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HD8 SU Carburettor PAGES

THE HD OR DIAPHRAGM-JET-TYPE CARBURETTER AND THE AUXILIARY ENRIGHCHMENT CARBURETTOR (THERMO-CARBURETTOR)

THE HD OR DIAPHRAGM-JET-TYPE CARBURETTOR

The HD carburettor differs from the more familiar type in that the jet glands are replaced by a flexible diaphragm, and the idling mixture is conducted along a passage-way, in which is located a metering screw, instead of being controlled by the throttle disc; the throttle/jet interconnection mechanism is also redesigned.

There alterations give more consistent idling, greater reliability of metering, and reduced choke control load. This carburettor is made in three sizes, 1.5 inch (38.1mm), 1.75 inch (44.4 mm) and 2 inch (50.8 mm), and can have either the manual mixture enrichment already described, or the auxiliary cold starting attachment referred to in the second part of this sheet.
The details of these alterations are as follows (diagram below). The Jet (1), which is fed through its lower end, is attached to a synthetic rubber diaphragm (2) by means of the jet cup (3) and jet return spring cup (4), the centre of the diaphragm being compressed between these two parts; at its outer edge it is held between the diaphragm casing (5) and the float chamber arm. The jet actuating lever (7), the latter having an adjusting screen (8), which limits the upward travel of the jet and thus constitutes the idling adjustment; screwing it in (clockwise) enriches the mixture, and unscrewing it weakens the mixture.

Throttle lever and jet interconnection

The jet and throttle interconnection mechanism is operated by a cam (9), mounted on the jet lever spindle (10), the whole unit being housed in the diaphragm casing (5). The cam on being rotated by means of the jet hand control lever (11) actuates the cam shoe (12), thereby causing vertical movement of the push rod (13). To the top of this push-rod is attached the top plate (14),, which is fitted with an adjusting screw (15) which makes contact with the throttle stop lever (16).
It will be seen that angular movement of the jet hand control lever will turn the jet lever spindle and, therefore, the jet actuating lever which controls the jet cup and the jet. The cam controls the cam shoe, push rod, top plate and the throttle. Suitable setting of the two adjustment screws (8) and (15) will clearly give any desired combination of mixture enrichment and throttle opening.

Vacuum-controlled ignition and economizer ports

The connection to the vacuum ignition control and o the float chamber vacuum-type economizer is made at the top of the carburettor instead of underneath or at the side, as with the older type. This means that the throttle is opened downwards, assuming the throttle lever to be in the normal position, facing the air intake.

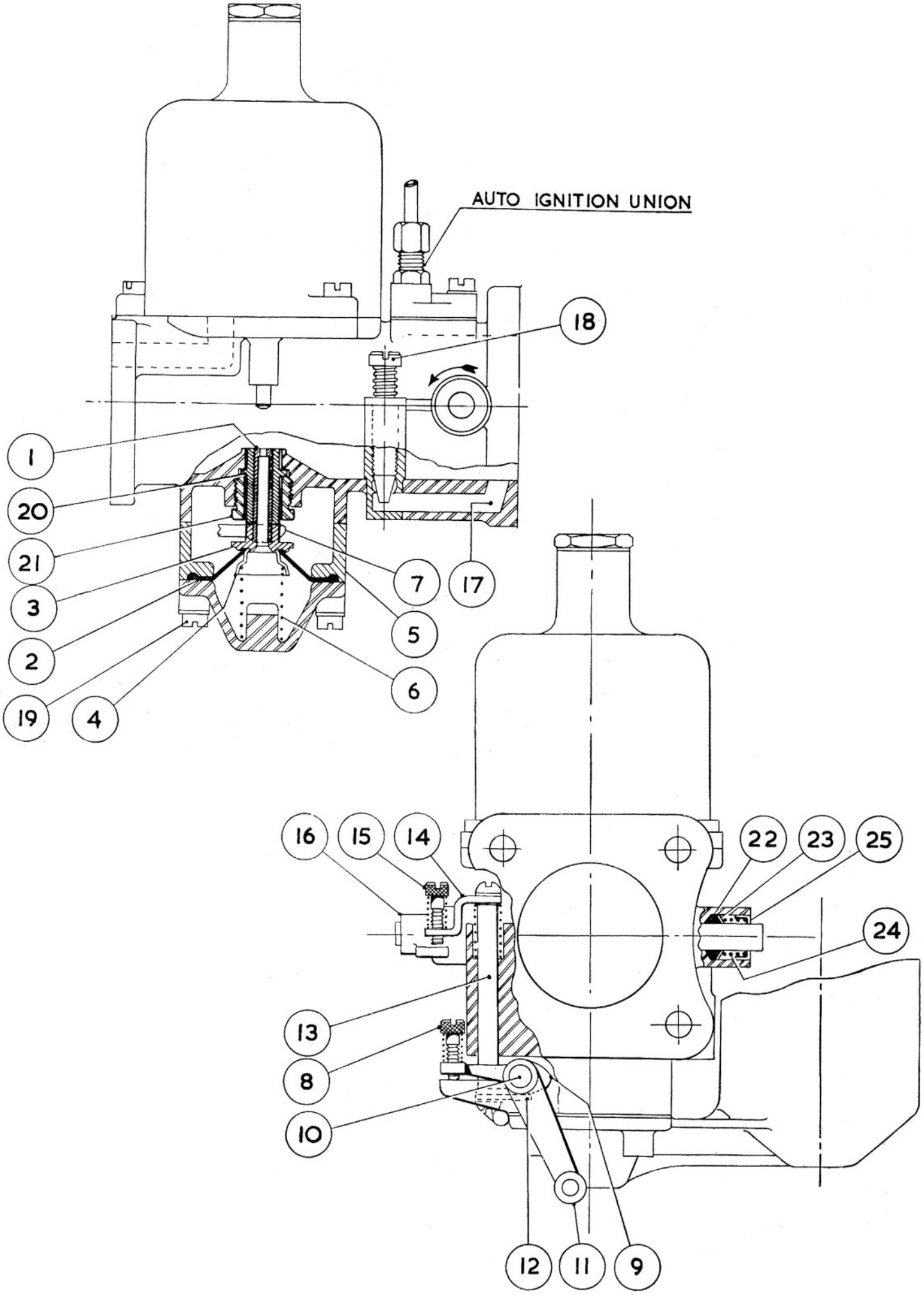
Throttle spindle glands
Provision is made for the use of throttle spindle glands consisting of the cork gland itself (22), a dished retaining washer (23), a spring (24) and a shroud (25). This assembly should not require servicing and can only be removed by dismounting the throttle spindle and disc.

Idling
The HD carburettor still idles on the man jet, but the mixture, instead of passing under the throttle disc, is conducted along the passage-way (17) connecting the choke space to the other side of the throttle disc.
The quantity of mixture passing through the passage-way and, therefore, the idling speed of the engine are controlled by the 'slow-run' valve (18), the quality or relative richness of the mixture being determined by the jet adjusting screw, as mentioned in paragraph 2 under "throttle lever and jet interconnection".. It follows that when idling, once the engine has reached its running temperature, the throttle remains completely closed against the bore of the carburettor; for fast idle, when the engine is cold, it continues to be partially open as with the current design, mixture passing under the throttle disc as well as along the passage-way.

Centering the Jet
This is carried out in much the same way as on the standard H type carburettor, except that the float chamber and jet casing must be removed and the jet held in the uppermost position by hand. It is important to keep the diaphragm and, therefore, the jet in the same radial position in relation to the carburettor body and jet casing, throughout this operation, as the jet orifice is not necessarily concentric with its outside diameter, and turning might cause decentralization. The simplest way to do this is to mark one of the diaphragm and corresponding jet casing screw holes with a soft pencil.

Adjustment
The adjustment of the HD carburettor is extremely simple. Whereas with the older type the jet was controlled by a nut, it is now set by a screw, and whereas the engine speed was determined by adjustment of the throttle, it is now controlled by the 'slow-run' valve (18). To enrich the mixture, the screw (8) should be screwed in, and to increase the idling speed the 'slow-run' valve should be undone.

Defects in operation
Since the jet of the HD carburettor is fed through its center and has no glands, leakage can only be caused by an insecure fit of the jet cup, an imperfect seal of the diaphragm, either at its outer edge, where it is compressed between the float chamber and the diaphragm casing, or at its inner edge, where it is fitted to the jet, or by a fracture of the diaphragm. Leakage at the outer edge may be cured by tightening the float chamber securing screws (19), but fracture or leaking at the inner edge will probably call for a new jet assembly.
The jet may also stick, up or down, due to dirt between it and its bearing (20), or due to corrosion. The cure is to remove the parts by undoing the jet screw (21), clean and refit.


AUTO IGNITION UNION
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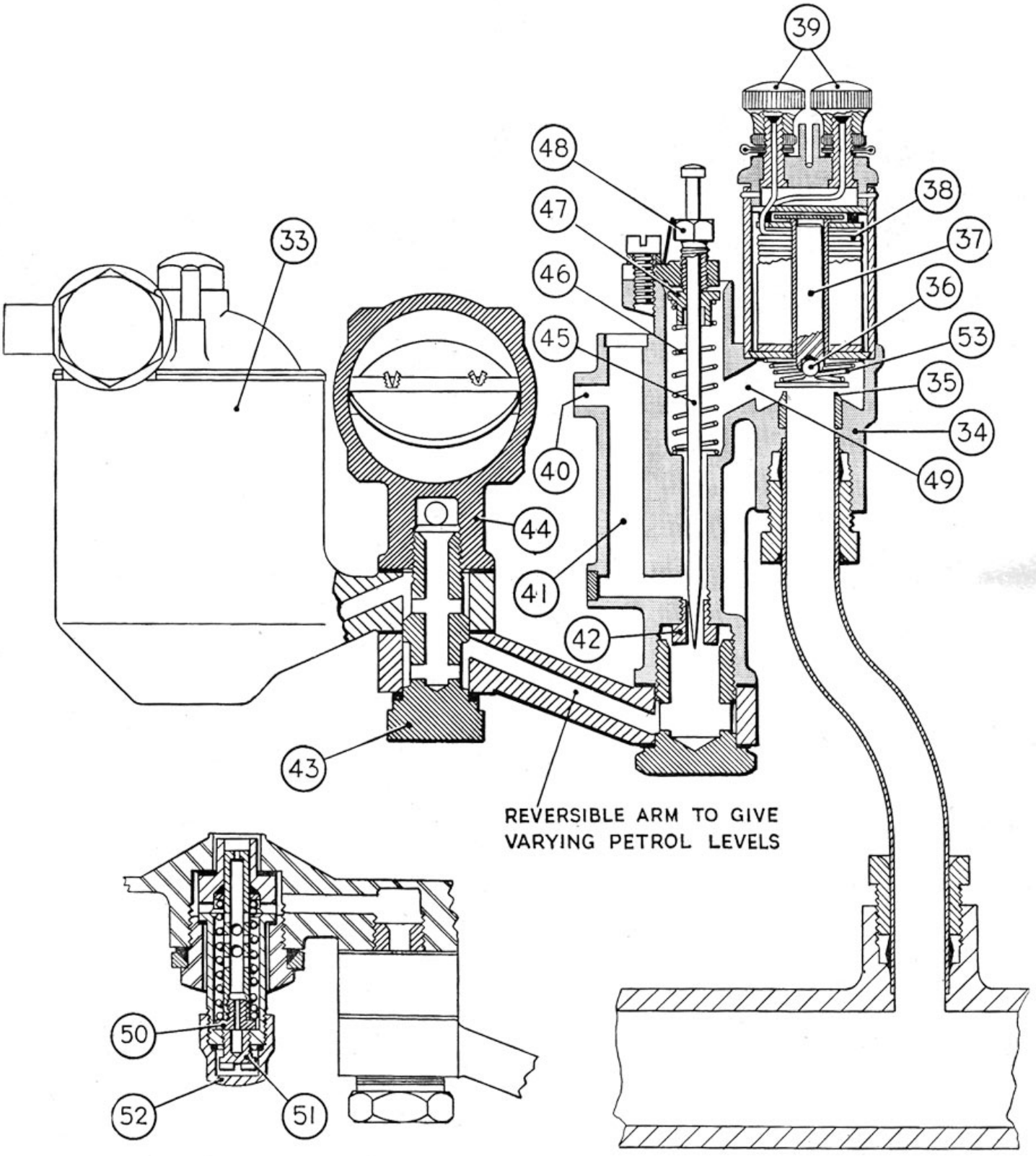
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REVERSIBLE ARM TO GIVE
VARYING PETROL LEVELS
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52
51

AUXILIARY ENRICHMENT CARBURETTER (THERMO-CARBURETTER)

On certain installations an electrically operated auxiliary carburetter is used in conjunction with a single or a multiple installation of S.U. carburetters. This may be controlled either by a thermostatically or manually operated switch.

In all cases where this additional starting device is employed the more usual means of manually withdrawing the jet for enrichment is, of course, omitted. The device is diagrammatically illustrated on the opposite page.

Before considering the construction and operation of the additional apparatus involved, reference may first be made to the diagram showing the somewhat simplified construction of the main carburetter jet. It will, of course, be realized that it is still necessary, in the case of the main jet of the carburetter, to provide facilities for centring as referred to in AUC9612. Similarly, provision must also be made for some degree of vertical adjustment of the jet in order to achieve the correct idling mixture strength.

Reference to the diagram will show that the general construction of this jet, which is mounted within a pair of jet bearings, follows closely the design of that described in AUC9612. The jet does not emerge from the lower jet bearing but terminates in a flange (50) which forms the lower abutment for the loading spring.

Thus the jet is urged downwards by the load of the gland spring, the lower face of the flanged end (50), coming into contact with the adjusting screw (51). A cap nut (52) encloses the adjusting screw (51) which, when tightened in position, seals the bottom of the lower jet bush against leakage of fuel which would otherwise occur down the thread of the adjusting screw.

The operation of centring the jet is similar to that described in AUC9612.

The process of adjustment for idling differs, however, from that formerly described in that the operation is performed by rotation of the slotted head of the screw (51). The general procedure for this adjustment is, of course, similar to that given for the normal sliding type of jet, with the exception that the cap nut (52) must first be removed, and the jet adjusted with a coin in the slot in the head of the adjusting screw (51). During this process of adjustment some slight leakage of fuel may occur, but it will, of course, cease as soon as the cap nut (52) is replaced.

The enrichment apparatus for starting is, in effect, an auxiliary carburetting system. The main body casting (34) containing a solenoid-operated valve and fuel metering system is illustrated as a separate unit attached by means of a ducted mounting arm to the base of the main carburetter fuel inlet.

The auxiliary carburetter forms, therefore, a separate unit additional to the normal float chamber retained by the hollow cross-drilled bolt (43). In certain cases, however, the casting (34) is formed integrally with the main float chamber body (33), drawing its fuel supply directly therefrom.

Fuel is supplied in either case to the base of the jet (42), which is obstructed to a greater or lesser degree by the tapered slidable needle (45).

When the device is in action air is drawn from atmosphere through the air intake (40) and thence through the passage (41), being carburetted with fuel as it passes the jet (42). The mixture is thence carried upwards past the shank of the needle (45) through the passage (49) and so past the aperture provided between the valve (36) and its seating (35). From here it passes directly to the induction manifold through the external feed pipe shown.

The device is brought into action by energizing the winding of the solenoid (38) from the terminal screws (39). The centrally located iron core (37) is thus raised magnetically, carrying with it the ball-jointed disc valve (36) against the load of the small conical spring (53) and thus uncovering the aperture provided by the seating (35).

Considering the function of the slidable needle (45), it will be seen that this is loaded upwards in its open position by means of the light compression spring (46) which abuts against a disc (47) attached to the shank of the needle. The needle continues upwards through the vertically adjustable stop (48) in which it is slidably mounted and it finally terminates in an enlarged head.

Depression within the space surrounding the spring (46) is directly derived from that prevailing in the induction tract, and this exerts a downward force upon the disc (47), which is provided with an adequate clearance with its surrounding bore. This tends to overcome the load of the spring (46) and to move the needle downwards, thus increasing the obstruction afforded by the tapered section which enters the jet (42).

The purpose of this device is to provide two widely different degrees of enrichment, the one corresponding to idling or light cruising conditions and the other to conditions of open throttle or full-power operation. In effect, under the former conditions the high induction depression prevailing will cause the disc (47) to be drawn downwards, drawing the tapered needle into the jet (42), while under the latter, the lower depression existing in the induction tract will permit the collar to maintain its upward position with the needle withdrawn from the jet.

The tuning elements concerned in this device are the size and degree of taper of the lower end of the needle (45), the diameter of the disc (47), the load provided by the spring (46) and the degree of movement permitted to the needle assembly, as determined by the adjustment of the stop (48).

In most installations the solenoid (38) is energized by means of a thermostatically operated switch housed within the cylinder head water jacket. This is generally arranged to bring the apparatus into action at temperatures below about 30–35° C. (86–95° F.). In some instances, however, a manual switch is provided, and in such cases a warning light is generally provided to indicate to the driver that the apparatus is in operation.

Tuning and adjustment

It will, of course, be understood that the normal adjustment to the main carburetter or carburetters, as dealt with in AUC9612, must be performed with the engine at its normal running temperature before any attempt is made to tune the auxiliary enrichment device.

As it can generally be assumed that the tapered form of the needle (45), the strength of the spring (46), and the diameter of the disc (47) have already been appropriately chosen, tuning is generally confined to the adjustment of the stop screw (48). It will be appreciated that the main purpose of this adjustment is to limit the downward movement of the needle, the head of which abuts against the upper surface of the stop screw at the lower extremity of its travel. The final downward movement of this needle determines, as has been described, the degree of enrichment provided under idling conditions with the auxiliary enrichment carburetter in operation.

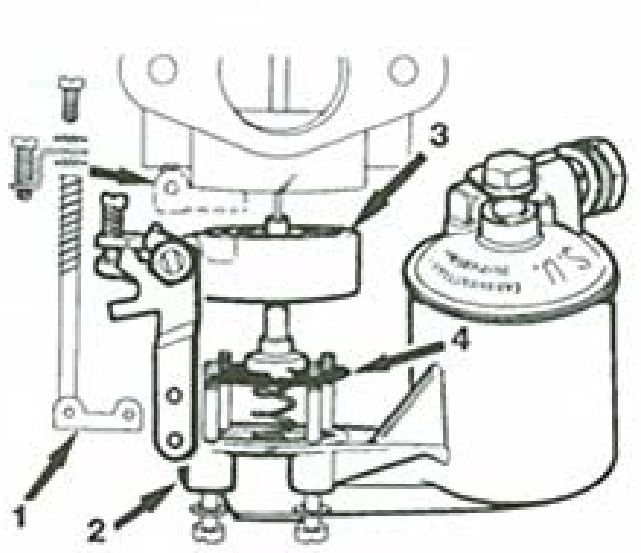
An appropriate guide to its correct adjustment in this respect is provided by energizing the solenoid when the engine has already attained its normal running temperature. The stop screw (48) should then be so adjusted that the mixture is distinctly although not excessively rich, that is to say, until the exhaust gases are seen to be discernibly black in colour, but just short of the point where the engine commences to run with noticeable irregularity.

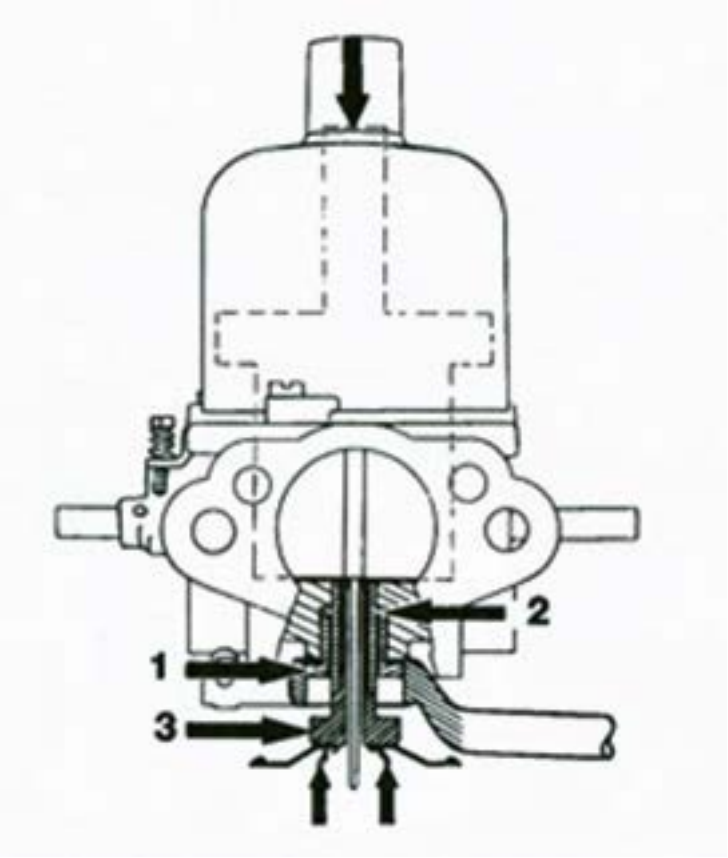
Anti-clockwise rotation of the stop screw will, of course, raise the needle under these conditions, and increase the mixture strength, while rotation in the opposite direction will have the opposite effect. In order to energize the solenoid under conditions when the thermostatic switch will normally have broken the circuit, it is merely necessary to short-circuit the terminal of the thermostatic switch directly to earth or, if this is not readily accessible, to make a connection between the appropriate terminal of the pair (39) to earth by means of a separate wire. In cases where a manual switch is provided, no difficulty, of course, arises in bringing the auxiliary enrichment carburetter into action under any condition of engine temperature.

HD Type Carburettor: Routine Servicing

Jet cantering

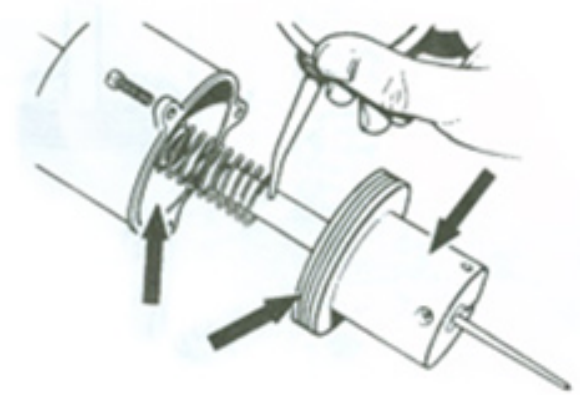
The piston should fall freely onto the carburettor bridge with a click when the lifting pin is released with the jet in the fully up position. If it will only do this with the jet lowered then the jet unit requires re-centring. This is done as follows:

(a) Mark the position of the jet housing and float-chamber in relation to the carburettor body for reassembly. (b) Remove the plate retaining screw and withdraw the cam rod assembly (1). (c) Unscrew and remove the float-chamber securing screws. (d) Remove the float-chamber (2) and the jet housing (3) and then release the jet assembly (4).	

(a) Slacken the jet locking nut (1), using a ring spanner, until the jet bearing (2) is just free to move. (b) Remove the piston damper, hold the jet (3) in the 'fully up' position and apply light pressure to the top of the piston rod. Tighten the jet locking nut (1). (c) Check again as in item 1 and ensure that the jet moves down the bearing freely. (d) Reassemble, ensuring that the jet and diaphragm are kept to the same angular position and that the beaded edge of the diaphragm is located in the housing groove. (e) Refill piston damper with oil (see tuning section).	

Cleaning

(a) Remove the piston/suction chamber unit.
(b) Using a petrol-moistened cloth, clean the inside bore of the suction chamber and the two diameters of the piston.
(c) Lightly oil piston rod only and reassemble



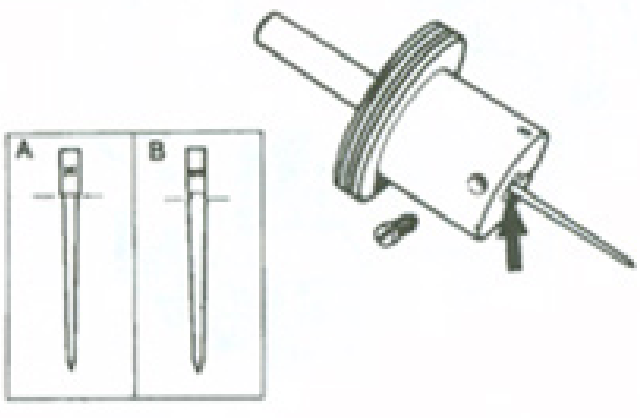
Float Chamber Fuel Level

(a) Remove and invert the float-chamber lid.
(b) With the needle on its seating, insert an 11.0 mm (7/16 in) diameter bar between the forked lever and the lip of the float-chamber lid.
(c) The prongs of the lever should just rest on the bar. If they do not, carefully bend at the star of the pronged section until they do.

Needle Size and Position

The needle size is determined during engine development and will provide the correct mixture strength except under the extremes of temperature, humidity, or altitude; e.g. a weaker needle will be necessary at altitudes exceeding 1800 m (6,000 ft). If modifications are made to the engine; (e.g. camshaft, compression ratio, air cleaner, or exhaust system) a different needle may be necessary to maintain performance.

(a) To check the needle fitted, remove the piston/suction chamber unit.
(b) Slacken the needle clamping screw, extract the needle and check its identifying mark against the recommendation.
(C) Fit the correct needle and lock it in position so that the shoulder on the shank (A), or the lower edge of the groove (B), is flush with the piston base.
(d) Reassemble the piston/suction chamber unit.

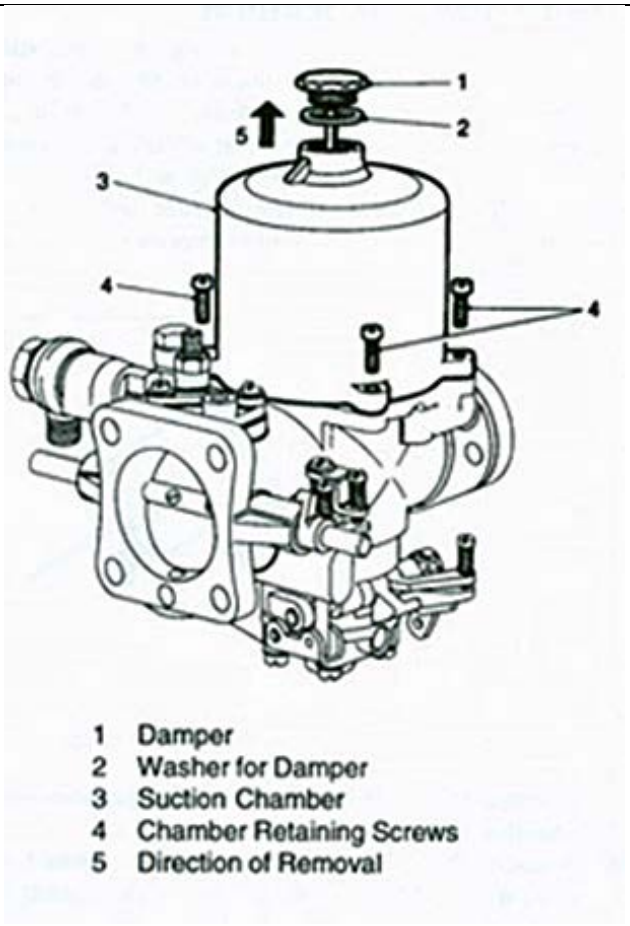


HD Type Carburettor: Dismantling

(a) Thoroughly clean the outside of the carburettor.

(b) Unscrew and remove the damper and washer.

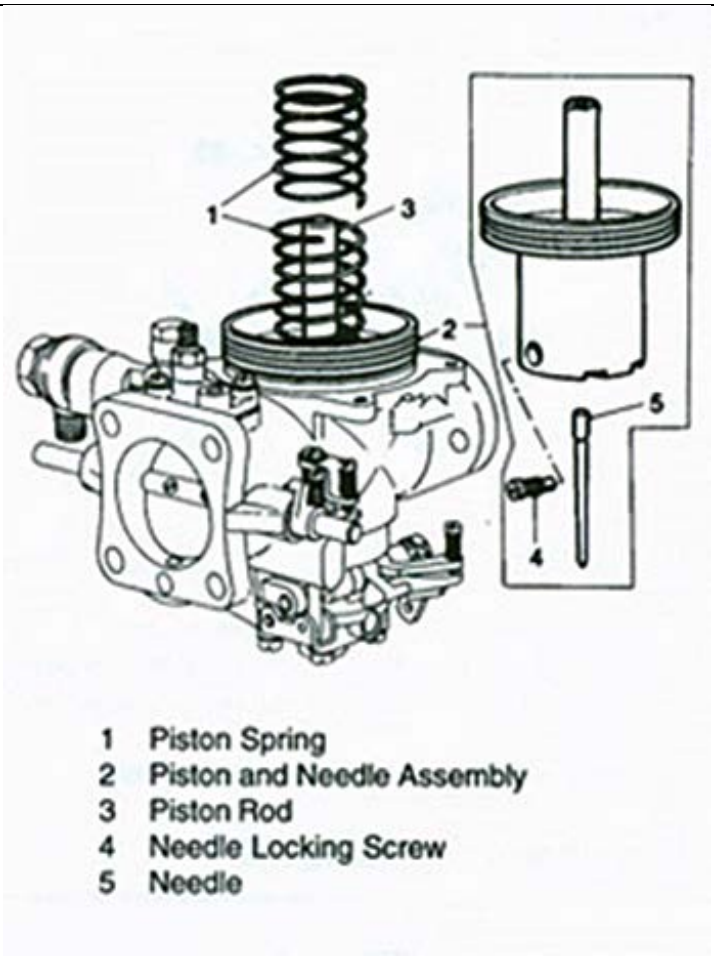
(c) Remove the suction chamber retaining screws and remove the chamber without tilting it.



(a) Lift off the piston spring.

(b) Carefully lift out the piston and needle assembly, and empty the damper oil from the piston rod.

(c) Remove the needle locking screw and withdraw the needle. If it cannot be removed easily, tap the needle inwards first and then pull outwards. Do not bend the needle.

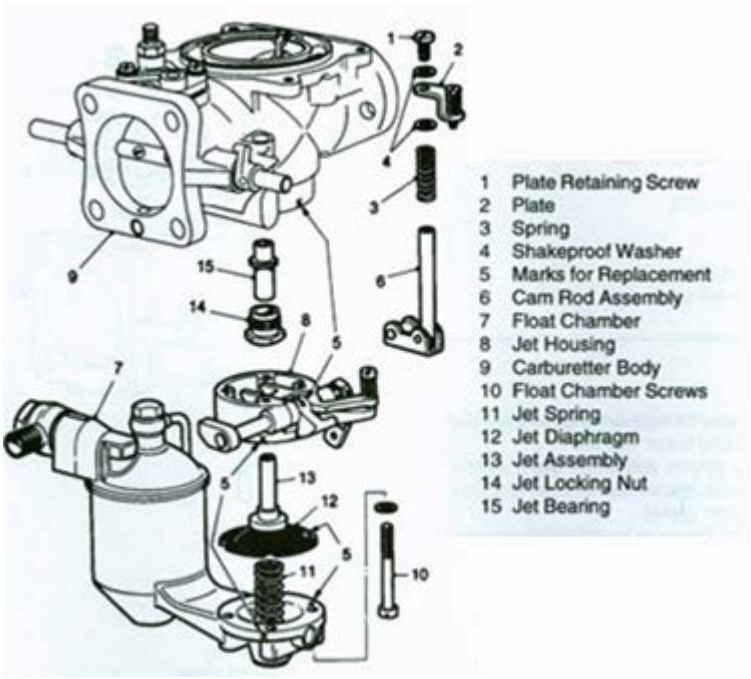


a) Remove the plate retaining screw and lift off the plate and spring, noting the shake proof washer either side of the plate. Withdraw the cam rod assembly.

(b) Mark the relative positions of the float chamber, jet housing and carburettor body. Unscrew the float chamber screws, holding the float-chamber against the pressure of the jet spring, then detach the float chamber carefully.

(c) Lift out the jet spring. Mark the jet diaphragm opposite one of the screw holes in the jet housing and withdraw the jet assembly, then lift off the jet housing.

(d) Using a ring spanner, slacken and remove the jet locking nut together with the jet bearing.



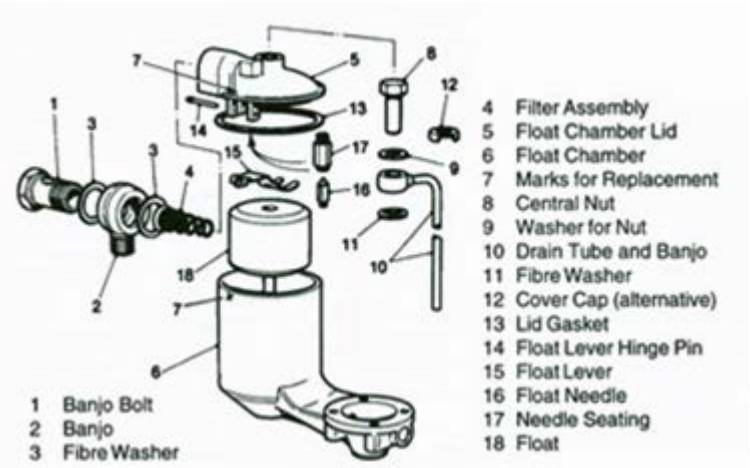
(a) Unscrew the banjo bolt and remove the bolt, banjo, and fibre washers. Extract the filter and spring assembly from inside the float-chamber lid inlet.

(b) Mark the relative positions of the float chamber and lid. Remove the central nut retaining the float-chamber lid together with the drain-tube banjo and fibre washer, or cover cap, if fitted.

(c) Detach the lid and gasket. Push out the float lever hinge pin from the end opposite to the serrations, then detach the lever.

(d) Extract the float needle from its seating and unscrew the seating from the lid using a box spanner 8.58 mm 0.338 in) across the flats. Do not distort the seating.

(e) Invert the chamber to remove the float.



(a) Close the throttle and mark the relative positions of the throttle disc and the carburettor flange.

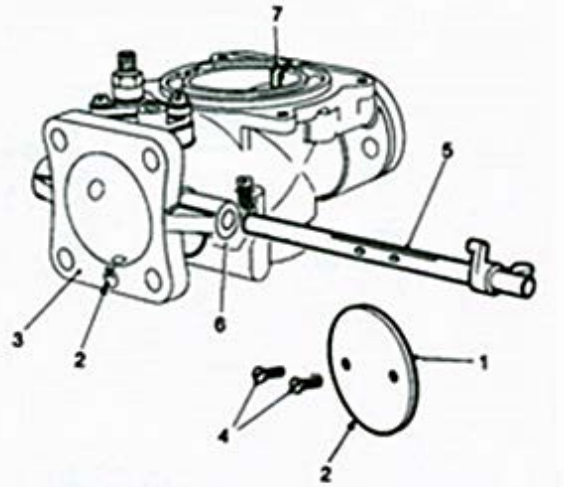
(b) Slacken and remove the disc retaining screws.

(c) Withdraw the disc from its slot in the throttle spindle.

(d) The disc is oval and will jam if care is not taken.

(e) Slide out the spindle from its bearings.

(f) The throttle spindle sealing glands should not be removed as they require no servicing.

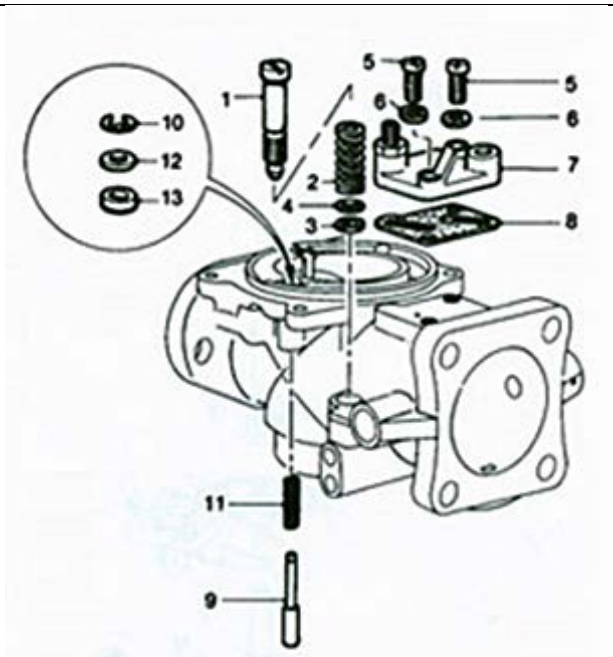


1 Throttle Disc
2 Marks for Replacement
3 Carburetter Flange
4 Disc Retaining Screws
5 Throttle Spindle
6 Spindle Sealing Glands
7 Piston Key

(a) Unscrew and remove the Slow-running valve complete with spring, seal and brass washer.

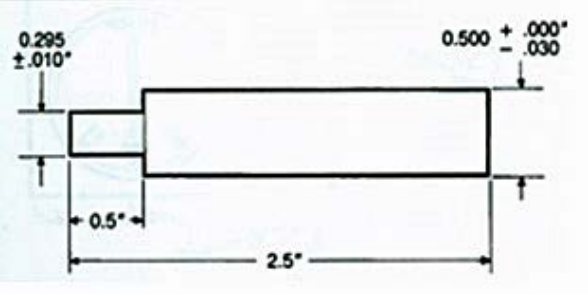
(b) Remove the two screws and shake proof washers retaining the vacuum ignition take off plate and union. Lift off the plate and gasket.

(c) Remove the piston lifting pin by extracting the circlip from its groove with the pin pressed upwards, and then withdraw the pin downwards.



1 Slow Running Valve
2 Spring
3 Seal
4 Brass Washer
5 Retaining Screw
6 Shakeproof Washer
7 Vacuum Take-Off Plate
8 Gasket
9 Piston Lifting Pin
10 Circlip
11 Spring
12 Plain Washer
13 Rubber Washer

HD Type Carburettor: Reassembly



Throttle Spindle Bush Replacement

Throttle spindle bush replacement should be undertaken as follows. Note: some HD8 carburettors are fitted with plastic spindle bushes which are now no longer available.

1. Dismantle the carburettor as described. Remove P.T.F.E. bushes from carburettor body where fitted.
2. Line ream throttle spindle bores from both sides using a 9.5 mm diameter reamer (see note below). Finished bore size should be 9.5 mm in diameter.
3. Using a service tool shown (part no. ABF 185) drive replacement bushes into the body.
4. Remove all swarf and burr from the body.
5. Reassemble throttle spindle and disc assembly fitting spindle seals supplied in the service kit. Position the seals* so that the sealing face is in contact with the carburettor body.

Note: Care must be taken not to exceed length of the bush when machining so as to not break through into the carburettor venturi. The bushes can then be pushed into place until flush with the body. If break through does occur it will be necessary for the bush to be pushed through to protrude into the venturi and then milled down flush to match the shape of the venturi wall. This will ensure the throttle disc is able to give a good seal in the area close to the spindle.

Before reassembling, examine all the components for damage and/or wear. Unserviceable components must be renewed.

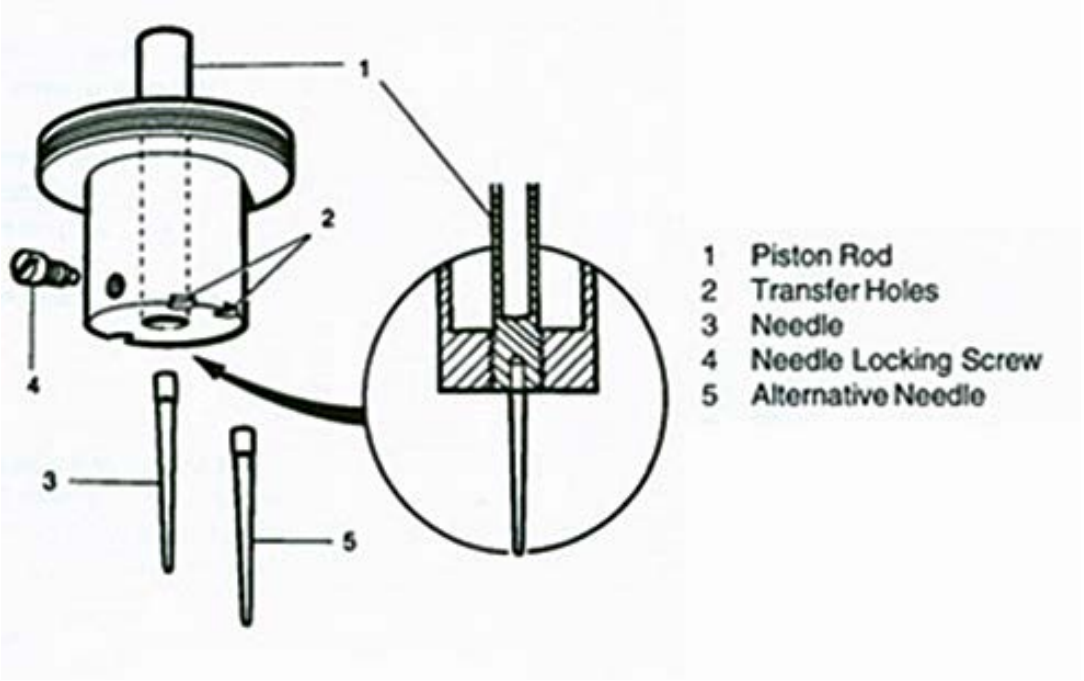
1

(a) Examine the throttle spindle for scoring or signs of wear. Refit the spindle in its bearings and check for slack in the bearings and for freedom of operation. (b) Refit the throttle disc in the slot of the throttle spindle in the position as marked when dismantling. The countersunk ends of the screw holes in the spindle must face outwards towards the flange of the carburettor body. Insert two new retaining screws but do not tighten. (c) Adjust the disc until it closes fully. Check this visually, and then tighten the screws. Spread the split ends of the screws just enough to prevent them from turning

2

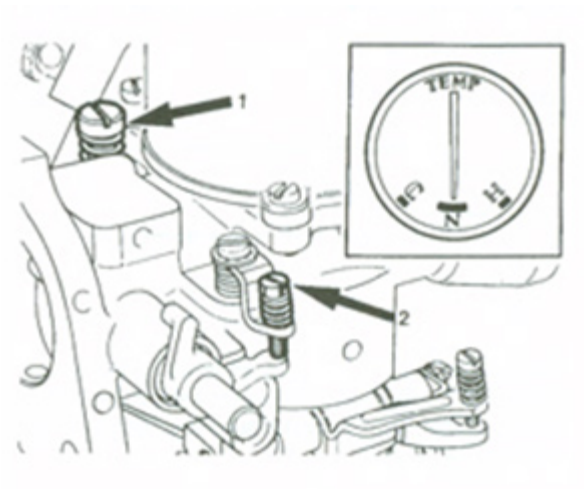
(a) Examine the slow-running valve seal for serviceability. Check that the concave face of the brass washer is towards the seal. Refit the valve assembly. (b) Check that the passages in the carburettor body and the vacuum ignition take-off plate are not obstructed. Examine the gasket for re-use and refit the gasket, plate, and securing screws. Tighten securely. (c) Refit the piston lifting pin, spring, rubber washer, plain washer and circlip.

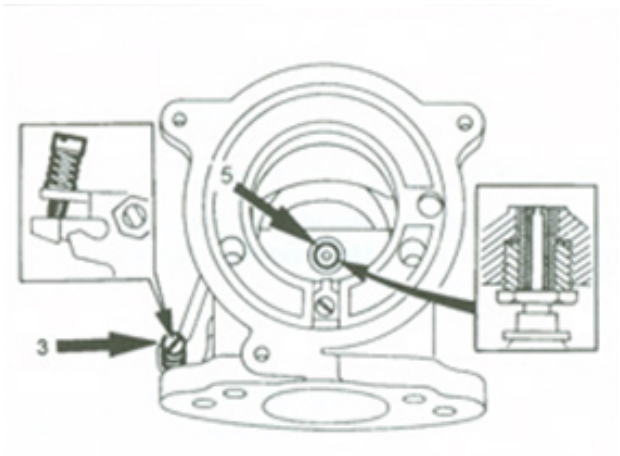
3
(A) Examine the float needle and seating for damage or wear. Screw the seating into the float-chamber lid but do not over tighten. Refit the needle to the seating, coned-end first. Test the assembly for leakage with air pressure. (b) Refit the float lever and insert the hinge pin. Check the float level as described on page 21. (c) Examine the float for damage or punctures. Refit the float to the float-chamber. (d) Examine the lid gasket for re-use. Fit the gasket to the lid and then replace the lid on the chamber as marked on dismantling. Fit the fibre washer, drain tube banjo, plain washer, and nut or cover cap and nut, as applicable. Do not over tighten the nut. (e) Clean the filter assembly and examine for damage. Refit the filter to the lid inlet, spring end first. Refit the banjo, fibre washers and banjo bolt. The recessed face of the banjo must be towards the hexagon of the bolt.
4
(a) Examine the piston assembly for damage to the piston rod and the outside surface of the piston. The piston assembly must be scrupulously clean. Use either petrol or mentholated spirits as a cleaning agent. Do not use abrasives. Lightly oil the outside of the piston rod. (b) Clean inside the suction chamber and piston rod guide using petrol or mentholated spirits. Refit the damper assembly and washer. Seal the transfer holes in the piston assembly with rubber plugs or Plasticine and fit the assembly to the suction chamber. Invert the complete assembly and allow the suction chamber to fall away from the piston. This operation should take between 5 and 7 seconds. If the time taken is in excess of that quoted the cause will be thick oil on the piston rod or an oil film on the piston or inside the suction chamber. Remove the oil from the points indicated and re-check.

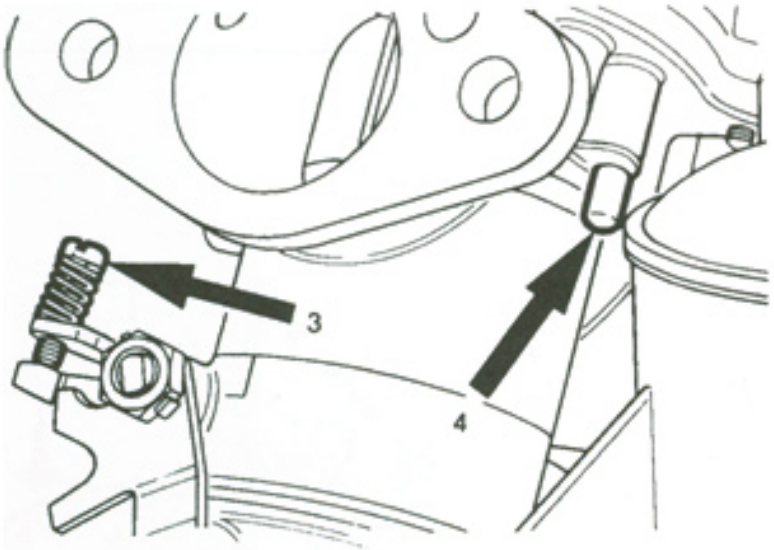


5
(a) Refit the jet bearing and jet locking nut. Leave the nut sufficiently slack to allow the bearing to be moved from side to side. (b) Fit the jet assembly to the bearing in the same position as marked on dismantling. Centralize the jet as described on Routine Servicing. (c) Remove the jet and refit the jet housing, jet, jet spring and float-chamber in the same relative positions as marked on dismantling. Fit and tighten the securing screws evenly. (d) Replace the cam rod assembly and refit the spring, plate and plate retaining screw with a shake proof washer either side of the plate. Ensure the plate is positioned so that its adjustment screw strikes squarely on the lug of the throttle spindle operating arm.

HD Type Carburettor: Tuning (single Carbs)

(a) Run the engine up to normal running temperature. (b) Switch off the engine. (c) Unscrew the fast-idle adjusting screw (2) to clear the throttle stop with the throttle closed. (d) Screw down the slow-running valve (1) onto its seating, then unscrew it 3.5 turns.	

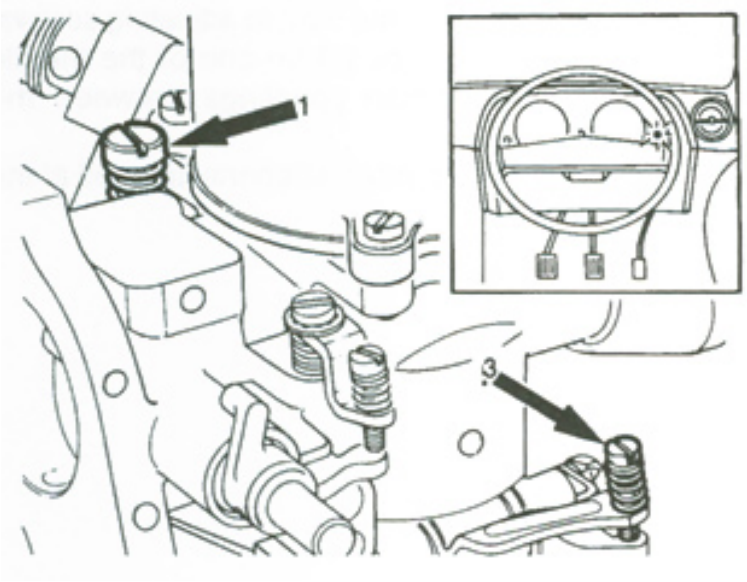
(a) Remove the piston/suction chamber unit. (b) Turn the jet adjusting screw (3) until the jet (5) is flush with the bridge of the carburettor.	

(a) Replace the piston/suction chamber unit. (b) Check that the piston falls freely onto the bridge when the lifting pin (4) is released. If not, Routine Servicing. (c) Lower the jet by turning the jet adjusting screw (3) down 2.5 turns.	

(a) Restart the engine and adjust the slow running valve (1) to give the desired idling speed.

(b) Turn the jet adjusting screw (3), up to weaken or down to enrich, until the fastest idling speed consistent with even running is obtained.

(c) Re-adjust the slow-running valve (1), if necessary, to give correct idling.

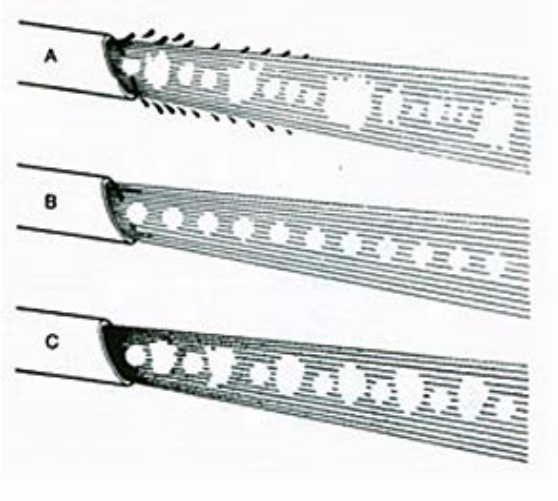


The effect of mixture strength on exhaust smoke

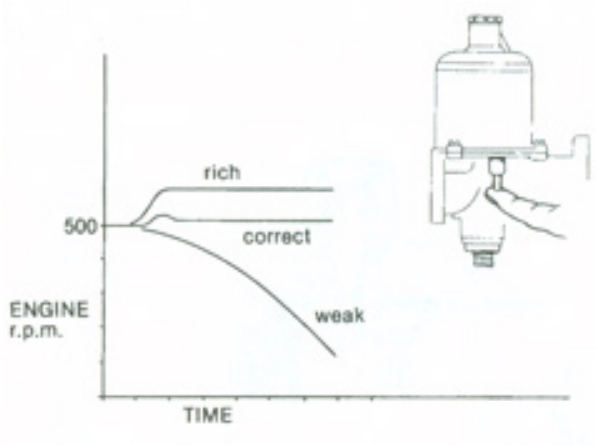
A. TOO WEAK: Irregular note, splashy misfire, and colourless.

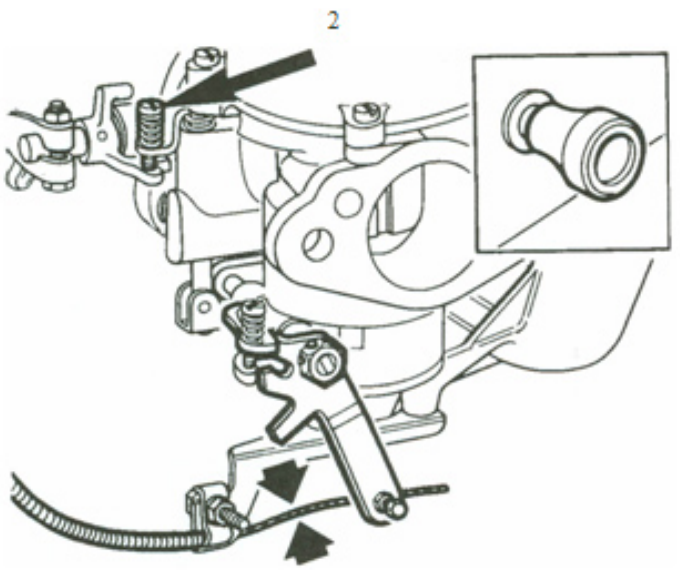
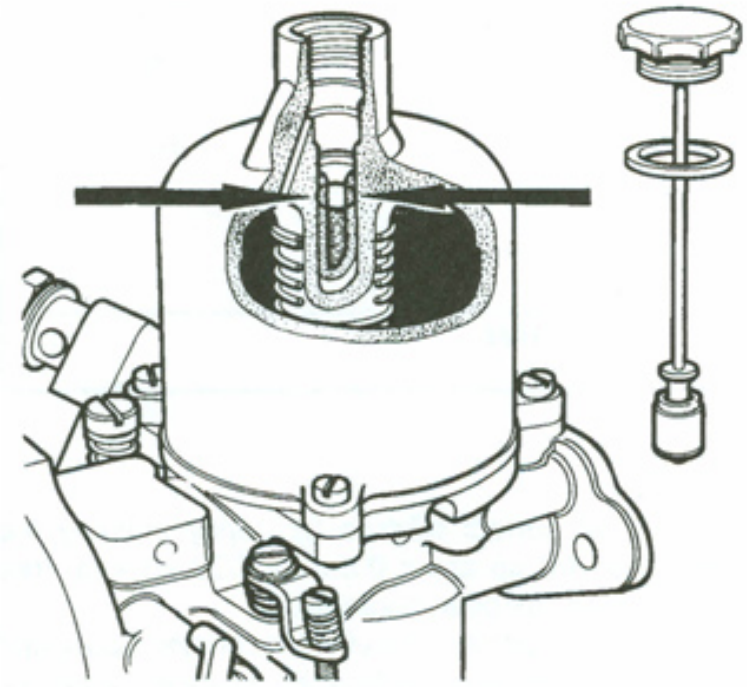
B. CORRECT: Regular and even note.

C. TOO RICH: Regular or rhythmical misfire, blackish.



(a) Check for correct mixture by gently pushing the lifting pin (4) up about 0.8 mm (1/32 in) after free movement has been taken up
(b) The graph illustrates the effect on engine r.p.m. and indicated mixture strength when the piston is raised.
RICH MIXTURE: r.p.m. increase considerably.
CORRECT MIXTURE: r.p.m. increase very slightly.
WEAK MIXTURE: r.p.m. immediately decrease.
(c) Re-adjust the mixture strength if necessary.



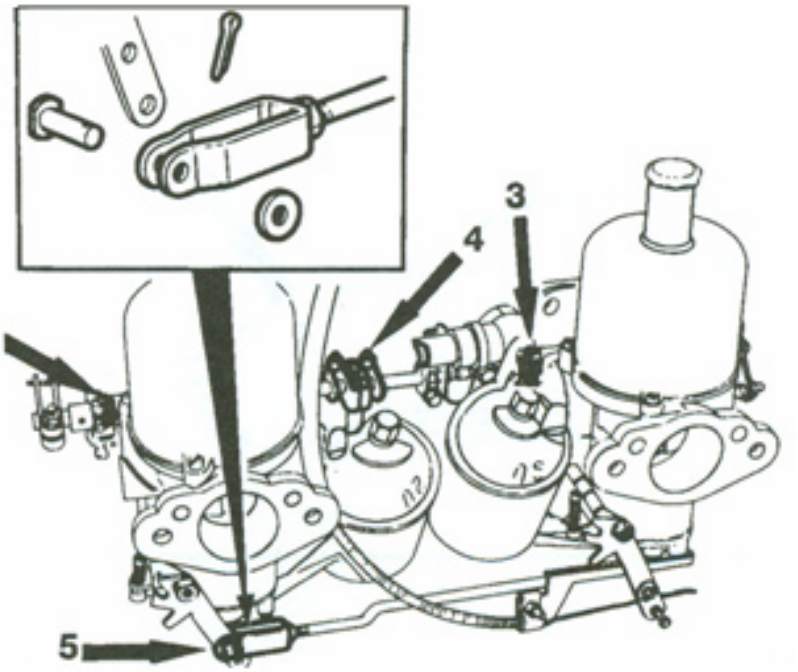
(a) Reconnect the mixture control wire with about1.6 mm (1/16 in) free movement before it starts to pull on the jet lever. (b) Pull the mixture control knob until the linkage is about to move the carburettor jet operating arm and adjust the fast-idle screw (2) to give an engine speed of about 1,000 r.p.m. when hot. (c) Return the control knob and check that there is some clearance between the fast idle screw (2) and the throttle stop.	
Finally top up the piston damper with thin oil of grade S.A.E. 20 until the level is 12.7 mm (1/2 in) below the top of the hollow piston rod. Mutli-carbs: Remove the air cleaners and carry out items 1, 2 and 3 (single carburettors) on each carburettor.	

HD Type Carburettor: Tuning (Multi-Carbs)

Note: Whenever the throttle adjusting screws (3) are fitted them, and not the slow-running valves, must be used to adjust the idling speed. Screw down the slow-running valves (which must remain closed) and set the throttle adjusting screws (3) 1.5 turns open. In items 2 and 3, adjust the idling speed with the throttle adjusting screws.

(a) Slacken a clamping bolt (4) on one of the throttle spindle interconnection couplings between the carburettors.

(b) Disconnect the jet control interconnecting rod at the forked end (5).

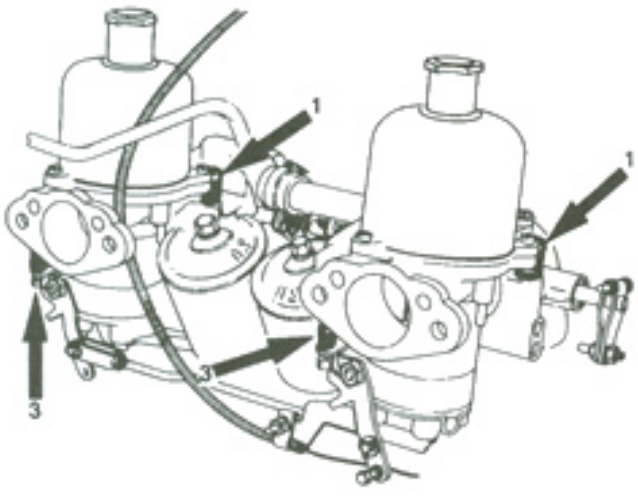


(a) Restart the engine and turn the slow-running valve (1), or the throttle adjusting screw, an equal amount on each carburettor to give the desired idling speed.

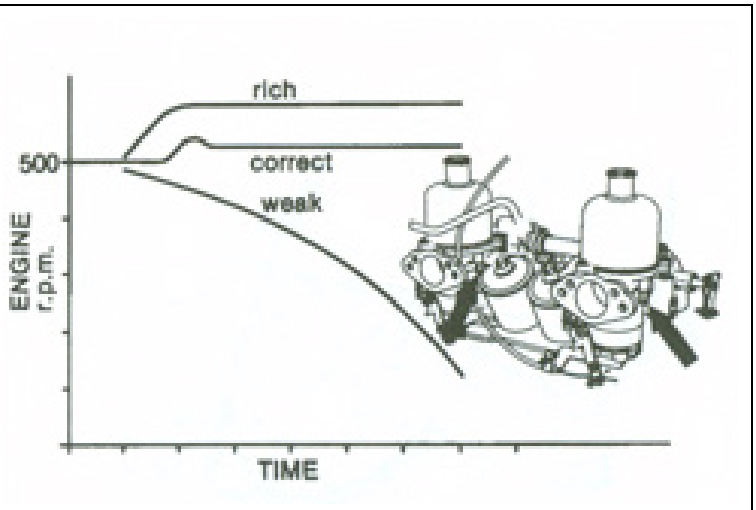
(b) Compare the intensity of the intake hiss on all carburettors and alter the slow-running valves (1), or throttle adjusting screws, until each hiss is the same.

(a) Turn the jet adjusting screw (3) an equal amount on all carburettors, up to weaken or down to enrich, until the fastest idling speed consistent with even running is obtained.

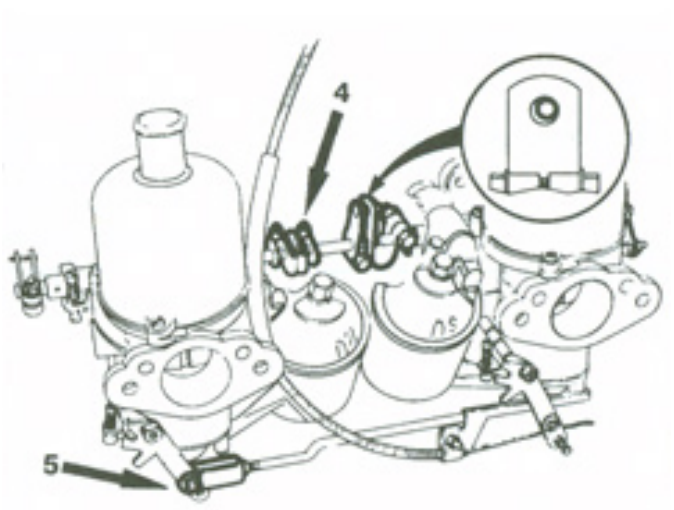
(b) Re-adjust the Slow-running valves (1), if necessary



(a) Check the mixture by raising the lifting pin (4) of the front carburetterO.8 mm (1/32 in) after free movement has been taken up. The graph illustrates the possible effect on engine r.p.m.
(b) Repeat the operation on the other carburettor(s) and after adjustment re-check as the carburettors are interdependent.
(c) Page 27 shows the effect of mixture on the exhaust smoke.



(a) Tighten the clamp bolt (4) of the throttle spindle interconnections with the pin of the link pin lever resting against the edge of the pick-up lever hole. This provides the correct delay in opening the front carburettor throttle. When forked levers are fitted, set the cranked levers so that the pin isO.15 mm (0.006 in) from the lower edge of the fork.
(b) Reconnect the jet control linkage (5) so that the jet operating arms move simultaneously; if necessary, turn the fork end(s).



(a) Reconnect the mixture control wire with about1.6 mm (1/16 in) free movement before it starts to pull on the jet levers.
(b) Pull the mixture control knob until the linkage is about to move the carburettor jet operating arms, and adjust the fast-idle screws (2) to give an engine speed of about 1,000 r.p.m. when hot.
(c) Return the control knob and check that there is a small clearance between the fast idle screws and the throttle stops.
(d) Refit the air cleaners and re-check for correct mixture as described in item 4.

Fault Diagnosis:

SYMPTOM	CAUSE	REMEDY
Erratic running Stalling at idling Lack of power High fuel consumption	Sticking piston: Dirty piston and suction chamber Jet out of centre Bent needle	Clean Re-centre Fit new
Hesitation at pick-up	Low damper oil level Incorrect oil grade (too thin)	Top up Replace with correct grade
Float chamber flooding	Dirty or worn float-chamber needle valve (dirty fuel) Punctured float Incorrect fuel level	Clean or renew valve (flush system) Fit new Check and reset level