

DECOKING THE

1 1/4 LITRE 

(SERIES Y)

Improving
Engine Performance

By A. CHAMBERS

THE M.G. 1 1/4-Litre (Series Y) was introduced in 1947, thus becoming one of the first completely restyled cars to appear after the war.

The model was continued for six years, during which time 7,500 were built, many of them for export earning a good reputation for the British motor industry.

The 1 1/4-litre was distinctive in appearance and was more than an ordinary motor car. It

Remove the bonnet completely after taking out the two screws at the rear end of the bonnet hinge. Detach the high-tension cables from the sparking plugs and remove the sparking plugs, taking care not to break or damage the porcelain centres. Then disconnect the throttle and mixture controls.

Uncouple the exhaust pipe from the manifold and disconnect the fuel pipe from the fuel pump. Remove the carburetter air cleaner, branch pipe and float-chamber overflow pipe and unbolt the carburetter from the induction manifold.

Remove the bolt clipping the exhaust pipe to the gearbox and remove the four nuts securing the induction and exhaust manifold to the cylinder head and withdraw the manifold. Loosen the top clips on the thermostat by-pass pipe and remove the top radiator hose and thermostat body and also

idea to place all these parts in order of removal since it facilitates reassembly, which is the above procedure carried out in the reverse order.

Release the 10 cylinder head stud nuts a partial turn at a time until they are free for complete removal by hand. A special spanner for this should be included in the tool kit.

The cylinder head can now be removed but, if it does not come away easily, tap each side with a hammer using a piece of wood to take the blow. When lifting the head, a direct pull should be given so that the head is lifted evenly up the studs.

The copper-asbestos gasket is not difficult to remove and should be lifted squarely to prevent jamming on the cylinder head studs.

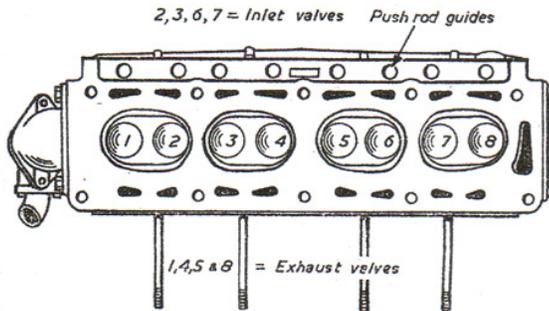


Fig. 1 - Showing the positioning of the valves.

was a combination of family-sized vehicle, British craftsmanship and a car with good performance. The engine, the M.G. XPAG 1,250 C.C. o.h.v. type, delivered 46 b.h.p. at 4,800 r.p.m. and road test reports at the time indicated that the model had a top speed of over 70 m.p.h., acceleration of 0-60 m.p.h. in 29 1/2 seconds and a fuel consumption of 36.5 m.p.g. at 30 m.p.h.

In December, 1951, the "B" version of the Y Series was introduced, the main difference being the standard fitting of a by-poid rear axle.

Engine decarbonising on this vehicle is a relatively simple task requiring only time and, possibly, a few shillings' worth of gaskets but it can mean a great deal in good all-round performance.

The time factor can be shortened if the following procedure is adopted but, before doing so, it is advisable to buy a decarbonising gasket set, part No. M.G.917/15.

Removal of Cylinder Head

Drain the water system by opening the tap at the bottom of the radiator and the tap in the cylinder block immediately below the exhaust manifold.

the oil feed pipe to the rocker gear from the cylinder head.

It is also necessary to slacken the fume pipe and the side inspection cover. If this cover gasket is damaged, it must be replaced before the engine is run.

The cylinder head is now free of all its attachments. Remove the valve cover and rocker gear from the cylinder head and then the push-rods may be withdrawn. It is a good

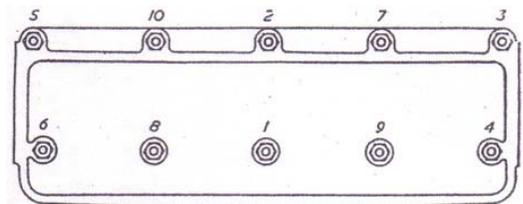


Fig. 2 - The correct order for retightening the cylinder head nuts.

Removal of Valves

Before removing carbon from the head, the valves should be withdrawn. The valve springs are secured by split cotters which can only be extracted if the cylinder head is placed on a bench, combustion chambers downwards, with a block of wood or suitable packing piece fitted in the combustion space below the valves being worked upon. By depressing the valve spring from above, the two cotter halves on each valve stem can be withdrawn. On the valve stems will be found a small synthetic rubber oil seal which can be slipped off easily.

Cleaning the Head

A wide screwdriver or similar blunt instrument should be used to remove the carbon deposits taking care not to damage the valve seatings. After washing the complete head thoroughly, it is advisable to dry off by blowing with compressed air rather than wiping over with a rag.

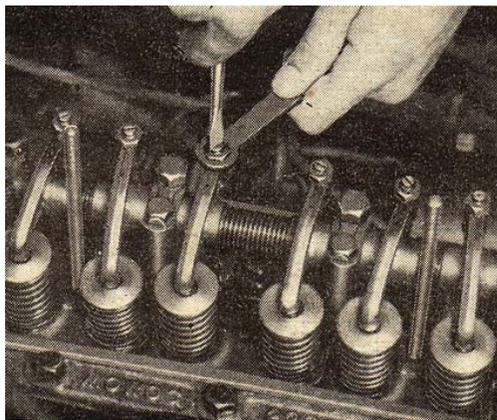


Fig. 3 - Showing the special spanner used for valve clearance adjustment.

Cleaning the Piston Heads

Very great care must be taken since the piston heads are aluminium alloy. A very blunt instrument should be used without great pressure. Do not use an abrasive, such as emery cloth.

The carbon around the top of the cylinder and around the piston edge should not be removed as this is an effective oil seal. A good method of preserving this, while the piston head is being cleaned, is to insert an old piston ring in the top of the cylinder bore on top of the carbon. Do not allow particles of carbon to fall into the waterways or cylinder bores.

Grinding in the Valves

At this stage of decarbonising, while the valves are still removed, it would be a good plan to check their condition.

If at all buckled or pitted, they should be replaced although mild pitting can be removed by having the valve faces trued up on a special machine.

Also inspect the valve seats as it is possible pitting may be evident. Special machining will also take care of these depressions in the metal and prevent needless grinding away.

If everything appears to be in order, valve grinding may begin. Care should be taken to see that the valves are inserted into the correct port, No. 1 being at the forward end of the cylinder block (Fig. 1).

The grinding-in process consists of coating the bevelled face of the valve with a small quantity of valve grinding paste, reinserting the valve in its guide and partially rotating it backwards and forwards on its seating, using a suitable tool which will either grip the valve stem or, for more pressure, which can be brought to bear on the valve head. The valve should be cleared from its seating every few reciprocations and given a half-turn in order that the grinding compound may spread evenly over the whole surface.

It is not necessary to continue grinding once the faces of both the valve and seating have taken on a clean, even, matt-surfaced appearance.

After each valve is ground in, withdraw it and wash it in paraffin, together with the valve seating and surrounding valve port. Do not forget to wash out the valve stem guides as some of the grinding compound may have found its way into these.

Reassembly of Valves

When reassembling the valves care should be taken to see that they are in their correct ports. Oil the valve stems with a little engine oil and then insert them in their guides, one at a time. After resting the valve head on the wood packaging block the valve spring may be replaced with the valve spring cap resting on it. Engage a tool on the top of the cap and depress the spring to expose almost the whole of the groove in the upper end of the valve stem. The synthetic rubber oil seal ring must

then be fitted to the bottom of the cotter groove when the two conical cotters (small ends downwards) can be reinserted.

Gradually release the spring, making sure the cotters are properly engaged in their grooves.

Refitting Cylinder Head

Make sure that the surfaces of both the cylinder block and cylinder head are clean. It is not necessary to use jointing compound for the gasket but it may, with advantage, be smeared with grease. Having slipped the gasket over the studs, with the elongated hole for the waterways to the rear (Fig. 1), lower the cylinder head into position and replace the nuts and screw to finger tightness. The correct order for tightening the nuts is shown in Fig. 2.

The push-rods should be fitted next and then the rocker gear reassembled. Since the valves

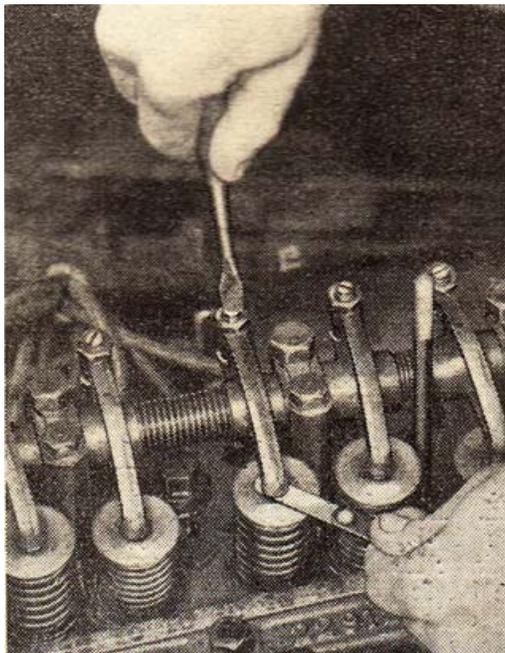


Fig. 4 – When the lock-nut is released, the valve clearance can be set by rotating the adjustment screw with a screwdriver and checking with a feeler gauge to .019in.

have been ground in it is necessary to check the tappet adjustment and make sure there is clearance. These, of course, will be readjusted after final assembly and the engine run.

Now fit the valve cover, not forgetting the cork gasket. Make sure it fits squarely. It is a good idea to stick the gasket to the cylinder head with jointing compound — but not to the valve cover as well!

Reconnect the oil feed pipe to the rocker gear and tighten the side inspection cover and fume pipe, making sure that the gasket is satisfactory. Should there be any doubt as to its condition replace it with a new one.

It is a good plan too, to inspect the exhaust manifold at this stage and clean it out if necessary. Also inspect the exhaust manifold gaskets and renew them if they have

deteriorated. Refit the induction and exhaust manifold with the carburetter assembly and tighten evenly the nuts holding the manifold.

Check and adjust the sparking plugs, or replace if necessary and replace the high tension leads after refitting the plugs. Replace the thermostat body and radiator connecting hose and tighten the hose clips. Connect the fuel pipe to the fuel pump and switch on the ignition and check for fuel leaks. The engine can now be started and should be allowed to run briskly for several minutes until the water temperature rises to 70 or 80 deg. C or 160-175 deg. F.

Final Adjustment

Whilst the engine is at the above temperature remove the valve cover, retighten the cylinder head stud nuts and adjust the valve clearance.

Adjust, these to give a play of .019in. (.48mm.) for both the inlet and exhaust valves between the end of the valve stem and the toe of the rocker when the engine is hot but, if you must do it while the engine is cold, allow an extra .001in. (.025mm).

It is important to note that while the clearance is being set the tappet of the valve being operated on is bearing exactly on the heel of the cam.

It should be realised that, counting from opposite ends, the pistons are paired together and move in unison. While the valve of one is fully opened, the corresponding valve of the other is fully closed.

To reduce the number of times the engine need be rotated tables of the correct valve adjusting sequence are:

No. 1 rocker with No. 8 valve fully open							
No.3	..	..	..	6	..	..	..
No.5	..	..	..	4	..	..	..
No.2	..	..	..	7	..	..	..
No.8	..	..	..	1	..	..	..
No.6	..	..	..	3	..	..	..
No.4	..	..	..	5	..	..	..
No.7	..	..	..	2	..	..	..

Turn the engine by the starting handle until No. 8 valve is wide open; No. 1 valve can now be adjusted. Turn engine until No. 6 is open and adjust No. 3, etc.

Valve clearance adjustment is made by the ball-ended screws which engage the tops of the push rods. A special spanner should still be in the tool kit for this (Fig. 3). When the lock-nut is released the valve clearance can be set accurately by rotating the adjustment screw with a screwdriver and checking with a feeler gauge to .019in.

Finally, replace the valve cover and fit the air cleaner and branch pipe.

Reproduced from Practical Motorist and Motor Cyclist, October 1958.
