

# 2015–2017 MUSTANG GT OIL COOLER

## PARTS LIST & INSTALLATION GUIDE



### PARTS LIST

- 1 PC** | APPLICATION-SPECIFIC MOUNTING BRACKET / AIR DIVERSION SHIELD
- 1 PC** | BAR-AND-PLATE OIL COOLER (SILVER OR BLACK)
- 1 PC** | 2'5" BRAIDED STAINLESS STEEL HOSE W/ -10AN FITTINGS
- 1 PC** | 4'11" BRAIDED STAINLESS STEEL HOSE W/ -10AN FITTINGS
- 1 PC** | M22 THERMOSTATIC SANDWICH PLATE
- 1 PC** | APPLICATION-SPECIFIC, M22 X 1.5 EXTENDED-LENGTH CENTER BOLT
- 2 PC** | M20 X -10AN STRAIGHT FITTINGS
- 2 PC** | 1/8" NPT PLUGS
- 1 PC** | LARGE O-RING
- 1 PC** | LOWER RADIATOR HOSE W/ WORM-GEAR CLAMPS
- 1 PC** | MOUNTING HARDWARE SET

### TOOLS NEEDED

1/4" DRIVE RATCHET	10MM WRENCH	CHANNELLOCK PLIERS
1/4" DRIVE EXTENSIONS	14MM ALLEN KEY OR SOCKET	POP-CLIP PLIERS
5.5MM SOCKET	-10AN WRENCH	FLATHEAD SCREWDRIVER
7MM SOCKET	27MM OR 1 1/16" SOCKET	PANEL TOOL
8MM SOCKET	TORQUE WRENCH	HOSE PICK
10MM SOCKET	OIL FILTER PLIERS OR STRAP WRENCH	FORD-APPROVED ENGINE OIL AND COOLANT
12MM SOCKET		

**INSTALLATION TIME** 3 HOURS

**INSTALL DIFFICULTY**

### DISCLAIMER

- Raise vehicle only on jack stands or on a vehicle lift.
- Allow vehicle to cool completely prior to attempting installation.
- Do not run the engine or drive the vehicle while overheating; serious damage can occur.
- Please dispose of any liquids properly.
- Mishimoto is not responsible for any vehicle damage or personal injury due to installation errors, misuse, or removal of Mishimoto products.
- Mishimoto suggests that a trained professional install all Mishimoto products.

### NOTE

Installing an oil cooler adds additional maintenance to vehicle ownership. All oil line connections should be checked regularly for leaks and then retorqued. The oil filter's center-bolt adapter must be retorqued every time the oil filter is removed.

### INSTALLATION INSTRUCTIONS

- 01.** Set the vehicle on an automotive lift, or raise it with a jack and place it securely on jack stands. Refer to your owner's manual for safe lifting points if you are unsure.
- 02.** Remove the six pop-clips that secure the front splash panel to the underside of the vehicle. (6x pop-clips)



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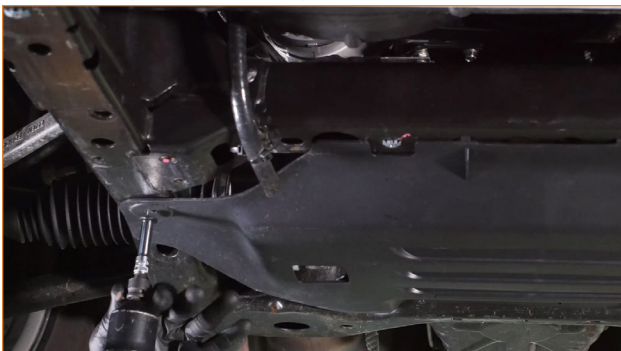
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- 03.** Remove the 16 screws that secure the front splash panel. Then slide the splash panel toward the rear of the vehicle to remove it. (16x 7mm screws)



- 04.** Remove the four screws that secure the rear splash panel to the vehicle. Then remove the splash panel from the vehicle. (4x 7mm screws)

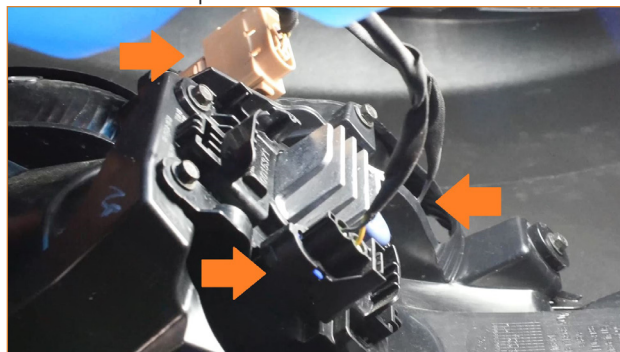


- 05.** Locate the radiator drain on the passenger side of the vehicle. Install a short piece of hose over the drain to avoid spilling coolant. Place a drain bucket under the hose, and loosen the drain plug until coolant flows freely from the hose.



- 06.** Remove the pressure cap from the expansion tank to accelerate the draining process.

- 07.** Reach up behind the bumper to disconnect the electrical harness from the fog light assemblies on both sides of the vehicle. There are a total of six connectors that need to be separated.



- 08.** Remove the pop-clips that secure the fender liners to the front bumper. There are three pop-clips on each side. (6x pop-clips)



- 09.** Pull back on the fender liner to access and remove the bolt that secures the corner of the bumper to the fender. Do this on both sides. (2x 8mm bolts)

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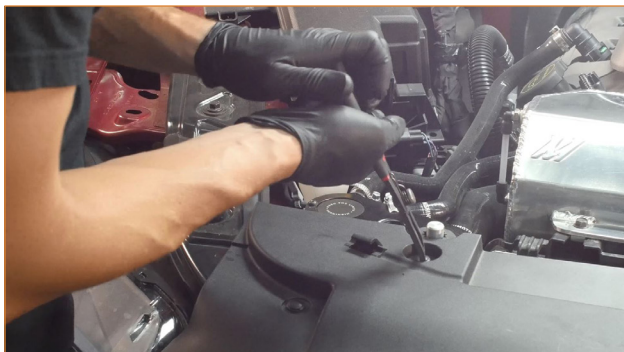


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- 10.** Remove the eight pop-clips that secure the air diversion panel to the upper radiator support. Then remove the air diversion panel. (8x pop-clips)



- 11.** Remove the six screws that secure the top edge of the bumper. (6x 8mm screws)



- 12.** Remove the two small screws that secure the top of the bumper, located just inboard of the headlight assemblies, underneath the hood seal. (2x 5.5mm screws)



- 13.** Pull outward on the bumper where it meets the fender to release it from the vehicle. Do this on both sides.



- 14.** The top edge of the bumper is held on by several plastic studs. Lift the top edge of the bumper to release it from the vehicle. Then remove the bumper by sliding it forward.

- 15.** Loosen the worm-gear clamp that secures the intake pipe to the airbox, and separate the hose from the airbox. (1x worm-gear clamp)

- 16.** Disconnect the two hoses from the intake pipe. To release the hose, depress the lock tab and pull it off.



- 17.** Remove the last hose from the intake pipe by sliding the lock tab down the slot and pulling it off the port.



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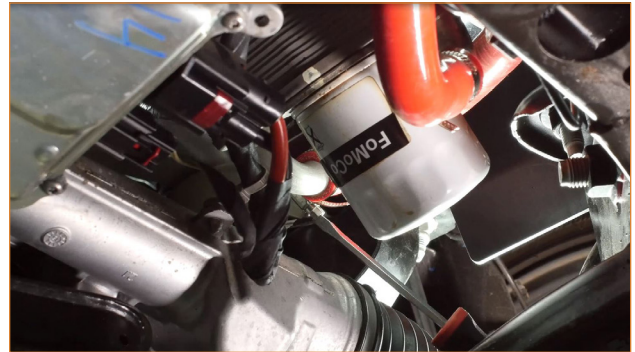
- 18.** Remove the engine cover by lifting it directly upward. The engine cover is secured by four pegs and grommets.
- 19.** Loosen the worm-gear clamp that secures the intake pipe to the throttle body. Then remove the intake pipe. (1x worm-gear clamp)
- 20.** Remove the bolt that secures the airbox to the vehicle. The bolt is located along the driver-side fender. (1x 10mm bolt)
- 21.** Disconnect the mass airflow (MAF) sensor, release the harness tree-clip from the airbox, and move the harness out of the way. Then remove the airbox from the vehicle by lifting it upward. To release the connector, slide the red lock tab away from the connector, then depress the black tab and pull the connector apart. (1x tree-clip)
- 22.** Compress the clamp that secures the lower radiator hose to the water outlet, and slide the clamp down the hose. Then remove the hose from the water outlet. (1x spring-clamp)



- 23.** Stuff a rag or shop towel into the water outlet to keep coolant from dripping on the drive belt while you work.
- 24.** Compress the clamp that secures the lower radiator hose to the radiator, and slide the clamp up the hose. Then remove the hose from the radiator. (1x spring-clamp)



- 25.** Release the quick-disconnect fittings that secure the coolant bypass hoses to the stock oil cooler, and remove the hoses from the oil cooler. To do this, squeeze both of the white plastic tabs, and pull the hose away from the oil cooler. Have a bucket handy, as there will be residual coolant in the oil cooler. Now remove the lower radiator hose from the vehicle.



- 26.** Place a drain pan beneath the oil filter, and remove it from the oil cooler.
- 27.** Remove the stock oil cooler's center-bolt adapter, and then remove the oil cooler. Insert a 14mm Allen key or socket into the center bolt to loosen it.



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**28.** Using a clean rag, wipe off the mating surface on the engine where you removed the stock cooler.

**29.** Lubricate the seal on the Mishimoto sandwich plate with clean oil. Insert the provided center-bolt adapter through the opposite side of the sandwich plate. Install the sandwich plate to the engine, making sure that the seal is between the engine and the sandwich plate. (1x 1" center-bolt adapter)



**30.** Orient the adapter so that the threaded ports on the sandwich plate face toward the front of the vehicle, and torque the center bolt to 30 ft-lb.



**31.** Install the two provided AN fittings to the sandwich plate and tighten them completely. (2x 1" AN fittings)



**32.** Remove the two tree-clips that secure the ducting located just above the crash beam on each side of the radiator. (2x tree-clips)



**33.** Push downward on the lower air diverter to release the six tree-clips that secure it. Once the air diverter is loose, push both radiator ducts inward, and slip the air diverter out to remove it from the vehicle. (6x tree-clips)



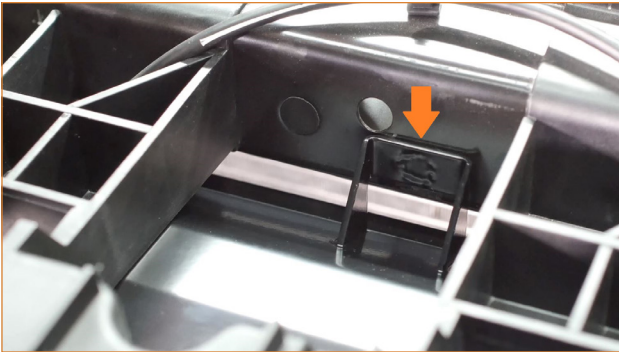
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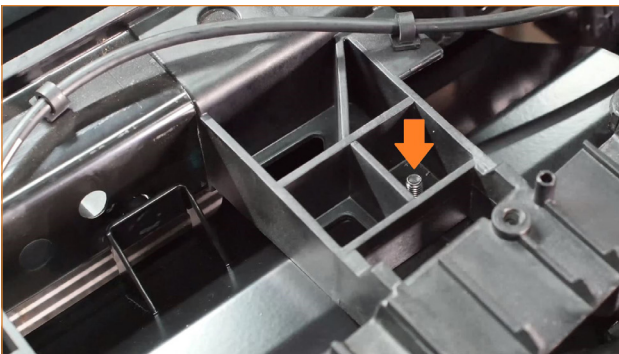


- 34.** Locate the Mishimoto air diverter in your kit, and remove the gasket from the edge to make installation easier. Push the radiator ducts inward, and install the Mishimoto air diverter. Slip the leading edge of the air diverter over the AC condenser, lift the diverter up, and then slip the dowels on the air diverter into the holes in the radiator support. Now go back and reinstall the gasket on the air diverter.

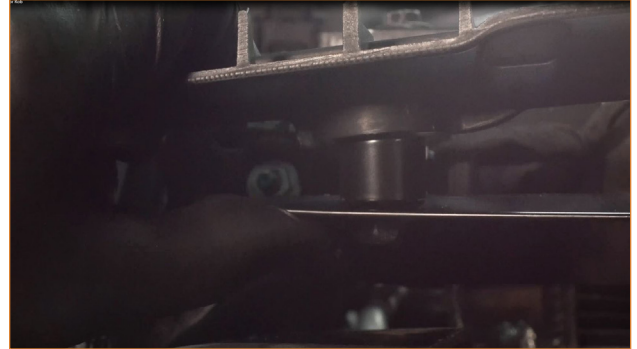


- 35.** Locate the mounting hardware in your kit. The larger, thicker bolts and flat-topped spacers will be used to mount the oil cooler. The short bolts and Nyloc nuts will be used to secure the air diverter to the radiator support. The long bolts and beveled-edge spacers will be used to support the outside edge of the diverter.

- 36.** Secure the air diverter to the radiator support by passing the four short bolts up through the bottom of the diverter. Thread the four nuts on, but do not fully tighten them. (4x 10mm short bolts, 4x 10mm Nyloc nuts)



- 37.** Install the two beveled spacers to the corners of the air diverter, and secure them with the two long bolts. When installing the beveled spacer, make sure that the beveled edge is on top. Loosely thread the nuts onto the bolts, and rotate each spacer until it is flush with both the radiator support and the air diverter. (2x beveled spacers, 2x 10mm long bolts, 2x 10mm Nylock nuts)



- 38.** Fully tighten all the hardware that secures the air diverter to the radiator support. When properly installed, the air diverter mounting pins will be fully engaged with the radiator support, and the gasket on the diverter will be firmly pressed against the radiator.

- 39.** Align the radiator ducts and secure them with the two tree-clips you removed earlier. (2x tree-clips)

- 40.** Attach the Mishimoto oil cooler to the air diverter. Drop one of the large bolts through the slotted hole in the top of the air diverter, and install a flat-topped spacer between the cooler and the air diverter. Do this on both sides. The slotted holes in the air diverter provide adjustability for forced induction setups where an intercooler may get in the way. Snug these bolts, but do not fully tighten them yet. (2x 12mm bolts, 2x flat-topped spacers)



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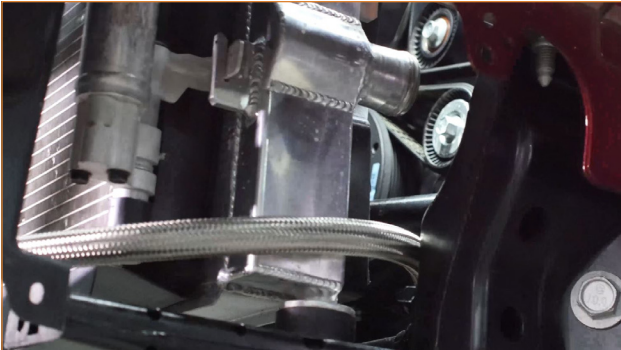


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- 41.** Locate the longer oil line in your kit. Pass the end with the 45° fitting around the driver side of the radiator, underneath the connection for the lower radiator hose. Attach this line to the upper port on the sandwich plate, and tighten it completely.



- 42.** Locate the shorter oil line in your kit. Pass the end with the 45° fitting alongside the line you just installed. Attach this line to the lower port on the sandwich plate, and tighten it completely.

- 43.** Lead the longer oil line up behind the crash beam, and install the 180° fitting to the passenger side of the oil cooler. Position the oil line so that it runs along the upper edge of the oil cooler, and then tighten the fitting.

- 44.** Install the 90° fitting to the driver side of the oil cooler, and tighten it completely.



- 45.** Check the routing of the oil lines to make sure that they are clear of the belt drive and stabilizer bar. If you need to adjust for fitment issues, simply turn the sandwich plate until proper fitment is achieved. Be sure to retorque the center bolt to 30 ft-lb when you are finished.

- 46.** Adjust the fitment of the oil cooler to suit your needs, and then tighten the bolts that secure it.

- 47.** Lubricate the oil filter gasket with fresh engine oil, and install it on the sandwich plate.
- 48.** Locate the new radiator hose in your kit. This hose will replace the one you removed earlier. Slip one of the provided hose clamps over each end of the hose, install the hose on the vehicle, then tighten the clamps to secure it. (2x worm-gear clamps)
- 49.** Install the airbox. Tilt the airbox as you lower it into place so that it clears the air inlet duct. Align the peg on the air box with the hole in the fender, and secure the airbox with the original bolt. (1x 10mm bolt)
- 50.** Connect the electrical harness to the MAF sensor, and secure the connector with the red locking tab. Secure the harness to the airbox with the tree-clip on the wiring harness. (1x tree-clip)
- 51.** Install the intake pipe on the throttle body and the airbox. Connect the three hoses to the intake pipe; simply push them on until they lock on the pipe. Then secure the intake pipe with two worm-gear clamps. (2x worm-gear clamps)
- 52.** Start the engine and allow it to idle for about ten seconds. Shut off the engine and check the oil level. Top off the oil with Ford-approved engine oil. Fill the cooling system with premixed, Ford-approved coolant through the reservoir filler neck, start the engine, and allow it to idle with the cap off. Turn the heat to full hot, and put the fan on low. Inspect all the oil line and sandwich plate connections for leaks while the engine warms up to operating temperature. If oil is leaking from any of the connections, shut off the engine, loosen the leaking connection, and retorque it. Monitor the engine temperature and coolant level in the reservoir. Add coolant as needed to maintain the proper level in the reservoir, and check your connections for leaks. If the vehicle begins to overheat or coolant starts to overflow from the reservoir, shut off the engine and allow it to cool before continuing.
- 53.** Once the vehicle is fully warmed up, allow the vehicle to cool off completely, and then top off the coolant and oil. Coolant level should be checked once more after putting in some miles. Remember that the cooling system should never be opened when the engine is hot.
- 54.** Reinstall the front bumper. Slide the bumper over the nose of the vehicle, and then lift the upper edge to slip the plastic studs into the holes on the bumper.

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- 55.** Align the edge of the bumper with the edge of the fender, and press the bumper in until it locks.
- 56.** Install the two screws that secure the upper corners of the bumper, just inboard of the headlights. (2x 5.5mm screws)
- 57.** Install the six screws that secure the upper edge of the bumper. (6x 7mm screws)
- 58.** Install the upper air diversion panel, and secure it with the eight original pop-clips. (8x pop-clips)
- 59.** Install the two bolts that secure the outside corners of the bumper to the fenders, located behind the fender liner. (2x 8mm bolts)
- 60.** Secure both of the fender liners to the front bumper with the six original pop-clips. (6x pop-clips)
- 61.** Reach up behind the bumper and reconnect the wiring harness to the fog light assemblies on both sides of the vehicle. There are six connectors in total.
- 62.** Install the rear splash panel, and secure it with the four original screws. (4x 7mm screws)
- 63.** Slip the forward splash panel up behind the front bumper, and secure it with the original hardware. (6x pop-clips, 16x17mm screws)

**Congrats! You just finished installing the 2015–2017 Mustang GT Oil Cooler.**



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