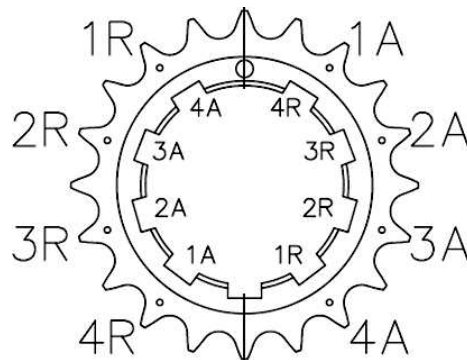


L&M Engines

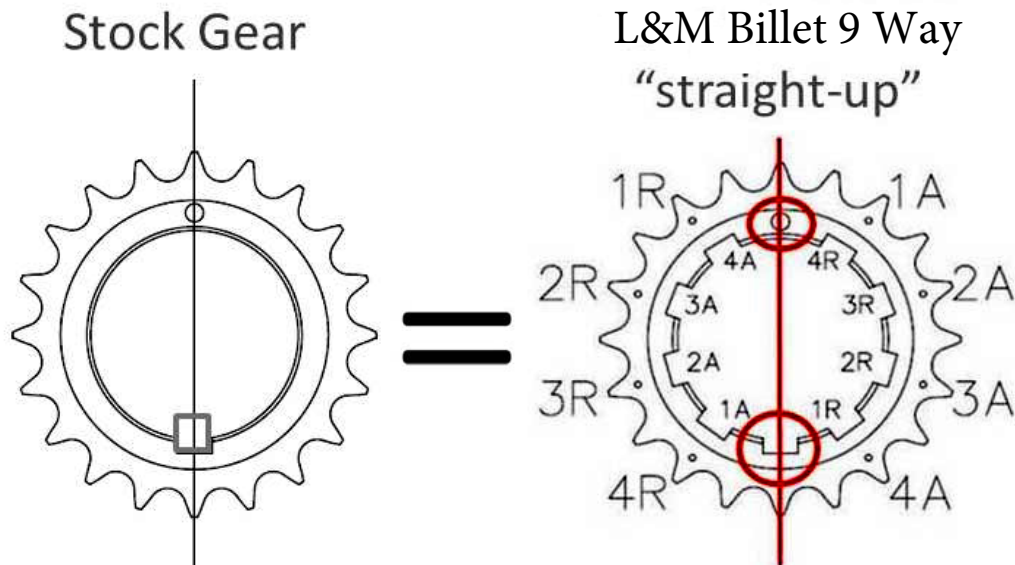
Billet 9 Way Secondary Sprockets

The following instructions describe how to use the L&M 9 Way gears to advance or retard only the intake cams in a 4.6 and 5.4 4v engines.

The stock, secondary cam gears must be installed with their “dot” and aligned with the colored links of the secondary chains (near 12 o’clock position) which puts the cam keyways at the 6 o’clock position. The L&M Billet 9 Way secondary gears are no different, but they have 9 dots and 9 keyways. This part is very important --**EACH DOT CAN ONLY BE USED WITH ITS CORRESPONDING KEYWAY**



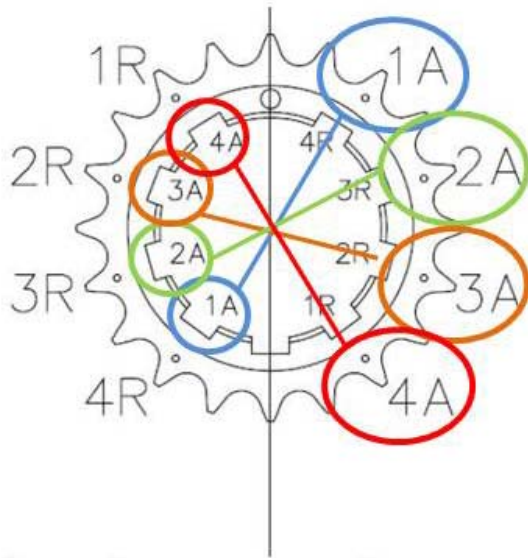
The following images show a stock gear in the correct orientation for installation and a L&M 9 Way aligned for “straight-up” installation (this provides the same lobe centers as the stock gears):



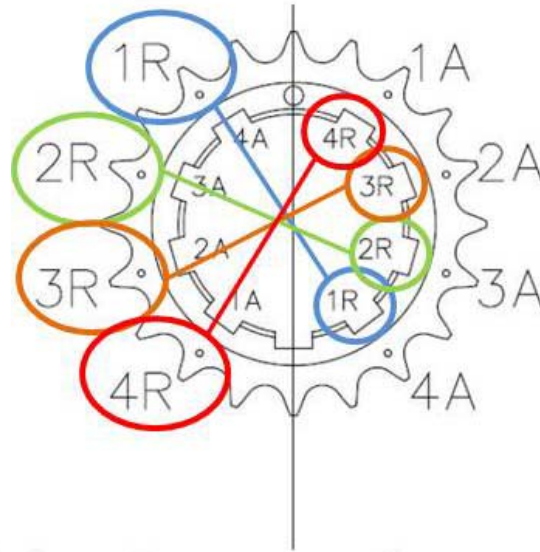
The drawings below shows the keys and dots used to achieve the desired advance or retard, note how they all are almost 180 degrees from each other.

Blue 1 degree Green 2 degree Orange 3 degree Red 4 degree

Advancing

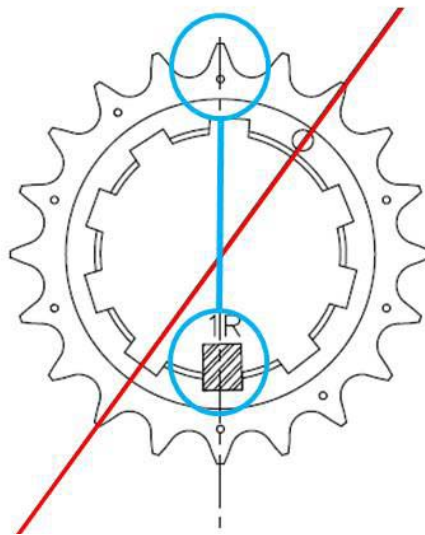


Retarding



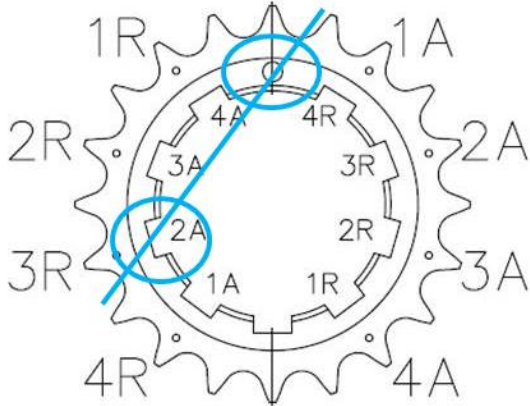
Below is an example of how to install the L&M 9 Way gears to be installed 1 degree retarded. The “dot” to the left of the “straight-up” dot and the keyway to the right of the “straight-up” keyway would be used (not how they are 180 degrees from each other). The red line shows the dot and keyway used for “straight-up” installations.

1 Degree Retarded



Most of the problems that people are experiencing are due to them using the "straight-up" dot when advancing or retarding. Doing so will move the cams far more than required, enough to cause significant engine damage. See the example below.

Example of incorrect
2 deg advance



Example of correct
2 deg advance

