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Instructions for installation of #306560 Vernier cam sprockets.

Thank you for purchasing Atomic vernier adjustable camshaft sprockets. These are designed to replace the troublesome factory hydraulic (VCT) sprockets and provide a wide range of camshaft phasing options.

To enjoy trouble free operation it is imperative the sprockets are installed correctly - failure to follow these instructions will lead to ineffective operation and the possibility of engine damage.

Step 1.
Remove the rocker cover, coil packs and spark plugs from the engine and rotate the engine until the camshaft timing links (yellow) are lined up with the corresponding marks on the VCT sprockets. This may take up to 36 revolutions of the motor until the chain is phased with the timing marks on the sprockets. Loosen the VCT retaining bolts by securing the camshafts from rotating - holding them with a shifting spanner on the cast flats provided at the front of the VCT units. **Refer figure 1**.

Step 2.
Remove the VCT units and secure the timing chain to the side of the timing cover.

Step 3.
The vernier sprockets are the same so there is no specific one for the inlet or exhaust. Check the 12 point bolts are tight and the zero (centre) mark on the hub is lined up with the mark on the sprocket. Fit the vernier sprockets to the cams and line the yellow timing marks up with the marks on the teeth of the sprockets. Torque the retaining bolts to the factory spec of 20 MN, followed by an additional 40 degrees of clockwise rotation.

Figure 1 – Loosening the VCT bolts

Step 4.
Reset the timing chain tensioner and rotate the engine over several times by hand to ensure the sprockets are correctly fitted.

Step 5.
Degree in the camshafts in accordance with the manufacturer's specifications and Locktite the bolts in place with #262 Stud lock, then tighten to 20 ft lbs. Recheck after one hour of operation.

Please note that changing camshaft phasing alters the piston to valve clearance. Advancing the inlet cam REDUCES the piston to valve clearance on the inlet, as does retarding the exhaust cam to the exhaust valve clearance. We strongly recommend checking piston to valve clearance when fitting aftermarket cams or when making major cam to piston phasing adjustments.

Remember, if you encounter any problems whatsoever when installing these parts, please call Atomic direct - we are here to help!

Cheers,

The Team at Atomic