LUBRICATION SYSTEM

General

The off set rotor type oil pump is gear driven through an idler gear from the crankshaft gear. A relief valve is incorporated in the pump body to control maximum pressure.

Oil is drawn up by the pump. through a strainer in the sump, and is passed through a pipe to the filter, fitted on the left hand side of the block. Filtered oil then passes to the oil cooler, fitted in the side of the block and to the main oil gallery drilling that runs along the length of the block.

From the gallery, oil passes to each main bearing and through drillings in the crankshaft, to the big end bearings. Drillings from Nos 2, 3, 5 and 7 main bearings supply oil to the camshaft journals and an intermittent supply of oil is taken to the front rocker shaft pedestal to lubricate the rocker assembly.

The timing gears are lubricated by a supply of oil to the idler gear hub.

The pistons, liners and small ends are splash lubricated.

Oil Strainer

The strainer is fitted on the end of the oil pump suction pipe, Fig. 1.

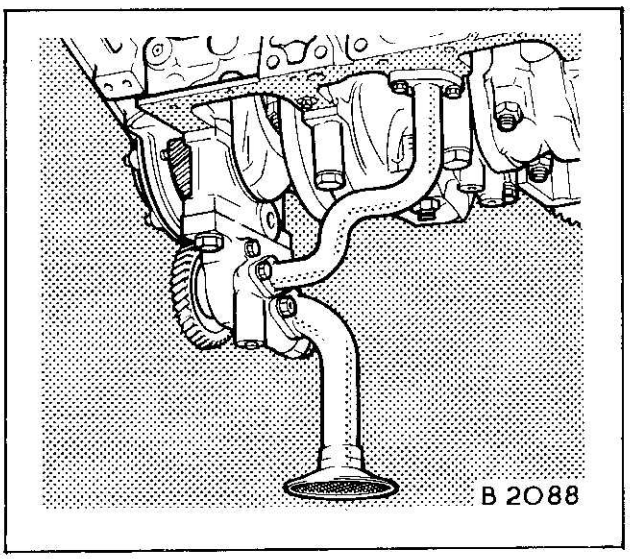

Fig. 1

There is no periodic servicing on this strainer but it should be cleaned whenever the sump is removed.

Oil Filter

The renewable element, full flow filter is situated on the left hand side of the engine.

The element should be changed at the appropriate time, as follows:–

To Renew Oil Filter Canister

1. Thoroughly clean the exterior of the filter assembly.
2. Unscrew the filter canister from the filter head, Fig. 2, and discard.
3. Clean the filter head.
4. Prime the new filter canister by slowly pouring clean lubricating oil through the central threaded orifice, allowing time for the oil to fill the bowl through the filter element.

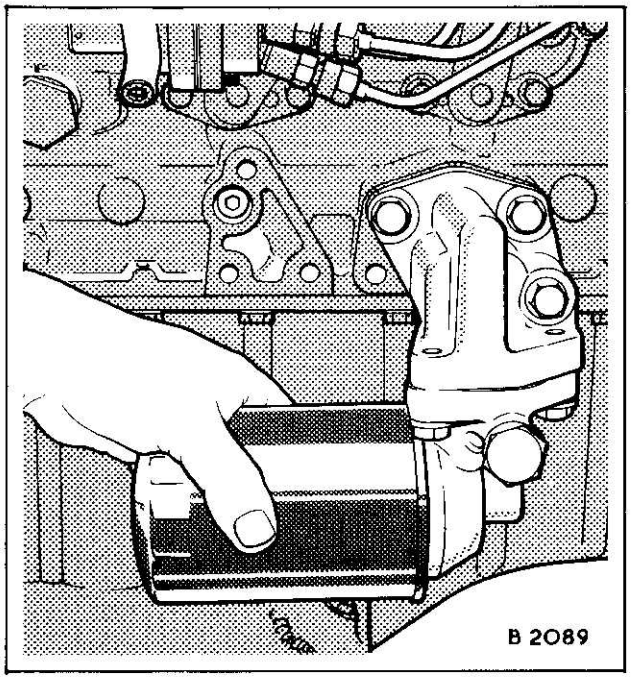

Fig. 2

5. Using clean lubricating oil, liberally oil the top seal of the new canister.

6. Screw the replacement canister onto the filter head until the seal just touches the head and then tighten by hand as detailed in the instructions on the canister. Where a tool is available, tighten to 2,07 kgf m (15 lbf ft).

7. The filter canister will normally be changed at the same time as the lubricating oil and, after filling the sump to the correct level with oil, run the engine and check for leaks. Do not run the engine at high speed until the oil pressure has built up.

8. Recheck the oil level after running the engine and top us as necessary.

Caution

If the filter head is removed from the block, ensure when refitting that the gasket is correctly fitted with the large and small holes aligned with the corresponding sized drillings in the block.

The correct relationship of gasket to head is shown in Fig. 3.

To Remove and Refit Oil Sump

1. Drain oil, disconnect dipstick tube, where necessary, and remove sump.

2. Clean sump and inspect for damage.

3. Clean joint faces of block and timing case, apply jointing compound to sump gaskets and place gaskets in position.

4. Check that the sealing strips are the correct length and contact sump gaskets when fitted in the grooves formed by the rear main bearing cap and oil seal housing and the timing case and cover, Fig. 4. Trim strips where necessary. Apply jointing compound to the strips and their ends and place in position.

5. Fit sump and reconnect dipstick tube.

6. Fill to correct level with approved oil, run engine and check for leaks.

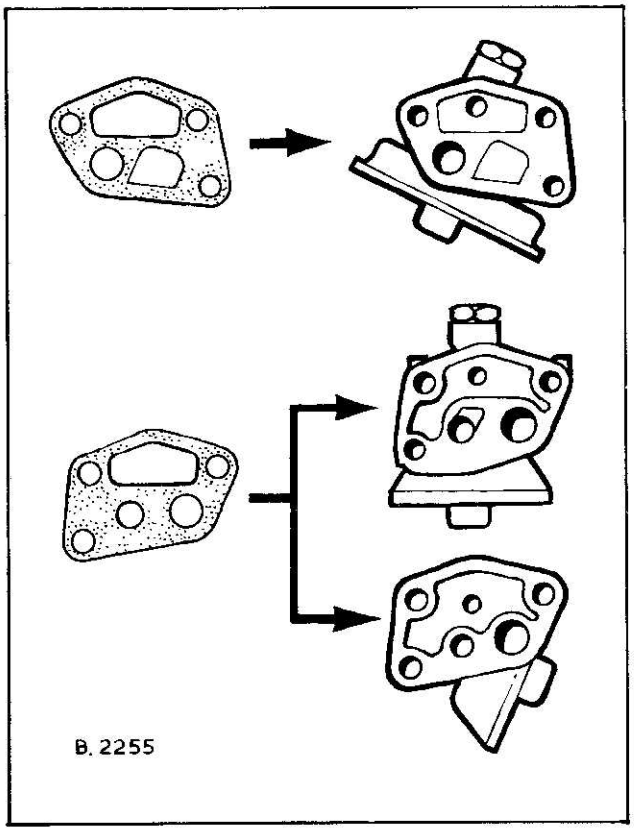

Fig. 3

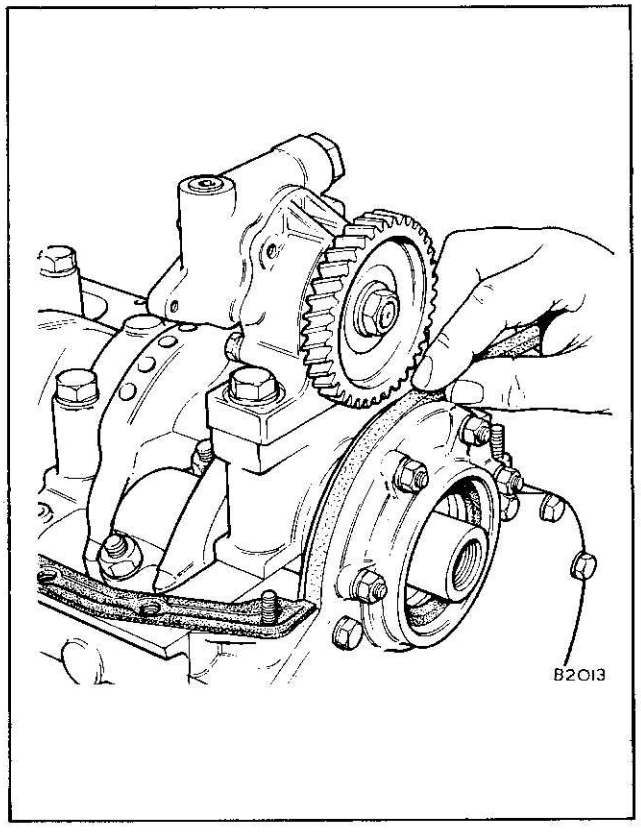

Fig. 4

Oil Cooler

The oil cooler is fitted into the left hand side of the block, Fig. 5, and consists of several hollow plates attached to a cover. Oil passes through the plates and is cooled by coolant passing around the plates. The cooler can be removed after the set-screws around the outside of the cover have been removed and the plate assembly can be detached after the nuts have been removed. Refit with new gaskets.

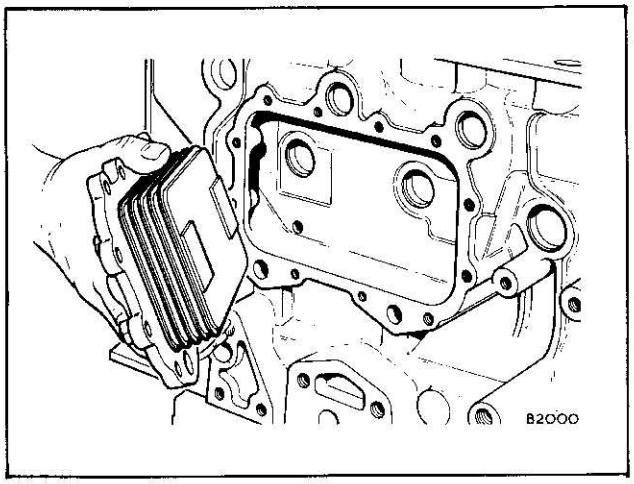

Fig. 5

Oil Pump

The off set rotor type pump is mounted on the front main bearing cap and is gear driven through an idler gear from the crankshaft gear. The pump is secured by the main bearing setscrews and is located on the cap by thimble dowels.

To Remove Oil Pump

1. Drain and remove oil sump.
2. Remove suction pipe, Fig. 1.
3. Remove oil delivery pipe, Fig. 6.
4. Remove setscrews securing front main bearing cap and oil pump and remove pump from bearing cap.

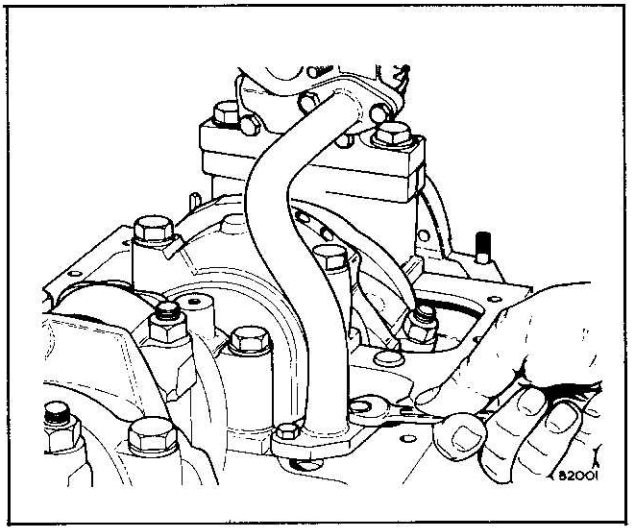

Fig. 6

To Fit Oil Pump

1. Position pump on front main bearing cap ensuring that thimble dowels are correctly located and tighten securing setscrews evenly to the torque given for main bearing setscrews.
2. Fit oil delivery pipe, Fig. 6, and suction pipe, Fig. 1, with new gaskets.
3. Fit oil sump as detailed previously.

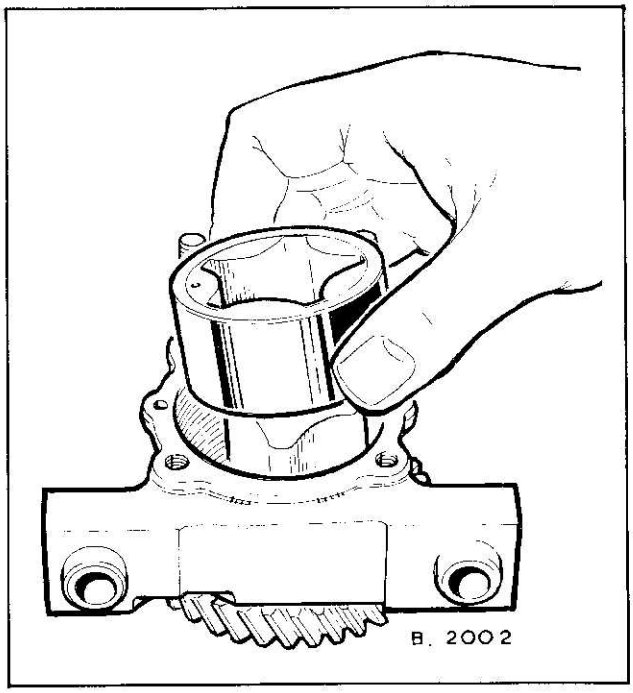

Fig. 7

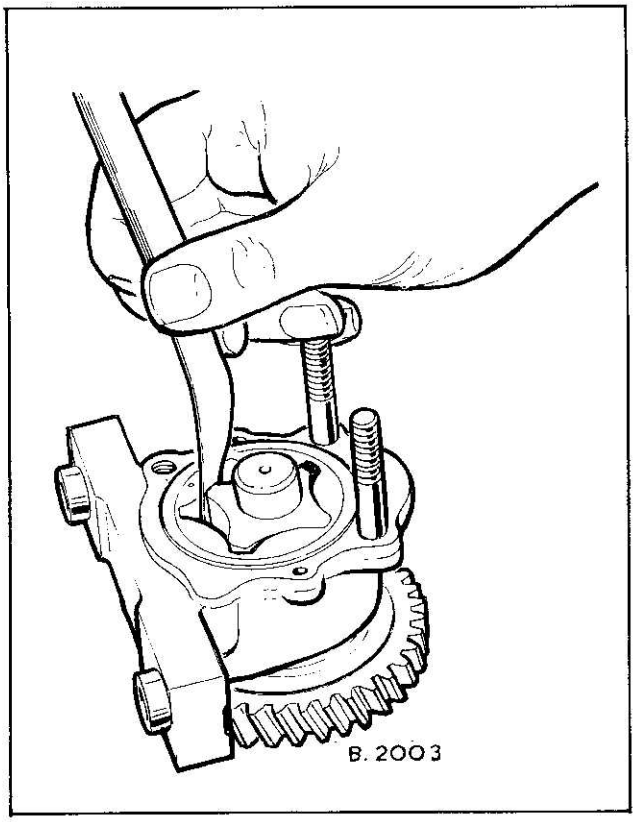

Fig. 8

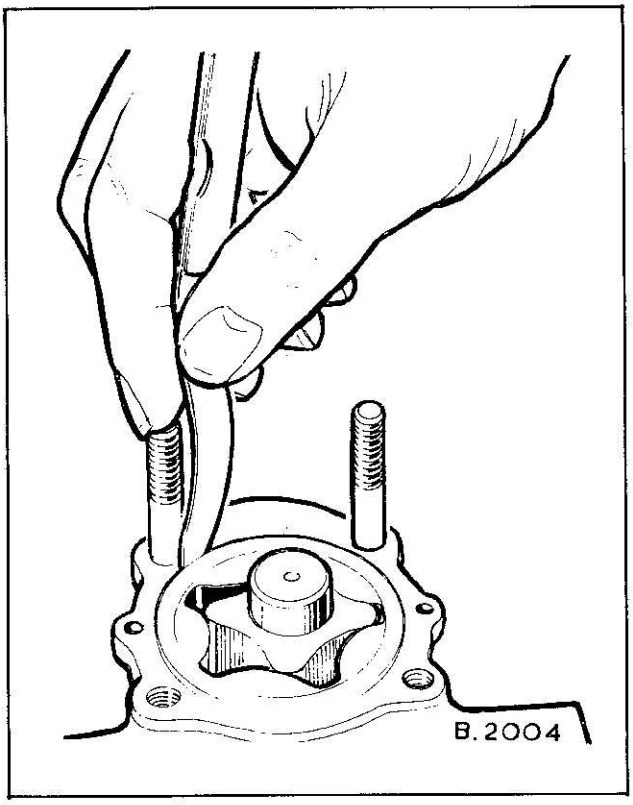

Fig. 9

Oil Pump Inspection

Remove the end cover and check the rotors, Fig. 7, for damage. Check the following against the limits given in 'Data'.

Check the inner rotor to outer rotor clearance, Fig. 8.

Check the outer rotor to body clearance, Fig. 9.

Using a straight edge, check the rotor end float, Fig. 10. Also check the end cover with a straight edge. If wear has taken place on the end cover, this figure must be added to the measured rotor end float to give the total figure. The end cover can be lapped to remove excess wear.

If the clearances are greater than those given for maximum wear in 'Data', renew the pump.

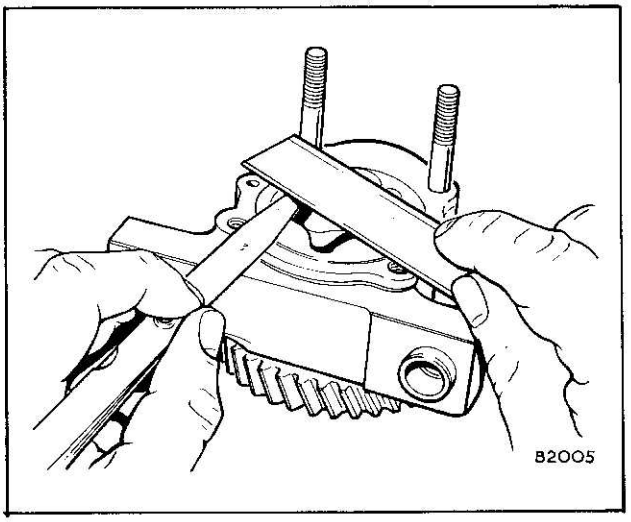

Fig. 10

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 note 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 aplogise 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.

Oil Pressure Relief Valve

The oil pressure relief valve consists of a spring loaded plunger operating in a bore in the end cover of the oil pump, Fig. 11.

The valve is preset to 3,8 kgf/cm^3 (54 lbf/in^2) and no attempt should be made to adjust the pressure other than the renewal of parts to restore the original pressure setting. The spring can be checked against the load/length given in 'Data'.

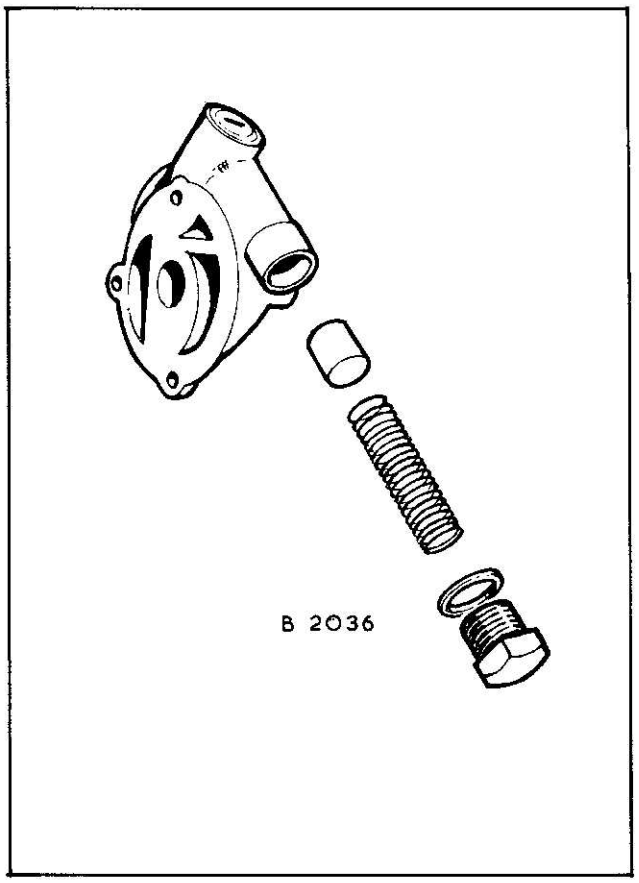

Fig. 11

0,2 0,4 microns (8 16 micro inches)