

For addition to M.G.A. Special Tuning Booklet, AKD 819.B.

Stage M.G.A. 4. (M.G.A. 1600 only).

Tune the engine as the procedure for Stage M.G.A. 3.A.

Reshaping the combustion space to increase power.

To increase B.H.P. at the higher R.P.M., the combustion space may be ground out as Sketch S.K. 7265, this will give increased breathing around the valves.

To restore the compression ratio to 9.25 to 1 or increase the compression ratio, up to .030" may be ground off the cylinder head face.

The exhaust port boss may be ground away as illustrated in S.K. 7266, the inlet guide may be shortened 1/4" at the port end.

Make sure the inlet throat has the radius on the valve seat to dimensions illustrated in S.K. 7264.

A larger inlet valve, Pt. No. 12.H. 435, and if required a larger exhaust valve, Pt. No. 12.H. 436, as B.1/B.2. may be fitted, which will need the ports and valve seats machining as dimensions in illustration.

Shorten Exhaust guide and boss as Sheet 16 of the Tuning Book AKD 819.B.

Without a fan fitted (for racing), you should get around 94 B.H.P. on 100 Octane fuel.

If a fan is needed, cut off 3 blades and statically rebalance.

Use M.G.A. 1600 distributor (rolling weight), set at 8° B.T.D.C.

Change needles in 1.3/4" carbs. to X.F. 87.

(Cont'd)

Stage M.G.A. 5. (M.G.A. 1600 only).

Tune the engine as the procedure for Stage M.G.A. 4.

9.5 to 1 Compression Ratio.

This ratio may be obtained by removing the cylinder head gasket, closing the water holes in head and block by threading and plugging with aluminium plugs, or welding up and refacing. The cylinder head should be at the standard depth. The head is then lapped to the cylinder block as a face to face joint.

Spot face oil feed hole and fit suitable synthetic oil seal O ring.

The head and cylinder block is then bored and studded at the rear and a 1.1/2" O.D. x 16.G. water connecting pipe fitted, the lower hole being the existing water plug hole.

The water flow is then from front and through cylinder block, through rear bypass pipe and from rear of cylinder head, through head to the front exit.

When head is fitted check valves carefully on full lift (with tappets set at .015") and ensure valves have a further movement of .060" minimum. If this movement cannot be obtained undercut block face to obtain this on the valves so effected.

Racing Camshaft, Pt. No. 713/12.

This camshaft has the same lift as standard, but has increased overlap of 53° with valve timing :-

I.O.	24°	B.T.D.C.
I.C.	64°	A.B.D.C.
E.O.	59°	B.B.D.C.
E.C.	29°	A.T.D.C.

It will only increase power above 4000 R.P.M. and give a higher valve bounce position than the standard shaft using comparable valve springs.

Tappet setting .015".

Stage M.G.A. 5. (M.G.A. 1600 only). (Cont'd).

Twin Branch Exhaust Manifold. (Pt. No. AHH 6123).

For racing purposes a twin branch extractor exhaust manifold will give some increased power.

The engine should develop around 97 B.H.P. on 100 Octane fuel, and using N.58.R. Champion sparking plugs.

Add in - "Other Special Items", after Page 24.

Flywheel.

The standard cast iron flywheel may be lightened by machining to illustration (Ref. Drawing 19.D. 1735), and re-balanced after machining. If a steel flywheel is required fit Pt. No. AEH 442.

Valve Springs. (Revise Sheet 23.)

The valve bounce r.p.m. on the standard engine is 6,000 r.p.m. and the valve springs, operating mechanism, and drive are **safely** stressed to maintain this.

If for very special competition purposes it is desired to raise the valve bounce period, this may be raised as follows, by choosing the following springs.

It is advised that these springs be used only for very special events, as if used under every day conditions the cams and followers will have a shorter service life.

The springs will not necessarily give an increase in brake-horse-power, but will extend the same horse-power up to valve bounce.

This is **sometimes** useful in enabling a lower gear to be retained, still maintaining the same maximum speed, with increased power for acceleration.

(Cont'd)

Valve Springs (Cont'd).

	Part No. Outer Valve Spring.	Lbs.	Part No. Inner Valve Spring.	Lbs.	Total Lbs. Full Lift.	Valve Bounce R.P.M.	
						Std. Camshaft.	Racing Camshaft.
Standard.	1.H. 722	105	1.H. 723	50	155	6000	6400
	6.K. 873	115	1.H. 723	50	165	6200	6570
	1.H. 1111	117	1.H. 723	50	167	6230	6610
	6.K. 873	115	1.H. 1112	57	172	6320	6710
	1.H. 1111	117	1.H. 1112	57	174	6360	6750
	1.G. 2887	131	1.H. 723	50	181	6480	6880
	1.G. 2887	131	1.H. 1112	57	188	6600	7010