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Camshaft Installation Instructions

1) Thoroughly clean camshaft including oil passages before fitting.
2) ***Check you have the correct camshaft***. Put your new cam against your old cam and make sure all lobes, gears, dowel pins, keyways and cam angle sensors are in the same position. Check the part number on the camshaft matches the part number on the timing card supplied with the cam.
3) Camtech Cams must be installed and "dialled in" by a qualified tradesperson.
4) Follow the vehicle manufacturer's instructions for removal, re-fitting and torque settings of all parts. Follow Camtech Cams cam specification card for dialling in your camshaft and setting valve lash as this may have changed from the manufacture's setting.
5) ***Flat Tappet Cams***. New lifters must be installed when using a new or reground camshaft. If new lifers are unavailable for your engine Camtech Cams can radius/machine your lifters to suit your cam. Only use new lifters recommended by Camtech cams or lifters radius/machined by Camtech Cams.
6) ***Roller Pushrod Engine Cams***. We recommend to replace roller lifters when installing a new roller camshaft.
7) ***Hydraulic Flat Tappet and Hydraulic Roller Lifters.*** Hydraulic lifters supplied by Camtech Cams ***DO NOT*** require pre priming. ***DO NOT*** soak the lifters in oil. Install the lifters as supplied. We advise to soak the ***roller wheel only*** in oil on all hydraulic roller lifters.
8) ***Overhead Cams.*** Check followers and rockers for wear. Replace rockers or followers if there is any scuffing on the mating surfaces. These surfaces must have a fine surface finish (less than 4RA)
9) Coat the camshaft lobes, distributor and oil pump gears with the assembly lube supplied and install your new cam. Do not use engine oil on the cam lobes, use engine oil on the journals only.
If you have flat tappet lifters, direct acting lifters or an OHC engine with slide rockers, coat the surfaces that contact the cam lobe with the lube supplied.
10) Replace timing gears, chain and or timing belt. Use race quality timing sets. Check all distributor and oil pump drive gears that come into contact with the cam for any sign of wear and replace as necessary.
11) You must check inlet valve to exhaust valve clearance, valve to piston clearance, valve to block clearance and all valve train components clearance as this will have changed with the use of a performance camshaft.
12) In some cases the base circle diameter of your cam may have changed. If so, check such things as hydraulic lifter preload, rocker geometry and cam to rocker wipe pattern.
13) Thoroughly check all valve train components and camshafts have adequate clearance and are not fowling against other engine components including cylinder heads and blocks.
14) It is extremely important that the valve springs used have the correct open and close pressures and adequate clearance to coil bind. Recommended minimum valve spring coil bind clearance .060". Also check valve spring retainer to valve guide clearance, a minimum of .060" is recommended. In non-roller cam engines where heavy dual springs are used it is recommended to run the cam in using the outer springs only.
15) Install the camshaft using the standard timing marks and "dial in" your cam as outlined below.
16) Find TDC on number 1 cylinder and mark this position with a pointer on your degree wheel.
Dial in your Push Rod Engine Camshaft. Your Cam Card will have a lift at TDC for number 1 intake, e.g. .065". Set your dial indicator to zero on #1 intake lifter on the back of the cam lobe. Turn the engine clockwise until you reach TDC in the overlap. Using your adjustable timing set dial in your cam to the Lift at TDC on the cam card to + or - .003", e.g. .065" + or - .003".
Dial in your Twin Cam Engine. Your Cam Card will have a centre line noted for the inlet and exhaust, e.g. Inlet 110˚ and Exhaust 115˚. Set your dial indicator to zero on the inlet cam follower or retainer with the cam lobe on the base circle. Turn the engine clockwise until your inlet cam is at full lift. You will find at this point the lift will dwell for approx. 3 degrees. Pick the half way point and this is your intake centre line. Adjust your adjustable cam wheel so you have full intake lift at 110˚ after TDC. Now set the dial indicator on the exhaust as described above and keep turning your engine clockwise until the exhaust lobe is at full lift (picking the half way point as described for the intake). Full lift on the exhaust occurs before TDC. Adjust your adjustable cam wheel so you have full exhaust lift at 115˚ before TDC.
Dial in your SOHC Engine. Your Cam Card will have a centre line noted for the inlet, e.g. Inlet 106˚. Set your dial indicator to zero on the inlet retainer with the cam lobe on the base circle. Turn the engine clockwise until your inlet cam is at full lift. You will find at this point the lift will dwell for approx. 3 degrees. Pick the half way point and this is your intake centre line. Adjust your adjustable cam wheel so you have full intake lift at 106˚ after TDC.
If your Cam Card does not specify a lift at TDC or centre line, your cam is to be installed using the standard timing marks.
17) ***You must use the correct break-in oil to break-in your camshaft. We only recommend the use of DRIVEN Break-In oils***
DRIVEN Oils are specifically designed to break in camshafts. **DRIVEN** Oils (formerly Joe Gibbs Racing Oils) are Race developed and Race proven. We also recommend the use of **DRIVEN** Race and Street Performance Oils. Camtech Cams can supply the correct **DRIVEN** oil for your application. Call for the correct oil recommendation.
18) If possible, prime the oiling system (applicable to engines where the oil pump drive can be turned independently to the engine). Prime the fuel system and set your ignition timing so the engine starts instantly.
Warning: Prolonged low speed cranking can wipe the assembly lube off the cam and can cause dry scuffing which will result in cam and parts failure.
19) At this point you should have filled your engine with the correct amount of ***DRIVEN Break-in Oil***. On initial start-up run the engine at 2000-2500 RPM for 20 minutes to break in the camshaft. Do not allow the engine to idle or operate under 1500 RPM. The 20 minute break in process is not applicable to roller camshafts, however we recommend you use ***DRIVEN Break-in Oil*** when installing your new roller camshaft and components.