

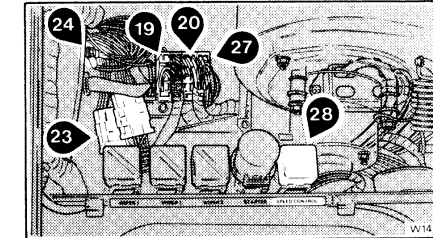
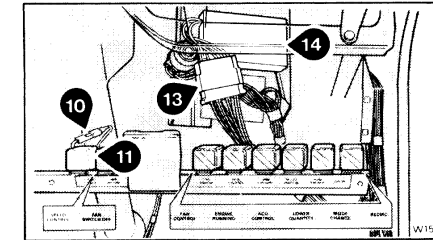
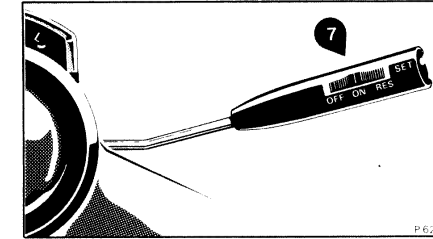
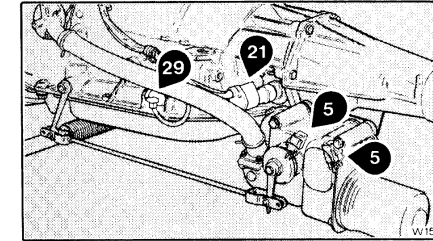
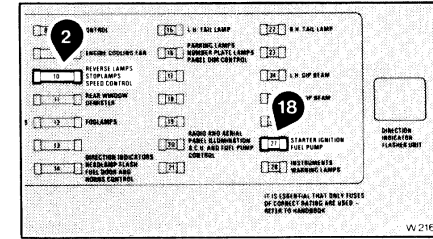
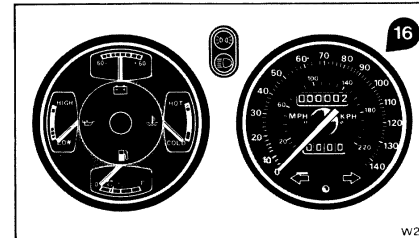
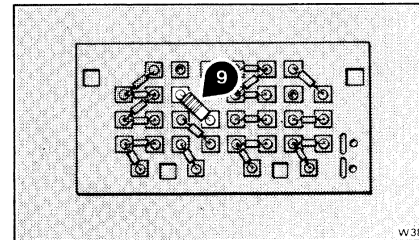
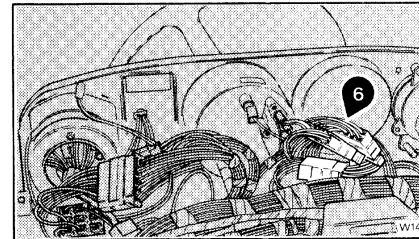
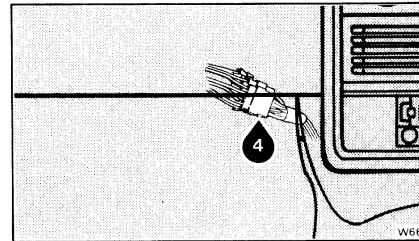
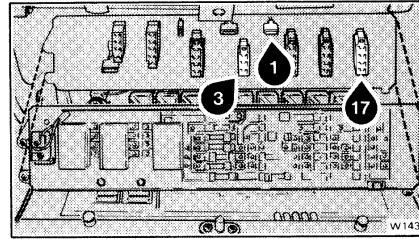
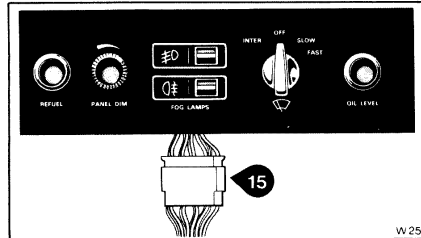
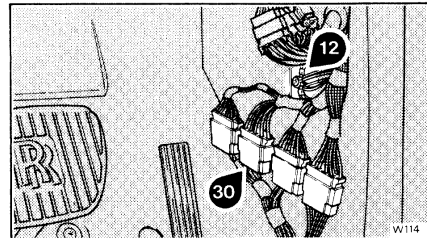
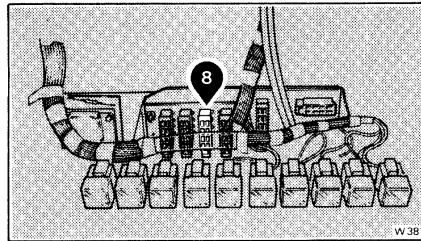
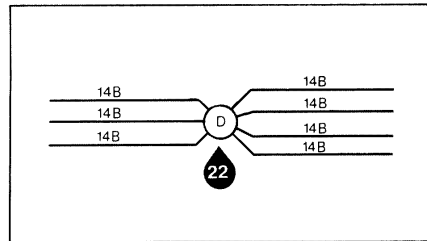
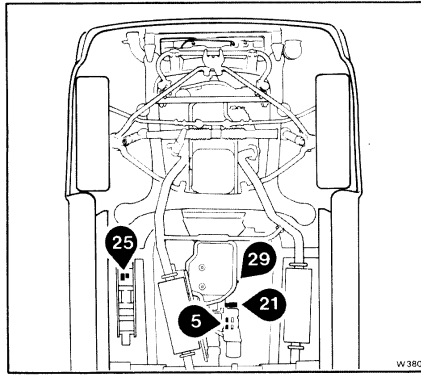
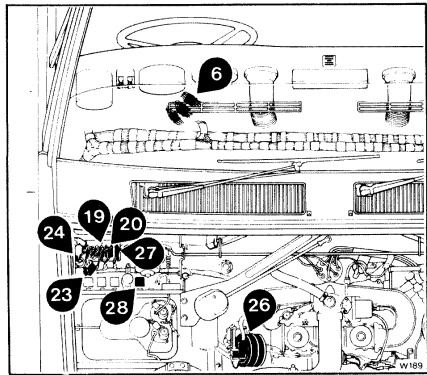
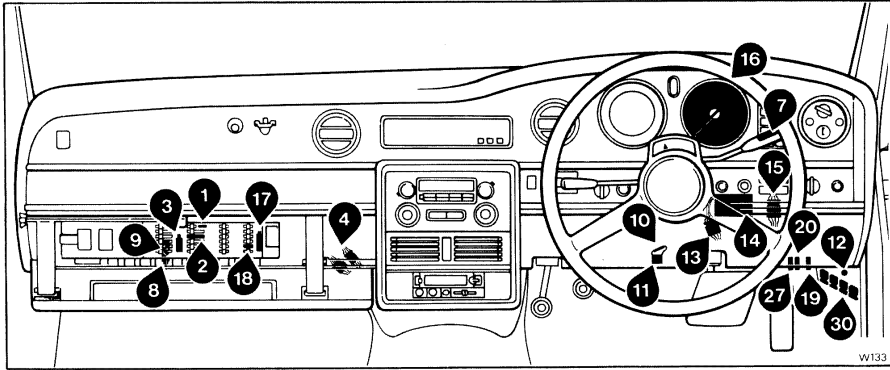
## Speed control system

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## **Speed control system**

Right-hand drive cars

Wiring diagram and component location



## **Speed control system**

Right-hand drive cars

Wiring diagram and component location



## **Speed control system**

Left-hand drive cars

Wiring diagram and component location

## **Speed control system**

Left-hand drive cars

Wiring diagram and component location

## Speed control system

### Introduction

It is the purpose of the automatic speed control system to maintain, within close limits, a set cruising speed selected by the driver.

The system will operate only when the car is in top gear. Any cruising speed from 50 km/h (30 mile/h) to 140 km/h (85 mile/h) may be selected to give satisfactory operation of the system. It is not intended that the speed control system be used below 50 km/h (30 mile/h) and at approximately 40 km/h (25 mile/h) the system is disengaged although a memory function operates as described later. The system becomes completely disengaged when either the ignition is switched off, the system is switched off, or the gear range selector lever is moved to Park, Neutral or Reverse.

The controls for the system are mounted on the gear range selector lever (see fig. M8-1). They comprise a three position switch marked ON/OFF and RES (resume) and a push button switch marked SET.

### Operation of the system

To use the system the car must be travelling in excess of 50 km/h (30 mile/h) with the gear range selector lever in the Drive range position.

To operate the system move the speed control switch to the ON position, accelerate the car to the desired cruising speed, then, engage the system by briefly depressing the push button switch marked SET. The accelerator pedal can then be released and the car will maintain the selected cruising speed under all road conditions within the limits of the engine performance.

Adjustment of the selected cruising speed can be accomplished as follows.

To cruise at a higher speed than the one already selected, depress the button marked SET. Whilst the button is depressed the speed of the car will increase. When the desired cruising speed is attained, release the SET button. The car may slightly exceed the selected speed when the button is released but will then settle down to the set cruising speed.

Alternatively, a higher set cruising speed can be attained by depressing the accelerator pedal until the required speed is reached, then briefly depressing the SET button.

The system can be disengaged by depressing the footbrake pedal or by moving the speed control switch briefly to the RES position. To resume cruising at the previously set speed, again move the speed control switch briefly to the RES position. Should the speed of the car have fallen below 40 km/h (25 mile/h) during the period of disengagement it will be necessary to accelerate the car to a speed in excess of 40 km/h

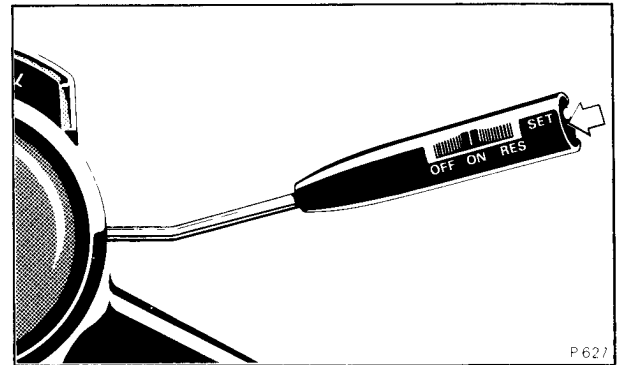


Fig. M8-1 Speed control switches

(25 mile/h) before moving the control switch to the RES position. Moving the switch to the RES position causes the car to return to its previously set cruising speed. This is because a memory of the last set speed is retained within the control unit, despite temporary disengagement by operation of the footbrake pedal or resume switch. This memory function is automatically cancelled when the gear selector lever is moved out of a forward drive position or either the speed control system or ignition system is switched off.

To reduce the set cruising speed, disengage the system by means of the footbrake or by briefly moving the control switch to the RES position. Then, when the desired cruising speed is reached, briefly depress the SET button.

The speed control system may be overridden by the accelerator pedal, for example when overtaking, but will automatically return to the originally selected speed once the pedal is released.

The speed control system only operates on the engine throttle, therefore on downhill gradients in overrun conditions, the selected speed could be exceeded as there would be no automatic selection of a lower gear ratio to give engine braking.

Another feature of the system is that if the gear range selector lever is moved from Drive range to either Intermediate or Low range or an automatic down-change occurs, the speed control system automatically disengages. Depending upon operating conditions, when the selector lever is returned to the Drive range position, or when the car automatically changes back into top gear, the memory within the control unit will return the car to its previously set cruising speed. Should the system not respond automatically briefly select RES on the speed control switch to activate the memory.

### Road test procedure

The following road test procedure is recommended to enable both a safety and functional check of the speed control system to be carried out. When carrying out the test procedure select an open stretch of road and ensure that the road is free from any potential hazard.

#### Safety inhibit systems

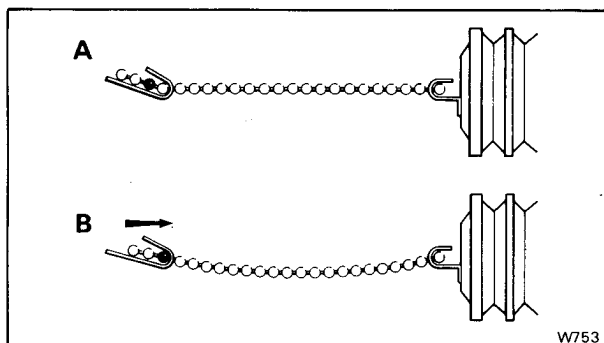
1. Ensure that the speed control switch is in the OFF position and that the gear range selector lever is in the Park position. Firmly apply the parking brake.
2. Start and run the engine until normal operating temperature is attained. Switch off the ignition.
3. Disconnect the actuator bellows chain.
4. Ensure that the vacuum hoses are in good condition and the connections secure. Also ensure that the operation of the actuator bellows is not obstructed.
5. When checking the operation of the actuator bellows it is essential that the following procedures are observed.

**Although the footbrake should not be applied during Operations 6 and 7, it is essential that no persons stand in front of the car and that the driver be prepared to apply the footbrake immediately, should any forward movement of the car occur.**

6. **Ensure that the parking brake is firmly applied.** Raise the bonnet of the car. Start the engine and move the gear range selector lever to the Drive range position.

Ensure that no compression of the bellows occurs.

7. Move the speed control switch to the ON position and again check that no compression of the bellows occurs.
8. Move the gear range selector lever to the Park position, the speed control switch to the OFF position and then switch off the ignition.
9. Open and close the throttle to ensure that the operation of the throttle linkage is not obstructed. Then connect the actuator bellows to throttle linkage chain (see fig. M8-2). Adjust the chain by pulling it taut across the gap between the throttle linkage connection and bellows actuator connection and then release it by one ball.
10. **Firmly apply the footbrake.** Start the engine and move the gear range selector lever to the Drive range position. Move the speed control switch to the ON



**Fig. M8-2 Actuator bellows chain adjustment**

- A Chain pulled taut
- B Chain correctly set

position, then slowly release the footbrake.

Ensure that the engine revs do not increase.

11. Release the parking brake and accelerate to approximately 70 km/h (45 mile/h). Briefly depress the SET button.

Ensure that the speed control system engages and that the speed is maintained at approximately 70 km/h (45 mile/h).

12. Move the gear range selector lever to the Intermediate position.

Ensure that the system disengages.

13. Allow the speed of the car to decrease (without applying the footbrake) to approximately 60 km/h (35 mile/h) and then move the gear range selector lever back to the Drive range position.

14. The memory within the control unit should automatically function to return the speed of the car to approximately 70 km/h (45 mile/h). Should the system not respond automatically select RES on the speed control switch to activate the memory function of the unit.

15. Apply the footbrake.

Ensure that the system disengages.

16. Switch off the speed control system.

#### Functional test

1. With the car travelling at a steady speed of 50 km/h (30 mile/h) move the speed control switch to the ON position. Briefly depress the SET button.

Ensure that the car cruises at a constant speed of 50 km/h  $\pm$  3 km/h (30 mile/h  $\pm$  2 mile/h).

2. Accelerate the car to 80 km/h (50 mile/h) and holding the speed steady for three to four seconds, briefly depress the SET button.

Ensure that the car cruises at 80 km/h  $\pm$  3 km/h (50 mile/h  $\pm$  2 mile/h).

3. Increase the speed of the car by depressing the SET button. Release the button when the car speed has reached 100 km/h (60 mile/h).

Ensure that the car cruises at 100 km/h  $\pm$  3 km/h (60 mile/h  $\pm$  2 mile/h).

The car may slightly exceed the selected speed when the button is released but should then settle down to the set cruising speed.

4. Apply the footbrake to reduce the speed of the car to approximately 80 km/h (50 mile/h) and then briefly move the speed control switch to the RES position.

Ensure that the car accelerates to and cruises at 100 km/h  $\pm$  3 km/h (60 mile/h  $\pm$  2 mile/h).

5. Briefly move the speed control switch to the RES position.

Ensure that the speed control system is disengaged and the car decelerates.

6. Briefly move the speed control switch to the RES position.

Ensure that the car accelerates to and cruises at 100 km/h  $\pm$  3 km/h (60 mile/h  $\pm$  2 mile/h).

7. Move the speed control switch to the OFF position. Reduce the speed of the car to approximately 80 km/h (50 mile/h) and then briefly press the SET button.

Ensure that the system does not engage.

8. Move the speed control switch to the ON position

and then briefly to the RES position.

Ensure that the system does not engage.

9. With the speed of the car at 65 km/h (40 mile/h) briefly press the SET button to engage the system. Then apply the footbrake to reduce the speed of the car to 25 km/h (15 mile/h). Briefly operate the RES switch and then the SET button.

Ensure that the system does not engage.

10. Stop the car. Move the gear range selector lever to the Neutral position and then back to the Drive range position. Accelerate to 60 km/h (35 mile/h) then briefly operate the RES switch.

Ensure that the system does not engage.

11. Accelerate the car to 80 km/h (50 mile/h) and then briefly press the SET button to engage the system. Apply the footbrake to reduce the speed of the car to 65 km/h (40 mile/h), then briefly operate the RES switch.

Ensure that the car accelerates to 80 km/h (50 mile/h) within ten seconds.

12. Move the speed control switch to the OFF position.

### Electrical test and fault diagnosis

The following test procedure describes the use of the speed control electronic test box, part number RH 9689. Also provided is a fault diagnosis procedure.

If having carried out an operation in the test procedure the required result is not obtained, reference must be made to the same operation number in the fault diagnosis procedure. This will give the correction procedure which must be carried out before the test procedure can be continued.

Successful completion of the test in conjunction with the fault diagnosis procedure should prove the correct electrical operation of the system.

#### Note

The electrical test and fault diagnosis procedures do not cover; the mechanical operation of the bellows actuator, the operation of the TCS (top gear) switch, the speedometer generator system, or the memory erase at switch-on of the electronic unit. The operation of these functions is dealt with in the Functional test procedure on Page M8-10.

It is essential that the electrical system of the car being tested is capable of providing 12.5 volts throughout the test procedure. To achieve this the car battery must be in a fully charged condition and connected to a **low current** type battery charger. **Do not** disconnect the battery from the car.

#### Connecting the test box (see fig. M8-3)

1. Ensure that the parking brake is firmly applied.
2. Remove the interior lamps fuse number 1 from the fuseboard.
3. Remove the white/green cable from the positive connection on the ignition coil.
4. Remove the speed control safety relay (see Section M2 figure M2-1, item 25) and replace with the test relay part number RH 9705.
5. Disconnect the speed control wiring loom from the electronic speed control unit and connect the test box.
6. On the test box, select the SZ position on the SY/SZ

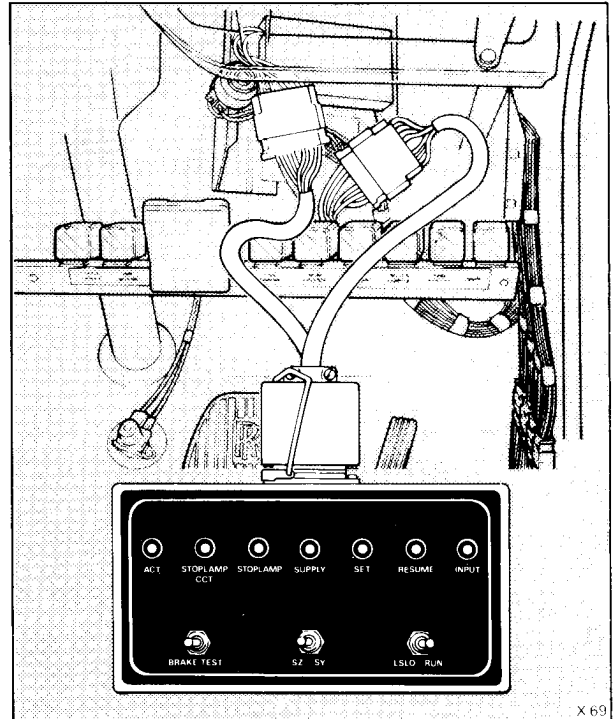


Fig. M8-3 Connecting the test box

switch; also the RUN position on the LSLO (low speed lock out)/RUN switch.

#### Test procedure

1. Switch on the ignition.
  - Ensure that none of the lamps on the speed control test box illuminate.
2. Move the gear range selector lever from Park through Neutral to the Drive position.
  - Ensure that none of the lamps on the test box illuminate.
3. Move the speed control switch to the ON position.
  - Ensure that on the test box, the SUPPLY and STOPLAMP CCT (circuit) lamps illuminate, the INPUT lamp either illuminates or flashes, and the speedometer registers approximately 80 km/h (50 mile/h).
4. Press and hold the SET button on the speed control switch.
  - Ensure that the SET lamp on the test box illuminates and that the RESUME lamp does not illuminate.
5. Release the SET button.
  - The ACT lamp should commence flashing.
6. Press and hold the SET button.
  - The ACT lamp should be extinguished.
7. Release the SET button.
  - The ACT lamp should recommence flashing.
8. Select and hold the RES position on the speed control switch.
  - Ensure that the RESUME lamp on the test box illuminates and the ACT lamp is extinguished.
9. Release the RES switch.
  - Ensure that the RESUME lamp is extinguished.
10. Select and hold the RES position on the speed

control switch for a minimum of a quarter of a second and then release.

The ACT lamp should commence flashing.

11. Repeat Operation 10.

The ACT lamp should extinguish.

12. Repeat Operation 10.

The ACT lamp should recommence flashing.

13. Depress the footbrake pedal.

Ensure that the STOPLAMP CCT and ACT lamps are extinguished and the STOPLAMP indicator lamp illuminates.

14. Release the footbrake pedal.

Ensure that the STOPLAMP CCT lamp illuminates and the STOPLAMP indicator lamp is extinguished. The ACT lamp should remain extinguished.

15. Operate the RES switch.

The ACT lamp should commence flashing.

Select the LSLO position on the LSLO/RUN switch.

The speedometer reading should fall to approximately 30 km/h (20 mile/h) and the ACT lamp should extinguish.

Select RUN position on the LSLO/RUN switch.

16. Press and hold the BRAKE TEST switch throughout this operation.

Operate the RES switch.

The ACT lamp should flash.

Depress the footbrake pedal.

The ACT lamp should extinguish.

Release the footbrake pedal.

The ACT lamp should recommence flashing.

17. Turbocharged cars only

Check the operation of the vacuum pump as follows

With the ignition switched on, the gear range selector lever in Drive range position, and the speed control switch set to ON, ensure that the vacuum pump is running. Disconnect the vacuum hose from the pump to the actuator vacuum line and ensure that the pump is withdrawing air. Set the speed control switch to OFF and ensure that the pump stops. Set the speed control switch to ON, remove the test relay and replace the speed control safety relay. Ensure that the pump does not run. Reconnect the vacuum pipes.

18. Switch off the ignition. Disconnect the test box and reconnect the speed control electronic unit plug and socket. Remove the test relay and replace the speed control safety relay. Replace the interior lamps fuse number 1 in the fuseboard. Reconnect the white/green cable to the positive connection on the ignition coil.

19. Road test the speed control system.

#### Note

Should the rectification time for the speed control system electrical test procedure become protracted, it is recommended that fuse number 27 be removed from the fuseboard. This prevents an inordinately high mileage being recorded on the odometer.

#### Fault diagnosis procedure

1. If any lamp on the test box illuminates there are faults in both the gearbox actuator micro-switch and the speed control switch. Alternatively, the blue/green supply cable from the speed control switch to the electronic control unit is picking up a supply from another source.

2. If any lamp illuminates, the ON/OFF contacts of the speed control switch are short-circuited; therefore

replace the switch.

3. If no lamp on the test box illuminates and the speedometer is inoperative, first check fuse number 10 speedometer is inoperative, first check the light green/green, green/yellow, and green/blue cables, also the reversing lamps switch.

If the STOPLAMP CCT lamp is not illuminated, ensure that the stop lamps bulbs and stop lamps failure unit are correct. Then, check the continuity of the green/brown cable connecting the speed control to the stop lamps circuit.

If the INPUT lamp does not illuminate and the speedometer is inoperative, ensure that fuse 27 is intact. Then, check the continuity of the red/green cable between the speedometer and the speed control circuit.

4. Should no lamp on the test box illuminate and the relay clicks, check the speed control to relay wiring (blue/white cable, 470 $\Omega$  resistor, and blue/yellow cable) and then the relay.

If the relay does not click check the continuity of the blue/brown cable from the speed control switch to the relay. Then, check the speed control switch and relay.

5. If the ACT lamp does not flash ensure that the supply voltage is at least 12.5 volts and that the test relay is fitted; check the continuity of the blue/brown cable from the control unit to the actuator (via the stop lamps switch and safety relay).

If these checks prove correct substitute the electronic control box with a proven unit.

6. If the ACT lamp continues flashing the electronic control unit is faulty.

Replace with a proven unit.

7. If the ACT lamp remains off the speed control switch is faulty and must be renewed.

8. If the RESUME lamp does not illuminate and the relay clicks, check the blue/yellow cable from the electronic control unit to the relay.

If the relay does not click the speed control switch is faulty and must be renewed.

If the RESUME lamp illuminates but the ACT lamp continues to flash, the electronic control unit is faulty and must be renewed.

9. If the ACT lamp commences flashing when RESUME is released check the fitting and operation of the diode connected across the relay coil.

10. 11. and 12. If the operation of the ACT lamp differs from that given in the test procedure, check that the RESUME lamp is illuminated with every operation of the RES switch then change the electronic control unit.

13. If no response is obtained, ensure that the stop lamps circuit operates correctly.

14. If the ACT lamp recommences flashing check the continuity of the green/brown cable between the electronic control unit and the stop lamps switch.

15. If the ACT lamp is not extinguished the LSLO (low speed lock out) function of the electronic control unit is faulty and the unit must be renewed.

16. If the ACT lamp is not extinguished when the footbrake pedel is depressed, either the stop lamps micro-switch is faulty or a short circuit exists between the blue/brown and blue/purple cables to the switch.

17. Turbocharged cars only

If the vacuum pump does not operate proceed as follows.

Disconnect the light/green and pink/black vacuum pump cables at the right-hand valance connections. Provide a known 12 volt positive feed to the light/green cable supplying the vacuum pump and a known earth to the pink/black cable supplying the vacuum pump. If the pump now operates it will be necessary to check the vacuum pump circuitry (refer to publication TSD 4417 page B1-1). Should the vacuum pump not operate replace the pump.

Ensure that all electrical connections are remade and the vacuum pipes reconnected.

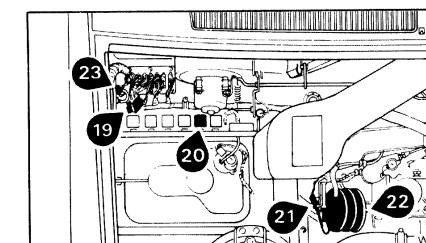
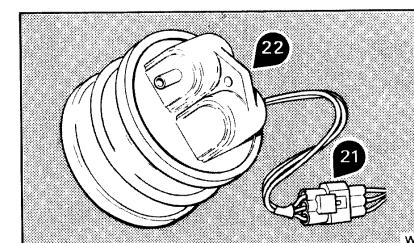
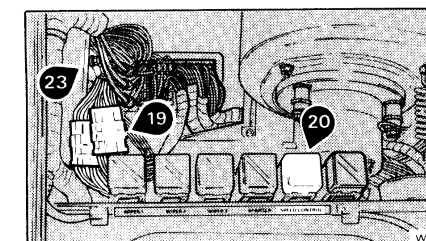
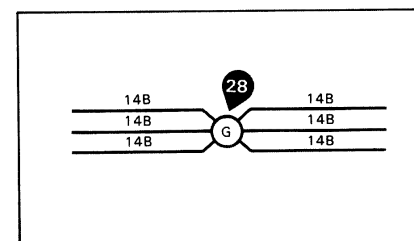
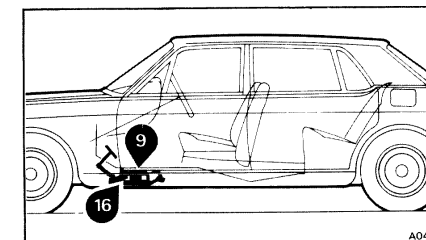
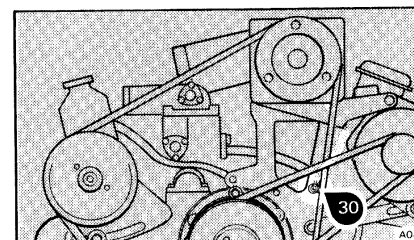
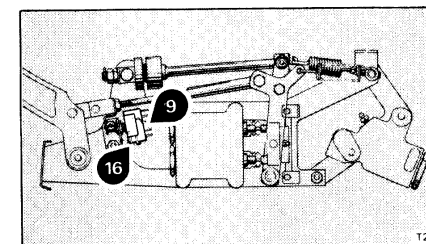
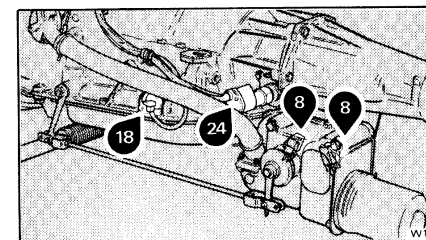
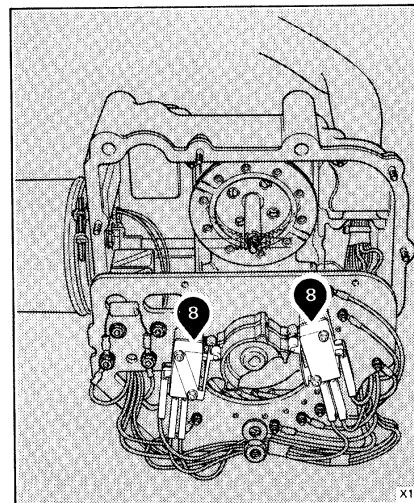
18. Switch off the ignition. Disconnect the test box and reconnect the electronic unit plug and socket. Remove the test relay. Ensure that all connections are remade and any fuses which have been removed, replaced.

19. Road test the car to check the speed control system.

### Speed control system

Silver Spirit, Silver Spur, Mulsanne (excluding Turbo), and Bentley Eight

Component location





## **Speed control system**

Right-hand drive cars

Silver Spirit, Silver Spur, Mulsanne  
(excluding Turbo), and Bentley Eight

Wiring diagram



## **Speed control system**

Left-hand drive cars

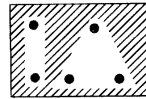
Silver Spirit, Silver Spur, Mulsanne  
(excluding Turbo), and Bentley Eight

Wiring diagram

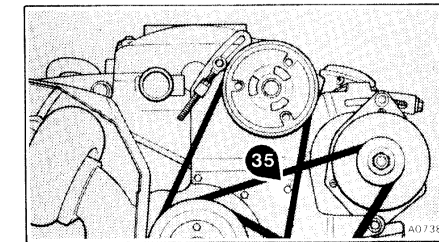
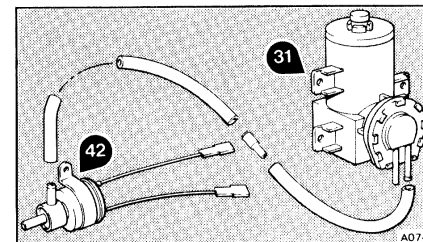
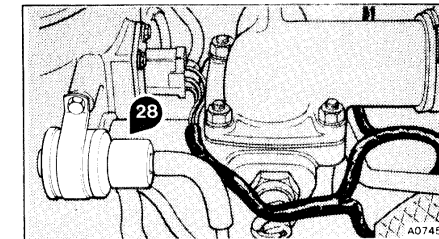
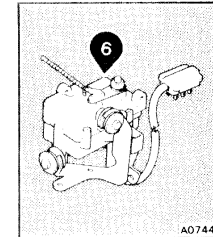
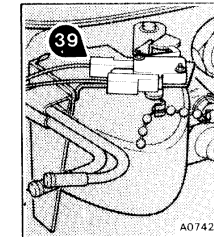
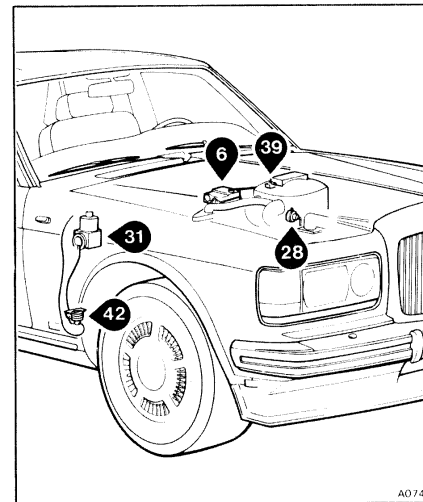
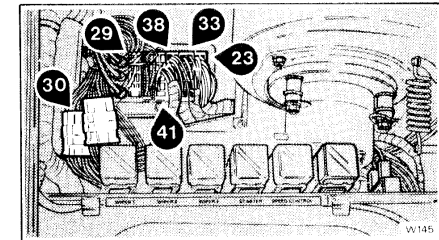
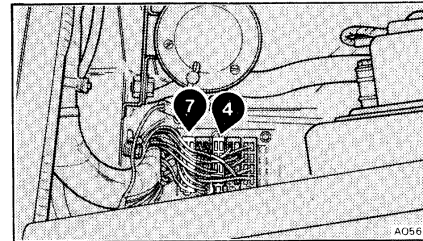
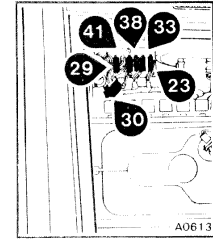
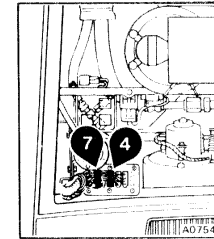
### Speed control system

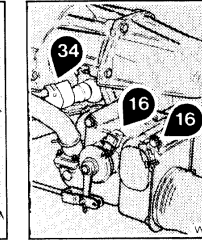
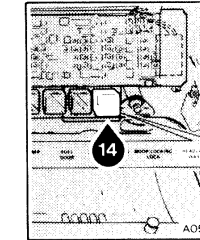
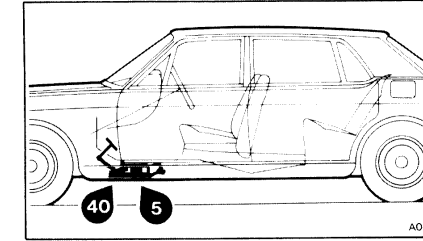
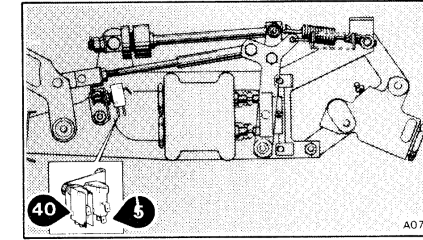
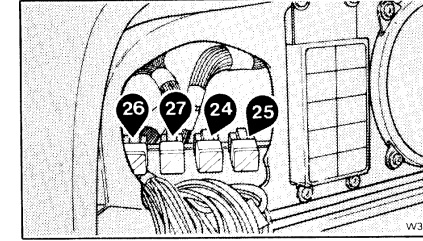
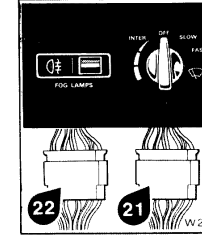
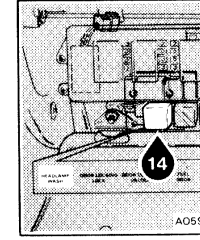
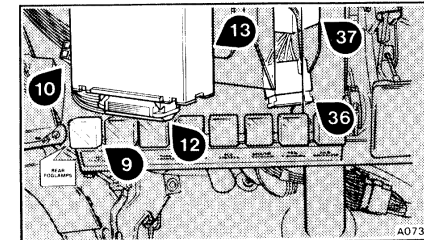
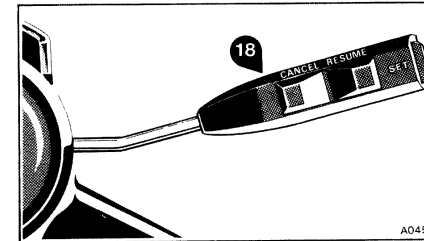
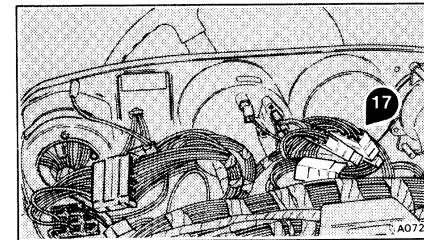
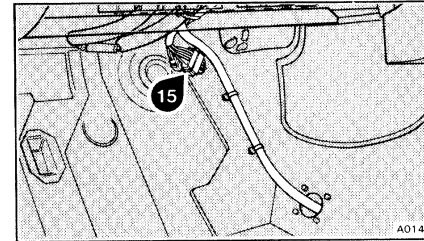
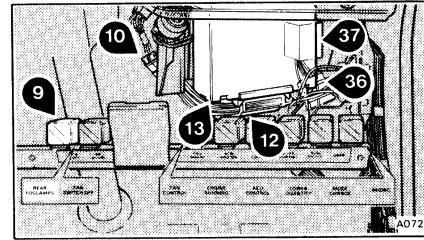
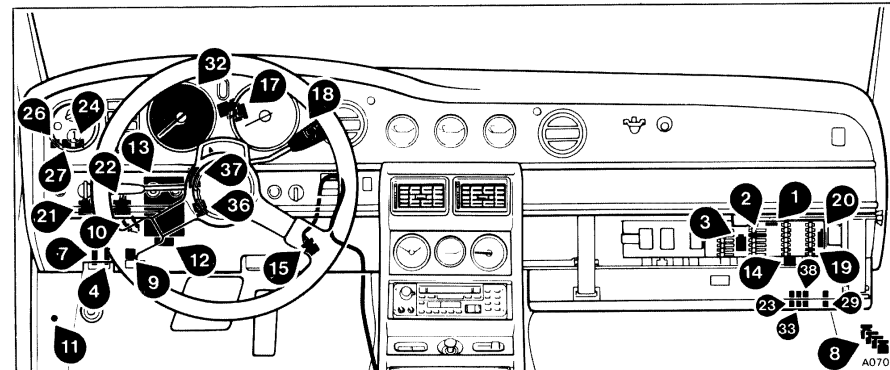
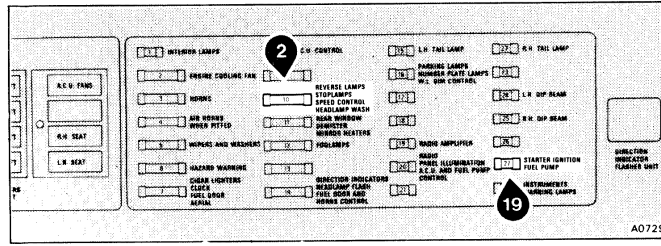
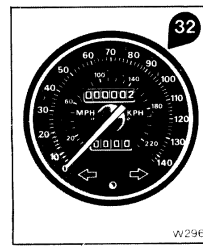
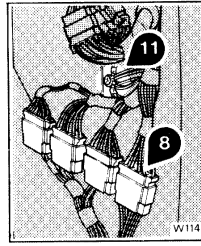
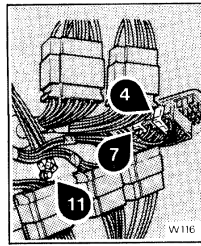
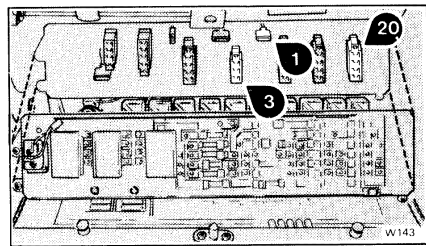
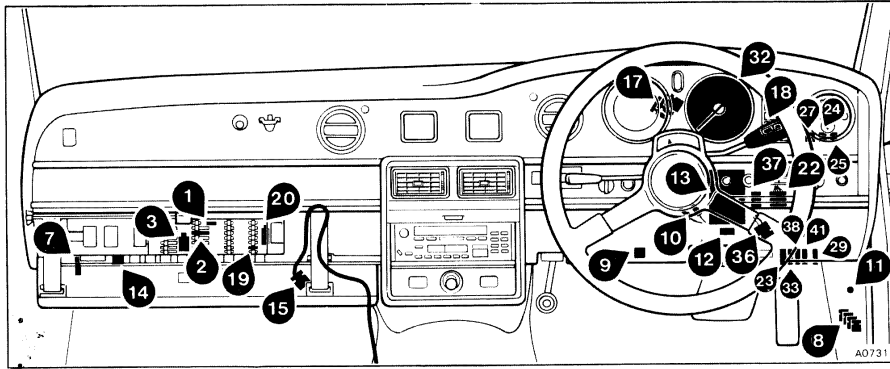
Bentley Mulsanne Turbo and Bentley Turbo R

Component location



Cars fitted with a CAV alternator





## **Speed control system**

Right-hand drive cars

Bentley Mulsanne Turbo and Bentley Turbo R

Wiring diagram



## **Speed control system**

Left-hand drive cars

Bentley Mulsanne Turbo and Bentley Turbo R

Wiring diagram

## **Speed control system**

Right-hand drive cars

Corniche/Continental

Wiring diagram

## **Speed control system**

Left-hand drive cars  
Corniche/Continental

Wiring diagram

## **Speed control system**

Right-hand drive cars

Corniche/Continental

Wiring diagram

## **Speed control system**

Left-hand drive cars  
Corniche/Continental

Wiring diagram