

Camshaft timing instructions

There are a number of different methods of cam timing procedure. We at Kent Cams use and recommend either of the following two methods:



CAM TIMING USING LIFT AT TOP DEAD CENTRE METHOD:

In recent years with the proliferation of multi valve and multi cam engines this method has proved extremely popular. The process involves setting your camshafts at a specified lift at TDC.

This Method has been in use by Kent Cams and many top engine builders for many years. The relative simplicity has the benefit of setting individual cams at the same position without resorting to excessive crankshaft rotation:

Refer to the Kent Cams catalogue or web site for the TDC lift figure of your particular camshaft.

1. Set your engine to TDC number 1 cylinder (fig a) it is important to ensure you are in the middle of the dwell which occurs at TDC.
2. Position a clock gauge on the inlet follower and turn the cam to achieve the specified lift (e.g. 2.72mm fig b).
3. If your engine has separate inlet and exhaust cams then position clock gauge on the exhaust follower and set this to its specified lift (e.g. 2.41mm fig c).

With your cams set to their specific Top dead centre lifts it is now time to fit your cam belt or chain, inevitably there will be some movement from the ideal TDC lift figure hence the necessity to check your figures a second time with the belt/chain installed and tensioned. Fine adjustments can then be carried out with the aid of a vernier cam gear / cam pulley.

It is imperative that the engine should be checked to ensure there is no piston to valve contact prior to initial starting.

CAM TIMING USING FULL LIFT BEFORE/AFTER TOP DEAD CENTRE METHOD:

For many years the most commonly used method has involved establishing top dead center (TDC) as a datum (zero degrees) and positioning your camshaft with the inlet or exhaust valve at maximum lift at a given position relative to this datum:

For example take our Ford 2Ltr SOHC camshaft number RL30 which has a quoted figure of inlet timing @ full lift = 105 degrees. This means that the inlet valve should be set to be fully open at 105 degrees after top dead center. Therefore using a protractor or timing disc you can establish 105 degrees after TDC and it is at this point that your inlet valve should be at maximum lift. Minor adjustments from the standard timing point can be made with the aid of an adjustable timing gear.

1. Zero a timing disc on your crankshaft with the engine set at top dead centre (fig a)
2. Rotate crankshaft in direction of normal rotation (after TDC) to the specified Full lift position as quoted in the Kent Cams catalogue or web site. (fig d. 105 degrees).
3. Establish, with the aid of a clock gauge, that the inlet valve has achieved maximum lift and is in the middle of its dwell period.
4. Adjustments on the cam pulley can then be made to achieve this.
5. If your engine has a separate exhaust camshaft then return to top dead centre and rotate the crankshaft to the quoted full lift position before top dead centre (opposite direction of rotation. fig e.). It is at this point your exhaust valve should have reached maximum lift. Once again fine adjustments can be made on the cam pulley

It is imperative that the engine should be checked to ensure there is no piston to valve contact prior to initial starting.



A



B



C



D



E