

Chapter 3 Fuel system and lubrication

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Specifications

V-1000 I-Convert, 850T, T-3 and 750 S and S3 models

Carburettor

Make	Dell 'Orto		
Type	VHB 30CD (right-hand)	VHB 30CS (left-hand)	
Atomiser	265		
Idling jet	50		
Starting jet	80		
Needle	V9, 2nd notch (V-1000 I-Convert model, U-9)		
Choke	40		
	<i>750, S, S3 & 850T</i>	<i>850T3</i>	<i>V-1000</i>
Main jet	142	120	130
Mixture screw; no. of turns out:			
750S and 850T	2-2½ (LH), 2¼-2¾ (RH)		
750 S3	2-2½ (LH), 2-2¾ (RH)		
850T3 and V-1000	1½		
Air filter type	Oil impregnated plastic foam		

Le Mans models

Carburettor

Make	Dell 'Orto	
Type	PHF 36 B (D) right-hand, PHF 36 B (S) left-hand	
Atomiser	265 AB	
Main jet	135	
Pilot jet	60	
Starter jet	70	
Accelerator pump jet	38	
Mixture screw: no. of turns out	1½	
Needle	K5 (2nd notch)	

Lubrication system

Type	Wet sump, high pressure	
Filter	Gauze screen, sealed cartridge (except 750S and some T models)	
Oil capacity:		
V-1000	3 ltr (6.4/5.3 US/Imp pint)	
All others	3.5 ltr (7.3/6 US/Imp pint)	
Oil pump type	Helical gear	

Oil pressure	...	...	...	...	...	...	...	55-60 psi (3.8-4.2 kg cm ²)
Pump body depth	...	...	...	...	...	...	...	14.032-14.075 mm (0.5524-0.5541 in)
Pump gear width	...	...	...	...	...	...	...	13.973-14.000 mm (0.5501-0.5511 in)
Gear diameter	...	...	...	...	...	...	...	26.250-26.290 mm (1.0334-1.0350 in)
Pump body internal diameter	...	...	...	...	...	...	...	26.340-26.390 mm (1.0370-1.0389 in)
Driven gearshaft diameter	...	...	...	...	...	...	...	9.985-10.000 mm (0.3931-0.3937 in)
Shaft recess in body	...	...	...	...	...	...	...	10.013-10.035 mm (0.3942-0.3950 in)
Shaft/recess clearance	...	...	...	...	...	...	...	0.013-0.050 mm (0.0005-0.0019 in)

1 General description

The fuel system comprises a petrol tank fitted with two taps from which the two carburettors are fed by gravity via interconnected petrol pipes. On 750S and V-1000 models the left-hand tap is of the electrovalve type and is operated by an integral solenoid when the ignition is switched on. All other taps are manually operated and combine a reserve position to provide a small amount of fuel after the main supply has run dry. A float-operated switch, mounted in the under side of the tank and interconnected with a warning light on the handlebar console, is fitted to V-1000 models, to indicate when the reserve fuel level is reached. A cylindrical gauze filter is fitted to each tap within the petrol tank, and a secondary filter is incorporated at each carburettor union.

The two carburettors breathe through a replaceable dry paper cartridge air filter on all models but the 850 Le Mans model, which has a gauze-screened bell mouth fitted to each carburettor. A collector box is incorporated in the air filter system, which allows expelled oil vapour from the crankcase and rocker boxes to be passed through the cylinders where it is burned during the combustion stage and exhausted through the exhaust system.

Dell'Orto concentric, slide-type carburettors are fitted to all models. The carburettor throttle valve on each unit is controlled by a separate cable connected to a shared twist grip throttle control on the handlebars. The carburettor fitted to the 850 Le Mans models differs from all others in having a throttle slide controlled accelerator pump to improve acceleration. Each carburettor is fitted with a choke assembly, operated either by a carburettor mounted lever or remotely by a lever mounted on the left-hand rocker cover and connected by control cables.

Engine lubrication is provided by oil contained in the sump and circulated through a gear pump, driven by the timing chain, at the front of the engine. All models are fitted with a gauze oil strainer through which the sump oil is passed before reaching the pump. In addition, all models but the 750S and some 850T models, have a replaceable cartridge-type main feed filter through which the oil is forced before being transmitted to the working parts of the engine. Both gauze screen filter and cartridge filter are contained within the sump.

2 Petrol taps: removal, cleaning and replacement

- Two petrol taps are fitted to all models, of which the left-hand tap on V-1000 Convert and 750S models is electronically operated by a solenoid on the tap body.
- Before the taps can be unscrewed, the contents of the tank must be drained into a suitable container. Release the spring clips or screw clips from the hoses and pull them from the tap unions. Operate the electrovalve tap by turning on the ignition.
- Remove the taps by unscrewing the gland nuts. The two wires fitted to the solenoid on electrovalve units are a push fit on the terminals. Each tap is fitted with a gauze mesh filter which should be cleaned in petrol at regular intervals as specified under the routine maintenance heading.
- If the electrovalve tap malfunctions, it should be replaced by a new unit as repair is impracticable. Slight leakage of the manual tap can often be rectified by tightening the lever securing nut slightly, which may vibrate loose. The taps may be dismantled when in position on the petrol tank, after draining the fuel. Unscrew the lever retaining nut and withdraw the lever, complete with the nut and backing spring. The Neoprene seal can be hooked

out with a small screwdriver. If leakage of the tap occurs, the seal must be renewed.

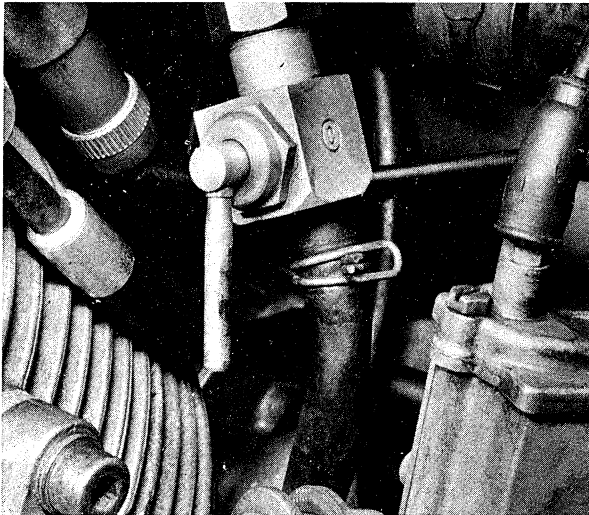
- When reassembling the tap, ensure that the holes in the seal are correctly aligned. When screwing in the centre nut take care that it does not become cross-threaded. This is easy to do since the nut is spring loaded and must therefore be pushed inwards as well as turned.

3 Carburettors: removal and replacement

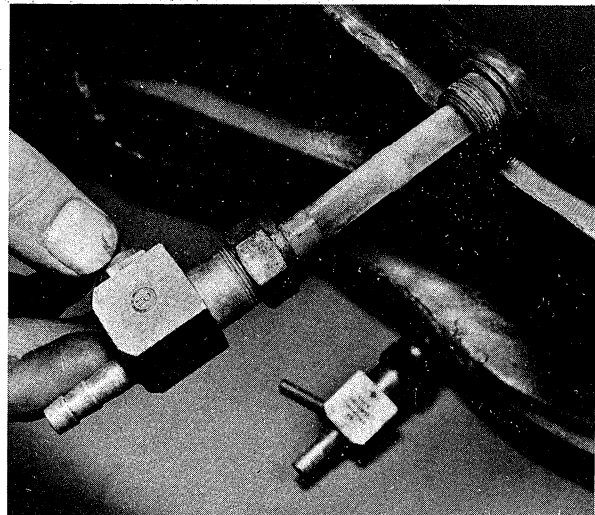
- Before removing the carburettors it is necessary to detach the petrol feed pipes with the unions at the carburettors. Unscrew the slotted bolt which passes through each union and displace the circular gauze filter screen.
- Unscrew the two carburettor top retaining screws from each instrument and withdraw the tops, complete with throttle slide. Remove the throttle slide return spring followed by the throttle slide and carburettor top from each cable. On Le Mans models this is not necessary as the return springs are securely retained and will not spring from position inadvertently. Where a remote choke control is used, unscrew the choke caps and pull the assemblies from position.
- On all but Le Mans model, each carburettor is retained on the inlet stub by a screw clamp. Because of the design of the air filter box rubber duct, it is simpler to detach each inlet stub from the cylinder head by removing the three socket screws and then separating the carburettor from the stub. On Le Mans models, each carburettor is retained on the inlet stub by a heavy rubber hose which is secured by two screw clips. The rubber mounting helps isolate the carburettors from vibration.
- Note the difference between the left and right-hand carburettors and lay them aside carefully.
- Replace in the reverse order to removal. Insert each throttle slide carefully, entering the needle into the jet. Do not oil the slides. Make sure the lug on the mixing chamber top engages with the notch in the carburettor body.
- Make sure that all the hose clips are tight, making airtight joints. If this is not so, the mixture will be weakened with possible damage to the pistons. Check that the controls work smoothly.



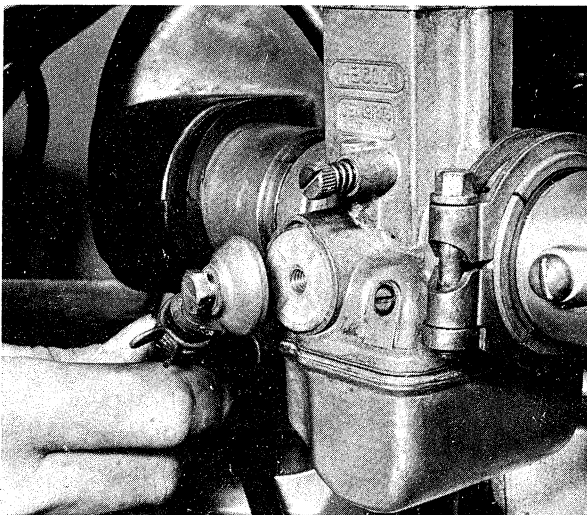
2.1 'Electrovalve' ignition operated petrol tap



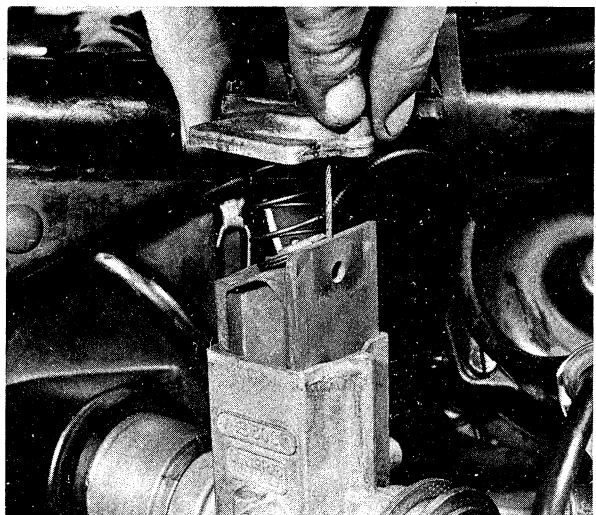
2.3a Petrol pipes held by screw or spring clips



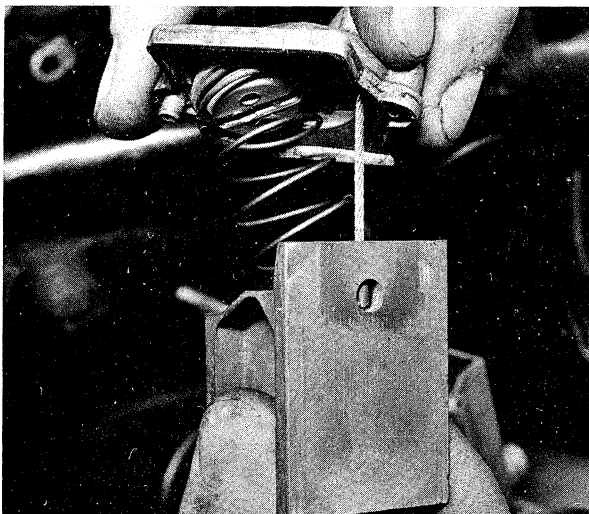
2.3b Withdraw tap to clean filter



3.1 Detach the petrol pipes and unions



3.2a Remove carburettor caps and ...

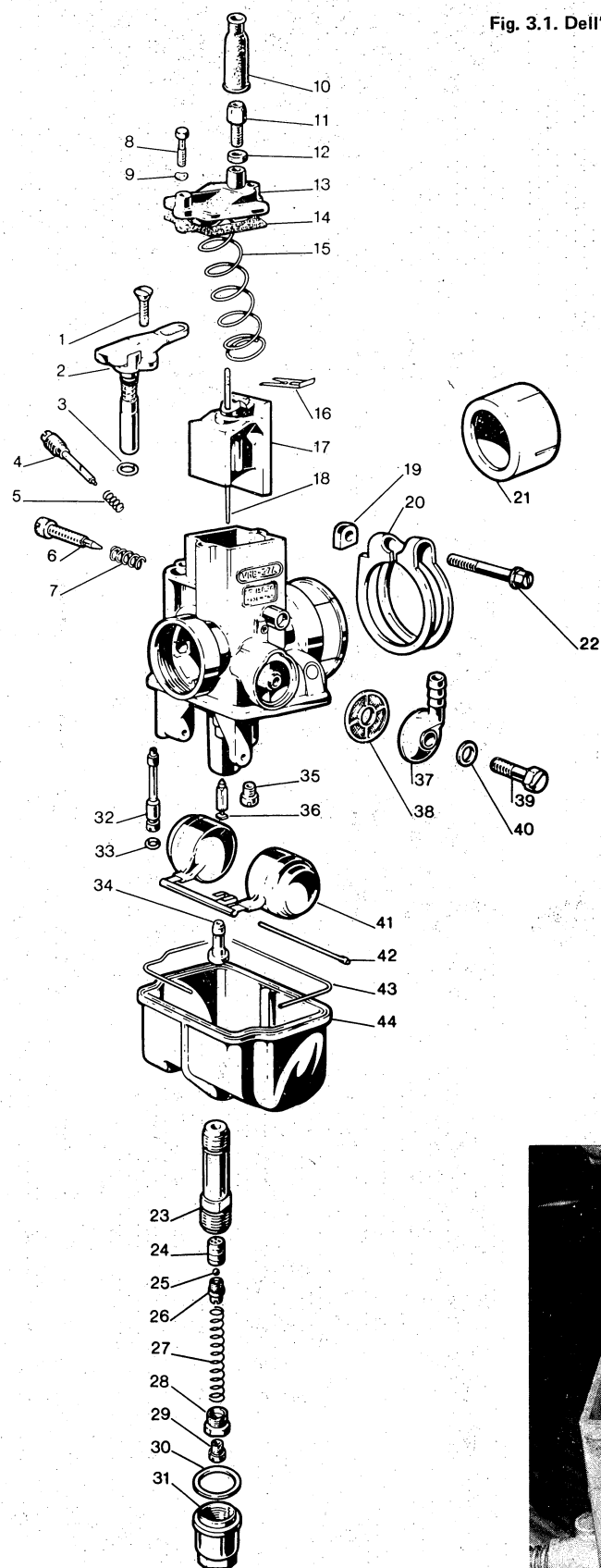


3.2b ... Disconnect the throttle slides

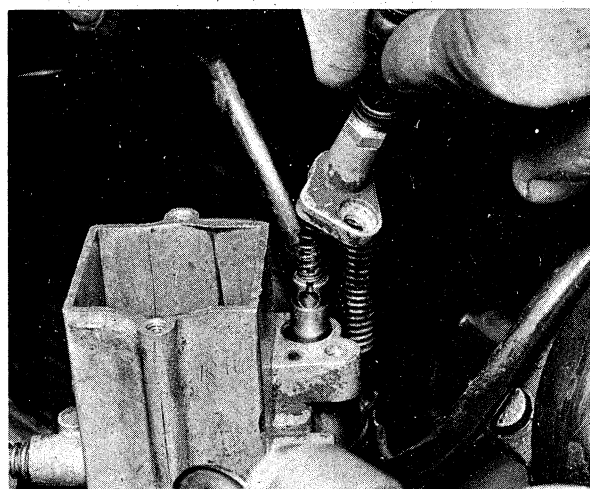


3.2c Remove the springs and caps from the cable

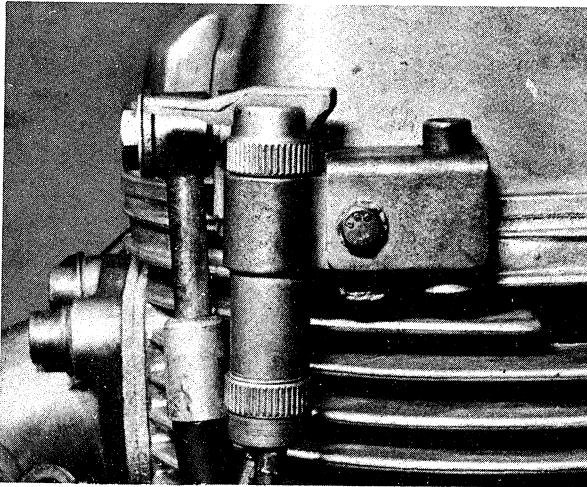
Fig. 3.1. Dell'Orto VHB type Carburettor - Except Le Mans model



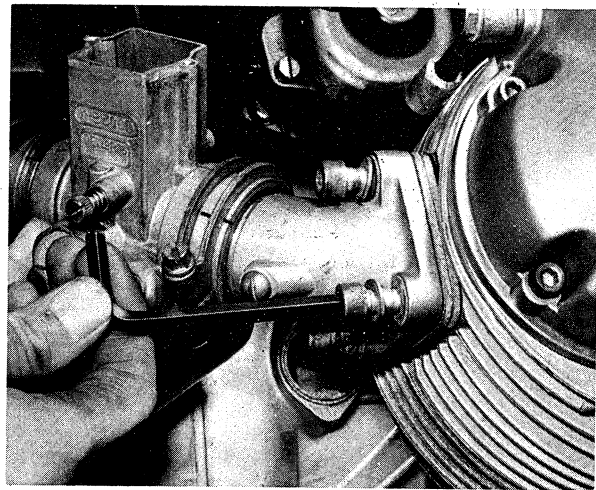
- 1 Screw
- 2 Choke mechanism
- 3 'O' ring
- 4 Pilot mixture screw
- 5 Spring
- 6 Throttle stop screw
- 7 Spring
- 8 Screw - 2 off
- 9 Washer - 2 off
- 10 Boot
- 11 Cable adjuster
- 12 Locknut
- 13 Carburettor cap
- 14 Gasket
- 15 Throttle return spring
- 16 Needle clip
- 17 Throttle valve (slide)
- 18 Needle
- 19 Special nut
- 20 Clamp
- 21 Insulator
- 22 Screw
- 23 Accelerator pump body
- 24 Piston
- 25 Steel ball
- 26 Valve body
- 27 Spring
- 28 Pump body cap
- 29 Main jet
- 30 Sealing washer
- 31 Drain plug
- 32 Starter jet
- 33 'O' ring
- 34 Main nozzle
- 35 Pilot jet
- 36 Float needle
- 37 Petrol feed union
- 38 Filter screen
- 39 Screw
- 40 Sealing washer
- 41 Float unit
- 42 Float pivot pin
- 43 Sealing pin
- 44 Float bowl



3.2d Choke plunger housing held by a single screw



3.2e Cable operated choke control lever



3.3 Detach the carburettor complete with inlet stub

4 Carburettors: dismantling and cleaning. Model VHB carburettors only

- 1 Remove each carburettor as described in the previous Section. Dismantle them separately, so that the parts do not become interchanged. Note that the carburettor marked CD is the right-hand instrument and the one marked CS is the left-hand instrument.
- 2 Invert the carburettor and unscrew the large nut from the centre of the float chamber. Lift the float chamber bowl from place, noting the sealing O ring. Using a pair of snipe nosed pliers, withdraw the float assembly pivot pin. Lift the floats from position together with the float needle. Displace the needle and store it safely as it is easily lost.
- 3 From the centre of the mixing chamber base unscrew the main jet and then remove the accelerator pump block as a unit, by fitting a spanner to the two flats on the main body. Separate the accelerator pump parts from the block after removing the end cap which held the main jet. The components include a return spring and a piston containing a non-return ball valve. The main nozzle which protrudes into the venturi of the carburettor, can be pushed out from the venturi side.
- 4 Unscrew the pilot jet from the boss adjacent to the accelerator pump holder. Then unscrew the choke (starter) jet complete with sealing ring from the turret to one side of the base.
- 5 The pilot adjuster screw should be unscrewed from the outside of the carburettor body. The choke control lever and plunger assembly (where utilised) may be removed after unscrewing the single screw which passes through the housing cap.
- 6 Clean all the passageways in the main body and the jets, using a compressed air jet. Do not use stiff wire or other pointed instruments for clearing obstructed jets or passageways. It is only too easy to enlarge the precision drilled orifices and cause carburation changes which will prove very difficult to rectify.
- 7 Persistent flooding is often caused by a leaking float, which will cause the petrol level to rise, or by dirt on the float needle or need valve seating. A worn needle may also cause flooding due to bad sealing, or may, in unusual circumstances, stick shut, causing a lack of fuel.
- 8 Before reassembling the carburettor in the reverse order to that given for dismantling, make sure all the component parts are clean. Check that the needle is not bent, by rolling it on a sheet of plain glass. Examine the throttle slide; signs of wear will be evident on the polished outer surface.
- 9 When replacing the throttle valves, make sure the slot in the base of each valve registers with the projection inside the mixing chamber, so that the valve will seat correctly. It is also important

to check that the needle suspended from each throttle valve has entered the needle valve, otherwise there is risk of damaging both the needle and the jet.

5 Carburettors: dismantling and cleaning. Model PHF carburettors only

- 1 To remove the carburettors, see Section 3. Dismantle each separately.
- 2 Unscrew the fuel filter cover screw and remove the screw, seal, filter cover and filter screen. Wash the screen in petrol.
- 3 Unscrew the float bowl nut and remove it, complete with sealing ring. Remove the float bowl and O-ring seal.
- 4 Unscrew the main jet, main jet holder and needle jet. Blow through the jets to ensure that they are clear.
- 5 Unscrew the starting jet and check the O-ring seal. Unscrew the pilot jet, and the accelerator pump valve. Blow through to clear.
- 6 Pull out the float pivot pin and remove the twin float. Drop out the float needle and unscrew the needle valve. Check the O-ring seal underneath the needle valve and inspect the float needle tip for wear. Check the plastic float for leaks by shaking to see if any petrol is inside.
- 7 Clean the float bowl and nut. Inspect the float chamber O-ring seal and fit it firmly in its groove before replacing the float bowl. Ensure that all O-ring seals are replaced without damage.
- 8 Unscrew the accelerator pump jet cover with its O-ring seal - this is opposite the fuel filter - and remove the accelerator pump jet with its O-ring seal. Blow through the jet. It should not be necessary to dismantle the accelerator pump. Do not move the pump adjuster screw - this is set by the factory.
- 9 Check the condition of the O-ring seal in the mixing chamber top. Inspect the throttle needle and needle jet for wear. The jet may be worn oval after considerable mileage when it should be renewed. The needle clip must be in groove 2.
- 10 Jet sizes and needle position are selected by the manufacturers after testing with the recommended fuel. Changes are only necessary in exceptional circumstances.
- 11 Do not move the throttle stop or mixture regulating screws or the carburettor will have to be retuned.
- 12 To remove the throttle slides and needles from the carburettor tops, pull back the return spring with one hand and invert the slide so that the throttle needle and clip can be pushed out. With the spring compressed, detach the slide from the cable. Control of the throttle slides by the main control cables is transmitted via a crank arrangement and a short length of cable within the carburettor top. Wear in this area is unusual. A worn cross shaft seal

may promote a weak mixture. The seal can be renewed after sliding the shaft from position.

13 Throttle slides or mixing chamber tops should not be interchanged as the accelerator pumps will then need readjusting.

14 Insert the throttle slide into the mixing chamber carefully, making sure that the needle goes into the needle jet. The accelerator pump lever is on the intake side.

6 Float chamber fuel level - checking

1 Remove both carburettors, see Section 3.

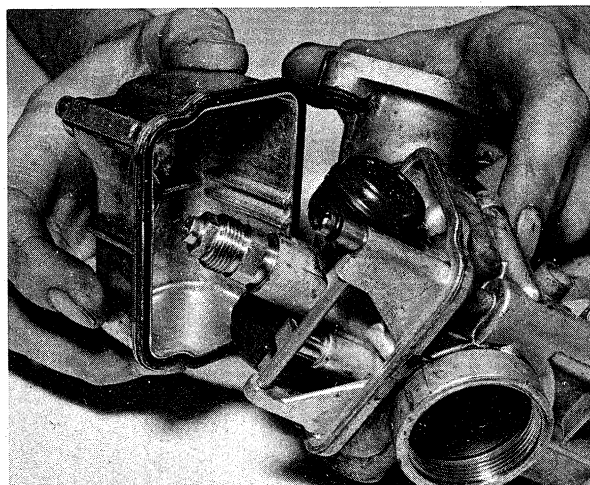
2 Detach the float bowl from each carburettor by unscrewing the central nut. Using a vernier gauge, check that the distance between the upper edge of the float and the float chamber mating surface is as follows, with the needle valve closed.

23.5 mm (0.9252 in) with 10 gm floats

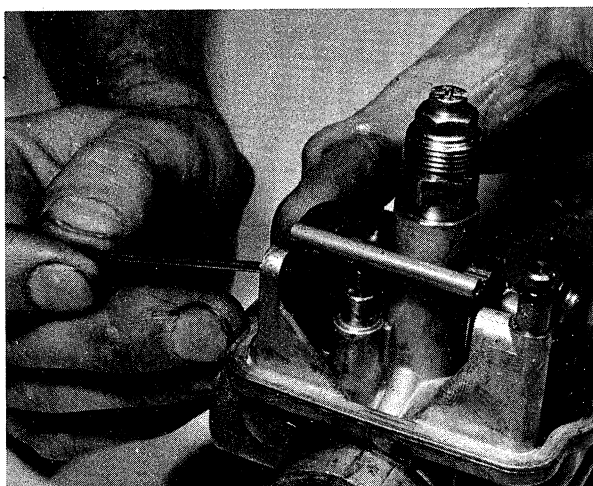
24.5 mm (0.9645 in) with 14 gm floats

The floats are weight marked for easy identification. The float tongue may be bent carefully to make the necessary adjustment.

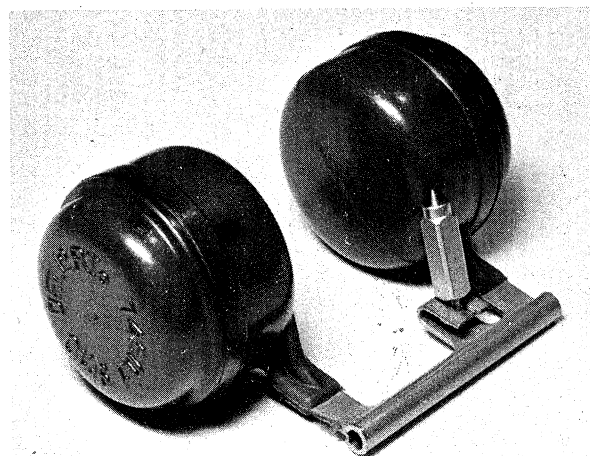
3 An incorrectly set float height can cause consistent overrichness of the mixture or weakness of the mixture depending upon whether the float is set too high or too low.



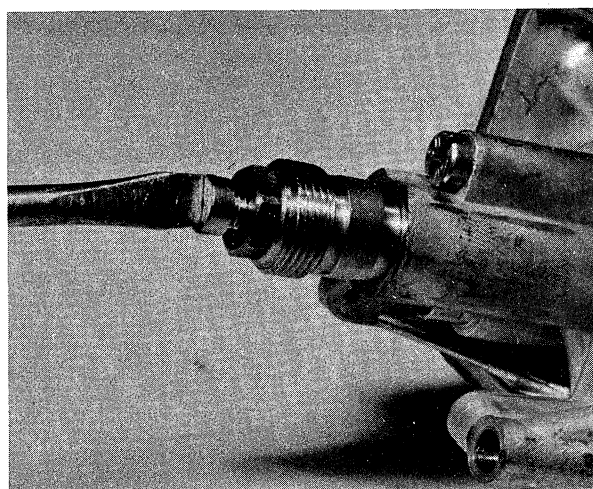
4.2a Remove plug to detach float chamber



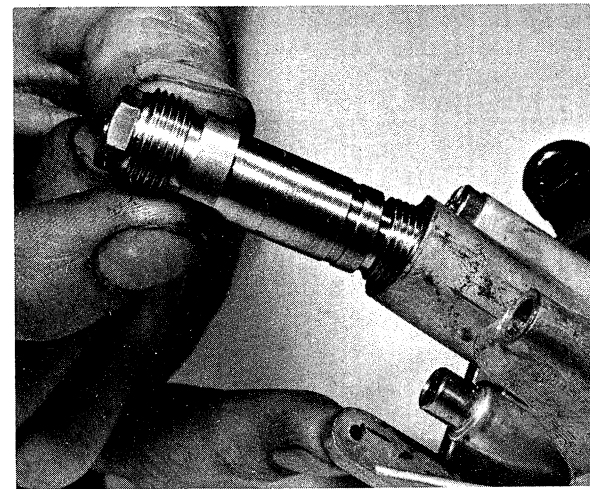
4.2b Displace pivot pin and lift float away



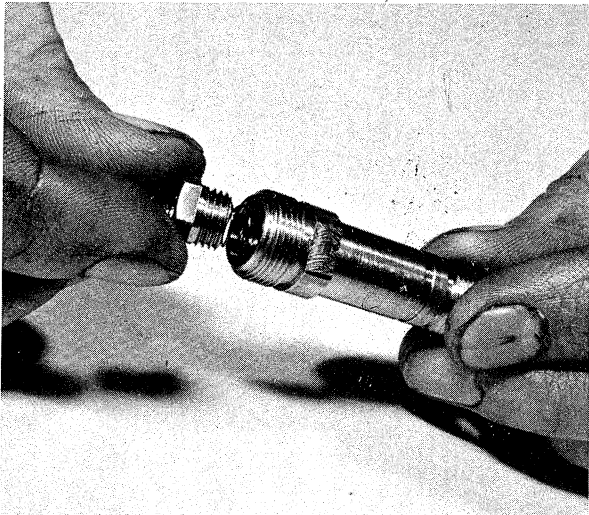
4.2c Float needle is located in fork



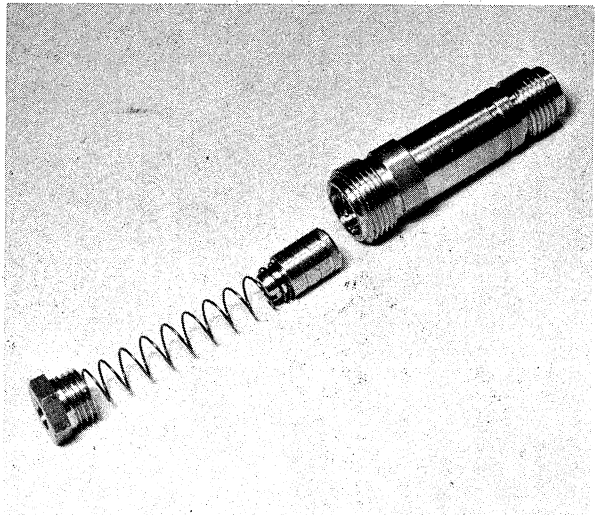
4.3a Unscrew the main jet and then ...



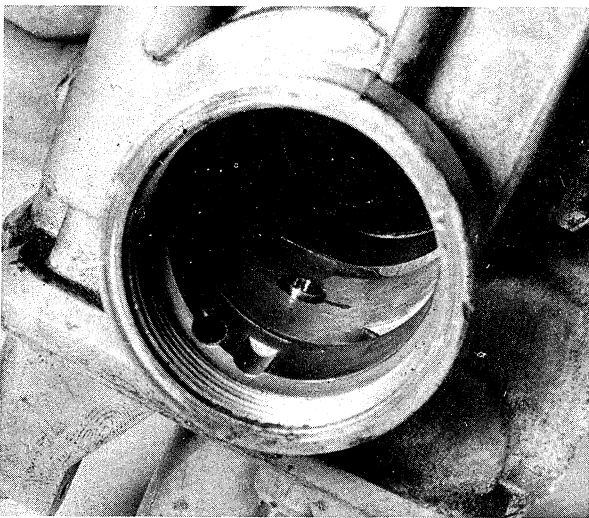
4.3b ... remove the accelerator pump body as a unit



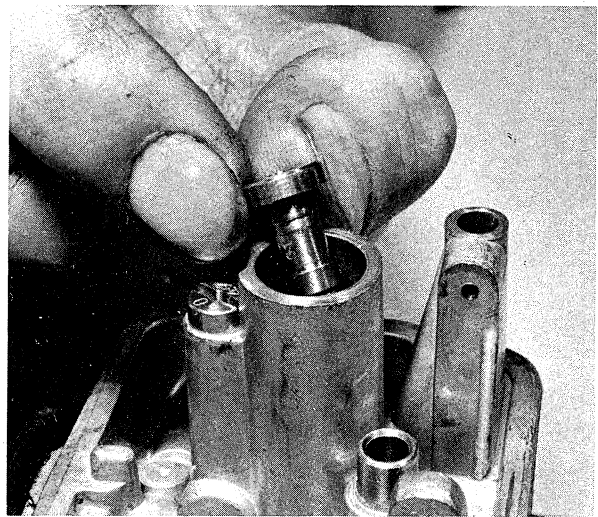
4.3c Unscrew the end plug to ...



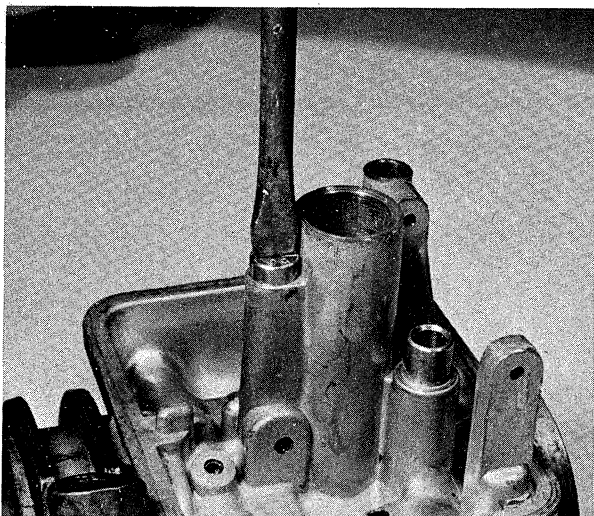
4.3d ... gain access to the pump components



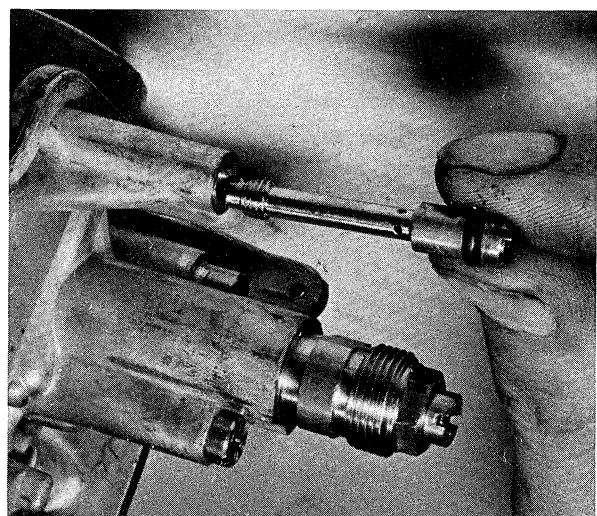
4.3e Push down the main nozzle and ...



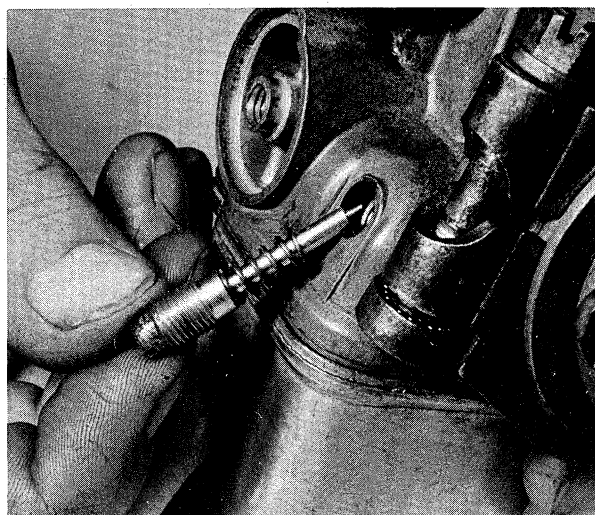
4.3f ... remove it from the bore



4.4a Unscrew the pilot jet and ...



4.4b ... remove the starter jet and 'O' ring



4.5 Unscrew the pilot mixture screw to aid cleaning

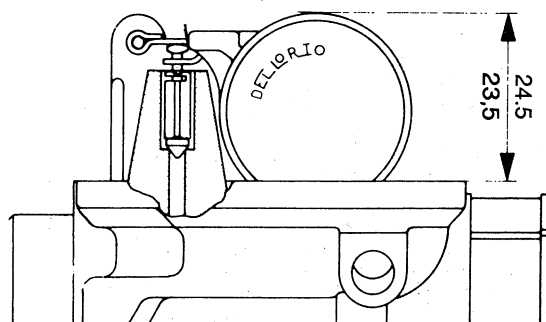
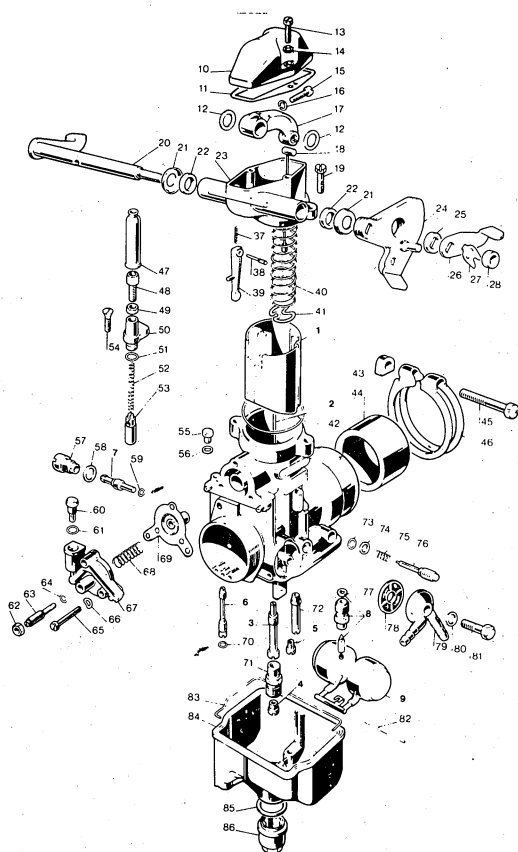


Fig. 3.3. Measuring float height



- | | |
|-------------------------------------|----------------------------------|
| 1 Throttle valve (slide) | 48 Adjuster screw |
| 2 Needle | 49 Locknut |
| 3 Main nozzle | 50 Starter housing cap |
| 4 Main jet | 51 'O' ring |
| 5 Pilot jet | 52 Return spring |
| 6 Starter (choke) jet | 53 Choke plunger |
| 7 Accelerator pump jet | 54 Screw |
| 8 Float needle valve | 55 Blanking screw |
| 9 Float unit | 56 Washer |
| 10 Top cover | 57 Accelerator pump jet cover |
| 11 Gasket | 58 'O' ring |
| 12 Sealing ring - 2 off | 59 'O' ring |
| 13 Screw - 2 off | 60 Accelerator pump valve |
| 14 Washer - 2 off | 61 'O' ring |
| 15 Screw | 62 Lock nut |
| 16 Washer | 63 Pump adjuster |
| 17 Crank | 64 'O' ring |
| 18 Intermediate cable | 65 Screw - 3 off |
| 19 Screw - 2 off | 66 Washer - 3 off |
| 20 Spindle | 67 Accelerator pump body |
| 21 Cup - 2 off | 68 Spring |
| 22 Seal - 2 off | 69 Diaphragm |
| 23 Crank box | 70 'O' ring |
| 24 Interconnecting lever - not used | 71 Main jet holder |
| 25 Washer - not used | 72 Accelerator pump feed pipe |
| 26 Lever arm - not used | 73 'O' ring |
| 27 Tab washer | 74 Washer |
| 28 Nut | 75 Spring |
| 37 Spring | 76 Idle mixture screw |
| 38 Pivot pin | 77 'O' ring |
| 39 Throttle pump arm | 78 Filter screen |
| 40 Return spring | 79 Petrol feed union |
| 41 Needle clip | 80 Sealing washer |
| 42 'O' ring | 81 Screw |
| 43 Special nut - not used | 82 Float pivot pin |
| 44 Insulator - not used | 83 Float bowl clip |
| 45 Screw - not used | 84 Float bowl |
| 46 Clamp - not used | 85 Sealing washer |
| 47 Boot | 86 Drain plug and main jet cover |

Fig. 3.2. Carburettor - Le Mans model only

Note: The carburettor illustrated is similar to but not identical to the instrument fitted to the Le Mans model

7 Carburettors: idle speed adjustment and synchronisation

- 1 Before any running adjustments are made to the carburettors, the engine must be allowed to reach normal working temperature. In addition, it is important that the valve clearances and ignition timing are checked first.
- 2 With the engine stopped, screw the idle adjuster screws (pilot mixture screws) inwards and then outwards the number of turns prescribed in the Specifications.
- 3 Start the engine and screw the throttle adjuster screws in an equal amount until the engine is running at 1000-1200 rpm. Remove one plug cap and by means of the idle adjuster screw on the opposite carburettor find the point at which the engine runs fastest. If the screw was set correctly, the optimum position will not be far away. Replace the plug cap and repeat the operation on the other cylinder. Because of the engine configuration running on one cylinder can be accomplished only at relatively high engine speeds. This is why the initial engine speed must be set at 1000-1200 rpm.
- 4 When the mixture adjustment is correct, unscrew the throttle adjuster screw on one cylinder so that when the plug cap is removed the engine fires four or five times before stopping. Repeat this on the second cylinder. The correct idling speed should now be achieved.
- 5 In order to ensure correct synchronisation of the carburettors, it will be necessary to check that both carburettor slides start lifting at exactly the same time. Checking may be done visually, through the carburettor mouth. Adjustments should be made by means of the cable adjusters on the carburettor tops or at the twist grip control on the handlebars. After making the adjustment, screw the adjusters in or out an equal amount until there is approximately 3 mm (1/8 in) free play at the cables before throttle slide lift commences.
- 6 In addition to manual adjustments of the carburettors, the carburettors are fitted with take-off points to which vacuum gauges may be fitted. Follow the makers instructions for adjusting the carburettors, commencing at an engine speed of 800-900 rpm.

8 Air filter: removal and replacement. Except Le Mans models

- 1 To gain access to the air filter box and make removal of the air filter element easier, the petrol tank should be removed, followed by the carburettors as described in Section 3 of this Chapter. In addition, the battery must be removed as described in Chapter 7, Section 2.
- 2 Remove the rubber ducting from the rear of the breather box and detach the four hoses leading to the breather box. The duct is retained by a strap arrangement consisting of two thin steel stops and two springs.
- 3 Unscrew the single nut from the rod projecting through the front of the air filter box and withdraw the breather box followed by the air filter element.
- 4 The air filter element is of the dry paper type and should be renewed, irrespective of condition, at the recommended interval. Knock the element to remove the loose dust. Blow out from the inside with an air hose to remove the more ingrained matter. If the filter element is perforated or has become soiled with oil, it must be renewed. Poor performance and an over-rich mixture will result from a blocked filter.
- 5 When refitting the filter assembly note that the free plate at the front of the breather box must be located correctly with the projection on the box.

9 Oil filters: removal and cleaning

- 1 All models are fitted with a gauze mesh oil strainer within the sump, which should be cleaned every 9,000 miles (15,000 km). This is approximately every fifth oil change. With the exception of the 750S and most 850T models, a filter cartridge is also

fitted. The cartridge cannot be cleaned and must therefore be renewed at the same time as the screen is cleaned.

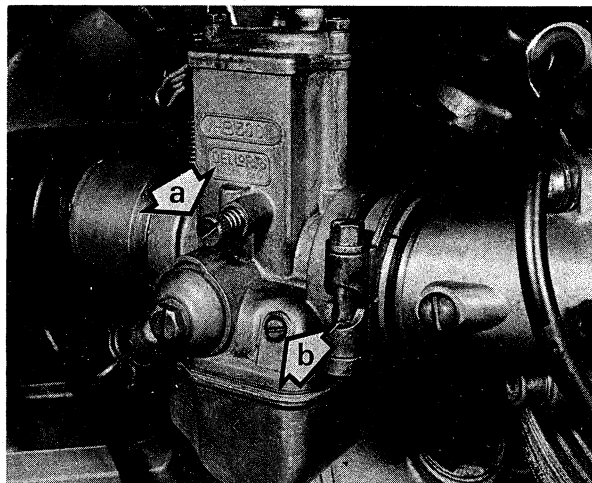
- 2 To gain access to the filter(s), drain the engine oil when the engine is warm and then remove the sump screws. The oil filters and pressure release valve are all attached to the sump plate itself.
- 3 Unscrew the filter cartridge and discard it. Bend down the lock plate on the gauze screen centre bolt. Remove the bolt and lift the screen from position. The screen may be cleaned in petrol and then allowed to dry thoroughly or blown dry with an air hose. When refitting the gauze, ensure that the centre bolt is secured by the tab washer.

10 Oil pump: removal, examination and renovation

- 1 The oil pump is of the spur gear type, retained in a housing fitted to the front of the engine and driven by the cam drive chain. Removal and inspection of the oil pump is unlikely to be necessary unless the engine lubrication system fails or during a major overhaul. The oil pump may be removed as described in Chapter 1, Section 10, after the frame has been separated from the engine and the alternator and timing cover removed. Refer to the relevant Sections in Chapter 1.
- 2 After withdrawing the Woodruff key from the oil pump driveshaft, push the integral shaft and drive pinion from position, and then displace the driven pinion. Clean the components thoroughly in petrol and allow them to dry. Make a visual check of the pinion teeth for chipping or wear and the shafts for scoring. Insert the driveshaft into the pump body and check for play in the two needle roller bearings. If play is evident, or if the needle rollers are scored, the bearings should be pushed from position and renewed.
- 3 Check the dimension of the gear pinions and the housings in the pump body against those given in the Specifications. Worn components cannot be repaired and therefore must be substituted by new components.

11 Oil pressure relief valve

- 1 The oil pressure relief valve consists of a spring loaded plunger contained within a housing screwed into the sump, adjacent to the filter. The valve regulates the pressure of oil in the lubrication system and allows the oil to bypass the filter and continue circulating if the filter becomes clogged.
- 2 To dismantle the valve, leaving the housing in the casing, remove the centre bolt and lift off the seal, cup and spring. Invert the casing and allow the plunger to fall out. The valve is set on initial assembly to a pressure of 54-60 psi (3.8-4.2 kg cm²) by means of shims placed between the spring and cap.
- 3 Clean all components and reassemble them in the same order.



7.2 A = Throttle adjuster screw; B = Pilot mixture screw

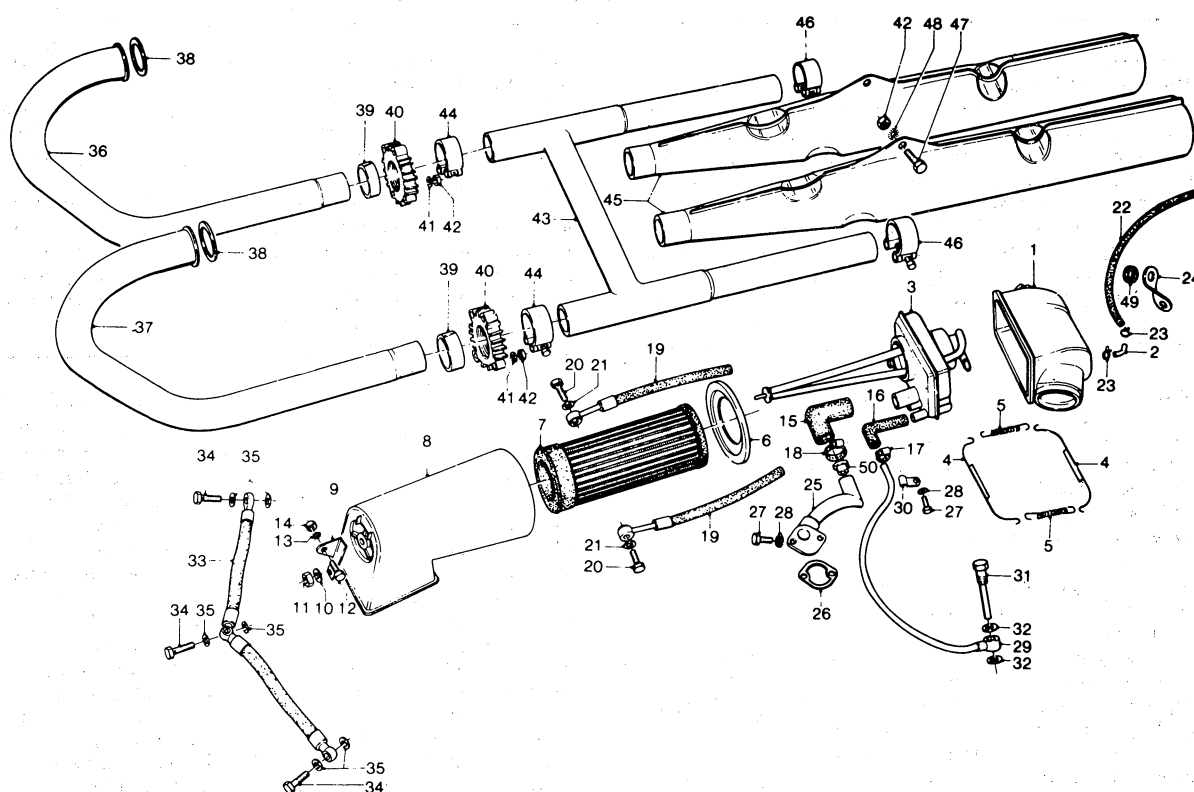
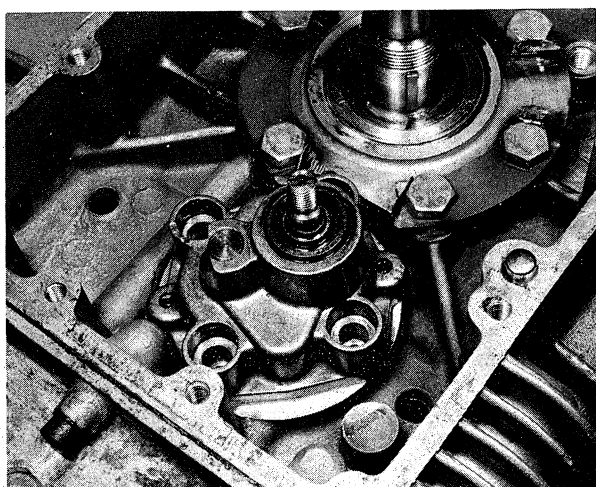
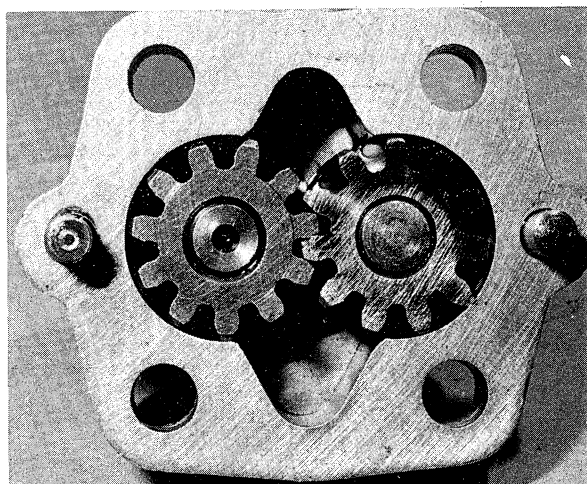


Fig. 3.4. Exhaust system and air filter

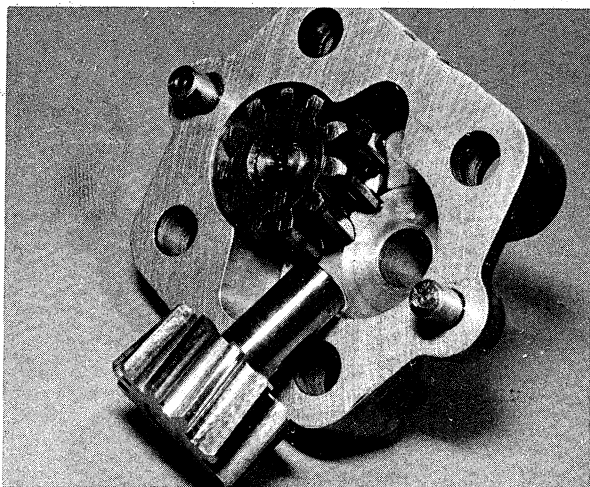
- | | | | |
|--------------------|---------------------------|---------------------------|--------------------------|
| 1 Rubber duct | 14 Nut | 27 Bolt - 2 off | 39 Collar - 2 off |
| 2 Elbow connection | 15 Rubber elbow | 28 Spring washer - 2 off | 40 Finned flange - 2 off |
| 3 Breather box | 16 Rubber elbow | 29 Return pipe | 41 Spring washer - 4 off |
| 4 Stop - 2 off | 17 Hose clamp - 5 off | 30 Clip | 42 Nut - 4 off |
| 5 Spring - 2 off | 18 Hose clamp | 31 Banjo bolt | 43 Balance pipe |
| 6 Backing plate | 19 Breather hose - 2 off | 32 Sealing washer - 2 off | 44 Clamp - 2 off |
| 7 Air filter box | 20 Banjo bolt - 2 off | 33 Rocker feed pipe | 45 Silencer - 2 off |
| 8 Air filter box | 21 Sealing washer - 4 off | 34 Banjo bolt - 3 off | 46 Clamp - 2 off |
| 9 Bracket | 22 Drain pipe | 35 Sealing washer - 6 off | 47 Bolt - 2 off |
| 10 Washer | 23 Spring clip - 2 off | 36 RH exhaust pipe | 48 Star washer - 2 off |
| 11 Nut | 24 Guide clip | 37 LH exhaust pipe | 49 Grommet |
| 12 Bolt | 25 Breather pipe | 38 Gasket ring - 2 off | 50 Non-return valve |
| 13 Star washer | 26 Gasket | | |



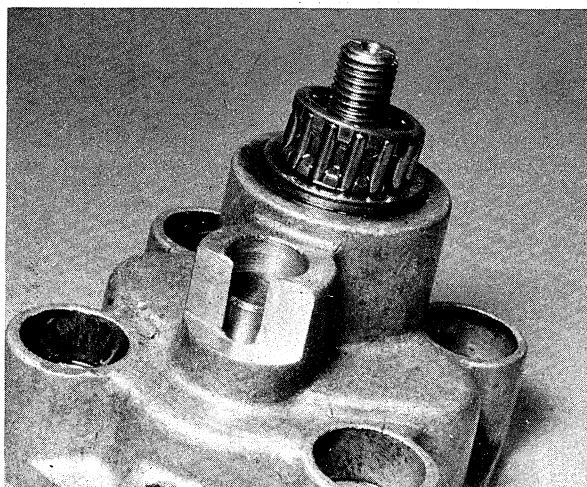
10.1 Oil pump secured by four screws, located on two dowels



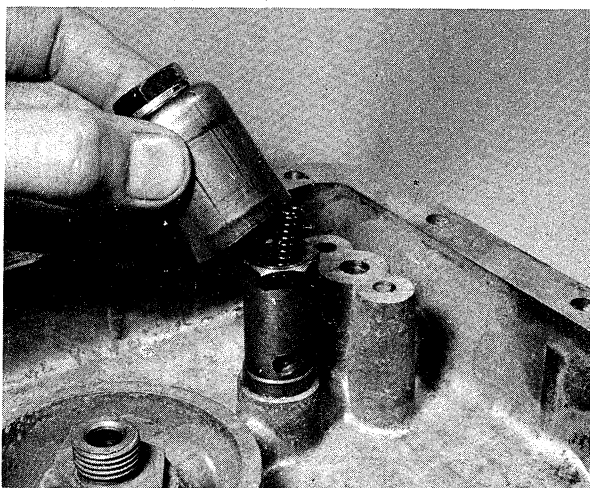
10.2a Check the pump gears for scoring and ...



10.2b ... the driven shaft for wear



10.2c The double row roller bearing can be pushed out



11.2a Remove the cap bolt complete with the cap



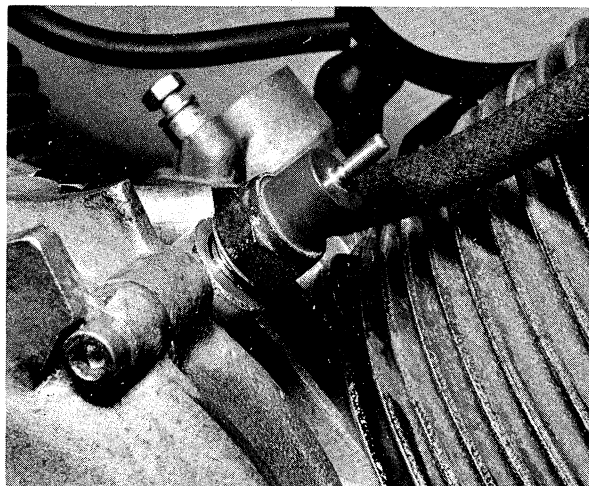
11.2b Lift out the spring and valve plunger

12 Oil pressure warning switch

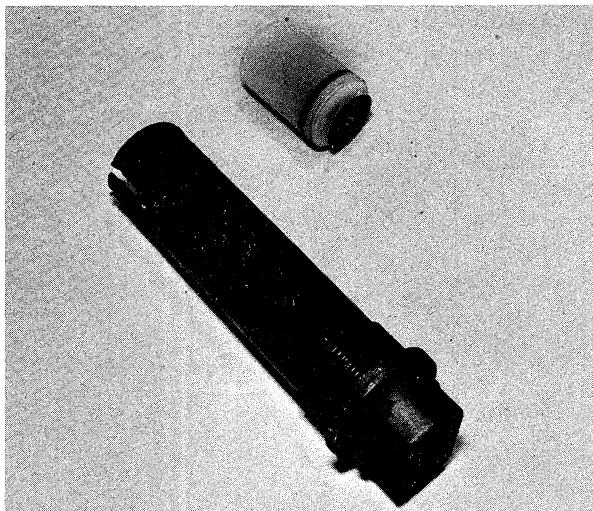
- 1 An oil pressure switch screwed into the crankcase forward of the cylinders, and connected to a warning light, is provided to indicate when the oil pressure has dropped below a safe level.
- 2 If the warning light illuminates when the engine is running at anything over tick-over speed, a fault in the lubrication system is indicated. Stop the engine immediately and do not restart until the fault has been rectified.

13 Petrol level switch: location. V-1000 Convert model only

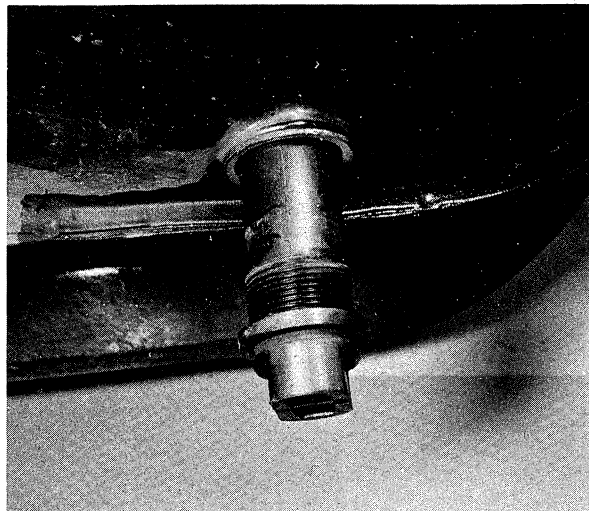
- 1 A float-operated switch is fitted in the underside of the petrol tank, which gives a visual indication of low fuel level via a warning lamp. Unless the float sticks in the cylinder in which it moves, failure of the switch to operate is unlikely.
- 2 After draining the petrol from the tank the complete unit may be unscrewed. The two wires leading to the switch are a push fit on their terminals.



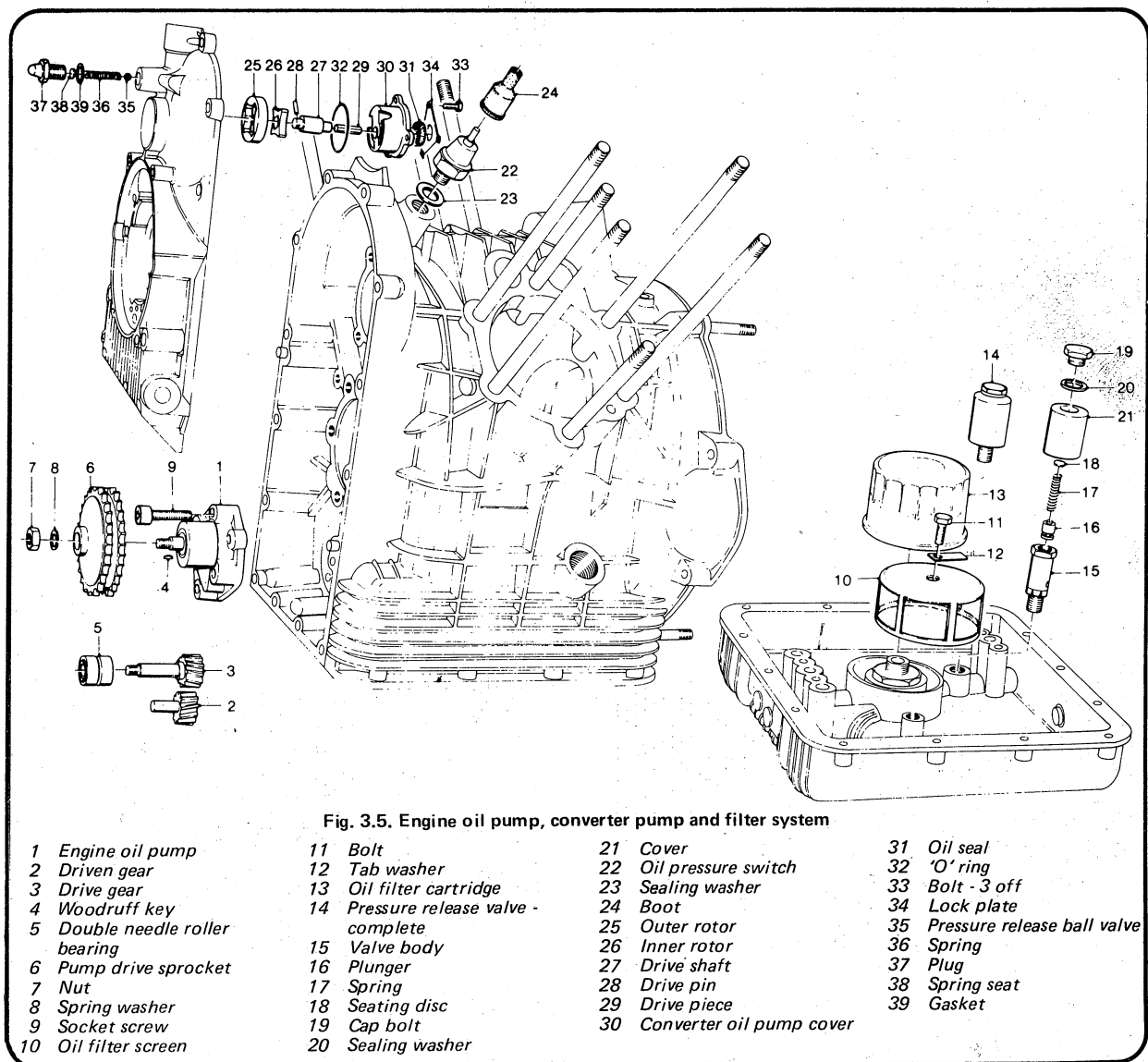
12.2 Oil pressure switch screws into crankcase housing



13.2a Two-piece float operated fuel level switch



13.2b Check condition of the sealing washer



14 Fault diagnosis: carburation

Symptom	Cause	Remedy
Engine 'fades' and eventually stops	Blocked air hole in filler cap Empty fuel tank Blocked fuel filter	Clean. Refill. Clean.
Engine difficult to start	Carburettor(s) flooding Twist grip open too far Air filter blocked	Dismantle and clean carburettor(s). Check for punctured float. Close twist grip. Remove and clean or renew.
Engine idles poorly	Blocked idling jet Carburettor too rich or too weak Leak between carburettor and cylinder head	Dismantle carburettor, and clean. Adjust. Check hose clips for tightness.
Engine runs badly - black smoke from exhausts	Carburettor(s) flooding Blocked air filter	Dismantle and clean carburettor. Check for sticking float. Remove and clean or replace.
Engine difficult to start. Fires only occasionally and spits back through carburettors	Weak mixture	Check for fuel in float chambers and whether choke is closed.
Engine runs very hot, keeps on running after ignition is turned off	Weak mixture	Readjust carburettors.
Engine pinks	Fuel octane rating too low	Use correct grade fuel.

15 Fault diagnosis: lubrication system

Symptom	Cause	Remedy
Oil pressure warning lamp remains on, flashes or comes on when driving	Low oil pressure Filter blocked Low oil level Worn main or big-end bearings Faulty oil pump Faulty oil pressure relief valve Faulty oil pressure switch Faulty wiring	Check. Renew. Top-up. Dismantle and check. Check. Check. Check continuity, renew if necessary. Check electrics.
White smoke in exhaust	Worn cylinder bore Broken piston ring Worn valve guides	Rebore. Renew. Renew.