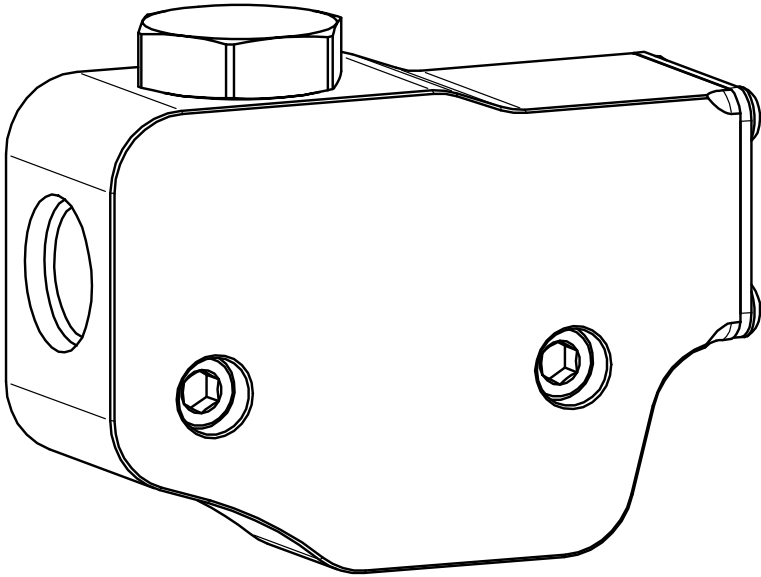




Oil Cooler Thermostat for LS & Vortec Series Engines, Rear Sump

Part No. EGM-114

Made in USA



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

For contact information, visit www.improvedracing.com
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Applications & Notes

- LS and Vortec family engines (GM Gen III & IV and other aftermarket blocks) with factory rear sump oil pans.
 - *Do you have an aftermarket rear-sump LS oil pan? Check Figure 1 to see if our adapter fits your oil pan.*
- Not suitable for front-sump oil pans such as the Pontiac GTO or Holden Commodore / Monaro (most 1999-2006 V8 vehicles)
- The following vehicles equipped with the factory oil cooler system will require a plug kit, sold separately at www.improvedracing.com:
 - 2010-2011 Chevrolet Camaro SS & ZL1: P/N 22962571-KIT
 - 2012-2015 Chevrolet Camaro SS & ZL1: P/N HPL-1004-KIT

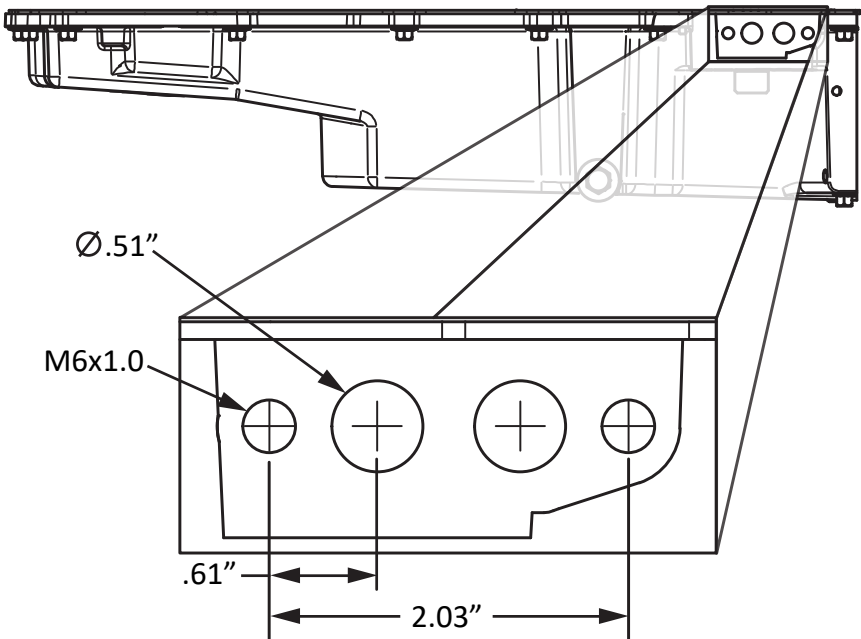
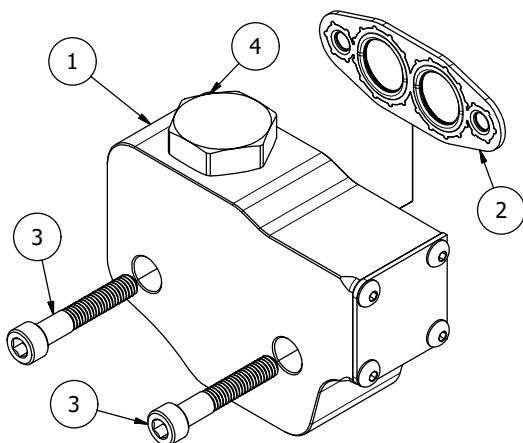


Figure 1 - GM Factory Bypass Cover Dimensions

Parts List & Schematic

ITEM	QUANTITY	PART #	DESCRIPTION
1	1	EGM-114	Oil Cooler Adapter w/Thermostat
2	1	HGA-1000	Bypass Cover Gasket
3	2	HSC-1005	M6x1.0 x 35 Socket Screw
4	1	PO-08	-8AN O-Ring Boss Plug



Technical Specifications

Part Number	EGM-114-T4	EGM-114-T7
Stabilization Temperature	185°F +/- 2°F (85°C +/- 1°C)	215°F +/- 2°F (101°C +/- 1°C)
Activation Temperature	180°F +/- 2°F (82°C +/- 1°C)	212°F +/- 2°F (100°C +/- 1°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)	3.7" x 2.5" x 1.3" (9.4 x 6.4 x 3.3 cm)
Weight (Adapter Only)	12.1 oz (343 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 (T4) or 212 °F (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.

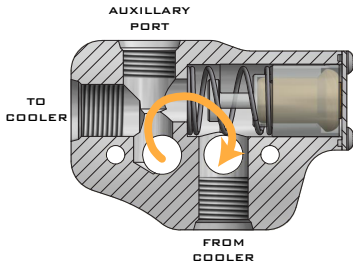


Figure 2 - Oil Path During Engine Warm-Up

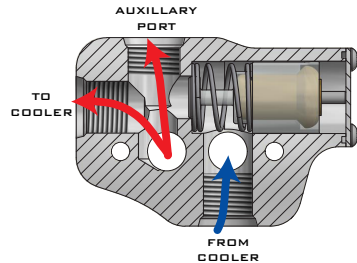


Figure 3 - Oil Path at Operating Temperature

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 faster and prevents temperatures from dropping below the rated temperature under most operating conditions.
 - Should the thermostat fail, circulation will not be blocked.
 - The adapter 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. If not using an oil cooler, the IN/OUT ports must be looped together to prevent engine damage.

⚠ 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 approved 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 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.

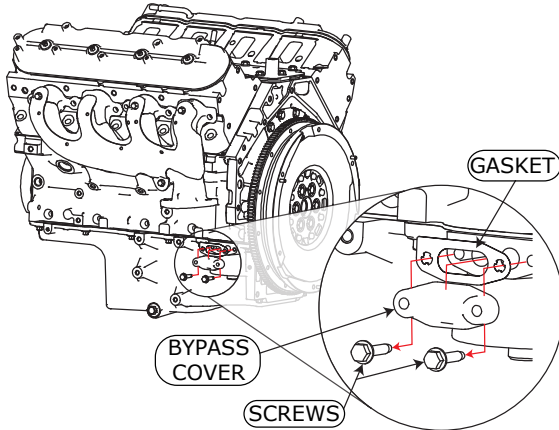


Figure 4 - Removing the factory bypass cover

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 straight hose-end fitting, Raceflux P/N DO-10-08 (-10AN lines) or DO-08-08 (-8AN lines), for the OUT port and a low-profile 90° hose-end fitting, Raceflux P/N DO-090-10-08 (-10AN lines) or DO-090-08-08 (-8AN lines), for the IN port.

Installing the Oil Cooler Adapter

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

💡 Tip: Lubricate the -AN fitting O-rings with motor 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 -8AN plug into the OUT / SENSOR port on the adapter. DO NOT overtighten.
3. If using a sensor, disconnect the wire harness from the sensor and install the sensor into the plug, then install the plug into the adapter. *Use thread sealant for NPT sensors and a crush washer for Metric sensors.*



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



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

4. Connect the oil cooler system lines to the adapter in the desired configuration.
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. Torque part to a maximum of 120 lb-in (10 lb-ft).

Completing the Installation

1. Replace the engine oil filter.
2. Fill the oil cooler with oil.
3. Connect and tighten the system lines.



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.



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

7. Crank the engine over to build oil pressure.
8. Replace the fuse removed in Step 6.
9. Start the vehicle and inspect for leaks.
10. Turn off the vehicle and inspect the engine oil level; top-off if necessary.
11. Reinstall any underbody panels and lower the vehicle back onto the ground.

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