

Radiator Fans Harness Removal

1. Disconnect the negative battery terminal.
2. Disconnect the positive battery terminal.
3. Remove the battery from its tray and set aside.
4. Disconnect the ring terminal for the fans harness power wire and the fan relay harness power wire from the positive battery terminal, then cut off the zip tie securing the fan harness and fans harness relay wires to the stock Ford harness. (Figure 1)

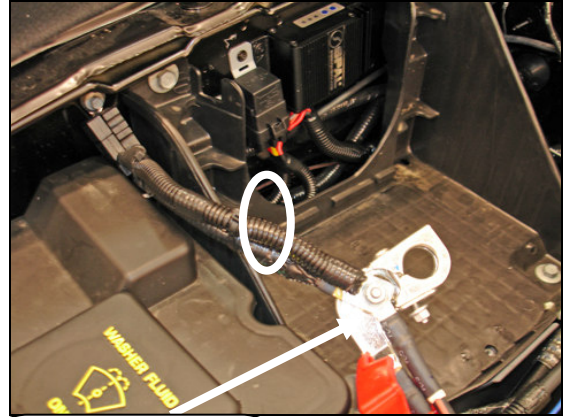


Figure 1

Disconnect fan harness and fan relay harness power supply leads from positive battery cable terminal and cut off the tie wraps

5. Remove the passenger side kick panel from the passenger footwell inside the truck.
6. Locate and disconnect the 24-pin central junction box connector located in the passenger side kick panel area (it's in the upper-rear corner of the junction box, right next to the door; see Figure 2).
 - To release the connector, pull UP on the D-ring
7. Cut the orange wire from the fan harness that has been spliced into pin 23 of the 24-pin connector.
8. Re-connect the 24-pin connector, making sure the D-ring is fully snapped into place and the connector is locked together.
9. Cut the zip ties holding the orange wire in place, and install new zip ties to fasten the water pump harness white/purple wire in place.

Cut the fan harness orange wire from pin 23 of the 24-pin central junction box connector; cut the zip ties holding the orange wire to the stock Ford wires

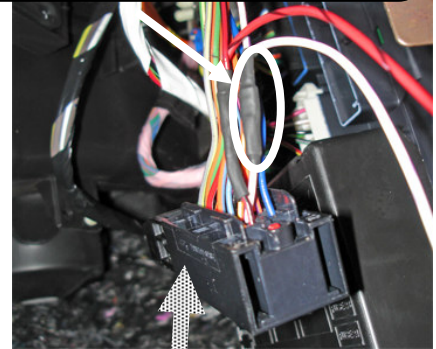


Figure 2a

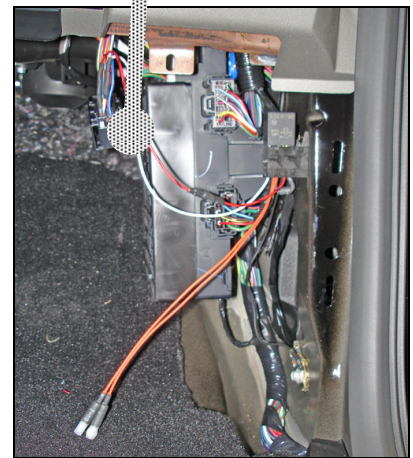


Figure 2

10. Remove the bolts that secure the battery tray and windshield washer fluid reservoir and reposition these items towards the center of the engine compartment.
11. Remove the fan relay and control box from the passenger side inner fender well. (Figure 3)
12. Remove the fan harness ground wire to the existing firewall ground point, at the passenger side-rear corner of the engine bay. Use an 8 mm socket to remove the bolt. Reinstall the bolt (Figure 4).



Figure 3

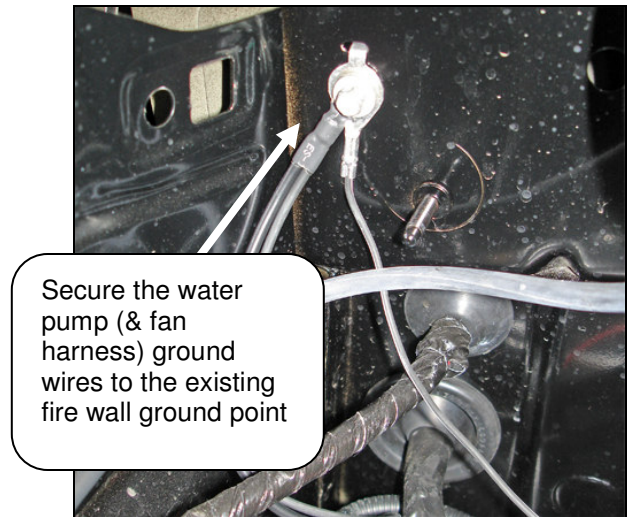
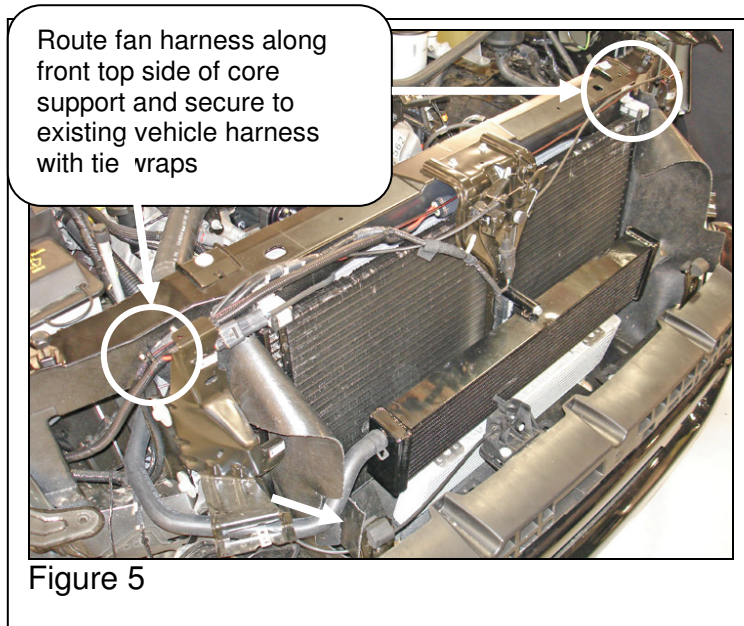


Figure 4

13. Remove the core support upper shroud.

14. Remove the tie wraps securing the fans harness to the stock Ford harness. (Figure 5)



15. Cut the blue wire from the fan harness off 3 inches from the connector in front of the PCM. (Figure 6)

16. Disconnect the fan harness connector from the coolant temperature sensor and cut off the tie wrap securing the harness to the bell housing with a tie wrap. (Figure 7)

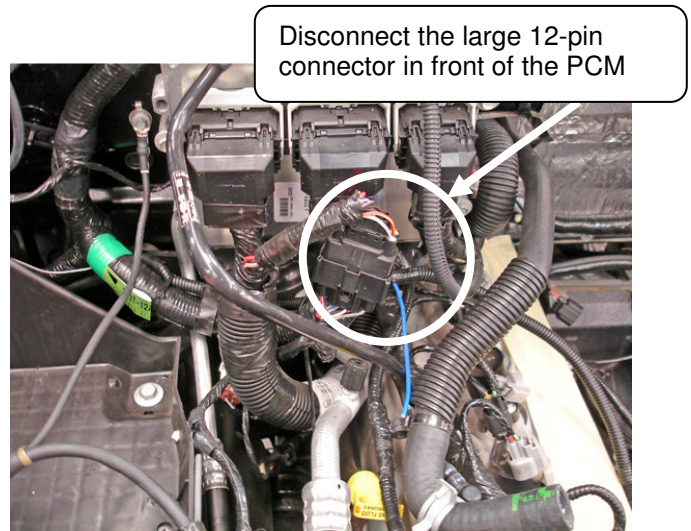


Figure 6

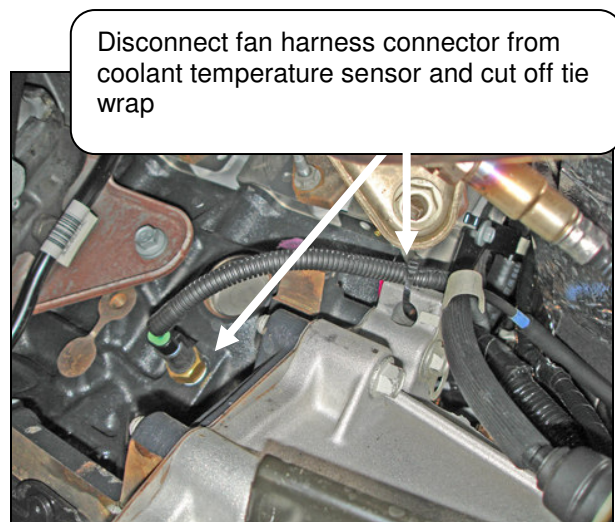
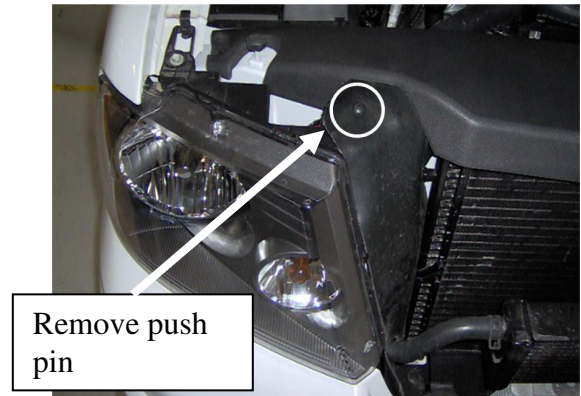


Figure 7

17. Remove push pin holding the top of the passenger side radiator rubber splash guard and move the guard so it is out of the way. (Phillips Screw Driver) (Figure 8)



Remove push
pin

Figure 8

18. Remove the relay shown using the removed T30 Torx bolt. The wires of the relay will be facing down (T30 Torx socket) (Figure 9)



Remove relay
and re-install
the stock Torx
bolt

Figure 9

19. Disconnect the fans relay harness from the passenger side fan connector. (Figure 10)
20. Disconnect the fans harness from the driver's side fan harness connector. (Figure 10a)



Figure 10

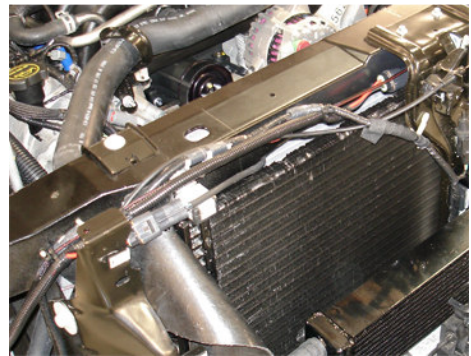


Figure 10a

21. Remove the ground bolt from the wheel well and install the new ground lug with the factory lug at the grounding point on the wheel well behind where the washer bottle mounts. (8mm socket) (Figure 11)
22. Detach the fans relay harness power wire ring terminal from the battery positive terminal tension bolt and tighten the bolt using an 8 mm socket on 1/4" drive ratchet. To secure the positive battery terminal. (Figure 12)



Figure 11



Figure 12

Electric Fans Removal

23. Remove the radiator electric fans as follows:
- Remove the two bolts (one at each upper corner; keep bolts for installation of mechanical fan)
 - Pull the fans out of the bottom slip brackets and remove from the vehicle

Install radiator electric fans; two slip-brackets at bottom and two bolts at top



Figure 13

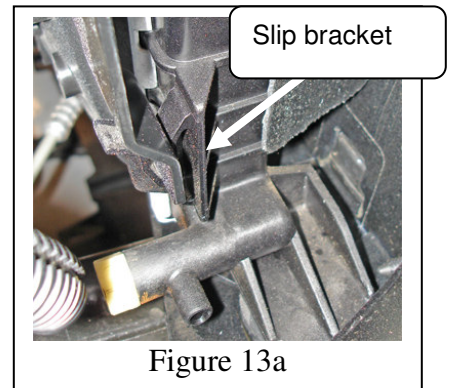


Figure 13a

Electric Fan Removal & Mechanical Fan Installation

24. Using an 8 mm socket and ¼" drive ratchet, remove the 4 bolts from the fan & hub assembly. (Figure 14)

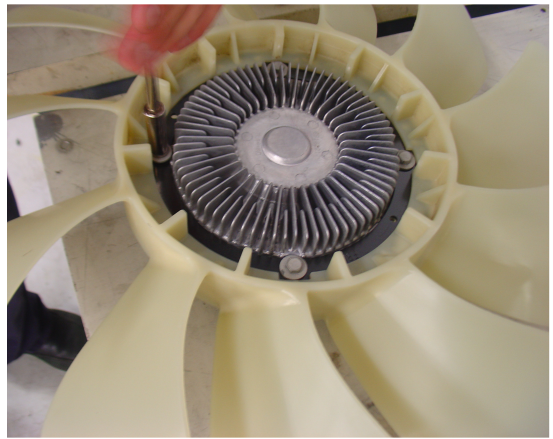


Figure 14

25. Install the spacer (08-1604-C16177A) onto the fan hub

- Line up the holes in the bottom of the spacer with the holes in the hub
- Loosely install the 4 provided bolts
- Gently tap the spacer onto the hub with a rubber mallet *only if necessary* (Figure 15)
- Use a piece of paper or a thin feeler gauge to ensure the spacer is seated flush against the eight machined mounting tabs

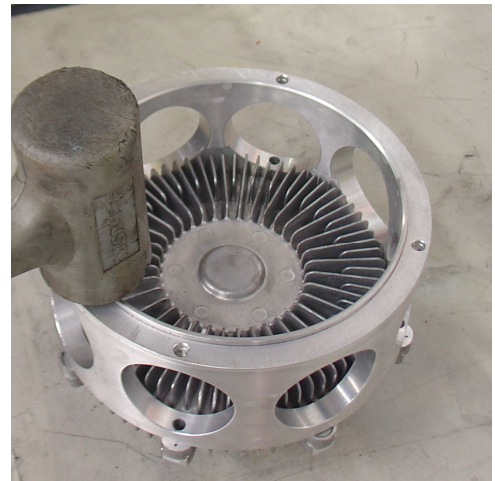


Figure 15

26. Install the fan over the spacer

- Ensure the fan is flush against the spacer
- Use a drop of red loctite at the bottom of each capscrew (00-9001-C16379*) (Figure 16)
- Install each capscrew with one washer (00-9004-C00296*) and tighten to **62 lb-in.** (Figure 17)

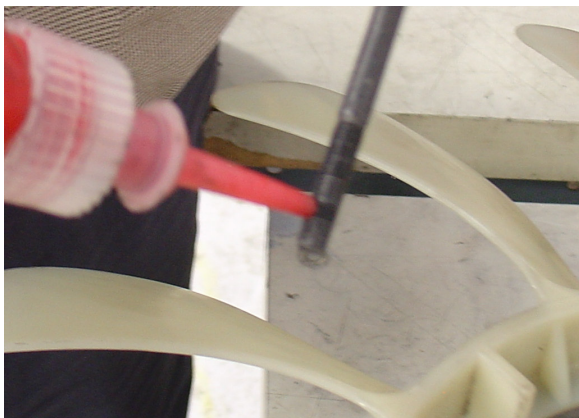


Figure 16

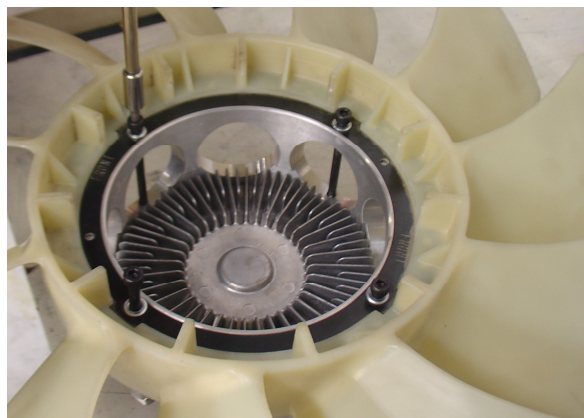


Figure 17

27. Install the fan + shroud assembly

- Insert the fan into the fan shroud and insert both into the front of the engine bay. (Figure 18)
- Slide the lower tabs of the fan shroud into the slip brackets on the radiator (driver's side shown, Figures 19, 21)
- Secure the upper tabs of the shroud to the radiator with the stock bolts, and **torque to 53 in-lb** (driver's side shown Figure 22)
- The shroud will need to be pushed/worked towards the driver's side as the bolts are tightened; it may be necessary to pull the shroud up out of the bottom slip brackets to move the shroud over and then re-insert into the slip brackets

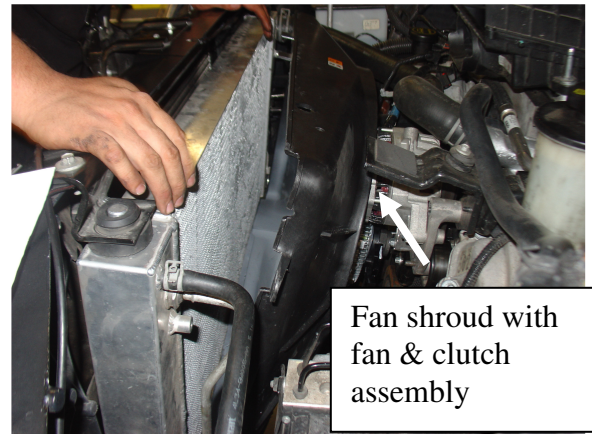


Figure 18

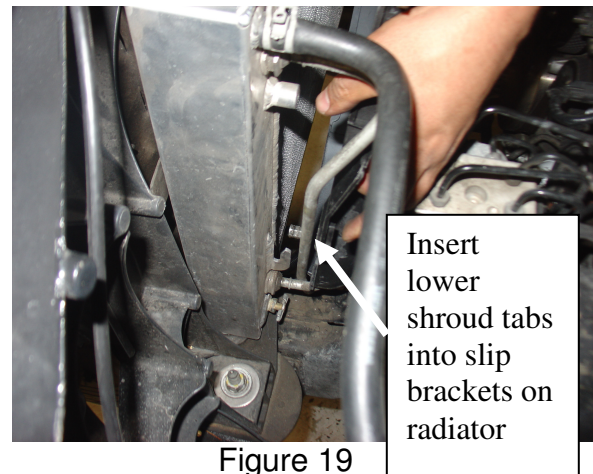


Figure 19

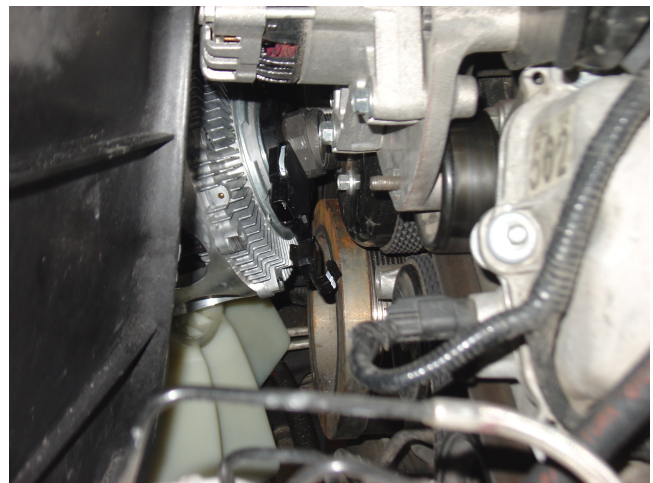


Figure 20

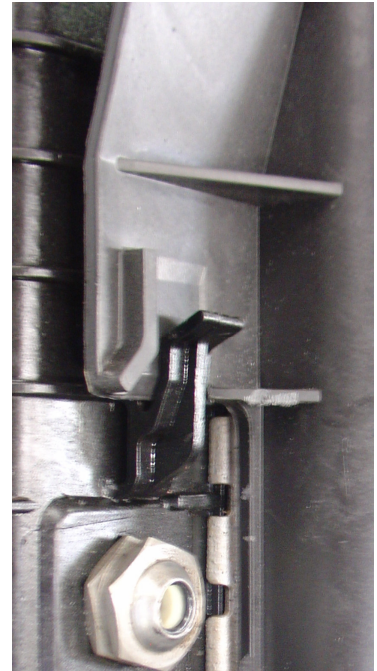


Figure 21

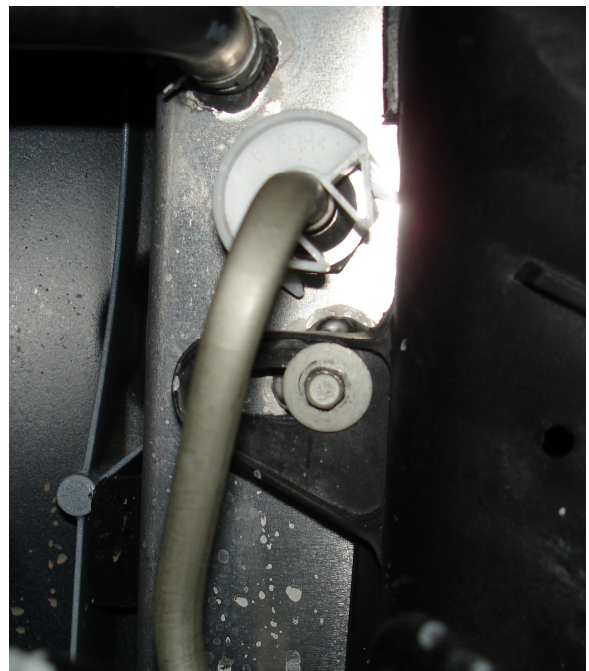


Figure 22

28. Thread the fan clutch onto the water pump shaft (Figure 23)
- Hold the water pump pulley steady using the Water Pump Pulley Holding Tool
 - Tighten the fan clutch hub nut using the 1 7/8" Fan Clutch Wrench.
Torque to 98 lb-ft.

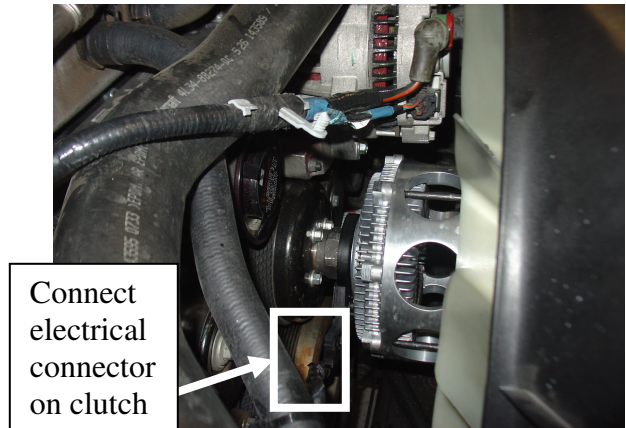


Figure 23

29. Reconnect the fan control harness electrical connector, and secure the harness in the clip with the stock rubber bushing. (Figure 23)

30. Ensure the fan is centered within the shroud opening, and that there is a **minimum of 1/2" gap** between the fan blades and the shroud at a position approximately halfway between the 7 o'clock & 8 o'clock positions (as viewed from behind the shroud; Figure 24)
- If necessary, the upper shroud mounting brackets may be loosened to allow for fitment adjustment

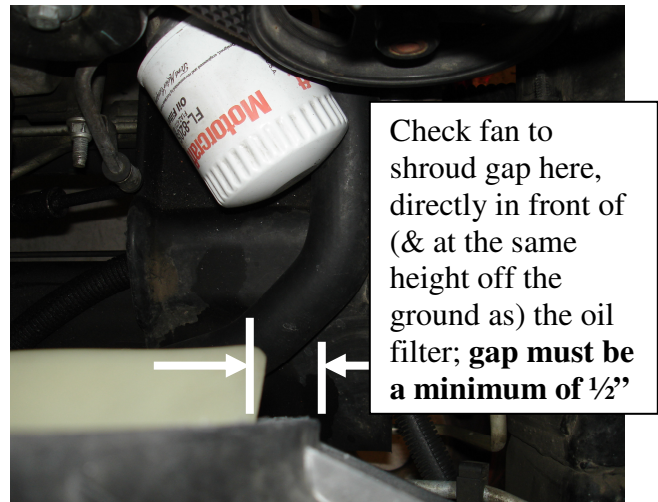


Figure 24

31. Secure the stock vehicle harness to the fan shroud by inserting existing plastic fastener into the upper-middle hole on the passenger side of the shroud. (Figure 25)
32. Temporarily install the core support shroud, carefully drill the fan shroud, using the core support shroud as a guide, for the two stock plastic fasteners. (Figure 26)



Figure 25

Secure vehicle harness to fan shroud by plugging plastic fastener into upper passenger side hole



Figure 26

Use this upper shroud as a template to drill holes for the plastic fasteners