

CYLINDER HEAD-VALVE GEAR**ROCKER COVER****To Remove**

Disconnect battery.

Disconnect the plug leads.

Disconnect the rocker cover ventilation pipe.

Remove nine nuts securing the rocker cover.

Remove rocker cover and gasket.

To Refit

Reverse the removal procedure.

ADJUSTING THE ROCKER ARMS**Special Tools**

31174G Rocker Arm Adjuster

Remove the rocker cover.

The rocker arms are adjusted by bringing each piston, successively, onto the compression stroke, that is to say, bringing the valves on the opposite cylinder into the 'rock' position.

to adjust the rocker arms on cylinder No.	bring valves to the rock position on cylinder No.
1	4
2	3
3	2
4 (Front)	1 (Rear)

Insert the feeler gauge and loosen each of the lock nuts with special spanner 31174 G. Adjust the clearance until the feeler is a good sliding fit between the two parts:

inlet rocker arm clearance: 0,20mm (.008 in.)

exhaust clearance: 0,30 mm (.012 in.)

Refit the rocker cover.

CYLINDER HEAD**To Remove**

Disconnect the battery.

Drain the cooling system.

Remove the front and rear engine covers inside the cab.

Raise and secure the bonnet.

Remove the air cleaner.

Disconnect the exhaust flange nuts and clear the pipe.

Disconnect the accelerator cable.

Disconnect the choke cable.

Disconnect the heater hoses.

Disconnect the vacuum pipe from the distributor, and both fuel pipes from the fuel pump.

Remove the fuel pump.

Remove the rocker cover (as described previously).

Turn the engine to bring the T.D.C. reference marks on the pulley and timing gear cover in alignment. No. 4 cylinder firing.

Disconnect H.T. and L.T. wires from the ignition coil and remove the distributor cap complete with H.T. leads.

Mark the position of the distributor body relative to the cylinder block and the rotor position relative to the distributor body. Remove the distributor.

Remove the service plug in the timing case cover giving access to the timing chain tensioner.

Neutralise the chain tensioner — use a screwdriver to press in and turn the screw a half turn to the right.

Remove the cylinder head front casing.

Plug the hole in the timing gear casing with a cloth.

Unlock and remove the setscrews holding the camshaft sprocket.

Remove the camshaft sprocket and retaining ring, but keep the chain taut.

Support the timing chain with a piece of wire passed through two of the links (Fig. 1).

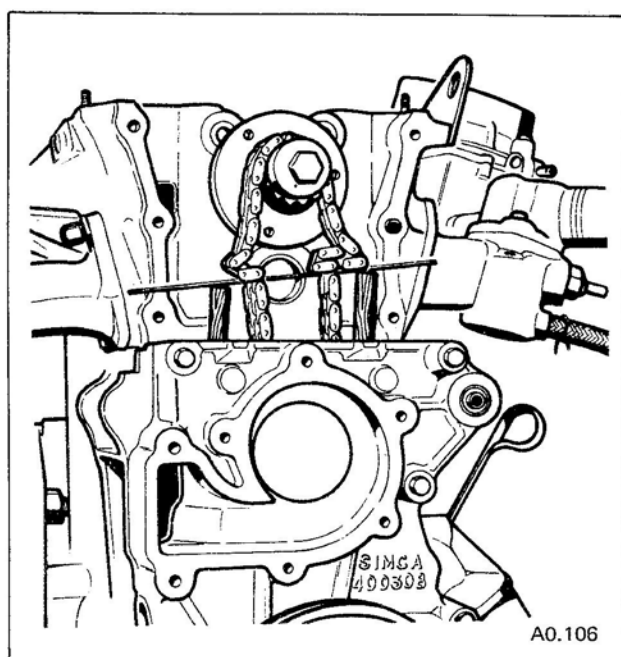


Fig. 1 Retaining timing chain

Remove the cylinder head bolts and washers in the sequence shown in Fig. 2.

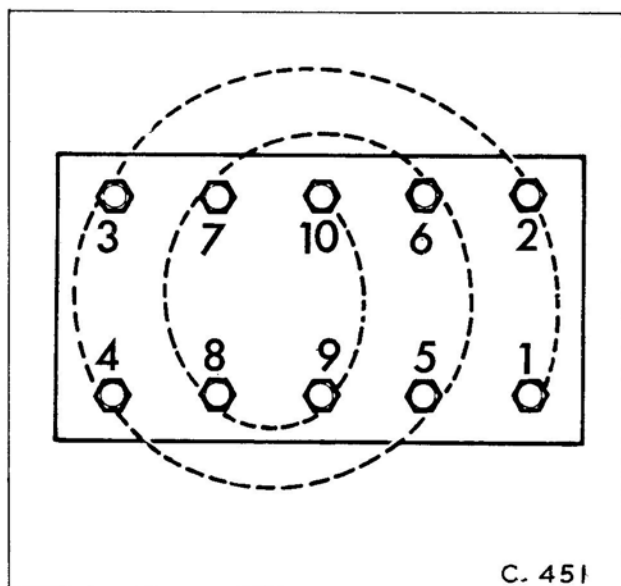


Fig. 2 Bolt removal sequence

Note: The cylinder head must be absolutely cold before removal to avoid distortion. THE ENGINE MUST HAVE STOOD FOR AT LEAST FIVE HOURS. There are no exceptions to this.

Remove the cylinder head, lifting the rear end higher than the front, to be able to free the camshaft from the timing chain (Fig. 3.)

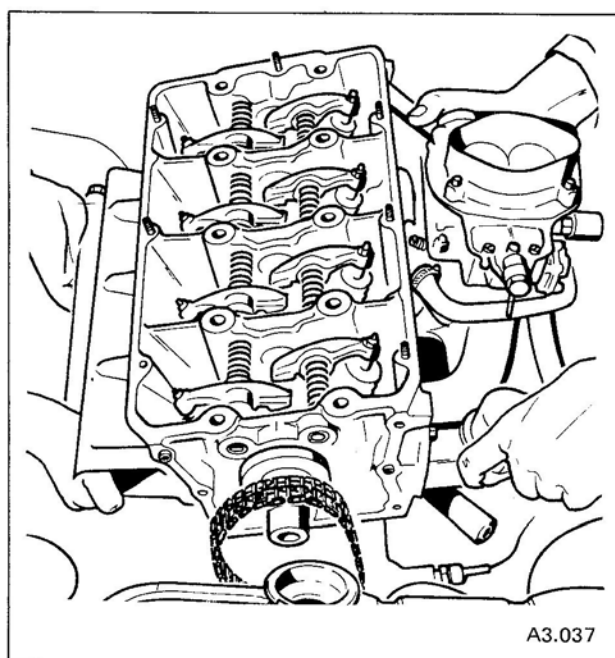


Fig. 3 Removing the cylinder head

Remove the cylinder head gasket and clean the block face.

To Refit

Ensure that the cylinder head and cylinder block faces are clean, with all traces of the old gasket removed. Check that the bolt holes in the cylinder block are clear.

Place the camshaft sprocket against the end of the camshaft and align its securing holes with the tappings.

Mark the position of the sprocket timing mark, on the camshaft, with a crayon or chinograph pencil.

Remove the sprocket and turn the camshaft so that the crayon mark is in line with the position mark on the front bearing.

Oil the new cylinder head gasket and lay it on the block, aligning it with two dowels.

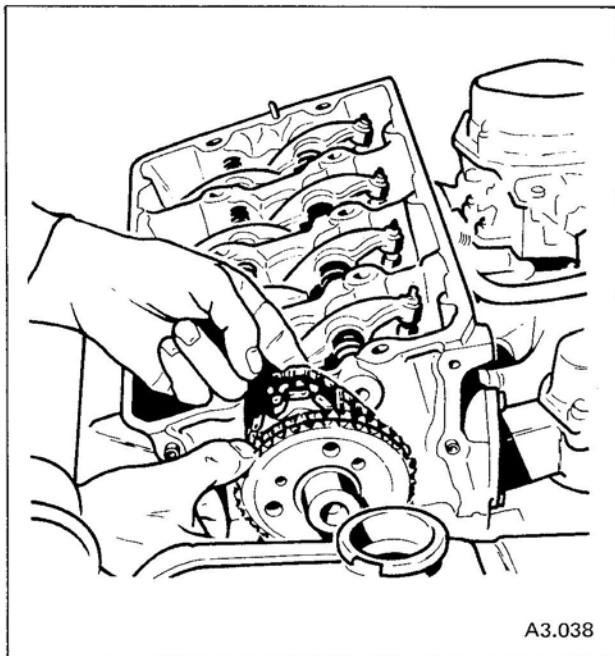
Cylinder Head—Valve Gear

Note: The mark "dessus", stamped on the gasket, must still be visible after it has been laid on the block.

Ensure that No. 4 piston is on T.D.C.

Place the cylinder head assembly in position, passing the end of the camshaft under the timing chain.

Fit the sprocket and new retaining ring to the camshaft and to the timing chain, aligning its timing mark with the position mark on the front bearing (see Fig. 4).



A3.038

Fig. 4 *Aligning camshaft sprocket timing mark*

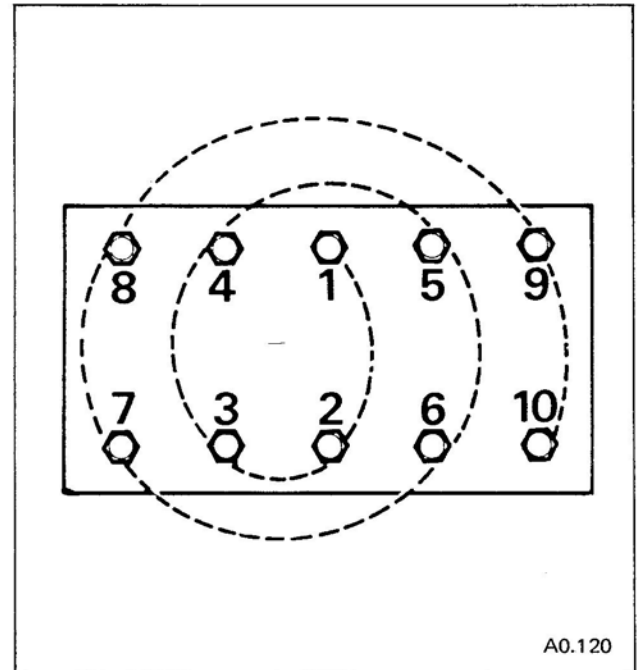
Plug the hole in the timing gear casing with a cloth and secure the sprocket in place, tightening it to the specified torque. Lock the three bolts and remove the cloth.

Oil and fit the cylinder head bolts and washer, hand tight.

Using grease as a jointing compound fit a new cylinder head front cover gasket. Fit the cover and tighten the set screws hand tight.

Tighten the cylinder head bolts in two stages to the Data figures in the sequence shown in Fig. 5.

Tighten the cylinder head front cover setscrews to the Data figure.



A0.120

Fig. 5 *Bolt tightening sequence*

Unlock the chain tensioner and refit the service plug in the timing case cover.

Adjust the rocker arm clearances.

Refit the distributor body using the marks made during removal.

Refit the rocker cover.

Refit the distributor cap and leads.

Reconnect the H.T. and L.T. wires.

Refit the fuel pump.

Reconnect the fuel pipes and vacuum pipe.

Reconnect the heater hoses.

Reconnect the choke cable.

Reconnect the accelerator cable.

Reconnect the exhaust pipe to the exhaust flange.

Refit the air cleaner.

Refill the cooling system.

Refit the front and rear engine covers inside the cab.

Reconnect the battery.

Check and re-adjust the ignition timing.

CYLINDER HEAD

SPECIAL TOOLS

Rocker arm adjusting spanner 31174 G

Valve lifter FACOM U43L

Dismantling support FACOM U43

Remove the cylinder head as previously described.

To Dismantle

The most convenient way to dismantle the cylinder head is with it mounted on dismantling support FACOM U43 (Fig. 6).

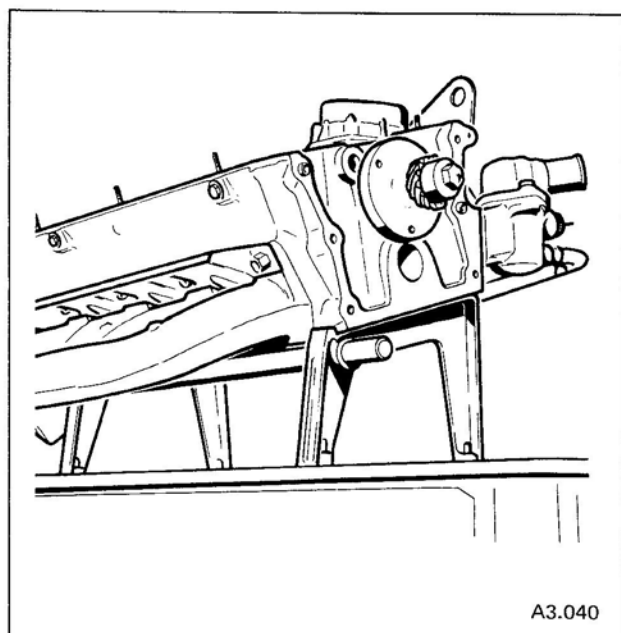


Fig. 6 Cylinder head support

Remove the plug lead protector plate.

Remove the exhaust manifold and gasket.

Remove the water outlet casing cover and thermostat.

Disconnect the pipes and remove the water outlet casing.

Remove the carburettor and insulating pad.

Remove the inlet manifold and gasket.

Unscrew the rocker arm adjusting screws as far as they will go using spanner 31174G.

Place a small wooden block, approximately 22 mm. (7/8 in.) wide between the pad on one of the rocker arms, moving it sideways to do so, and the adjacent camshaft bearing.

Move back the thrust washer from the rocker arm to gain access to the snap-rings.

Position the ring so that its two ends are uppermost and then remove it, by pushing it downwards with a screwdriver (Fig. 7).

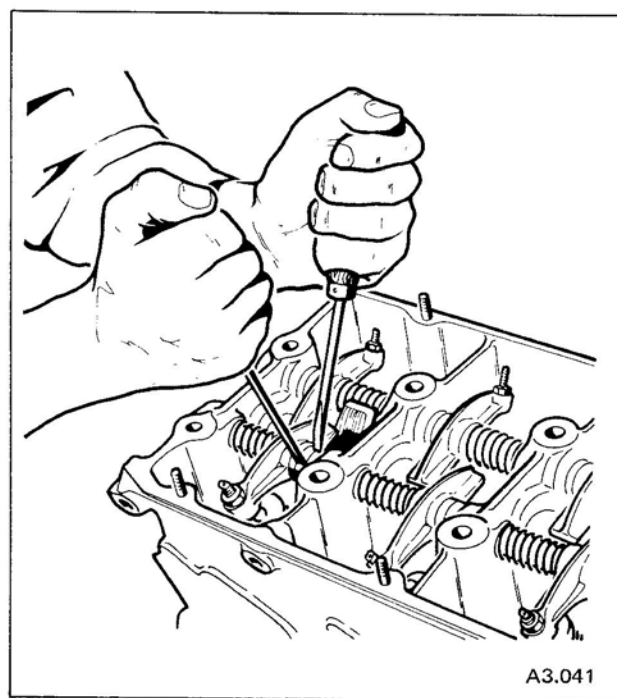


Fig. 7 Removing snap ring

Repeat the operation for the remaining snap-rings. Collect snap-rings.

Remove the cylinder head rear cover and gasket.

Unlock the two setscrews and remove the camshaft thrust plate.

Note: The thrust plate also secures the two rocker shafts.

Drive out the rocker arm shafts, paying particular attention to the position occupied by each of

Cylinder Head—Valve Gear

the parts (Fig. 8), so that they can be refitted in exactly the same order on reassembly.

Note: The exhaust valve rocker arm shaft is different from the inlet shaft in that it has five notches in it to clear the cylinder head bolts.

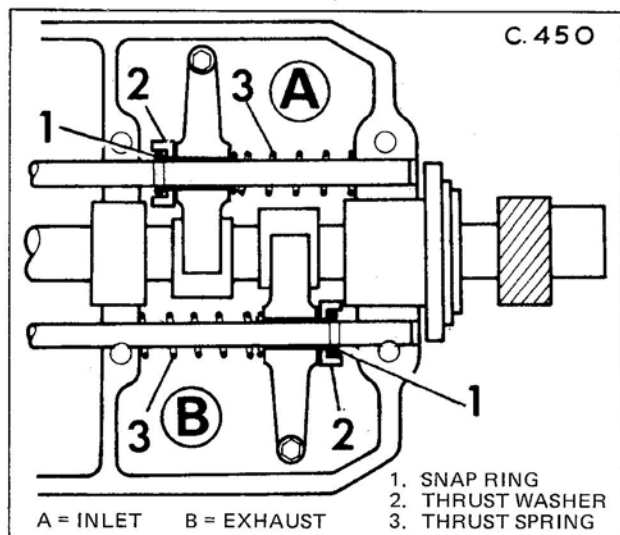


Fig. 8 Rocket shaft arrangement

Withdraw the camshaft.

Free the valve collets, using the percussion weight on the spring compressor U4 3L (Fig. 9).

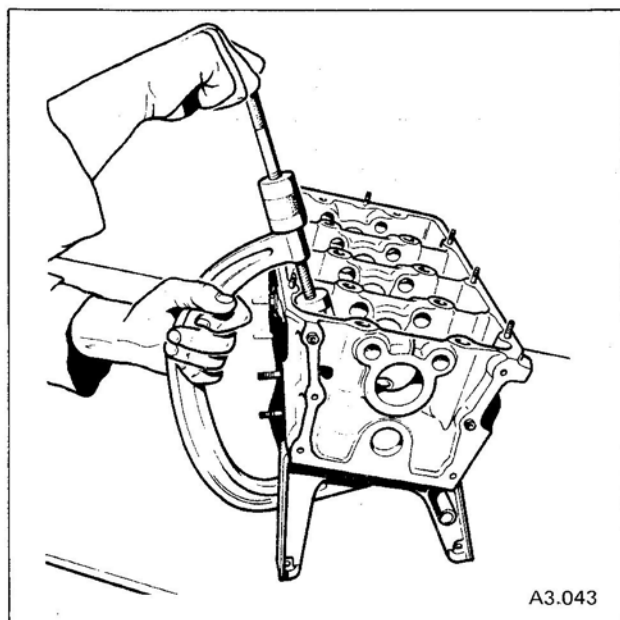


Fig. 9 Using valve spring compressor U43L

Extract the collets and remove the spring compressor.

Remove the valve caps, spring, valve seal and lower spring cup.

Remove the valves.

Inspection and Overhaul

Thoroughly clean the cylinder head and remove all traces of carbon.

Check the cylinder head face for distortion. The maximum allowable distortion is 0.04 mm (.0015 in.).

The maximum that may be machined from the cylinder head and front casing is 0.30 mm (.012 in.).

Note: The front casing must be bolted to the cylinder head for the machining operation. It is essential that these two parts should be flush with one another and a repair size cylinder head gasket must then be fitted.

Check the camshaft bores in the cylinder head for wear or damage.

Examine the valve seats for pitting or burning, if defective they should be recut to the dimensions shown in Fig. 10 and 11.

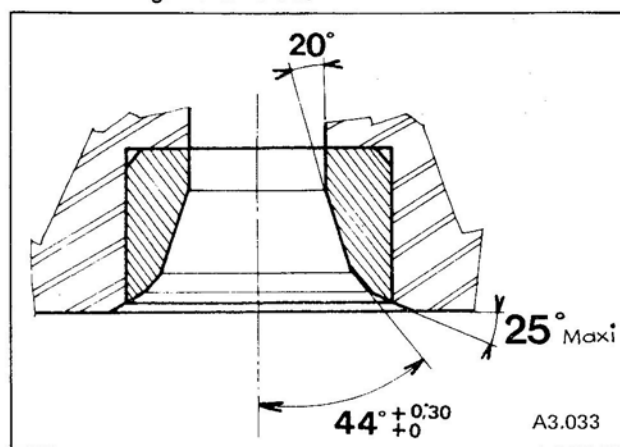


Fig. 10 Inlet valve seat recess

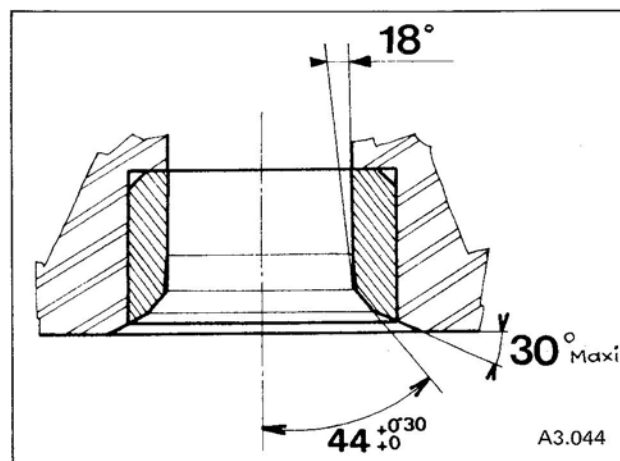


Fig. 11 Exhaust valve seat recess

DESCRIPTION AND MODIFICATIONS

This may seem a little out of place but I have heard about problems with people stealing work and selling it - for example on eBay.

If you're reading this and you bought this manual anywhere then you have been ripped off.

Please contact me via my email mikejamson@hotmail.com Otherwise I can be found on the dodge50 facebook page, if not then get in contact with Greg and he can pass the message on to me.

I have not done this pdf manual for my own personal gain and wish to see the community of 50 series owners benefit from the information here, and I do not want to see the community get taken advantage of and somebody else gain from it unfairly.

The information in pdf format will hopefully allow more of these wonderful trucks to stay on the road by providing information to everybody.

This has been quite a long and involved process to scan the manual and to convert it into a pdf format. I do apologise as I have used several different scanners and several different computers to do it, so there are no doubt some errors hidden throughout, as well as some editing errors.

I have aimed to balance quality and file size and hope that this balance meets to everybody's approval.

If you see an error please let me know and I will fix it as soon as I can.

Check the valve guide bores for wear by inserting the stem of a new valve (or one which correctly matches the diameter given under 'Data') into the bore. Stem and bore must be free of carbon oil and burrs. The stem should be a free sliding fit in the guide without excessive side play.

If the valve guides are worn they should be renewed as detailed in section A132.

Remove any carbon from the valves. Examine valves for pitting on the face, burning, distortion or cracks in the head.

Inlet and exhaust valves are tin plated and must not be refaced or lapped to the seat.

Examine the valve springs for damage, check dimensions against Data figures.

Examine the rocker arm shafts for wear or distortion, ensure the oil holes are free from obstruction.

Check the rocker arm bores and cams for wear. If one rocker arm requires renewing all eight rocker arms must be renewed.

Check the camshaft bearings, cams and distributor drive for wear or damage.

New valve oil seals should always be fitted.

To re-assemble

Ensure that all gasket faces are clean.

Oil the valve stems.

Fit the valves to their respective seats.

Fit the lower spring cups.

To prevent damage to the valve oil seal teflon insert, wrap sellotape around the valve stem cotter groove.

Oil the new valve oil seals.

Carefully push the oil seal down the valve stem until it makes contact with the end of the guide, holding the white part of the seal (the teflon section) with the fingers to prevent it coming out of place (Fig. 12), continue to push the seal onto the end of the guide until it is fully down.

Remove the sellotape from the valve stem.

Fit the springs and valve caps, fit the collets into the grooves in the valve stems, after first compress-

ing the springs with valve lifter Facom U43L. Remove valve lifter.

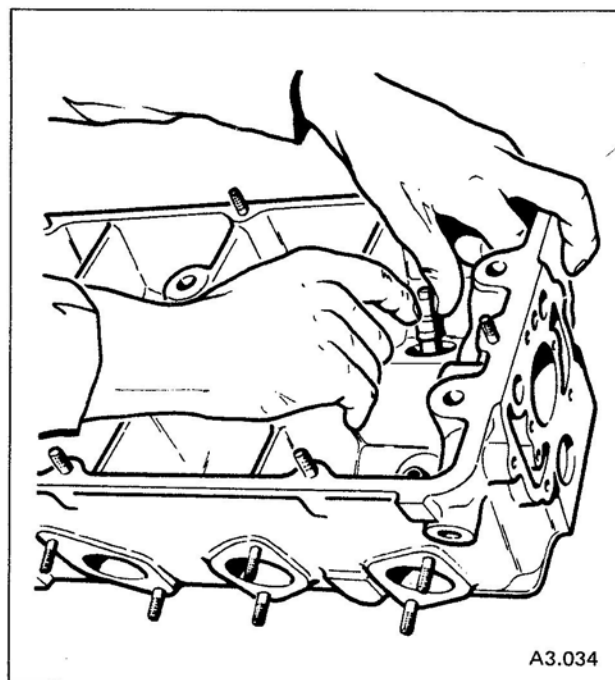


Fig. 12 Fitting new valve oil seals

Oil the camshaft bearings and pass the camshaft through the bearing bores.

Note: If a new camshaft and rocker arm are to be fitted, spray the bearing surfaces and cams with Molykote spray G.

Fit each of the rocker arm shaft as follows:

Identify the exhaust rocker arm shaft, which is the one with 5 cylinder head bolt clearance notches in it.

Then pass the shafts into the cylinder head from the rear end, after first oiling them. The flat that locates the camshaft thrust plate will therefore face towards the rear end.

Fit, between each of the shaft bearings, in the following order, a thrust spring, a rocker arm fitted with its adjusting screw and the thrust washer, with its flat face against the rocker arm and the snap-ring locating groove towards the next bearing (in the case of the inlet rocker arm shaft, the order is reversed).

Check that the cylinder head bolt clearance notch in the shaft is in the correct position, by screwing in one of the cylinder head bolts.

Cylinder Head—Valve Gear

Grip each of the snap-rings with a pair of flat-nosed pliers and knock it into place in its groove by sharply pushing it down, whilst holding the rocker arm assembly compressed with the other hand (Fig. 13).

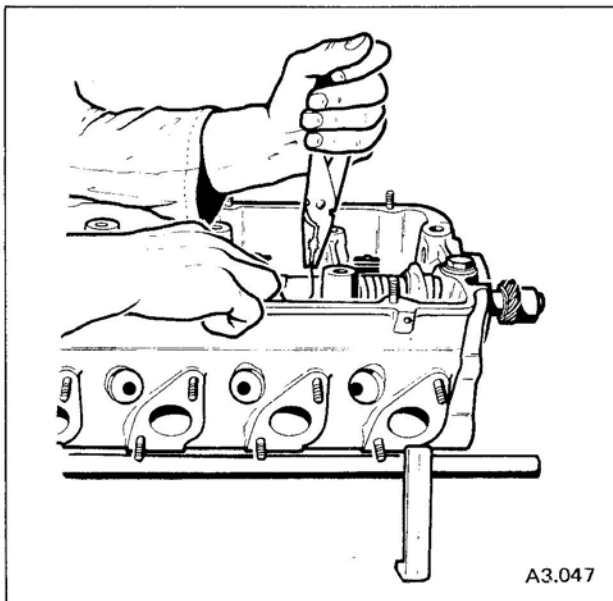


Fig. 13 *Fitting snap rings to rocker arm shafts*

Correct the position of the locating flats on each of the shafts, and place the camshaft thrust plate in position. Secure it.

Tighten the two bolts to the specified torque and lock them.

Fit the camshaft end cover paper gasket and secure the cover in place.

Check that the camshaft end float is within Data figure.

Refit the inlet manifold and new gasket.

Refit the carburettor and insulating pad.

Refit the water outlet casing and pipes.

Refit the thermostat and casing cover.

Refit the exhaust manifold, new gasket and plug lead protector plate.

Refit the cylinder head as previously described.