

Flat Tappet Camshaft Break-in Procedure

1. Set your valve lash or lifter preload. Try to minimize the number of times that you rotate the engine, as this can displace the moly paste from the lobes and lifters.
2. If possible, prime the oiling system. When priming, rotate the engine at least two complete revolutions to assure oil gets to all valve train components. Valve covers should be off to assure that all rockers are oiling.
3. Preset the ignition timing to start the engine at a fast idle. It is important that the static ignition timing is set as close as possible and if the engine has a carburetor, it should be filled with fuel. The engine needs to start quickly without excessive cranking to insure immediate lubrication to the cam lobes.
5. Start the engine and immediately bring to 3,000 rpm. Timing should be adjusted, as quickly as possible, to reduce excessive heat or load during break-in. Get the engine running fairly smooth and vary the engine speed from 1,500-3,000 rpm in a slow, to moderate, acceleration/deceleration cycle. During this time, be sure to check for any leaks and check out any unusual noises. If something doesn't sound right, shut the engine off and check out the source of the noise. Upon restart, resume the high idle speed cycling. Continue the varying break-in speed for 20-30 minutes. This is necessary to provide proper lifter rotation to properly mate each lifter to its lobe. Should the engine need to be shut down for any reason, upon restart it should be immediately brought back to 3,000 rpm and the break-in continued for a total run time of 20-30 minutes.
5. Let the engine cool, and then drain the crankcase and properly dispose of the oil and oil filter. Refill the crankcase with a premium petroleum-based oil that contains the flat tappet compatible additives, not a synthetic oil. At this point the initial break-in is complete. The engine can be run normally. It is recommended that you change the oil and filter after 500 miles. You might want to put another 5,000 miles on the cam before switching to a synthetic, if that is your preference.

Cam Break-In Basics

In terms of cam break-in we've learned some twists on an old story. In the old days, the drill began with coating the camshaft with that black moly grease. Today you'll notice that most camshaft manufacturers are using a more viscous liquid. The new liquid performs the same job with fewer negative qualities. The next step in the break-in procedure was to preconfigure the engine with proper static timing and fuel in the carburetor, pressure-lube the engine within a couple of hours of startup for best lubrication, and ensure the engine started immediately upon cranking. This is critical because ex-

cessive engine cranking wipes the lube off the lobes before the engine starts. Perhaps the most important step in the break-in process is to bring the engine immediately up to a minimum of 2,500 rpm or more. This is vital because most V8 pushrod engine camshafts are not pressure-lubed. Instead, the cam relies on splash oiling brought up from crankshaft movement.

A higher engine speed for the first 20 minutes ensures plenty of oil reaches the camshaft. Another tip is to vary the engine speed throughout the initial 20-minute session to ensure that random splash oiling reaches all 16 cam lobes. Of course, it almost goes without saying that the engine temperature and oil pressure are within specs during this crucial break-in time. *From Hot Rod Magazine*

Tech Tip: Regarding what kind of distributor gear to use with a cam? Composite is compatible with every type of camshaft material. However, for cast iron cams, a cast iron distributor gear is recommended. For steel billet cams, bronze is an option. For ductile iron the options are composite, melonized or hardened steel.

Always refer to the Manufacturer's Recommended Specifications in completing these tasks.