



# Full-Race Transmission Oil Cooler Install:

## 2017+ Raptor and 2015+ F-150

### Required Tools:

- Trim Panel Removal Tool
- Flathead and Phillips screwdriver
- Needle Nose Pliers
- 3/8" Ratchet w/ 12" extension
- 8mm and 10mm Sockets
- Fluid Transfer Pump
- MERCON ULV (2017+) for 10 speed 10R80 equipped Trucks
- MERCON LV (2011-2016) for 6 speed 6R80 equipped Trucks

**Note:** While the front end is apart for Trans cooler installation, now is an excellent opportunity to upgrade to a Full-Race Radiator and Intercooler at the same time.

### Installation Procedure:

**Step 1.** Park the vehicle on level ground and set E-brake. Open the hood and disconnect the negative battery terminal. Prepare your workspace, avoid using every engine bay surface as a tool shelf (this can lead to leaving behind foreign objects that get sucked into your engine).



**Step 2. Remove the grill:**

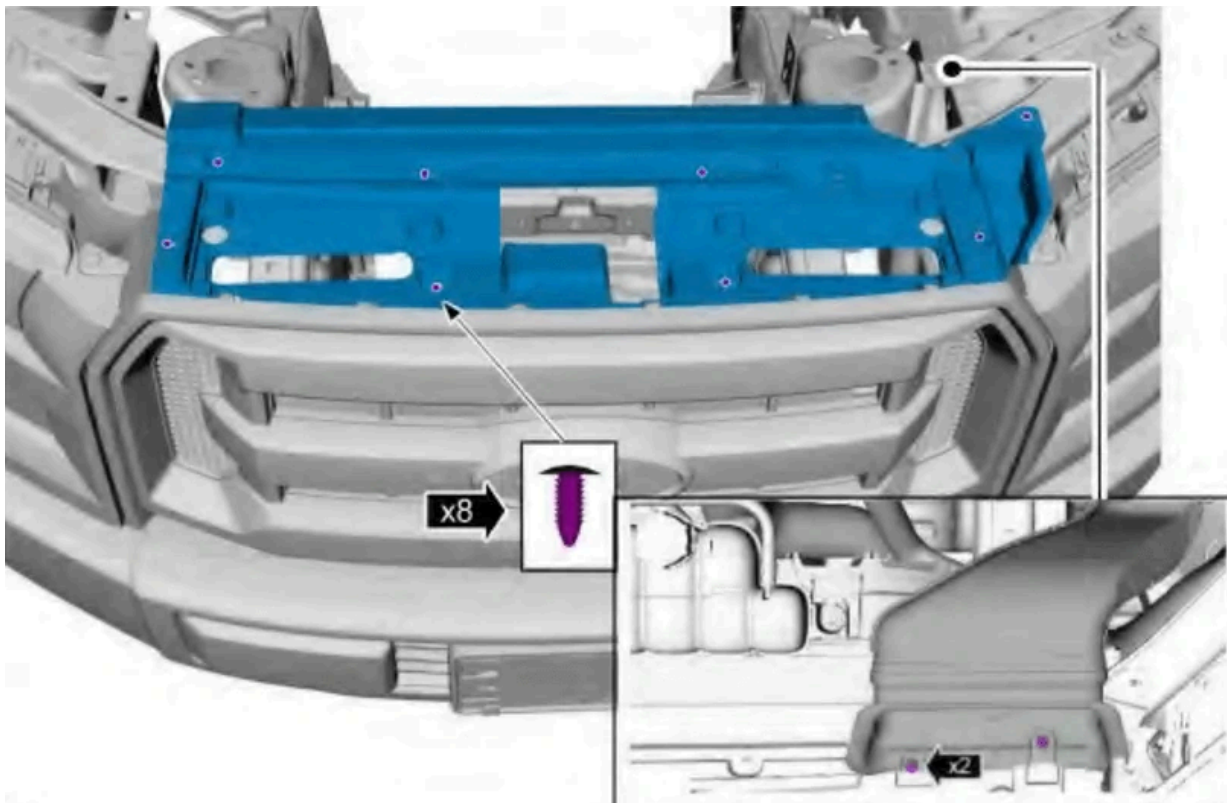
Gently use trim panel removal tool on retaining clips to avoid damage or scratches.

**Save clips and hardware for reinstallation**

Using the Trim tool, start by removing the 2 retaining clips at the airbox inlet.



Remove (7) clips holding the radiator air deflector. Gently pry the center up until it unlocks, then pull on the larger round base to remove.



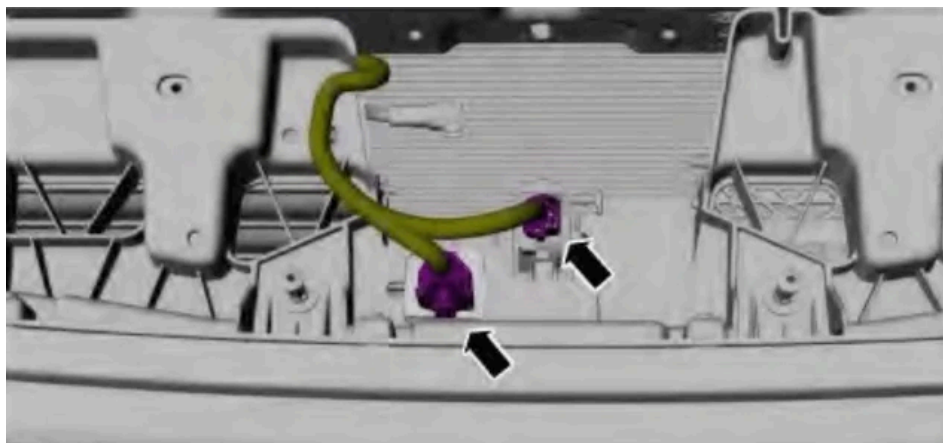


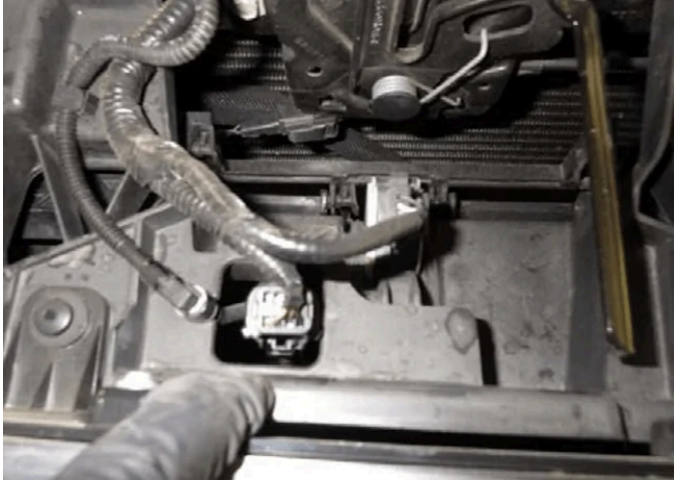
2021+ trucks have 2 more trim clips on the corner of the core support, 2 small 7mm bolts on each of the passenger/driver side fender liners, and a corner lamp that needs unplugged.

**Step 3.** Using an 8mm socket, remove 4 bolts (17-20) or 2 bolts (21+) that hold the grille assembly to the core support. This may be a 10mm socket on early 2017 trucks.



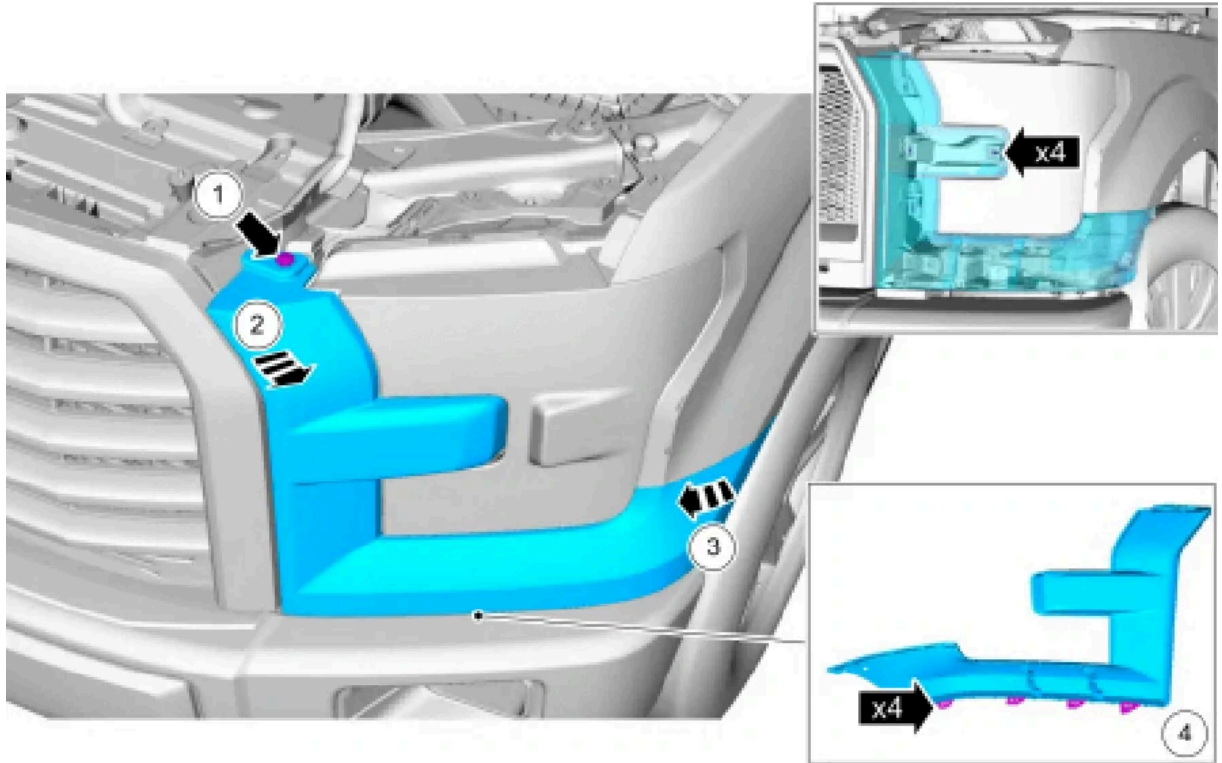
**Step 4.** Unplug the Grille shutters at the two electrical connectors and washer hose (gently spread the retainer ring on the washer line and unplug the hose). Unclip the grille harness plastic push-clip from grille.



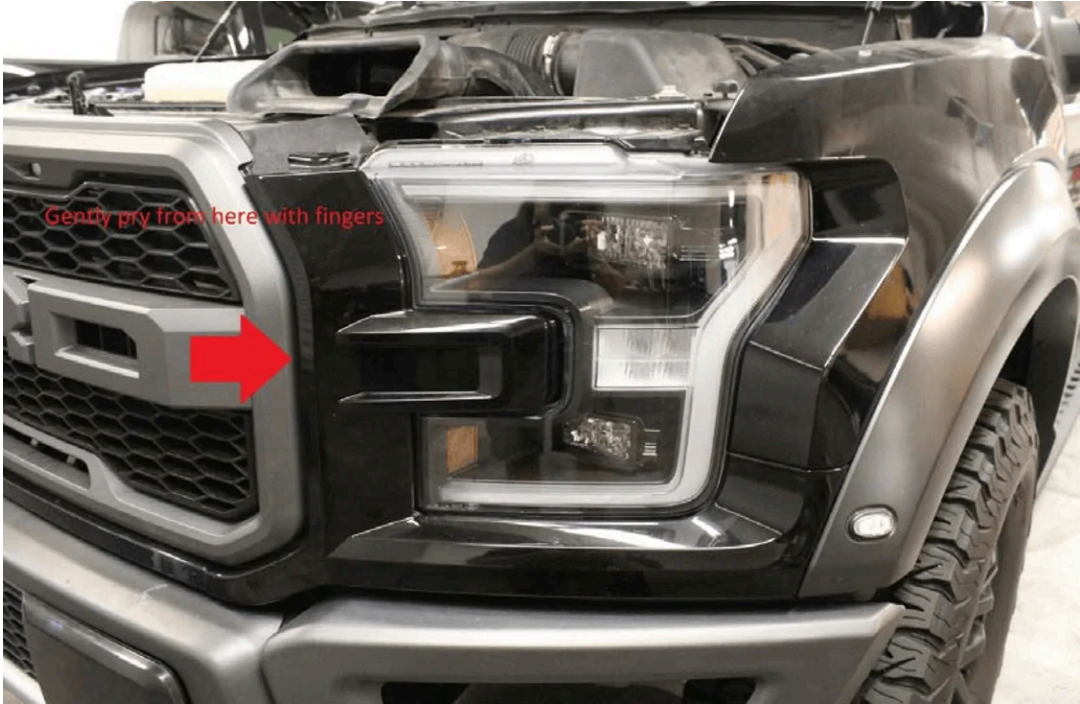


**Step 5. Remove the headlamp assembly trim panel.**

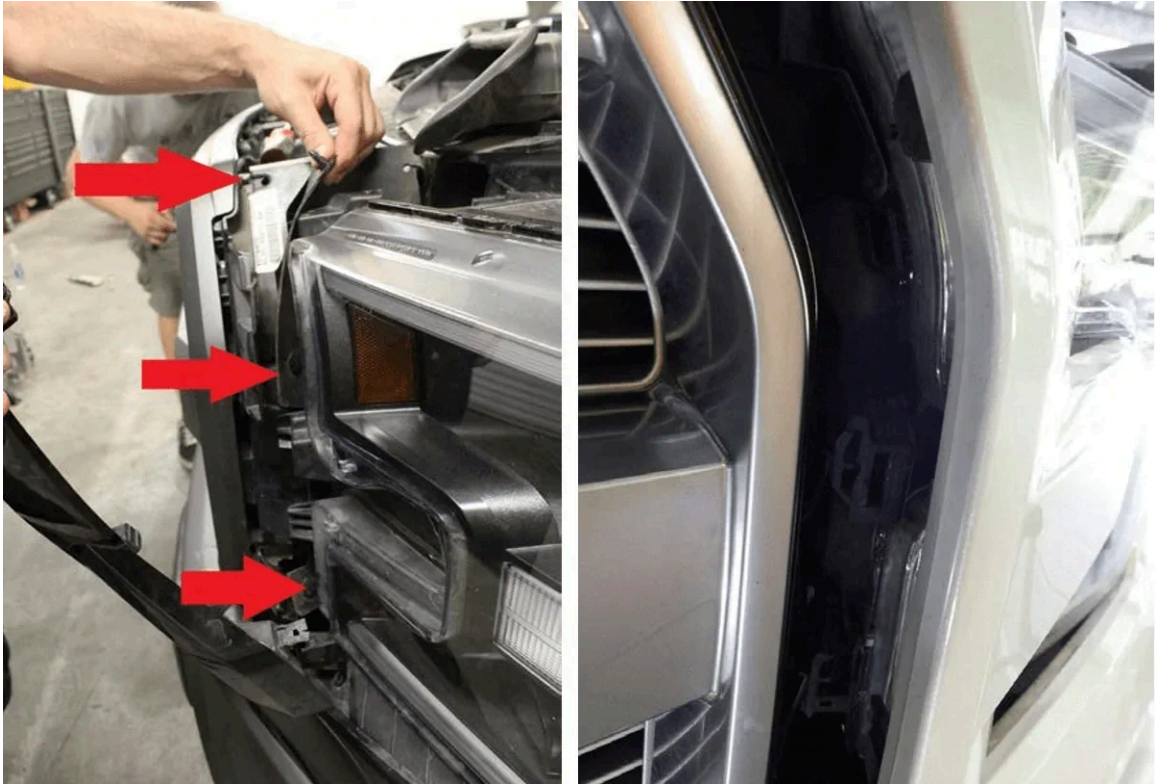
- Remove pin-type retainer from the top of headlight surround, one per side.
- Starting at the inner edge, release the headlamp assembly trim panel clips.
- Starting at the outer edge, release the headlamp assembly trim panel.



**Step 6.** Gently pry on headlight surrounds by hand only, starting from the side closest to the grill. They don't have to be removed entirely, but it will make grill removal and installation easier.



**Step 7.** Remove 3 christmas tree clips from each side of the grille assembly.

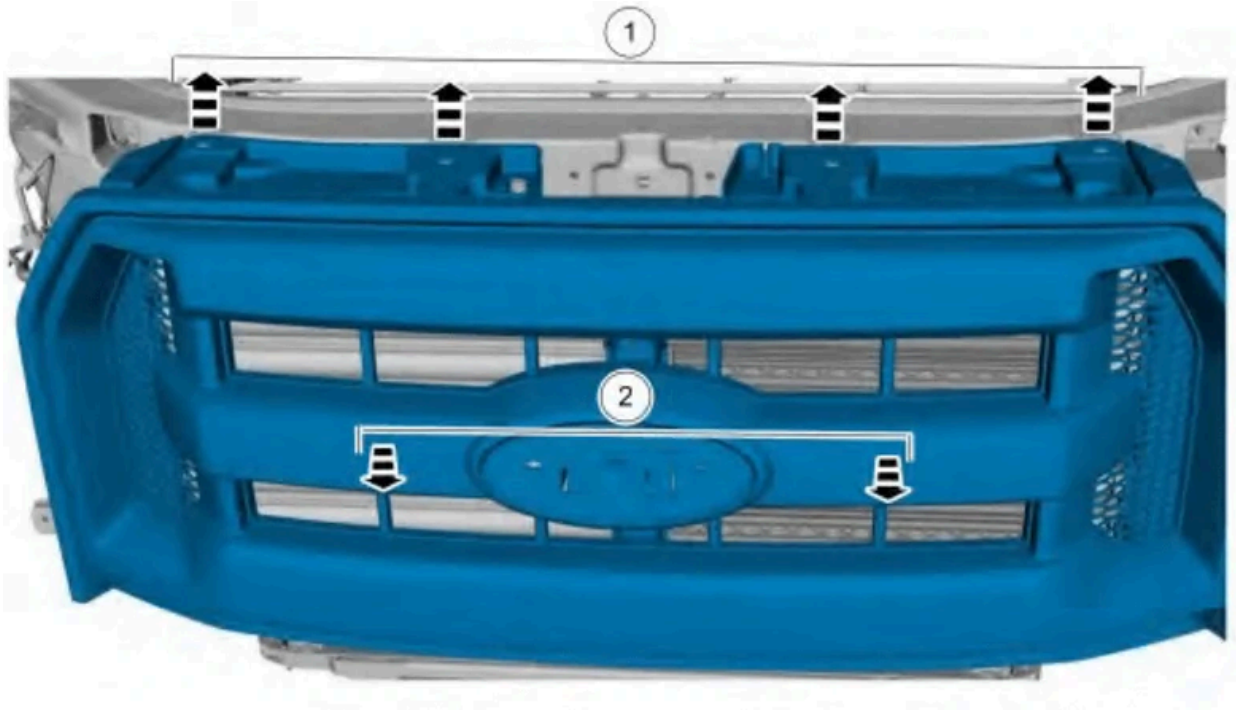
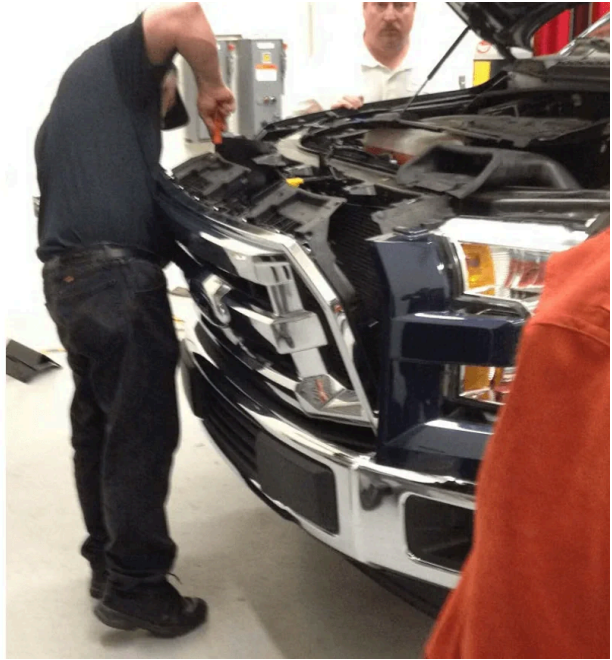


**Step 8.** Remove x2 8mm bolts from each lower corner of the grille using an extension and 8mm socket.



**Step 9.** Find a safe place to set the Grille. Carefully lift and remove grille assembly out of the vehicle. Avoid scratches / scrapes.





**Step 10.** Now it's time to remove your old transmission cooler. Clamp both hoses to avoid leakage (not too tight, don't damage the hose!) and wrap with a shop-towel to contain fluid.

**Step 11.** Use pliers on the pinch-clamps to loosen and disconnect the transmission cooler hoses from the OEM trans cooler. Note: Swapping the plastic caps from your new Full-Race cooler to the OEM cooler can help to avoid a leaky mess while you remove it from the truck.

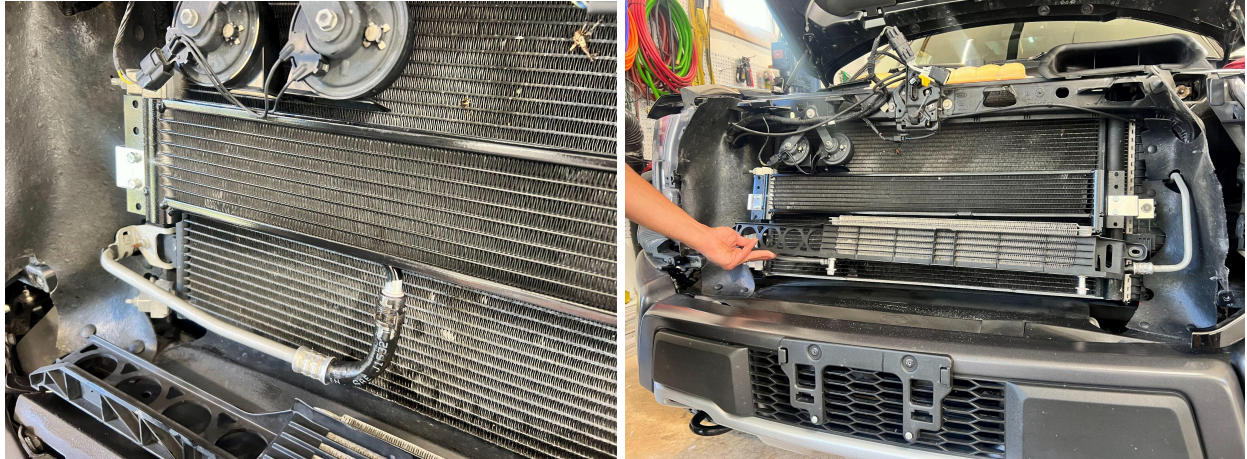
**Step 12.** Attach Mounting Brackets and Prepare cooler for installation.



**Step 13.** OPTIONAL: Using a fluid pump, prefill cooler with ATF fluid then swap plastic caps on barb fittings to avoid spills. You can do this if you aren't planning on draining/refilling your transmission fluid at this time

**Step 14.** Final Installation, Tightening and Adjustments: Fully seat both hoses on the core and reinstall the clamps. Double check mounting hardware is tight. Step back and admire your new cooler!





**Step 15.** Reinstalling grille: Double check that everything is tight, secure and plugged in. Reinstall grille assembly in reverse order of disassembly. Be sure to plug in all connections by the hood latch. Go over all work, ensure there is nothing overtightened or loose/disconnected before reinstalling grille, headlight surrounds, and plastic front cover pieces.

