



AUDI 1,8L 4cyl 20v cam gear setup

A/ CAST IRON CAMSHAFTS

- The cam gears are pre-installed, calibrated to the position of the original AEB camshafts.
- There is a reference flat on the camshafts between cylinder 3 and 4. When it is aligned parallel to the cylinder head (with cylinder 1 at TDC), the camshaft is installed at the lobe center indicated next to the reference flat. This may be slightly different from the installation angle using the default cam gear setting because the cam gears are preinstalled using the original cam gear positions. This method requires that the chain tensioner is kept in the operating position.
- A digital angle gauge placed on the reference flat can be used to adjust the cam timing. Instead of installing the reference flats parallel to the cylinder head, they can be installed to an accurate offset to precisely advance or retard the camshafts. To do so, set the angle gauge to zero on the cylinder head surface and rotate the cams with the angle gauge on the reference flat to get the desired angular offset.
- The easiest way for adjusting the cam gear position is to remove the cam followers so the camshaft can turn free in the cylinder head. This way, there will be no counter acting forces from the valve springs so the measurements will be more precise.
- The contact face between the gear and the sprocket should be clean and flat. The M5 bolts for the cam gear should be torqued to 9Nm using loctite blue. Excessive torque will damage the core of the bolt, possibly resulting in loose gears and consequent engine damage.

B/ STEEL BILLET CAMSHAFTS

- Opposed to the cast iron camshafts, the cam gears are not preinstalled on the steel billet camshafts. To set the cam timing, please refer to explanations for adjusting the gears on the cast iron camshafts. When the reference flats are aligned parallel to the cylinder head surface, the installed centerlines are 110°/110°, which may be different from the optimal centerlines (see datasheet for more information).

CAMSHAFTS SHOULD BE INSTALLED BY ENGINE PROFESSIONALS WHO HAVE THE CORRECT TOOLS, SKILLS AND PATIENCE TO DO THE JOB CORRECTLY. WRONG INSTALLATION CAN CAUSE SEVERE ENGINE DAMAGE. PLEASE CONTACT CAT CAMS IN CASE OF DOUBT.