



## Sunbeam Service Sheet No. 5

**Subject: Replacement of the Camshaft, Rockers  
and Valve Springs (Model S.7)**

**Date: July 1948**

To prevent excessive wear on the Camshaft and Rockers, these parts have been re-designed, and the modified components are now available.

The camshaft Part No. 89-350 is replaced by Camshaft Part No. 89-379 which has Cams with a smaller base circle.

Rockers Part No. 89-362 are replaced by Rockers Part No. 89-381 and the replacement Camshaft and Rockers must be used in conjunction with the new lighter Valve Springs. These Springs bear an inspection mark in the form of a dab of yellow paint which enables them to be distinguished from the original springs.

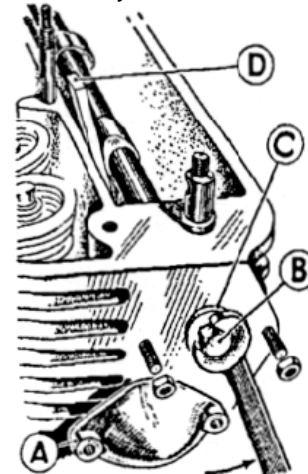
### To fit the parts

Remove the petrol pipe and take off the petrol tank. Disconnect the low tension lead at the distributor, take the sparking plug cover from the engine and after disconnecting the plug lead, take off the distributor cover. Disconnect the speedometer drive on top of the gearbox and after disconnecting the battery take off the

control box container, it is not necessary to separate the boxes or to disconnect the lighting harness, as this is long enough to allow the boxes to be placed on top of the saddle, but the lead to the rear light should be broken at the connector inside the control box.

Take off the cylinder head cover after removing the three securing nuts. Mark the distributor body and the cylinder head with a scribed line so that the distributor can be replaced in the same position. Release the two nuts and withdraw the distributor, remove the cover plate immediately below the distributor body.

Remove the sparking plugs and gently turn the engine over until the pistons are at top dead centre in which position they must remain throughout the fitting operation. This can best be done by removing the louvred inspection cover on the gearbox when the top dead centre position will be seen to be marked on the flywheel, this should be lined up with the indicator.



**Fig. 1**

Now unscrew the bolt and take off the camshaft sprocket.

Unscrew the four nuts which hold the rocker shaft brackets in position. The rocker assembly complete with baffle plate can now be lifted off bodily and if the rocker shaft brackets do not slide freely over the studs they should be gently prised up with a screwdriver, taking care not to damage the aluminium cylinder head.

Take off the cap *A*, *Figure 1*, at the front end of the cylinder head by removing the two fixing nuts. This will reveal the hexagon head of the bolt *B* which retains the camshaft locating thrust washer *C*. Unscrew this bolt, keeping the camshaft from turning by inserting a piece of soft metal between the cam flank and the side of the cam chamber as shown at *D*. The camshaft can now be drawn out from the rear.

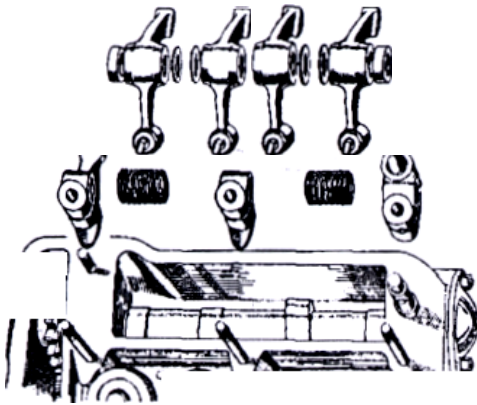
Dismantle the rocker assembly, making a careful note of the disposition of the various components in order to ensure correct re-assembly, *Figure 2*.

Replacement of the valve springs can best be carried out at this stage. Replace the two fixing brackets on the bare rocker spindle and bolt the assembly in position on the cylinder head, check that the pistons are at T.D.C. and remove the valve end caps.



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**Fig. 2**

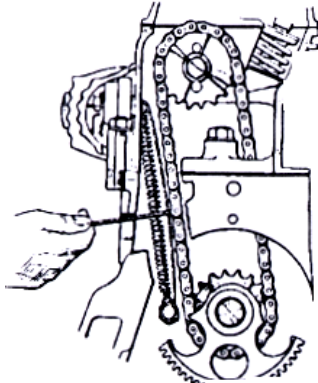
To remove the valve springs a 6" length of  $\frac{1}{2}$  inch diameter rod should be obtained. Insert the rod through each plug hole in turn in such a manner that it rests underneath the head of the exhaust valve, thus preventing the valve falling when pressure is applied to the valve spring.

Next take the large double-ended spanner from the tool kit and place this, from the nearside of the engine, underneath the rocker spindle so that its open end bears on the edges of the valve spring collar. Pressure can now be applied to the collar and spring using the rocker spindle as a levering point thus compressing the spring and allowing the valve cotters to be removed. Release the pressure and take off the valve spring and valve collars.

To remove the inlet valve springs use the same procedure as for the exhaust valve springs, but as a straight rod passed through the plug hole will not be satisfactory in arresting the movement of the valves when pressure is applied to the valve collars, it will be found necessary for the rod to be suitably shaped so that it will bear on the valve head.

The new springs can be fitted by this same method, care must be exercised, however, or damage to the sparking plug inserts may result.

After fitting the new springs remove the bare rocker shaft from the cylinder head and re-assemble with the new rockers, *Figure 2*, then mount the assembly on the cylinder head, replacing the baffle plate. Note that the notches on the rocker shaft must engage with the three long studs in the cylinder head. Now securely tighten the rocker bracket nut taking care that the washer is in position under the nut on the offset part of the bracket.



**Fig. 3**

Check that the pistons are at top dead centre and turn the cam shaft until the driving peg hole is vertically above the camshaft centre. Now take the camshaft sprocket and engage it in the chain in such a position that the driving peg in the sprocket is in line with the peg hole in the end of the camshaft (i.e. vertically above the centre hole in the sprocket), then slide the peg into the hole. Replace the sprocket securing bolt and securely tighten. It will greatly assist the fitting of the sprocket if the inspection cover is removed and the tensioner blade pulled back, *Figure 3*.

With the camshaft driving sprocket set as described in the previous paragraph it will be seen that the lower hole in the sprocket, immediately below the centre, is vacant. This hole is for the driving dog on the distributor. Fit the paper washer on the distributor flange and then carefully assemble the distributor so that the peg enters the hole in the sprocket. Now set the distributor as it was before, by

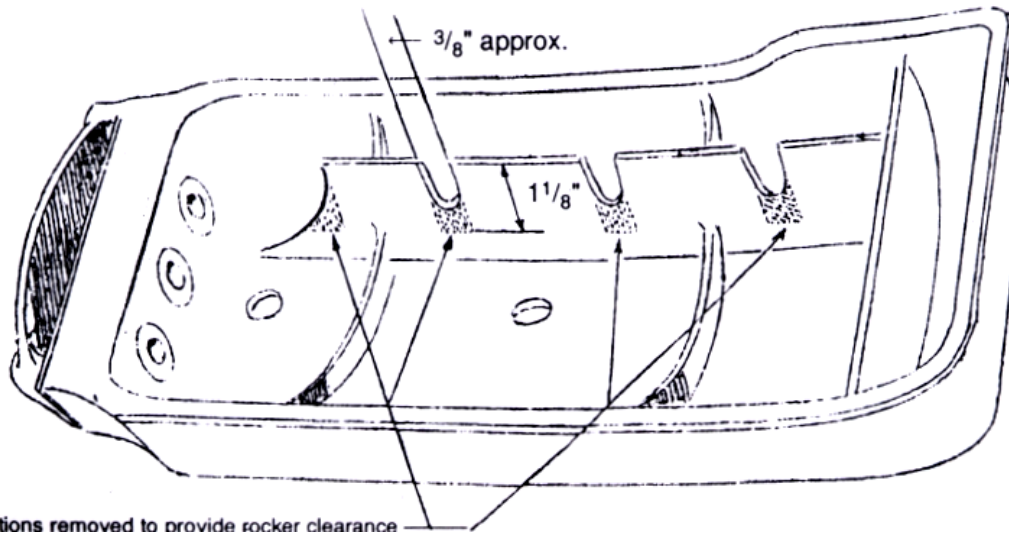
matching the marks scribed on the cylinder head before dismantling. Replace the cover below the distributor, and adjust the tappet clearances.

Before the rocker cover can be replaced the webs must be cut away to give clearance to the modified rockers, *Figure 4*. This operation can be carried out using a suitable file.



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**Fig. 4**

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