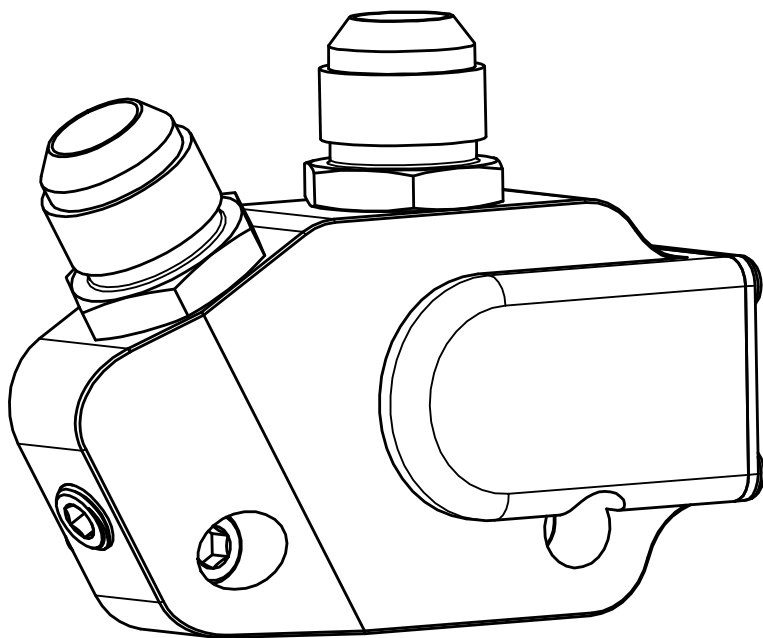




Oil Cooler Thermostat for GM LS Series Engines, Rear Sump

Part No. EGM-112

Made in USA



**IMPORTANT: Please read these instructions
in their entirety prior to installation.**

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Applications

- 1997+ aluminum GM LS and Vortec family engines (Gen III & IV) with factory rear sump oil pans.
 - *If you have an aftermarket rear-sump LS oil pan, check Figure 1 to see if the adapter fits your oil pan.*
- Iron block LS, LSX and Vortec family engines may require some clear-ancing around the left rear oil galley plug to clear the fittings.
- Not suitable for front-sump oil pans such as the Pontiac GTO or VT-VZ Holden Commodore / Monaro (see part number EGM-107).
- The following vehicles equipped with the factory oil cooler system factory cooler delete kit, sold separately:
 - 2010-2011 Chevrolet Camaro SS & ZL1: P/N 22962571-KIT
 - 2012-2015 Chevrolet Camaro SS & ZL1: P/N HPL-1004-KIT

Parts List & Schematic

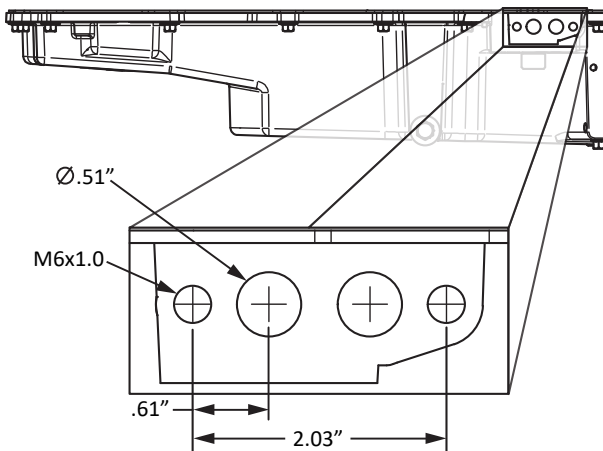
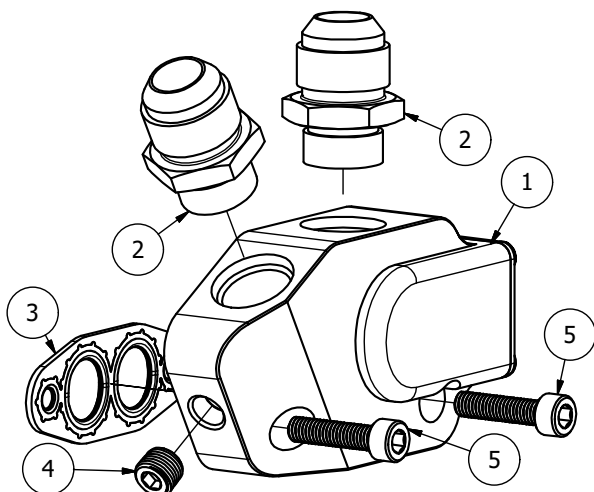


Figure 1 - GM Factory Bypass Port Dimensions

ITEM	QUANTITY	PART #	DESCRIPTION
1	1	EGM-112	LS Oil Cooler Thermostat
2	2 (OPTIONAL)	OM-08-XX	-AN Fitting Adapter
3	1	HGA-1000	Bypass Cover Gasket
4	1	PP-02	Pre-Sealed 1/8" NPT Plug
5	2	HSC-1004	M6 Socket Screw



Technical Specifications

Part Number	EGM-112-T4	EGM-112-T7
Activation / Stabilization Temp	180°F (85°C)	212°F (101°C)
Full Flow Temp	203°F (95°C)	233°F (112°C)

Max Operating Temperature	302°F (150°C)
Min Operating Temperature	-22°F (-30°C)
Max Recommended Pressure	300 psi (20.68 bar)
Dimensions (W x H x D)	4.0" x 2.2" x 1.3" (10.2 x 5.6 x 3.3 cm)
Weight (Adapter Only)	9.7 oz (274 g)
Housing Material	CNC-Machined 6061-T6 Billet Aluminum
Housing Finish	MIL-A-8625 Type II Anodizing, Black
Valve Material	CNC-Machined 6061-T6 Billet Aluminum
Valve Finish	Plain
Spring Material	316 Stainless Steel
Spring Finish	Ultrasonic Citric Acid Passivation
Thermal Actuator Material	Brass Body and Zinc-Plated Steel Ram
Ports	-08AN SAE J1926-1 / MS16142 O-ring boss
Estimated Service Life	> 10,000 heat cycles

Thermostat Operation

1. The thermostat bypasses the oil cooler until the oil temperature reaches 180°F (EGM-112-T4) or 212°F (EGM-112-T7), shown in Figure 2.
 - Roughly 95% of the oil will flow through the bypass which offers less resistance to flow than the cooler. This prevents cold oil in the cooler from shocking the system and eliminates air pockets.

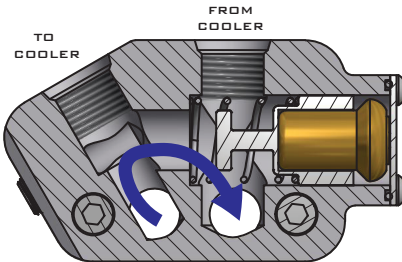


Figure 2 - Oil Path During Engine Warm-Up

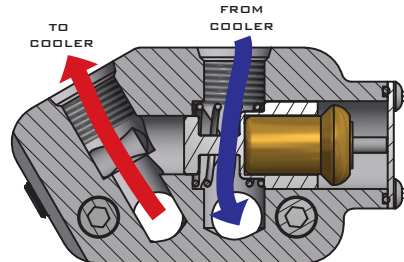


Figure 3 - Oil Path at Operating Temperature

2. At the rated temperature, the bypass valve begins to close, forcing oil through the cooler as illustrated in Figure 3.
 - This allows the oil to reach minimum operating temperatures more quickly and prevents temperatures from dropping below the rated temperature under most operating conditions.
 - Should the thermostat fail, circulation will not be blocked.
 - The thermostat is re-buildable.

Installation Instructions

⚠ WARNING: DO NOT CAP OFF THE OIL COOLER PORTS after the adapter is installed. Running the engine with the ports capped will block oil flow and result in catastrophic engine damage! The IN and OUT ports must be either connected to an oil cooler or looped together for oil to flow to the engine.

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

Preparing for Installation

1. Raise the front of the vehicle and support with certified automotive frame stands, lift, or ramps.

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

2. Remove any underbody panels necessary to access the oil pan and filter.
3. Place a drain pan under the filter and remove the oil filter. *Roughly 1 quart of fluid will drain-out after removing the oil filter.*

⚠ Caution: Oil may be hot!

4. Remove the two bypass cover or factory oil cooler (if equipped) flange screws with a 10 mm socket or wrench. Be sure to remove the factory gasket, shown in Figure 4.

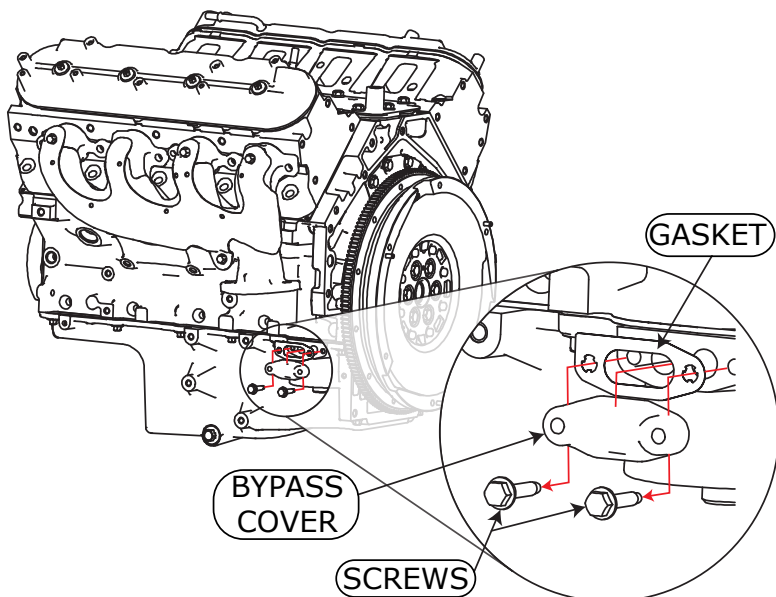



Figure 4 - Removing the factory bypass cover

5. If not equipped with a factory oil cooler, proceed to Step 6; otherwise:
 - a. Remove the three to four additional M8 screws securing the factory oil cooler to the engine's oil pan. Use a 13 mm socket and ratchet or wrench.
 - b. Plug the engine block and radiator (see *Application & Notes* section).
6. Measure and assemble the oil cooler system lines. Leave the lines disconnected from the adapter and oil cooler.
 - a. Improved Racing recommends using a 60°, 90° or 120° fitting for the OUT port and a 90° fitting for the IN port.

Installing the Oil Cooler Adapter


1. Install the -AN adapter fittings into the thermostat block.

 **Tip:** Lubricate the -AN fitting O-rings with engine oil to prevent O-ring damage.

 **Tip:** Use aluminum -AN fitting wrenches to avoid damaging the fittings.

2. If not using a sensor, install the provided NPT plug into the oil cooler adapter using a 3/16" hex-drive key/bit. DO NOT overtighten.

3. If using a sensor, disconnect the wire harness from the sensor and install the sensor into the adapter.

 Use Teflon tape or pipe-dope thread sealant for NPT sensors.

4. Connect the oil cooler system lines to the adapter.

5. Install the oil cooler adapter and gasket onto the oil pan using the M6 socket screws and a 5 mm hex-drive bit/key, shown in Figure 5. Torque to a maximum of 120 lb-in (10 lb-ft).

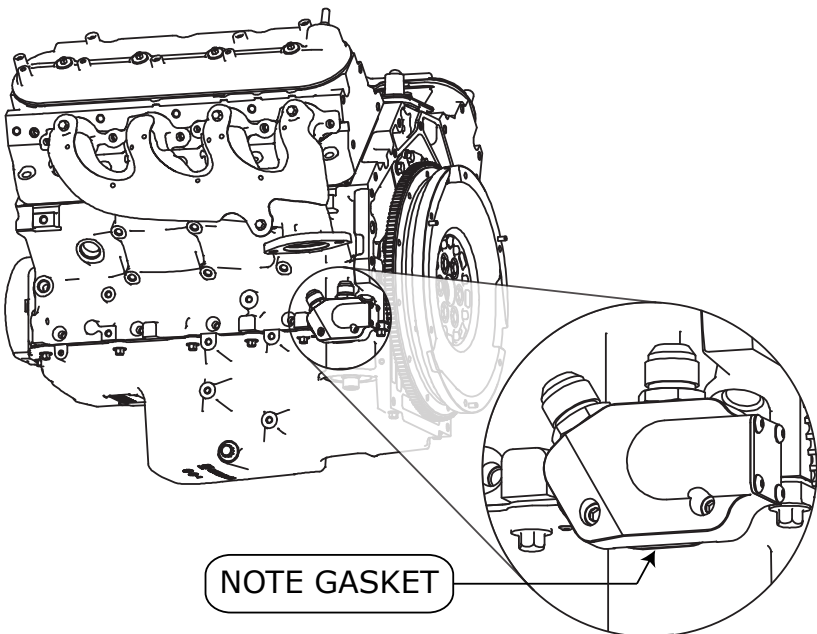





Figure 5 - Installed Oil Cooler Adapter & Gasket

Completing the Installation

1. Fill a new oil filter with engine oil and install the filter.
2. Fill the oil cooler with oil.

3. Connect and tighten the system lines. DO NOT overtighten.
 -  **Tip:** Use aluminum -AN fitting wrenches to avoid damaging the fittings.
 4. Secure the oil cooler to the vehicle.
 -  **Tip:** Ensure the oil cooler is isolated from vibration.
 5. Check the engine oil level and add oil if needed.
 6. Remove the fuel pump fuse(s) or disconnect the ignition circuit.
 -  **Tip:** Consult the vehicle's factory service manual for the fuse location.
 7. Crank the engine over to build oil pressure.
 8. Replace any fuse(s) removed and/or reconnect the ignition circuit.
 9. Start the vehicle and inspect for leaks.
 10. Turn-off the vehicle and inspect the engine oil level; add oil if necessary.
 11. Reinstall any underbody panels and lower the vehicle back onto the ground.
 12. Re-inspect the oil lines and fittings for leaks after 100 miles of driving.
- Congratulations!*** The installation of your oil cooler adapter is now complete.