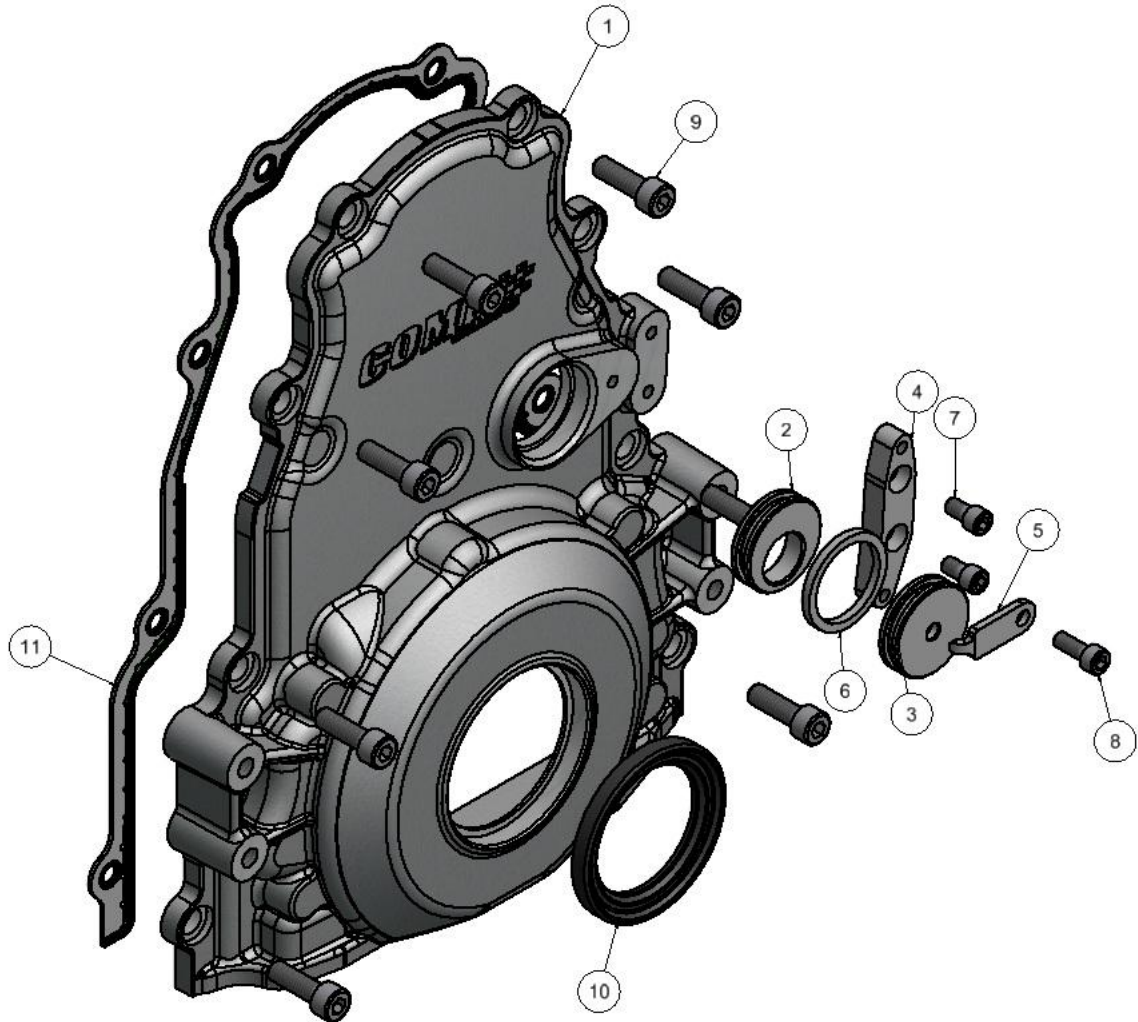




# INSTRUCTIONS

## LS Front Covers Part #5496 & #5497

Thank you for choosing COMP Cams® products; we are proud to be your manufacturer of choice. Please read this instruction sheet carefully before beginning installation, and also take a moment to review the included limited warranty information. Contact us toll free at 1.800.999.0853 or at [www.compcams.com](http://www.compcams.com) under Tech Support with any questions.



**Part #5496 Components**

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	5496-MACH	Modular Front Cover, Machined
2	1	5496-CSL	Cam Sensor Locator for Modular LS Front Cover
3	1	5496-CSB	Cam Sensor Block Off for Modular LS Front Cover
4	1	5496-TPA	Timing Pointer Adapter for Modular LS Front Cover

5	1	5496-BOC	Cam Sensor Block Off Clamp for Modular LS Front Cover
6	1	5496-OR1	O-Ring for Cam Sensor Locator/Plug for Modular LS Front Cover
7	2	5496-B1	1/4-20 x 7/16 - Socket Head Cap Screw
8	1	5490-B1	M6 x 1 x 16mm - Socket Head Cap Screw
9	8	5490-B5	M8 x 1.25 x 25mm - Socket Head Cap Screw
10	1	5496-FCCS	Front Crank Seal, LS
11	1	5496-FCG	Gasket, Timing Front Cover, LS

### Part #5497 Components

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	5497-MACH	Modular Front Cover, Machined
2	1	5496-CSL	Cam Sensor Locator for Modular LS Front Cover
3	1	5496-CSB	Cam Sensor Block Off for Modular LS Front Cover
4	1	5496-TPA	Timing Pointer Adapter for Modular LS Front Cover
5	1	5496-BOC	Cam Sensor Block Off Clamp for Modular LS Front Cover
6	1	5496-OR1	O-Ring for Cam Sensor Locator/Plug for Modular LS Front Cover
7	2	5496-B1	1/4-20 x 7/16 Socket Head Cap Screw
8	1	5490-B1	M6x1x16mm Socket Head Cap Screw
9	8	5490-B5	M8x1.25x25mm Socket Head Cap Screw
10	1	5496-FCCS	Front Crank Seal, LS
11	1	5496-FCG	Gasket, Timing Front Cover, LS
12*	1	5497-PCM	LS7 Oil Pump Cover for Modular LS Front Cover, Machined
13*	1	5497-OR1	O-Ring for 5497-PCM for Modular LS Front Cover
14*	4	5490-B10	M8x1.25x20mm Flat Countersunk Socket Head Cap Screw

**\*Note: Items 12-14 of the #5497 kit are not shown in the exploded view on the previous page.**

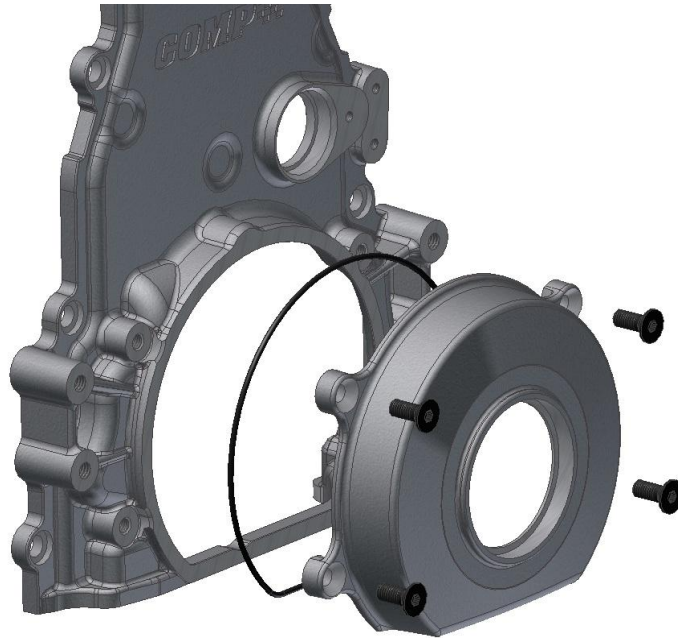
### Installation Instructions

Please ensure that you have received all necessary components before beginning installation. Item numbers will be referred to in brackets in the instructions below. **Note: all stated torque specs are for dry bolts.**

**Step 1:** Please check that you have ordered the correct kit for you application. If building an engine using the two stage LS7 oil pump, use the LS7 Front Cover Kit (COMP® #5497). If building an engine using the standard LS single stage oil pump, use the LS1-6 Front Cover Kit (COMP® #5496).

**Step 2:** If using the #5497 kit, begin by installing the oil pump cover (if using the #5496 kit please skip to step 3). Install the pump cover by fitting the large, round o-ring into the groove on the back of the oil pump cover. Next, using the provided M8x1.25x20mm countersunk screws, attach the pump cover to the main cover. A thread locking compound may be used if desired. Torque to 18 ft.-lbs.

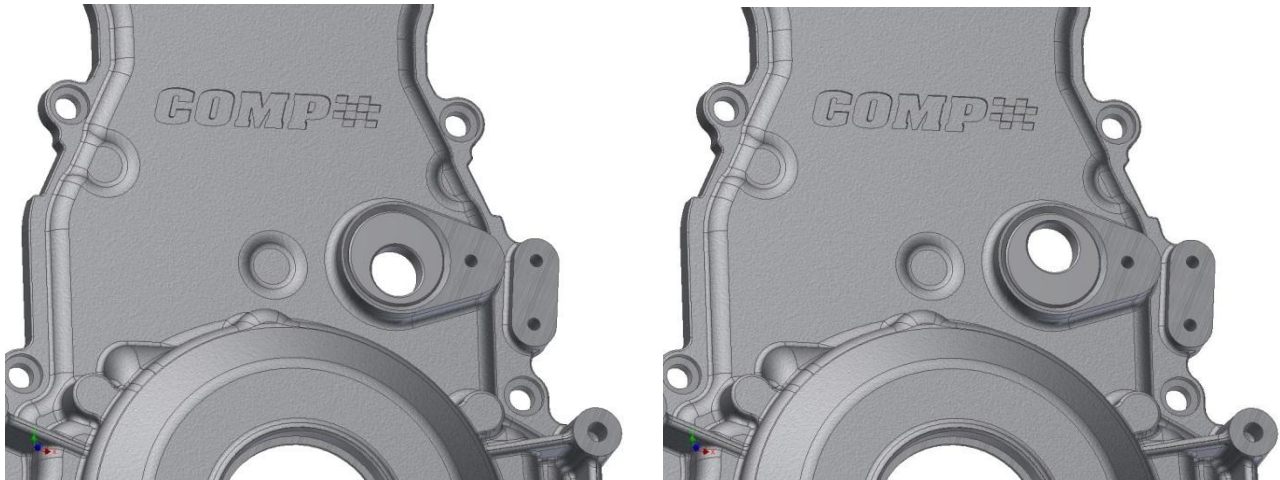
### Installing #5497 Oil Pump Cover



**Step 3:** Depending on whether or not you are running a front mount cam sensor, you will now install either the Cam Sensor Locator [2] or Cam Sensor Block Off [3].

- a. If using a front mount cam sensor, place the square o-ring [6] in the groove around the Cam Sensor Locator [2]. You will notice that the cam sensor hole in the Cam Sensor Locator is offset. If installing on a standard cam height block (all stock GM blocks) rotate the hole down towards the crank. If installing on a raised cam block (such as the LS Race Block by RHS<sup>®</sup>) rotate the hole up away from the crank. Now install the cam sensor (not provided). This kit is designed to work with the stock cam sensor and stock cam sensor o-ring.

### Cam Sensor Locator Position



Standard Cam Height Position

Raised Cam Height Position

- b. If **not** running a front mount cam sensor, install the square o-ring [6] in the groove around the Cam Sensor Block Off [3]. Install the block off on the cover and use the Cam Sensor Block Off Clamp [5] with the M6x1x16 socket head cap screw [8] to retain the block off. A thread locking compound may be used if desired.

**Step 4:** To install the cover on the block we recommend that you use an LS front cover alignment tool (such as Kent-Moore EN-47813) that centers on the ID of the front crank seal cutout. If no tool is available, install the Front Crank Seal [10] and then loosely fit the cover to the block using the provided Timing Cover Gasket [11] and M8x1.25x25mm socket head cap screws [9]. Next, install the crank balancer, which will align in the Front Crank Seal [10] and be used to help center the cover. You should also have the oil pan installed to locate the front cover vertically. Tighten the oil pan to front cover bolts (not provided) first to 106 in.-lbs. and then tighten the front cover bolts to 18 ft.-lbs.

#### Front Crank Seal

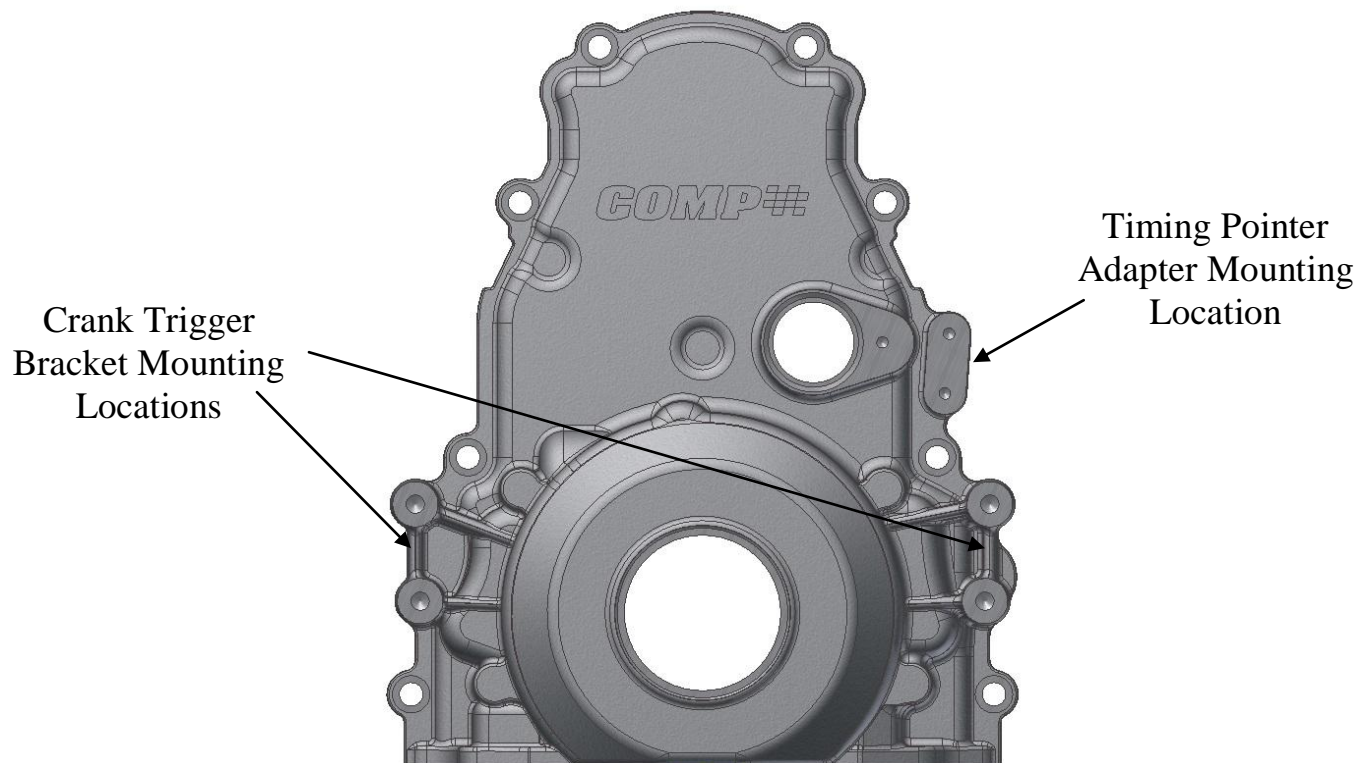


This side faces the front (toward the balancer).

**Step 5:** If using a timing pointer, first install the Timing Pointer Adapter [4] using the two 1/4-20 x 7/16 socket head cap screws [7] with the bent part of the adapter pointing down. **Note: this kit is made to accept standard Big Block Chevy timing pointers (such as TCI® Part #871004) and is intended to be used with aftermarket balancers (such as TCI® Part #870030). Spacers (not included) may be needed to align the pointer with the timing marks depending on the balancer used.**

**Step 6:** If you would like to run a balancer-mounted crank trigger, any Small Block Chevy crank trigger will work (such as FAST™ Part #301270) when bolted to the mounting bosses on either the left or right side of the cover using bolts supplied with the crank trigger kit. **Note: External crank triggers are not necessary for most applications, as all factory LS engines are shipped with internal reluctor wheels and block mounted crank sensors.**

### Mounting Boss Locations





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### **Limited Warranty**

Competition Cams, Inc. warrants that all of its products are free from defects in material and workmanship, and against excessive wear for a period of (1) one year from the date of purchase. This **limited warranty** shall cover the original purchaser.

**Competition Cams, Inc.'s obligation under this warranty is limited to the repair or replacement of its product.** To make a warranty claim, the part must be returned within (1) one year of purchase to the address listed below, freight prepaid. Items covered under warranty will be returned to you freight collect.

**It is the responsibility of the installer to ensure that all of the components are correct before installation. We assume no liability for any errors made in tolerances, component selection, or installation.**

**There is absolutely no warranty on the following:**

- A) Any parts used in racing applications;**
- B) Any product that has been physically altered, improperly installed or maintained;**
- C) Any product used in improper applications, abused, or not used in conjunction with the proper parts.**

**There are no implied warranties of merchantability or fitness for a particular purpose.** There are no warranties, which extend beyond the description of the face hereof. Competition Cams, Inc. will not be responsible for incidental and consequential damages, property damage or personal injury damages to the extent permitted by law. Where required by law, implied warranties or merchantability and fitness are limited for a term of (1) one year from the date of original purchase.

This warranty gives you specific legal rights and you may also have other legal rights, which vary from state to state.