ANDREWS PRODUCTS, INC.
431 Kingston Ct.
Mt. Prospect, IL USA 60056
847-759-0190 (phone)
847-759-0848 (fax)
www.andrewsproducts.com

Installation Instructions: Chain Drive Cams 2007- 2008 Twin Cam and '06 Dyna Engines

This document applies to all '07 and '08 twin cam engines and 2006 DynaGlides. Chain drive cams for '99 -'06 engines are different. Cam lifts and durations are listed on page 2. Service manual (part# 99481-07) procedures for camshaft removal and replacement should be carefully followed.

1. Andrews Products 2006 Dyna and all '07 - '08 twin cams use stock size lobe base circles for lower lift, bolt in type cams. For these cams the original stock pushrods can be reused. If the original pushrods will be reinstalled, removing the fuel tank(s) and rocker boxes will be necessary. Mark the pushrods so they can be replaced into their original locations since not all stock pushrods are the same length.

2. If you want to save installation time by not removing fuel tanks and rocker boxes, EZ-install pushrods are available from Andrews Products in either aluminum or chrome moly steel. If you are going to use EZ-install pushrods, stock pushrods can be cut with bolt cutters and then removed (in two pieces). EZ-install pushrod part numbers are: 292188 for aluminum and 292088 for steel pushrods.

3. Remove the 10 screws holding outer cam cover. When this cover is reinstalled, there is a specific tightening sequence and torque rating for all 10 screws. *VERY IMPORTANT: Overtightening cover screws can cause aluminum engine case threads to strip.*

4. Before proceeding further, put the transmission in 4th or 5th gear. Remove both spark plugs so there will be no resistance from compression pressure. Now turn the rear wheel and align camshaft timing marks. This will simplify installation of new cams.

5. Following the factory service manual, the outer chain tension shoe can be removed.

6. Remove the crankshaft sprocket retaining bolt and the rear camshaft sprocket retaining bolt. The factory camshaft locking tool (part number H/D-47941) is well worth the minor cost.

7. Remove the cam support plate. All four oil pump retaining bolts must also be loosened to permit correct oil pump rotor alignment at the time of reassembly after the cam support plate is in place with the new camshafts.

8. With the cam support plate out of the engine, the inner hydraulic cam chain tensioner assembly can now be removed.

9. As described in factory service manuals, the old cams can be removed from the cam support plate and the new cams installed. If you are familiar with cam changes on '99-'05 engines, the '06 Dyna or '07 and '08 twin cam installation is much simpler.

10. Once the cam support plate and new cams are assembled, the cam plate can be reinstalled back into the engine.

11. Reinstalling the 34T sprocket requires using either the original sprocket spacer or a new spacer from HD if the original is not the correct thickness for your engine. HD makes shims and spacer washers in 6 different thicknesses. Spacer part numbers:

    25729-06 0.100 inches
    25731-06 0.110 inches
    25734-06 0.120 inches
    25736-06 0.130 inches
    25737-06 0.140 inches
    25738-06 0.150 inches

12. According to factory service manuals, the front cam thrust washer should be 0.100.

See diagrams 1 and 2 on next page

13. After a trial assembly, alignment of crankshaft sprocket and cam sprocket positions must be checked and adjusted with shims if necessary. See factory manual for proper procedure. Make sure all timing marks are aligned before proceeding!

14. When reinstalling sprocket retaining bolts, use Loctite retaining compound to secure the bolt threads. The sprocket locking tool can be used here. Bolt torque should not exceed 25 ft-lbs for 5/16 x 18 bolts. Bolt torque for splined rear camshafts (3/8 x 24 bolt) should not exceed 35 ft-lbs. Please note that whether your camshaft uses 5/16 bolts (key drive camshafts) or 3/8 bolts (spline drive camshafts), the bolts must be rated as grade 8. (All grade 8 bolts have a 6 pointed star symbol on the top of the bolt heads).

15. Reinstall the outer cam cover with the 10 cover bolts. Cover bolts are to be tightened to a torque specification of 90-120 in-lbs. The service manual shows the correct tightening sequence.

16. EZ-install pushrods are made with 2 long (exhaust), and 2 short (intake) rods. To install, adjust pushrod to shortest length, then position in engine, rocker arm end first. Swing the lower end into lifter. Lengthen pushrod adjuster until free play is gone. Adjust pushrod 3.5-4 full turns longer (21-24 flats) and tighten locknut. Wait until hydraulic unit bleeds down and repeat procedure on next pushrod. When adjusting pushrods, make sure that cam lobe for that pushrod is on low lift point. Lifter housing covers can be temporarily removed to gain another 1/4 inch of clearance. Shorter pushrod cover tubes are available from HD. They will make the pushrod installation and adjustment much easier. Part numbers are: 17938-83 and 17634-99. You will need 4 of each part number to install a complete set.

17. For engines with stock pistons and stock heads, 21H, 26H, 31H and 37H cams should be able to bolt in without head work. 50H cams need piston to valve clearances and valve to valve clearances checked. 54H, 55H and 60H cams need .620 minimum valve travel and .060 minimum piston to valve clearance. With Andrews Products high lift steel collars (part# 293115; includes 4 pieces), setting valve spring travel for either of these two higher lift cams will be easier.

18. Fuel injection systems used on 2006 DynaGlide engines usually do not need re-mapping due to their advanced control system design but if remapping is necessary, a dynamometer with an engine braking system makes it easier and more efficient.

Andrews Products: All '07 - up & '06 DynaGlide Chain Drive Cam Timing

Andrews#	Grind	Timing*	Duration*	Lift	Springs	TDC Lift	Spring Travel
-------	Stock Dyna	02/34	216	.473	Stock	.087	Stock
	'06 (fuel inj)	42/-03	219	.473	-	.110	Stock
-------	Stk ('07-'08)	-09/25	196	.471	Stock	.048	Stock
		42/-03	219	.474	-	.100	Stock
216321	21H	10/30	220	.498	Stock	.134	Stock
		40/08	228	.498	-	.121	Stock
216326	26H	11/35	226	.490	Stock	.138	Stock
		41/09	230	.490	-	.120	Stock
216331	31H	10/46	236	.510	Stock	.131	Stock
		52/08	240	.510	-	.120	Stock
216332	32H	10/46	236	.570	Hi-lift	.135	Stock
		52/08	240	.570	-	.120	Stock
216337	37H	18/38	236	.510	Stock	.174	Stock
		46/14	240	.510	-	.148	Stock
216354	54H	16/42	238	.555	Stock	.165	.615
		43/15	238	.555	-	.158	.615
216350	50H	20/48	248	.510	Stock	.184	Stock
		54/18	252	.510	-	.168	Stock
216355	55H	22/46	248	.550	Hi-lift	.197	.620
		52/20	252	.550	-	.181	.620
216367	67H	24/48	252	.570	Hi-lift	.209	.630
		58/22	260	.570	-	.187	.630
216360	60H	24/56	260	.560	Hi-lift	.205	.620
		58/22	260	.560	-	.192	.620

*Timing and duration listed for .053 cam lift

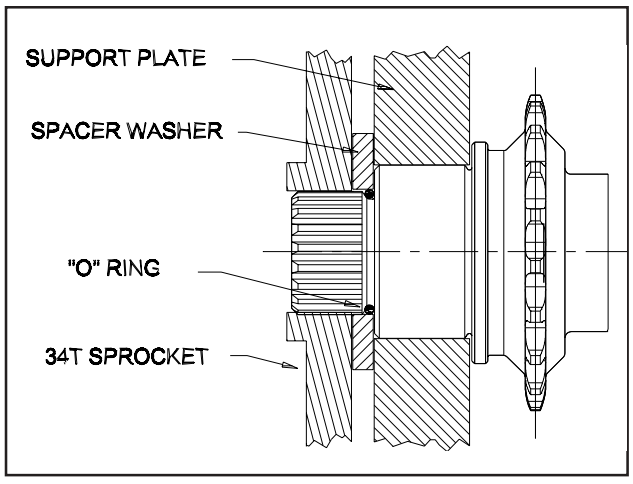


Figure 2: Rear camshaft schematic.

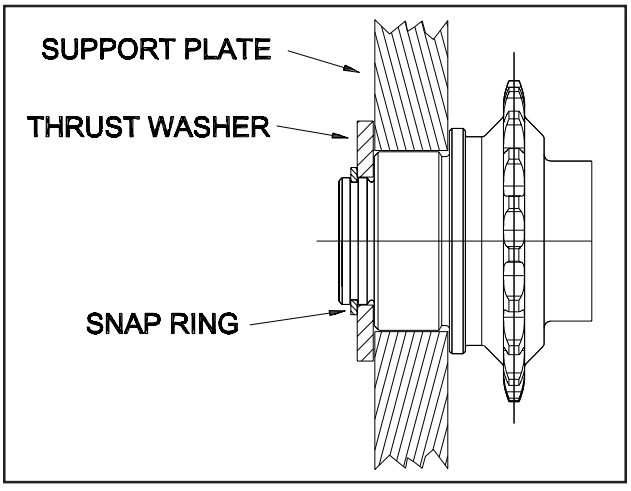


Figure 1: Front camshaft schematic.

Rear camshafts manufactured before July, '06, use an "O" ring as shown to align thrust washer. To adjust alignment of 34T rear cam sprocket and 17T crankshaft sprocket, HD spacer washers are available in 6 different sizes.

The '07 service manual and the '06 HD Dyna manual specifies a .100 thick thrust washer on the outside end of the front camshaft.