

Stromberg carburettor (Zenith type 175 CD-2S), to overhaul—Operation L1-3

(For removal and refitting instructions, Section A refers)

Workshop hand tools:

Spanner sizes: $\frac{1}{4}$ in. BSF, $\frac{5}{16}$ in. BSF ring, $\frac{5}{8}$ in. AF open end,
Screwdriver (medium), Phillips screwdriver

Carburettor, to dismantle

Piston assembly, to remove

1. Remove oil cap and damper.
2. Remove top cover and spring.
3. Remove air valve, shaft and diaphragm assembly.

Float chamber, to remove

4. Remove metering needle retained by locking screw.
5. Remove diaphragm from air valve.
6. Detach float chamber from carburettor body with gasket.
7. Remove jet assembly complete, then strip assembly fully.
8. Unclip float and arm with spindle.
9. Remove needle valve and washer from carburettor body.

Carburettor body, to dismantle

10. Remove ignition adaptor from carburettor body.
11. Remove throttle butterfly from the throttle spindle after marking up.

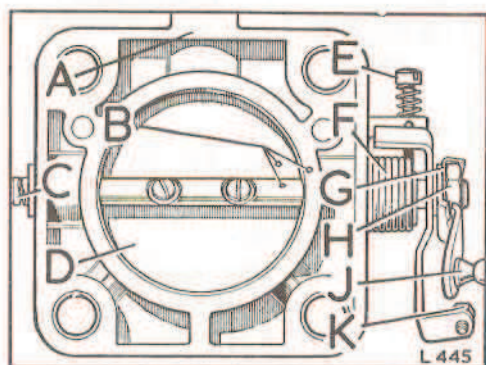


Fig. L1-25. Throttle butterfly assembly

- A—Carburettor body
- B—Marks to be added during dismantling
- C—Throttle spindle
- D—Throttle butterfly
- E—Fast idle adjusting screw
- F—Throttle return spring
- G—Tab washer
- H—Locknut
- J—Throttle lever
- K—Throttle stop and fast idle lever

12. Withdraw throttle spindle from carburettor body and strip down throttle linkage if necessary.
13. Remove fast-idle adjusting screw.
14. Detach cold start assembly.
15. Strip cold start assembly.

Inspection and cleaning

Special notes:

1. Carburettor cleaning.

When cleaning fuel passages do not use metal tools (files, scrapers, drills, etc.) which could cause dimensional changes in the drillings or jets. Cleaning should be effected using clean fuel and where necessary a moisture-free air blast.

2. Joint faces.

Examine the faces for deep scores which would lead to leakage taking place when assembled.

3. Joint gasket and seals.

New gaskets and seals should be used throughout carburettor rebuild. A complete set of gaskets is available for replacement purposes.

4. Examine throttle spindle bushes for wear, if oval or badly worn renew carburettor body.

5. Inspect metering needle, it is machined to very close limits and should be handled with care. Examine for wear, bend and twist, renew if necessary.

6. Diaphragm.

In common with other products made from rubber compounds, any contact of the diaphragm with volatile cleaners should be avoided, use only CLEAN RAG. Examine for damage and deterioration.

7. Examine float, for puncture or damage and chamber for corrosion, retaining clips for wear.

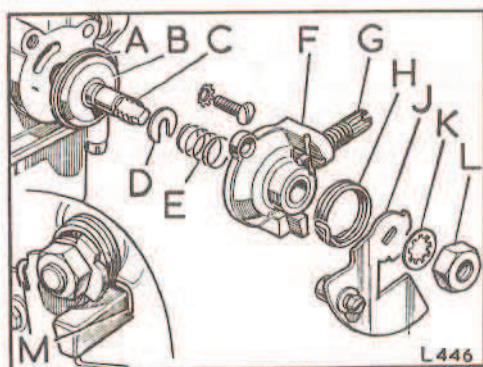
8. Examine cold start bushes for wear, renew starter cover as necessary.

9. Examine clamping screw for two positions, renew as necessary.

10. Examine lifting pin for air valve for correct operation.

Operation L1-3—continued**Carburettor, to rebuild****Cold start, to rebuild**

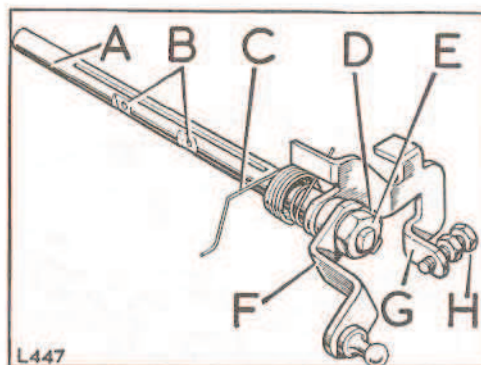
1. Fit the cold start spring behind the discs and secure with spring retaining clip, ensure discs are able to move easily on spindle.
2. Position cold start return spring on starter cover as illustrated.
3. Offer up cold start spindle assembly to starter cover, paying particular attention to the position of the slots in the disc; refit cam lever then secure in position.
4. Fit the cold start assembly to carburettor body. Then check for ease of operation.

**Fig. L1-26. Cold start assembly**

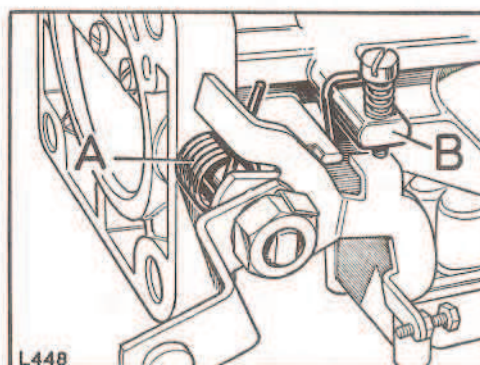
- A—Cold start outer disc
- B—Cold start inner disc
- C—Cold start spindle
- D—Spring retaining clip
- E—Cold start spring
- F—Cover for cold start
- G—Clamping screw for cam lever swivel
- H—Return spring for cam lever
- J—Cam lever for cold start
- K—Shakeproof washer
- L—Locknut
- M—Return spring location

Carburettor body, to rebuild

5. Take throttle spindle, with recessed end upwards, fit throttle return spring, throttle stop and idle lever then washer, followed by throttle lever washer, tab washer and locknut. Fully secure assembly and lock tab washer.
6. Insert throttle spindle into throttle flange from the cold start side of carburettor body, fitting the throttle return spring on the fast idle adjusting holder and tension spring half a turn.
7. Fit the throttle butterfly into the throttle lever as previously marked then centralise the throttle butterfly after fitting the retaining screws loosely and actuating the throttle a number of times to align up in the central position. Then tighten securing screws and lock by peening ends of screws.

**Fig. L1-27. Throttle spindle arrangement**

- A—Throttle spindle
- B—Recess in shaft
- C—Throttle return spring
- D—Tab washer
- E—Locknut
- F—Throttle lever
- G—Throttle stop and fast idle lever
- H—Throttle stop

**Fig. L1-28. Throttle return spring position**

- A—Return spring
- B—Carburettor body

Operation L1-3—continued

8. Fit spring-loaded adjusting screw till it touches the throttle stop and fast-idle lever then turn another one and a half turns.
9. Fit ignition adaptor to carburettor body securely.

Float chamber, to rebuild

10. Fit needle valve and washer to carburettor body.
11. Fit spindle into float arm then securely clip the spindle into the retaining clips as illustrated.
12. With the needle valve on its seating and the end tab on the float carrier, contacting on the needle valve, measure the distance between the flange face and the highest point on the floats, as illustrated.

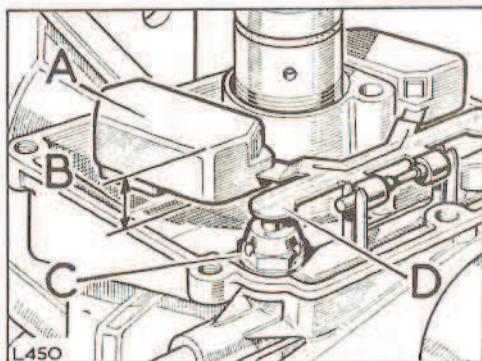


Fig. L1-29. Float level adjustment

A—Float
B— $\frac{3}{8}$ in. (16 mm)
C—Needle valve
D—Tag

13. The dimension required at this check is 0.67 in. (17 mm) to 0.71 in. (18 mm). Any adjustment must be made by either bending the tag which contacts the end of the needle, or fitting an additional washer under the needle seating arrangement.

Note: Care should be taken to maintain the tag at right-angles to the needle in the closed position.

14. Fit joint gasket to the float chamber then fit float chamber to the carburettor body, do not fully tighten securing screws at this stage.
15. Fit the three 'O' rings to the jet assembly.
16. Place the spring over the jet orifice followed by the guide bush and bushing which has the 'O' ring fitted in.

17. Place the jet orifice assembly into carrier for jet orifice and insert assembly through float chamber then fully tighten.
18. Fit the adjusting screw for the jet orifice at the bottom of the jet assembly and adjust up until the jet orifice just appears in line with the top of the bushing for jet orifice.

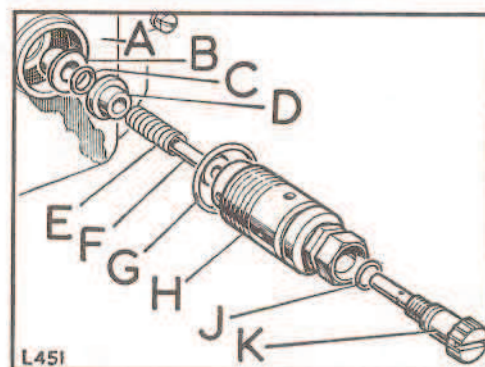


Fig. L1-30. Jet assembly

A—Carburettor body, throttle orifice
B—Bushing for jet orifice
C—'O' ring for bushing for jet orifice
D—Guide bush
E—Spring for jet orifice
F—Jet orifice
G—'O' ring for jet carrier
H—Carrier for jet orifice
J—'O' ring for jet orifice
K—Adjusting screw for jet orifice

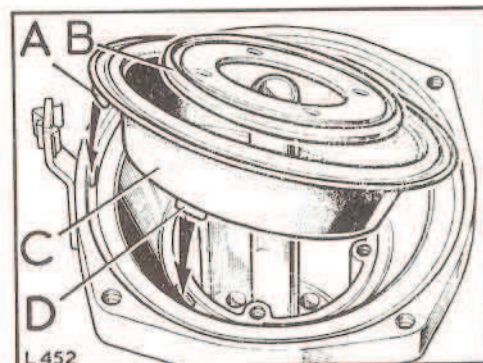
Air valve, shaft and diaphragm, to assemble

Fig. L1-31. Air vane diaphragm

A—Locating tab, outer
B—Retaining ring for diaphragm
C—Air vane diaphragm
D—Inner locating tab

Operation L1-3—continued

19. Fit the diaphragm to the valve ensuring that the locating tab is inserted in the recess in the air valve then fully secure with retaining ring.
20. Carefully fit the metering needle to the air valve aligning the shoulder of the needle with the top surface of the shaft, as illustrated.

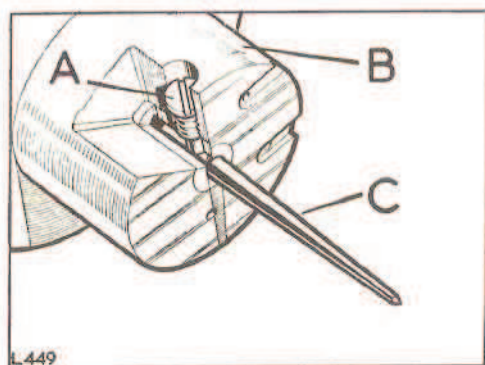


Fig. L1-32. Metering needle position

A—Retaining screw
B—Piston
C—Metering needle

Jet centralisation

Note: The efficient operation of the carburettor depends on the free movement of the air valve and needle in the jet orifice. In the Stromberg there is an annular clearance around the orifice bush which permits the lateral positioning of the bush and jet. Thus it may be clamped up in such a position that the metering needle moves freely in the orifice.

21. Very carefully insert needle into jet orifice and allow it to bottom, if any difficulty is encountered unclamp the jet assembly enough to allow the jet to bottom. In this position ensure that the locating tab on the diaphragm fits into the recess on the carburettor body.
22. Fit the air valve return spring and carburettor top cover, aligning the marks, then secure assembly.
23. Lift the air valve and tighten the jet assembly fully.
24. Slacken off the whole jet assembly approximately half a turn to release the orifice bush.
25. Allow the air valve to fall; the needle will then enter the orifice and thus automatically centralise it. If necessary, assist the air valve drop by inserting a pencil in the dashpot.
26. Slowly tighten the jet assembly, checking frequently that the needle remains free in the orifice. Check by raising the air valve approximately $\frac{1}{4}$ in. (6 mm) and allowing it to fall freely. The position should then stop firmly on the bridge.
27. Fill up the dashpot in the air valve to within a $\frac{1}{4}$ in. (6 mm) of the rod in which the damper operates with SAE 20 engine oil.
28. Fit in the damper assembly and fully secure.

Adjustments

Setting the idle

Two adjustments are used when regulating the idle speed and mixture. The following procedure should be used in setting the throttle adjusting screw which controls the speed, and jet adjusting screw, which determines the mixture strength.

1. Remove the air cleaner.
2. Remove the damper assembly.
3. Hold the air valve down on the bridge in the throttle bore.
4. Screw up the jet adjustment screw until the jet is felt to come into contact with the underside of the air valve.
5. Turn down the jet adjusting screw three turns.
6. Run the engine till it is thoroughly warm.
7. Adjust the throttle adjusting screw to an idle speed of 500 rpm.

Note: The idle mixture will be correct when the engine speed is smooth and regular, and by careful and gradual adjustment of the jet adjustment screw, the correct adjustment will be determined.

To check

Lift the air valve $\frac{1}{32}$ in. (0.8 mm). If the engine speed rises the mixture is too rich, if the engine stops it is too weak. Correctly adjusted it will remain constant or fall slightly in speed. Turning the orifice adjusting screw into carburettor decreases the mixture strength; unscrewing will enrich.

Operation L1-3—continued

8. Fit the damper assembly.
9. Fit the air cleaner.

Fast-idle adjustment (choke)

1. Operate choke fully.
2. Adjust fast-idle stop screw until engine speed is 1,000 to 1,200 rpm.
3. Push choke fully in and ensure that fast-idle stop screw is clear of choke cam lever.