

Moto Guzzi Conversion Engine Ignition Timing

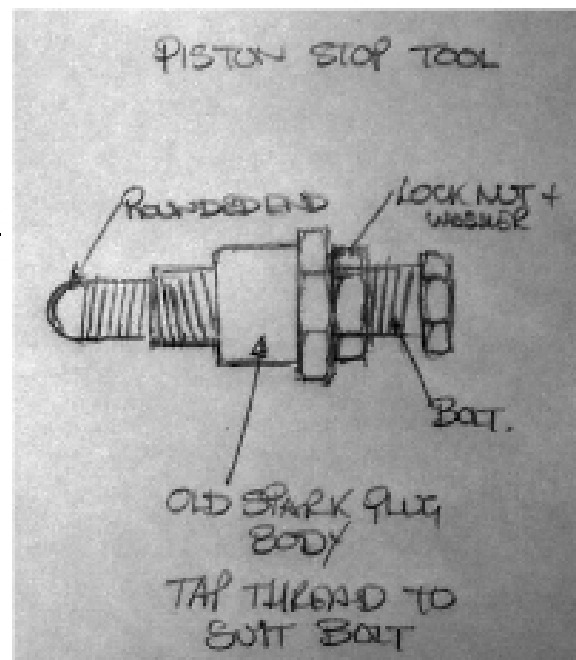
My Guzzi 1000 is fitted with after-market electronic ignition using a Lucas Rita Amplifier. It is a wasted spark system and the kit is produced by Mistral Eng. The advance curve is pre-mapped for the engine and requires the ignition timing to be set at maximum spark advance of 33° which occurs at 6500 rpm.

Your assistant in the car holds the engine at a steady 6500 rpm while you lean over the top with a telephone directory stuffed down the front of your trousers and operate the timing light and adjust the position of the distributor body. To be honest this procedure is worrying, if not downright scary.

When a new or non-standard flywheel is fitted the appropriate timing marks are lost. Accurate timing marks can be made on the new flywheel using the following method:

You will need a timing disc. I made mine from 1mm steel sheet, circular, about 10 or 12in dia. with a hole in the centre for mounting and marked around the edge in 1° increments. All done on a CNC Plasma cutter but could be home made with patience.

Make a permanent timing pointer and attach this to the crank-case or bell housing to indicate the proposed new marks on the edge of the flywheel. Consider when positioning the pointer that you will need to operate a timing light and adjust the distributor body at the same time.



Setting top dead centre:

Isolate the battery, remove the alternator cover, remove the brush holders. Fix the timing disc to the rotor using the centre fixing bolt – do not over-tighten the bolt or loosen the rotor on the taper.

Make a temporary pointer to align with marks on the timing disc and fix to a convenient place on the front of the engine.

Remove both sparking plugs.

Insert the special tool into No.1 cylinder, turn the engine by hand anti-clockwise until the piston stops on the tool. Mark the timing disc as indicated by the temporary pointer, turn the engine clockwise until the piston stops on the tool. Mark the timing disc. Remove the special tool from the spark plug hole.

Bisect the two markings on the timing disc using dividers and mark the disc TDC. Rotate...

...the engine to align this centre mark with the temporary pointer. When aligned mark the flywheel to align with the permanent pointer.

Next set the maximum advance mark (in my case 33°). Turn the engine in the opposite direction to normal rotation and count the degrees on the timing disc. At the appropriate angle mark the flywheel to align with the permanent pointer.

UNDER NO CIRCUMSTANCES, SHOULD YOU ALLOW THE DISC TO SLIP ON ITS FIXING ONCE THE PROCEDURE HAS STARTED.

The procedure can be repeated with No.2 cylinder if required. Remember to mark TDC1 & 2 and max advance 1 & 2 to avoid confusion. With flat and parallel twin engines only one set of marks will be required since the pistons reach top dead centre simultaneously.

Once complete the procedure should be repeated to verify that everything is correct before permanently marking the flywheel. Good accuracy is paramount.

Remove the disc and temporary pointer and reassemble. JOB DONE!

Dave Parr