



# INSTRUCTIONS

-J02949

REV. 4-26-04

Kit Number 25197-04

## XL PERFORMANCE CAM SET

### General

This kit 25197-04 is designed for use on the 2004 and later Sportster 883 and 1200cc engines model motorcycles.

### Camshaft Specifications

Intake open	25° BTDC
Intake closed	44° ABDC
Intake duration	249°
Exhaust open	59° BBDC
Exhaust closed	10° ATDC
Exhaust duration	249°
All data taken at .053 lift Valve Lift .551	

### CAUTION

Harley-Davidson motorcycles equipped with Screamin' Eagle high performance engine parts may not be used on public roads and in some cases must be restricted to closed course competition because these parts may impair the vehicles emission system performance and/or increase its noise level. Installation of Screamin' Eagle parts could also void any new vehicle warranty. Engine related performance parts are intended for THE EXPERIENCED RIDER ONLY.

### WARNING

The rider's safety depends upon the correct installation of this kit. Use the appropriate service manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333a)

### Camshaft Installation

Installation of this kit will require the following gaskets available from any authorized Harley-Davidson Dealer:

DESCRIPTION	PART NO.
Gasket kit, top overhaul	17049-04
Camgear cover gasket	25263-90D

### NOTE

All washers and fasteners used in the engine are hardened. They must not be mixed or replaced with unhardened parts. Do not reuse cover gaskets.

### WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect negative (-) battery cable before proceeding. (00048a)

Follow Service Manual Procedures to perform the following:

1. Remove spark plug.
2. Remove rocker box covers. Remove and discard gaskets.
3. Rotate the crankshaft so that both valves are closed on the cylinder being worked on.
4. Remove the inner rocker box cover assembly.
5. Repeat steps 2 thru 4 for the remaining cylinder.
6. Refer to the Service Manual and follow the procedure to remove gear cover screws and gear cover. Remove and discard gasket.

### CAUTION

Mark all valve train components for reassembly in their original positions. Valve train components must be reinstalled in their original positions during reassembly.

### NOTE

It is not necessary to remove the pinion gear, oil pump gear or oil pump.

7. See Figure 1. Rotate engine to align timing marks. Cams are numbered 1 to 4 from the rear exhaust (1) to the front exhaust (4). Remove camshaft (2). One at a time remove camshaft (1), (3), and (4) and replace with the appropriate camshaft from this kit. Be careful to maintain timing mark alignment. Install camshaft (2) from this kit last. Carefully check alignment of all timing marks.
8. Following Service Manual instructions, assemble gearcase cover and check that specified camshaft play is present. After final assembly torque cover screws to 80-110 in-lbs (9-12 Nm).
9. Rotate engine crankshaft so either cylinder has both cams at their lowest point (valves closed). Install the inner rocker box assembly. Consult the Service Manual for proper torque specifications. Wait ten minutes and then repeat procedure at second cylinder.
10. Install rocker boxes using new gaskets from gasket kit. Consult the Service Manual for proper torque specifications.
11. Refer to the Service Manual and follow the instructions given to re-attach the negative battery cable.

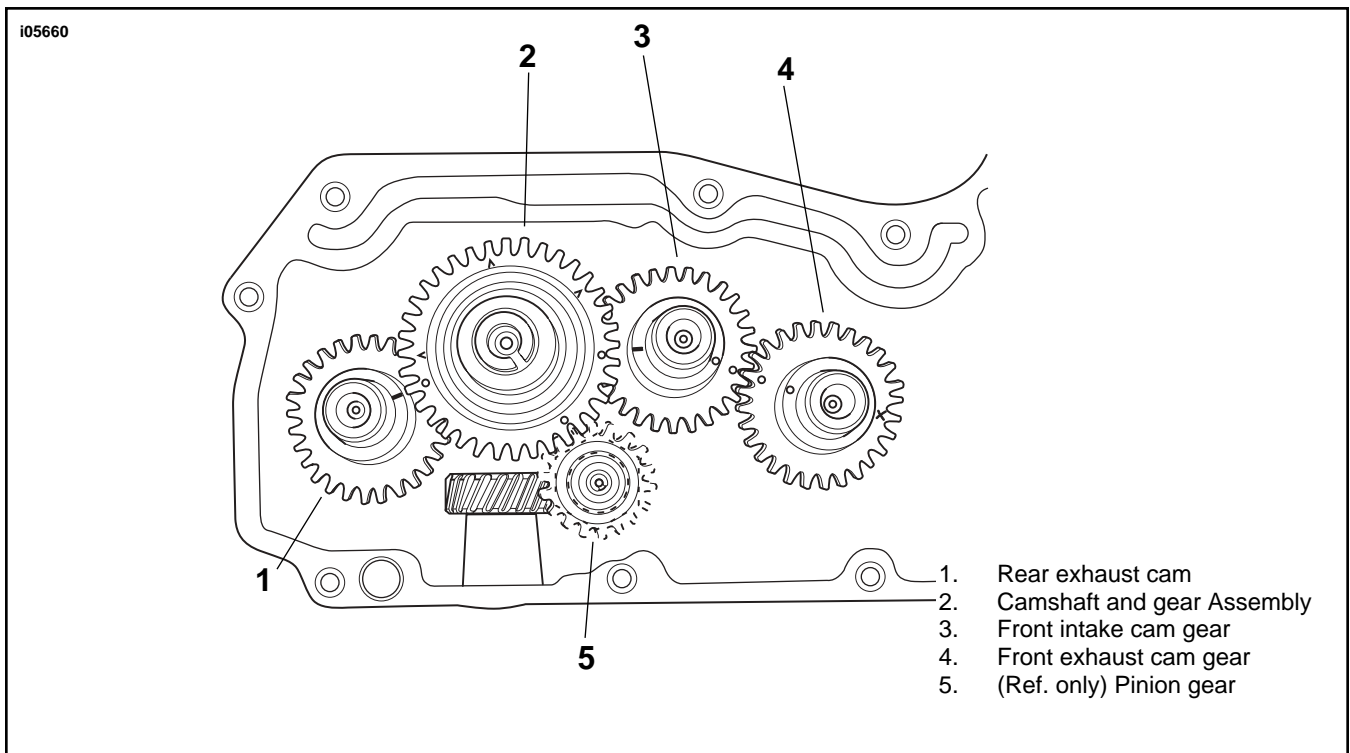
**NOTE**

These cams were designed to replace stock cams and maintain sufficient valve to piston clearance. However, it is advisable to check all engines for valve spring coil bind at full lift and piston to valve clearance. We recommend that this inspection or any subsequent piston modification be done by any Harley-Davidson dealer.

Put clay, about 1/8 in. thick on piston, in area where valve would contact pistons. Assemble the heads and valve train and turn the engine by hand. The heads are then removed and the clay measured at its thinnest point. If not at least .080 in. thick then notches should be cut into the piston crown to obtain that dimension. The depth of the notches must not exceed 0.135 in. It is strongly recommended that this practice be followed.

**Improving Engine Output**

To enhance the horsepower increase of this kit see any authorized Harley-Davidson Dealer for the latest Parts & Accessories catalog which includes the complete line of Screamin' Eagle performance parts.



**Figure 1. Timing Mark Alignment**