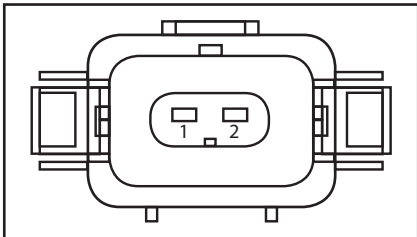


26. Reinstall the terminal cover and the fuse box cover.

27. Run harness down along the factory harness on top of the wheel well and reinstall the cruise control unit. Be sure not to pinch the harness.



28. Remove the plastic loom on the coolant pump harness at the connector and locate the white wire on the harness. This wire may be a different color, but you need the wire that is in the #2 pin location. This wire will have battery voltage when pump is activated. Cut this wire approximately 2" from the pump connector.



29. Insert the two ends of the wires cut in previous step into the blue/clear 3M Scotchlock 3-way splice connector supplied with the kit. Note: It is not necessary to strip the wires and the order of the wires inserted does not matter. Once the button is depressed, the connector is difficult to reuse, so be sure the wires are inserted completely. Insert the orange wire from the fan harness into the remaining hole. Using a slip joint pliers, (or similar tool) press the blue button down into the connector until the button locks. The connector is filled with EG-3 sealant. Just wipe off any excess with a rag. You may wrap the connection with electrical tape, although it is not necessary.



30. Run the harness back over the frame rail and fasten to keep out any slack in the harness in the areas of engine compartment and in front of the tire.



31. Connect the two weatherpack connectors to the connectors on the fans. The longest section connects to the passenger side fan and the shortest section connects to the driver side fan.



32. Remove the driver side bolt on the coolant pump bracket. Attach the terminals on the black & grey fan harness ground wires to this location and reinstall bolt.



33. Reconnect the coolant pump connector and resistor connector.



34. With the supplied wire ties, secure the harness wiring up out of the way.

35. Install the rubber filler under the bumper using the factory fasteners. The filler attaches to the 5 holes in the bottom of the shroud and the factory holes in the bottom of the bumper cover.

36. Reinstall the air filter box assembly.

37. Attach the inlet tube and reconnect the MAF sensor.

38. Reconnect the battery.

39. Refill the coolant reservoir with coolant. Fill slowly to prevent trapping air in the system. Fill to the proper level and run vehicle until the pump circulates the coolant. Note: The pump is controlled by the computer. It senses temperature and is time delayed, so be patient. Time and temp will vary if your vehicle has a computer upgrade. Check the coolant level and add if necessary.