



Instructions for: VMP Dual Fan Triple Pass Heat Exchanger Installation on 2007-2009 Mustang GT500

Parts list for 2007-2009 Mustang GT500:

<u>Part</u>	<u>Quantity</u>
VMP Dual Fan Triple Pass Heat Exchanger	1
Dual Relay Heat Exchanger Harness for '07-'09 GT500	1
Section of 3/4" heater hose	5'
M8x50mm Bolts	4
M8 Nyloc Nuts	4
M8 Sleeves	4
M8 Washers	8
Blue snap on heat exchanger isolators	4
M8 Flange nuts	2
M6 nuts	2
M6 square base bolts	2
Z-Bracket Assembly	1

Tools needed to complete the job:

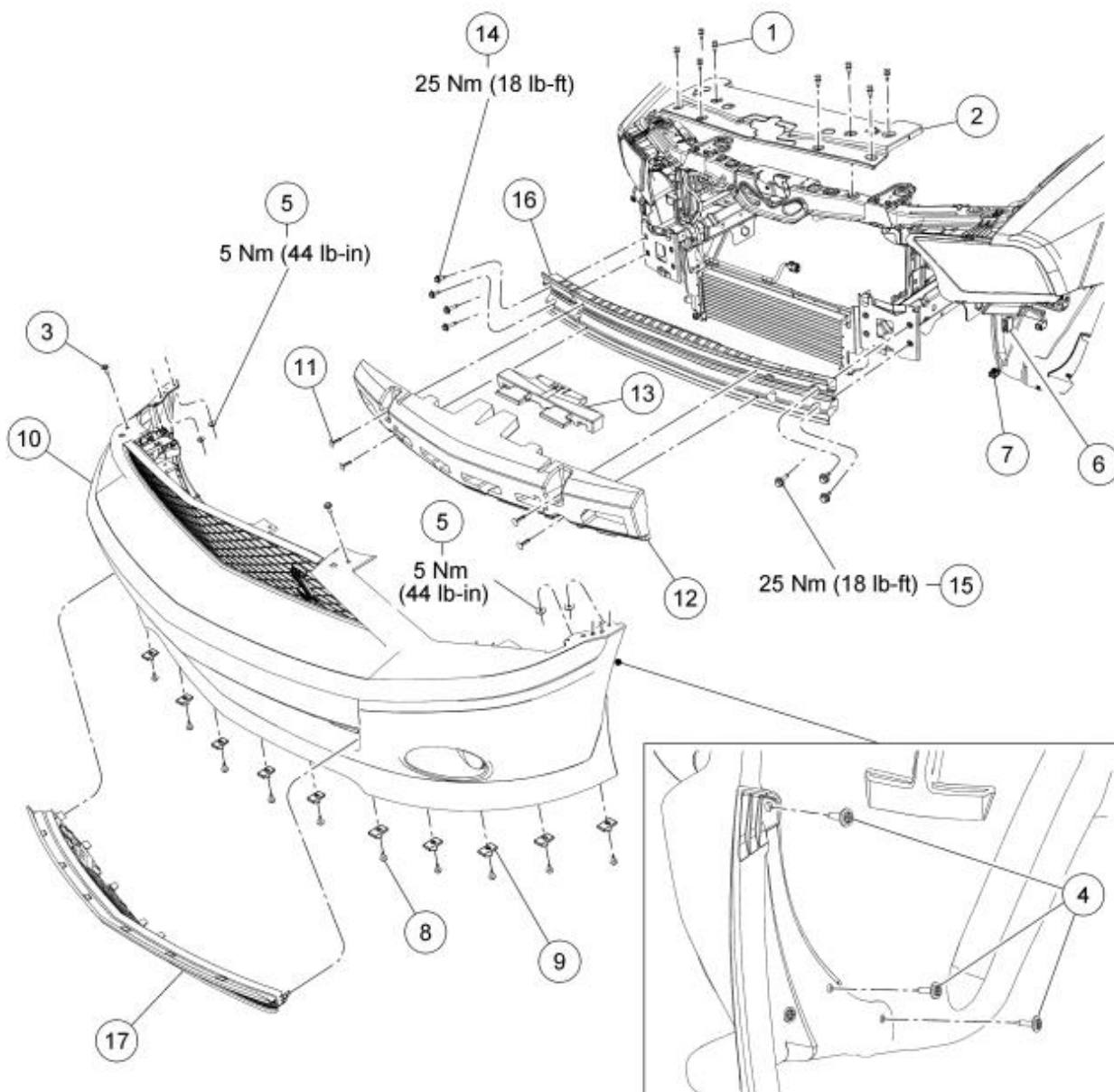
Flat and phillips head screwdrivers	Removal of plastic push pins and screws.
10mm 1/4" drive socket	Removal/install of bolts that retain headlight to the inner fender and bumper bolts.
5.5mm 1/4" drive socket	Removal/install of bolts that retain the splash shield to the radiator support.
1/4" drive ratchet	For driving the aforementioned sockets
13mm 3/8" drive socket	For removing/installing the bolts that retain the bumper support to the frame and heat exchanger mount.
13mm wrench	For removing/installing the nuts on the rear side of the heat exchanger mounting bracket.
3/8" drive ratchet	For driving the aforementioned socket.
Sharp razor and tin snips/ shears	For cutting hose and trimming plastic.
Channel locks/ assorted pliers	For removing/installing the constant tension clamps.

Instructions:

Begin your installation by assuring that you have all of the parts and tools necessary to install the heat exchanger on the vehicle. Make sure to give yourself around 3 hours for the install your first time around. If you find you have any missing parts or need technical assistance please call 321-206-9369 Mon-Thu 9am-5pm and Fri 9am-2pm EST. If it is not within normal business hours please email us at Sales@vmptuning.com and one of our associates will get back with you as soon as possible.

Now that you are sure you have all of the tools necessary to do the job, make sure that the car has been sitting for at least a couple hours as the fluids and hoses can be hot which can add time and pain to the install. Having the front of the car lifted and supported, whether it is ramps or jack stands, will make the installation much easier. It is possible to do without lifting.

-Disconnect the negative battery terminal at this time with an 8mm or 10mm socket/wrench. You will be informed on when to reinstall it.



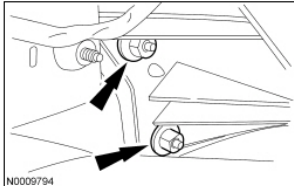
Item	Part Number	Description
1	W705436	Upper radiator sight shield pin-type retainer (8 required)
2	8C291	Upper radiator sight shield
3	W712277	Front bumper cover bolt (upper) (2 required)
4	W706805	Front fender splash shield-to-front bumper cover screws (6 required)
5	W711059	Front bumper cover-to-reinforcement nuts (4 required)
6	—	Side marker light electrical connector
7	—	Fog lamp electrical connector
8	W713519	Lower air deflector bolt (10 required)
9	W713547	Lower air deflector nut (10 required)
10	17D957	Front bumper cover
11	310D12	Front bumper isolator pin-type retainer (4 required)
12	17C882A	Front bumper lower outer isolator
13	17C947	Front bumper pad-impact
14	W711097	Front bumper bolt (outboard) (4 required)
15	W711457	Front bumper bolt (inboard) (3 required)
16	17757	Front bumper
17	17B814	Lower radiator grille

Shelby GT 500

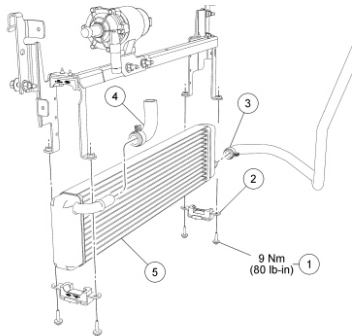
- Remove the 8 pin-type retainers and the upper radiator sight shield.

All vehicles

- Remove the 2 upper front bumper cover bolts.
- Remove the 6 front fender splash shield-to-front bumper cover screws.
- If equipped, remove the 10 lower air deflector bolts.
 - To install, tighten to 2 Nm (18 lb-in).
- Position the front splash shield aside and remove the 4 front bumper cover-to-reinforcement nuts.
 - To install, tighten to 5 Nm (44 lb-in).



- If equipped, disconnect the 2 fog lamp electrical connectors.
- Disconnect the 4 side marker lamp electrical connectors and remove the front bumper cover.
- To install, reverse the removal procedure.



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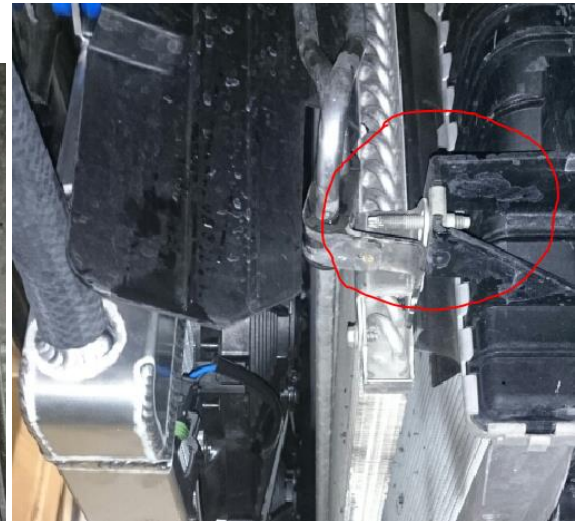
Item	Part Number	Description
1	W505424	Radiator bracket bolt (4 required)
2	8K243	Radiator bracket (2 required)
3	8D030	Radiator-to-Charge Air Cooler (CAC) hose
4	8K236	Radiator-to-coolant pump hose
5	8K229	Radiator

Removal and Installation

- Drain the Supercharger (SC) cooling system. For additional information, refer to [Supercharger Cooling System Draining, Filling and Bleeding](#) in this section.
- Disconnect the radiator-to-Charge Air Cooler (CAC) hose from the radiator and position aside.
- Disconnect the radiator-to-coolant pump hose from the radiator.
- Remove the 4 radiator bracket bolts and the radiator.
 - To install, tighten to 9 Nm (80 lb-in).

-Remove the front bumper, heat exchanger, and intercooler pump using the instructions above.

-Remove the two 10mm nuts that hold the power steering cooler tube on and remove the brackets from the studs as shown.



-Now that everything is out of the way install a single washer on each one of the included M8x50mm bolts. Run the upper bolts for each side in so that appx $\frac{3}{4}$ -1" is protruding from the back side of the bumper support. Run the lower bolts for each side in so that there is no more than a $\frac{1}{4}$ " of protrusion from the back side of the bumper support.

-Install the blue isolators onto the new heat exchanger with the molded in washers facing the forward side(side without fans). After the isolators are fully clipped on, slide the M8 sleeves into all 4 bushings.

-We suggest using an assistant for this step. Now that your heat exchanger is ready to be installed, raise the heat exchanger into position onto the two upper bolts that were left protruding $\frac{3}{4}$ -1" and run these bolts in so that they are protruding through the blue isolators $\frac{1}{4}$ " (push the plastic air deflectors towards the outside of the car on each side so that the heat exchanger can slide up). Install a M8 washer and M8 Nyloc nut on each of the upper bolts and snug them down by hand against the blue isolators(don't run the bolts all the way through at this time). Once the upper nuts are snug slowly start running the lower bolts through(stop at $\frac{1}{4}$ " protrusion through the isolator again) while assuring that they are lined up with the M8 sleeves. If they don't seem to be lined up the heat exchanger brackets are slotted to allow for you to move them to line them up. Once you have $\frac{1}{4}$ " protrusion through the bushing place a M8 washer and M8 Nyloc nut on each of the lower bolts and snug the nuts against the isolator.

-Now that all four nuts are snug against the isolators place a wrench on the nuts and hold them still as you run the bolts the rest of the way through using a 13mm socket and ratchet. These bolts will be tightened to 15 lb-ft. Once the bolts are tight, bring the nuts down the rest of the way using a 13mm wrench(snug with a wrench is fine).

-Once the heat exchanger is tight reinstall the power steering cooler tube. This will be tight on the heat exchanger. It may be easier to put a slight bow on each end carefully by hand and then reinstall it using the stock brackets and nuts.

-Run the passenger side hose(this hose runs from the bottom port on the lower intake to the passenger side upper port of the VMP DFTP HE) over the top of the frame rail and out of the opening just underneath the inboard side of the headlight. Assure that the hose is not contacting any of the belt drive and that it is not binding. We find that this hose usually needs trimmed on the HE side in order to contour the frame rail in such a way that it doesn't stick up too high or bend at extreme angles(kink) by using the premolded bends to your advantage as shown.

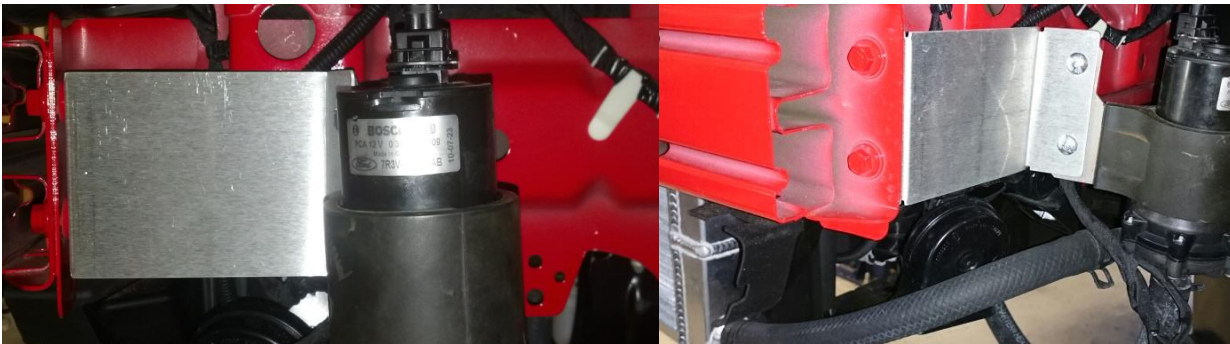
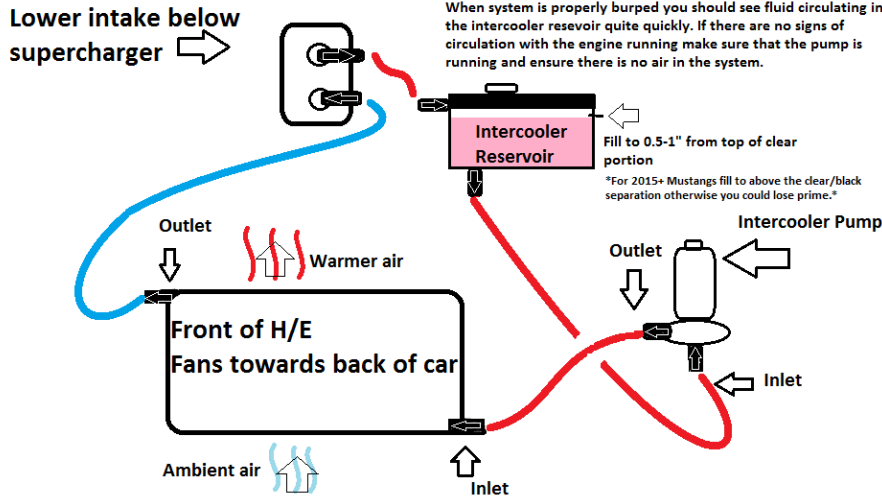


-While on the passenger side of the car now is a good time to install the dual fan heat exchanger harness on the car. First step will be to mount the relays using the two 10mm lower passenger side headlight bolts as shown in the picture below. Orient them as shown. Next, route the 12v(+) wires and fuses through the opening underneath the headlight and route them to the smart junction box positive post while being mindful of the placement of the wires. Then, route the ground(-) wire up to the passenger side of the radiator support where the two pre-existing body grounds are and pick which one you would like to put the harness ground with. Once you are happy with the way those wires are run it is time to move on to the intercooler pump connector. Connect the heat exchanger harness to the intercooler pump connections. Run the wires in a way that satisfies you and use the supplied zip ties to secure them out of the way of any moving parts. Next, connect the heat exchanger fan connectors to your fans. Run the intercooler pump harness to the driver side of the bumper support and connect it once the pump and z bracket are installed.



-Now that all of the heat exchanger harness connectors are connected neatly zip-tie the wiring up and out of the way of moving parts and areas where they can be pinched.



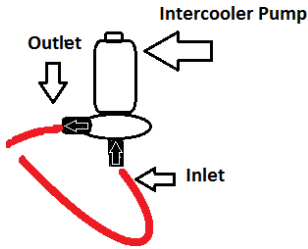


-Mount the provided z-bracket as shown to the bumper support using the two provided M8 nuts. Insert the provided square base bolts into the other end of the bracket. Being careful not to damage the pump, stretch the rubber pump isolator so that you can squirt a very small amount of soapy water in between the isolator and the pump body. This will help rotate the pump inside the isolator to point the pump outlet so that it is facing towards the heat exchanger inlet when it is installed on the car. Mount the pump and bracket on the car by tightening the nuts onto the studs that were installed earlier. At this time install the hose that is coming out of the bottom of the heat exchanger reservoir to the inlet side of the pump. If you are unsure as to the orientation of the inlet and outlet of the pump reference the drawing shown above.

- This step is mainly for people using a 3x capacity reservoir on their GT500. You have two options for this step: Option 1 is to use a piece of the length of hose provided to replace the hose coming out of the supercharger coolant reservoir that will go to the relocated intercooler pump inlet. Option 2 is that you can use the length of hose provided to extend the factory hose by utilizing a 3/4 male to male hose barb/heater hose fitting (found at most local hardware/auto parts stores). Either method will work just fine. Just assure that you route the hose in such a way that you don't incur any hose kinks.

-Now that you have all of the hoses connected it is time to fill the supercharger coolant reservoir. We recommend reusing the factory coolant (make sure that it goes in clean) and fill up the remainder of the way with distilled water. We find that it is best to never fill the reservoir up to the hash marks until the system is burped. Go slowly and as you pour it in you should hear the reservoir (gurgling). When the system stops accepting more coolant and it starts coming up on the hash marks (it may take a moment or two for the level to start dropping again) it is then time to reinstall the negative terminal for the battery and start the car. We do this with the bumper off of the car. If you find you have a leak it is much easier to fix while the bumper isn't on the car. In order to verify that the system is properly burped watch for strong/steady coolant circulation in the reservoir (Please see picture below if you don't see fluid circulation). Once you have verified that the system is burped, verify that your fans are pulling air by throwing a small piece of paper or a shop

towel in front of the heat exchanger(if they are working they will suck them to the face of the heat exchanger). Now shut the car off and fill to the fill line on the reservoir.



If you don't see fluid circulation in your reservoir, when the pump is on, then you have air in your supercharger cooling system. First, check to make sure that all of your hoses have smooth transitions in elevation, and that you have no kinks. If you still have no circulation, remove the clamp from the intercooler pump inlet. With the engine running and pump power connected pull the line off of the pump inlet and quickly reinstall it. You should see fluid circulating through the reservoir now. Reinstall the clamp onto the pump inlet. If this doesn't work the first time try it once more. If it doesn't work the second time either it may be necessary to use a vacuum pump to pull a vacuum on the system.

-Reinstall your front bumper, splash shields, and upper radiator cover (make sure that you reconnect the fog lights and marker lights). Now enjoy all of your new found cooling with your VMP Dual Fan Triple Pass (DFTP) Heat Exchanger (HE)!