

and needle arrangement works in conjunction with the main jet, to control the amount of petrol/air mixture administered to the engine. There is also a slow running jet with an adjustable air screw, to control idling at low speeds, and a manually-operated choke, to aid cold starting.

The ATC 70 and 90 are also equipped with a device termed the 'high altitude compensator'. This is a knob on the side of the carburettor, clearly marked, which is pulled outwards when the machine is operated for any length of time at an altitude greater than 6000 ft (1750 metres). The device compensates for the more rarified air at these altitudes and allows less fuel into the fuel to air mixture. If this device were not fitted the mixture would be far too rich causing increased fuel consumption and a sharp drop in performance. The ATC 110 model does not come so equipped, but it does have a 'high altitude jet' (a smaller main jet; No. 78 instead of the standard No. 85) available as an optional extra. The procedure for changing or replacing jets will be explained later in this Chapter. It must be remembered that, on the ATC 70 and 90 models, the compensator button must be pushed back in to its original position, and on the ATC 110 model the standard jet must be replaced, as soon as the machine is operated, for any length of time, below the prescribed altitude. Note that the altitude limit, before the smaller jet becomes necessary on the ATC 110, is 6500 ft (2000 metres). If operation is sustained with the smaller jet installed below 5000 ft (1500 m) on the ATC 110, the weak mixture could cause serious engine damage. Roughly the same lower limit applies to the other models.

6 Carburettor: removal

Engine removed from the frame

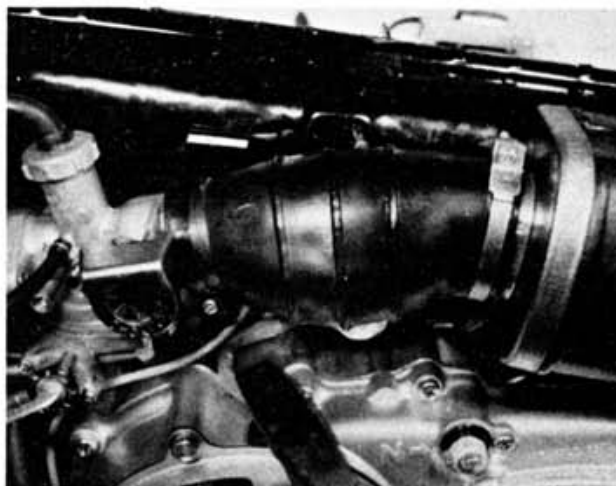
- 1 If the engine has already been removed from the frame, the carburettor will only be held to the engine by the overflow pipe (where fitted) and the inlet manifold from the carburettor intake to the engine inlet port.
- 2 Release the overflow tube from its two retaining clips on the lower left-hand crankcase cover, just in front of and below the recoil starter cover. The pipe can be left attached to the carburettor during further dismantling unless damage requires its removal.
- 3 If the inlet manifold does not require any maintenance, it too can be detached from the inlet port on the engine, and left attached to the intake port on the carburettor.

Engine still in the frame

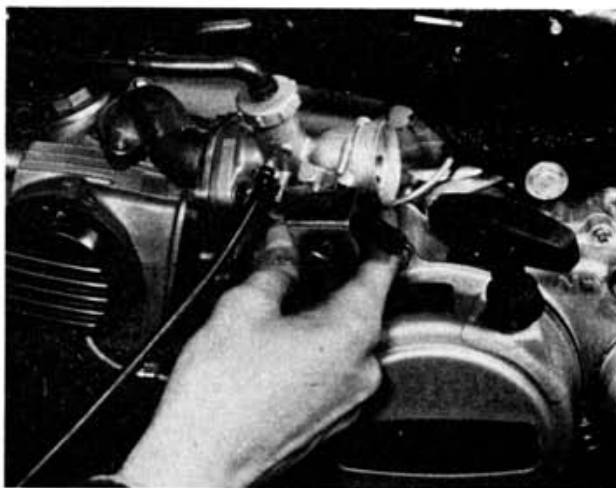
- 4 Either drain the petrol tank or remove it carefully as described in Section 2 of this Chapter.
- 5 Release either the spring clip (ATC 70 and 90 models) or the screw clip (ATC 110) from the rear end of the carburettor, which secures the short rubber hose connecting the carburettor to the air filter box. Pull the hose clear.
- 6 Remove the two nuts and washers and either pull the carburettor off the inlet manifold, or leave it attached, and pull the carburettor away from the inlet port on the engine. If the inlet manifold is removed, make sure the O-ring in the carburettor flange is not lost. Unscrew the carburettor top and withdraw the throttle slide/needle assembly.

7 Carburettor: dismantling – ATC 70 model

- 1 Compress the slide return spring and unhook the throttle cable. The slide, the needle with its spring clip, the W-shaped spring, the return spring and the carburettor top will then slide off the cable.
- 2 Remove the three screws holding the float chamber top in position and pull the top clear. Remove the float needle seat from the underside of the float chamber top. Lift the filter chamber, the sealing ring, and the petrol filter out of the float chamber top.



6.5 Detach rubber intake hose from rear of carburettor



6.6 Removal of the two flange nuts now allows removal of carburettor

- 3 Lift the float and needle assembly out of the float chamber.
- 4 Remove the throttle stop screw and the slow running air screw from the side of the carburettor, taking care not to lose the small springs.
- 5 Unscrew the main jet from the centre column in the roof of the float chamber, and then unscrew the needle jet holder into which the main jet screws. The needle jet is a push fit and can be pushed out from the venturi side using a wooden dowel.
- 7 Pre 1975 ATC 70 models are fitted with a detachable slow air jet, which screws into the roof of the mixing chamber to one side of the main jet column.
- 8 Remove the float chamber drain screw.
- 9 Remove the two retaining screws and remove the choke lever cover and gasket. If the choke mechanism requires attention (not a usual occurrence), removing the nut from the end of the choke lever shaft allows the mechanism to be dismantled.

8 Carburettor: dismantling – ATC 90 and 110 models

- 1 Compress the slide return spring and unhook the throttle cable. The slide, the needle with its spring clip, the W-shaped spring, the return spring and the carburettor top will then slide off the cable.

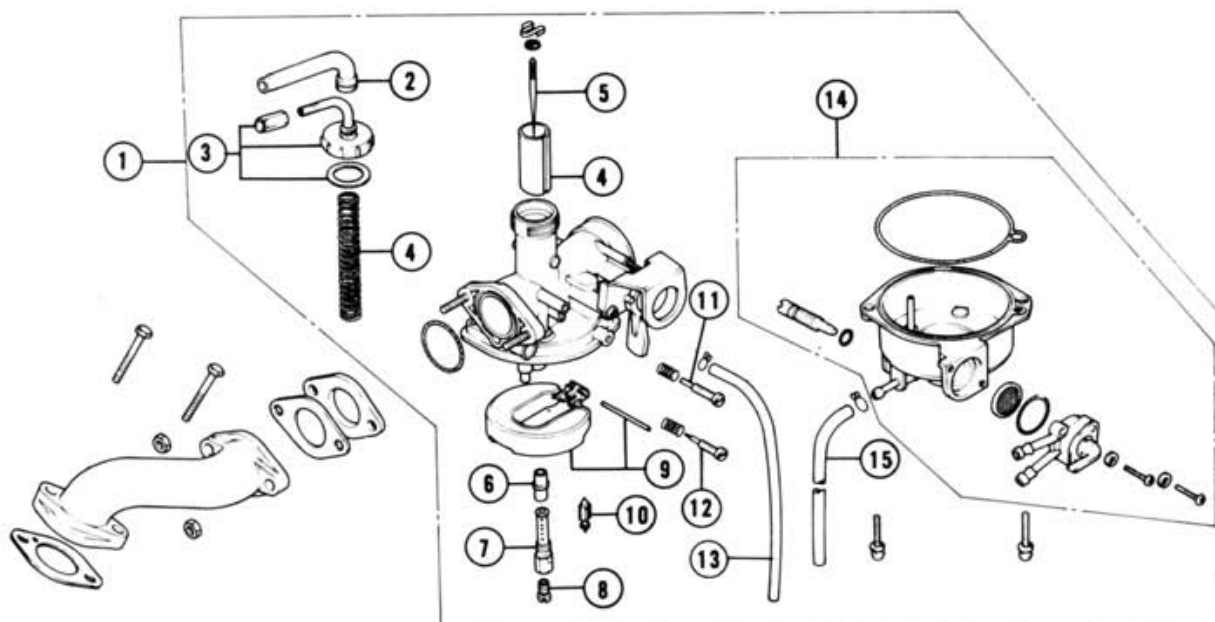


Fig. 2.2 Carburettor – ATC 70

- | | | |
|----------------------------|---------------------|---------------------------|
| 1 Carburettor assembly | 6 Needle jet | 11 Throttle stop screw |
| 2 Rubber sleeve | 7 Needle jet holder | 12 Pilot air screw |
| 3 Carburettor top assembly | 8 Main jet | 13 Breather pipe |
| 4 Throttle valve | 9 Float assembly | 14 Float chamber assembly |
| 5 Jet needle | 10 Float needle | 15 Overflow pipe |

2 Remove the two screws holding the float chamber in position and pull the chamber clear. Remove the two screws on the end of the float chamber to release the blanking plate, sealing ring and petrol filter. Remove the float chamber drain screw.

3 Invert the carburettor body and push out the float pivot pin. This releases the float and the float needle. Carefully remove the float needle from the float. Unscrew the main jet from the underside of the mixing chamber. On ATC 90 models the needle jet can be pushed out from the venturi side of the carburettor. ATC 110 models are fitted with a screw in needle jet holder (into which the main jet screws). After removal of this the needle jet can be pushed out from the venturi side. All ATC 90 models are fitted with a detachable slow jet. This can be unscrewed from its location to the side of the main jet column.

5 Remove the throttle stop screw and the slow running air screw (ATC 90) from the side of the carburettor, taking care not to lose the small springs. **Do not** remove the screw from ATC 110 carburettors because the position is factory pre-set to maintain the required EPA regulated low emissions.

6 Dismantle the choke mechanism, if necessary, by removing the nut from the end of the choke lever shaft. On the ATC 110, the choke lever is of a different design and is fitted with a guard plate. This plate is retained by a crosshead screw.

4 The float needle seating will wear after lengthy service and should be closely examined with a magnifying glass. Wear usually takes the form of a ridge or groove, which will cause the float needle to seat imperfectly. Always renew the seating and float needle as a pair, especially since similar wear will almost certainly occur on the point of the needle. If required, the seat can be unscrewed from the body.

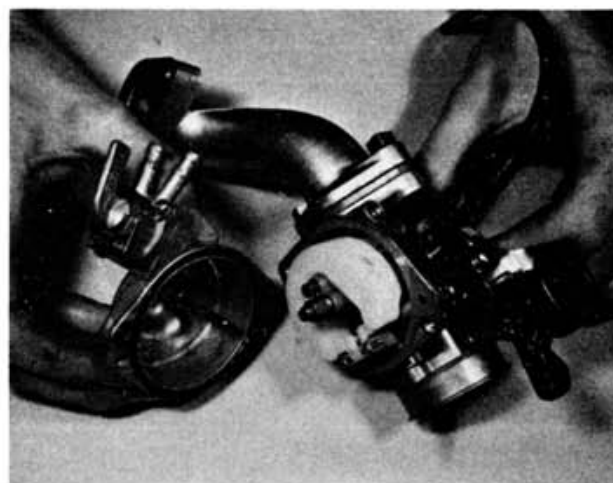
5 Check the condition of the float assembly and shake it to see if there is any petrol inside. If they are punctured, because they are moulded from a plastic material, it is not possible to effect a permanent repair. In consequence, a new replacement should always be fitted if damage is found.

9 Carburettor: cleaning, examining and reassembling

1 Thoroughly clean all the parts paying particular attention to the internal passageways of the carburettor body, the bottom of the float chamber, and any other places where sediment may collect. Use compressed air to clean the carburettor and avoid using a piece of rag since there is always risk of particles of lint obstructing the internal passageways or the jet orifices.

2 Check that none of the springs are weak or broken.

3 Check for wear on the slide and carburettor body as air leaks round the slide can cause weak mixture problems.



8.2 Separate the float chamber from the carburettor body