

# F150 EcoBoost Radiator Upgrade



In order to properly cool this engine, we use an oversize radiator. Converting to this style radiator with traditional cap requires removing the tank from the airbox and trimming the fan shroud top lip from the radiator. We also include the option to use a traditional radiator cap and overflow tank – similar to SVT Raptor's cooling system for extreme off-road or big turbo / high power applications.

Expect 4-6 hours install time, buddy is helpful but not required.

Materials/Tools Needed	NOTE/RESULTS
Minimum 3 gallons Coolant (Ford Motorcraft or Peak Global)	If deciding to flush radiator up to 6 gallons of coolant may be needed
Flat and Phillips head screwdrivers	Clamps, clips, covers
Needlenose or small tongue and groove pliers	For pinching hose clamps
8mm, 10mm, 13mm and 15mm sockets	3/8" drive is sufficient
Rubber hose, (.35-.38" Inner diameter), 2 approx.. 18-24" long	For Draining coolant
5 gallon oil or drain pan	For coolant
Shop Towels	
Kitty litter or other liquid cleaning agent	
Jig Saw or cutoff wheel	For trimming fan shroud if F150 OEM fan is used
Full Race Radiator upgrade kit	Rad, 4 rubber grommets, 4 metal spacers
OPTIONAL : OEM Raptor Radiator Fan	If used fan shroud does not have to be trimmed
OPTIONAL : Raptor-style Overflow tank	

ACTION	NOTE/RESULTS
Make sure engine is cold	Minimum 2 hours since last run time
Remove coolant tank cap	Set aside in clean location
If Installed, remove lower chin shroud from front lower bumper	Use 15mm socket

Remove lower plastic radiator cover from bottom of core support



Position drain pan under truck on passenger side

Drain radiator coolant by slipping hose onto OEM radiator drain petcock nipple, open petcock slowly holding hose on drain pan to minimize mess.



Ensure hose will remain in drain pan and allow coolant to drain, you can continue with work on radiator while draining



Carefully remove 4 clips from upper radiator cover



Remove upper cover and set aside



Remove Air Intake or CAI upper cover and tubes

Remove Throttle Body to CAC charge pipe

Unplug radiator fans, make sure to note which side is which as fans will not work if reversed



Remove remainder of airbox and coolant expansion tank, disconnect tank overflow hose from OEM radiator

**These can be moved and set aside instead of fully removed**



Next to the  
headlights -  
separate both  
rubber flaps from  
the AC condenser

Disconnect negative and positive cables from the battery



Disconnect power cable that runs from positive terminal lug to fusebox



Remove 4 bolts from fusebox on top of radiator

**Fusebox will be placed on top of throttle body**



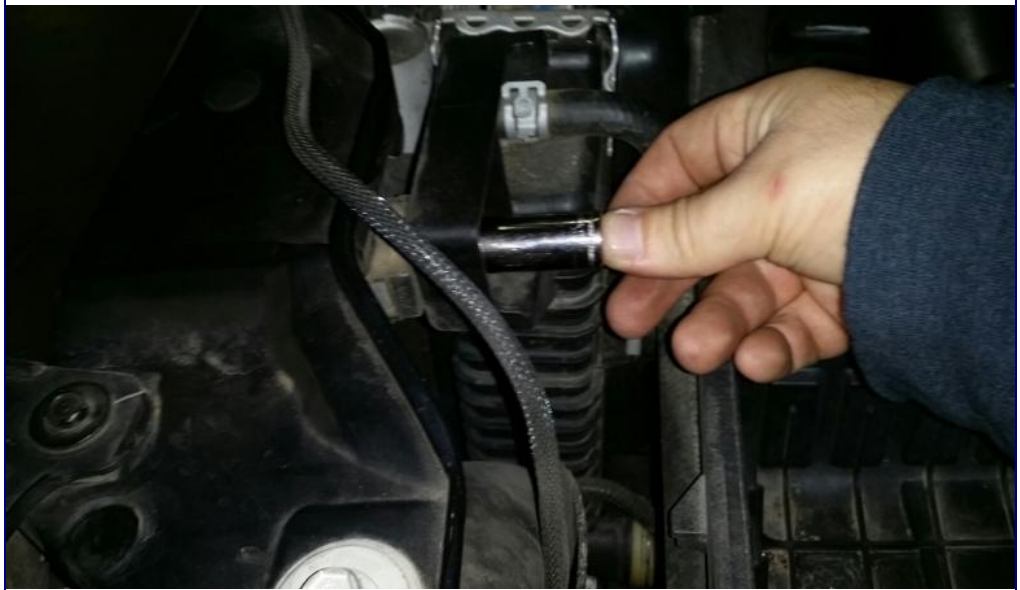
Separate chassis harness from plastic radiator shroud  
Once harness is removed move fusebox on top of throttle body

**Harness wraps around fusebox, so moving fusebox carefully can help you identify where you need to remove harness from shroud**





Remove 2 10mm  
nuts from plastic  
radiator fan  
shroud

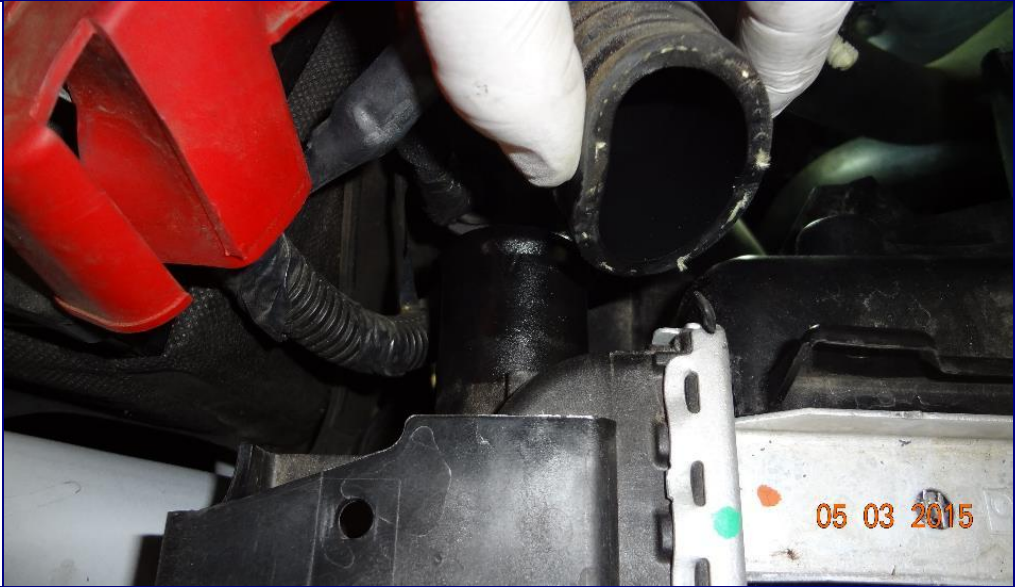


Remove fan shroud



Disconnect top radiator hose

**\*\*Prepare for leaking coolant\*\***



Disconnect lower radiator hose – by removing the spring clip first



\*\*Prepare for more leaking coolant\*\*

Put a rag and catch can beneath the tranny cooler lines on the front of the radiator and separate



Unbolt (2) 13mm bolts from the top corner of radiator

Push the radiator/condenser forwards to separate the condenser from the small clips (use a small screwdriver to separate them – this is goofy so be patient trying to separate these)

Remove radiator: lift driver's side first then wiggle out of engine bay



If using Raptor fan skip to next step, if using F150 OEM begin trimming shroud to fit new radiator

- Make a line on the top and bottom of the fan shroud for the “trim” cut point. This will provide clearance for the thicker core



- Cut top and bottom off



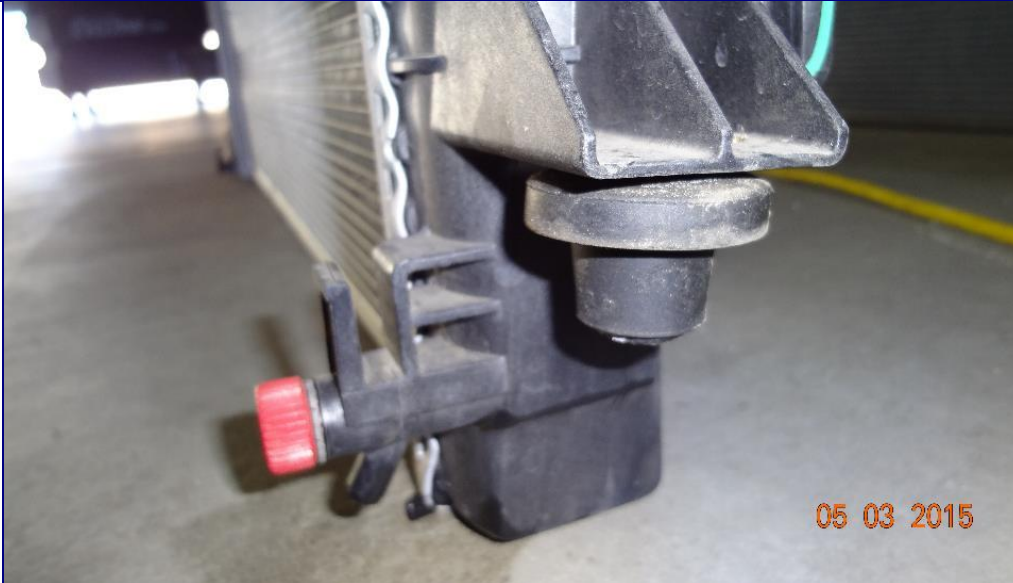
- On the bottom corners, about 5" up from the corner, trim the outside down ~1/4" so it doesn't rub on the radiator
- Test fit trimmed fan shroud to new radiator, determine proper fitment and whether it needs to be notched or trimmed more. Inspect the fan shroud mounting tabs to make sure they provide enough clearance for the fan shroud to drop into place

Inspect radiator, tightening all fittings such as trans cooler nipples and

throttle body  
coolant nipple

Tighten tranny  
cooler barbs,  
ensure no leaks  
(easy to reach  
now - difficult to  
reach in the truck)

Swap rubber  
isolator bushings  
from bottom of  
OEM radiator,  
onto New Full-  
Race radiator



Install radiator, driver's corner first then wiggle the passenger side into place



Tilt radiator forwards to slip AC condenser into place




Put radiator/AC condenser into final resting place

Once firmly inserted, tighten the 13mm bolts. Make sure you use the rubber grommets to go between rad and frame!

Install transmission cooler lines and clamp



<p>Install lower radiator hose and spring clip</p>	
<p>Install fan shroud, tighten (2) 10mm bolts to fasten on the radiator</p>	<p>Further trimming may be required. Have patience!</p>
<p>Reconnect Fan Wiring Harness</p>	<p>Long harness side goes to driver's fan and shorter harness cable goes to passenger fan! (If you have them plugged in backwards the fans will not turn on)</p>
<p>Connect upper radiator hose</p>	
<p>Reinstall Fusebox, using the 4 metal spacers</p>	
<p>Re-connect chassis harness to fan shroud</p>	<p>Note: Some of the mounts were trimmed off during fitment</p>
<p>Re-connect power cable that runs from positive terminal lug to fusebox.</p>	
<p>Re-connect negative and positive cables to the battery</p>	<p>Note: Hook up positive cable first. Note: To keep alarm from going off, turn ignition to run position, once battery is installed turn key to off position.</p>
<p>Next to the headlights – Re-install both rubber flaps from the AC condenser</p>	
<p>Re-connect airbox and coolant</p>	<p>Note: If installing Raptor-style overflow tank perform the following before re-installing airbox:</p> <ul style="list-style-type: none"> <li>• Remove airbox from truck, and carefully cut the overflow canister</li> </ul>

expansion tank, re-connect tank overflow hose to radiator	<p>off. You can use a cutoff wheel, jigsaw, sawzall or bandsaw, just make a clean cut and remove the tank</p> <ul style="list-style-type: none"> <li>• Reinstall Airbox without expansion tank</li> <li>• Install overflow reservoir and connect hose to nipple at radiator cap.</li> </ul>
Re-install Throttle Body to CAC charge pipe	**Be Very careful to align the TB charge pipe and avoid rubbing or interfering with Driver's side Fan and Shroud** Fan motor can be damaged if the charge pipe is blocking and preventing it from spinning
Re-install Air Intake / CAI upper cover and tubes	
Re-install upper cover and set aside	
Re-install lower plastic radiator cover on bottom of core support	
If desired, re-install lower chin shroud on front lower bumper	
Begin filling radiator via pressure cap on rad itself	Note: Fill with approximately ½ to 1 gallon initially, inspect for drips at the lower radiator hose, if no leaks continue filling radiator until radiator is approximately filled to 1 inch below cap.
Begin filling radiator overflow tank, fill to top of cold fill line, pump radiator hose and allow to settle. Continue topping tank back off to top of cold fill line until stable.	If no coolant flush was perform this will take between 2 and 3 gallons depending on how much drained during work
Start engine and watch for leaks, pump hoses to help bleed, ensure coolant tank never goes empty!	
Once truck heats up ensure you turn heat to high to fill the heater core	Once the cooling fans come on the system should be bled
Install radiator cap on overflow tank	Take for a test drive, inspect for low fluid levels and/or possible leaks at the transmission fittings/hoses or radiator hoses.

