



Adjustable Vernier Cam Gears

Part Numbers:

A Series : TMG10828A

B Series : TMG10725

MGC : 12B1429ADJ

Thank you for your purchase of a Q Parts adjustable vernier gear.

An adjustable, lightweight vernier gear from Q Parts, enables owners to unlock the full potential of their engine's cam timing, allowing for precise adjustment within the entire range (20 degrees) of a full tooth. Q Parts Vernier Gears are Manufactured in the UK and CNC machined from high grade steel (Boss - EN8 / Gear EN9) for durability and strength whilst reducing the overall weight for a lighter valve train, and more responsive engine. Pair it with one of our Up-rated Duplex Chains manufactured in Germany by Wipperman for optimal performance.

Tools required:

- Timing disc (TT2929)
- Dial Test Indicator (DTI)
- Torque wrench
- Factory Workshop Manual

Additional Items, available separately

	A Series	B Series	MGC
Timing Cover Gasket	12A956B	12H1319B	12B1336
Up-rated Chain (NB. Included within A & B Series Kits)	2H4905UR	2H4905UR	12B1430UR
Crankshaft Duplex Gear (NB. Included within A & B Series Kits)	12G1699	12A1553	12B1980
Crankshaft Timing Gear Shims*	6K628	2K6633	2K8725
Crankshaft Lock Washer	12A398	12A398	12B681
Camshaft Lock Washer	2A759	2A759	1B1219
Oil Seal**	88G561	88G561	AEC621
Countersunk Screws***	2 x CMZ407 or AEA687		

*Required for aligning the crankshaft duplex gear on A & B series engines, fit as many as needed.

**Oil seal 88G561 also suitable for MGA 1600.

***For A Series engines it is necessary to install 2 x ¼ UNF (CMZ407 or AEA687) screws at the bottom of the engine end plate which should be countersunk flush.

NB. The above table does not include part number listings for MGA 1500 – Please contact your supplier for more information if required.

General Instructions

The instructions below are intended to provide outline installation guidance only. For specific torque settings, you should refer to the vehicle factory Workshop Manual.

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If you are intending to change other fuel or ignition components it is advisable to install and test these first. Be sure that the engine starts and runs well before attempting to install to avoid causing increased initial wear of the valve train whilst fault finding.

Before you begin:

- Consult the Factory Workshop Manual to ascertain the torque setting for the camshaft nut and if fitting a duplex crankshaft gear, the torque setting for the crankshaft bolt.
- To optimise your camshaft timing, you will need to know the Inlet Full Lift After Top Dead Centre value (in degrees). NB. On A & B series camshafts, the no.1 inlet cam is the second lobe from the front of the camshaft; only this lobe should be used to set the camshaft to the full lift position, the first lobe provides exhaust lift.

Please be sure to follow the procedures for fitting of the crankshaft & camshaft timing gear to achieve correct alignment. It is essential that both the vernier gear and lower crankshaft gear are in alignment to ensure adequate clearance of the engine face and timing chain cover and to avoid placing strain on the chain during engine operation. The vernier cams have been supplied with hardened mushroom cap Allen screws to enable precise setting of the cam shaft. Once adjustment has been made, these must be torqued to 10-12lb/ft.

Note, when fitting a Duplex chain, it is not essential to install a timing chain adjuster. If doing so, clearance of the adjuster mounting plate must be observed to avoid damage to either the chain and/or the adjuster.

When installing an adjustable vernier and/or Duplex crankshaft gear we recommend that new hardware is sourced, this includes camshaft and crankshaft lock washers and oil seals. For more information see Additional Items above.

Q Parts Performance Tuning Parts

- Performance Q Parts Cam Shafts - A Series (G023) or B Series (G041)
- Performance Q Parts Cam Follower Set – A Series & MGB 18V (G044CF2)
- Performance Q Parts Inlet Valve Set 1.56” – MGB (G044VI1)
- Performance Q Parts Inlet Valve Set 1.62” – MGB (G044VI2)
- Performance Q Parts Exhaust Valve Set 1.343” – MGB (G044VE1)
- Q Parts Aluminium Water Pump – MGB 18V (GWP130A)
- Aluminium Water Pump Pulley – MGB 18G (12B174A)

Further Tuning

When using a performance camshaft, it should be possible to increase the dynamic ignition timing by two to four degrees. Selecting a richer carburettor needle optimised for your particular configuration will further improve engine running (contact your specialist for advice). For optimum engine set-up we recommend the use of a rolling road.