

the scavenge pump. A bleed-off from the return feed to the oil tank is arranged to lubricate the rocker arms and valve gear, after which it falls by gravity via the pushrod tubes and the tappet blocks, to the crankcase. An additional, positive oil feed is arranged from drillings in the timing cover to lubricate the exhaust tappets. It will be noted that the oil pump is designed so that the scavenge plunger has a greater capacity than the feed plunger, this is necessary to ensure that the crankcase is not flooded with oil, and that any oil drain-back whilst the machine is standing is cleared quickly, immediately the engine starts.

2 Petrol tank - removal and replacement

1 The petrol tank is secured to the frame by two studs underneath the nose, one on each side. These studs project through two short brackets welded to the frame and are cushioned by rubber washers to damp out vibration. The tank is retained at the rear by two further bolts, in similar fashion. There may be some variations of this arrangement on later models.

2 When the four bolts are removed and the two fuel pipe unions disconnected at their joint with the petrol taps, the tank can be lifted from the machine. Make sure the shaped rubbers are not lost, since they will be displaced as the tank is removed.

3 When replacing the tank, special care must be taken to ensure none of the carburettor control cables are trapped or bent to a sharp radius. Apart from making control operation much heavier, there is risk that the throttle may stick since there is minimum clearance between the underside of the petrol tank and the top frame tube.

4 As a precaution against the bolts working loose, they can be wired together with locking wire.

3 Petrol taps - removal and replacement

1 The petrol taps are threaded into inserts in the rear of the petrol tank, at the underside. Neither tap contains provision for turning on a reserve quantity of fuel. It is customary to use the right hand tap only so that the left hand tap will supply the reserve quantity of fuel, unless the machine is used for high speed work or racing. In these latter cases, it is essential to use both taps in order to obviate the risk of fuel starvation.

2 Before either tap can be unscrewed and removed, the petrol tank must be drained. When the taps are removed each gauze filter, which is an integral part of the tap body, will be exposed.

3 When the taps are replaced, each should have a new sealing washer to prevent leakage from the threaded insert in the bottom of the tank. Do not overtighten; it should be sufficient just to commence compressing the fibre sealing washer.

4 Petrol feed pipes - examination

1 Petrol feed pipes of different types have been used, with a union connection to each petrol tap and a push-on fit at the carburettor float chamber.

2 After lengthy service, plastic pipes will discolour and harden gradually due to the action of the petrol. There is no necessity to renew the pipes at this stage unless cracks become apparent or the pipe becomes rigid and brittle.

5 Carburettor(s) - removal

1 Both single and twin carburettor fitments have been used depending on the version. Early models used the Standard Type 6 Amal carburettor(s) whilst later versions use either the Amal Monobloc Concentric carburettor(s). All types are described here but special emphasis is given to the Concentric because it is, by now, the most usual fitment or replacement.

2 Before removing a carburettor it is first necessary to detach the mixing chamber top which is retained by two small screws and lift away the top complete with the control cables, throttle valve and air slide assemblies. The petrol pipe can then be pulled off the push connection at the float chamber (or the union complete detached) and, after detaching the two retaining nuts and shakeproof washers, the complete carburettor, may be removed from the cylinder head.

3 Some of the older models will have an Amal Concentric carburettor fitted as this is the only type of Amal carburettor now available. It will replace the earlier types and possibly show benefit in terms of both performance and fuel economy if adjusted correctly.

6 Carburettor(s) - dismantling, examination and reassembly

Amal Concentric carburettor only

1 To remove the float chamber, unscrew the two crosshead screws on the underside of the mixing chamber. The float chamber can then be pulled away complete with float assembly and sealing gasket. Remove the gasket and lift out the horseshoe-shaped float, float needle and spindle on which the float pivots.

2 When the float chamber has been removed, access is available to the main jet, jet holder and needle jet. The main jet threads into the jet holder and should be removed first, from the underside of the mixing chamber. Next unscrew the jet holder which contains the needle jet. The needle jet cannot be removed until the jet holder has been unscrewed and removed from the mixing chamber because it threads into the jet holder from the top. There is no necessity to remove the throttle stop or air adjusting screws.

3 Check the float needle for wear which will be evident in the form of a ridge worn close to the point. Renew the needle if there is any doubt about its condition, otherwise persistent carburettor flooding may occur.

4 The float itself is unlikely to give trouble unless it is punctured and admits petrol. This type of failure will be self-evident and will necessitate renewal of the float.

5 The pivot needle must be straight - check by rolling the needle on a sheet of plate glass.

6 It is important that the gasket between the float chamber and the mixing chamber is in good condition if a petrol tight joint is to be made. If it proves necessary to make a replacement gasket, it must follow the exact shape of the original. A portion of the gasket helps retain the float pivot in its correct location; if the pin rides free it may become displaced and allow the float to rise, causing continual flooding and difficulty in tracing the cause. Use Amal replacements whenever possible.

7 Remove the union at the base of the float chamber and check that the inner nylon filter is clean. All sealing washers must be in good condition.

8 Make sure that the float chamber is clean before replacing the float and float needle assembly. The float needle must engage correctly with the lip formed on the float pivot; it has a groove that must engage with the lip. Check that the sealing gasket is placed OVER the float pivot spindle and the spindle is positioned correctly in its seating.

9 Check that the main jet and needle jet are clean and unobstructed before replacing them in the mixing chamber body. Never use wire or any pointed instrument to clear a blocked jet, otherwise there is risk of enlarging the orifice and changing the carburation. Compressed air provides the best means, using a tyre pump if necessary.

10 Before refitting the float chamber, check that the jet holder and main jet are tight. Do not invert the float chamber, otherwise the inner components will be displaced as the retaining screws are fitted. Each screw should have a spring washer to obviate the risk of slackening.

11 When replacing the carburettor, check the O ring seal in the flange mounting is in good condition. It provides an airtight seal between the carburettor flange and the cylinder head flange to

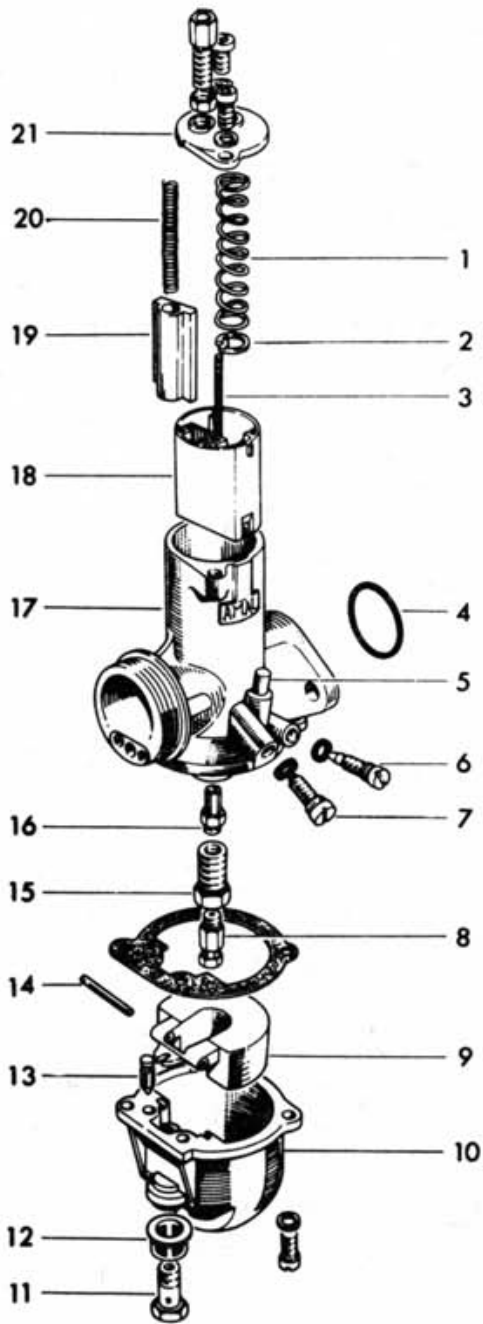
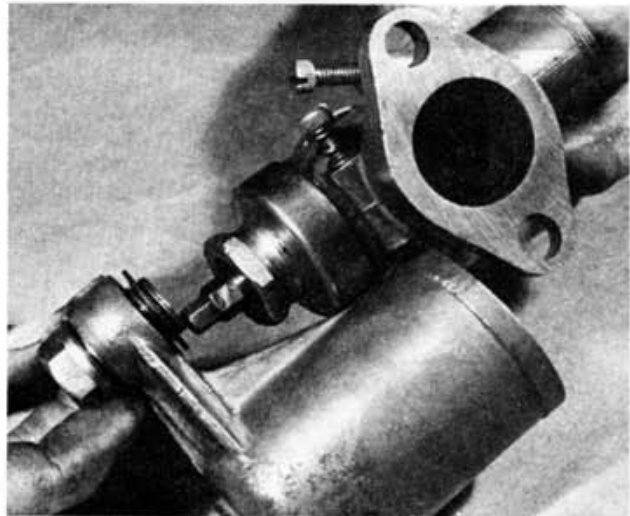


Fig. 4.1. Amal Concentric carburettor

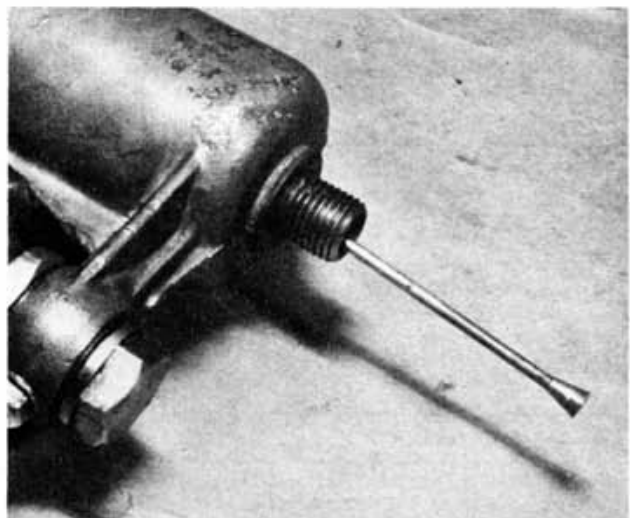
- | | |
|--------------------------|----------------------------|
| 1 Throttle return spring | 11 Banjo union bolt |
| 2 Needle clip | 12 Filter |
| 3 Needle | 13 Float needle |
| 4 'O' ring | 14 Float hinge |
| 5 Tickler | 15 Jet holder |
| 6 Pilot jet screw | 16 Needle jet |
| 7 Throttle stop screw | 17 Mixing chamber body |
| 8 Main jet | 18 Throttle valve (slide) |
| 9 Float | 19 Air slide (choke) |
| 10 Float chamber | 20 Air slide return spring |
| | 21 Mixing chamber top |



6.22 Early carburettors have a separate float chamber



6.23 Squeeze needle clip to release float



6.23a Needle will withdraw from bottom of float chamber