

## Section K7

## Throttle linkage

**Introduction**

The S.U. HIF7 carburetters assembly has right-hand and left-hand drive linkage for all Silver Shadow II, Bentley T2 and Silver Wraith II motor cars. In addition, this linkage is also fitted to Corniche and Camargue cars destined for Australia, Canada, Japan and the U.S.A.

The Solex 4A1 carburetter has linkages for both right-hand and left-hand drive Corniche and Camargue cars destined for countries other than Australia, Canada, Japan and the U.S.A.

The contents of this section are as follows.

**S.U. HIF7 carburetters****Carburetter throttle linkage - To fit and set**

All cars except those destined for Australia, Canada, Japan and U.S.A. For details applicable to these cars refer to the appropriate model year of Chapter U.

**Accelerator pedal and isolator mechanism - To set**  
Right-hand drive cars.

Left-hand drive cars not fitted with an emission control system.

Left-hand drive cars fitted with an emission control system.

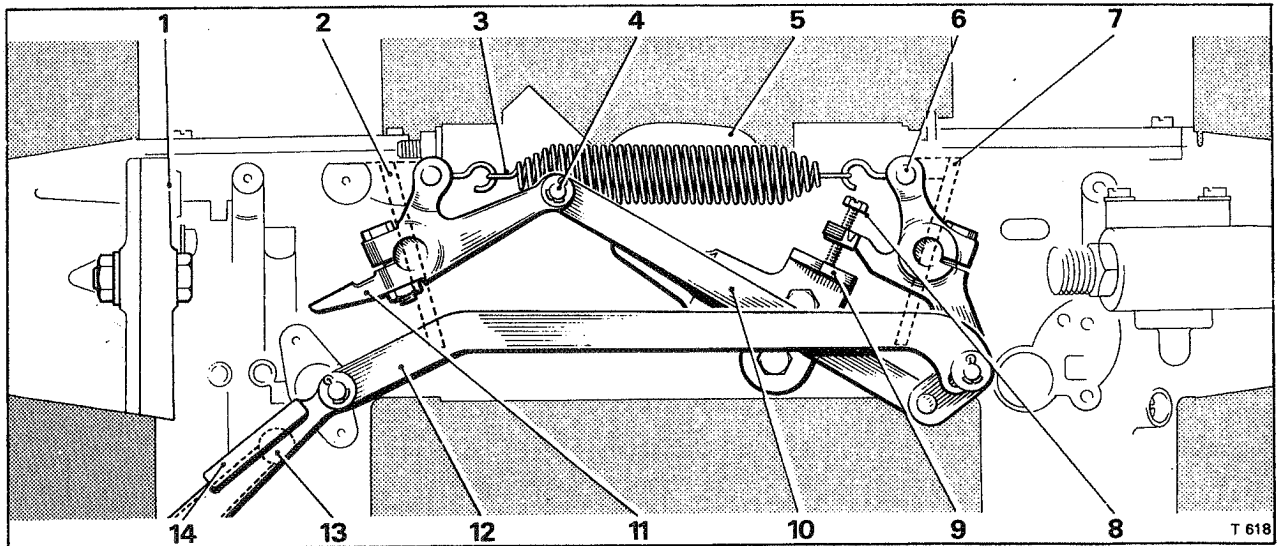
**Solex 4A1 carburetter****Carburetter throttle linkage, accelerator pedal and isolator mechanism - To set**

Right-hand drive cars.

Left-hand drive cars.

**S.U. HIF7 carburetters****Carburetter throttle linkage - To fit and set**  
(see Fig. K97)

1. Assemble 'A' bank and 'B' bank throttle levers (items 6 and 11) onto the carburetter spindles.
2. Fit the setting jig (RH 8880) into position on the throttle levers.
3. Fully close 'B' bank carburetter butterfly (item 7).
4. Tighten the pinch bolt securing 'B' bank throttle lever.



**Fig. K97 Carburetter throttle linkage**

- |  |   |
|--|---|
| 1 'A' bank carburetter.                    | 8 Idle stop screw.                      |
| 2 'A' bank carburetter throttle butterfly. | 9 Throttle cross link guide bracket.    |
| 3 Throttle spring.                         | 10 Cross link.                          |
| 4 Eccentric throttle adjuster.             | 11 'A' bank carburetter throttle lever. |
| 5 Carburetter 'tee' piece.                 | 12 Drive link.                          |
| 6 'B' bank carburetter throttle lever.     | 13 Rear manifold shaft lever.           |
| 7 'B' bank carburetter throttle butterfly. | 14 Front manifold shaft lever.          |

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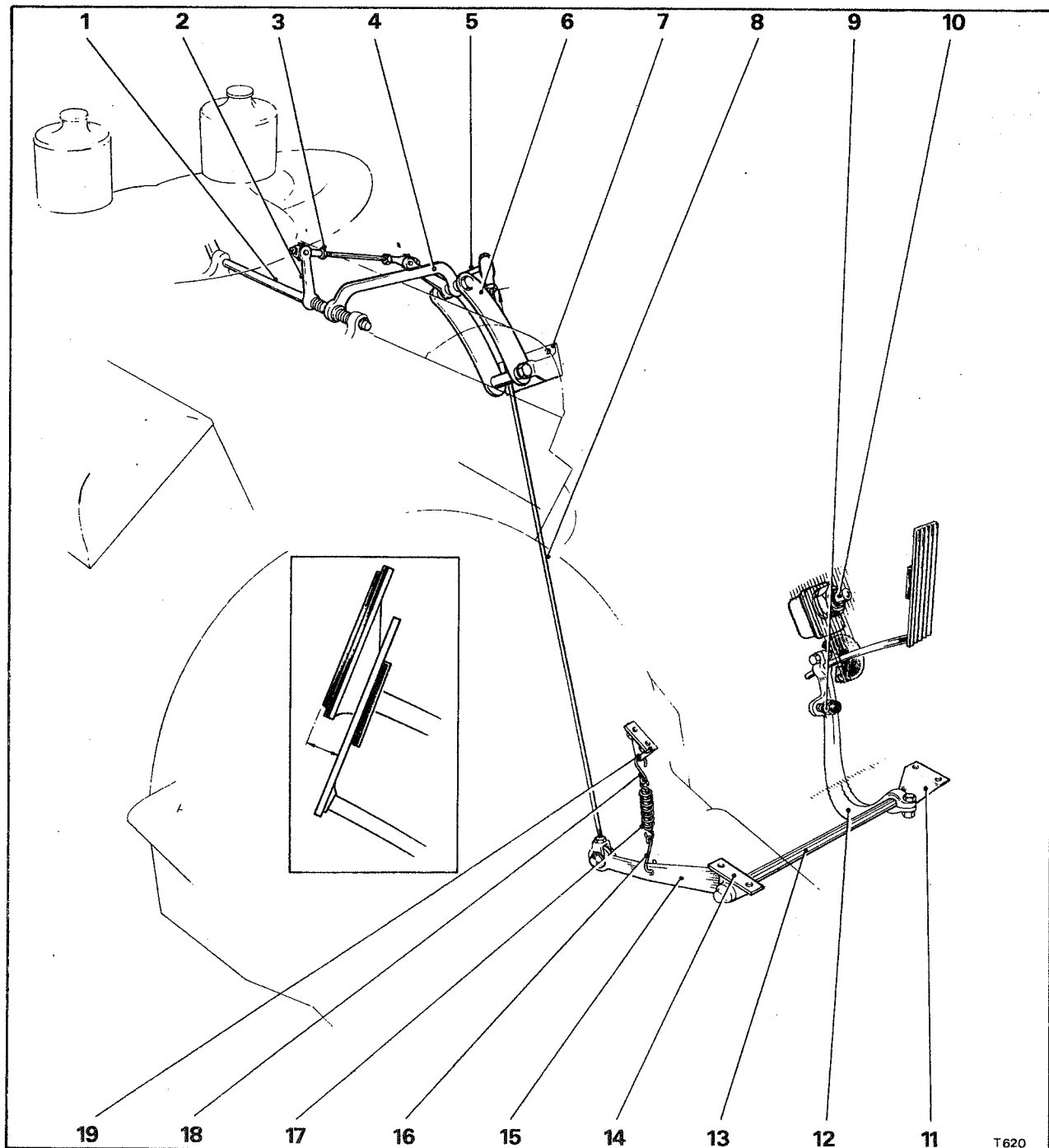


Fig. K98 S.U. carburettor accelerator pedal and isolator mechanism (right-hand drive cars)

- |  |  |
|--|--|
| 1 'A' bank control shaft               | 13 Cross-shaft                         |
| 2 Lever                                | 14 Cross-shaft mounting bracket (L.H.) |
| 3 Isolator rod                         | 15 Control operating lever             |
| 4 Tie-bar                              | 16 Lower hook                          |
| 5 Bell-crank lever                     | 17 Return spring                       |
| 6 Isolator trapeze                     | 18 Top hook                            |
| 7 Body longeron bracket                | 19 Return spring mounting bracket      |
| 8 Long rod                             |  |
| 9 Pedal off-stop screw                 |  |
| 10 Kickdown micro-switch               |  |
| 11 Cross-shaft mounting bracket (R.H.) |  |
| 12 Pedal lever                         |  |

5. Fully close 'A' bank carburettor butterfly (item 2).
6. Tighten the pinch bolt securing 'A' bank throttle lever.
7. Fit the throttle spring (item 3) to the throttle levers.
8. Remove the setting jig from the throttle levers.
9. Fit the cross link guide bracket (item 9) to the carburettor 'tee' piece (item 5). Secure in position with two small screws. Lock the screws using two tab washers.
10. Fit the cross link (item 10) and the eccentric throttle adjuster (item 4) onto the throttle levers, ensuring that both throttle butterflies are closed when adjusting and tightening the eccentric adjuster.

**Note**

The eccentric pin should be set in the lowest position possible.

11. Ensure that the clearance between the cross link guide (item 9) and the cross link is between 1,27 mm. and 1,78 mm. (0.050 in. and 0.070 in.). If necessary bend the guide to obtain this clearance.
12. Check that the throttle linkage moves freely.
13. Fit the idle stop screw (item 8) and lock plate. Adjust until the screw just contacts the stop bracket (item 9) ensuring that the throttle butterflies are in the closed throttle position.
14. Screw down the idle stop screw half a turn.
15. Connect one end of the drive link (item 12) to the 'B' bank throttle lever and the opposite end to the manifold shaft lever (item 14).
16. Operate the linkage to ensure free movement.
17. With the throttles in the closed position check that the 'A' bank control shaft to control rod lever (item 13) on the rear of the manifold shaft lever is in line with the front manifold shaft lever (item 14). Tighten the securing bolts on both levers.
18. Operate the mechanism; check for freedom of movement within the linkage. Also ensure that there is clearance with the various engine components.

**Accelerator pedal and isolator mechanism - To set Right-hand drive cars (see Fig. K98)**

1. Assemble the isolator rod (item 3) to give a distance of between 5,75 cm. and 5,84 cm. (2.265 in. and 2.300 in.) between the inner faces of the lock-nuts.
2. Set the accelerator pedal off-stop screw (item 9) to between 2,54 cm. and 2,61 cm. (1.0 in. and 1.03 in.).
3. Fit the right-hand mounting bracket (item 11) for the accelerator cross-shaft (item 13).
4. Insert the cross-shaft (item 13) through the longeron. Fit the accelerator pedal lever (item 12) and insert the cross-shaft into the bush in the right-hand bracket (item 11).
5. Mount the control operating lever (item 15) on the opposite end of the cross-shaft (item 13), but do not fit the pinch bolt.
6. Fit the left-hand mounting bracket (item 14) onto

the cross-shaft (item 13). Screw the bracket to the underside of the body.

7. Tighten the pinch bolt of the accelerator pedal lever (item 12).
8. Adjust the cross-shaft end-float to between 0,127 mm. and 0,381 mm. (0.005 in. and 0.015 in.) bending the brackets if necessary.
9. Check that the cross-shaft rotates freely.
10. Fit the accelerator pedal return spring (item 17) using the hooks (items 16 and 18).
11. Slide the control operating lever (item 15) into its correct position. Fit the pinch bolt and tighten the nut.
12. Check that the brake pedal is set correctly (the accelerator pedal is set relative to the brake pedal). Ensure that there is a minimum clearance of 9,94 cm. (3.915 in.) between the underside of the brake pedal and the seal housing.

**Note**

Full instructions for setting the brake pedal are given in Chapter G - Hydraulic systems.

13. Connect the isolator trapeze (item 6) to the yoke of the body longeron bracket (item 7).
14. Check that the mechanism moves freely by pressing downwards on the free end of the isolator bell-crank (item 5).
15. Assemble the long rod (item 8) with a distance of approximately 47,17 cm. (18.575 in.) between the inner faces of the lock-nuts; leave the nuts loose.
16. Check that the accelerator pedal is positioned between 6,35 mm. and 12,7 mm. (0.250 in. and 0.500 in.) below the brake pedal. If not, reset the off-stop screw (item 9).
17. Fit the jaw of the long rod (item 8) to the control operating lever (item 15); offer up the opposite end to the bell-crank lever (item 5). Adjust the length of the rod until there is a minimum amount of 'free-play' in the control system.
18. Tighten the lock-nuts.
19. Check that the entire accelerator control system operates smoothly.
20. Check that full throttle and kickdown are available.
21. Set the height of the kickdown button (item 10). Ensure that 'pedal feel' is evident when kickdown occurs.
22. Check that when the accelerator pedal is released the throttles fully close.
23. With the engine at normal operating temperature but not running, repeat Operations 19 and 22.

**Left-hand drive cars not fitted with an emission control system (see Fig. K99)**

1. Assemble the isolator rod (item 3) to give a distance of between 5,75 cm. and 5,84 cm. (2.265 in. and 2.300 in.) between the inner faces of the lock-nuts.
2. Set the accelerator pedal off-stop screw (item 16) to between 2,66 cm. and 2,71 cm. (1.050 in. and 1.070 in.).

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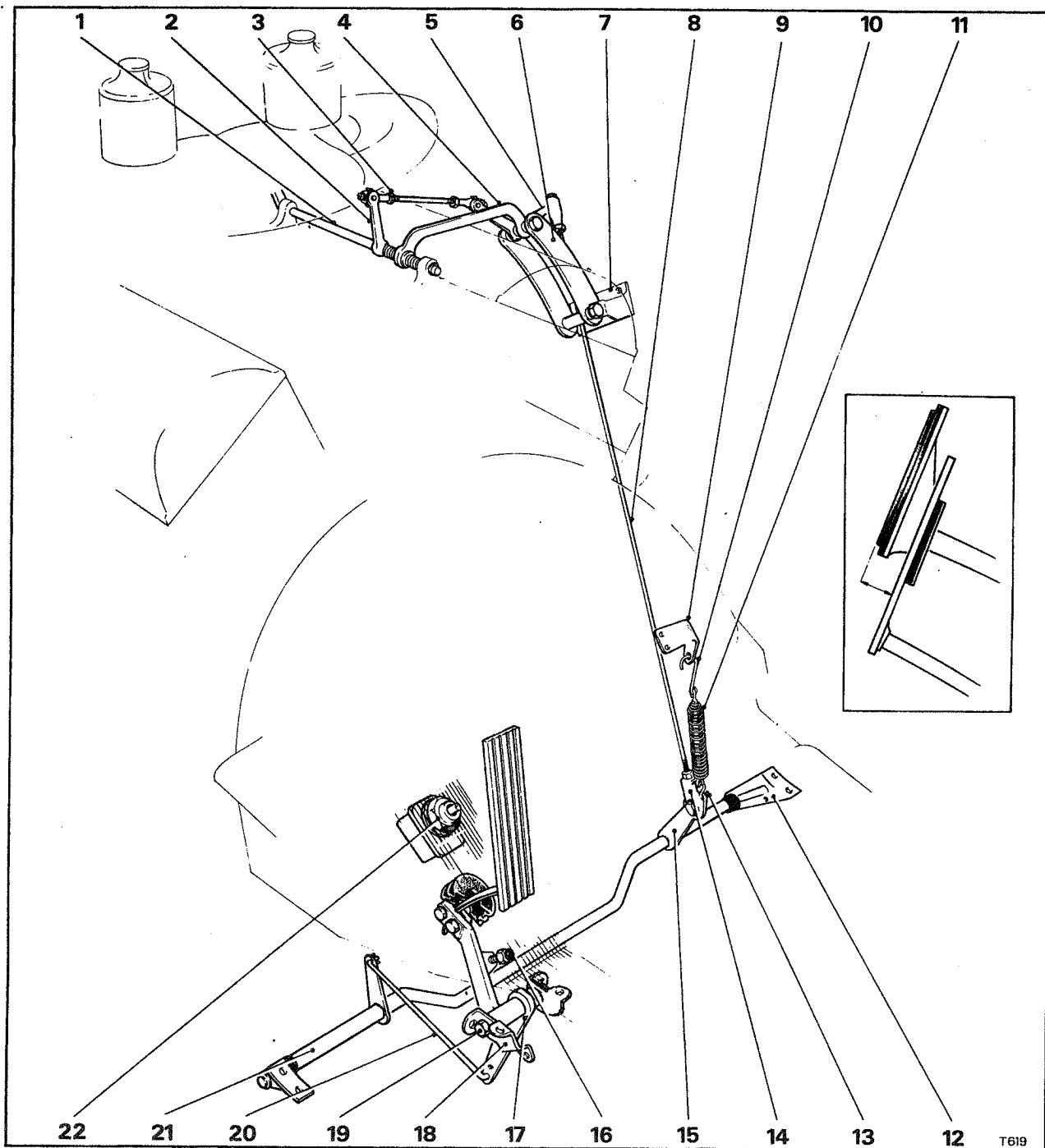


Fig. K99 S.U. carburettor accelerator pedal and isolator mechanism (left-hand drive cars)

- |                                  |                                 |
|----------------------------------|---------------------------------|
| 1 'A' bank control shaft         | 12 Cross-shaft mounting bracket |
| 2 Lever                          | 13 Lower hook                   |
| 3 Isolator rod                   | 14 Jaw - long rod               |
| 4 Tie-bar                        | 15 Control operating lever      |
| 5 Bell-crank lever               | 16 Pedal off-stop screw         |
| 6 Isolator trapeze               | 17 Pedal lever                  |
| 7 Body longeron bracket          | 18 Pedal lever mounting bracket |
| 8 Long rod                       | 19 Pivot pin                    |
| 9 Return spring mounting bracket | 20 Connecting rod               |
| 10 Top hook                      | 21 Cross-shaft                  |
| 11 Return spring                 | 22 Kickdown micro-switch        |

3. Build a sub-assembly of the accelerator pedal lever (item 17), its pivot pin (item 19) and mounting brackets (item 18). Check that the lever moves freely between the brackets.
4. Fit the accelerator pedal assembly to the body. Check that the lever moves freely.
5. Fit the accelerator cross-shaft (item 21), screwing the cross-shaft mounting brackets (item 12) to the longeron.
6. Carry out Operations 8 to 10 inclusive and 12 to 23 inclusive, as described for right-hand drive cars.

#### Left-hand drive cars fitted with an emission control system (see Fig. K99)

1. Assemble the isolator rod (item 3) to give a distance of between 10,66 cm. and 10,79 cm. (4.204 in. and 4.250 in.) between the inner faces of the lock-nuts.
2. Set the accelerator pedal off-stop screw (item 16) to between 3,27 cm. and 3,32 cm. (1.290 in. and 1.310 in.).
3. Assemble the accelerator pedal lever (item 17), pivot pin (item 19) and the mounting brackets (item 18). Check that the lever moves freely between the brackets.
4. Fit the accelerator pedal assembly to the body. Check that the lever moves freely.
5. Fit the accelerator cross-shaft (item 21) and screw the cross-shaft mounting brackets (item 12) to the longerons.
6. Adjust the end-float of the cross-shaft to between 0,127 mm. and 0,381 mm. (0.005 in. and 0.015 in.), bending the brackets (item 12) if necessary.
7. Check that the cross-shaft (item 21) rotates freely.
8. Using the rod (item 20) connect the pedal lever (item 17) to the cross-shaft (item 21). Lock the rod with split pins and check that the rod moves freely.
9. Fit the accelerator pedal to the lever (item 17).
10. Fit the pedal return spring (item 11) using the hooks (items 10 and 13).
11. Check that the brake pedal is set correctly (the accelerator pedal is set relative to the brake pedal). Ensure that there is a minimum clearance of 9,94 cm. (3.915 in.) between the seal housing and the underside of the brake pedal.

#### Note

Full instructions for setting the brake pedal are given in Chapter G - Hydraulic systems.

12. Connect the isolator trapeze (item 6) to the yoke of the body longeron bracket (item 7).
13. Check that the mechanism moves freely by pressing downwards on the free end of the isolator bell-crank (item 5).
14. Assemble the long rod (item 8) with approximately 46,67 cm. (18.380 in.) between the inner faces of the lock-nuts; leave the nuts loose.
15. Check that the accelerator pedal is positioned

between 15,87 mm. and 20,32 mm. (0.625 in. and 0.800 in.) below the brake pedal. If not, reset the off-stop screw (item 16).

16. Fit the jaw (item 14) of the long rod (item 8) to the control operating lever (item 15) and offer up the opposite end to the bell crank lever (item 5). Adjust the length of the rod until there is a minimum amount of free-play in the control system.
17. Tighten the lock-nuts.
18. Check that the entire accelerator control system operates smoothly.
19. Check that full throttle and kickdown are available.
20. Set the height of the kickdown button (item 22). Ensure that the 'feel' it provides is evident when kickdown occurs.
21. Check that the throttles close fully when the accelerator pedal is released.
22. With the engine at normal operating temperature, but not running, repeat Operation 18 and 21.

#### Solex 4A1 carburetter

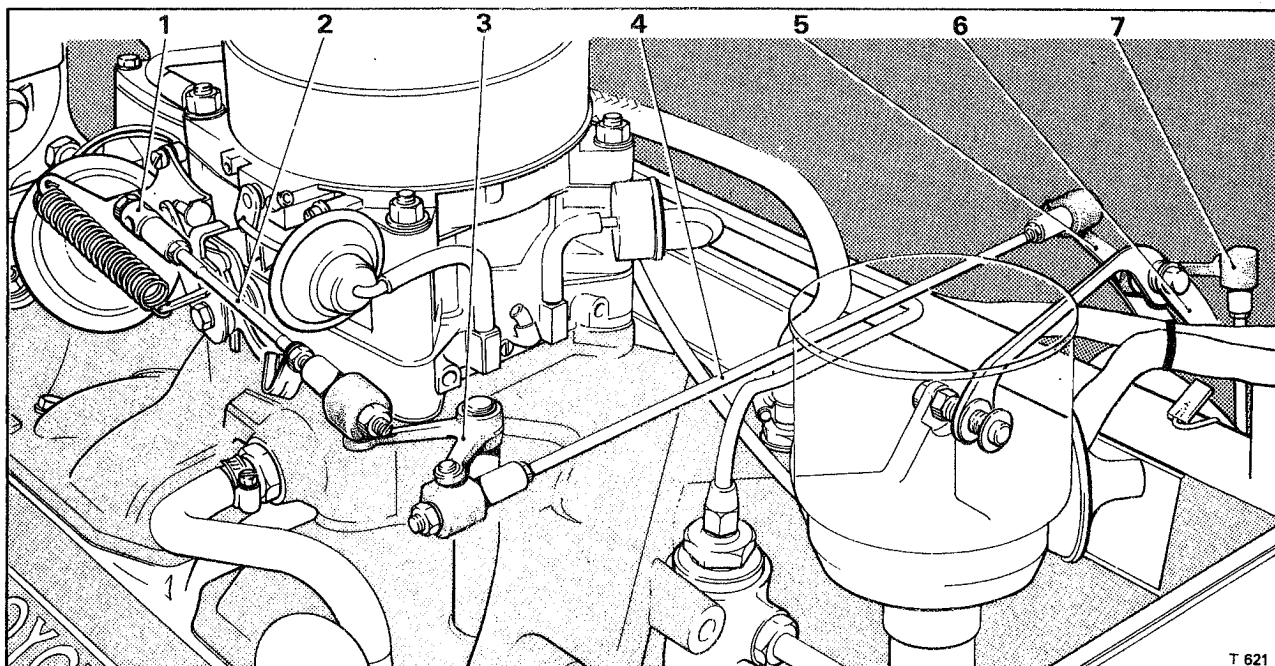
##### Carburetter throttle linkage, accelerator pedal and isolator mechanism - To set. Right-hand drive cars (see Figs. K100 and K98)

1. Assemble and fit the carburetter to bell-crank rod (see Fig. K100, item 2). Ensure that a distance of 9,48 cm. to 9,56 cm. (3.735 in. to 3.765 in.) exists between the inner faces of the lock-nuts.

#### Note

No rubber protective boot is fitted to the carburetter end balljoint connection.

2. Assemble and fit the isolator mechanism rod (item 4). Ensure that a distance of 27,90 cm. to 27,98 cm. (10.985 in. to 11.015 in.) exists between the inner faces of the lock-nuts.
3. Fit the right-hand accelerator cross-shaft mounting bracket (see Fig. K98, item 11).
4. Set the accelerator pedal off-stop screw (item 9) to between 3,05 cm. and 3,11 cm. (1.20 in. and 1.225 in.).
5. Insert the cross-shaft (item 13) through the longeron. Fit the accelerator pedal lever (item 12) and insert the cross-shaft into the bush in the right-hand bracket (item 11).
6. Mount the control operating lever (item 15) onto the opposite end of the cross-shaft; but do not fit the pinch bolt.
7. Fit the left-hand mounting bracket (item 14) onto the cross-shaft. Screw the bracket to the underside of the body.
8. Tighten the pinch bolt of the accelerator pedal lever.
9. Adjust the cross-shaft end-float to between 0,127 mm. and 0,381 mm. (0.005 in. and 0.015 in.) by bending the brackets if necessary.
10. Check that the cross-shaft rotates freely.
11. Fit the accelerator pedal return spring (item 17)



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**Fig. K100 Solex carburettor throttle linkage**

- |   |                             |
|---|-----------------------------|
| 1 Carburettor end ball joint connection | 5 Isolator bell-crank lever |
| 2 Carburettor to bell-crank rod         | 6 Isolator trapeze          |
| 3 Bell-crank lever                      | 7 Long rod                  |
| 4 Isolator rod                          |                             |

using the hooks (item 16 and 18).

**12.** Slide the control operating lever into its correct position. Fit the pinch bolt and tighten the nut.

**13.** Check that the brake pedal is set correctly (the accelerator pedal is set relative to the brake pedal). Ensure that there is a minimum clearance of 9,94 cm. (3.915 in.) between the underside of the brake pedal and the seal housing.

#### Note

Full instructions for setting the brake pedal are given in Chapter G - Hydraulic systems.

**14.** Connect the isolator trapeze to the yoke of the body longeron bracket.

**15.** Check that the mechanism moves freely; by pressing downwards on the free end of the isolator bell crank lever.

**16.** Assemble the long rod (item 8). Ensure that a distance of 45,72 cm. to 45,78 cm. (18.00 in. to 18.025 in.) exists between the inner faces of the lock-nuts.

**17.** Check that the accelerator pedal is positioned between 6,35 mm. and 12,7 mm. (0.250 in. and 0.500 in.) below the brake pedal.

**18.** Fit the jaw of the long rod to the control operating lever (item 15) and offer up the opposite end to the bell-crank lever (item 5).

**19.** Check that the accelerator control system operates smoothly.

#### Note

When the choke flap is closed the secondary throttles are prevented from opening. This results in an extra load in the pedal feel at the point where the secondary throttles are normally opened.

**20.** Check that full throttle and kickdown are available. If not adjust the long rod (item 8).

**21.** With the engine at normal operating temperature, but not running, repeat Operation 19. Then, with the engine running check that the throttles close fully when the accelerator pedal is released.

#### Note

The engine must be running so that the manifold vacuum is applied to the throttle jack. Without manifold vacuum, the throttle jack will hold the throttles slightly open. If the throttles do not close fully, adjust the long rod (item 8). After any adjustment repeat Operation 20.

#### Left-hand drive cars (see Figs. K100 and K99)

**1.** Carry out Operations 1, 2 and 4 as described for right-hand drive cars.

**2.** Build a sub-assembly of the accelerator pedal lever (item 17), pivot pin (item 19) and mounting brackets. Check that the lever moves freely between the brackets.

**3.** Fit the accelerator pedal assembly to the body. Check that the lever moves freely.

4. Fit the accelerator cross-shaft (item 21) by screwing the mounting brackets (item 12), to the longerons.
5. Carry out Operation 9 and 10 as described for right-hand drive cars.
6. Using the connecting rod (item 20) attach the pedal lever to the cross-shaft. Lock the rod with split pins and check that the rod moves freely.
7. Fit the accelerator pedal to the lever (item 17).
8. Fit the pedal return spring (item 11) using the hooks (items 10 and 13).
9. Carry out Operations 13 and 21 inclusive as described for right-hand drive cars.

### Kickdown micro-switch

This micro-switch is situated on the underside of the car body below the accelerator pedal, its purpose is to provide kickdown (detent) for the torque converter transmission.

#### Kickdown micro-switch assembly - To remove

1. Drive the car onto a ramp and raise to a suitable working height.
2. From inside the car, locate the micro-switch operating plunger beneath the accelerator pedal.
3. Unscrew the large retaining nut and withdraw the washer.
4. From under the car detach the 'Lucar' connections and withdraw the micro-switch assembly.

#### Kickdown micro-switch - To dismantle

The assembly comprises the micro-switch, plunger and casing, the assembly should be removed from the car before any dismantling is commenced.

1. Using a screwdriver carefully 'ease back' the indentations which crimp around the cover of the assembly.
2. Remove the cover.
3. Disconnect the two electrical cables from the micro-switch. The white/green cable has a 'Lucar' connection and the white cable is retained by a small cheesehead screw.
4. Unscrew the two 6B.A. nuts securing the micro-switch to its mounting bracket. Withdraw the cheesehead screws and collect the two washers from each screw. Withdraw the micro-switch.
5. Unscrew the two cheesehead screws retaining the micro-switch mounting bracket. Withdraw the bracket.
6. Remove the circlip from around the plunger assembly.
7. Withdraw the plunger assembly and spring.

#### Kickdown micro-switch - To assemble

Assemble the micro-switch and plunger by reversing the procedure given for dismantling, noting the following points.

1. Ensure that the rubber seal is in a good condition and fitted securely to the body of the

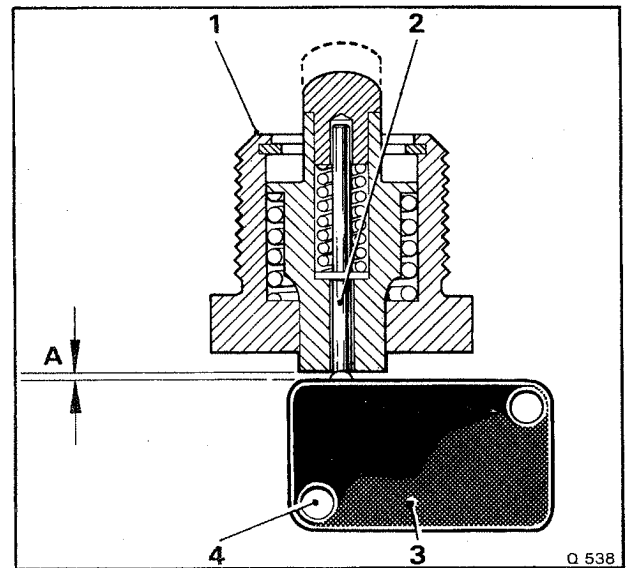


Fig. K101 Kickdown micro-switch assembly

- 1 Plunger assembly
- 2 Secondary plunger
- 3 Micro-switch
- 4 Elongated hole in mounting plate (micro-switch adjustment)
- A Clearance of 0,127 mm. (0.005 in.)

assembly. The seal is secured using Dunlop Adhesive S1240 or equivalent.

#### Kickdown micro-switch - To set

1. Ensure that the carburetter linkage and the accelerator pedal linkage are correctly set. Swing the micro-switch towards the base of the plunger until a 0,254 mm. to 0,762 mm. (0.010 in. to 0.030 in.) gap exists between the micro-switch button and the plunger.
2. Tighten the micro-switch securing nuts and afterwards, check that the gap set in Operation 1 has not been disturbed.
3. Slowly depress the plunger to obtain full stroke. Check that the switch operates (audible click) during this operation.
4. Ensure that with the main plunger fully depressed it is still clear of the micro-switch case (see Fig. K101).
5. Slowly release the plunger ensuring that the micro-switch contacts open (audible click).
6. Ensure that the clearance set between the plunger and the micro-switch button, remains as set in Operation 1.