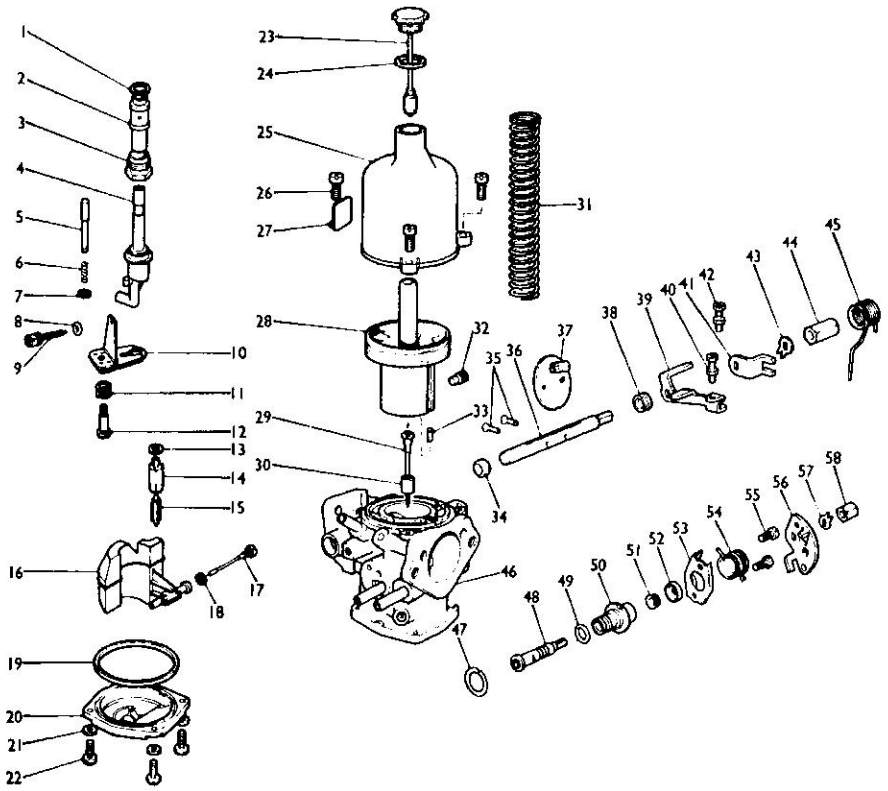

Fig. 73. **THE TYPE HIF CARBURETTER COMPONENTS**

1. Jet bearing washer
2. Jet bearing
3. Jet bearing nut
4. Jet assembly
5. Lifting pin
6. Lifting pin spring
7. Circlip
8. Adjusting screw seal
9. Jet adjusting screw
10. Bi-metal jet lever
11. Jet spring
12. Jet retaining screw
13. Needle seat washer (if required)
14. Float needle seat
15. Float needle
16. Float
17. Float pivot
18. Pivot seal
19. Float chamber cover seal
20. Float chamber cover
21. Spring washer
22. Cover screw
23. Piston damper
24. Damper washer
25. Suction chamber
26. Chamber screw
27. Identity tag
28. Piston
29. Jet needle
30. Needle guide
31. Piston spring
32. Needle retaining screw
33. Needle spring
34. Throttle spindle seal
35. Throttle disc screws
36. Throttle spindle
37. Throttle disc
38. Throttle spindle seal
39. Throttle actuating lever
40. Fast idle screw and nut
41. Throttle lever
42. Throttle adjusting screw and nut
43. Tab washer
44. Retaining nut
45. Throttle spring
46. Body
47. Cold start seal
48. Cold start spindle
49. 'O' ring
50. Cold start body
51. Spindle seal
52. End cover
53. Retaining plate
54. Cold start spring
55. Retaining screw
56. Fast idle cam
57. Tab washer
58. Retaining nut

Crankcase ventilation control

The e.e.c. carburetters are readily distinguished from standard units by absence of the externally mounted float-chamber and cold-start jet positioning lever.

An 'exploded' view of HIF type carburetter components is shown in Fig. 73. The assembly of parts will be self evident from this and later illustrations.

Variable Choke

The effective choke area at any time is determined by the amount of induction passage obstruction by the lower part of the spring loaded piston (28). The piston carries tapered jet needle (29) which rides in jet assembly (4) and so determines the corresponding effective jet area. Vertical movements of the piston (and hence variations in effective choke and jet area) occur in response to changes in induction air flow.

The space below the suction disc of the piston is in communication with the air supply upstream of the choke, whereas the space above the disc communicates with the induction passage downstream of the choke. This passage is at a depression under fuel jet and choke, and hence across the piston, causing this to rise or fall to a position of balance determined by the spring in opposition to the differential force.

The amount of the differential force (and therefore extent of piston and jet needle movement) is determined by the air mass flow required by the engine at any time, together with the corresponding throttle position controlling the passage depression. As the tapered needle is withdrawn from the jet, the increasing effective area allows more fuel to glow. The fuel/air requirements throughout the engine load/speed range are thus automatically controlled.

Jet Needles

Each size of jet needle is specific to the carburetter/engine duty. For some carburetter applications variations from the standard needle are available to give alternatively richer or weaker mixtures. For HIF units however – whatever the application – standard needles only are available.

A feature of the HIF units is that they are already pre-set on the weak side and sealed before a vehicle is delivered (to help meet the exhaust emission regulations) and no overall weaker setting is recommended. Alteration of mixture strength is therefore limited to adjustment of the jet tube height, which is later described.

Spring-loaded Jet Needle

The amount of fluid flow in a pneumatic or hydraulic system is affected by the shape, position, and effective area of the metering orifices. To obtain repeatability of emission control performance in carburetters of the same specification it is essential that the geometry of the flow passages is identical. This is achieved in type HIF carburetters by using a spring-loaded jet needle arrangement, Fig.74.

The shoulder of the needle (3) abuts a protusion formed on the face of the needle guide (5), so that when held in place by spring (4) the needle adopts a biased position (7) in the fuel jet orifice. The direction of the bias is either to the inlet, or the outlet side of the carburetter as indicated by etched location marks on needle guide and piston.

As the needle is retained in a pre-determined position no jet centreing is required and a non-centreable jet bearing is fitted.

Mixture Adjustment

Whereas on the standard type of SU carburetter the jet tube is lowered down the jet needle to provide cold start enrichment, its vertical movement on HIF types