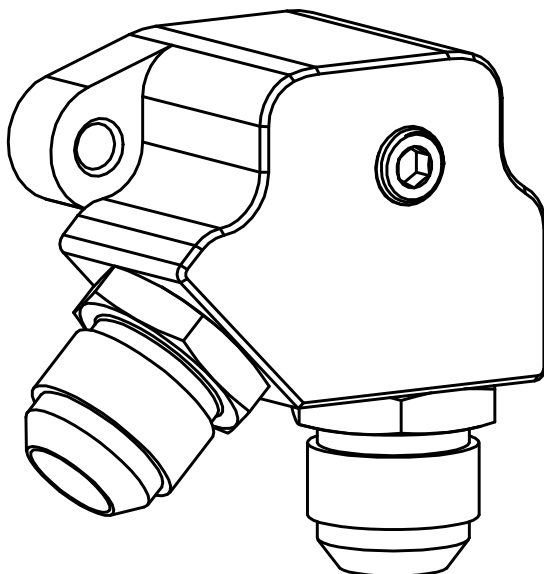




**LS ENGINE OIL COOLER ADAPTER FOR  
PONTIAC GTO / HOLDEN COMMODORE  
& REAR SUMP OIL PANS**

**PART NO. EGM-107**

MADE IN USA



**Important: Read these instructions in their  
entirety prior to installation.**

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APPLICATIONS

- 2004-2006 Pontiac GTO / VT-VZ Holden Commodore
- 1997+ aluminum and iron block GM LS and Vortec family engines (Gen III & IV) with front-sump and rear-sump oil pans including LS1, LS6, LS2, LS3, LS7, L76, L92, L93, LQ4, LQ9, LS9, LSA and LSX.

GTO / COMMODORE PART LIST & SCHEMATICS

- Figure 1 is a general assembly schematic that shows the parts listed in this section’s table for GTO / Commodore applications.
- Figure 1 also shows the plumbing for the -8 SAE O-ring ports.

ITEM	QUANTITY	PART #	DESCRIPTION
1	1	EGM-107	LS Oil Cooler Adapter
2	1	HGA-1000	LS Oil Pan Bypass Cover Gasket
3	1	PP-02	Pre-Sealed 1/8" NPT Plug
4	2	HWA-1003	M6 Washer
5	2	HNT-1002	M6x1.00 Nut
6	2 (OPTIONAL)	OM-08-XX	-8 SAE ORB Adapter Fitting
7	1 (OPTIONAL)	EGM-107-PSB	Pontiac GTO / Holden Commodore Power Steering Relocation Bracket

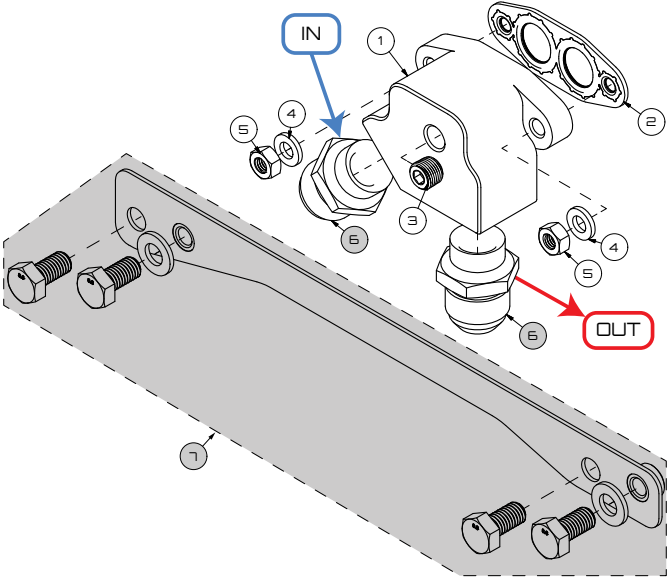


Figure 1 - GTO / Commodore Assembly, Parts & Plumbing

# REAR SUMP PART LIST & SCHEMATICS

- Figure 2 is a general assembly schematic that shows the parts listed in this section’s table for rear sump applications.
- Figure 2 also shows the plumbing for the -8 SAE O-ring ports.

ITEM	QUANTITY	PART #	DESCRIPTION
1	1	EGM-107	LS Oil Cooler Adapter
2	1	HGA-1000	LS Oil Pan Bypass Cover Gasket
3	1	PP-02	Pre-Sealed 1/8" NPT Plug
4	2 (OPTIONAL)	OM-08-XX	-8 SAE ORB Adapter Fitting
5	2	HWA-1003	M6 Washer
6	2	HSC-1033	M6x1.00x20 Socket Screw

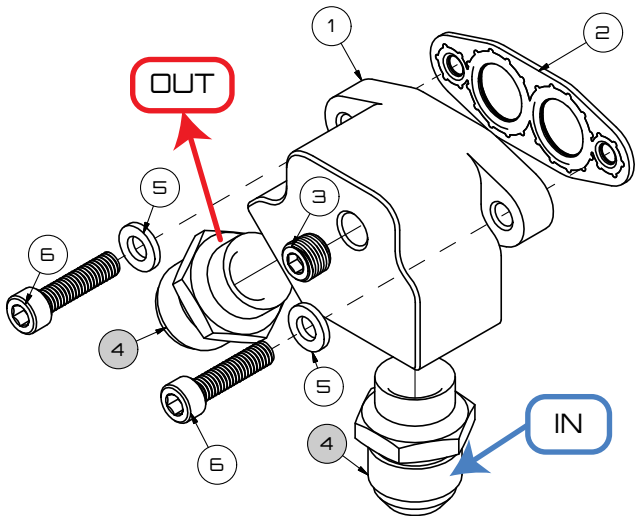


Figure 2 - Rear Sump Assembly, Parts & Plumbing

## INSTALLATION INSTRUCTIONS

- This product should only be installed by a qualified mechanic.
- Improper installation could result in severe engine damage.

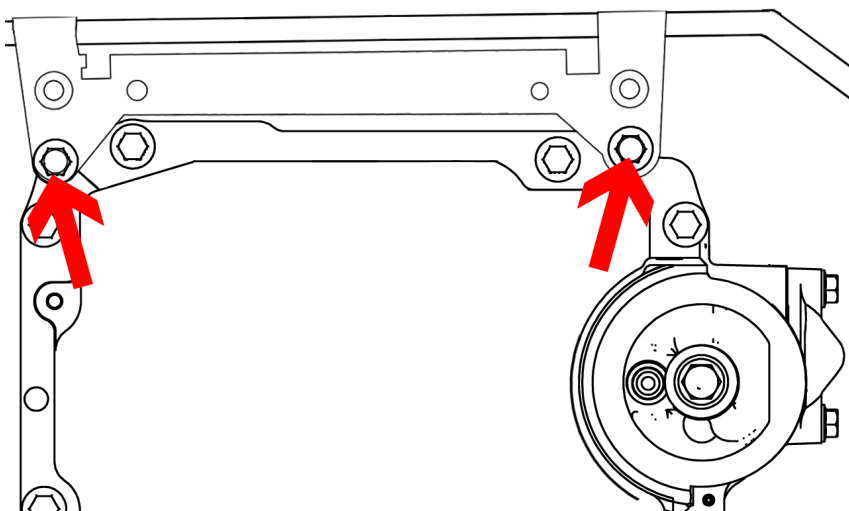
## PREPARING FOR INSTALLATION

1. Raise the vehicle and support with automotive-use approved frame stands, lift, or ramps.
- NEVER work under a vehicle supported only by a jack.

2. Remove any necessary fascia panels to access the oil pan and filter.
3. Place a drain pan underneath the oil filter and remove the oil filter.

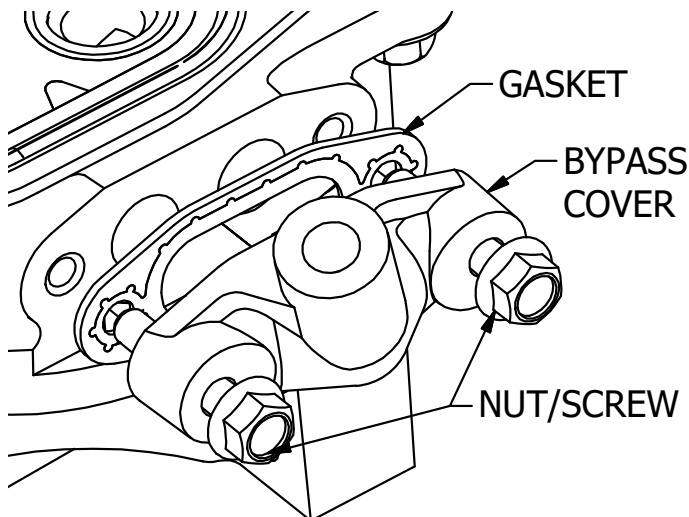
**⚠ Oil may be hot!**

4. 2004-2006 Pontiac GTO / Holden Commodore (VY-VZ) & applicable front sump pans:
  - a. Locate factory power steering line bracket screws, indicated by arrows in Figure 3.



**Figure 3 - Removing the Factory Power Steering Bracket Screws**

- b. Use a 13 mm tool to remove the two screws shown in Figure 3.
      - 💡 This allows for play in the factory power steering line bracket to install the adapter.
      - 💡 Installed in the next section, EGM-107-PSB (#7 in Figure 1) permanently relocates the factory power steering line bracket away from EGM-107.
5. Use a 10 mm tool to remove the two bypass cover flange nuts / screws from the oil pan.
  - 💡 Be sure to remove the factory gasket shown in Figure 4.



**Figure 4 - Removing the Bypass Cover & Hardware**

6. Measure and assemble oil cooler system lines. Leave the lines disconnected from the adapter and oil cooler.



Improved Racing recommends using a 45° fitting on the angled port and a 90° fitting on the bottom port.

## INSTALLING THE OIL COOLER ADAPTER

7. Use a  $\frac{3}{16}$ " hex tool to install the provided NPT plug into the oil cooler adapter.



When installing a sensor into EGM-107 refer to the instructions for that product.

8. Lubricate the adapter fitting O-rings with oil and install the fittings into EGM-107. Torque the fittings to 23 lb-ft (31 N-m).
9. Install EGM-107 onto the oil pan:

- a. **GTO / Commodore:**

- i. Install the HGA-1000 gasket over the oil pan studs.
- ii. Manipulate the power steering line and install EGM-107 onto the oil pan studs using HWA-1003 and HNT-1002 as shown in Figure 1.
- iii. Torque the nuts to a maximum of 120 lb-in (10 lb-ft)



Use an open-end 10 mm wrench and E6 Torx socket.

**b. Rear sump oil pans:**

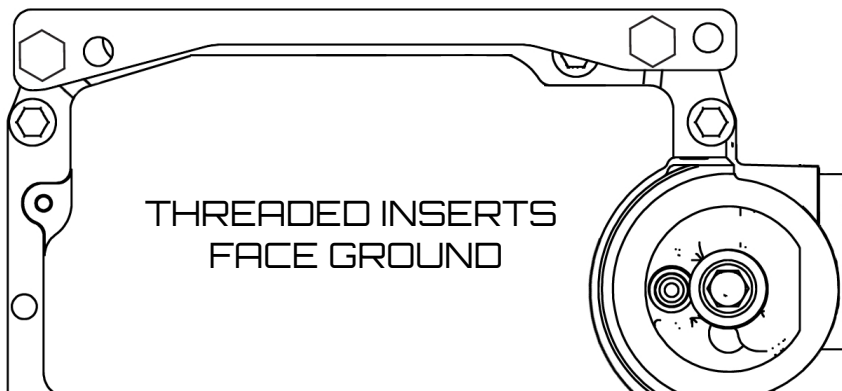
- i. Use a 4 mm hex tool to secure HGA-1000 and EGM-107 onto the oil pan using the HSC-1033 screws and HWA-1003 washers from the hardware kit. Refer to Figure 2.



Torque the screws to a maximum of 120 lb-in (10 lb-ft).

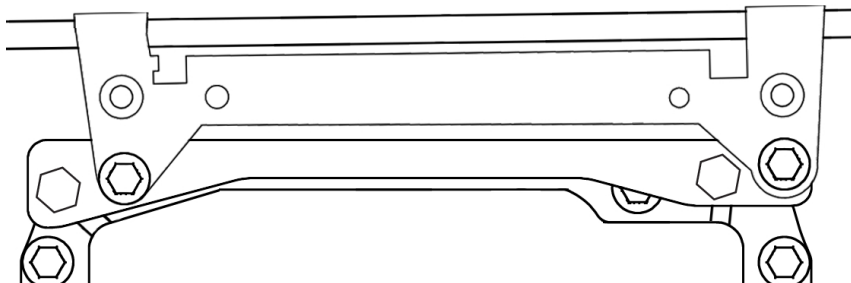
**INSTALLING THE POWER STEERING LINE RELOCATION BRACKET (GTO / COMMODORE)**

1. Use a 13 mm tool to secure the relocation bracket to the oil pan using two M8 screws from the EGM-107-PSB kit. This is shown in Figure 5.



**Figure 5 - EGM-107-04 Relocation Bracket Installed**

2. Use a 13 mm tool to secure the factory power steering line bracket to the relocation bracket installed in the last step using the remaining M8 hardware from the EGM-107-PSB kit. This is shown in Figure 6.




**Figure 6 - Relocated Factory Power Steering Line Bracket**



Check to ensure the clearance gained between the power steering line and EGM-107 is satisfactory.

## COMPLETING THE INSTALLATION

1. Fill the oil cooler with oil, connect and tighten the system lines and secure the oil cooler to the vehicle if not completed previously.

 **Ensure the oil cooler is isolated from vibration.**

2. Check the engine oil level and add oil if needed.

3. Remove the fuel pump fuse.

 Consult the vehicle's factory service manual for the fuse location.

4. Crank the engine over for five seconds to build oil pressure, repeating this cycle three to five times.
5. Replace the fuse removed in Step 8.
6. Start the vehicle and inspect for system leaks, turn vehicle off once complete.
7. Inspect the engine oil level, and top-off if necessary.

***Congratulations!*** The installation of your oil cooler adapter is now complete.