

2016+ CAMARO SS OIL COOLER KIT

PARTS LIST AND INSTALLATION GUIDE



PARTS LIST

- 3 PC** | APPLICATION-SPECIFIC MOUNTING BRACKETS W/ CORROSION-RESISTANT MOUNTING HARDWARE
- 1 PC** | HORN-RELOCATION MOUNTING BRACKET
- 1 PC** | 25-ROW OIL COOLER (SLEEK SILVER OR STEALTH BLACK)
- 1 PC** | 4'9" BRAIDED STAINLESS STEEL HOSE WITH 45° AND 90° -10AN FITTINGS
- 1 PC** | 3'9" BRAIDED STAINLESS STEEL HOSE WITH 90° -10AN FITTINGS
- 1 PC** | BANJO FITTING WITH BOLT M20 X -10AN AND DOWTY SEALS, BLACK
- 1 PC** | 45° FEMALE -10AN SWIVEL-TO-MALE ADAPTER, BLACK
- 1 PC** | M22 OIL SANDWICH PLATE (THERMOSTATIC OR NONTHERMOSTATIC)
- 1 PC** | M22 X 1.5 SANDWICH-PLATE ADAPTER
- 1 PC** | M20 X -10AN SANDWICH-PLATE FITTING WITH DOWTY SEAL, BLACK
- 1 PC** | THERMAL HEAT WRAP

TOOLS NEEDED

- | | |
|---------------------------------------|-------------------------------|
| 7MM SHALLOW, DEEP, AND SWIVEL SOCKETS | STRAP WRENCH |
| 10MM SHALLOW AND DEEP SOCKETS | 10MM WRENCH |
| T15 TORX SOCKET | -10 AN WRENCH |
| 1/4" RATCHET | FLATHEAD SCREWDRIVER |
| 1/4" EXTENSION(S) | PANEL TOOL |
| 22MM IMPACT SOCKET | NEEDLENOSE PLIERS |
| 27MM SOCKET | POP-CLIP PLIERS |
| 1" SOCKET | MASKING TAPE |
| 1/2" RATCHET | DRAIN BUCKET |
| TORQUE WRENCH | CHEVROLET-APPROVED ENGINE OIL |

INSTALLATION TIME 2-3 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.

INSTALLATION INSTRUCTIONS

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

- 01.** Remove the two pop-clips that secure the upper edge of the front bumper. (2x pop-clips)
- 02.** Remove the six Torx screws that secure the upper edge of the front bumper. Do not remove the screws that secure the black plastic alignment tabs. (6x T15 Torx screws)
- 03.** Remove the five screws that secure the air diverter to the driver side of the vehicle. Remove the air diverter. Repeat this process on the passenger side. (10x 7mm screws)



- 04.** Remove the eight screws that secure the lower edge of the bumper. (8x 7mm screws)

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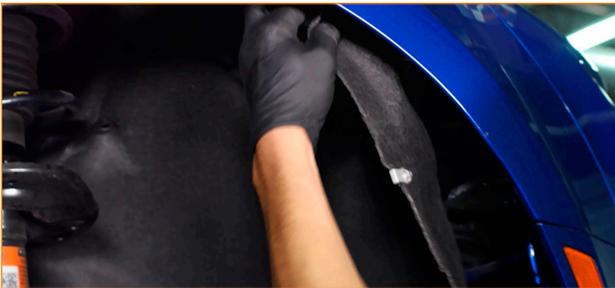


- 05.** Remove the four screws and six bolts that secure the splash panel to the underside of the vehicle. Remove the splash panel. (4x 7mm screws, 6x 10mm bolts)

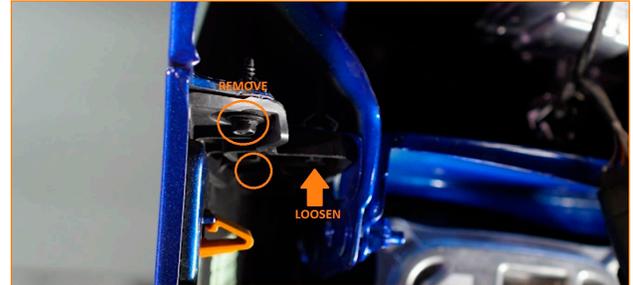


- 06.** Remove the seven Torx screws and one pop-clip that secure the driver-side fender liner to the vehicle. (7x T15 Torx screws, 1x pop-clip)

- 07.** Unseat the liner from the fender, and pull it back to expose the front of the wheel well.



- 08.** Release the two tree clips that secure the lighting harness to the vehicle. Release the harness connector from the body and disconnect it. To release this connector, slide the red lock tab out of the connector and depress the black tab. (2x tree clips)



- 09.** Remove the two screws that secure the bumper to the fender, and loosen the inner screw. (3x 7mm screws)



- 10.** Remove the four screws that secure the bumper to the front edge of the fender. (4x 7mm screws)

- 11.** Pull the upper corner of the bumper away from the fender to release it from the vehicle.

- 12.** Remove the seven Torx screws and one pop-clip that secure the passenger-side fender liner to the vehicle. (7x T15 Torx screws, 1x pop-clip)

- 13.** Unseat the liner from the fender, and pull it back to expose the front of the wheel well.

- 14.** Remove the two screws that secure the bumper to the fender, and loosen the inner screw. (3x 7mm screws)

- 15.** Remove the four screws that secure the bumper to the front edge of the fender. (4x 7mm screws)

- 16.** Pull the upper corner of the bumper away from the fender to release it from the vehicle.

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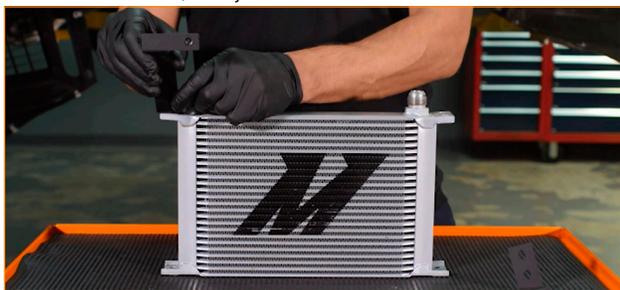
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17. Lift the top edge of the bumper to free it from the alignment tabs.



18. Remove the front bumper by sliding it forward off the nose of the vehicle.
19. Locate the large bracket with the threaded insert in your kit. Attach this bracket to the passenger side of the oil cooler with the provided bolts and nuts, but do not fully tighten yet. (2x 10mm bolts, 2x Nyloc nuts)



20. Locate the angled bracket in your kit. Attach this bracket to the driver side of the oil cooler with the provided bolts and nuts, but do not fully tighten yet. (2x 10mm bolts, 2x Nyloc nuts)



21. Locate the horn assembly on the crash bar, and separate the wiring harness from the stud that secures it. Remove the stud.

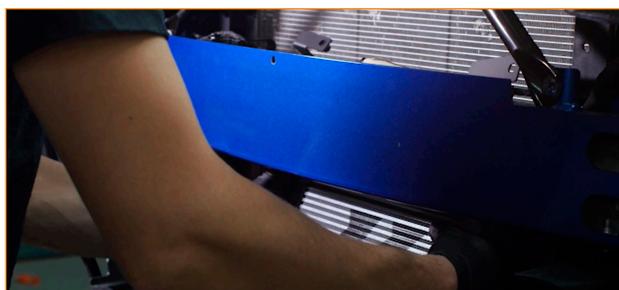
22. Locate the small bracket with the threaded insert in your kit. Lift the horn assembly off the crash bar and install the bracket in its place. Orient the bracket so that the threaded insert faces toward the passenger side, and secure it with the stud you just removed. Reattach the wiring harness to the stud.



23. Place the horn assembly on top of the bracket you just installed, and secure it with the provided bolt. (1x long 10mm bolt)
24. Remove the bolt that secures the bottom of the driver-side support strut. (1x 10mm bolt)



25. Slip the Mishimoto cooler and attached brackets under the crash bar while tilting it up to clear the AC condenser. Align the angled bracket with the support strut, and thread in the bolt that originally held the strut. (1x 10mm bolt)



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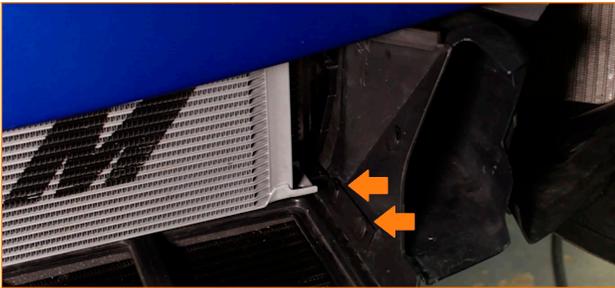
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- 26.** Align the other bracket with the hole in the crash bar, and secure it with the provided bolt and washer. (1x 10mm bolt, 1x plastic washer)



- 27.** Remove the two pop-clips that secure the air diverter to the ducting. Align the remaining bracket in your kit with the holes in the air diverter, and reinstall the pop-clips to secure it. Attach the cooler to the bracket with the provided nut and bolt. (2x pop-clips, 1x 10mm bolt, 1x 10mm nut)



- 28.** Now that all the brackets are attached, go back and tighten all the bolts.
- 29.** Insert a small funnel into one of the oil cooler ports. Slowly fill the oil cooler with GM-approved engine oil until you can see oil rising from the other fitting. The cooler holds less than a quart, so take your time and don't overfill it.
- 30.** Disconnect the wiring harness from the mass airflow (MAF) sensor. To release the connector, slide the red lock tab out of the connector and depress the black tab.



- 31.** Disconnect the CCV hose from the intake. Depress the gray tab to release the fitting.



- 32.** Compress the clamp that secures the sound-generator hose to the intake, and separate the hose.



- 33.** Loosen the clamp that secures the intake hose to the throttle body, and separate the hose from the throttle body.

- 34.** Unlock the clip that secures the sound-generator hose to the airbox, and lift the hose out of the clip.



- 35.** Remove the airbox and intake hose from the vehicle by lifting the airbox upward. The airbox is held in by only pegs and grommets.

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- 36.** Remove the four bolts that secure the radiator stays to the vehicle, and then remove the radiator stays. [4x 10mm bolts]



- 37.** Place a drain bucket underneath the vehicle and remove the oil filter. Wipe the mating surface with a clean rag.
- 38.** Locate the sandwich plate and the centerbolt adapter in your kit. Lubricate the gasket on the sandwich plate with fresh oil, and slip the female end of the adapter through the other side of the plate. Install the sandwich plate to the oil filter pedestal, and secure it with the centerbolt adapter. When properly installed, the threaded ports on the sandwich plate should face away from the engine. Using a torque wrench, tighten the centerbolt adapter to 30 ft-lb.



- 39.** Locate the straight fitting in your kit, and attach it to the port on the sandwich plate that is closest to the front of the vehicle. Torque this fitting to 15–25 ft-lb. [1x 1" AN fitting]
- 40.** Locate the banjo fitting in your kit and thread it into the other port on the sandwich plate, but do not fully tighten it yet. Torque this fitting to 15–25 ft-lb. [1x 27mm banjo fitting]



- 41.** Locate the oil line with two 90° fittings in your kit. Gently push back on the radiator, and lead one end of this hose between the radiator and the radiator support.



- 42.** Locate the oil line with a 45° fitting in your kit. Lead this end past the radiator alongside the first hose.
- 43.** Locate the 45D AN fitting in your kit, and install it to the driver-side fitting on the oil cooler. The threaded end of this fitting should face toward the center of the vehicle.



- 44.** Pull the hose with the 45° fitting past the radiator so that you have some length to work with. Lead it behind the support strut, and attach it to the passenger-side fitting of the oil cooler.
- 45.** Lead the other hose in a similar way, and attach it to the 45° fitting that you previously installed on the driver-side of the oil cooler.



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- 46.** Locate the free end of the oil line that is attached to the driver side of the oil cooler. Pass this line underneath the AC line, down between the frame rail and the steering column. From underneath the vehicle, lead the line so that it passes in front of the engine mount. Attach this line to the straight fitting on the sandwich plate and tighten it.



- 47.** Lead the other oil line alongside the first; however, this line will pass on the other side of the engine mount, toward the rear of the vehicle. Attach this line to the banjo fitting on the sandwich plate. Adjust the orientation of the banjo fitting to provide maximum clearance between the steering shaft and the oil line. Then tighten the banjo bolt and the oil-line fitting.



- 48.** Locate the heat wrap in your kit. Be sure to wear gloves when handling it, as this material contains fiberglass that can irritate your skin. Install the heat wrap around the lower oil line, and then pull back the strip that covers the adhesive to secure the wrap. Slide the heat wrap down the hose to protect it from the boot on the steering column.



- 49.** Reinstall the radiator stays, and secure them with the four original bolts. (4x 10mm bolts)
- 50.** Reinstall the oil filter.
- 51.** Visually inspect the oil lines to ensure that they will not contact the steering shaft.
- 52.** Reinstall the airbox and intake tube. Lower the airbox into place, and press it down to engage the mounting pegs. Secure the sound-generator tube with the clip on the airbox. Reattach the CCV hose, and install the intake hose over the throttle body. Squeeze the clamp on the sound-generator hose, and install the hose over the port on the intake tube. Tighten the clamp that secures the intake tube to the throttle body. Reconnect the wiring harness to the MAF. (1x spring clamp, 1x worm-gear clamp)
- 53.** Check the level of the engine oil, and top it off as needed. Start the engine and allow it to idle for a few seconds. Then shut off the engine and check the oil level once more. Start the engine again and allow it to warm up to operating temperature. While the vehicle is warming up, inspect all the oil-line connections, the sandwich plate, and the oil filter for leaks. If oil is leaking from any of the connections, shut off the engine. Loosen the leaking connection and retorque it. Once the vehicle is fully warmed up, shut off the engine and check the oil once more.
- 54.** Apply masking tape to the edges of the fenders to protect the paint while you reinstall the bumper.
- 55.** Install the front bumper. Align the pins on the bumper with the holes in the fender as you slide the bumper over the nose of the vehicle. Lift the top edge of the bumper over the alignment tabs.
- 56.** Install the eight screws that secure the bumper to the front edge of the fenders. (8x 7mm screws)
- 57.** Check the fender gap on both sides, and then remove the masking tape.
- 58.** If the bumper retention clip came out of the fender during disassembly, simply hook it back into the fender and thread in the screw to retain it.
- 59.** Install the six screws that secure the bumper to the bottom of the fenders. (6x 7mm screws)
- 60.** Reconnect the lighting harness, lock the connector with the red tab, and secure it to the vehicle with the integrated tree clips. (2x tree clips)
- 61.** Push the fender liners back into place, and make sure that the edges are fully seated behind the ducting. Secure both liners with the original screws and two clips. (14x T15 Torx screws, 2x pop-clips)

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- 62. Install the splash panel to the underside of the vehicle, and secure it with the original screws and bolts. (4x 7mm screws, 6x 10mm bolts)
- 63. Install both air diverters, securing each one with five original screws. (10x 7mm screws)
- 64. Install the four screws that secure the splash panel to the fender liner. (4x 7mm screws)
- 65. Install the eight screws that secure the front edge of the bumper. (8x 7mm screws)

- 66. Install the two pop-clips that secure the upper edge of the front bumper. (2x pop-clips)
- 67. Install the six screws that secure the upper edge of the bumper. (6x 7mm screws)

Congrats! You just finished installing the 2016+ Camaro SS Oil Cooler Kit.

