

Singles Timing Chain

Contributed by BMWVMCA NEWS
 Sunday, 26 June 2011
 Last Updated Friday, 25 January 2013

by S. Hamfist Here's a trick to make it easier to get the master link into place when installing a chain in one of the singles. Of course, this means installing a NEW chain. Don't use the old chain, thinking it's probably good enough. Chains are a lot cheaper than the effort needed to remove an engine, replace a chain and reinstall an engine. You saved the old chain, right? You'll need the master link from it for this procedure. First, remove about one third the length of each pin on the old master link, chamfering the edges a bit. We'll get to this new tool of yours in a minute. The old and new links compared. When aligning the sprockets, while the crankshaft is at TDC (that's top dead center) the OT mark in your flywheel timing window, both lobes of the camshaft should be brought into position where they are equal in relation to the center line drawn between the center of the camshaft and through the center of the cam followers. See photo. Another way to do this is to install the cam followers (lifters) and push rods. When the crankshaft is at TDC and the camshaft aligned so that both the tops of the push rods are equal, the two timing sprockets will be properly timed. If you like, apply a bit of white paint to mark each sprocket for future reference. Now comes the fun part: Installing the chain. Begin with a section linking both sprockets, then carefully rotate the cam sprocket drawing up the remainder of the chain. The chain should continue to be engaged with the crank sprocket. When the lead end is drawn back down to the crank sprocket, install the old cut down link from the top to join the two ends of the chain. Next, rotate the crankshaft around to TDC and double check the alignment of the camshaft. If it is off in either direction, it should be easy enough to correct by simply removing the temporary master link and making the correction at the crankshaft sprocket. Reinstall the temporary link and check it again. If you have any doubts about your work so far, this is the time to take a break, get a coffee, bag it in for the night, or whatever it takes to get your mind off the chain and sprockets. Back at it: Once satisfied that the sprocket timing is good, install the new master link from the opposite side of the chain from the temporary link. You'll need angled tweezers and a steady hand for this. Installing the temporary link. Gently slip the new link in, pushing the old link out. Hold the new link in place while installing the upper guide and lock. The locking clip is properly installed when the open end is facing the opposite direction of chain travel. Cannot say when BMW began installing chain tensioners in the singles. The R27 model had it from the factory. The earlier models were tensioned by using chains with incrementally tighter dimensions. Today, just buy a chain from your BMW supplier, plus a chain tensioner kit and retro-fit your engine with one. The tensioner is a standard upgrade on all singles we rebuild here at the shop. Not shown in the photos, the tensioner is a two part affair, with two special shouldered bolts to hold a leaf spring and a steel follower with a nylon face (which presses against the chain). The tensioner presses against the lee side of the chain taking any slack out of it, preventing a worn or loose chain from whipping around inside the engine.

If your engine came with a tensioner, it is probably worn out. Buy a new one.

Your Pal, S. Hamfist

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