

CAMSHAFT BREAK-IN FOR FLAT TAPPET CAMSHAFTS

The current engine oils used by engine manufacturers in new car production are no applicable for initial flat tappet camshaft break-in. Those oils are less desirable than older formulations which have better wear additives than the current SM category oils. With the advent of roller lifters / came as well as roller rockers, the need for those expensive elements has diminished.

Changes in today's oil products and "advanced" internal engine design have contributed to a harsher environment for the camshaft and a potential for failure during break-in.

Below is a list of oils with higher levels of wear preventive additives that may be more desirable during flat tappet camshaft break-in. All of the oils listed below also have flashpoints above 400°F.

<u>Delo 400</u>	<u>Delvac</u>	<u>Rotella T</u>
Magnesium 23	Moly 35	Magnesium 20
Calcium 3343	Boron 61	Calcium 3322
Zinc 1378	Calcium 2195	Phosphorus 1326
Viscosity 100°C 15.95	Magnesium 419	Zinc 1499
TBN* 10.63	Phosphorus 1120	Viscosity 100°C 15.12
	Zinc 1231	TBN* 10.36
	Viscosity 100°C 15.5	
	No TBN*	

*TBN stands for Total Base Number, which is the measurement of a lubricant's reserve alkalinity. The higher a motor oil's TBN, the more effective it is in handling contaminants and reducing the corrosive effects of acids for an extended period of time.

Melling offers cam assembly lube. Using liberal amounts of this lube during assembly on all moving or rotating points will offer a front line defense as soon as the engine is rotated.

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RECOMMENDED BREAK IN PROCEDURES

In order to give your new camshaft and lifters the best possible chance to make it through the first crucial moments of operation upon initial startup and provide a long, trouble-free service life, the following is recommended:

PRELUBE BY ONE OF THE FOLLOWING METHODS

BEST, PRESSURE TANK SYSTEM: The pressure tank system is by far the best method of making sure all air is purged from the oil galleries. Prelube until oil is seen at the rocker arms.

NEXT BEST, SPINNING THE OIL PUMP: Using a priming tool, turn the pump with a drill until oil is seen at the rocker arms. Priming tools are available from Melling.

LEAST DESIRABLE, FREE SPINNING THE ENGINE: Remove the spark plugs and turn the engine with the starter until oil pressure is noted on the gage.

BEFORE STARTING: Set the timing and be sure fuel is in the carburetor or injection before cranking. This will assure the engine starts with the least amount of cranking.

START THE ENGINE: After it starts, check for oil pressure and bring the RPM to 1500-2000. If the pressure is good, run the engine at this RPM range for 20 minutes. After this run in period, final adjustments can be made and the engine can be put in service.