



PART #80197

Mounting Instructions

Custom Billet Fan Bracket

Package Contents

One (1) pair main brackets with pressed-in 10–32 studs
Two (2) pair side angle brackets
Eight (8) 10–32 lock nuts
Eight (8) #8 x 5/8" sheet metal screws

Tools Required

5/16" wrench or socket set
Phillips screwdriver
1/8" diameter bit and electric drill

NOTE: If the fan is a new installation, determine if your fan is a pusher or a suction fan and position the fan to the radiator accordingly. A pusher fan is installed in front of the radiator; a suction fan is installed in the back of the radiator.

Mounting Instructions

1. Loosely assemble the side mounting brackets (4) to the main brackets (2) with four lock nuts.
DO NOT TIGHTEN.
2. Mount the main bracket studs through the mounting lugs of the fan. Make sure that the radius of the bracket matches the curvature of the top and bottom of the fan. Fasten the stud through the fan brackets with the 10–32 lock nuts. Tighten with the wrench.
3. Position the electric fan in the center of the radiator with the mounting brackets in place.
4. Adjust all of the side brackets to a snug fit on the corners of the radiator. Tighten the 10–32 nuts on the adjustable slide mount to lock in fit.
5. Mount the bracket by carefully drilling .120 diameter holes using the existing holes that are pre-punched on the bracket as a template. Then attach the same brackets with #10 x 1/4" screws. Repeat this procedure for the balance of brackets.
6. Connect the electrical and thermal connections per the manufacturer's fan instructions.



PART 80199

Installation Instructions

Adjustable Electric Fan Thermostat with
3/8-NPT Brass Probe

The AFCO Adjustable Fan Thermostat allows the user to custom-tailor the turn-on temperature. It is factory preset at 160°; the adjustment range is 150° to 240°.

NOTE: Before starting installation, read the instructions completely and disconnect the battery.

Fan Control Module Installation

The fan control module must be mounted in a cool, dry location, away from hot components. The temperature probe wires are 18" long, but can be lengthened to allow mounting the control box further from the radiator. When lengthening the probe wires, use good quality connectors and wire.

1. Using the mounting feet on the fan control module as a guide, mark and drill two 5/32" holes.
2. Use the two #10 metal screws provided to mount the control module.

Temperature Probe Installation

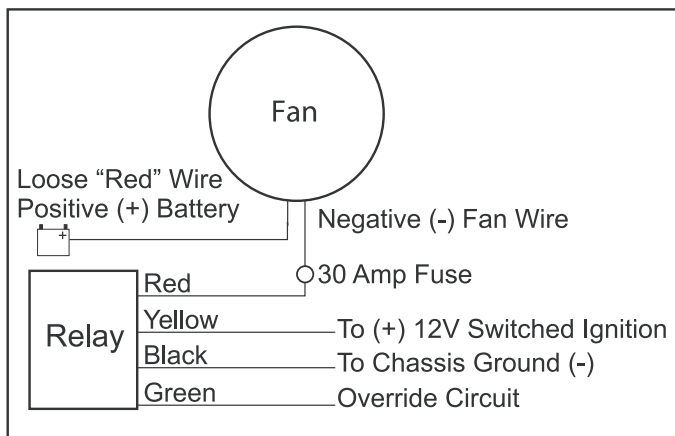
1. The temperature probe must be inserted into a 3/8" NPT port in the engine or radiator. Often the intake manifold or cylinder heads have an available port.
2. The probe wires can be lengthened if necessary.

NOTE: Thread sealant must be used when installing the probe and on the adapter, if used.

Temperature Adjustment

1. Turn the temperature adjustment counter-clockwise to lower the fan turn-on temperature.
2. Turn the temperature adjustment clockwise to raise the fan turn-on temperature.
3. The adjustment range is 3/4 of a turn. Do not force past the stop. Ensure that the vehicle is up to operating temperature before adjusting.

WIRING DIAGRAM



Wiring

Before starting, disconnect the Negative (-) cable on the vehicles battery. Plug the wire harness into the Fan Control Module. Using the electrical connectors and wire ties provided, follow the instructions below. **See Wiring Diagram in left hand column.**

Red (Loose wire): Positive (+) Battery to Positive (+) Fan Lead

Using the Yellow Ring Terminal provided, attach one end of the Red loose wire to the vehicle's Positive (+) terminal on the battery. Using the Blue Butt Connector provided, attach the other end of the loose Red wire to the Positive (+) lead on the electric fan.

Red (Fused Harness wire): To Negative (-) Electric Fan Lead

Using the Blue Butt Connector provided, attach the Red wire to the Negative (-) lead on the electric fan. If you are running two small electric fans, the total continuous amperage cannot exceed 25 amps. The Red wire can be connected in parallel to both Negative (-) fan leads.

Black Wire: Chassis Ground (-)

Using the Blue Ring Terminal provided, attach the black wire to a good chassis ground.

Yellow Wire: Switched Ignition source

Using the Red Butt Connector provided, attach the yellow wire to a positive (+) switched ignition source.

NOTE: If the yellow wire is connected to a constant power source (battery) the electric fan will run after the vehicle is shut off and could run down the battery.

Green Wire: Override Circuit (Optional)

The green wire is designed to work in two different configurations. When used, this will allow the fan(s) to be turned on regardless of the temperature of the thermostat as it simply overrides all other functions. If you choose to not use this option, cut any exposed copper and tape or shrink wrap the end of the wire.

1. A/C Override - Using the Blue Wire Tap provided, attach the green wire to the positive lead on the air conditioning compressor.
2. Manual Switch Override - Attach the Green Wire to the manual switch (not provided). For Manual Switch installation, always follow manufacturer's instructions.

Bill of Materials

- 1 — Fan control module
- 1 — 30 Amp relay
- 1 — 25 Amp fuse
- 2 — #10 Phillips head screws
- 2 — 22 GA. red butt connector
- 1 — 14 GA. blue butt connector
- 1 — 14 GA. blue ring connector
- 1 — 22 GA. red ring connector
- 1 — 14 GA. blue splice connector



PERFORMANCE COOLING SYSTEM WARNING

Radiator damage and inadequate cooling can result from improper filling of a radiator. It is critical that all air be purged from the cooling system.

Air pockets allow coolant to expand violently when contacting hot cylinder walls. This creates steam that causes surges in water pressure that overcome the pressure cap rating. In turn, inadequate cooling (because all internal surfaces are not in contact with coolant) and radiator damage (tube or tank bulging) can result.

Make sure the cooling system is completely full and all air is bled from the system. Lifting the front of the vehicle can help. Also, a good catch can (AFCO #80158) placed in line with the overflow fitting from the filler neck will insure integrity of the cooling system throughout the heating and cooling cycles.

This AFCO Performance Radiator is the best part available for your vehicle. Proper mounting and filling of the radiator combined with regular maintenance of the cooling system will lead to long part life and increased performance.

MOUNTING AN AFCO PERFORMANCE RADIATOR

1. Be sure to measure your radiator and compare it to the AFCO radiator for size and fitment to ensure it will work in your application.
2. AFCO Performance Radiators are built without hole locations in the brackets to allow for use with a wide variety of aftermarket grill shells, radiator supports, and chassis mounts. Modification to the vehicle mounts are to be expected. Make sure that any fabricated mounts are sound in their design to support the weight of the radiator when full of water and also to prevent twisting of the radiator with normal chassis flex.
3. It is advised to use rubber isolators at each attachment point to alleviate the affects of vibration and twisting of the chassis.
4. Take care when washing as most high pressure washers can damage the fins of the radiator and limit the cooling ability by restricting air flow.
5. Always install a new radiator cap with a new radiator. Used caps, even with minimal use, will retain the impression from the old filler neck that will not match that of the new filler neck. This can lead to improper cap release pressures and poor performance. Most applications will utilize a 16# radiator cap (AFCO #80152-16).



AFCO Wiring Harness Installation Instructions

Jumper Negative Switch Relay Heat Shrink Positive Switch Fuse Holder Fusible Link

Components Needed

- Toggle Switch (Positively wired) (AFCO part # 85260)
- Temperature Switch (Negatively wired) (AFCO part # 85286)



Single Harness Shown

Fan Leads Connectors Harness Ground Ignition Wire Switch Leads Positive Leads

LIT 713

AFCO Wiring Harness Installation Instructions



1. Remove the harness and items from the bag. Check to ensure all the components have been included (Dual harness items in parenthesis).
2. Mount the relay(s) and fuse holder(s) on the firewall, inner fender, or another location away from any heat source. Also, make sure the red wires are long enough to reach the power source, battery or fuse box, and the green and black (and blue and black) wire leads are long enough to reach the fan(s) (Fig. 1).

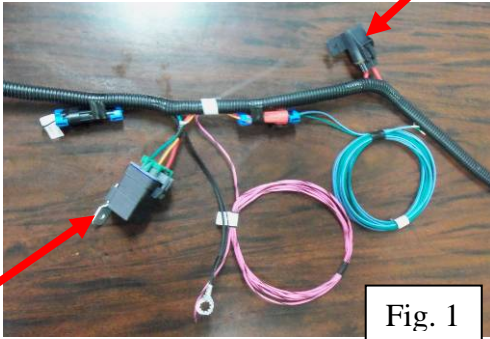


Fig. 1

3. Attach the eyelet(s) with the two black wires to a ground (Fig. 2).



Fig. 2

4. Cut the red, green, and black wires to length once mounted in place (Fig. 3 & 5).
5. Attach the green wire to the positive fan wire and the black wire to the ground of the fan using the supplied connectors and heat shrink (Fig. 3).



Fig. 3

6. The pink wire will be ran to the ignition wire of the vehicle if you want the fan to only run while the vehicle is on. If you want the fan to run anytime the vehicle is above the specified temperature (ignition off or on), then run the pink/black wire to your power source (Fig. 4).

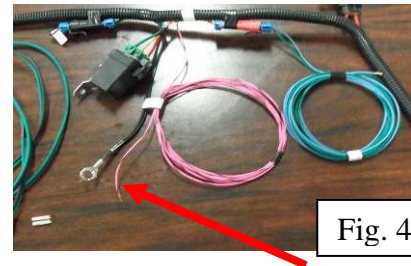


Fig. 4

7. Attach the fusible link(s) to the red wire(s) and the other end will be attached to the battery or power source. Do not connect to the power source until everything is wired completely. The fusible link is an added safety feature based upon the length of wire being used (Fig. 5).

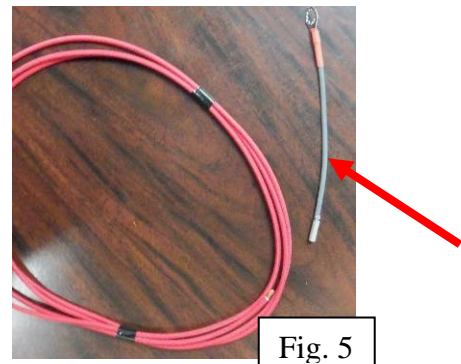


Fig. 5

AFCO Wiring Harness Installation Instructions



8. The last step consists of wiring the fans to be controlled positively (by the use of a toggle switch), or negatively (by a temperature grounding switch). The components below control the switching operation of the harness (Fig. 6).



Fig. 6

9. If the car will be positively wired, a toggle switch will be needed. If the car will be negatively wired, an electric fan temperature switch will be needed (AFCO part # 85286) (Fig. 11).
10. In order to wire the car for the positive switch, the jumper should be installed into the black connector (Fig. 7) of the harness and the green and blue leads should be connected to the red connector (Fig. 8). The blue and green wires will then run to your toggle switch.



Fig. 7

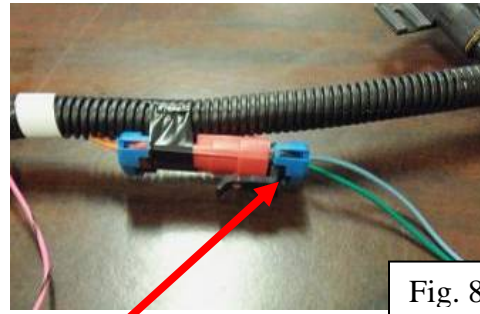


Fig. 8

11. If the car will be wired for a ground switch, the jumper will be installed into the red connector (Fig. 9) and the blue and green leads will connect to the black connector (Fig. 10). Then, the green wire can be discarded and the blue wire will attach to the electric fan temperature switch (Fig. 11). At this time the fan harness will be functional.

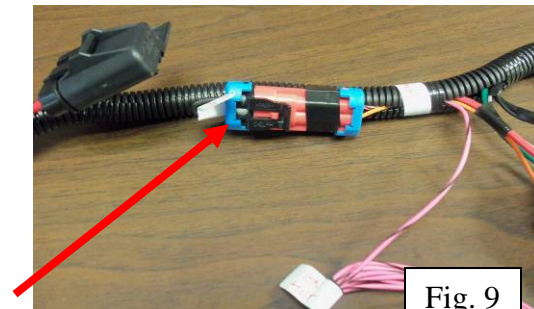


Fig. 9

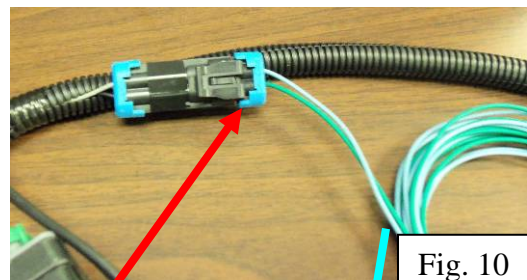


Fig. 10

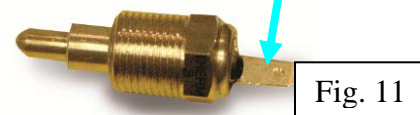


Fig. 11

2012 & Up Camaro ZL1 Heat Exchanger 80283NDP



Lit 716 2012 & Up Camaro ZL1 Heat Exchanger Installation

Congratulations on your purchase of the 2012 & Up Camaro ZL1 heat exchanger. **Please read and understand each of the steps involved with the installation of the 80283NDP heat exchanger prior to getting started.**



Parts List (80283NDP)

- Heat exchanger (Qty. 1)
- Zip tie (Qty. 2)
- Spacer .40" diameter (Qty. 4)
- Spacer 1.00" diameter (Qty. 4)
- Blue grommet (Qty. 4)
- M8 x 1.25 x 50mm bolt (Qty. 4)
- M8 x 1.25 Nylock nut (Qty. 4)
- M8 x 24mm Washer (Qty. 8)
- #12 Hose clamp (Qty. 2)
- Lit-716 Installation manual (Qty. 1)



Tools Needed

- 7mm Socket
- 10mm Socket
- 13mm Socket
- 1/4" Drive ratchet
- 1/4" Extension
- 10mm Wrench
- 13mm Wrench
- 5/16" Drill bit
- Torx head screwdriver
- Socket and wrench to remove lug nuts
- 5/16" Transfer punch

WARNING:

1. Radiator fluid must be handled properly. Please observe local ordinances with regards to handling and disposal.
2. Allow vehicle and components to cool a minimum of 1 hour before handling.
3. **Never attempt to open the radiator cap when hot.**
4. Do not allow any tools or limbs to contact fans—SERIOUS INJURY MAY RESULT.
5. Always follow directions and disconnect the battery before attempting installation.
6. Retailer is not responsible for personal injury or damage to vehicle resulting from improper installation of this product.
7. Due to vehicle variations / tolerances it is ultimately up to the installer to determine proper installation.

Removal of the Stock Heat Exchanger

1. Disconnect the negative battery terminal.
2. Lift the front of the vehicle, secure on jack stands, and remove the front tires of the vehicle to gain access to the inner fender splash guards.
3. Remove the five Torx head screws from the bottom of the inner fender well (from underneath the bumper of the car) (Fig. 1).



Fig. 1

4. Remove the two Torx head screws holding the inner fender splash guard to the brake duct (Fig. 2).

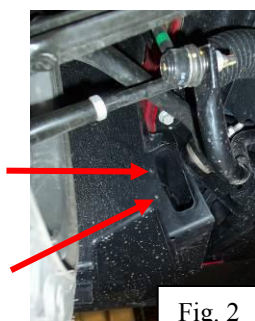


Fig. 2

5. Remove the five Torx head screws, three located in the front and two in the rear of the fender well (Figs. 3-5).

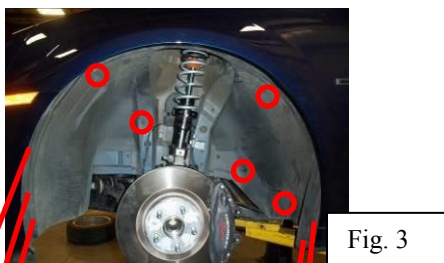


Fig. 3



Fig. 4

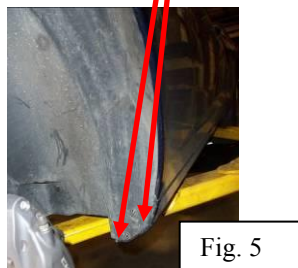


Fig. 5

6. Remove the five plastic clips holding the inner fender well splash guard to the vehicle and then remove the inner fender splash guard (Fig. 3 Red Circles).
7. Use a 7mm socket to remove the bolt attaching the bumper to the fender (Fig. 6).

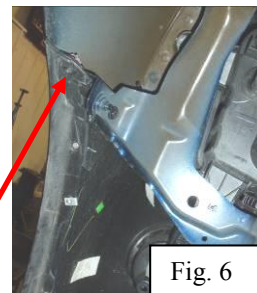


Fig. 6

8. Use a 10mm socket to remove the bolt on the back side of the marker light in the bumper; do not remove the nut (Fig. 7).

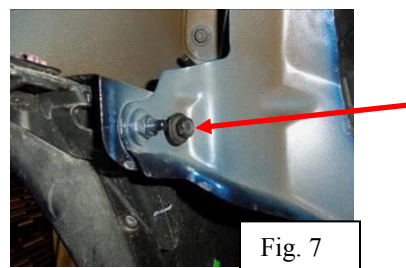


Fig. 7

9. Remove the three 10mm bolts that hold the front nose to the fender (Fig. 8).

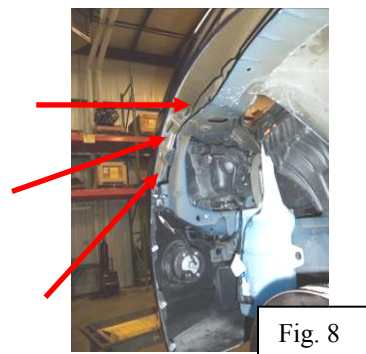
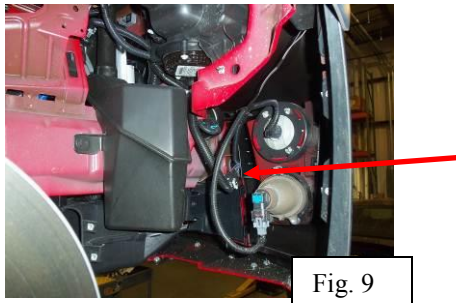
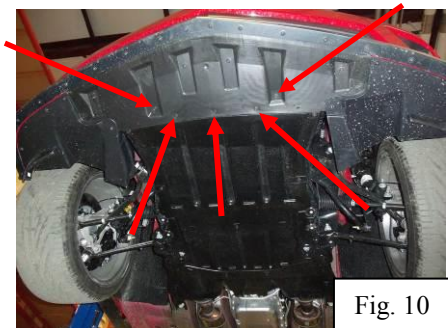


Fig. 8

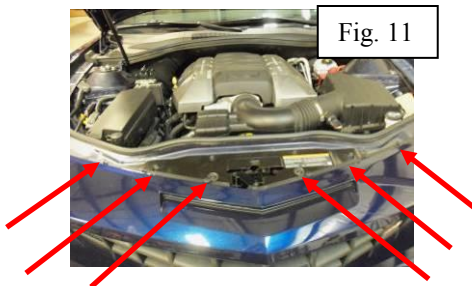
10. Repeat steps 3-9 on the opposite side of the vehicle.
11. Unplug the wiring for the front bumper. This is located in the passenger fender well above the fog light (Fig. 9).



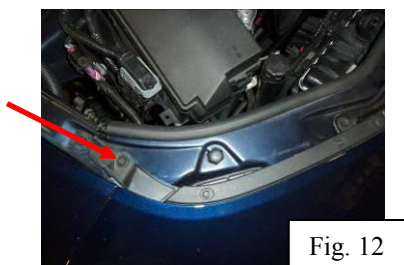
12. Remove the five 10 mm bolts in the bottom of the bumper (Fig. 10).



13. From the top side of the car, remove the six plastic snaps that hold the bumper cover to the radiator support (Fig. 11).

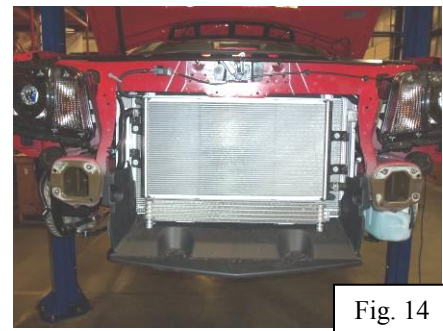
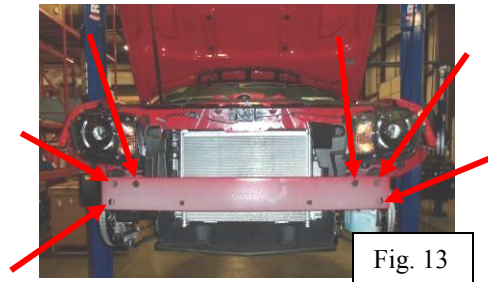


14. Remove the two 10mm bolts at the corner of the nose and radiator support (Fig. 12).

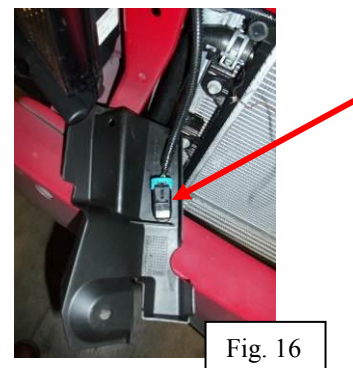
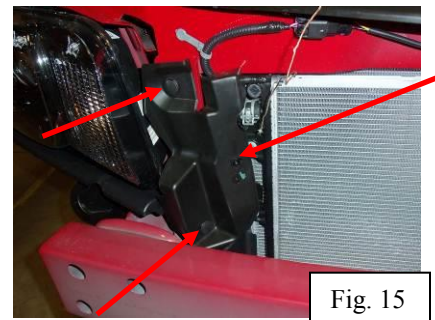


15. At this point, the nose of the car should be removed and set aside (Fig. 13).

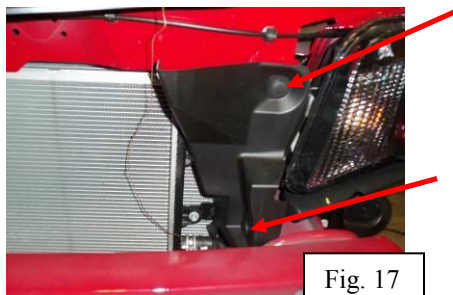
16. Remove six 13mm bolts that hold the steel bumper on, and remove the bumper (This is not mandatory but will aid in the removal and installation of the heat exchanger) (Fig. 13 & 14).



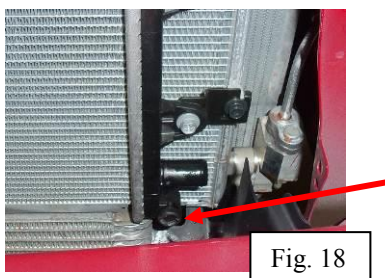
17. Remove the two plastic snaps holding the air deflector to the radiator support (Fig. 15). Remove the air temperature sensor from the backside of the plastic air deflector (Fig. 16).



18. Remove the two plastic snaps that hold the driver side air deflector in place (Fig. 17).



19. The air deflectors removed in steps 17 and 18 will not be used after the heat exchanger is installed.
20. Drain the coolant from the heat exchanger by removing the 3/8" hex plug located on the driver side of the heat exchanger (Fig. 18).



21. Remove the upper and lower coolant hoses from the heat exchanger. Then, remove the four 10mm bolts holding the heat exchanger to the condenser (Fig. 19).



22. The heat exchanger should be removed at this time.

Installation of the AFCO Heat Exchanger

23. Place all four rubber grommets onto the heat exchanger. Insert the .40" diameter aluminum spacer into the center of each grommet (Fig. 20).



Fig. 20

24. Next, mount the heat exchanger into the existing lower two holes in the radiator support with only the top bolts (make sure the inlet and outlet go behind the radiator support while installing the heat exchanger). Place the .20" thick spacers between the radiator support and the rubber grommets on the heat exchanger. Tighten the heat exchanger into place (Fig. 21-23).



Fig. 21



Fig. 22



Fig. 23

25. A transfer punch should be used to mark the location of both bottom holes (Fig. 24).



Fig. 24

26. Remove the heat exchanger and then drill the bottom two holes (marked in step 25) with a 5/16" drill bit. Deburr the holes after drilling (Fig. 25).



Fig. 25

27. The upper hose for the AFCO heat exchanger should be routed before installing the heat exchanger. This is the factory hose that ran to the upper passenger side inlet of the factory heat exchanger. The hose should be removed from the plastic clamp and routed on the outside of the front air dam up to where the upper heat exchanger inlet will be located (Fig. 26 & 27). The plastic air dam may need trimmed for additional clearance for the lower hose on the heat exchanger.

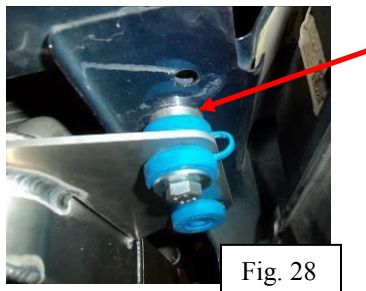


Fig. 26



Fig. 27

28. The heat exchanger can be installed at this point. First, attach the upper and lower hoses to the heat exchanger before bolting it in place. Then, place the four supplied .20" thick round spacers between the radiator support and each rubber grommet that mounts the heat exchanger to the radiator support (Fig. 28).



29. Insert all four bolts with a washer at the head and a washer at the nut. The bolts should be inserted from front to rear. Tighten the bolts until it compresses the blue grommet approximately 1/16" or until the bolt bottoms out on the aluminum spacer (Fig. 28).
30. The air temperature sensor will have to be installed into the upper hole above the heat exchanger on the passenger side radiator support (Fig. 29).



31. Verify all bolts, nuts, and hose connections are tight. Also, verify there are no leaks.
32. Fill the coolant system with the recommended OEM coolant.
33. Reconnect the negative battery cable, start the vehicle, and allow the car to idle until warm. The heat exchanger coolant pump will not turn on until the air charge is warm.
34. Once the pump turns on, the level in the radiator will drop. Continue adding coolant until the recommended level is achieved. This system will hold approximately 1/2 – 3/4 gallons of coolant.
35. Continue to run the vehicle for 5 minutes to verify that all air is purged from the system. Check the system for leaks while waiting.

36. Once the system is checked, install all of the components in reverse order of removal. The air deflectors in steps 17 and 18 will not be reinstalled.

2010 & Up Raptor/F150 Heat Exchanger for Whipple



Lit717 2010 & Up Raptor/F150 with Whipple Supercharger Heat Exchanger

Parts List (80284PRO)(With Fans)

- Heat exchanger (Qty. 1)
- 10" Fan (Qty. 2)
- Dual relay wiring harness (Qty. 1)
- 3M 3-way Scotchlock connector (Qty. 1)
- Wire tie (Qty. 8)
- Spacer .40" diameter (Qty. 4)
- Blue grommet (Qty. 4)
- M8 x 1.25 x 40mm Bolt (Qty. 4)
- M8 x 24mm Washer (Qty. 4)
- Hose clamps SAE #12 (Qty. 3)
- 3/4" Heater hose (Qty. 36")
- 1.38" x 1.38" M8x1.25 tapped plate (Qty. 1)
- Horn relocation bracket (Qty. 1)
- Lit714 Installation manual (Qty. 1)

Parts List (80284WHIPPLE)

- Mounting brackets (Qty. 2)
- Wire tie (Qty. 5)
- M8 x 1.25 x 16mm Bolt (Qty. 4)
- M8 x 1.25 Nylock nut (Qty. 4)
- 3/4" to 5/8" Hose connector (Qty. 1)
- 3/4" to 3/4" Hose connector (Qty. 1)
- 3/4" Molded hose 300° bend (Qty. 1)
- 3/4" Molded hose 90° bend (Qty. 1)
- Hose clamps SAE #12 (Qty. 7)
- Lit717 Installation manual (Qty. 1)



Parts List (80284NDP)(Without Fans)

- Heat exchanger (Qty. 1)
- Wire tie (Qty. 4)
- Spacer .40" diameter (Qty. 4)
- Blue grommet (Qty. 4)
- M8 x 1.25 x 40mm Bolt (Qty. 4)
- M8 x 24mm Washer (Qty. 4)
- Hose clamps SAE #12 (Qty. 3)
- 3/4" Heater hose (Qty. 36")
- 1.38" x 1.38" M8x1.25 tapped plate (Qty. 1)
- Horn relocation bracket (Qty. 1)
- Lit714 Installation manual (Qty. 1)

Tool List

- 8mm Wrench
- 13mm Wrench
- 10mm Socket
- 13mm Socket
- 15mm Socket
- 1/4" Drive ratchet
- 1/4" Extension
- 3/8" Drive ratchet
- Phillips screwdriver
- 5/16" Nut driver
- Pliers
- Wire cutters
- Trim tool

WARNING:

1. Radiator fluid must be handled properly. Please observe local ordinances with regards to handling and disposal.
2. Allow vehicle and components to cool a minimum of 1 hour before handling.
3. **Never attempt to open the radiator cap when hot.**
4. Do not allow any tools or limbs to contact fans—SERIOUS INJURY MAY RESULT.
5. Always follow directions and disconnect the battery before attempting installation.
6. Retailer is not responsible for personal injury or damage to vehicle resulting from improper installation of this product.
7. Due to vehicle variations / tolerances it is ultimately up to the installer to determine proper installation.

Congratulations on your purchase of the 2010 & Up Raptor heat exchanger. **Please read and understand each of the steps involved with the installation of the Heat Exchanger prior to getting started.**

2010 & Up Raptor/F150 Heat Exchanger for Whipple



Removal of the Whipple Heat Exchanger

1. Disconnect the negative battery terminal.

2. Disconnect the inlet hose from the heat exchanger and drain as much coolant as you can (Fig. 1).

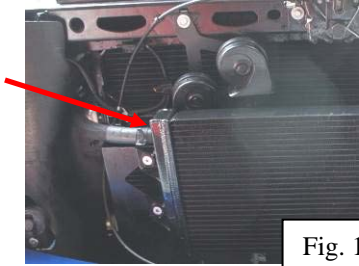


Fig. 1

3. Remove the four 10mm bolts holding the Whipple heat exchanger into the truck (Fig. 2).



Fig. 2

4. Move the heat exchanger in front of the bumper in order to drain the heat exchanger without spilling coolant. Disconnect the outlet hose and drain the coolant (Fig. 3).



Fig. 3

5. Unplug the wire pigtail for the horns. Remove the horns and bracket using a 10mm wrench (Fig. 4).

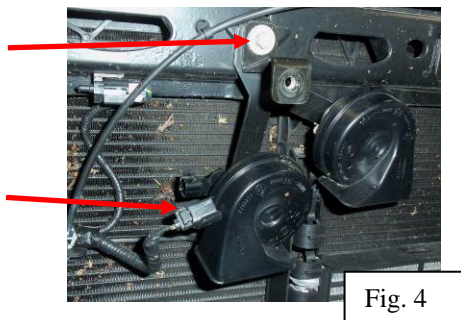


Fig. 4

6. Remove the six 15mm bolts holding the front skid plate to the truck (Fig. 5). Remove the skid plate.



Fig. 5

7. Using a trim tool or screwdriver, remove the three plastic clips holding the rubber air deflector to the bumper (Fig. 6).

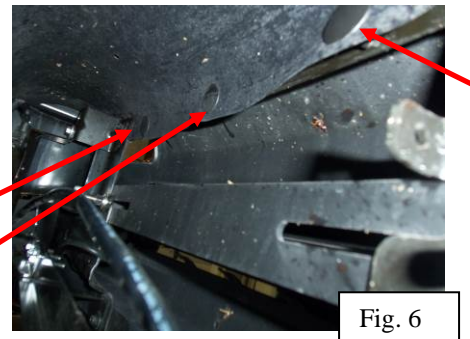


Fig. 6

8. Using a Phillips screwdriver and trim tool remove the plastic clip holding the rubber air deflector on the passenger side of the truck next to the headlight (Fig. 7).

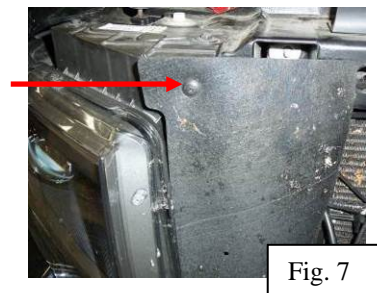


Fig. 7

Installation of AFCO Heat Exchanger

9. Install the blue grommets into the AFCO heat exchanger as shown below. Make sure the aluminum sleeve is in the center of the blue bushing (Fig. 8).



Fig. 8

10. Remove the horns from the factory bracket. Attach both horns to the relocation bracket as shown (Fig. 9-10).

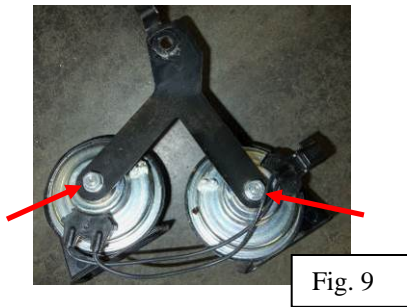


Fig. 9

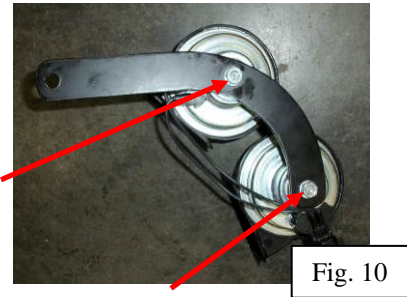


Fig. 10

11. Install the horn bracket using the existing bolt. Using one of the supplied zip ties, attach the hood release cable to the horn relocation bracket (Fig. 11).

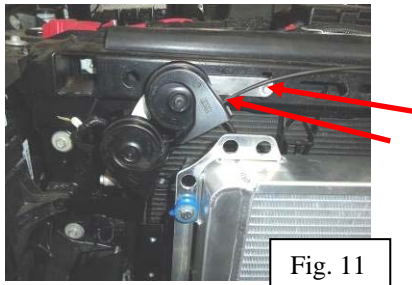


Fig. 11

12. Install the AFCO heat exchanger mount brackets to the existing Whipple brackets using the supplied 8mm x 16mm bolts and nylock nuts (Fig. 12-13). Install the bolts from the backside of the Whipple brackets facing towards the front of the truck. Do not fully tighten the nuts in order to leave room for adjustment when mounting the heat exchanger. The center to center width of the mounting holes will be approximately 27-5/16" (Fig. 14).

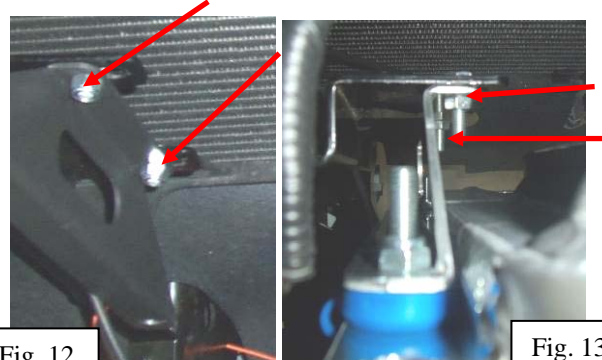


Fig. 12

Fig. 13



Fig. 14

13. Place the four supplied 8mm x 40mm bolts with washers from the front side of the heat exchanger. Place the heat exchanger onto the mounting brackets and secure with the nylock nuts (Fig. 15-16).



Fig. 15

2010 & Up Raptor/F150 Heat Exchanger for Whipple

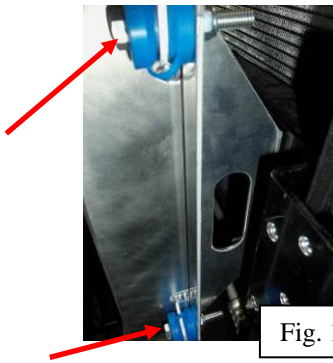


Fig. 16

14. Now all of the bolts for the AFCO heat exchanger can be tightened at this time. The bolts going through the blue grommets should be tightened until it compresses the blue grommet approximately 1/16" or until the bolt bottoms out on the aluminum spacer. The bolts attaching the AFCO brackets to the Whipple brackets should be tightened now.

15. Attach the 300° molded hose to the inlet of the heat exchanger using the supplied hose clamp with a 5/16" nut driver (Fig. 17). The hose should be angled towards the passenger side of the truck. Attach the 3/4" to 5/8" plastic hose connector to the 300° molded hose and tighten the hose clamp (Fig. 18). Attach the 5/8" inlet hose to the 5/8" hose connector and tighten with a hose clamp.

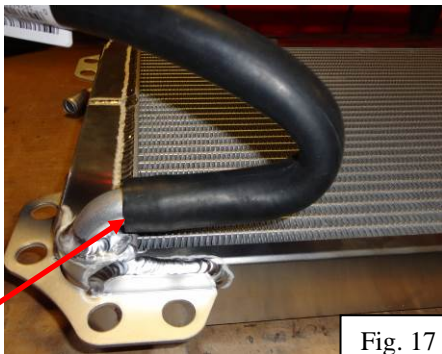


Fig. 17

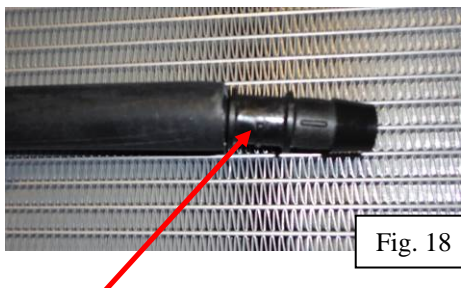


Fig. 18

16. Attach the 90° molded hose to the outlet of the heat exchanger and angle it towards the driver side of the truck (Fig. 19). Attach the 3/4" to 3/4" hose connector onto the 90° molded hose (Fig. 20). Next attach the 36" piece of 3/4" heater hose to the hose connector and run it to the coolant pump, trim the hose if necessary. This hose will be connected where the previous outlet hose was connected to the pump. Install the hose clamps and tighten (Fig. 21).

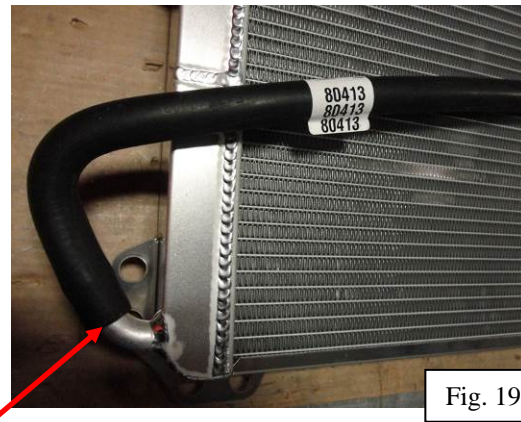


Fig. 19



Fig. 20

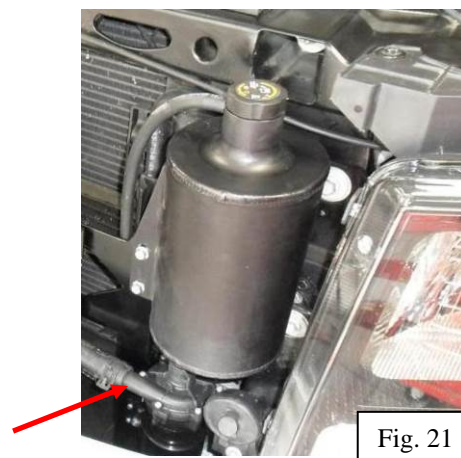


Fig. 21

17. If you purchased an 80284NDP (non-fan Heat exchanger) skip to step 25.

18. Remove the 10mm bolt holding the passenger side head light in place (Fig. 22). The wire harness relays will attach using this bolt. Some tape may have to be removed from the harness to allow more slack in the wires for the relays. Attach the relays as shown (Fig. 23).

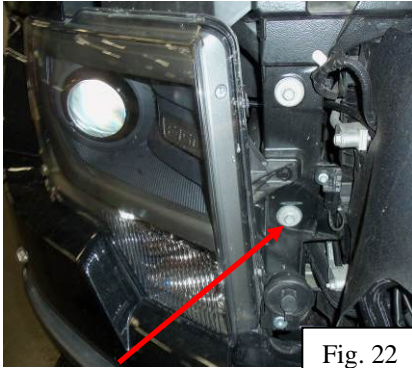


Fig. 22

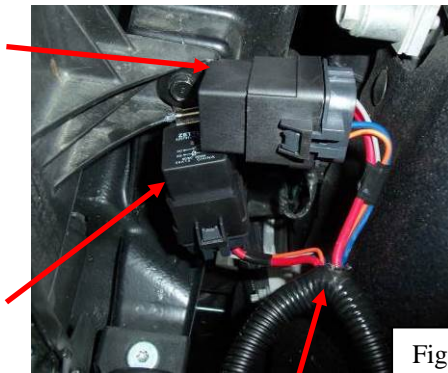


Fig. 23

19. Route the positive leads with the fuses through the opening in the radiator support and attach the fuse holders to the hole in the radiator with the supplied zip ties (Fig. 24-25).



Fig. 24

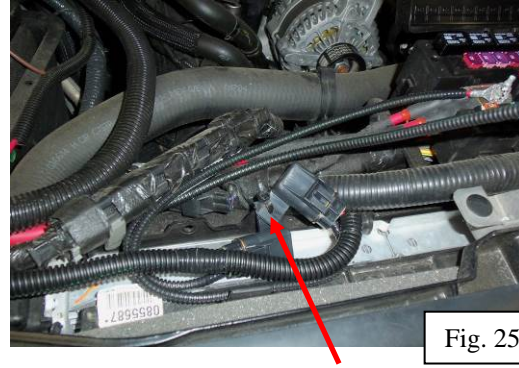


Fig. 25

20. Open the fuse box and remove the 10mm nut holding the main power wires to the fuse box. Attach both power leads from the wire harness to the main wire lead of the fuse and tighten the 10mm nut (Fig. 26).

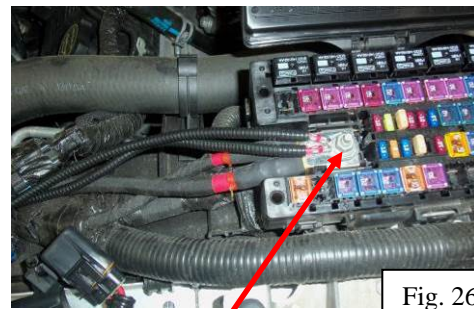


Fig. 26

21. The rest of the wire loom from the relays needs to be routed down and through the rubber air deflector below the heat exchanger (Fig. 27).



Fig. 27

2010 & Up Raptor/F150 Heat Exchanger for Whipple



22. Remove the 8mm bolt holding the power steering lines to the cross member (Fig. 28). Attach the gray and black ground wires from the relays using the 8mm bolt. Tighten the bolt. Zip tie the wires to the factory wire harness that is along the frame rail.

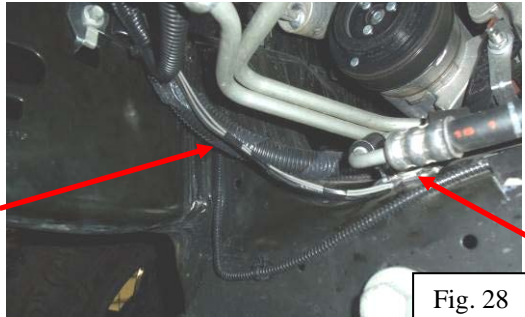


Fig. 28

23. Route the orange wire through the hole in the rubber air deflector towards the coolant pump (Fig. 29). The orange wire may have to be removed from part of the wire loom in order to reach the coolant pump. Cut the power wire (white and green wire) approximately 3" from the pump connector (Fig. 30). Insert the two ends of the power wire from the coolant pump and the orange wire into the clear 3M Scotchlock 3-way splice connector supplied (Fig. 31). 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. Be sure the wires are inserted completely. Using slip joint pliers (or similar tool) press the 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. Zip tie the wires and connector to the wire loom.

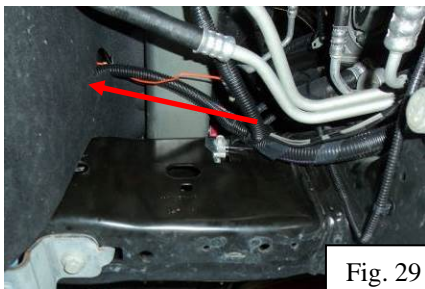


Fig. 29



Fig. 30



Fig. 31

24. Route the fan leads through the center hole in the rubber air deflector (Fig. 32). Connect the weatherpack plugs from the harness to the ones on the fans. The order does not matter. Zip tie the wires out of the way (Fig. 33).

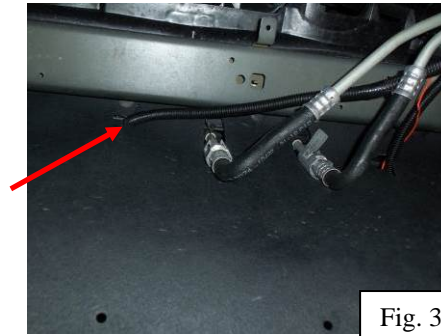


Fig. 32

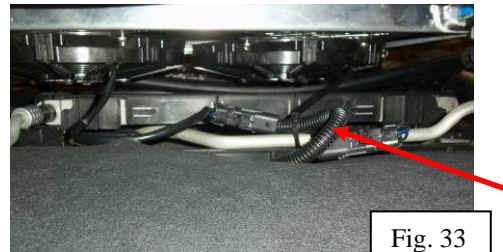


Fig. 33

25. Reconnect the negative battery terminal.

26. Fill the heat exchanger reservoir with the recommended coolant. The AFco heat exchanger will hold approximately 3/4 gallon more coolant. Start the truck and let it idle. The coolant pump and fans should kick on. Once the pump kicks on more coolant will need to be added to the system. Fill the reservoir until a sufficient level is reached. Check the system for leaks while the truck is running. When the fans turn on, hold a rag or piece of paper in front of each fan to verify the fans are pulling the air and not pushing. The rag or paper should pull towards the front of the heat exchanger.

27. Reinstall three plastic clips holding the rubber air deflector in place that is underneath the heat exchanger (Fig. 34).

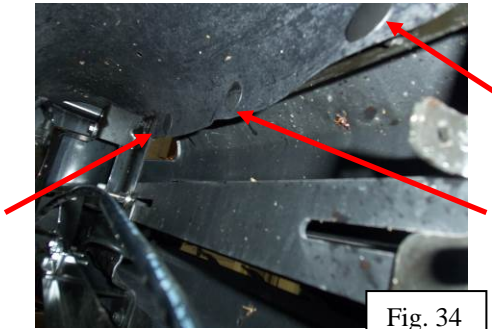


Fig. 34

28. Reinstall the rubber air deflector on the passenger side using the Phillips head plastic snap that was removed (Fig. 35).

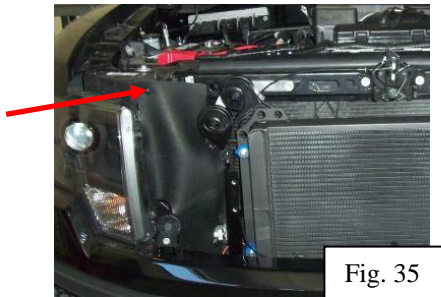


Fig. 35

29. Reinstall the front skid plate and tighten the six 15mm bolts to factory torque specification (Fig. 36).



Fig. 36

30. Check the hood for clearance before closing.

31. The fans are wired to the coolant pump which is controlled by the intake air sensor. The fans and coolant pump may continue to run after the truck is shut off. The fans and pump should not run longer than 5 minutes after the truck has been shut off. (80284PRO only)

