



INSTALLATION GUIDE

2023-UP FORD F-150 RAPTOR R HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

AC21112301NA



TOOLS REQUIRED

(Sockets) 7/16, 9/16, 8mm, 10mm, 13mm, 14mm, 15mm, 17mm
(Box end wrenches) 7/16, 9/16, 8mm, 10mm, 13mm, 14mm, 15mm, 17mm
(Allen wrenches) 5/32
Hose Clamp Pliers
Fastener remover or flathead screwdriver
Zip ties
Ratchet
Drill
Cutting Tool
Marker
Scissors



TIME REQUIRED

- 2 hours for OEM Removal/Bumper Install
-1 Additional Hour to Wire Lights

****Labor Rates are based on a vehicle with no pre-existing damage. Wiring labor is based on a standard wiring procedure with light switches installed in an easily accessible location. Custom light triggering or switch mounting location will result in a greater labor charge.****



SKILL LEVEL



Easy

****This installation requires 2 people for best results****



WARNINGS/CAUTIONS BEFORE STARTING INSTALLATION



-BEFORE YOU INSTALL THIS KIT-

Read and understand all instructions, warnings, cautions, & notes contained in this installation instruction guide. Consult your vehicle owner's manual for proper disconnection of electrical and lifting of vehicle if required for installation of this product.

This install may require some technical skills and knowledge of basic mechanical work. If you do not feel that you are capable of performing this install please take this product to a trained professional.

After reading this guide please contact us with any questions or concerns before installing product.
Customer Service (480) 671-0820

Addictive desert designs is not responsible for any bodily injury or harm to you or your vehicle as a result of an improper install.

Proper installation of this kit required knowledge of the factory recommended procedures for removal and installation of original equipment components.

We recommend that the factory shop manual and any special tools needed to service your vehicle be on hand during the installation. Installation of this kit without proper knowledge of the factory recommended procedures may affect the performance of these components and the safety of the vehicle.

Inspect all contents of this package to make sure product is not damaged and all installation hardware has been included. If parts are missing from kit, please be prepared to provide the following information:

1. Name of purchase location
2. Bar Code on side of box
3. Date above bar code
4. Date inside box cover

***ALWAYS WEAR EYE PROTECTION
WHEN OPERATING POWER TOOLS***



INSTALLATION GUIDE

HARDWARE/PARTS

A.



1/4-20 X 3/4" BUTTON HEAD BOLT

QTY: 8

A1.



1/4" WASHER

QTY: 16

A2.



1/4-20 NYLON LOCK NUT

QTY: 8

B.



5/16-18 X 3/4" HEX HEAD BOLT

QTY: 2

B1.



5/16 FLAT WASHER

QTY: 4

B2.



5/16-18 NYLON LOCK NUT

QTY: 2

B3.



5/16-18 THREADED RUBBER BUMPER

QTY: 2

C.



M8-1.25 X 30MM HEX HEAD BOLT

QTY: 2

C1.



M8 FLAT WASHER

QTY: 2

D



1 1/8 HOSE CLAMP

QTY: 4

D1.



10 INCH SECTION OF 3/4 HEATER HOSE

D2.



AN 45 DEGREE PUSH LOC HOSE END

QTY: 1

D3.



AN TO NPT 45 DEGREE ADAPTER FITTING

QTY: 1

D4.



AN 90 DEGREE PUSH LOC HOSE END

QTY: 1

D5.



ALUMINUM BARBED HOSE FITTING FOR 3/4" HOSE

QTY: 1

D6.



AN TO NPT STRAIGHT ADAPTER FITTING

QTY: 1

Reference this page throughout the install



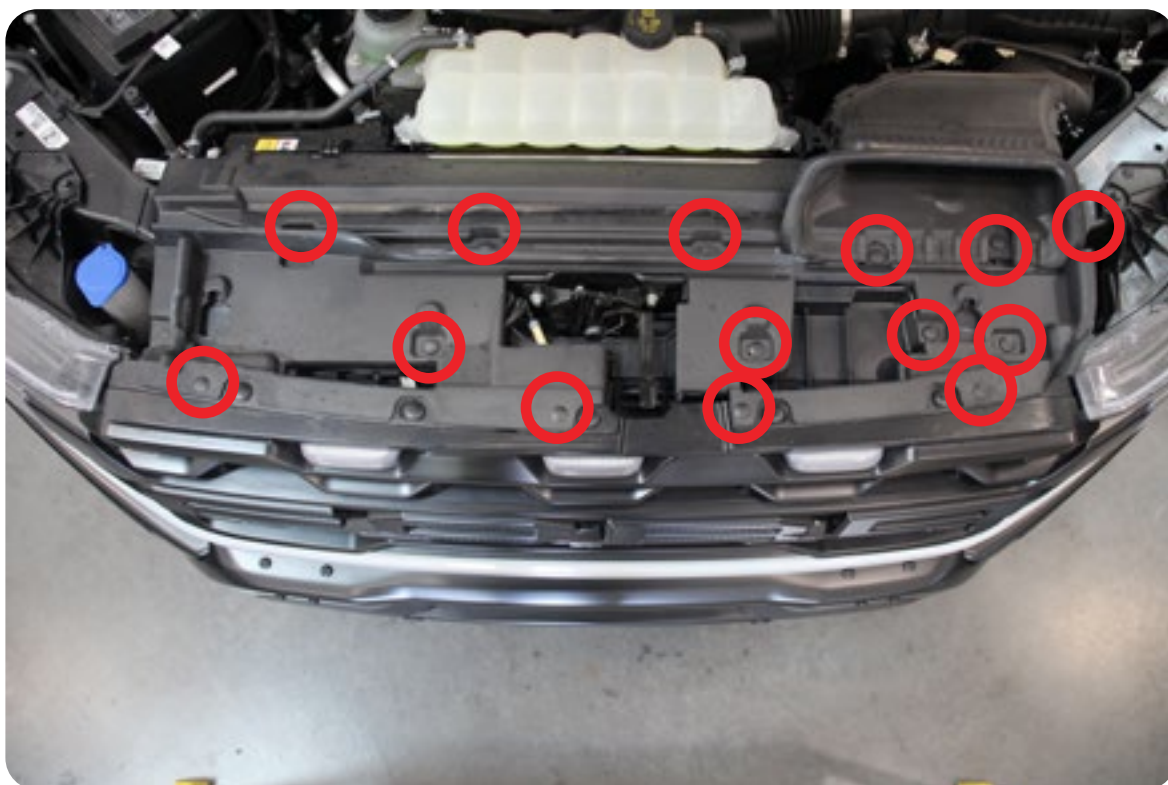
INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 1

Use a plastic pry tool to remove the (14) plastic clips holding the grill cover on. Then remove.





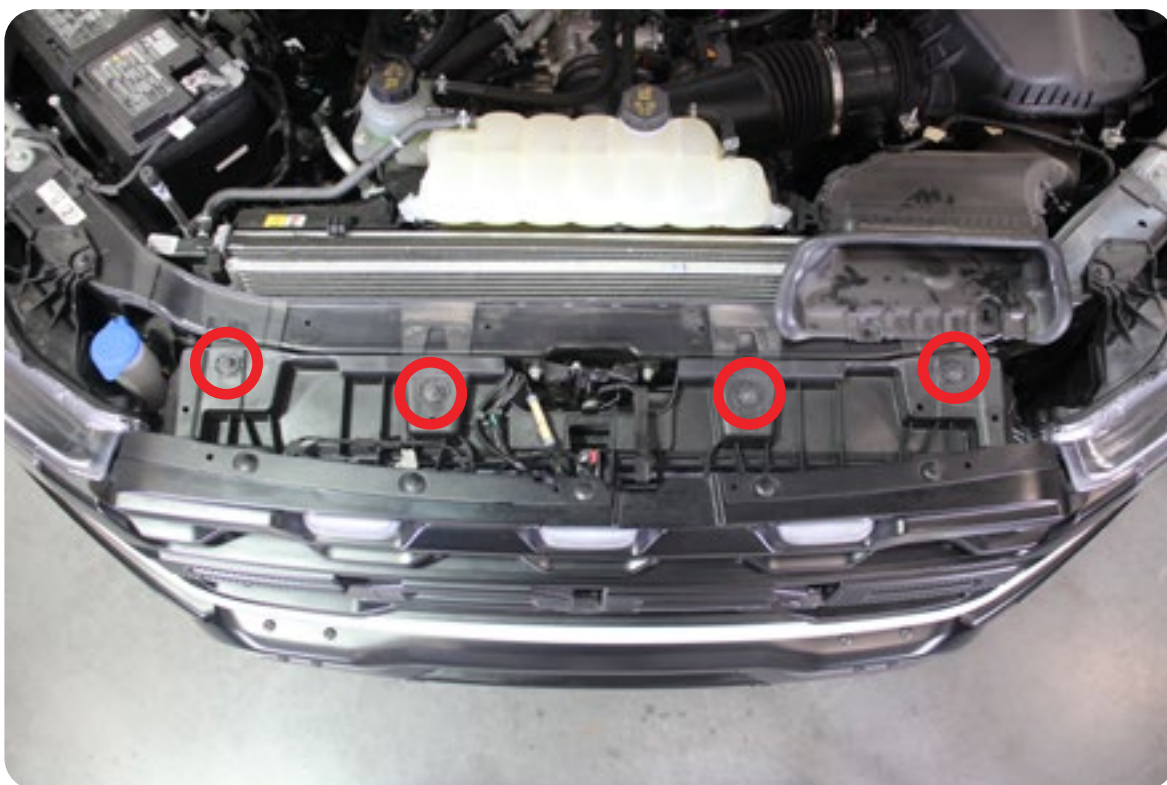
INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 2

Using a (10mm socket) remove the (4) upper grill mounting bolts.



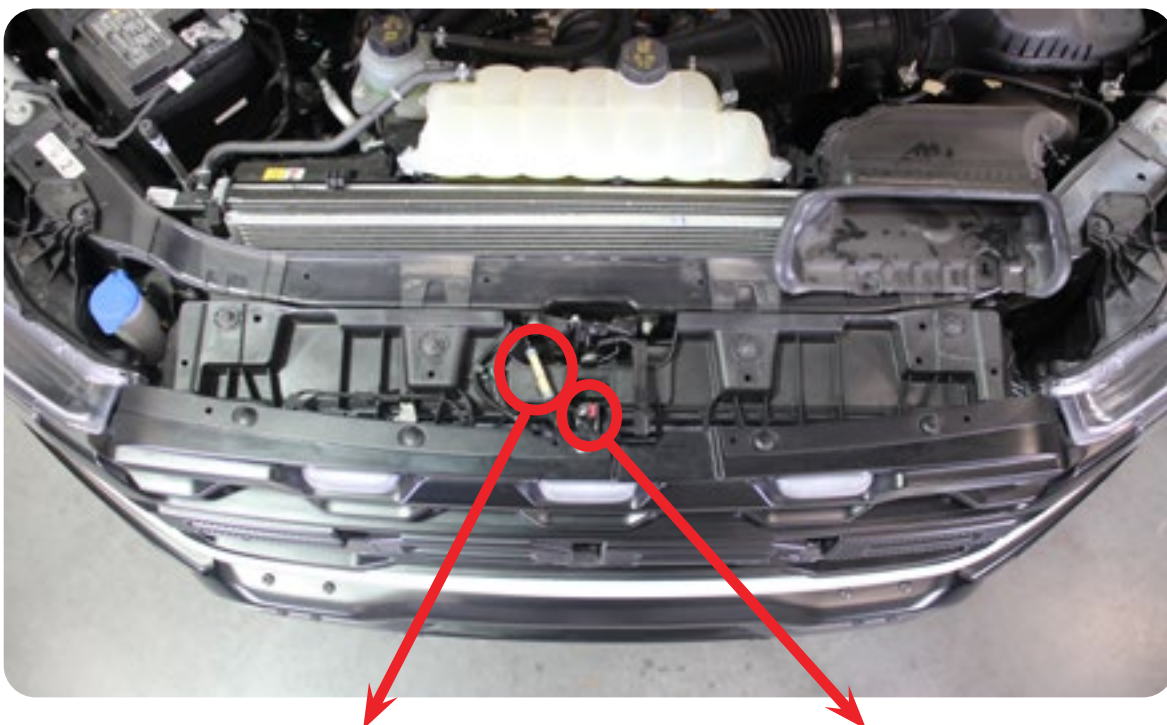


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 3

Unplug the front parking camera plug and the upper shutter motor as shown below.





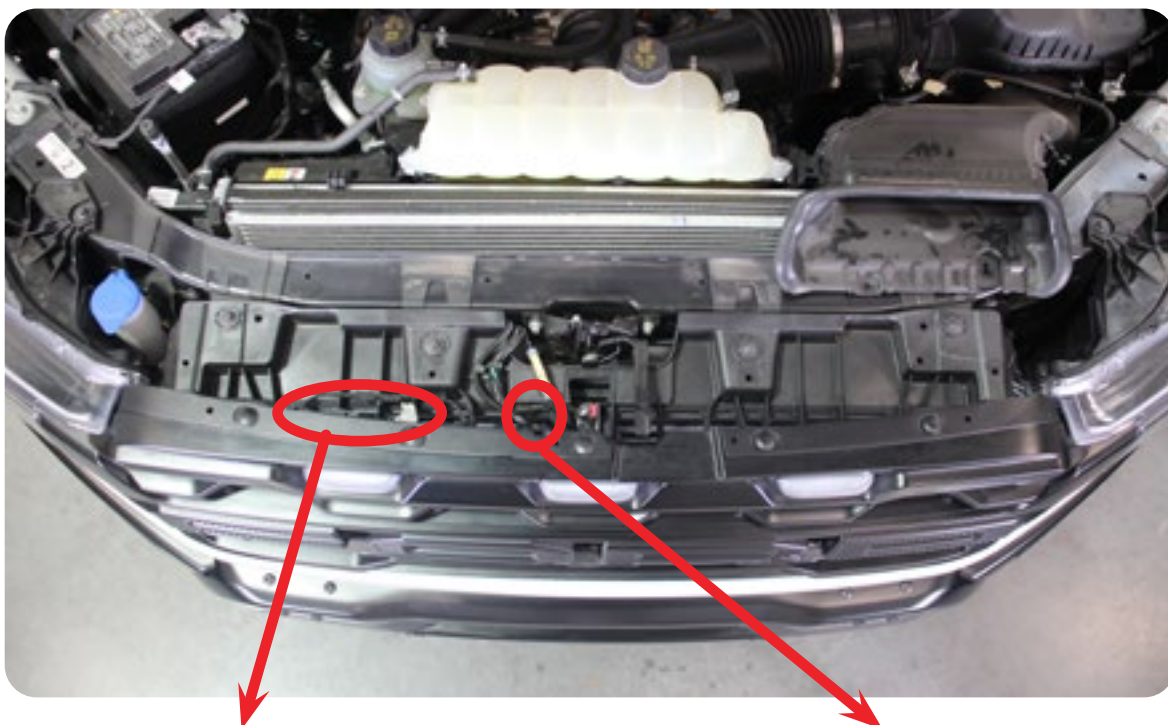
INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

☐ STEP 4

Disconnect the camera washer fluid hose as shown below.





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HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 5

Using a (7mm socket) remove the (2) fender flair bolts indicated below.
Repeat on the other side.





HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 6

With the bolts removed, pull the fender flares outwards to release the plastic retaining clips.



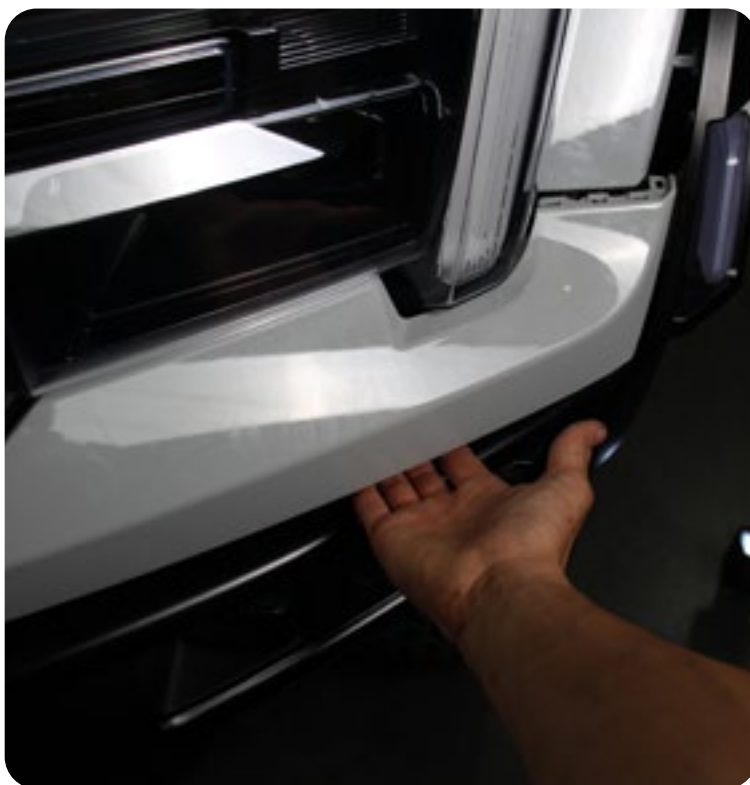


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

☐ STEP 7

Starting from the driver side gently pull to release the clips retaining the front valance.





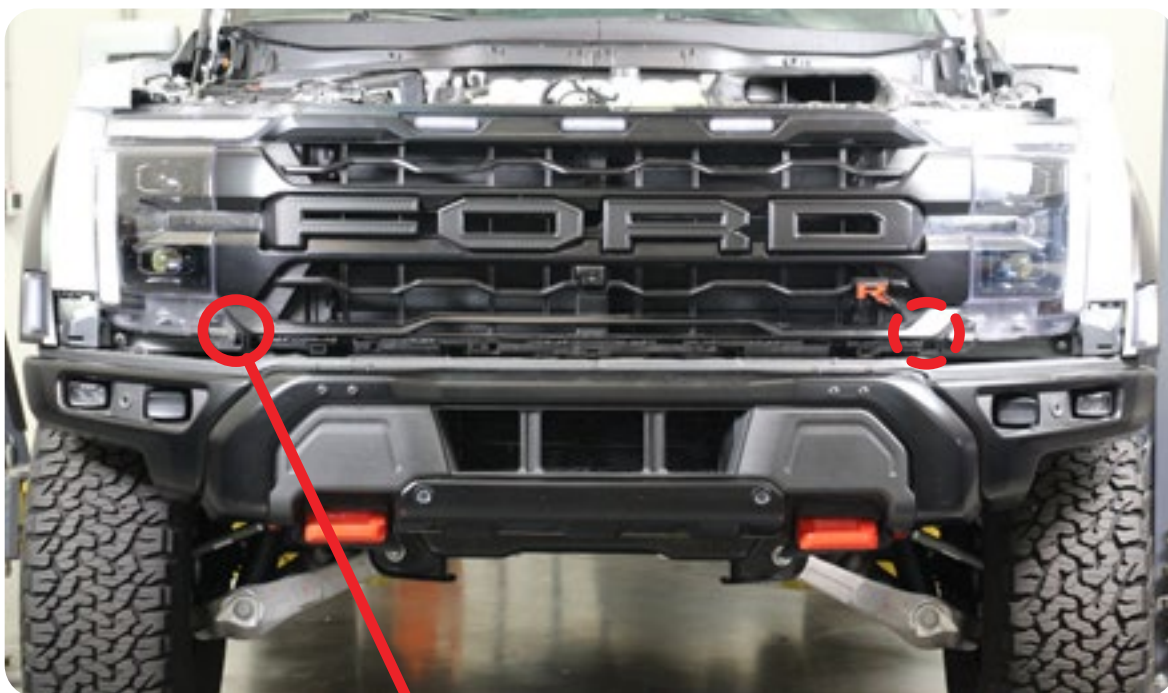
INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 8

Using a (10mm socket) remove the (2) OE bolts indicated below. You can now remove the front grill assembly.





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HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

☐ STEP 9

Remove the (6) bolts to release the OEM skid plate using a (13mm and 15mm socket).





INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

☐ STEP 10

Remove the skid plate spacer.



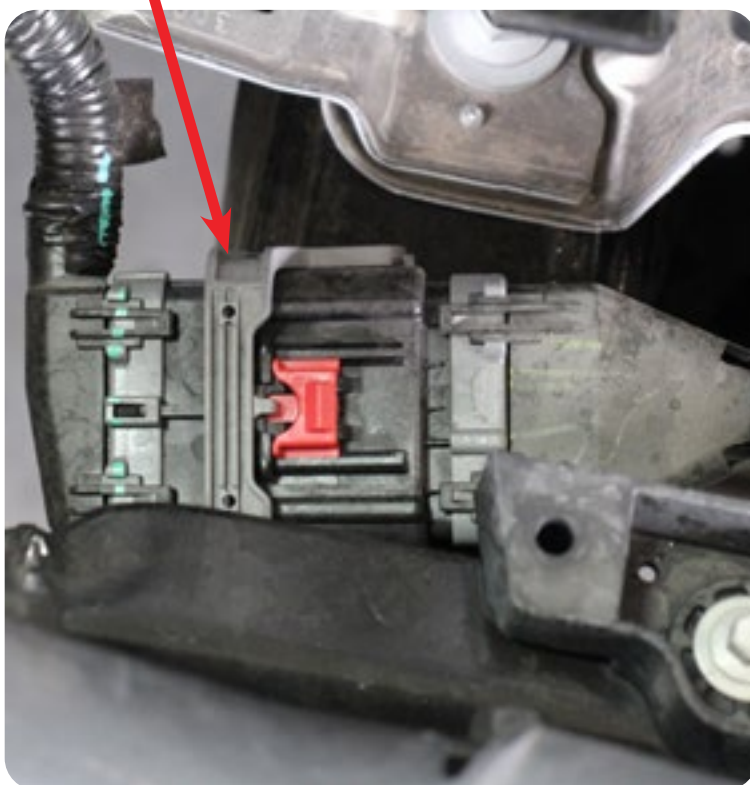
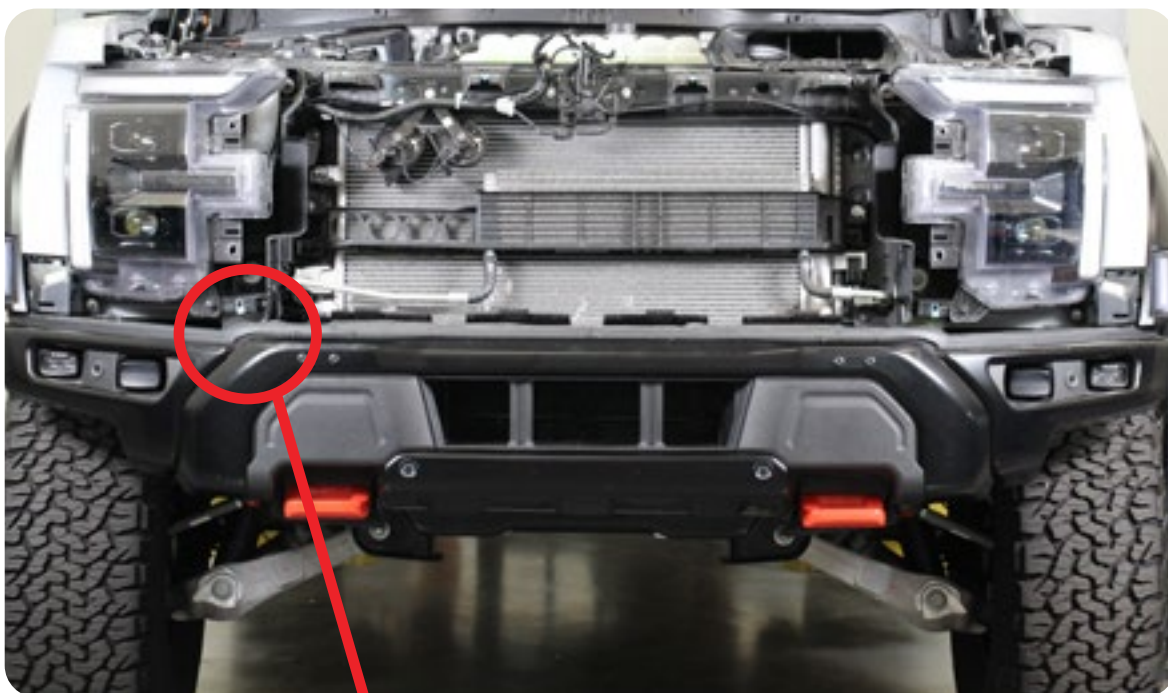


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

☐ STEP 11

With the grill removed, unplug the main wire harness plug located on top of the passenger side frame horn.





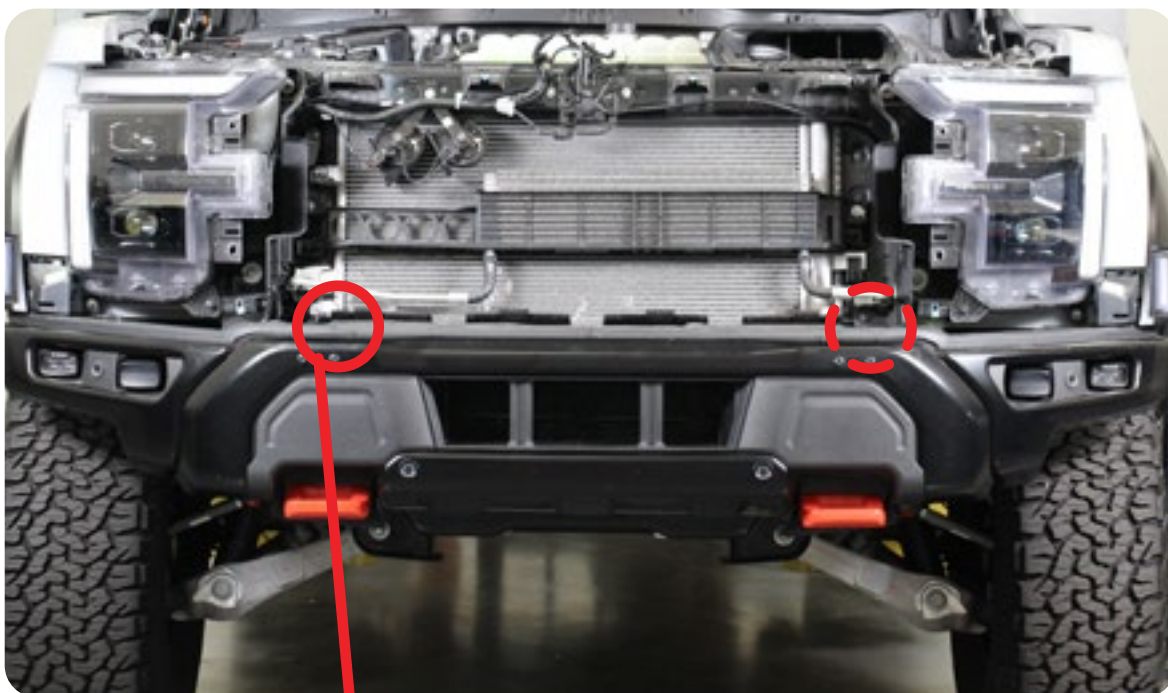
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HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 12

Using a (8mm socket) remove the (2) support braces as shown below.



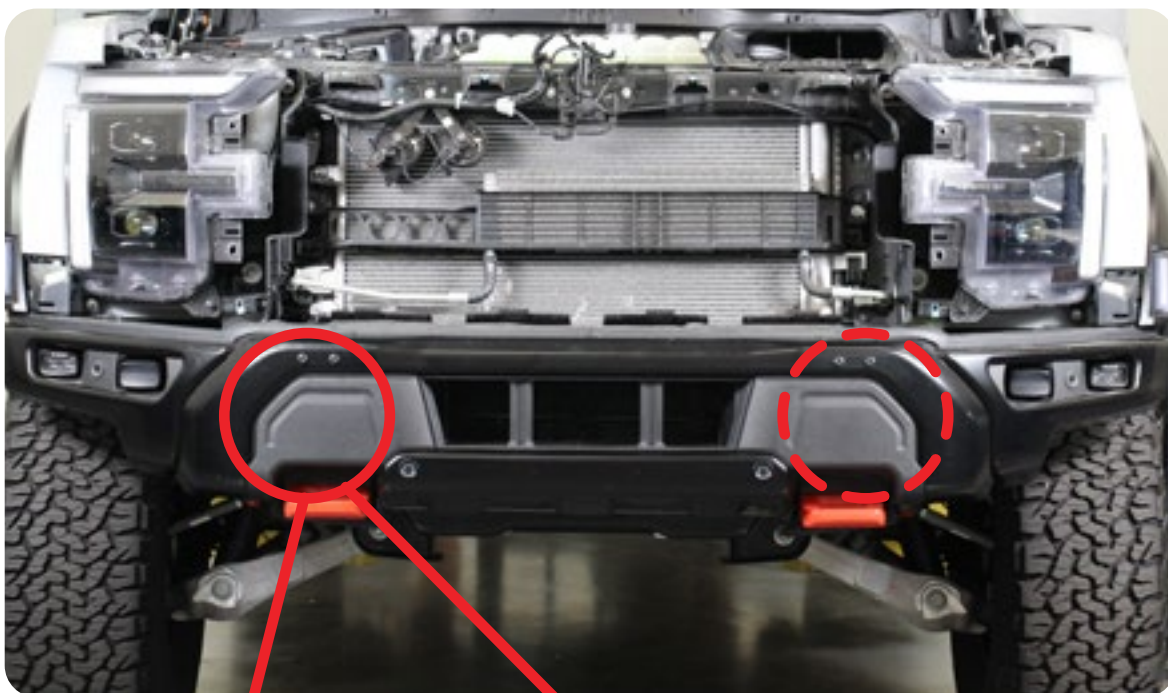


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 13

Using a (13/16 socket) remove the (3) bumper mounting bolts as shown below.
(Repeat on other side) You can now remove the front bumper.

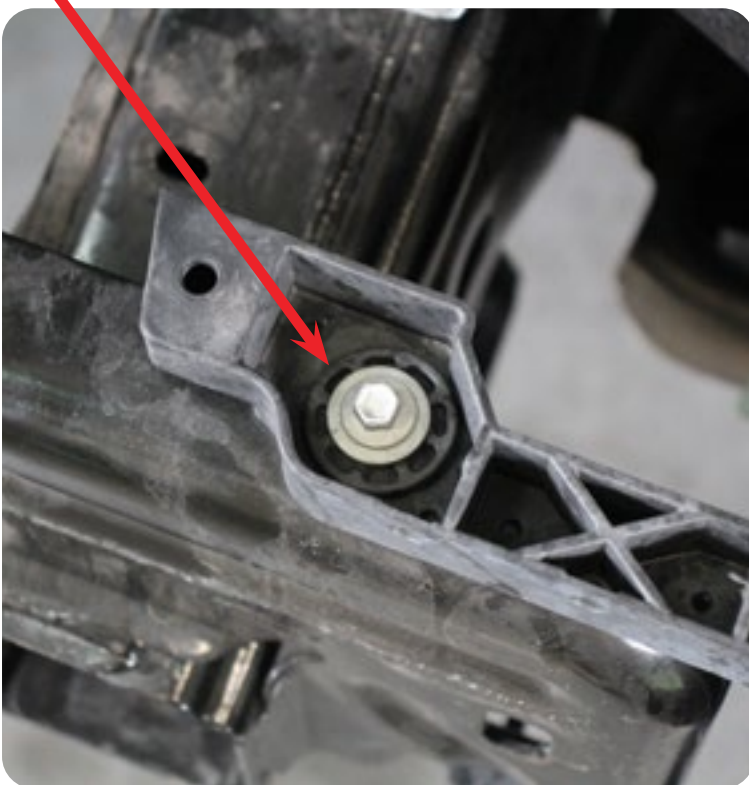
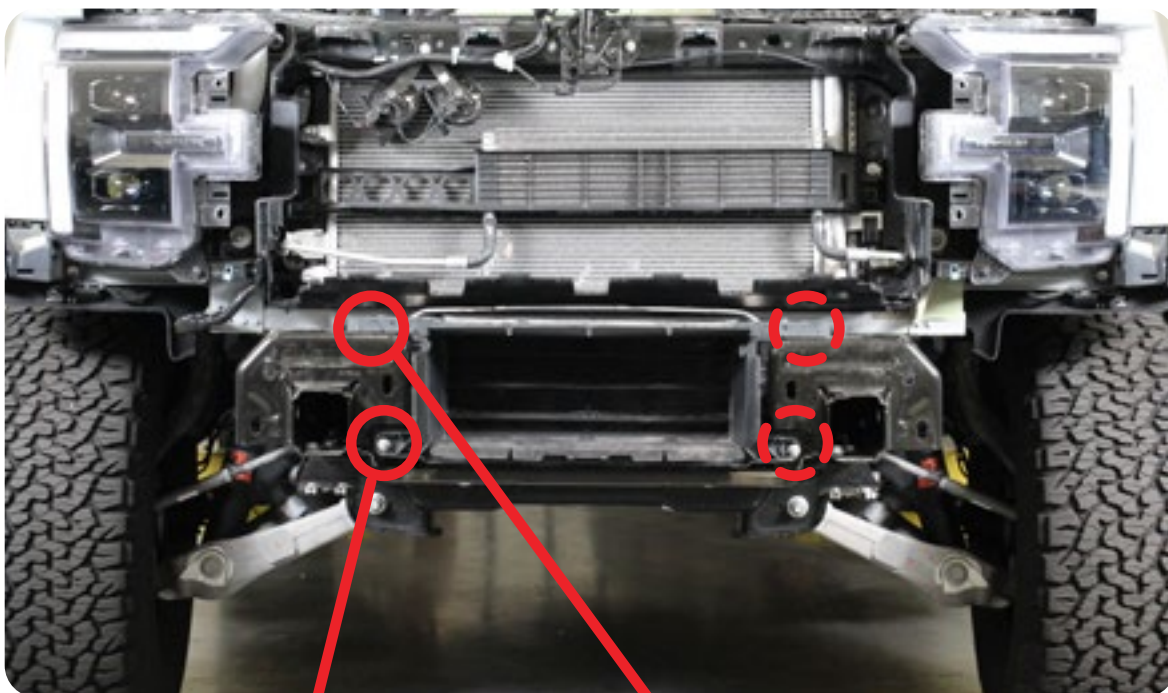


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 14

Using a (10mm socket) remove the (4) bolts indicated below.
Then remove the heat exchanger shroud.





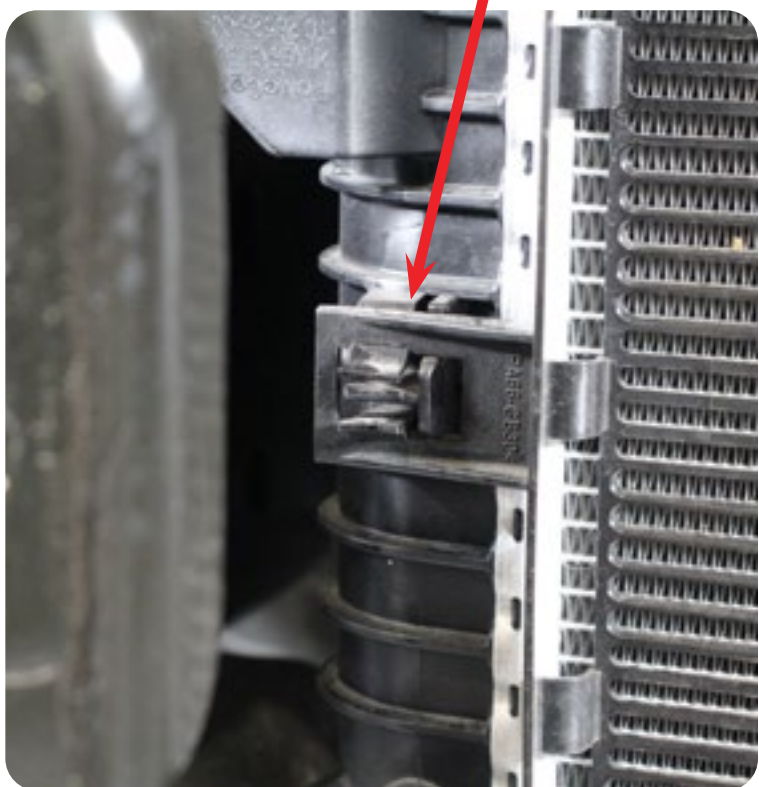
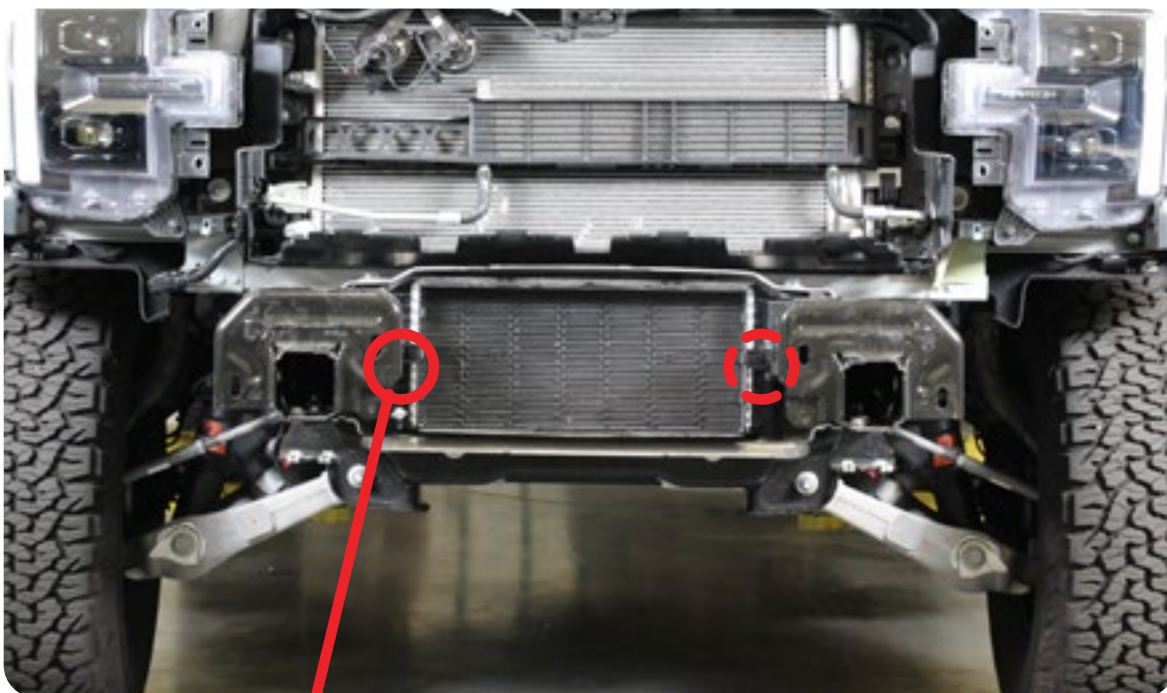
INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 15

Remove the plastic housing surrounding the intercooler by depressing the (2) plastic clips located on front edges of the intercooler



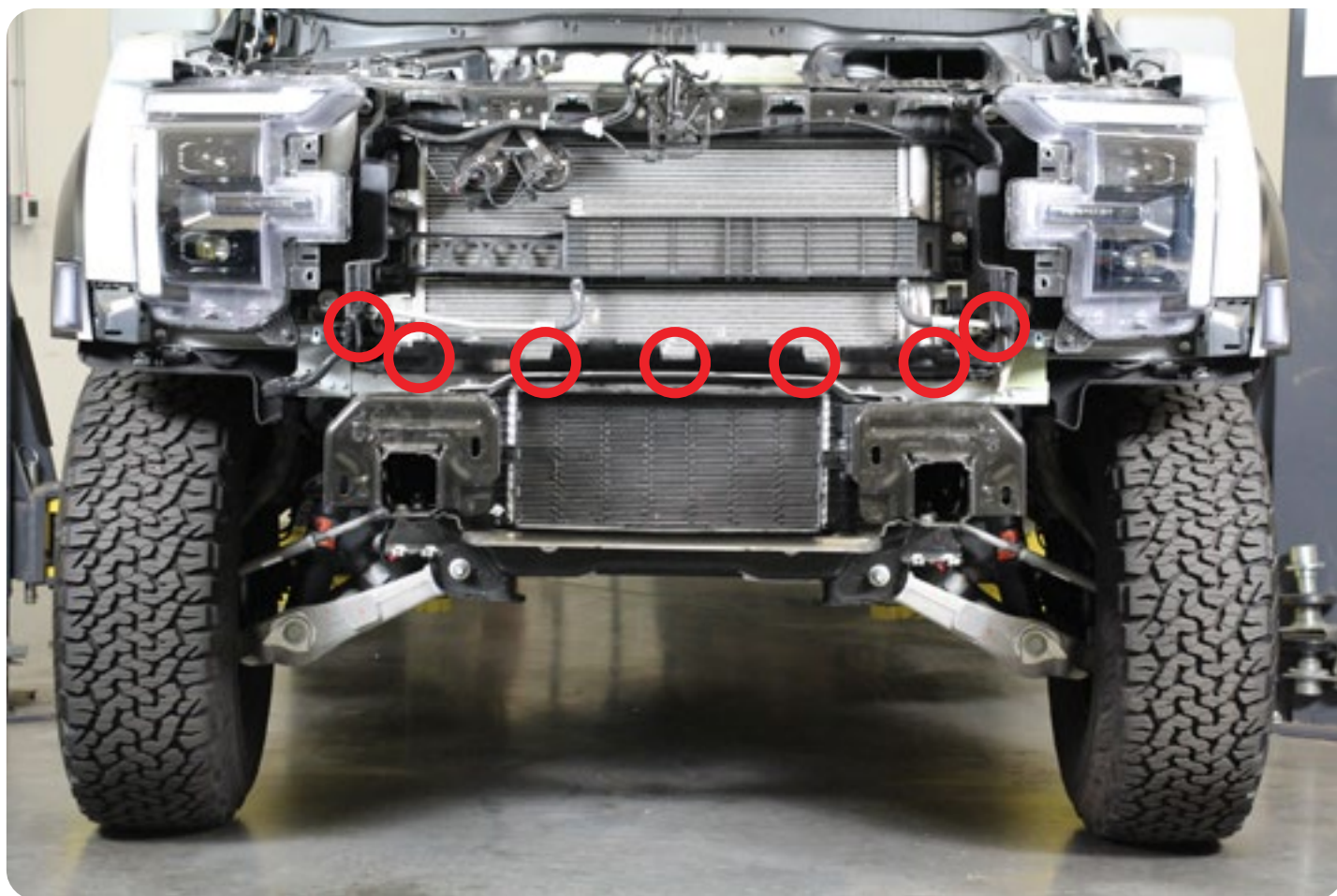


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 16

Using a pry tool remove the (7) plastic retaining clips indicated below, then remove the heat exchanger shroud.

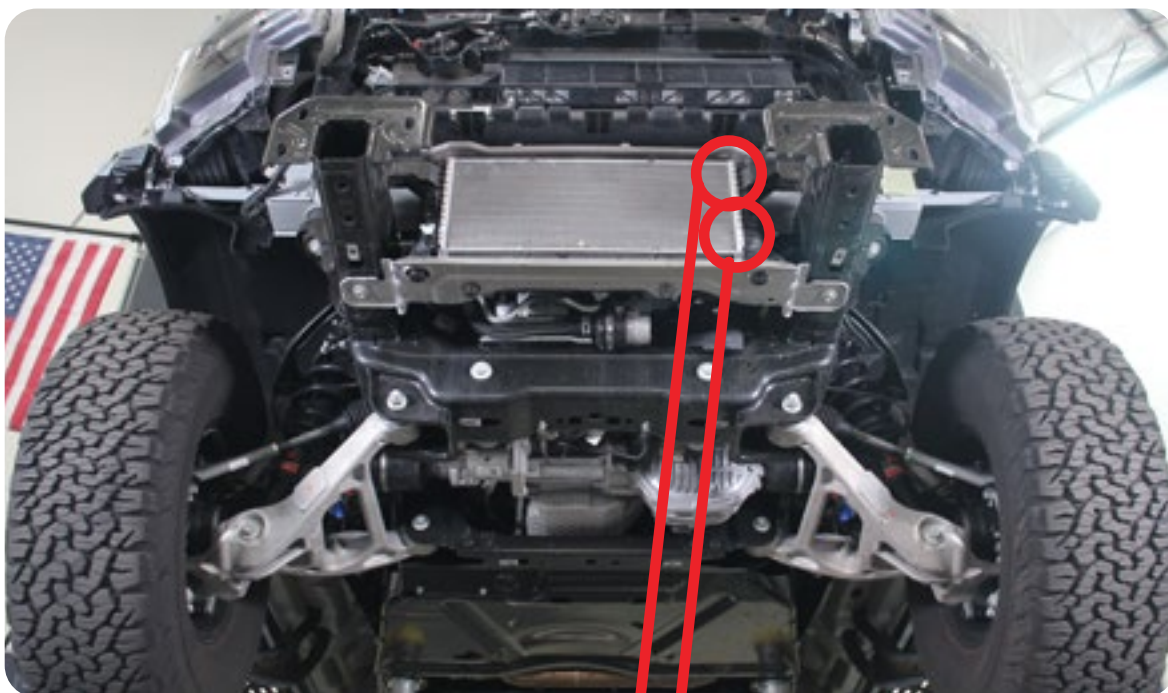


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 17

Locate the (2) main coolant hoses running into the back of the heat exchanger and clamp them off.



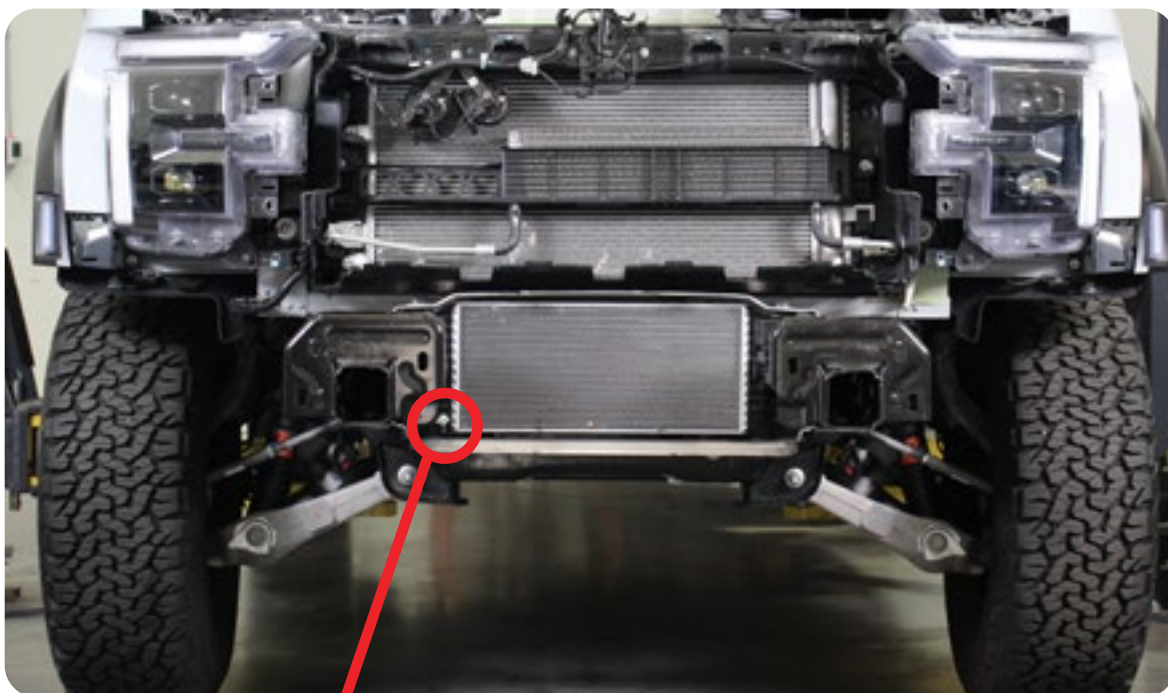


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 18

Locate the drain plug located on the bottom passenger side of the heat exchanger. Turn it to the left to begin draining the coolant, ensure you have a bucket to catch the coolant.



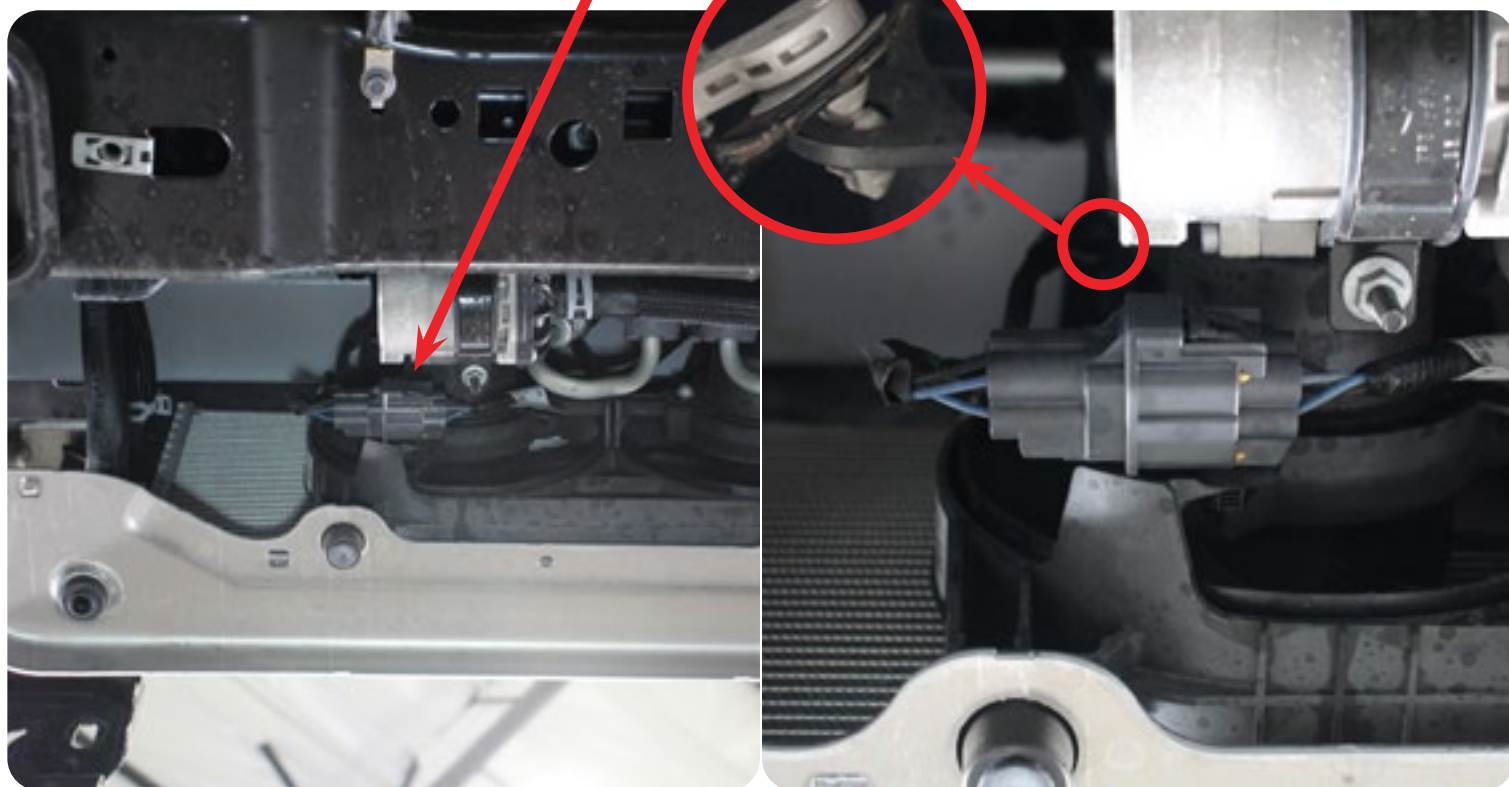
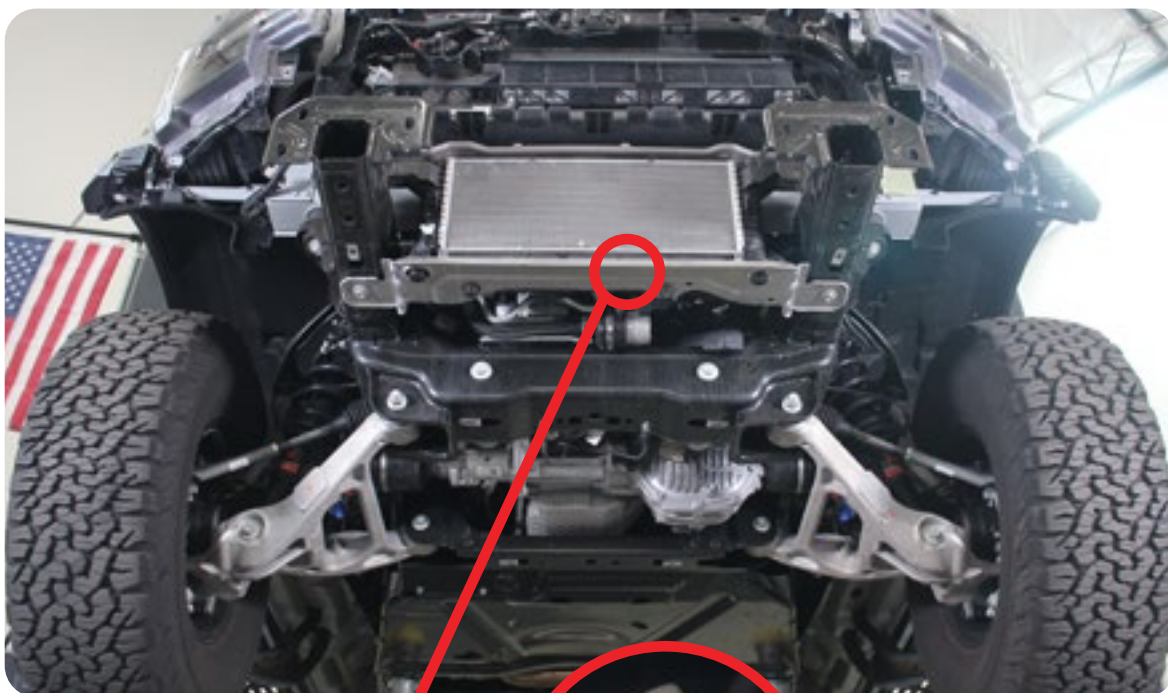


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 19

Locate the plug for the electric fans behind the heat exchanger and disconnect it. Once disconnected remove the plastic retaining clip as shown below.

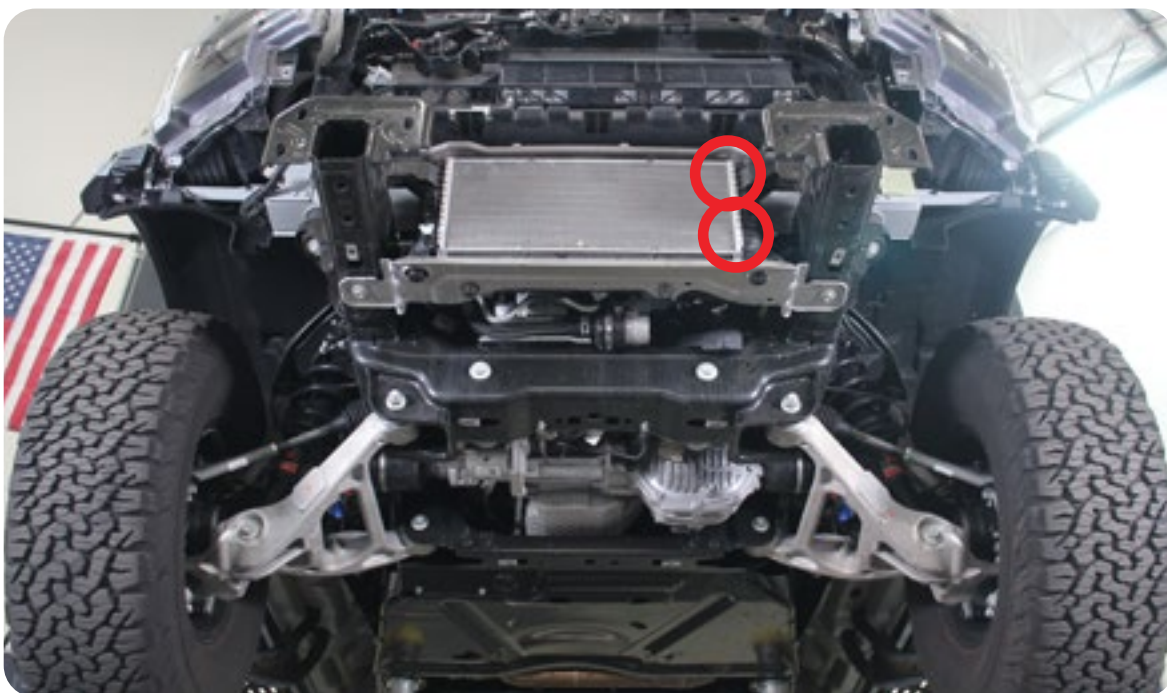


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

☐ STEP 20

With all coolant drained out of the heat exchanger use a pair of pliers to release the factory hose clamps as shown below.

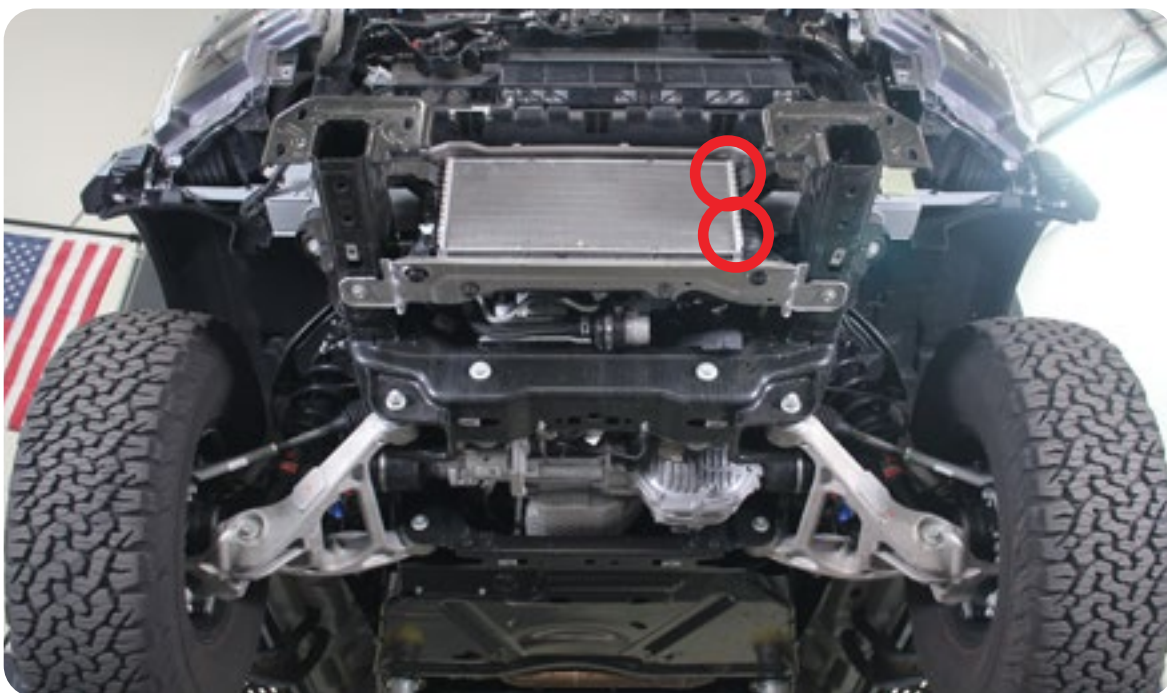


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

☐ STEP 21

With both hose clamps removed, remove both main coolant lines from the back of the heat exchanger.





HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

☐ STEP 22

Using a (13mm socket) remove the lower mounting bolts for the heat exchanger as shown below.





HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

☐ STEP 23

You can now remove the heat exchanger.



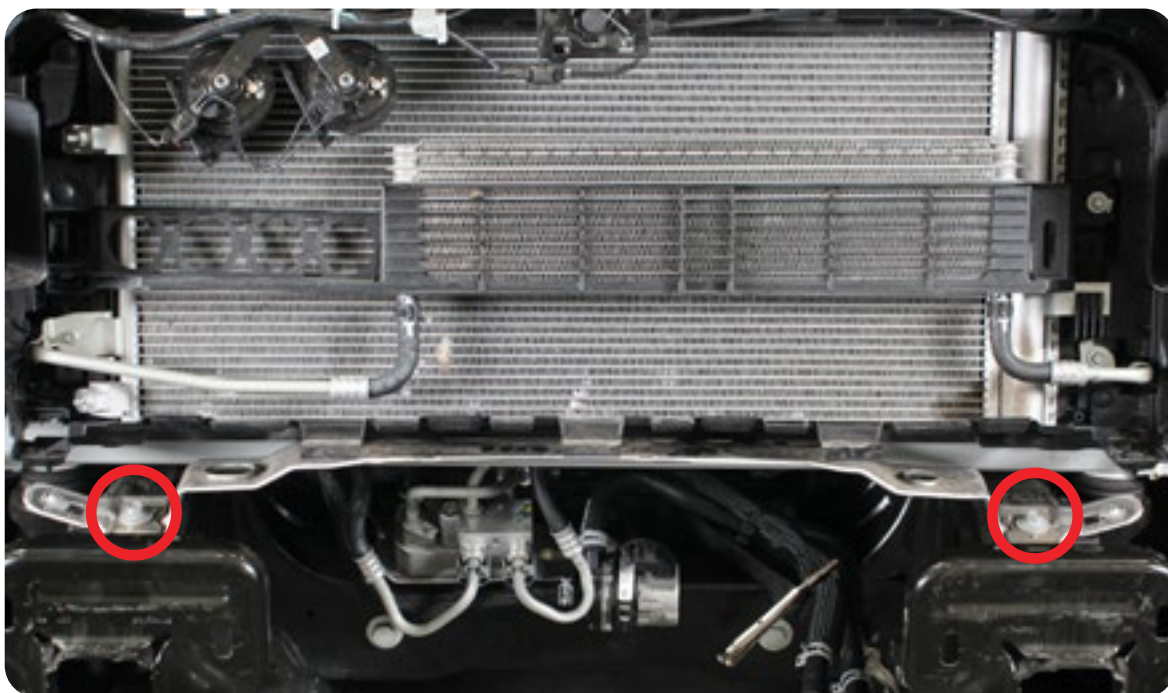


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 24

Using a (13mm socket) remove the mounting bolts for the upper heat exchanger support bracket.





INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 25

Using a 1/4" drill bit, drill a hole through the side of the upper shroud, then reinstall one of the OE plastic clips to retain it to the body, reuse the plastic retaining clip attached to the main wire harness to secure the shroud on the passenger side.





INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 26

Using a (10mm socket) remove the hood latch assembly as shown below. Keep these bolts for future steps.



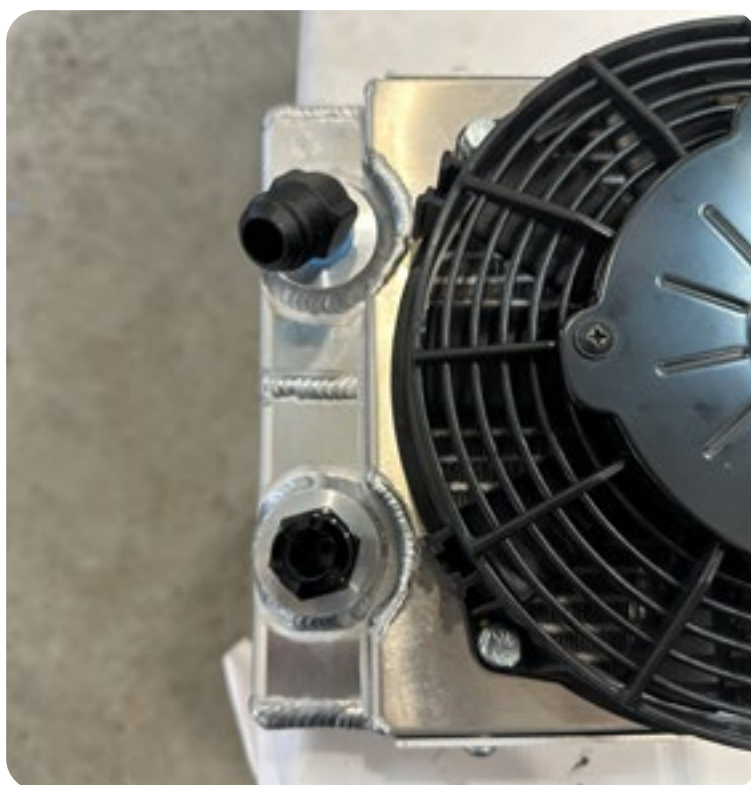
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 27

Locate the provided NPT to AN fittings (D3, D6) wrap the NPT side of the adapter in PTFE. Once the fittings are prepared use a (17mm wrench) to install both fittings in the positions indicated below.
(Ensure the 45 degree fitting is position at 7 o'clock for proper clearances.)





INSTALLATION GUIDE

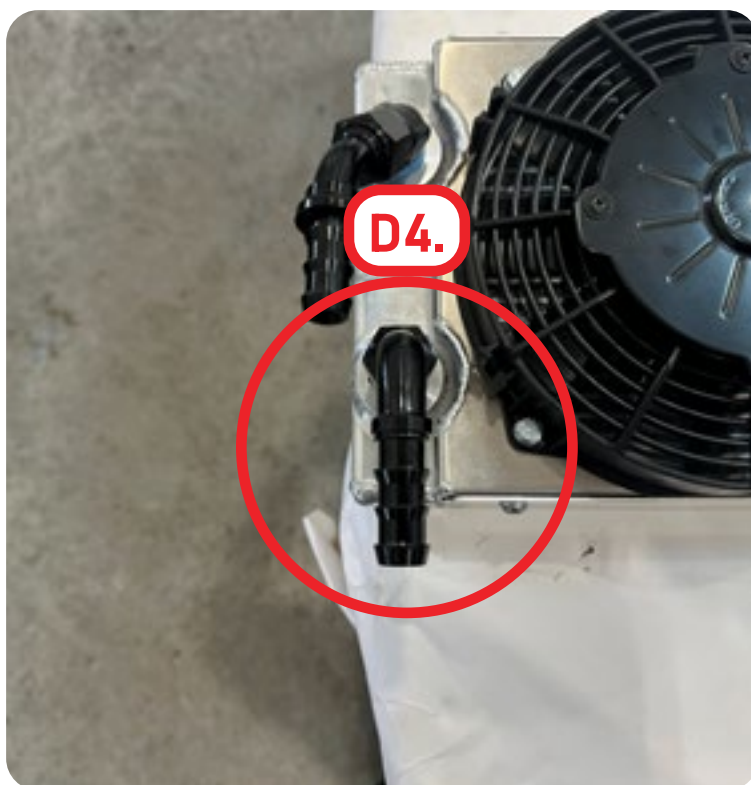
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 28

Locate the provided (D4) 90 degree elbow fitting as shown below and install onto the lower fitting previously installed.





HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 29

Locate the provided (D2) 45 degree elbow fitting as shown below and install onto the upper fitting previously installed.



D2.



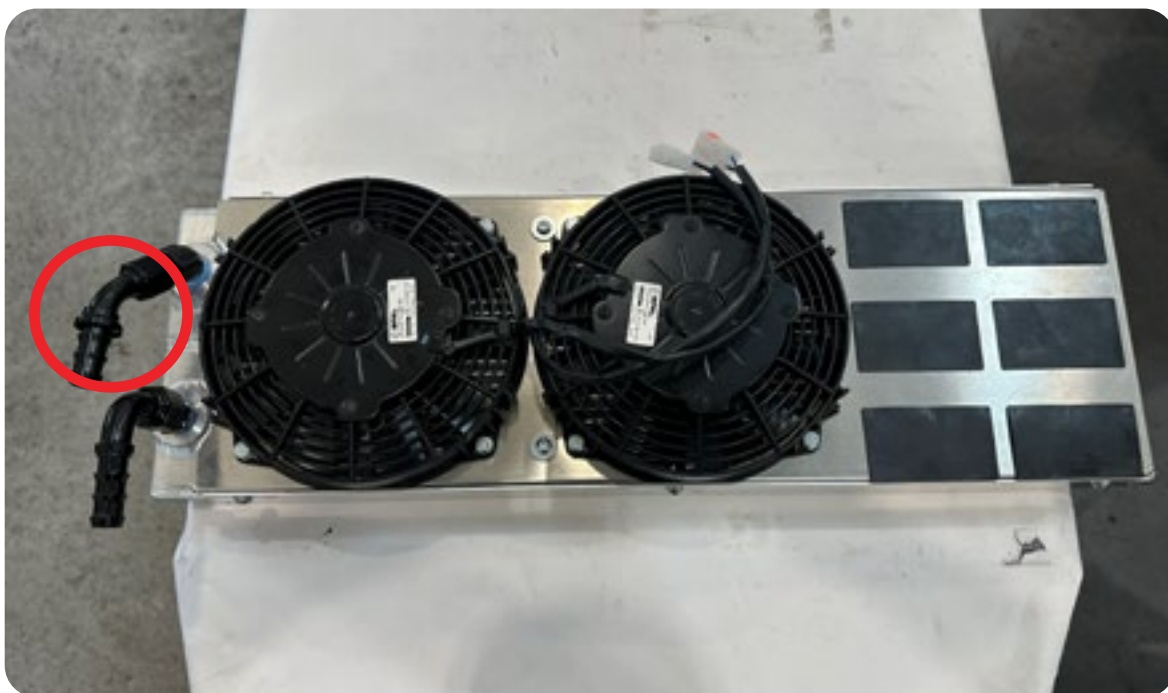
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 30

Locate the provided (D1) 10" heater core hose and a (D) hose clamp, and attach it to the upper fitting as shown below, once fully seated on the fitting secure the hose using the hose clamp and a flat head screwdriver.





HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 31

Measure 26" of the provided foam insulator and cut with scissors. One cut apply the foam insulator to the top and bottom of the intercooler as shown below.



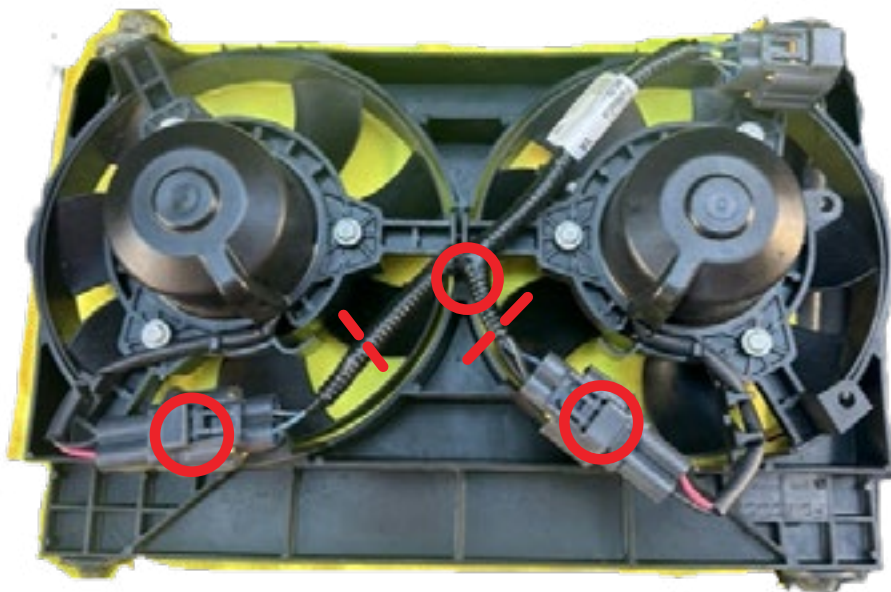
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 32

Remove the (3) retaining clips on the back of the factory heat exchanger cooling fans. Once removed cut and splice the harness along the dotted lines below and connect the harness to the new heat exchanger fans.





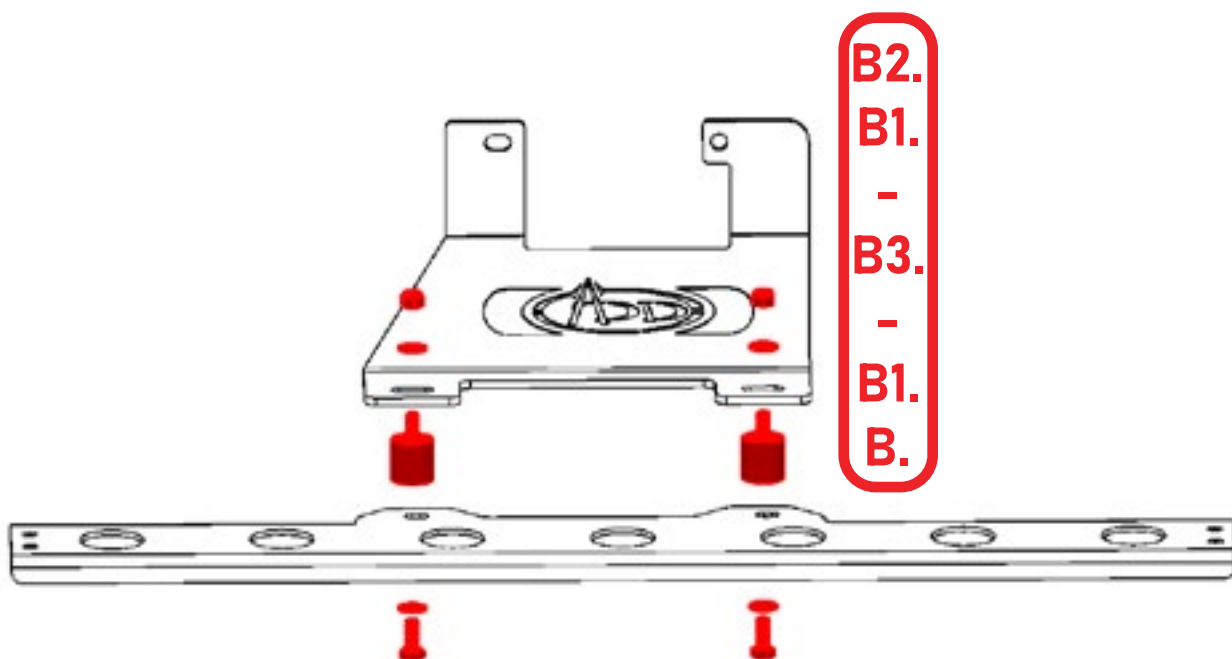
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 33

Assemble the upper intercooler support bracket using the provided (B, B1, B2, B3) and a (1/2 socket).
(Apply blue loctite to hardware (B) and tighten, leave all other hardware loose)

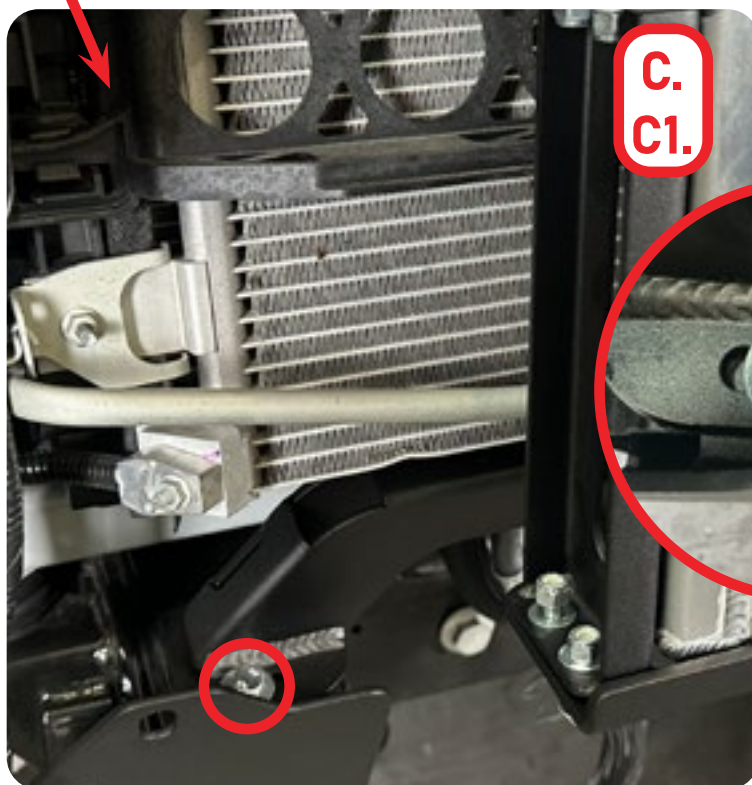




INSTALL

2023-UP FORD F-150 RAPTOR R

ENSURE TO CHECK ALL CLEARANCES BEFORE TIGHTENING



HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 35

Install the upper support bracket by placing it behind the hood latch assembly previously removed. Use a (10mm socket) to reinstall the (2) OE bolts to secure as shown below.





INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

☐ STEP 36

Carefully set the heat exchanger in between the upper and lower support bracket as shown below.

ENSURE TO CHECK ALL CLEARANCES





INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

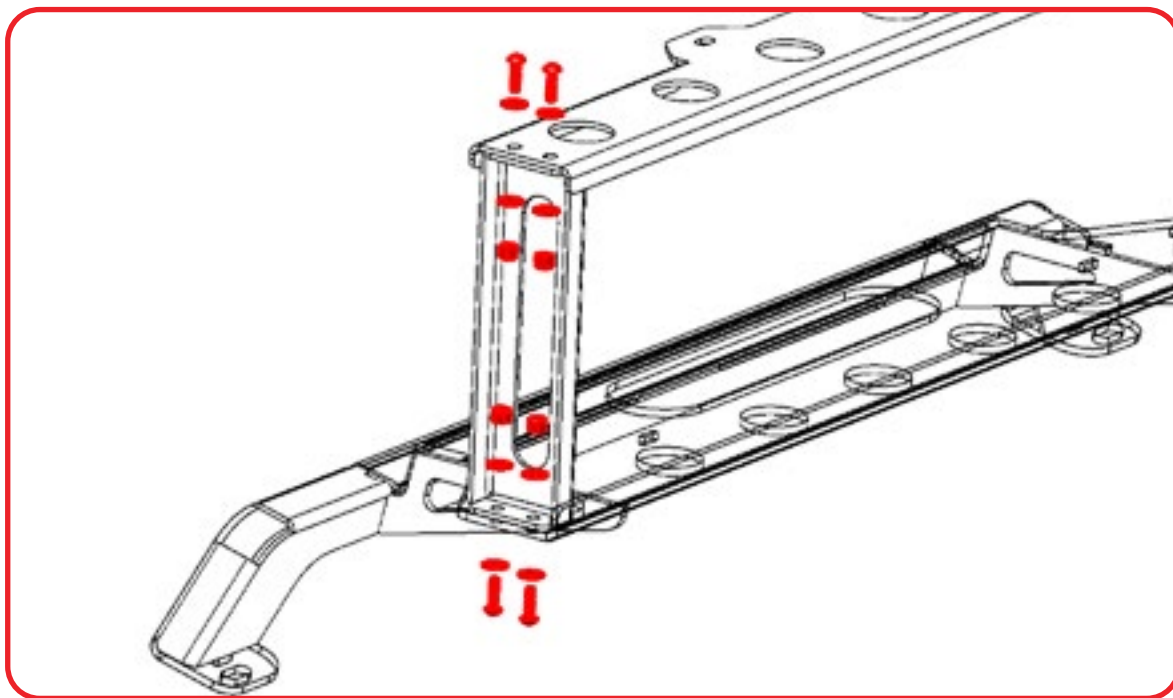
INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 37

Install the side brackets using the provided (A, A1, A2) 1/4 hardware, a 5/32 allen, and a 7/16 wrench.

ENSURE TO CHECK ALL CLEARANCES BEFORE TIGHTENING





INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

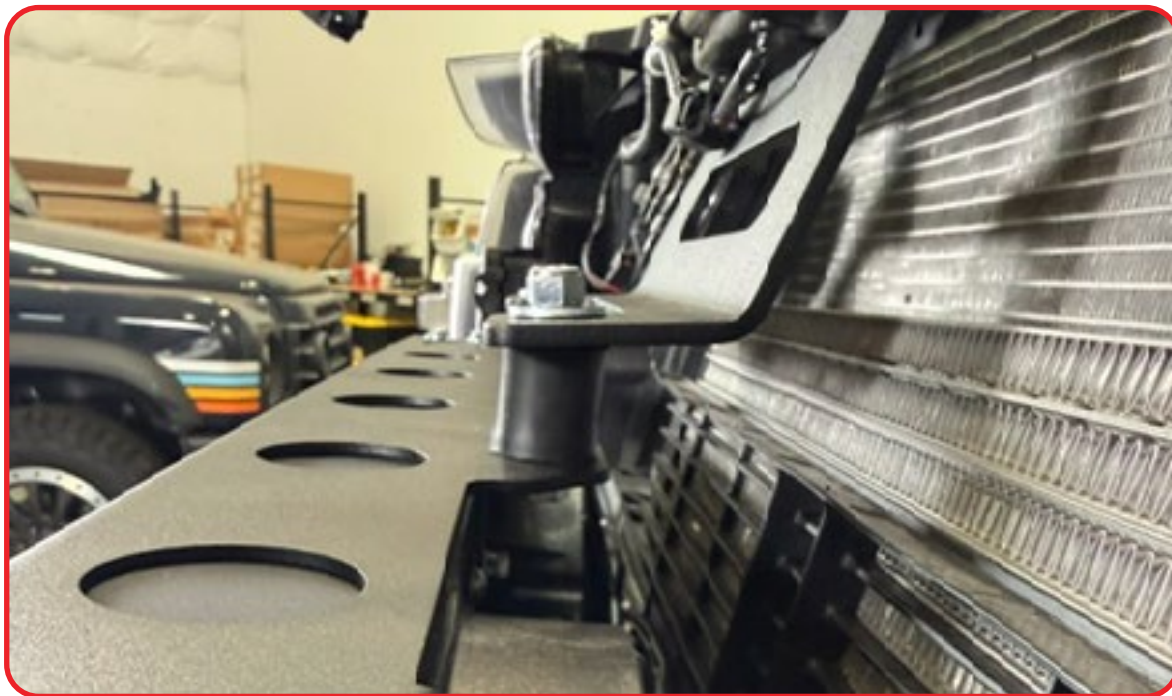
INSTALL

2023-UP FORD F-150 RAPTOR R

☐ STEP 38

With the heat exchanger set in position, tighten the top support bracket using a (1/2 socket).

ENSURE TO CHECK ALL CLEARANCES BEFORE TIGHTENING





INSTALLATION GUIDE

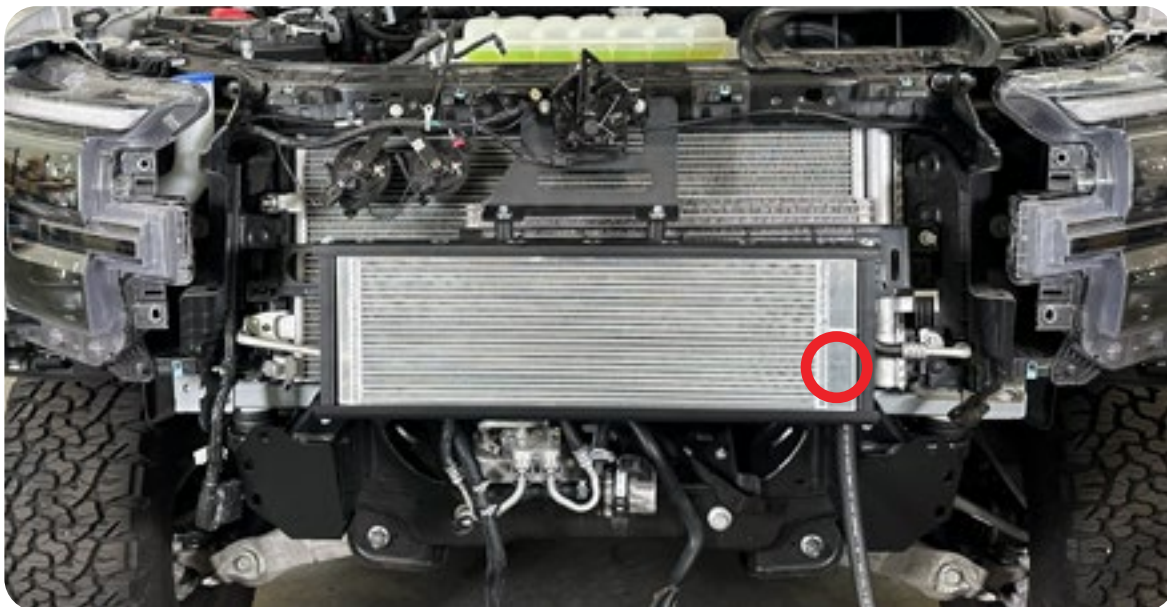
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 39

Using a flat head screwdriver and (1) of the provided (D) hose clamps attach the lower coolant hose to the lower fitting as shown below.





HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

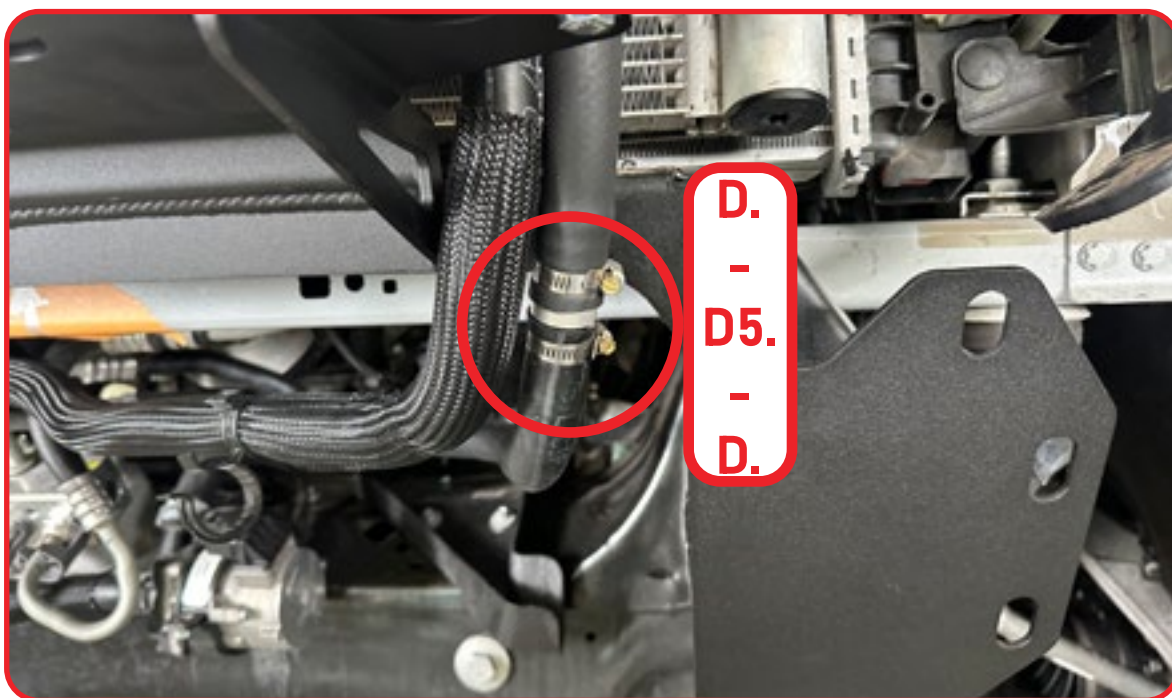
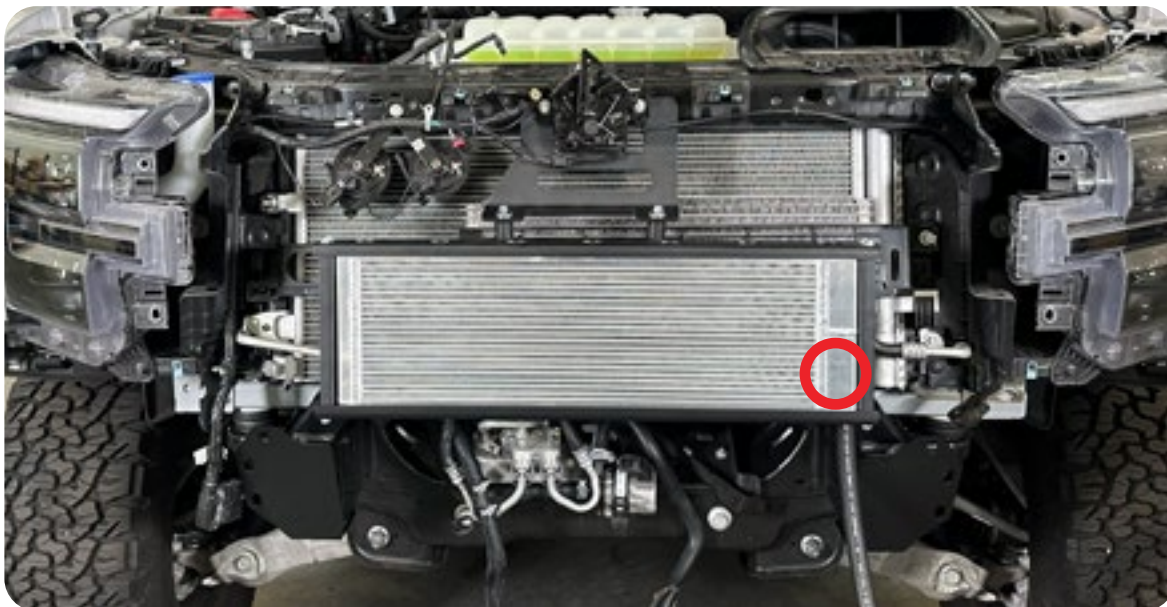
INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 40

Using (2) of the provided (D) hose clamps, and the provided (D5) barbed hose fitting, connect the upper coolant hose to the previously installed heater core hose. Once both hoses are completely seated on the fitting use a flat head screwdriver to secure the hose clamps.

AT THIS TIME CHECK ALL HOSE CLAMPS TO ENSURE THEY ARE TIGHT AND POSITIONS WHERE THEY WILL NOT CAUSE PREMATURE FAILURE





HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

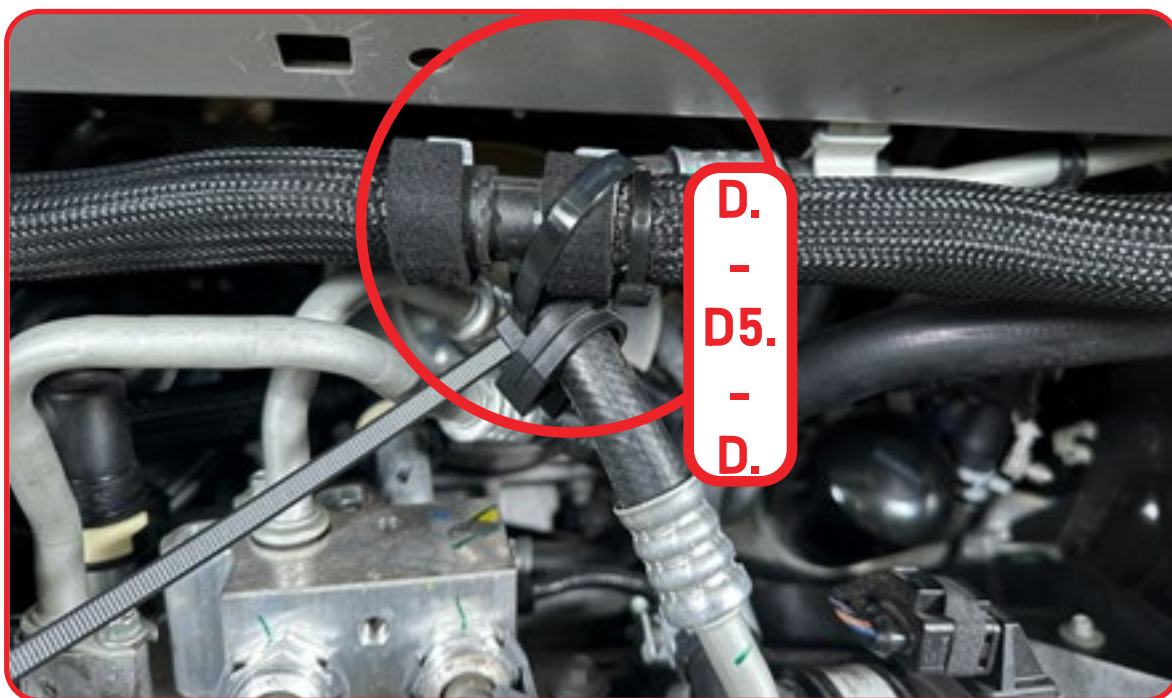
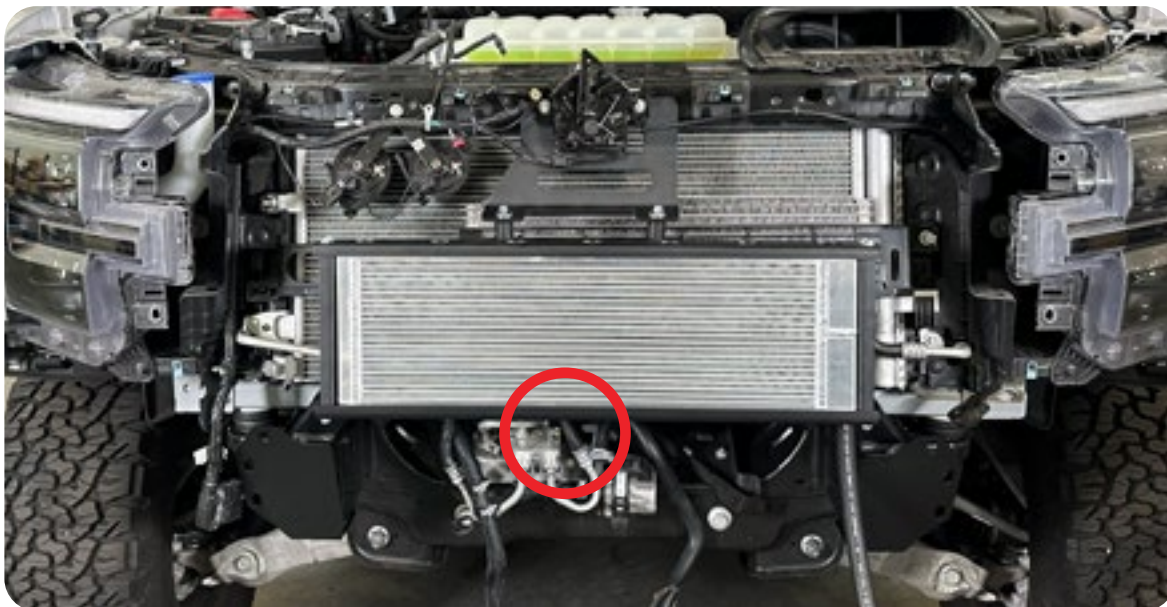
INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 41

Using a ziptie secure the lower heat exchanger cooling line to the other cooling line as shown below.

ENSURE THE HOSE IS COMPLETELY SECURE TO AVOID PREMATURE FAILURE





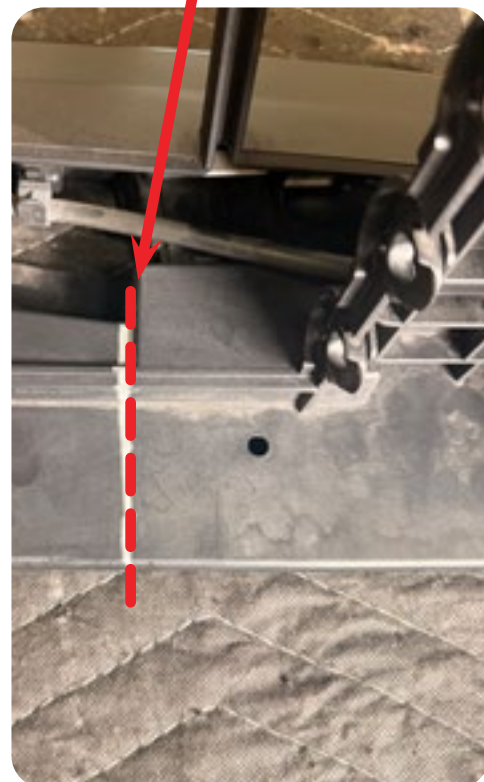
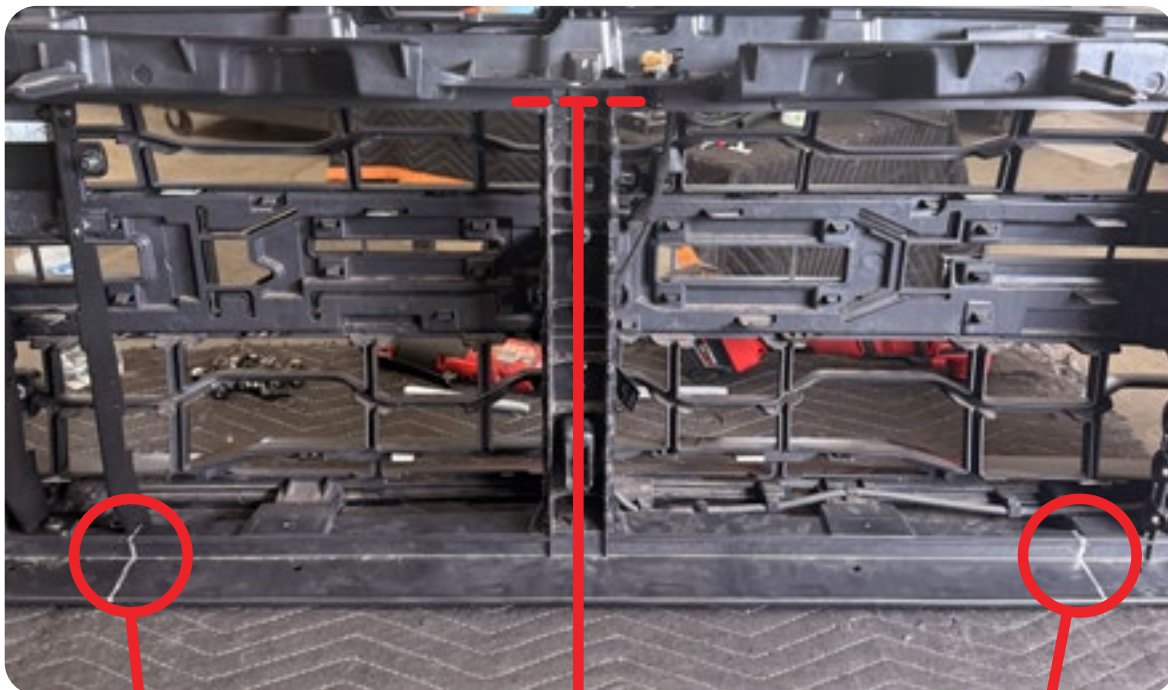
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

□ STEP 42

Using a marker and a straight edge use the body lines indicated below to mark a trim line on the inside of the grill. Once all lines are marked use the cutting tool of your choice to trim the shutter grille out of the bumper following the lines marked below. Follow the install guide for the Shutter Motor Bracket.

https://www.addictivedesertdesigns.com/cdn/shop/files/ADD_InstallGuide_AC1300900NA.pdf?v=4894805209185784070



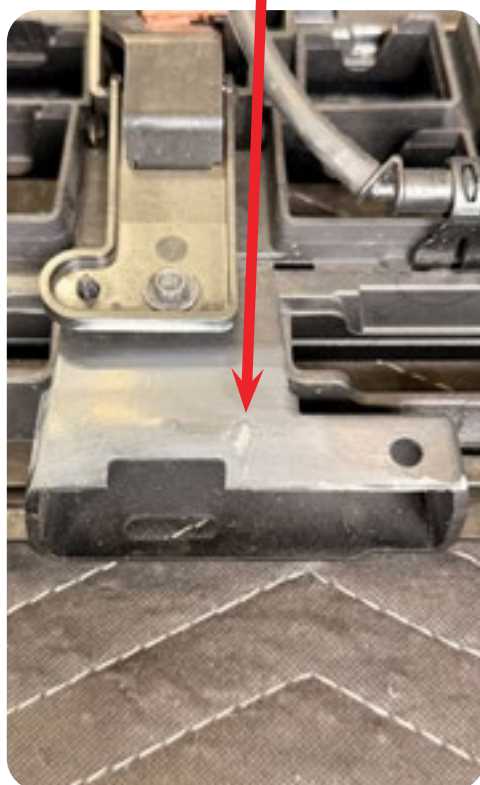


HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT **REMOVAL**

2023-UP FORD F-150 RAPTOR R

STEP 43

Mark along the dotted lines below, then trim off the tabs using your cutting tool of choice.





HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

□ STEP 44

2023-UP FORD F-150 RAPTOR R

Refill the cooling system using manufacturer specified coolant, once coolant is at the full line start the truck and check for any leaks in the cooling system, the system will slowly begin to bleed itself as the truck runs so continue to add coolant as needed.





INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

☐ STEP 45

At this point of the install if you are installing an aftermarket bumper please reference that install guide.

If you are returning the truck back to stock please continue to the end of this install guide.



INSTALLATION GUIDE

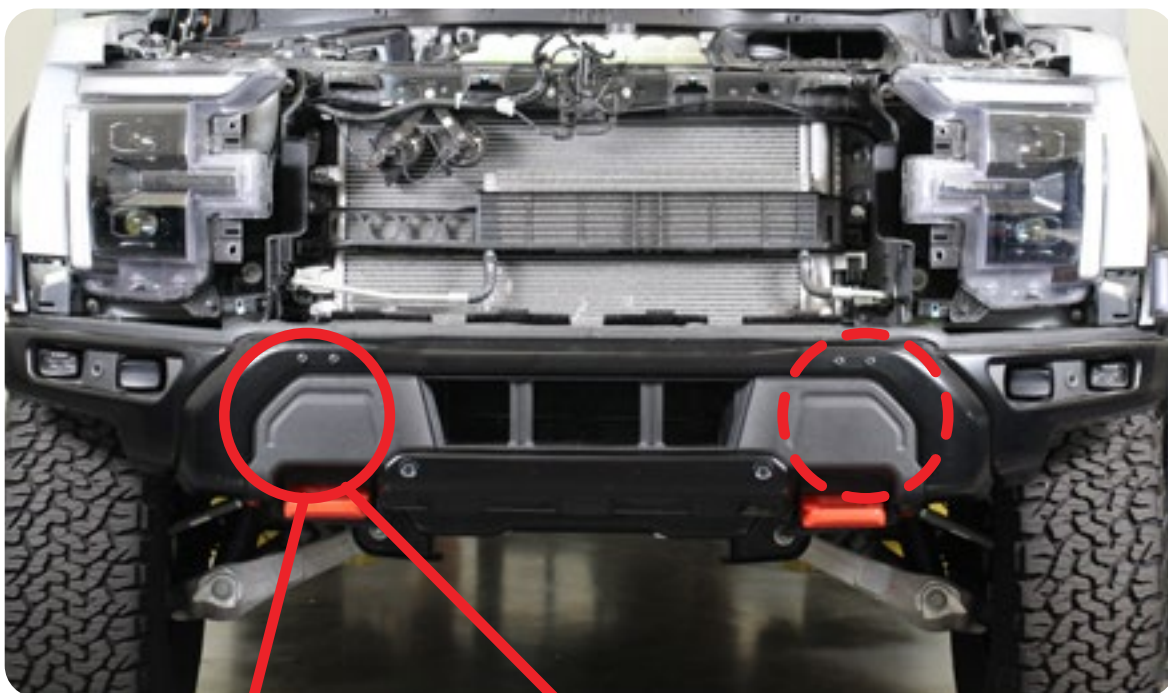
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

□ STEP 46

2023-UP FORD F-150 RAPTOR R

Using a (13/16 socket) reinstall the (3) bumper mounting bolts as shown below.
(Repeat on other side)





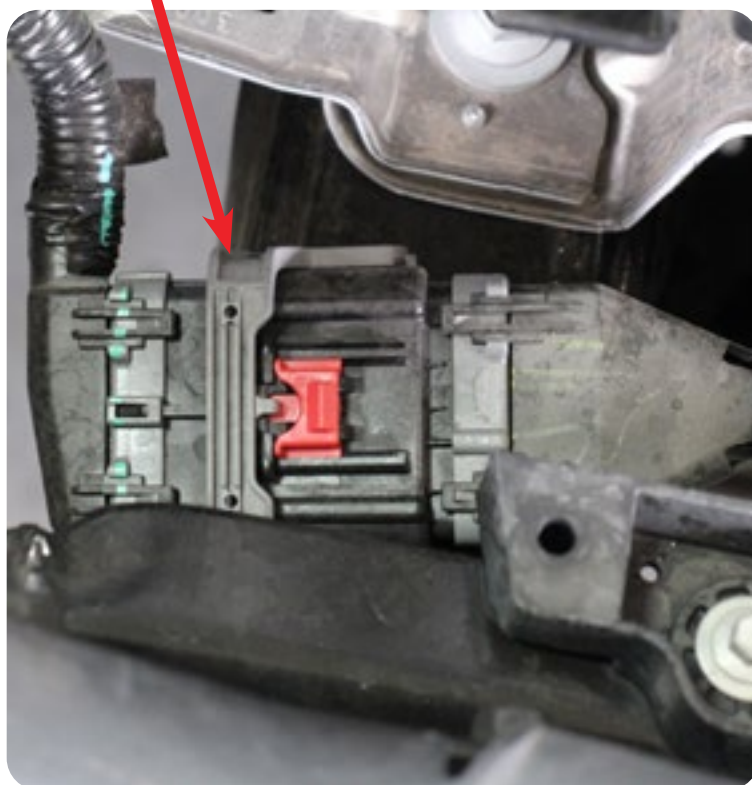
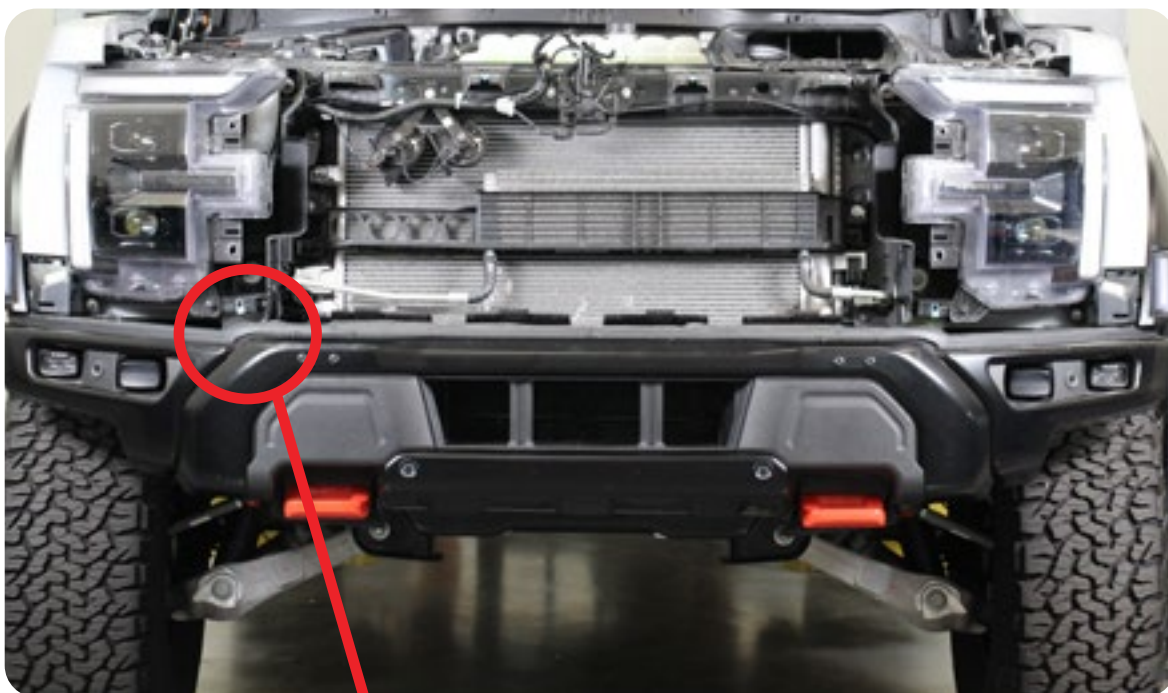
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 47

With the grill still removed, plug the main wire harness plug back in.





INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

□ STEP 48

2023-UP FORD F-150 RAPTOR R

Reinstall the (6) bolts to the OEM skid plate using a (13mm and a 15mm socket).





INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

☐ STEP 49

2023-UP FORD F-150 RAPTOR R

Reinstall the skid plate spacer.





INSTALLATION GUIDE

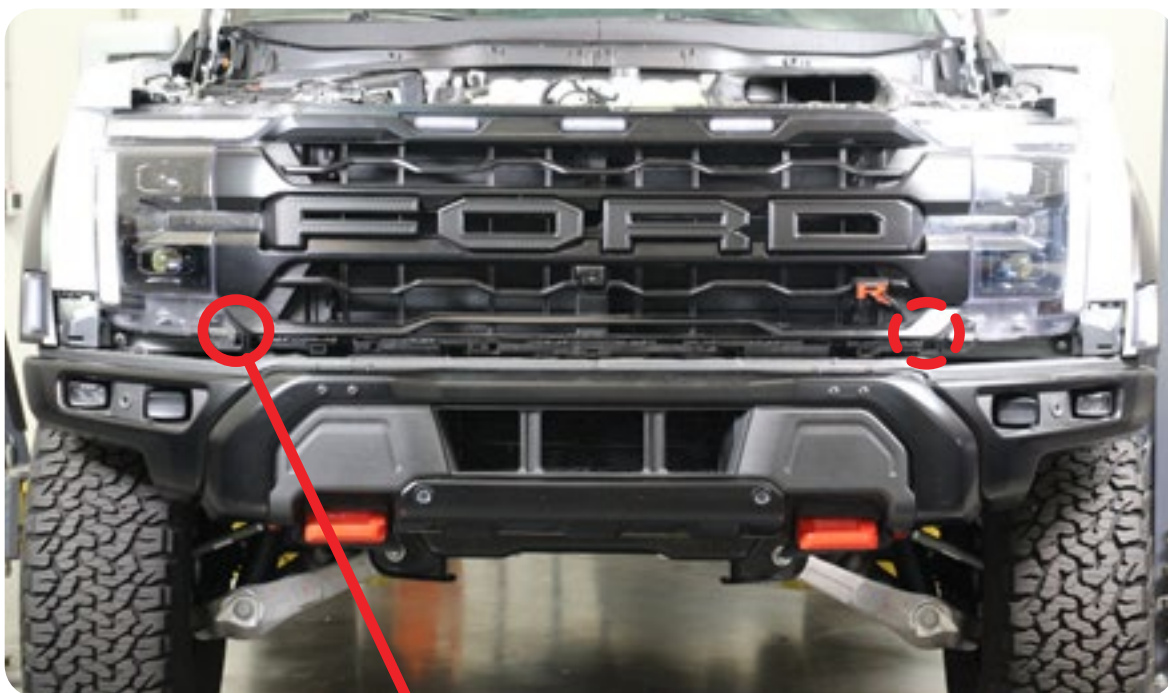
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

□ STEP 50

2023-UP FORD F-150 RAPTOR R

Reinstall the front grill, once grill is set in place use a (10mm socket) to reinstall the factory bolts.





HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 51

Reinstall the front valance working from the driver side to the passenger side.





INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

□ STEP 52

2023-UP FORD F-150 RAPTOR R

Reinstall the fender flares





INSTALLATION GUIDE

HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 53

Using a (7mm) reinstall the (4) fender flare bolts indicated below.





INSTALLATION GUIDE

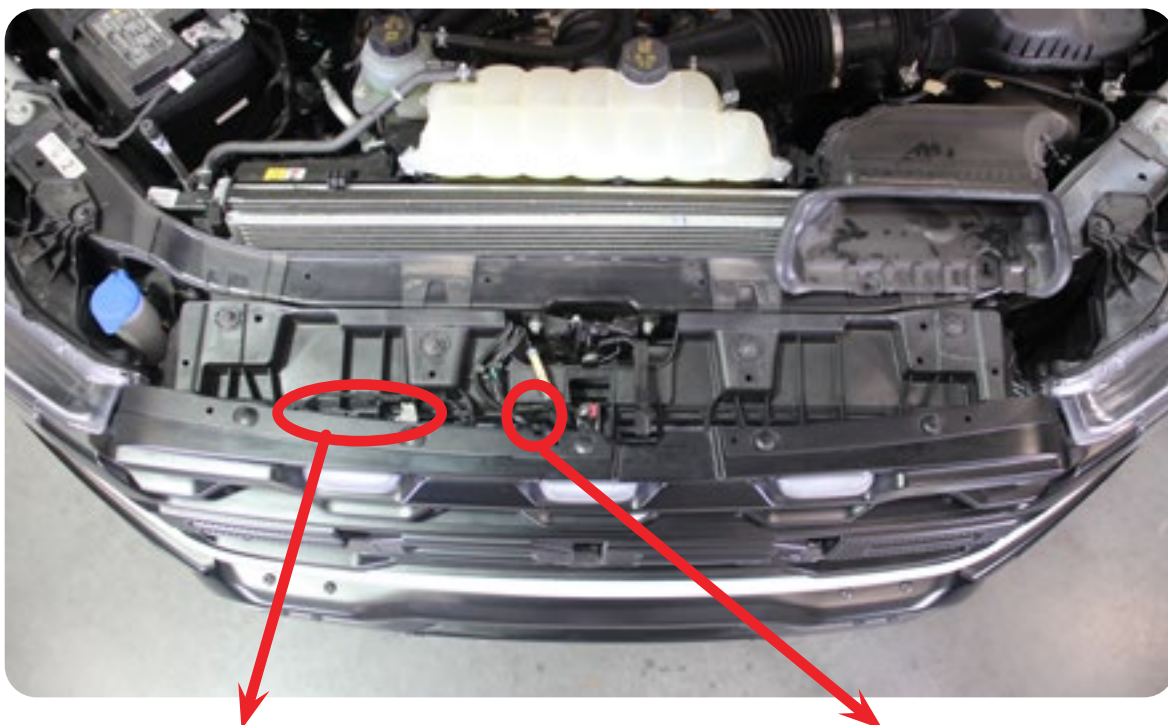
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

□ STEP 54

2023-UP FORD F-150 RAPTOR R

Connect the washer fluid hose as shown below.





INSTALLATION GUIDE

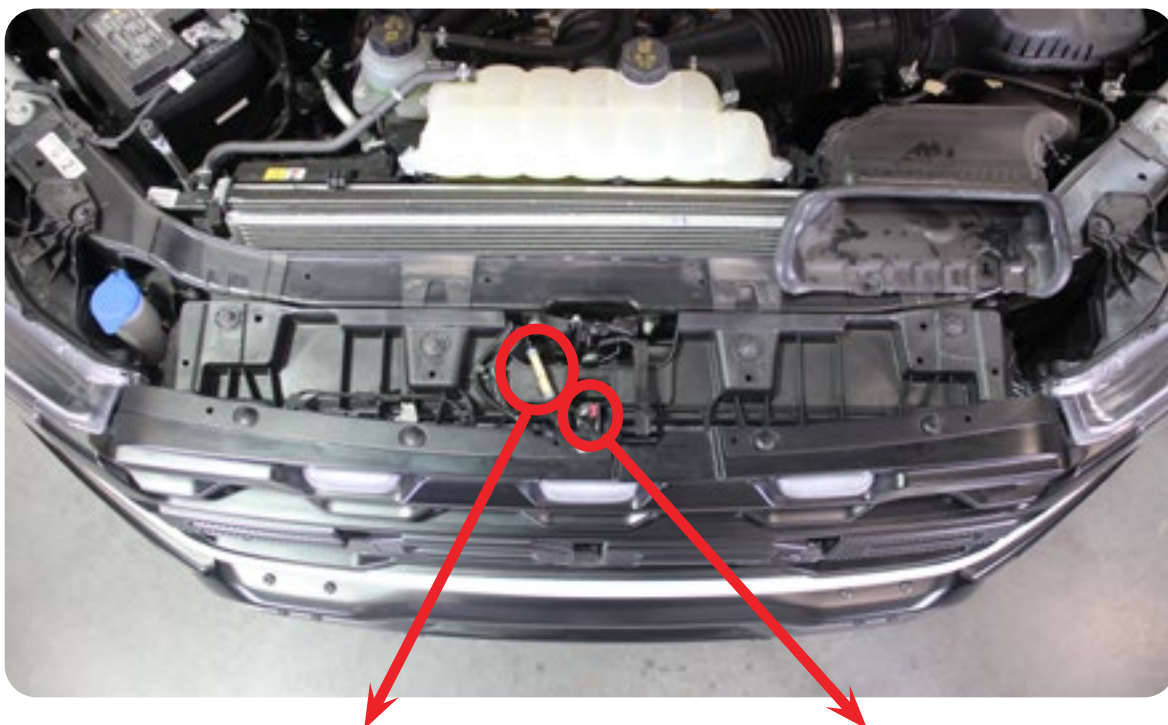
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

□ STEP 55

2023-UP FORD F-150 RAPTOR R

Plug in the front parking camera plug and the upper shutter motor as shown below.





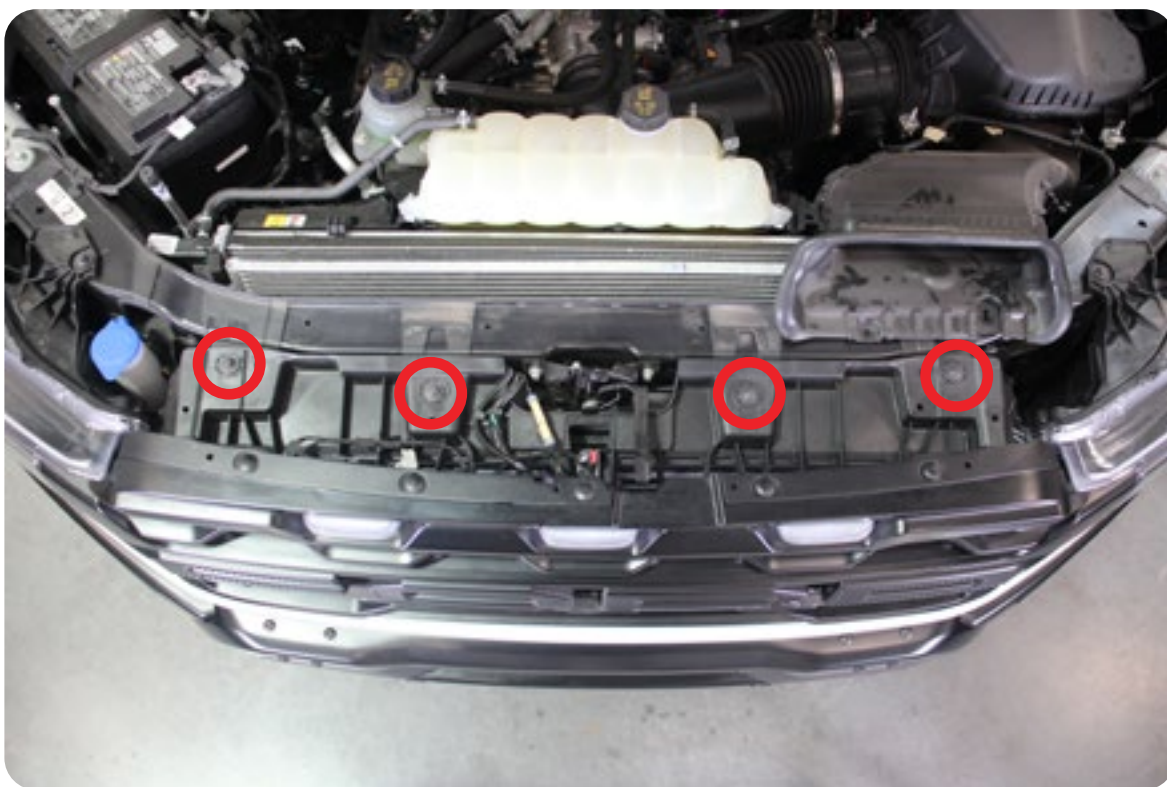
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

□ STEP 56

2023-UP FORD F-150 RAPTOR R

Using a (10mm socket) reinstall the (4) upper grill mounting bolts.





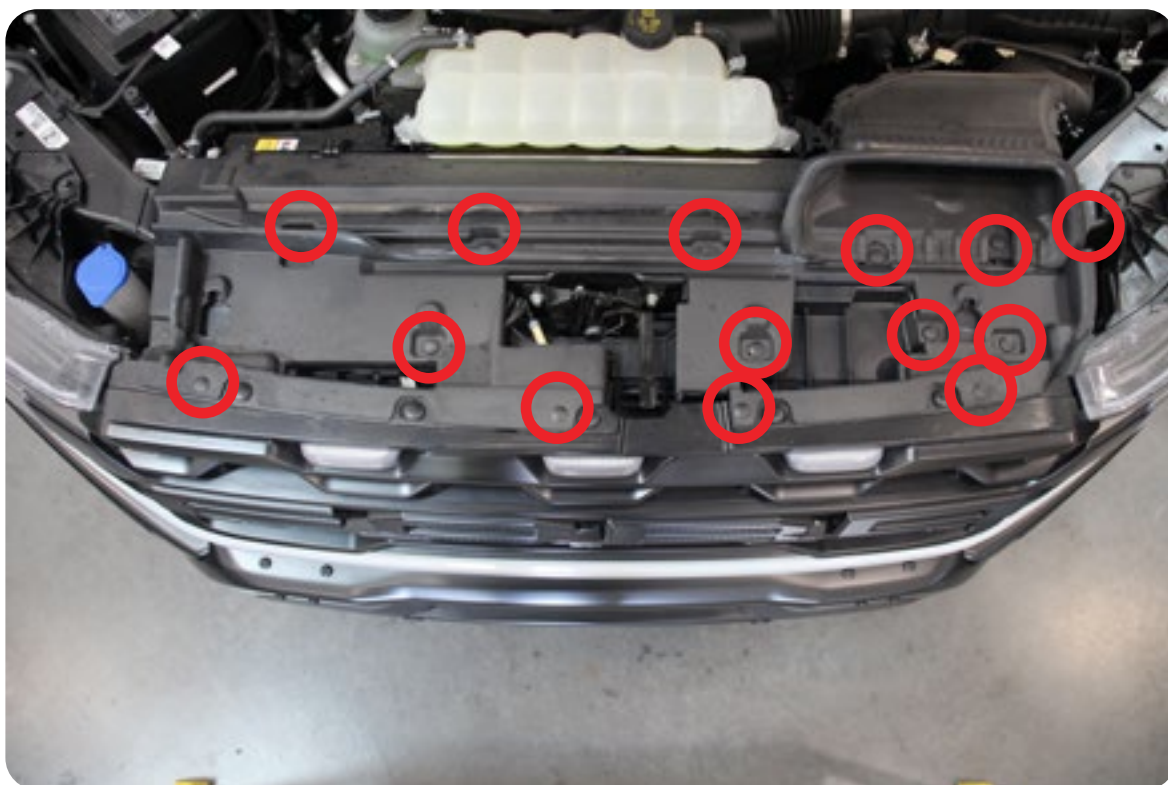
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

INSTALL

2023-UP FORD F-150 RAPTOR R

□ STEP 57

Reinstall the top grill cover then reinstall the (14) plastic grill cover clips.





INSTALLATION GUIDE

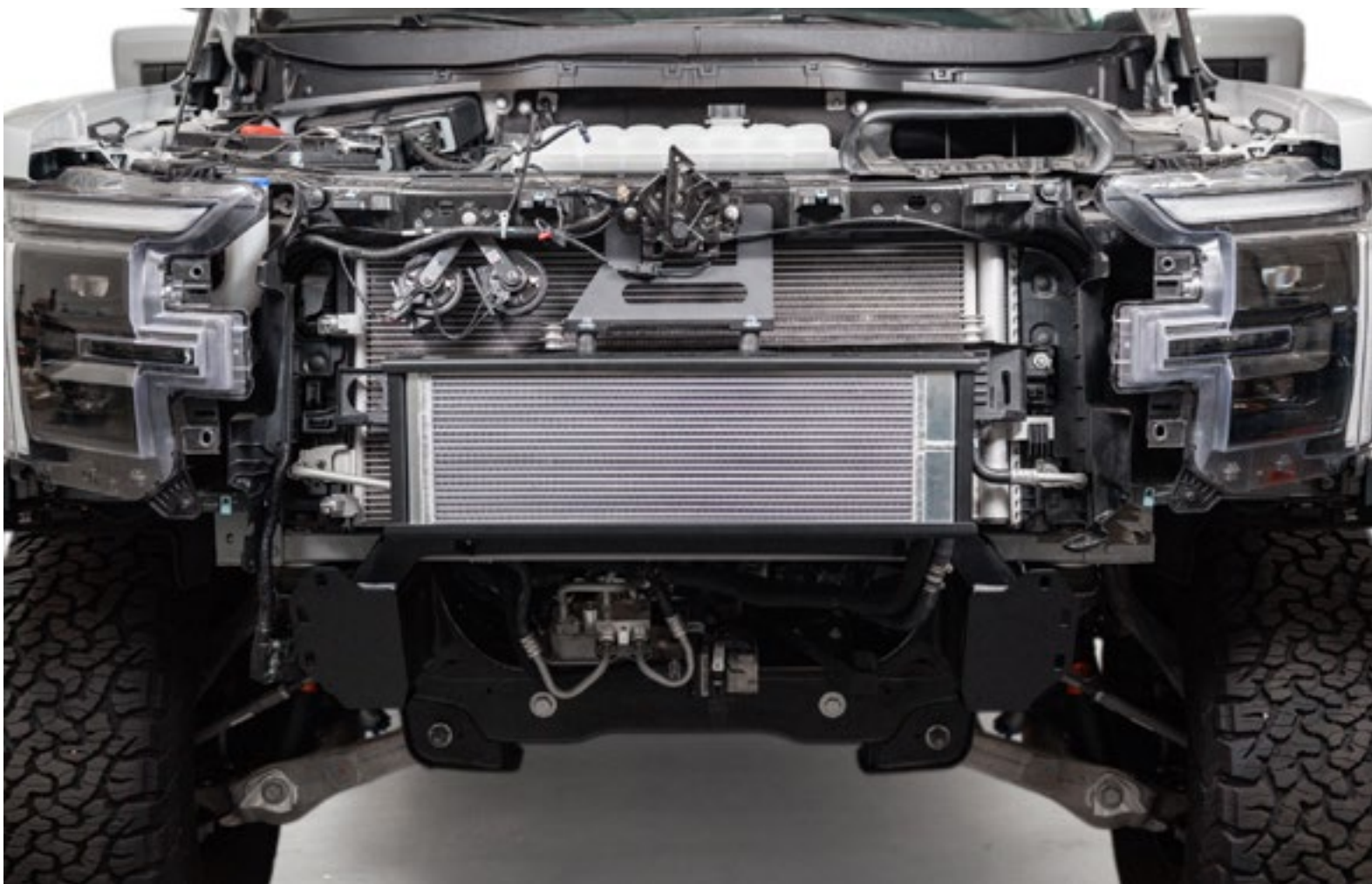
HIGH-MOUNT PERFORMANCE HEAT EXCHANGER KIT

FINAL

2023-UP FORD F-150 RAPTOR R

□ STEP 58

Stand back and enjoy your new ADD High-Mount Performance Heat Exchanger Kit. Check and re-tighten all mounting bolts after 100 miles and periodically thereafter.



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