

Distributors
for
MG T-Series
XPAG and XPEG Engines

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IGNITION COIL

The stock coil is good to about 6000 engine RPM and therefore suitable for street cars. For high revs and high compression, a "Lucas SPORTS" coil is recommended as it is suitable for revs to 8000 RPM (but 8000 RPM is not recommended for the stock 'T' engine).

When connecting up the coil ensure that the low tension leads are connected properly. This is, the "CB" contact is connected to the "Contact Breaker" connection on the side of the distributor and the "SW" contact is connected back to the "Ignition Switch". In the case where the coil has been replaced with a different type, ensure that the "+" coil contact is connected to the distributor on positive ground cars (all 'T's + MGA's) and the "-" contact is connected to the ignition switch. The car will run if the connections are reversed but maximum performance will be reduced and spark plug wear will be increased.

DISTRIBUTORS

Distributor model interpretations are: Prefix D indicates = Distributors. KY= die cast body with pressed steel contact breaker base. "4" = four cylinder. A= automatic advance. Specific distributor numbers follow, eg 40162 etc.

The type of block, compression ratio and camshaft all influence the choice of distributors. Three models of distributors are available for the XPAG - XPEG engines as follows:

Model DKY4A - This model was fitted to the TC and early TDs and is fixed to the engine block using the TC micro-adjuster or TD external clamp and 1/8" spacer ring. The measured thickness of both of these types of fixings is 1/4" total. The length from the center line of the drive gear to the bottom of the distributor body is 2-1/2" on the model DKY4A distributor. Therefore, using a TC micro-adjuster or TD clamp and ring fixing results in a center line gear to bottom of fixing of $2\text{-}1/2" - 1/4" = 2\text{-}1/4"$, this is the portion of the distributor that is inside the block. Using these distributors for the late TD and TF, a spacer ring of 1/4" thickness must be used or use two 1/8" early TD spacer rings to arrive at $2\text{-}1/4"$ gear to effective distributor bottom. The late TD and TF use a different block and side clamp cotter bolt to clamp the distributor.

Model D2A4 This model was fitted to the late TD's and all TF's and is fixed to the block using a single cotter bolt with a cut out on the side on the rear of the distributor (no external clamp or spacer rings). The length from the center line of the drive gear to the bottom of the distributor body is $2\text{-}1/4"$ and again this is the length of the portion of the distributor that is inside the engine block, same as the TC and early TD.

This distributor cannot be used in the TC or early TD block as no convenient means of fixing the distributor to the block is available without using the TD 1/8" thick external clamp ring. Use of this ring results in gear to effective bottom of distributor height of $2\text{-}1/4" - 1/8" = 2\text{-}1/8"$ and the gears will not mesh properly.

Model DKYH4A - This model was not originally fitted to the TC, TD or TF but is suitable for use in any engine. The length from center line of drive gear to the bottom of the distributor is $2\text{-}3/8"$, therefore, for the TC and early TD use the TD clamp only without the 1/8" Spacer ring. Resultant "in block" length to center line drive gear is then $2\text{-}3/8" - 1/8" = 2\text{-}1/4"$ For the late TD and TF use the early TD 1/8" spacer ring only and lock the distributor by the cut-out side cotter bolt lock bolt.

Resultant "in block" length to center line gear is still the correct $2\text{-}3/8" - 1/8" = 2\text{-}1/4"$

Please note if you use the TC micro-adjuster with this distributor the drive gear will be 1/8" too high and will not mesh properly with the cam gear (ie: $2\text{-}3/8" - 1/4" = 2\text{-}1/8"$ only in block).

XPAG / XPEG Distributor Original Specifications

DKY4A - Model

Distributor Number	Full RPM	Advance Degree	Int. RPM	Advance Degree	Low RPM	Advance Degree	No Advance Degree	Recomm. Usage
40048B	2600	14-16	2000	13-15	500	1½ - 3½	200	Stock TC
40162A	2600	14-16	2000	13-15	1000	8½-10½	200	Stock early TC or TD
40348A	2200	11-13	980	5-7	500	0-2	300	High compression & stock TC, TD or TF cam

D2A4 - Model

Distributor Number	Full RPM	Advance Degree	Int. RPM	Advance Degree	Low RPM	Advance Degree	No Advance Degree	Recomm. Usage
40367	2200	11-13	980	5-7	500	0-2	315	Stock TF
40368	2600	14-16	1150	9½-11½	500	1½ - 3½	200	Late TD
								Or High compression & TF cam
40441A	1500	9-11	900	6½ - 9½	600	½ - 3½	425	AEG122 cam & high comp

DKYH4A - Model

Distributor Number	Full RPM	Advance Degree	Int. RPM	Advance Degree	Low RPM	Advance Degree	No Advance Degree	Recomm. Usage
40115H	1500	9-11	800	5-7	400	0-2	200	AEG122 cam & high comp. For TC, TD, TF with appropriate spacers.

NOTE that the above advances are distributor advances at distributor rpm. As the distributor runs at 1/2 engine speed, the advance and rpm are doubled for crankshaft readings.

DISTRIBUTOR CAMS

The early distributors were fitted with "symmetric" or "asymmetric" cams, these use a point gap setting of 0.010" - 0.012". Dimension across high points of cam lobes is 0.748" and across cam flats is 0.701"

The later "High Lift" cams use a point gap setting of 0.014" - 0.016". Dimensions across the high points of cam lobes is 0.748" and across cam flats is 0.643". These dimensions are my own measurements and not factory numbers. The high lift cam was fitted to later distributors to improve ignition system performance and increase contact life.

Cam Angles are as follows:

	Open Period	Closed Period
Symmetric	45° ~ 4°	45° ~ 4°
Asymmetric	41° ~ 4°	49° ~ 4°
High Lift	30° ~ 3°	60° ~ 1°

The above listed distributors are those listed or recommended for the various cars and various stages of tune. Other distributors may operate satisfactorily, but the individual characteristics must be checked and an attempt made to match the recommended characteristics. If you have an "unknown" distributor, I have a complete Lucas listing of the characteristics and would be happy to provide the appropriate numbers. However remember that many changes have been made to distributors over the last 60+ years so carefully check the advance plate instead of relying on the distributor number.

The MG Factory recommended static setting for all distributors as points just opening at TDC (Top Dead Center) . However with modern gasolines and higher compression the timing can be advanced to give much better performance. Static settings of 5 or 6 degrees BTDC (Before Top Dead Center) are recommended with a total advance of about 36 to 38 degrees BTDC at approx 3000 to 3500 crankshaft RPM.

DISTRIBUTOR ADVANCE PLATES

All T type distributors have a centrifugal advance control plate attached to the vertical shaft. This plate is usually marked with a number indicating the maximum distributor advance allowed by the plate. The advance is controlled by shaft speed and also by a positive maximum stop for the advance weights. The positive stop is a pair of holes drilled in the advance plate. These holes stop the centrifugal advance of the weights, hence control the amount of total distributor advance. Various advance plates, with various holes sizes, were available to give distributor advances for a normal distributor speed range from 10 degrees to 21 degrees. The distributor runs at half engine speed, therefore the distributor advance number has to be doubled to get crankshaft advance measured at the flywheel or front pulley. Therefore a TC/TD distributor with number DKY4A -40048 or 40162 had an advance plate marked 15 (14 to 16 degrees) giving an automatic advance of 28 to 32 degrees on the crankshaft. These advance plates can be modified to give more advance by drilling the stop holes a bit larger. Maximum recommended crankshaft advance using modern fuels is approximate 36 to 38 crankshaft degrees. This can be achieved by statically setting the points opening at 5 or 6 degrees BTDC and an advance plate of 13 degrees. Or a smaller static advance and a slightly higher advance plate setting. In any case, make sure there is no pinging or pre-ignition anywhere on the rev range. If pinging is occurring, back off the distributor advance setting. Pistons and/or valves will burn out if operated for extended periods under pinging or pre-ignition conditions.

Measuring different distributor advance plates gives the following table (sorry, I can't do a graph , but you can use squared paper or the computer) . With this information you can modify your advance plate to give the desired distributor advance.

Distributor Advance Plate Degrees	Max. External Hole Dimension (inches)
10	1.510
12	1.545
15	1.593
17	1.625
21½	1.690

DISTRIBUTOR SPRINGS

Lucas made hundreds of different distributors for different cars and specific applications. The T type distributors used two different spring sets to control the automatic advance. One weak spring was snug on the distributor weights under static conditions. The second spring was much stiffer and was loose and had no tension under idle. At low engine speed, the weak spring controlled the automatic advance in a straight line. As the engine speed increased, the second spring comes into effect and because it was heavier it caused a break in the advance curve and the curve became more horizontal. Maximum distributor advance is usually achieved before engine speed reaches 3000 RPM and remains constant all the way up the range.