



INSTALLATION INSTRUCTIONS: HIGH PERFORMANCE CAMSHAFT KIT PART# 35-4551

READ ALL INSTRUCTIONS BEFORE BEGINNING INSTALLATION

Congratulations, you have purchased the finest high performance camshafts available for your motorcycle. Your Vance & Hines 575 camshafts are designed and crafted for performance, and quality. Please follow the instructions below, check camshafts for missing or damaged parts and if you need any assistance please contact our technical support line (562) 921-7461.

FITMENT YEARS:

- 2006 – Later Harley-Davidson Dyna models
- 2007 – Later Harley-Davidson Twin Cam models (Softail, Touring)

NOTES:

- A Service Manual for your respective Year and Model motorcycle is recommended for the proper installation of this High Performance Camshaft kit.
- If you are not qualified or have the proper tools for this installation, please contact your local Harley-Davidson service department.
- Vance & Hines recommends the installation of new hydraulic lifters and adjustable pushrods when installing new camshafts.
- For best performance use Vance & Hines Race Shop Components hydraulic lifters part #35-4553, and adjustable pushrods part # 35-4552.
- Recalibration of the ECM is required when installing these Camshafts.
- H-D Cam drive retention kit part # 25566-06 is required for proper alignment of cam drive sprocket.
- Crankcase blind holes should be clean and free from any debris prior to assembly as damage to crankcase may result.

RECOMMENDATIONS:

- For best results use V&H FP3 to recalibrate your ECM.
- Use FP3 Fuel Pak (Part # 66005) for 2014 – 2016 Touring models, 2012-2016 Softail models, and 2012-2016 Dyna models
- Use FP3 Fuel Pak (Part # 66007) for 2007-2103 Touring models, 2007-2011 Softail models, and 2007 to 2011 Dyna models

KIT CONTENTS:

- Qty.1 front camshaft
- Qty.1 rear camshaft
- Qty.1 inner cam bearing kit (Part # B-168)
- Qty.1 gasket set (Part # C10047-VH)

VANCE & HINES RACE SHOP 575 CAMSHAFT SPECIFICATIONS

	TIMING @ LIFTER OPEN / CLOSE	DURATION @ .053" LIFTER	VALVE LIFT / LOBE LIFT	LOBE CEN- TER	ESTIMATED VALVE LIFT @ TDC
INTAKE	20° / 40°	240°	.575" / .353"	100	.180"
EXHAUST	45° / 15°	240°	.575" / .353"	105	.145"

CAMSHAFT REMOVAL:

Reference the Service Manual for your year and model motorcycle.

1. Prepare the motorcycle for disassembly. Disconnect the battery ground cable to prevent the potential for sparks or starter engagement.
2. Remove the necessary components, air cleaner assembly, exhaust, etc to gain access to the camshaft compartment
3. Remove pushrod spring clips to gain access to pushrods. Collapse pushrod tubes.
4. Remove spark plugs and put bike on scissor lift. With bike in 5th gear rotate engine to locate the front cylinder camshafts on their base circle (lowest point) to lower valve spring pressure prior to cutting O.E. pushrods with boltcutter. Note: put rag or cloth in lifter cavity to prevent debris from entering the lifter gallery.
5. Cut front pushrods and remove with Pushrod tubes.
6. Rotate engine to locate rear cylinder camshafts on base circle (lowest point) and cut pushrods and remove. Note: put rag or cloth in lifter cavity to prevent debris from entering the lifter gallery.
7. Remove 10 Allen screws from cam cover and remove cover and gasket. [See figure 1](#)
8. Insert wireform or rivet that measures .075" into primary cam chain tensioner hole to prevent the tensioner from coming apart during removal. Remove both primary tensioner fasteners and remove tensioner. [See figure 2](#)
9. Insert cam locking tool to prevent sprockets from rotating during bolt removal. (Screaming Eagle part # 94076-09).
10. Remove cam sprocket bolt and crank sprocket bolt. Remove cam locking tool then remove chain and sprockets.
11. Remove the four oil pump fasteners per the sequence shown in [figure 3](#).
12. Prevent lifters from falling into cam compartment while the cam plate is removed by using (Screamin' Eagle magnetic lifter holder part #93979-10 per [figure 4](#).
13. Remove the six fasteners and remove the cam support plate from crankcase. [See figure 5](#). Note: Do not force cam plate removal.
14. Remove secondary cam chain tensioner screws.
15. Remove front camshaft retaining clip and front spacer.
Note: front spacer is .100" thick
16. Remove camshafts and chain from cam support plate, take note of chain travel direction.

CAMSHAFT INSTALLATION:

1. Install chain on camshafts while paying attention to proper timing mark alignment and cam chain direction. [See figure 6](#)
2. Install new camshafts in the cam support plate and use a liberal amount of assembly lube on lobes and journals prior to installation. Verify timing marks align after installation into the cam support plate. Install .100" thick spacer and new circlip on front camshaft.
Note: Do not mix up camshafts; rear camshaft is splined.
3. Install secondary cam tensioner and torque fasteners to 90-120 In-Lbs or 10.2-13.6 Nm. [See figure 7](#)
4. Remove O.E. inner cam bearings (Screamin' Eagle part #94144-09) and reinstall supplied inner cam bearings in crankcase. (Screamin' Eagle part #94107-09A) See service manual for instructions on removal and installation.
5. Verify oil feed o-rings are in place and reinstall cam support plate and torque fasteners to 100-120 In-Lbs or 11.3-13.6 Nm per sequence. [See figure 8](#)
6. Install oil pump screws 1 & 2 and while rotating engine tighten until snug. Continue rotating engine and install 3 & 4 until snug. Torque all four fasteners initially to 40-45 In-Lbs or 4.5-5.1 Nm per the sequence. Finally torque the fasteners per the sequence to 90-120In-Lbs or 10.2-13.6Nm. [See figure 9](#)
7. Install original rear cam spacer on rear camshaft for measurement purposes.
8. Install cam and crankshaft sprockets without chain. Using a straightedge placed across the crank sprocket and cam sprocket, insert a .010" feeler gauge in between the upper sprocket then again the bottom sprocket to check offset. If the feeler gauge will not fit, the sprocket alignment is ok.
9. If the cam sprocket is above the face of the crank sprocket replace the cam spacer with the next size smaller feeler gauge and recheck. [See Table 1](#)
10. If the crank sprocket is above the cam sprocket replace with the next size larger spacer and recheck for proper offset. [See Table 1](#)
11. Clean loctite off the camshaft sprocket bolt and the crankshaft sprocket bolt. Clean excess loctite from crankshaft. Apply red loctite 262 to both fasteners.
12. Reinstall chain on sprockets with dots visible, line up dots on sprockets to alignment mark on cam support plate. Rotate engine as necessary to help align dots to alignment mark. [See figure 10](#)
13. Install sprocket locking tool (Screamin Eagle part# 94076-09)
14. Apply oil / assembly lube between the head of bolt and washer on camshaft bolt and crankshaft bolt.
15. Tighten both bolts to 15 Lb-ft or 20.3 Nm then loosen one full turn.

- 16.** Initially, tighten both the rear cam sprocket bolt and the lower crank sprocket bolt to 15 lb-ft.
- 17.** Next tighten the rear cam sprocket bolt to 34 lb-ft or 46.1Nm
- 17.** Then tighten lower crank sprocket bolt to 24 lb-ft or 32.5 NM
- 18.** Remove sprocket locking tool
- 19.** Install primary chain tensioner and torque fasteners to 100-120 in-Lbs or 11.3-13.6 Nm
- 20.** Clean out cam cover blind bolt holes of any debris prior to installing gasket, cover and fasteners.
- 21.** Install new gasket with cover and fasteners. Torque to 125-155 In-lbs or 14.1-17.5 Nm per sequence shown in **figure 1**.
- 22.** Install adjustable pushrods and adjust per instructions included with pushrods.
- 23.** Reinstall exhaust, spark plugs , air cleaner assy or any other components removed.
- 24.** Verify for proper assembly
- 25.** Verify proper ECM calibration is installed
- 26.** Start motor- do not let engine idle. Run engine at 1800-2000 rpm's for 10-15 minutes to allow for proper camshaft break-in
- 27.** Test ride.

FIGURE 1



FIGURE 2

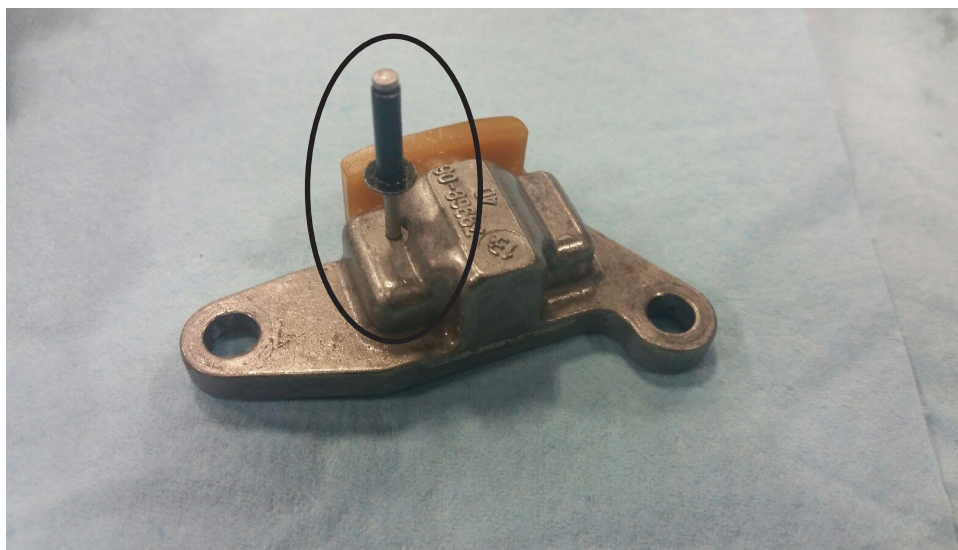


FIGURE 3

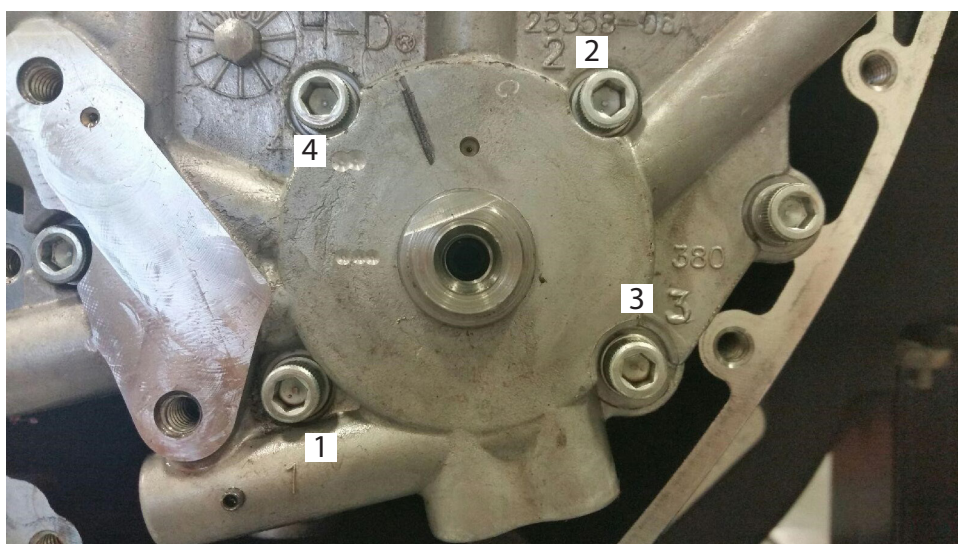


FIGURE 4

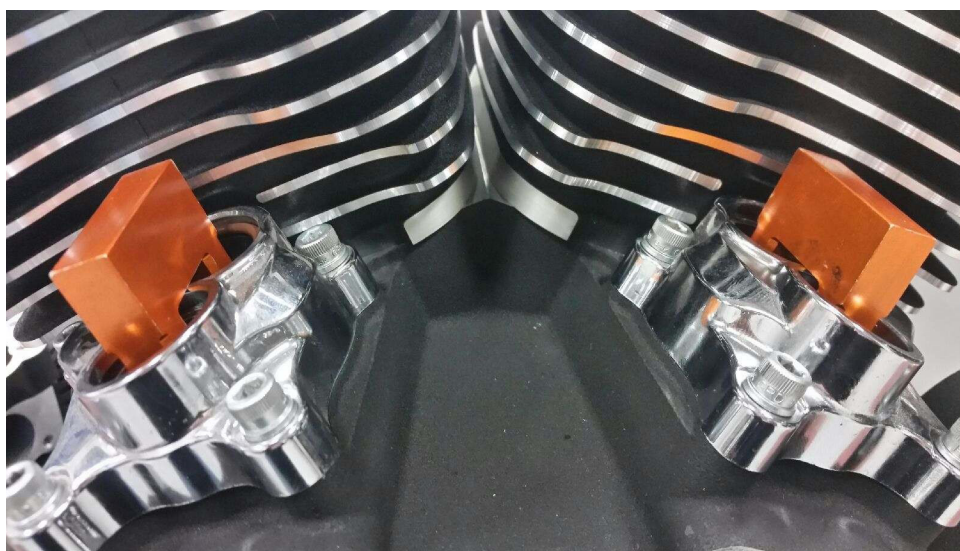


FIGURE 5

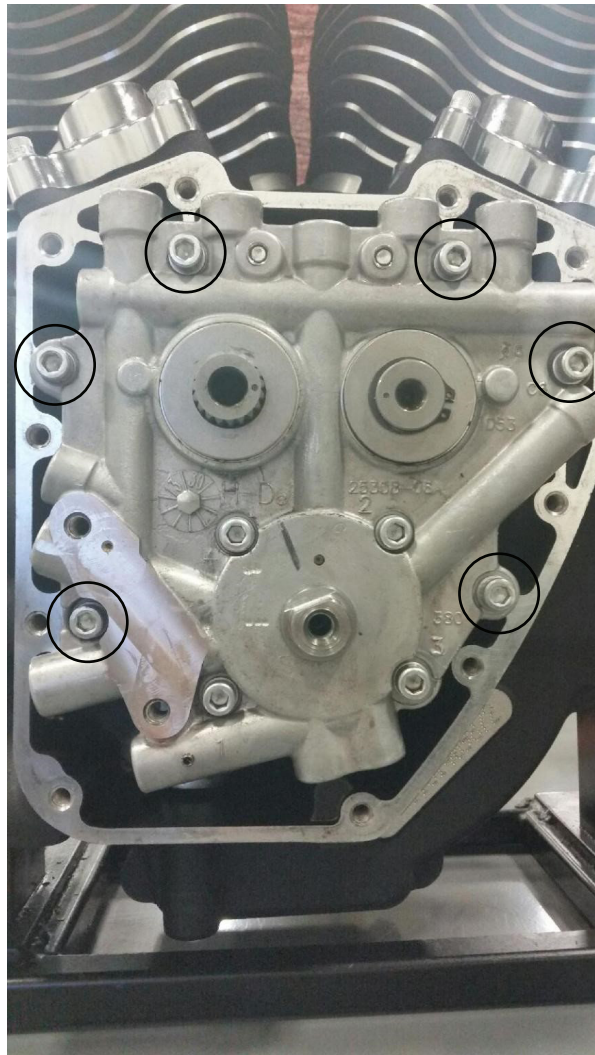


FIGURE 6



FIGURE 7

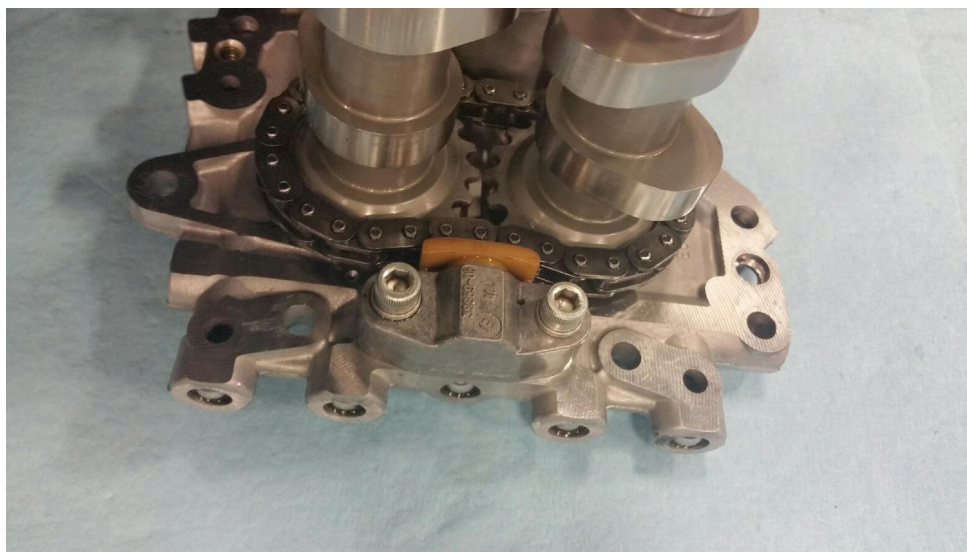


FIGURE 8



FIGURE 9

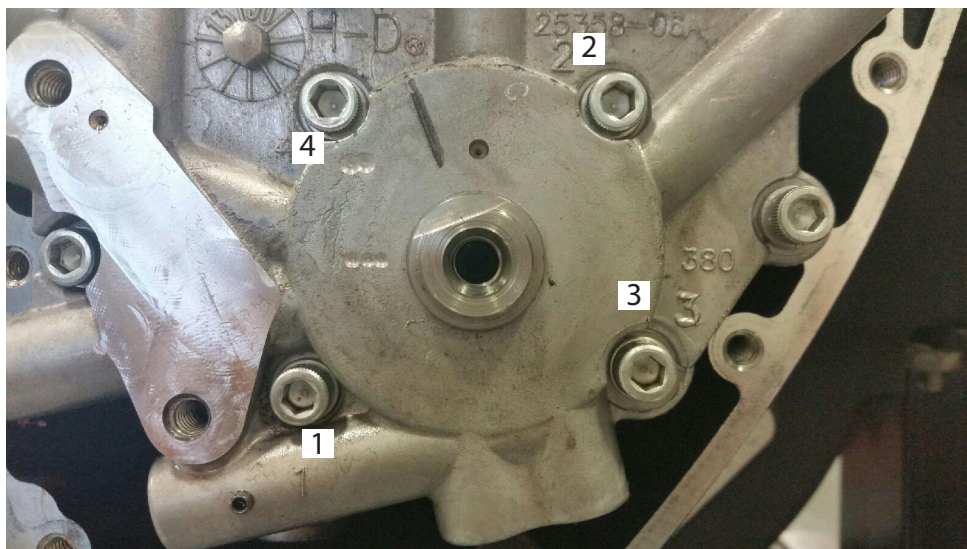


FIGURE 10



TABLE 1

H-D Cam Drive Retention Kit Part #25566-06
Camshaft Sprocket Spacer (Rear)

H-D PART#	IN.	MM.
25729-06	0.100	2.54
25731-06	0.110	2.79
25734-06	0.120	3.05
25736-06	0.130	3.30
25737-06	0.140	3.56
25738-06	0.150	3.81

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