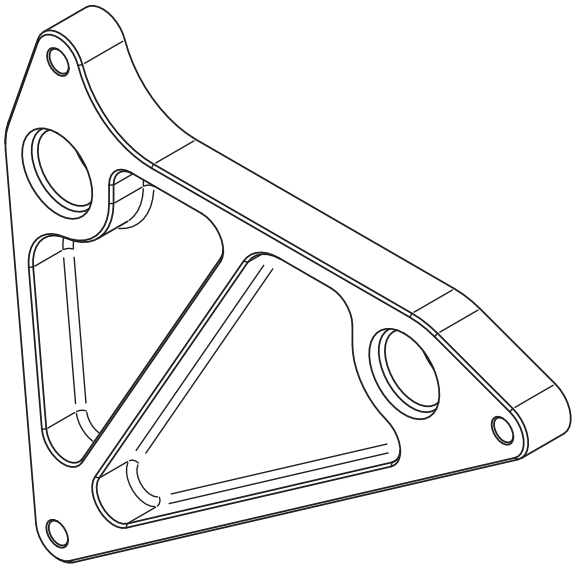
2016+ CAMARO SS/ZL1 & CTS-V OIL COOLER ADAPTER

PART NO. EGM-136

MADE IN USA



Important: Read these instructions in their entirety prior to installation

For contact information, visit www.improvedracing.com

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APPLICATIONS

- 2016-2019 Cadillac CTS-V
- 2016-2024 Chevrolet Camaro V8
- All LT1 / LT4 crate engines with GM oil pan part number 12639931

SCHEMATIC, PARTS LIST & HARDWARE

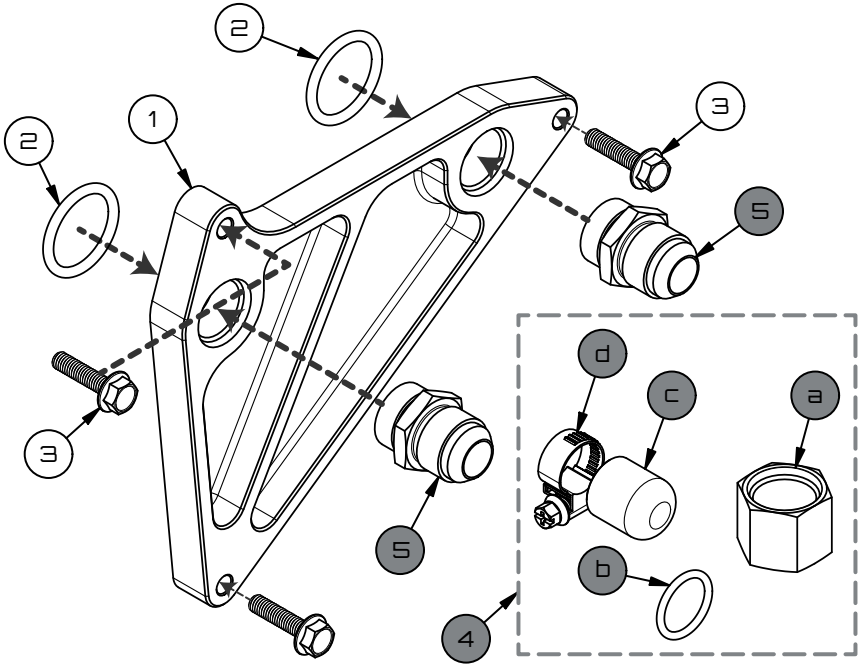


Figure 1 - EGM-136 Schematic

Item	Qty	Part Number	Description
1	1	EGM-136	Oil Pan Adapter
2	2	HRG-1023	Adapter O-ring
3	3	HSC-1056	Mounting Screw
4	1	E6G-680	Optional Factory Oil Cooler Line Delete Kit
5	2	OM-10-XX	Optional Adapter Fittings

E6G-680 is required for crate engines still using the factory Camaro / CTS-V water pump housing to cap the fitting shown in Figure 2.

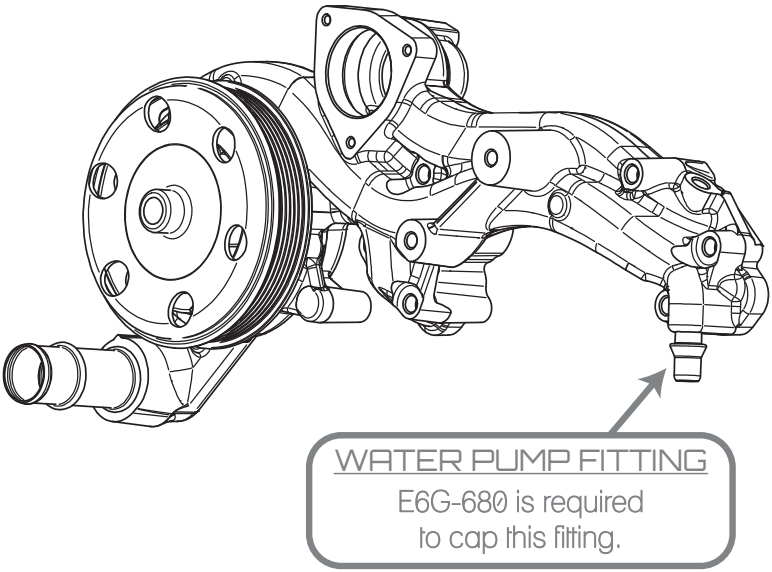


Figure 2 - Factory Water Pump Connection

Optional E6G-680 Hardware Pack Contents			
Item	**Qty**	**Part Number**	**Description**
a	1	OC-10	-10 SAE ORB Cap
b	1	HRG-0910	-10 SAE ORB O-ring
c/d	1	HPL-3010	$^{5}/_{8}$ in ID Rubber Cap with Hose Clamp

TECHNICAL SPECIFICATIONS

Maximum Operating Temperature	302°F (150°C)
Minimum Operating Temperature	-22°F (-30°C)
Maximum Operating Pressure	300 psi (20.68 bar)
Dimensions (W x H x D)	7.0 in x 6.1 in x 0.6 in (17.8 cm x 15.5 cm x 1.5 cm)
Fitting Ports	-10 SAE J1926-1 Straight Thread O-ring Port, $^{7}/_{8}$-14 UNF
Weight (Adapter Only)	10.5 oz (298 g)
EGM-136 Material	CNC-Machined 6061-T6 Billet Aluminum
EGM-136 Finish	MIL-A-8625, Type II, Black Anodizing

INSTALLATION INSTRUCTIONS

PREPARING FOR INSTALLATION

⚠ **WARNING: NEVER work under a vehicle supported only by a jack.**

⚠ **WARNING: NEVER cap / plug the oil ports on the EGM-136 adapter.**

⚠ **WARNING: Capped / plugged oil ports block oil flow in the engine and may result in catastrophic engine damage.**

💡 Use a union to loop the lines or create a new line to join the ports if servicing or removing the oil cooler from the vehicle.

⚠ **WARNING: Only qualified mechanics should install this part.**

⚠ **WARNING: Improper installation may result in severe engine damage.**

💡 Lubricate adapter fitting flares for a better seal.

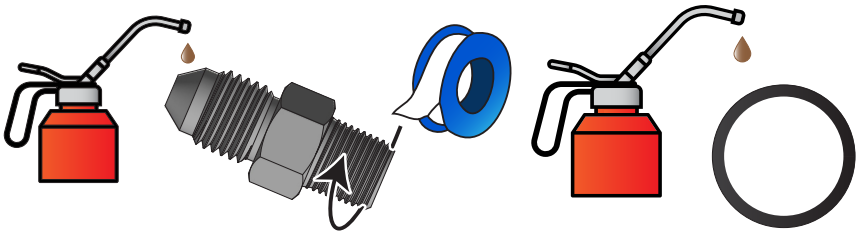
💡 Wrap tapered pipe threads (NPT, FNPT, MNPT) with Teflon (PTFE) tape or apply thread sealant to seal the threads.

💡 Lubricate every O-ring to prevent damage and ensure a leak-free seal.

⚠ **Never secure hoses to moving components.**

💡 Use zip-ties and P-clamps to stop oil lines from rubbing against the exhaust, engine, suspension components and chassis.

💡 Use aluminum tools to avoid damaging fittings.



REMOVING THE FACTORY OIL COOLER

💡 Crate engine customers can skip the draining steps in this section and proceed with removing the pan-mounted oil cooler and line(s).

1. Raise the vehicle and support with automotive-use approved frame stands, lift, or ramps.
2. Remove all underbody panels required to gain access the oil pan and radiator.

3. Place a drain pan under the oil filter and remove the filter.

Oil may be hot!

4. Place a drain pan under the factory oil cooler.
5. Use a 10 mm tool to partially loosen all four M6 screws securing the factory oil cooler to the oil pan.
6. Allow the oil to drain out.

Oil may be hot!

7. Starting at the pan-mounted oil cooler, trace the coolant lines to the connections on the water pump and lower radiator hose: These will be removed
8. Use a pry tool to remove each of the retaining rings from the factory oil cooler fittings as shown in Figure 3.

Save one retaining ring for installing the new oil pan adapter.

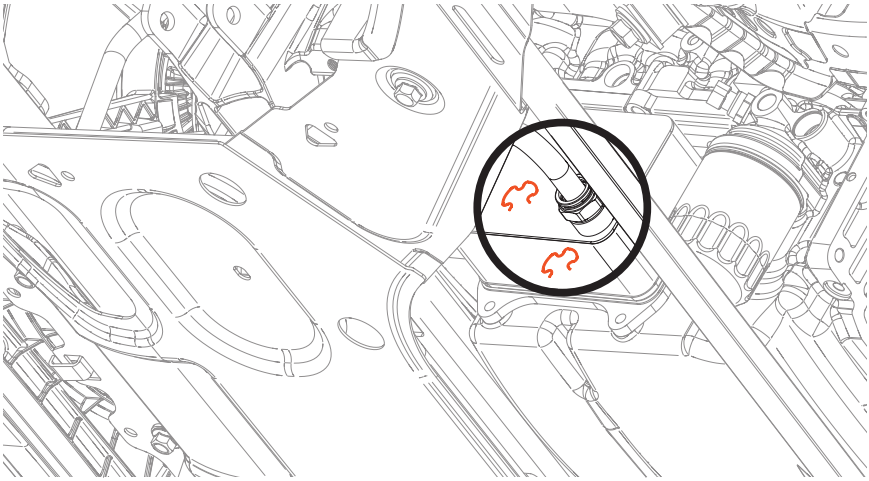


Figure 3 - Removing the Retaining Rings from the Oil Cooler Fittings

9. Use a prying tool to remove the retaining ring from the water pump fitting.
10. Use channel-lock pliers to release the hose clamp on the tee fitting of the lower radiator hose and slide it down the hose.
11. Place a drain pan underneath the oil cooler and remove both hard tubes from the oil cooler fittings and allow the coolant to drain.
12. Use a 10mm tool to temporarily tighten the M6 oil cooler screws.
13. Use a 1-$^{1}/_{8}$" tool to remove one fitting from the oil cooler.

14. Use a 10 mm tool to remove all M6 screws securing the factory oil cooler to the oil pan and remove the oil cooler.

PREPARE THE CAP FITTING

1. Remove the used O-ring on the factory fitting and replace it with the new O-ring from the E6G-680 hardware kit, as shown in Figure 4.

Don't have the required fitting for capping the coolant port on the water pump? Purchase GM part # 12662820 from your local dealer or online.

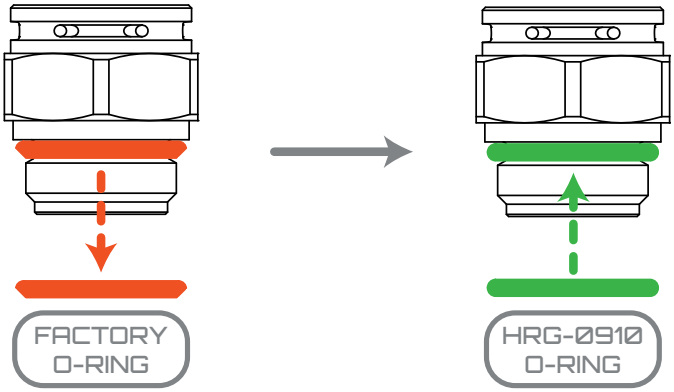


Figure 4 - Installing the HRG-0910 Replacement O-Ring on Factory Fitting

2. Assemble the included cap and the factory oil cooler fitting as shown in Figure 5.
3. Torque the parts to 20 lb-ft (27 N-m) using a vise and 1-$^{1}/_{16}$" or 1-$^{1}/_{8}$" tool, depending on which side is in the vise.

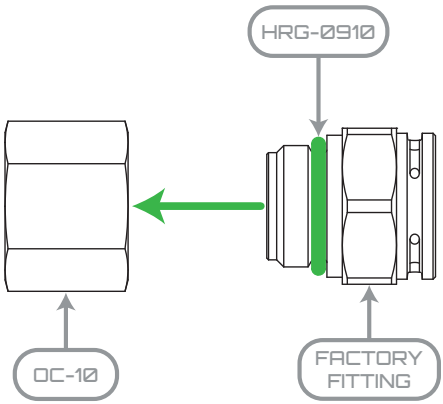


Figure 5 - Installing the Factory Fitting into OC-10

CAPPING THE FACTORY CONNECTIONS

1. Remove the rigid coolant tube from the water pump and quickly cap the connection with the fittings assembled in the last step.
2. Reinstall the retaining ring previously set aside to permanently secure the cap onto the water pump.
3. Use hose pliers to gently remove the other oil cooler line from the lower radiator hose tee.
4. Quickly cap the connection with the rubber cap and stainless steel hose clamp, supplied with the E6G-680 hardware kit.
5. Use a 7 mm ($^{9}/_{32}$") tool to secure the by tightening the stainless steel hose clamp to no more than 20 lb-in (2.3 N-m).

⚠ **DO NOT over-tighten.**

INSTALLING THE OIL COOLER ADAPTER

1. Confirm both O-rings are inside the glands of the adapter.

💡 Refer to Figure 1.

2. Use a 10 mm tool to secure the adapter to the oil pan using the supplied M6 flange screws.
3. Torque to 10 lb-ft (13 N-m).
4. Install the adapter fittings into EGM-136.
5. Torque to 20 lb-ft (27 N-m).

INSTALLING THE OIL COOLER

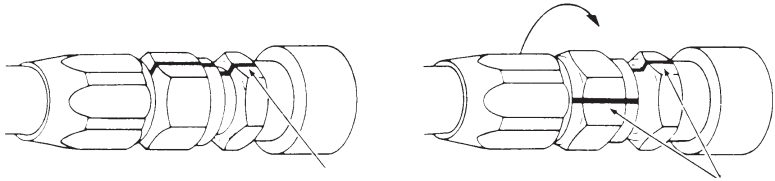
6. Secure the oil cooler to the vehicle.

💡 Confirm the oil cooler is isolated from vibration.

7. Measure and assemble the oil cooler system lines.
8. Connect the oil lines.

💡 Attempt to pre-fill the oil cooler when possible.

9. Connect and torque the hose ends according to the steps below for your line size:
    a. Hand tighten the fittings.
    b. Mark the flats as shown in Figure 6.
    c. Tighten according to the table below.



Mark a line on the nut and adapter before torquing.

Misalignment of the mark shows the amount which the nut was tightened.

Figure 6 - Marking the Fittings for Correct Tightening

Size	Number of Hex Flat Rotations
-10	1.25 to 1.75
-12	1 to 1.5

COMPLETING THE INSTALLATION

1. Pre-fill a new oil filter, lubricate the seal and install the oil filter according to the proper manufacturer specification.

⚠ **Never overtighten an oil filter.**

2. Check the engine oil level and add oil if necessary.
3. Check the engine coolant level and add coolant if necessary.

Refer to the factory service manual.

4. Prime the oiling system according to the factory service manual.
5. Start the engine and inspect for oil leaks.

Confirm oil pressure is stable and reading the correct value.

6. Turn off the engine.
7. Confirm oil and coolant levels are within spec.
8. Reinstall all underbody panels and lower the vehicle back onto the ground.
9. Inspect all parts for loosening or leaks after one heat cycle and again after 100 miles of driving.

Installation is now complete. Thank you for purchasing an Improved Racing product!