SPECIAL TUNING

FOR

MIDGET ENGINES

TYPE XPAG/TF—1250 c.c. and TYPE XPEG—1466 c.c.

(As fitted to Series "TF" and "TF" 1500 cars)

Issued by

M.G. CAR COMPANY LIMITED

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FOREWORD

The M.G., as delivered from the factory in its standard form, is tuned to give maximum performance with 80 octane petrol, consistent with complete reliability and reasonable freedom from pinking. There is, however, a more or less continuous demand from enthusiasts all over the world for information on methods of improving the performance for competitive purposes, and it is to meet this demand that this booklet has been prepared.

It must clearly be understood, however, that, whereas it is a simple matter to increase the power output of the engine, this in some cases cannot be achieved without the use of fuel having better anti-detonant qualities than regular grade petrol. In addition, this increase in power must inevitably carry with it a tendency to reduce reliability. It is for this reason that the terms of the guarantee on a new M.G. expressly exclude any super-tuning of the kind described in this booklet, but this does not mean that tuning in this way will necessarily make the car hopelessly unreliable. In fact, it may be assumed that it will be at least as reliable as other cars of similar performance.

This booklet is laid out to give details for progressively increasing the power. With the above ideas firmly in mind, the owner should select the simplest tuning method which will give him the performance he requires, remembering all the time that here, as elsewhere, **Power Costs Money.**

This is another of the " M.G. Tuning Booklets " which have been issued in recent years. It deals specifically with the Series " TF ", but much of the information, which is now brought up-to-date, is applicable to those earlier models which also used the XPAG engine.

Tuning hints are included for the racing enthusiasts who want to go to the limit and who have facilities to modify or make up special parts for their car. We hope this section will be of use to them.

Standard Engine Data

TYPE XPAG/TF	VARIATIONS FOR TYPE XPEG
Bore : 66·5 mm.	72 mm.
Stroke : 90 mm. 1250 c.c. 4-cylinder.	1466 c.c.
Firing Order : 1, 3, 4, 2.	
Sparking Plugs : Champion N.A.8.	
Compression Ratio : 8·1 to 1.	8·3 to 1
Valve Timing : Inlet opens 5° B.T.D.C. Closes 45° A.B.D.C. Exhaust opens 45° B.B.D.C. Closes 5° A.T.D.C.	
Valve Lift : 8·3 mm. inlet and exhaust.	
Valve Springs : 150 lb. valve open.	
Tappet Clearance : ·012″ hot.	
Contact Breaker Points : ·014″/·016″.	
Ignition Timing : T.D.C.	
Octane Rating : Minimum requirements for knock-free operation ... ... = 76 octane.	78-80 octane
For maximum power ... = 82 octane.	86-90 octane
Carburetters : Twin "S.U." 1½″ bore.	
Carburetter Jet : ·090″.	
Carburetter Needles : Standard—"G.J." Richer—"H.I." Weaker—"G.L." For Richer Pick-up "B.Y."	
Carburetter Piston Part No. AUC.8015, S.U. No. 3182/1.	
Carburetter Piston Spring : Blue.	
B.M.E.P. : 125 at 3,400 r.p.m.	131 at 3,000 r.p.m.
Max. Torque : 65 ft./lb. at 3,400 r.p.m.	78 ft./lb. at 3,000 r.p.m.
B.H.P. : 57 at 5,500 r.p.m.	63 at 5,000 r.p.m.
Safe Maximum r.p.m. : 5,700.	
Valve Crash r.p.m. : 6,000.	

Standard Engine Data

TYPE XPAG/TF	VARIATIONS FOR TYPE XPEG
C.C. of Combustion Space : 39·3 c.c.	44·4 c.c.
Cylinder Head : Large port type. Exhaust valve throat dia. : 29 mm. Inlet valve throat dia. : 33 mm.	
Cylinder Head Depth: Top to bottom face = 75·16 mm.	76·75 mm.
Thickness of Cylinder Head Gasket : ·045″ (Part No. 168423).	(Part No. AEF.116).
C.C. of Cylinder Head Gasket : Approximately 4·5 c.c. compressed.	5·25 c.c.
Inlet and Exhaust Manifold Gasket : Part No. 168433.	
Clutch Pressure Springs : 150/160 lb. brown.	

Standard Car Data

Gear Ratios :

	Overall ratios	*M.P.H. per 1,000 R.P.M.*
Top	4·875 to 1 ...	15·195
3rd	6·752 to 1 ...	10·97
2nd	10·09 to 1 ...	7·34
1st and Reverse	17·06 to 1 ...	4·34

Gearbox Ratios :

Top	1 to 1.
3rd	1·385 to 1.
2nd	2·07 to 1.
1st and Reverse	3·5 to 1.

Speedo Reduction Gear : 6-tooth gear to 15-tooth pinion.

Rear Axle Ratio : 4·875 to 1.

Dimensions :

Overall length				147″
Overall width				59″
Overall height (hood up)				$52\frac{1}{2}$″
Wheelbase				94″
Track—Front ...	Wire	$48\frac{3}{16}$″	Disc	$47\frac{3}{8}$″
Rear ...	Wheels	$50\frac{13}{16}$″	Wheels	50″
Weight				$17\frac{1}{4}$ cwt.
Tyre size				5·50 × 15
Tyre pressures (front tyres)				18 lb.
Tyre pressures (rear tyres)				18 lb.

Tyre pressures may be increased to 22 lb. or 24 lb. for competition work.

Front wheel toe-in ... ... Nil

Capacities :

Capacity of water system	$10\frac{1}{4}$ pints	
Capacity of gearbox	$1\frac{1}{4}$ pints	Hypoid "90"
Capacity of rear axle	$2\frac{1}{4}$ pints	Hypoid "90"
Capacity of petrol tank	12 gallons	
Capacity of engine sump	$10\frac{1}{2}$ pints	

Optional Equipment

Optional Rear Axle Ratio : 8/41 Crown Wheel and Pinion (Part No. 102258 (Pair)).

	Overall Ratios	*M.P.H. per 1,000 R.P.M.*
Top	5·125 to 1 ...	14·42
3rd	7·098 to 1 ...	10·412
2nd	10·609 to 1 ...	6·966
1st and Reverse	17·938 to 1 ...	4·12

Speedo reduction for above :
Speedo Gear: 5-tooth (Part No. AEG.3110).
Speedo Pinion: 13-tooth (Part No. X.22797).

Optional Rear Axle Ratio : 9/41. Crown Wheel and Pinion (Part No. 102262 (Pair)).

	Overall Ratios	*M.P.H. per 1,000 R.P.M.*
Top	4·555 ...	16·259
3rd	6·309 ...	11·81
2nd	9·429 ...	7·85
1st and Reverse	15·942 ...	4·64

Speedo reduction for above :
Speedo Gear : 6-tooth (Part No. AEG.3109).
Speedo Pinion : 14-tooth (Part No. X.19101).

Stage T.F.1 (1250)

Higher Compression Ratio Tuning (8·6 to 1)

The engine is raised to 8·6 to 1 compression ratio by removing $\frac{1}{32}''$ from the cylinder head face.

The standard head is 75·16 mm. thick ; the finished thickness after machining should be 74·37 mm.

Remove any frazes left, and polish, but do not grind out the combustion chambers as these are already quite clean and are machined nearly all over.

Make sure the gasket edges do not overlap the combustion spaces.

The ports may be lightly ground and polished, but should not be ground out so heavily that the shape or valve choke diameter is impaired.

The inlet port outer separating stud boss may be ground away slightly—about $\frac{1}{16}''$ off each side (still maintaining its streamline shape)—so that oblong ports are obtained $1\frac{3}{16}''$ high, $\frac{11}{16}''$ wide (minimum).

Do not remove this boss completely or it will affect mixture distribution.

Match-up, by grinding, all the exhaust and inlet manifold ports with the cylinder head ports.

Grind out and polish the inlet manifold, also matching the carburetter bore.

(*a*) Use standard cylinder head gasket (Part No. 168423).

(*b*) Use $\frac{3}{32}''$ thick $\times$ $\frac{3}{4}''$ O.D. washers under cylinder head nuts (to correct for reduced head thickness).

(*c*) Use fuel 80 octane.

(*d*) Plugs : Use Champion N.A.8 for ordinary road work.
For sustained power use N.A.10.

(*e*) Use carburetter needles G.J.—Jet ·090″.

(*f*) Tappet setting : ·012″.

(*g*) Ignition setting : T.D.C.

(*h*) Use standard $1\frac{1}{2}''$ carburetters.

The engine should then give approximately 61 brake horse-power at 5,000 r.p.m.

Stage T.F.2 (1250)

High Compression Ratio Tuning (9·3 to 1)

The standard engine is raised to 9·3 to 1 compression ratio by removing $\frac{1}{16}''$ from the cylinder head face.

The finished thickness after machining should be 73·575 mm. This is the absolute maximum to remove.

Polish head, ports and manifolds as in Stage 1.

It will be noticed that a sharp edge is left on the combustion space profile at the end of the sparking plug hole.

File this sharp edge back vertically until it is a minimum of $\frac{1}{32}''$ thick at the centre.

File this only locally at the plug hole (approximately $\frac{3}{4}''$ wide scoop) and blend into the combustion chamber shape with a radius each side. Do not file back too far. Check that the combustion space edge still extends safely over the gasket edge.

(*a*) Use standard cylinder head gasket.

(*b*) Use $\frac{1}{8}''$ thick by $\frac{3}{4}''$ O.D. washers under cylinder head nuts (to correct reduced thickness).

(*c*) To allow for the cylinder head machining it is better to shorten the push rods $\frac{1}{16}''$, by drawing off one end in an extractor jig, machining $\frac{1}{16}''$ off the tube end, counterboring the tube $\frac{1}{16}''$ deeper for the push-rod end to enter, refitting the push-rod end and spot welding through to retain end.

Alternatively, use four rocker-shaft bracket packing pieces (Part No. MG.862/459) to correct rocker adjustment. These are $\frac{1}{16}''$ mild steel with three holes to match base of bracket.

(*d*) Plugs : Use Champion N.A.8 or for sustained power use Champion N.A.10 or Lodge RL.49.

(e) Tappet setting ·012″.

(*f*) Ignition setting : T.D.C.

(*g*) Use standard $1\frac{1}{2}''$ carburetters.

Using fuel 90 octane, with carburetter needles G.J., Jet ·090″, the engine should then give approximately 64 brake horse-power between 5,500 and 6,000 r.p.m.

If your car is not fitted with the high pressure "S.U." fuel pump fitted at the rear of the car, it would be advantageous to fit one.

The parts required are :—

Part No.	*Description*	*No. off*
ACG.5144/Z	Frame Bracket for Petrol Pump	1
ACG.5145/Z	Petrol Pipe—Front	1
ACG.5146/Z	Petrol Pipe—Rear	1
AUA.45	Petrol Pump (High Pressure) P.P.36 (c/w Elbow, Nut and Olive, supplied loose) ...	1
ACG.5143/Z	Bracket—Petrol Pump	1
FB.104/9/Z	Bolt—2 off } Bracket and Mounting to Chassis Frame	
FN.104/Z	Nut—2 off } Bracket and Mounting to Chassis Frame	
FN.204/Z	Nut—2 off } Bracket and Mounting to Chassis Frame	
ACG.5147/Z	Cover for Petrol Pump	1

Stage T.F.3 (1250)
High Compression (9·3 to 1) Semi-Racing Tune using special camshaft

Carry out the procedure of raising the compression ratio as Stage T.F.2.

Fit new Camshaft (Part No. AEG.122).

This camshaft gives the following timing :—

Inlet opens 13° B.T.D.C. Inlet closes 59° A.B.D.C.
Exhaust opens 50° B.B.D.C. Exhaust closes 22° A.T.D.C.

The tappet setting is ·019″ hot, inlet and exhaust, but they may be set down to minimum ·015″ for quietness.

The valves should not flutter until 6,300–6,400 r.p.m.

This camshaft may be described as semi-racing and some feeling of lost power at the lower revs. may be felt, but the free-running of the engine at the higher revs. in top and the intermediate gears should compensate for this. But be reasonable when using the revs. available, as, due to the design of the camshaft, the valve crash-point is not loudly audible, and the maximum revs. could be considerably exceeded. A good driver is aware of this point of uselessly over-revving his engine (with resulting expensive noises) and drives on the rev. counter with due respect.

The oil pressure should be raised to approximately 80 lb. maximum by fitting a spigoted steel washer (Part No. SK.1039) on the lower end of the oil pump release valve spring. Or turn one up yourself to the following dimensions : ·490″ O.D. × ·075″ thick with spigot ·368″ O.D., making total thickness $\frac{1}{8}$″.

Insert the spigot into the lower end of the spring and this should hold the washer in position during assembly.

The standard distributor will be reasonably satisfactory, but a special distributor to suit the characteristics of this tuning is available (Part No. AJG.5035 or Lucas No. 40441A).

Static ignition setting is T.D.C.

Use 80 octane fuel, or 90 octane may be used.

The engine should give approximately 66 brake horse-power between 5,800 and 6,300 r.p.m.

Use carburetter needles G.J., or richer L.S.1.

Stage T.F.1 (1500)

Higher Compression Ratio Tuning (8·6 to 1)

The engine is raised to 8·6 to 1 compression ratio by removing ·020″ from the cylinder head face.

The standard head is 76·75 mm. thick ; the finished thickness after machining should be 76·25 mm.

Remove any frazes left, and polish, but do not grind out the combustion chambers as these are already quite clean and are machined nearly all over.

Make sure the gasket edges do not overlap the combustion spaces.

The ports may be lightly ground and polished, but should not be ground out so heavily that the shape or valve choke diameter is impaired.

The inlet port outer separating stud boss may be ground away slightly—about $\frac{1}{16}$″ off each side (still maintaining its streamline shape)—so that oblong ports are obtained $1\frac{3}{16}$″ high, $\frac{11}{16}$″ wide (minimum).

Do not remove this boss completely or it will affect mixture distribution.

Match-up, by grinding, all the exhaust and inlet manifold ports with the cylinder head ports.

Grind out and polish the inlet manifold, also matching the carburetter bore.

(*a*) Use standard cylinder head gasket (Part No. AEF.116).

(*b*) Use fuel 90 octane.

(*c*) Plugs : Use Champion N.A.8.

(*d*) Use carburetter needles G.J.—Jet ·090″.

(*e*) Tappet setting : ·012″.

(*f*) Ignition setting : T.D.C.

(*g*) Use standard $1\frac{1}{2}$″ carburetters.

The engine should then give approximately 65 brake horse-power between 5,000 and 5,500 r.p.m.

Stage T.F.2 (1500)

High Compression Ratio Tuning (9·3 to 1)

The standard engine is raised to 9·3 to 1 compression ratio by removing ·050″ from the cylinder head face.

The finished thickness after machining should be 75·50 mm.

Polish head, ports and manifolds as in Stage 1.

It will be noticed that a sharp edge is left on the combustion space profile at the end of the sparking plug hole.

File this sharp edge back vertically until it is a minimum of $\frac{1}{32}$″ thick at the centre.

File this only locally at the plug hole (approximately $\frac{3}{4}$″ wide scoop) and blend into the combustion chamber shape with a radius each side. Do not file back too far. Check that the combustion space edge still extends safely over the gasket edge.

(*a*) Use standard cylinder head gasket.

(*b*) Plugs : Use Champion N.A.8 or for sustained power use Champion N.A.10 or Lodge RL.49.

(*c*) Tappet setting ·012″.

(*d*) Ignition setting : T.D.C.

(*e*) Use standard $1\frac{1}{2}$″ carburetters.

Using fuel 90 octane, with carburetter needles G.J., Jet ·090″, the engine should then give approximately 67 brake horse-power between 5,500 and 6,000 r.p.m.

Stage T.F.3 (1500)

High Compression (9·45 to 1) Semi-Racing Tune using special camshaft

The standard engine is raised to 9·45 to 1 compression ratio by removing ·068″ from the cylinder head face.

The finished thickness after machining should be 75·16 mm.

Polish head, ports and manifold as in Stage 1.

Fit new Camshaft (Part No. AEG.122).

This camshaft gives the following timing :—

Inlet opens 13° B.T.D.C. Inlet closes 59° A.B.D.C.
Exhaust opens 50° B.B.D.C. Exhaust closes 22° A.T.D.C.

The tappet setting is ·019″ hot, inlet and exhaust, but they may be set down to minimum ·015″ for quietness.

The valves should not flutter until 6,300–6,400 r.p.m.

This camshaft may be described as semi-racing and some feeling of lost power at the lower revs. may be felt, but the free-running of the engine at the higher revs. in top and the intermediate gears should compensate for this. But be reasonable when using the revs. available, as, due to the design of the camshaft, the valve crash-point is not loudly audible, and the maximum revs. could be considerably exceeded. A good driver is aware of this point of uselessly over-revving his engine (with resulting expensive noises) and drives on the rev. counter with due respect.

The oil pressure should be raised to approximately 80 lb. maximum by fitting a spigoted steel washer (Part No. SK.1039) on the lower end of the oil pump release valve spring. Or turn one up yourself to the following dimensions : ·490″ O.D. × ·075″ thick with spigot ·368″ O.D. making total thickness $\frac{1}{8}$″.

Insert the spigot into the lower end of the spring and this should hold the washer in position during assembly.

The standard distributor will be reasonably satisfactory, but a special distributor to suit the characteristics of this tuning is available (Part No. AJG.5035 or Lucas No. 40441A).

Static ignition setting is T.D.C.

Use 90 octane fuel.

The engine should give approximately 70 brake horse-power between 5,800 and 6,300 r.p.m.

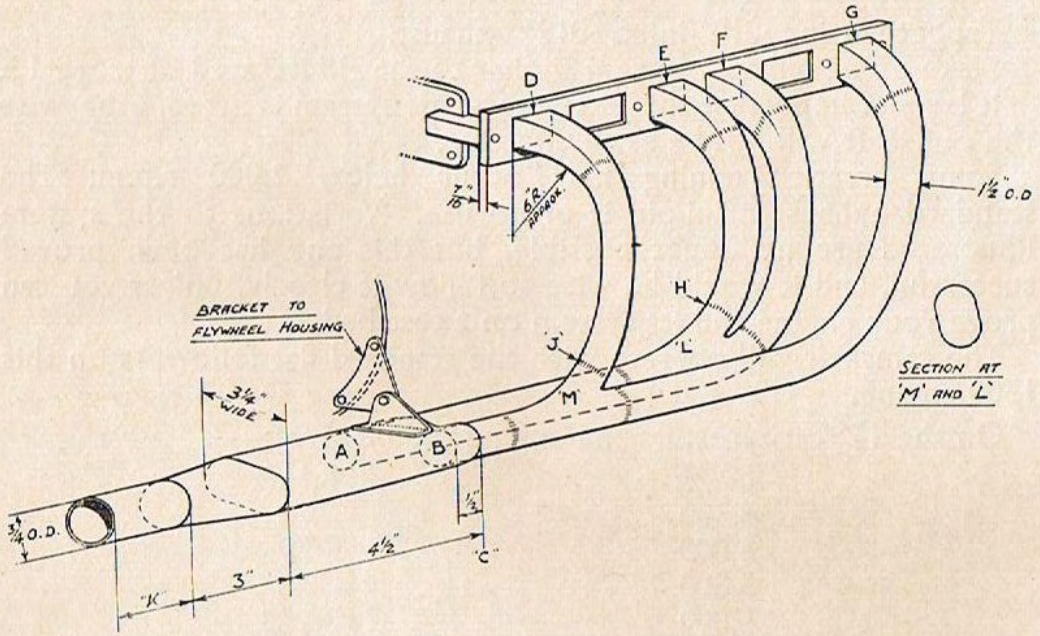
Use carburetter needles L.S.1.

Stage T.F.4

Hints on extra Tuning for Specials

A. Special Exhaust System for use with Semi-racing Camshaft.

Carry out procedure as for tuning to Stage T.F.3 (1250 or 1500). Make up and fit a 4-pipe extractor exhaust system similar to illustration below.



This will increase the power 2 or 3 B.H.P. all the way up the range, or alternatively, a twin exhaust system, with a branch from cylinders 1 and 4 and another branch from cylinders 2 and 3 running into separate pipes is partly effective.

B. Racing tune for 1500 engines.

For racing purposes, the best way of improving performance is to use a high compression ratio, in conjunction with a special camshaft.

If run on 90 octane fuel the compression ratio can be put as high as 10·7 to 1.

The cylinder head depth should be 73·575 mm. for this compression ratio. This is the absolute maximum to remove. When raising the compression ratio from the standard engine, shorten the push-rods

by the same amount as is removed from the cylinder head face. This can be done by drawing the push-rod end in a small jig, machining the tube and pressing back the push-rod end. Check that the undercutting inside the push-rod tube is deep enough to allow the push-rod end to go right home.

Fit high overlap camshaft (Part No. 168551).

The timing of this camshaft is :—

Inlet opens 32° B.T.D.C. Inlet closes 58° A.B.D.C.
Exhaust opens 60° B.B.D.C. Exhaust closes 30° A.T.D.C.

Tappet setting ·012″ inlet, ·019″ exhaust.

Make up an exhaust system similar to that illustrated on page 13. It is most important this extractor-type system is fitted, otherwise the camshaft will not be at all effective.

Some erratic running may occur below 2,000 r.p.m. The standard exhaust manifold is of no use. Variations to the system illustrated are no doubt possible, but this one has been proved successful, and it would be wise to follow it closely, unless you can prove your engine and its system on a test bed.

The camshaft will operate with the standard flat followers on this 1500 engine.

On the 1½″ carburetters the engine should give :—

R.P.M.	*B.H.P.*
6,300	78
6,000	79
5,500	78
5,000	76

A further slight increase on these figures can be made :—

Fit two 1¾″ carburetters (S.U. Specification 723).

They are fitted with needles C.V. (If richer required use G.K., or weaker required use B.C. or K.T.A.).

For maximum performance, blue springs are fitted to the carburetter pistons, but where acceleration only matters it may prove better to fit heavier springs (red), with a slight loss of maximum power.

The "TF" inlet manifold (Part No. 168434) can be bored $\frac{25}{32}$″ dia. and an adaptor plate fitted to accept the 1¾″ carburetters.

Taper grind the $\frac{25}{32}$″ dia. into the inlet manifold, making the passage through the manifold as large as possible.

The "TF" inlet manifold (Part No. 168434) used as suggested above with the adaptor plate for the 1¾″ carburetters is rather heavy, and for the sake of lightness could be replaced with a sheet-metal one, built directly into the exhaust manifold, following a similar design, with boxes up from main branch and ⅝″ I.D. steel balance

tube across with a balance restrictor in the centre of this pipe having a 11 mm. hole.

When fitting the large $1\frac{3}{4}''$ dia. carburetters it is advantageous to increase the width of the inlet ports in the cylinder head and the inlet manifold. It is just possible to remove a further $\frac{1}{16}''$ down each outer side of the inlet port, by grinding the wall and tapering into the port for approx. $\frac{5}{8}''$. Do the same with the inlet manifold port, tapering out as far as possible. Grind the leading edge of inlet port separating boss to a rather sharp edge and taper back as steeply as possible around the stud boss, do not thin down the walls of the stud boss excessively or the strength to clamp down the cylinder head will be impaired. Cut away the inlet manifold gasket to the shape of the enlarged port opening.

To prevent vibration of the carburetters, it is advisable to use a Neoprene gasket $\frac{1}{8}''$ thick and double coil spring washers under bolt heads, so that the carburetters may be left not quite tightened solid. Wire bolts in pairs to prevent them becoming slack.

The engine should give the following :—

R.P.M.	*B.H.P.*
6,300	82
6,000	81·5
5,500	81
5,000	78·5
4,500	73
4,000	66
3,500	57
3,000	49
2,500	41

Use plugs KLG.FE.280/4 or softer KLG.FE.250/4, or harder KLG.FE.290/4, or alternative Champion N.A.10 or N.A.12, or Lodge RL.47 or Lodge RL.49.

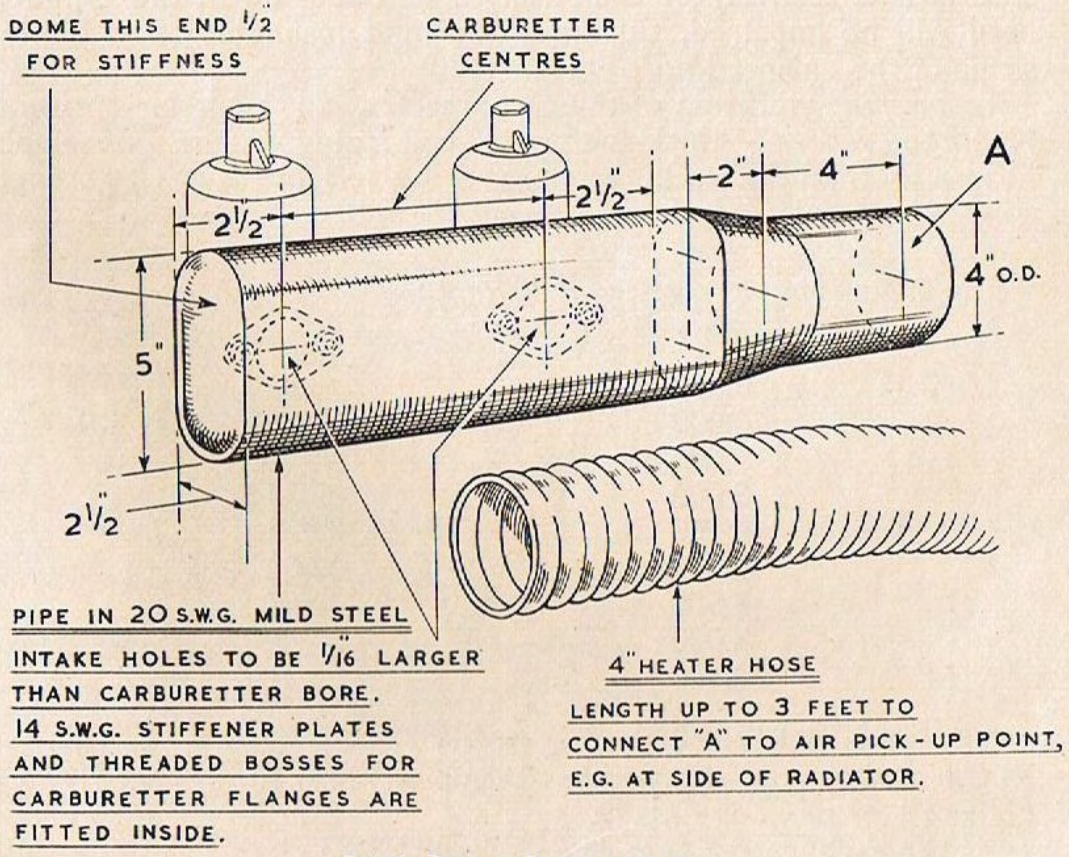
As the carburetter float-chamber will come close to the exhaust pipes, it will be necessary to fit a large asbestos-lined black steel sheet heat-deflector plate between pipes and carburetters. Also if cold air can be arranged to blow on the float-chambers this will prevent any chance of fuel boiling.

As the exhaust manifold (shown on page 13) has a large area of hot pipes under the carburetters, hot air rises and enters the carburetter chokes and seriously impairs the efficiency. The carburetter chokes must be in or fed with a cold air stream.

If the engine is fully enclosed, especially when in a streamlined

body it may be necessary to fit an air-box feed to the carburetters with an extension pipe to a cool air position such as at the nose of the car, although not essentially head on into the main air stream. A quiet spot behind the body nose adjacent to the grill will do. If the pipe is put head on into the main air stream, it may be necessary to connect (by unions in the air box) the float-chamber top air vent pipes to the air box to balance the pressures, or alternatively, drill three $\frac{3}{8}''$ holes in the centre bottom of the air box to prevent any pressure variation building up.

Such an air box is depicted below :—



Road Racing Performance.

A satisfactory alternative method to the above is to use a length of 4″ car heater hose, fitted with the front open end in the main air stream at the body nose and the end supported 3″ or 4″ ahead of the front carburetter, with the direction of the air stream crossing the carburetter intakes.

If maximum overall car performance is required, don't overgear these engines. Let them attain 6,300 r.p.m. in top gear.

Valve crash is 6,500 r.p.m. to 6,800 r.p.m.

List of Special Material available

Optional Rear Axle Ratio : 8/41 Crown Wheel and Pinion (Part No. 102258 (Pair)).

	Overall Ratios	*M.P.H. per 1,000 R.P.M.*
Top	5·125 to 1 ...	14·42
3rd	7·098 to 1 ...	10·412
2nd	10·609 to 1 ...	6·966
1st and Reverse	17·938 to 1 ...	4·12

Speedo reduction for above :
Speedo Gear : 5-tooth (Part No. AEG.3110).
Speedo Pinion : 13-tooth (Part No. X.22797).

Optional Rear Axle Ratio : 9/41 Crown Wheel and Pinion (Part No. 102262 (Pair)).

	Overall Ratios	*M.P.H. per 1,000 R.P.M.*
Top	4·555 to 1 ...	16·259
3rd	6·309 to 1 ...	11·81
2nd	9·429 to 1 ...	7·85
1st and Reverse	15·942 to 1 ...	4·64

Speedo reduction for above :
Speedo Gear: 6-tooth (Part No. AEG.3109).
Speedo Pinion: 14-tooth (Part No. X.19101).

15–450 Disc Wheels suitable for tyre sizes 6·00 × 15 (M.G. Part No. 131904).

	Part No.
Washer for Oil Pump Spring	SK.1039
Rocker-shaft bracket packing pieces $\frac{1}{16}''$ (1·6 mm.) thick	MG.862/459
Competition Camshaft	AEG.122
Racing camshaft	168551
High compression pistons—12 to 1 (complete with special rings and gudgeon pin). (State exact bore size when ordering) (1250 c.c. only)	MG.862/458
34 mm. (1·34″) exhaust valves (sodium-cooled) ...	MG.862/466
Valve guide (for sodium exhaust valve)	MG.862/467
Cotters, 1 pair (for sodium exhaust valve)	MG.862/468

	Part No.
8" competition clutch assembly—complete	MG.862/97
Comprising :—	
Cover assembly complete with special pressure plate 195/205 lb. light grey springs with cups ...	MG.862/98
Drive plate assembly with cemented linings... ...	MG.862/99
Release Bearings } Standard "TF"	163264
Retainer ... ... } Standard "TF"	MG.795/161

Plugs—Champion

N.A.8	Sports	Long Reach.
N.A.10	Super Sports ...	
N.A.12	1st Step Racing ...	
N.A.14	2nd Step Racing ...	
N.A.19	3rd Step Racing ...	

Plugs—Lodge

H.L.N.P.	Super Sports ...	Long Reach.
R.L.49	1st Step Racing	
R.L.51 or 52	2nd Step Racing	
R.L.53	3rd Step Racing	

Lucas High Performance Coil, Type B.12.1.

(The Model Q.12 coil fitted as standard is satisfactory up to 6,000 r.p.m., but the BR.12 is good up to 8,000 r.p.m.)

Lucas 4 V.R.A. Vertical Magneto (Lucas Part No. E.N.M. 2002).

(This has a suitable advance curve for the XPAG and XPEG engine when fitted with the standard camshaft or SK.1017 but not for use with camshaft AEG.122).

To fit this magneto it is necessary to indent valve chest plate to clear the body and move position of breather pipe elbow.

Lucas Distributor (Part No.AJG.5035) Lucas No. 40441A ... ... } For use with Camshaft (Part No. AEG.122) and 9·3 to 9·45 to 1 Compression Ratio.

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