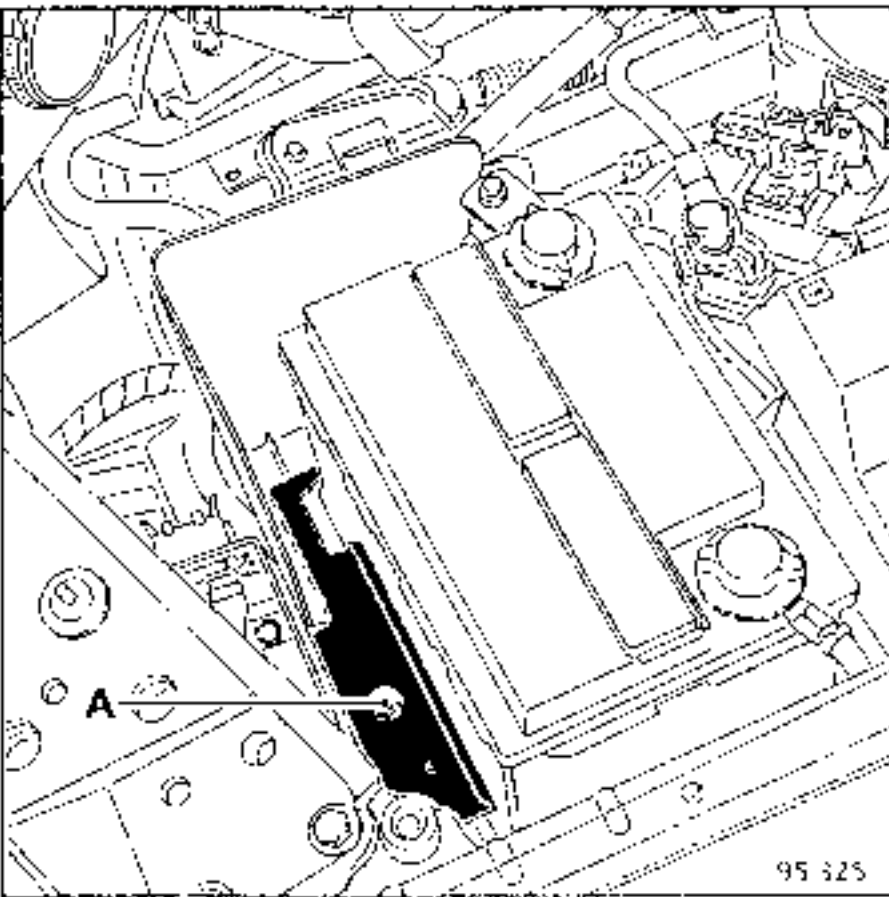


## SPECIAL NOTES FOR REFITTING



Grease the terminals before fitting the connectors.

Battery connector torque : 0,3 daN.m

Battery mounting (A) : 1 daN.m

### A - INSPECTION

Check and ensure that :

- the battery body and cover are not cracked or broken,
- the top of the battery is clean,
- the terminals are in good condition.

It is essential that :

- there is no sulphation on the terminals and clips,
- the terminals and clips are cleaned and greased if sulphation is present,
- the clips are correctly tightened on the terminals. If incorrectly tightened, this may cause starting or charging faults which may create sparks which could cause the battery to explode,
- the electrolyte level is checked.

For batteries having a row of removable plugs :

- remove the cover either by hand or using a tool (rigid spatula),
- check the electrolyte level which should cover the plates in each of the cells,
- top up the level using distilled water if necessary.

*Note : certain batteries have clear bodies which enable the electrolyte level to be seen.*

Never add electrolyte or other products to the battery.

### B- PRECAUTIONS

Remember that a battery :

- contains sulphuric acid, which is a dangerous product,
- when charging, produces oxygen and hydrogen; the mixture of these two gasses produces an explosive gas.

#### 1) DANGER = ACID

The sulphuric acid solution is a highly aggressive, toxic and corrosive product. It attacks the skin, clothing and concrete and corrodes most metals.

It is therefore important to take the following precautions when handling a battery :

- wear goggles to protect the eyes,
- wear anti-acid gloves and clothing.

**If any acid is splashed, rinse all affected parts with copious amounts of water. If acid is splashed in the eyes, consult a doctor.**

## 2 - DANGER = RISK OF EXPLOSION

When a battery is charging, (either in the vehicle or removed from the vehicle), oxygen and hydrogen are formed. The formation of gas is at a maximum when the battery is fully charged, and the amount of gas is proportional to the intensity of the charging current.

Oxygen and hydrogen combine in open spaces, on the surface of plates, and form a detonating mixture. This mixture is highly explosive.

The slightest spark, a cigarette, or a lit match are sufficient to cause an explosion. The explosion is so strong that the battery may shatter spraying acid across the surrounding area. Any persons in the vicinity are in danger (from splinters and acid splashes). Splashes of acid are harmful to eyes, face and hands, and also attack clothing.

Protection against the risk of explosion which may occur if a battery is handled carelessly, must be taken seriously. Avoid all risks of sparks.

- Ensure all accessories are switched off before disconnecting or reconnecting the battery.
- When charging a battery, switch the charger off before disconnecting or reconnecting the battery.
- Never place a metal object on the top of the battery, or a short circuit will be produced between the terminals.
- Never bring a naked flame, blow lamp, hot air gun, cigarette or lighted match near a battery.

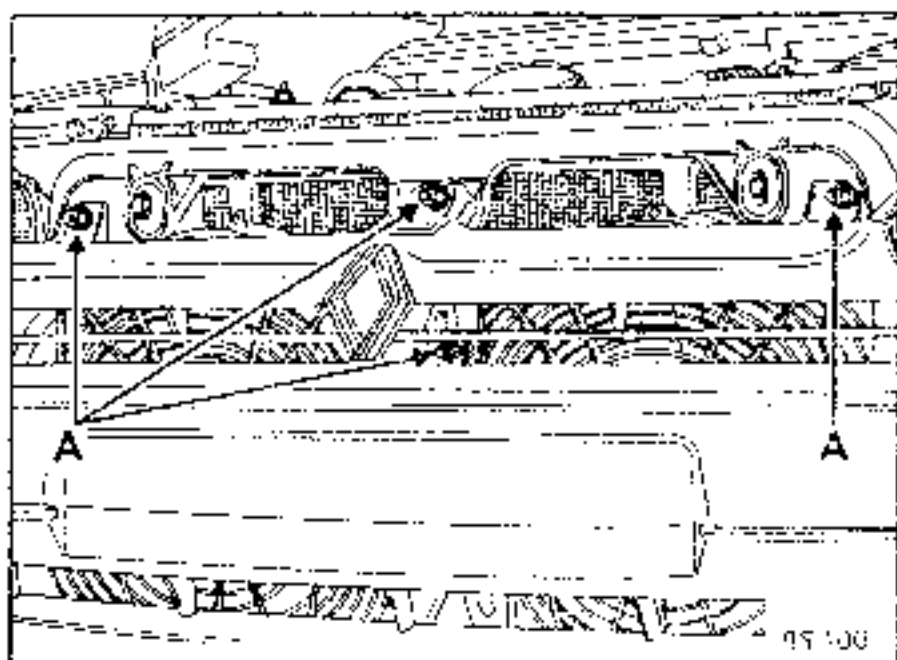
**REMOVAL - REFITTING**

**Disconnect:**

- the battery,
- the connectors on the light units and the direction indicators.

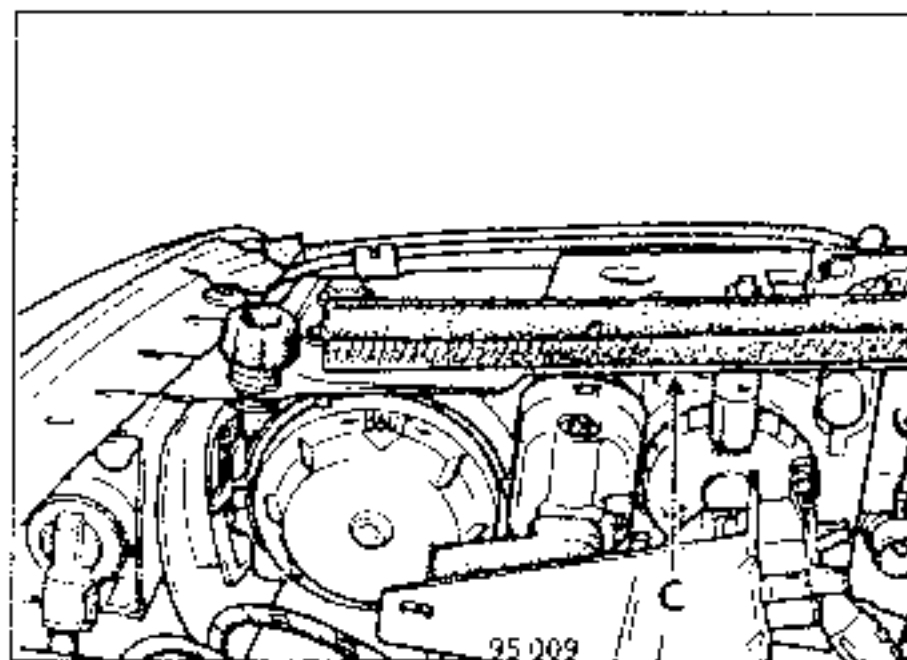
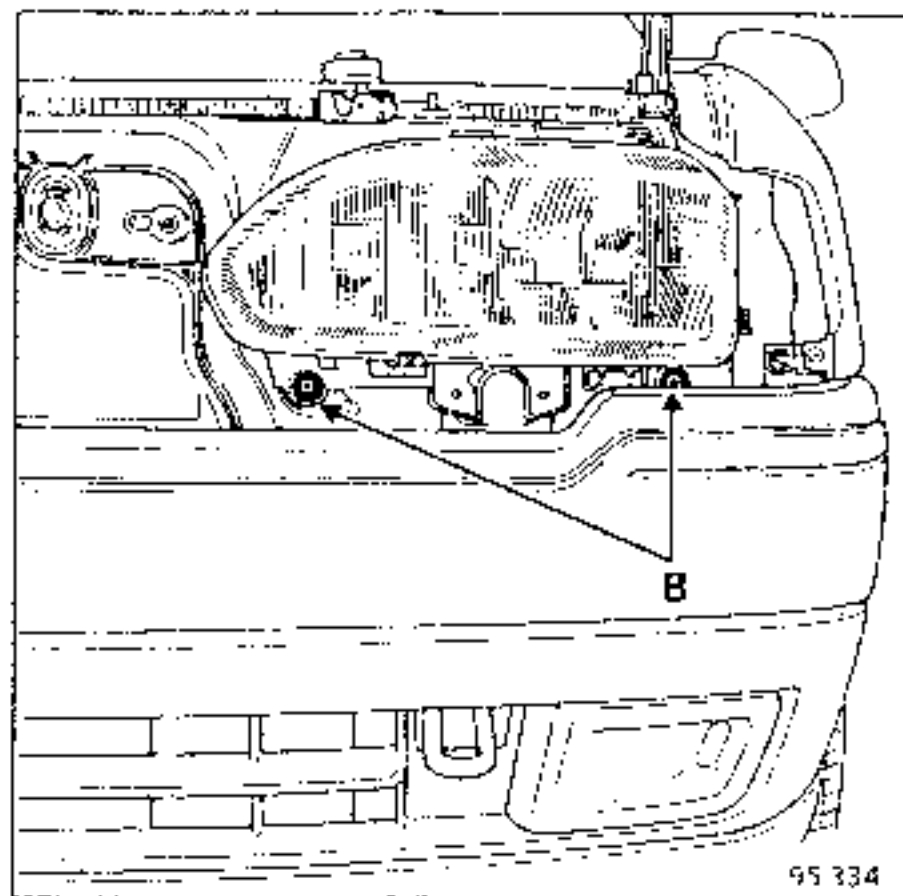
**Remove:**

- the direction indicators, by tilting the lever down,
- the radiator grill by removing the 4 nuts (A) and releasing the ends.



- the light unit by the two lower nuts (B) and the upper nut (C) behind the light unit.

**NOTE :** if the vehicle is fitted with headlight washers, remove the two mounting bolts for the nozzle after moving back the cover.



Pull the light unit out.

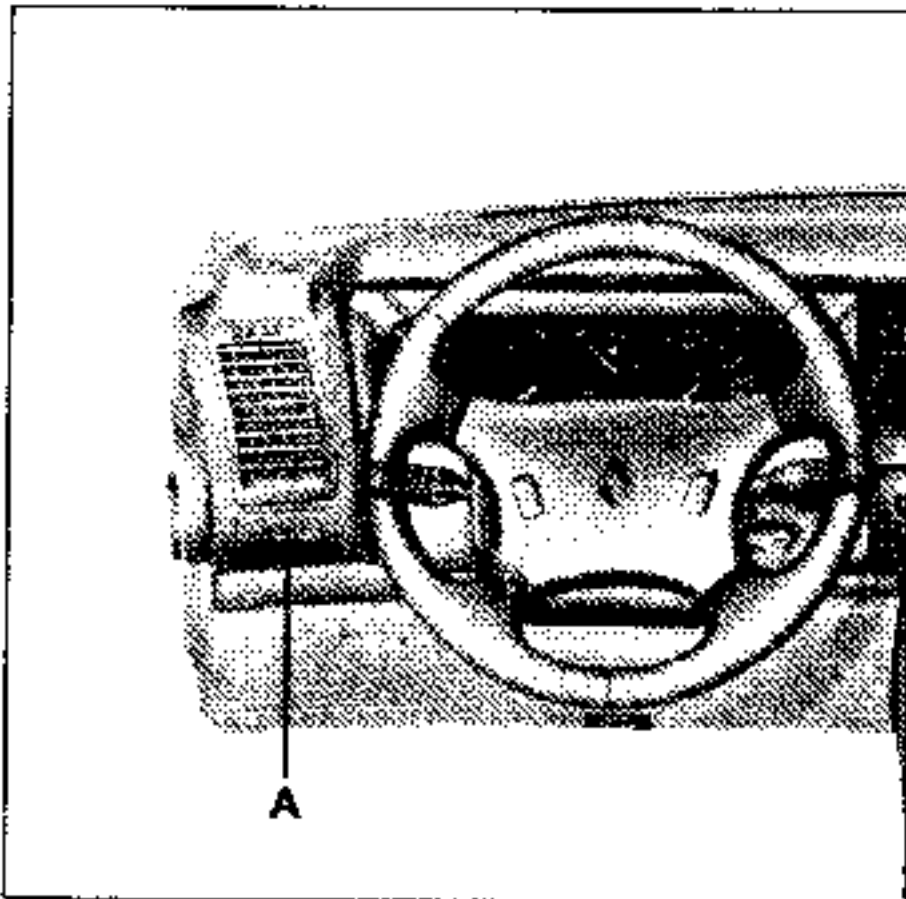
**SPECIAL NOTES FOR REFITTING**

The light units must be adjusted after replacement.

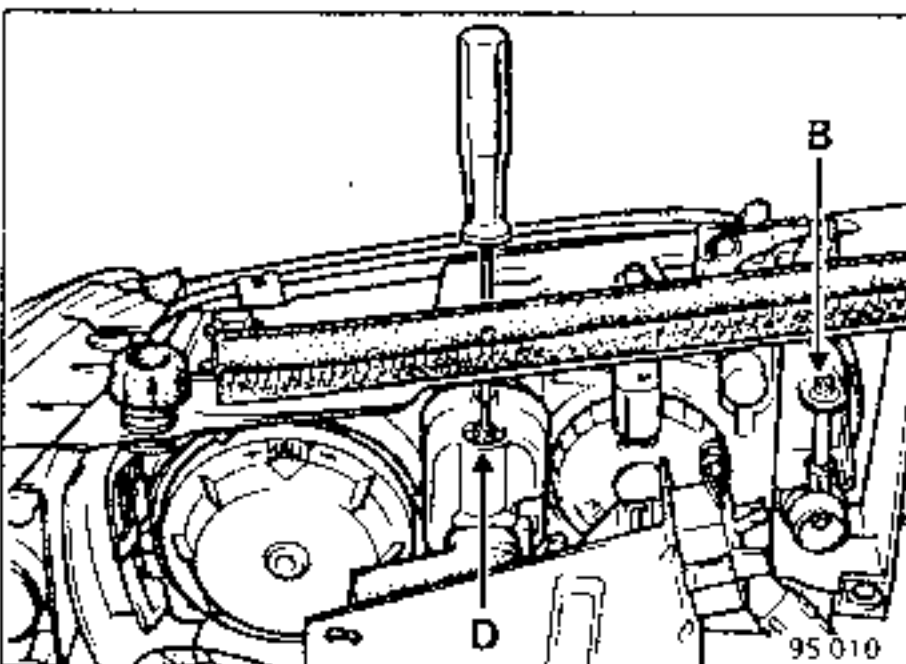
To adjust:

Check the vehicle is empty.

Set the adjustment control to 0 (A).



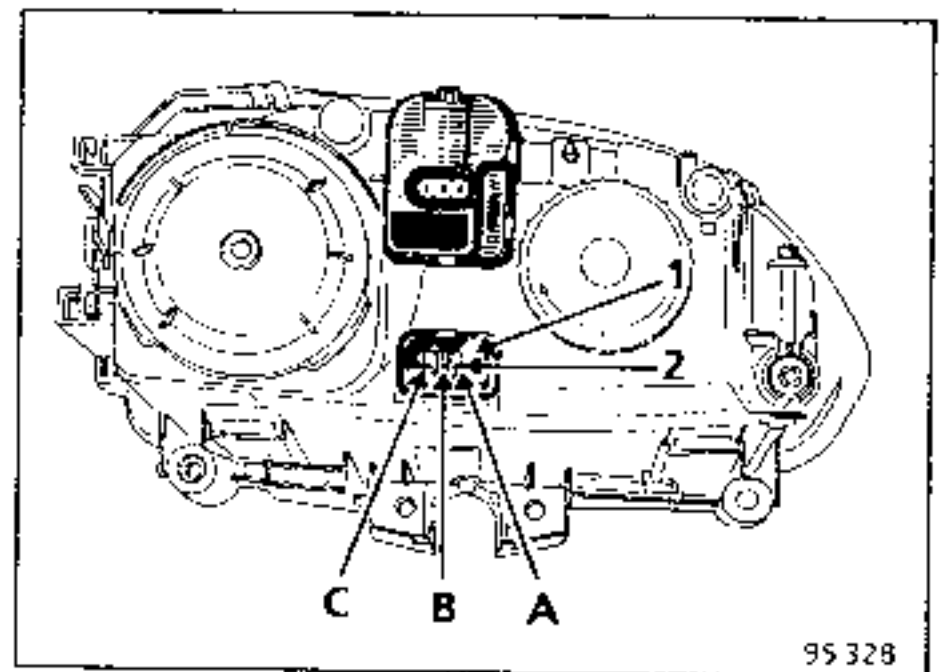
Adjust height using bolt (D) and direction using bolt (B).



**CONNECTIONS**

Light unit connector (grey)

Track	Allocation
A1	Not used
A2	Side light
B1	Earth
B2	Dipped headlight
C1	Not used
C2	Main beam headlight

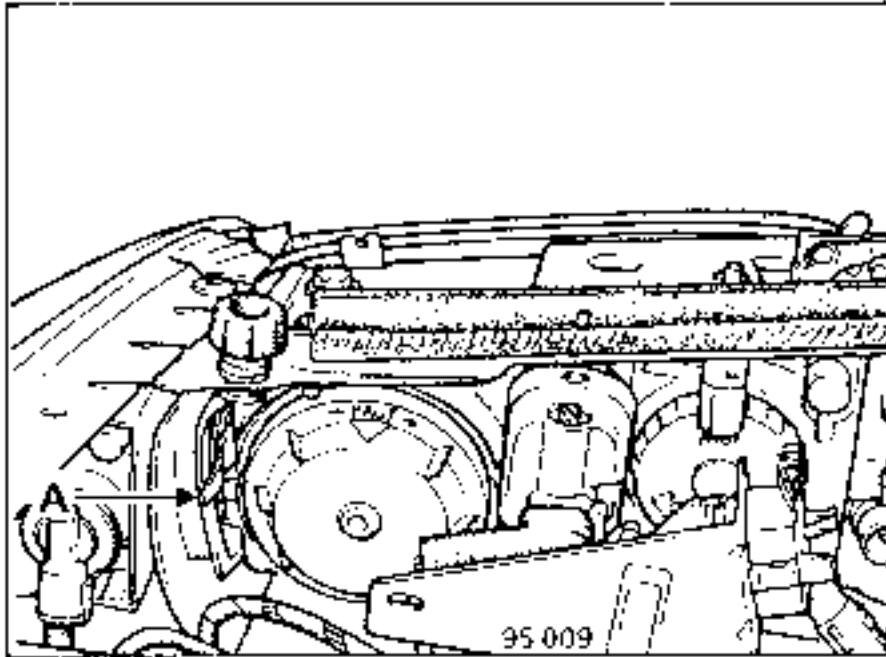


95 328

95 010

**REMOVAL - REFITTING**

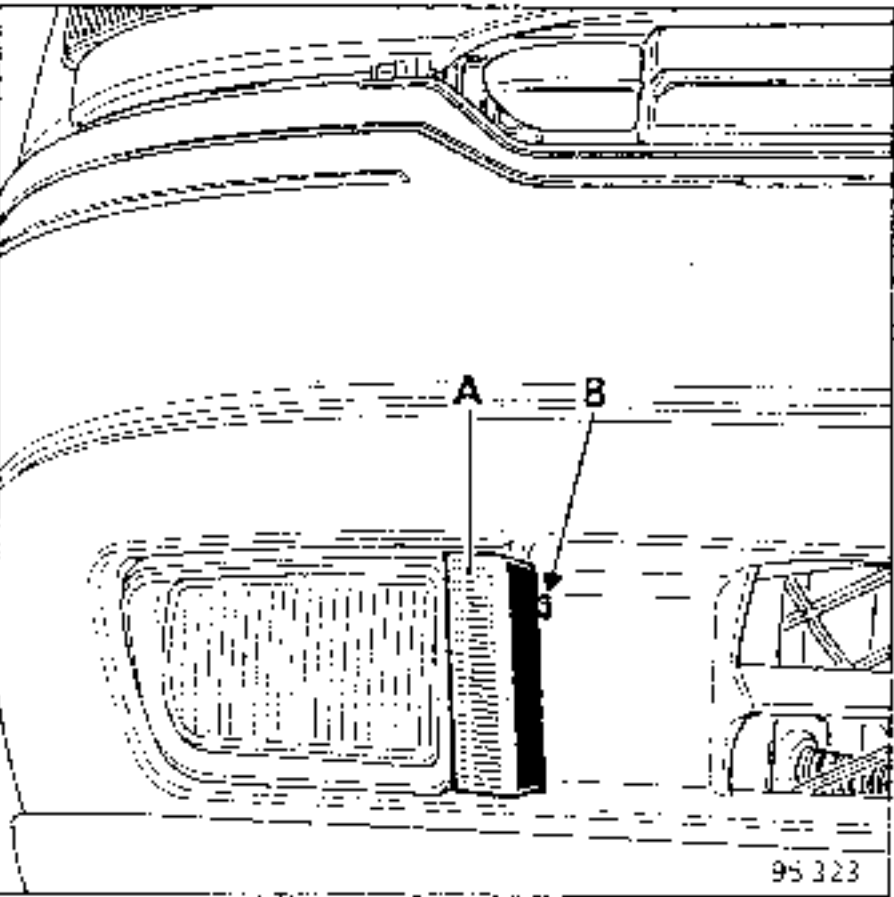
Remove the light by tipping lever (A) down and removing to the front.



For vehicles fitted with front fog lights.

**REMOVAL**

Remove cover (A) by bolt (B).



Unscrew bolt (C).

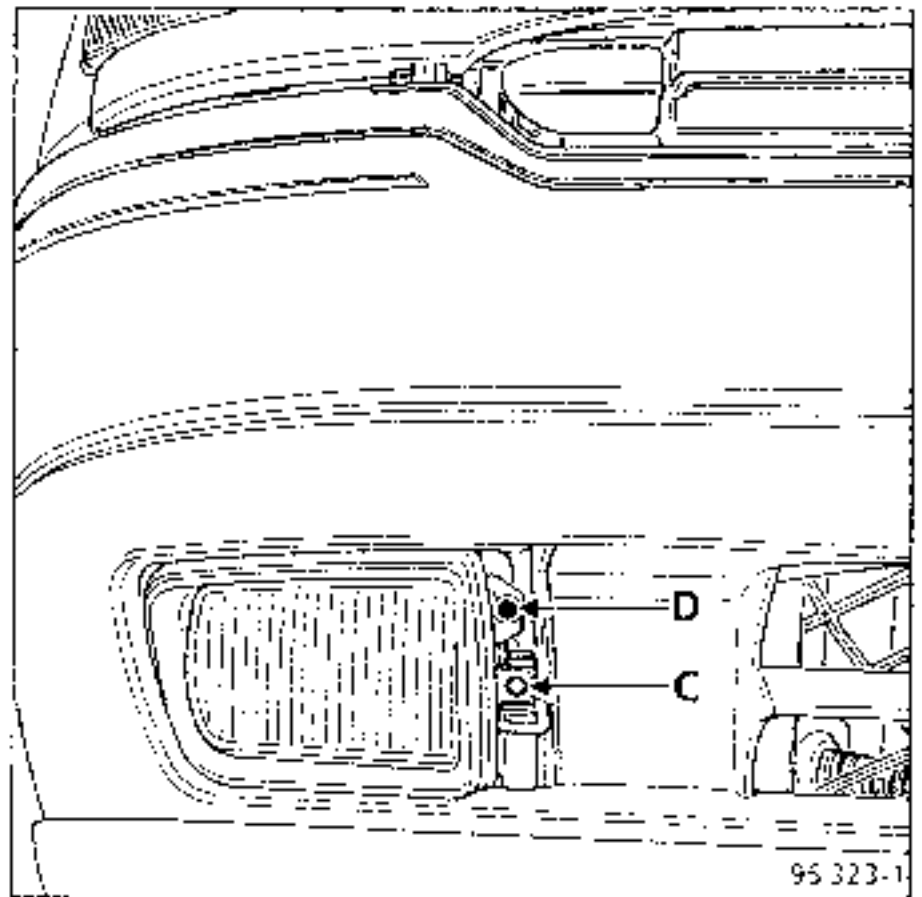
Pull the light unit out .

Disconnect the connector.

**REFITTING**

Refit the fog light.

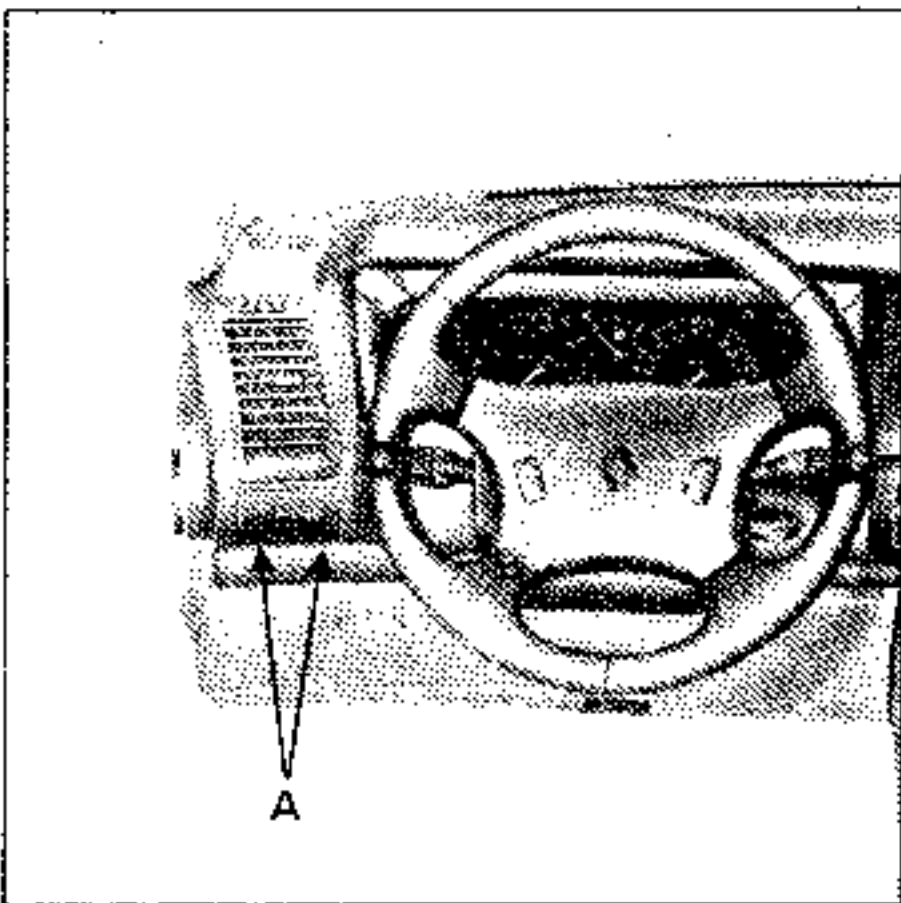
Adjust it using bolt (D).



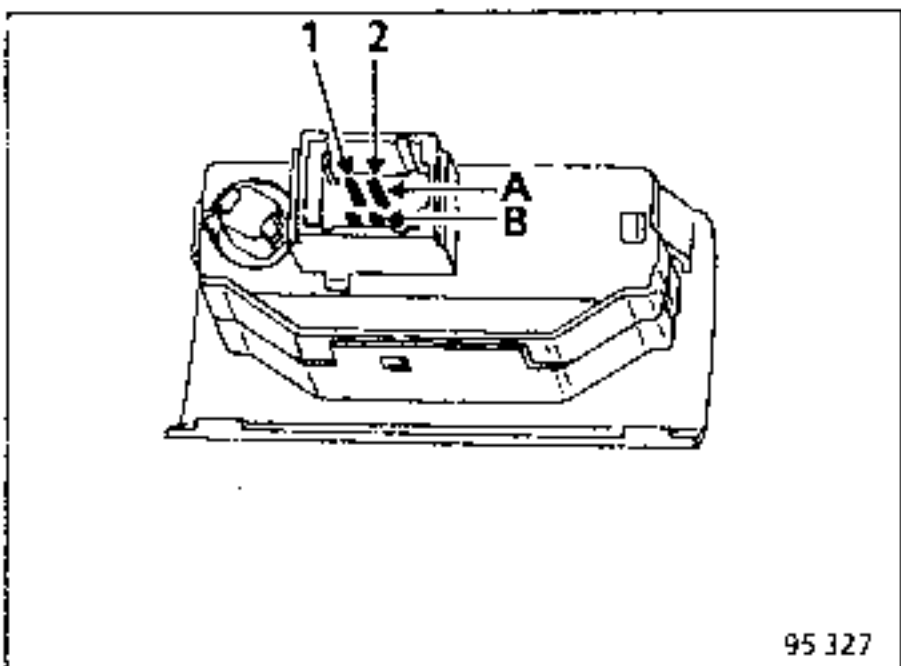
**REMOVAL - REFITTING THE CONTROL**

Remove the two lower mounting bolts (A).

Pull the assembly out



**CONNECTIONS**



95 327

**NOTE :** For the system to operate correctly, ensure that earth (A2) is correct.

Track	Allocation
A1	Light
A2	Earth
A3	Not used
B1	Adjustment control
B2	Dipped headlight
B3	Not used

**REMOVAL - REFITTING THE RECEIVER**

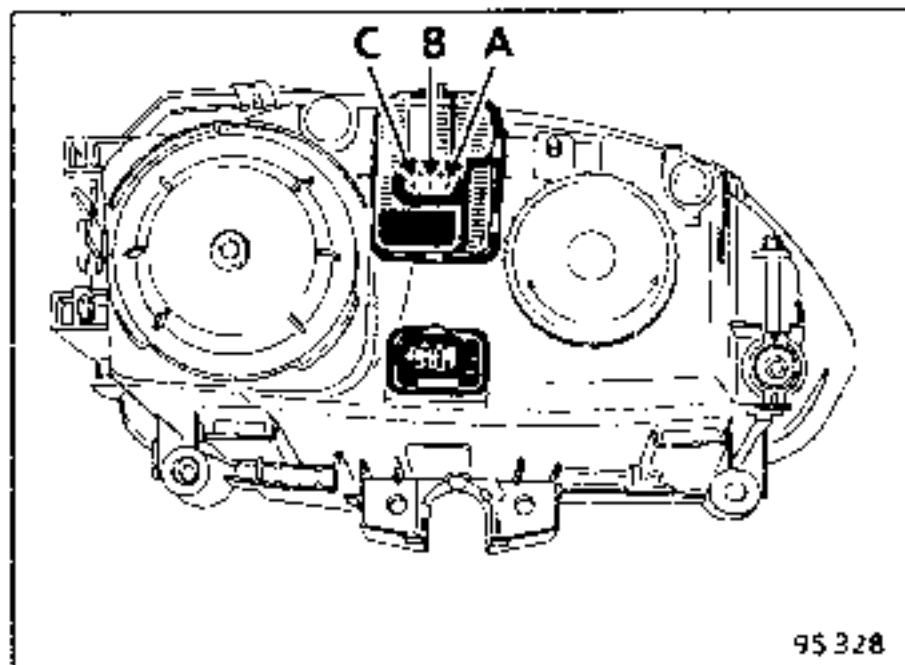
Remove the light unit (see page 80-3).

Turn the adjustment receiver by a quarter turn.

Release the light unit ball joint

Remove the assembly.

**CONNECTIONS**



95 328

Track	Allocation
A	Earth
B	Adjustment control
C	Dipped headlight information

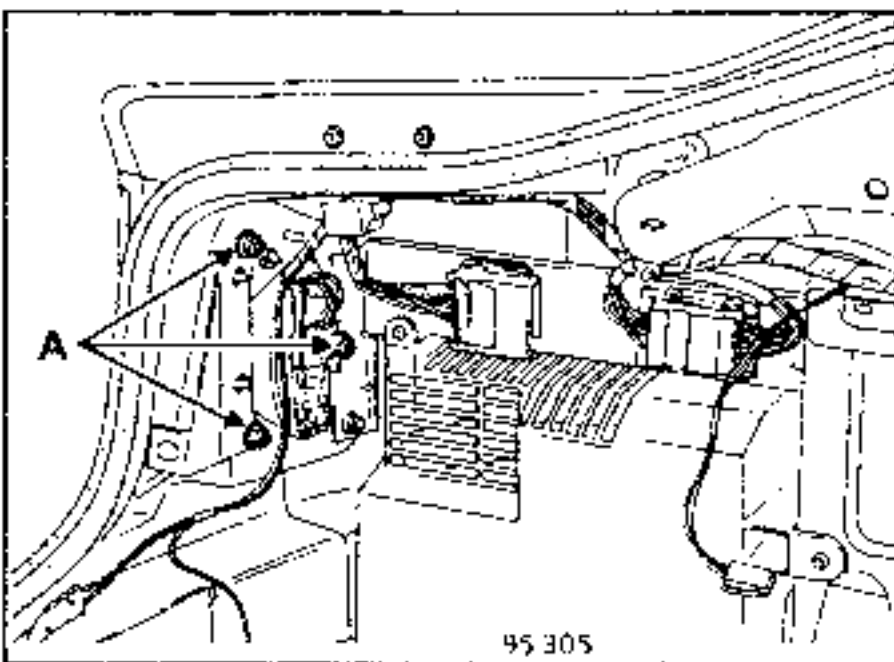
**REMOVAL - REFITTING LIGHTS IN THE WING**

Open the cover inside the luggage compartment.

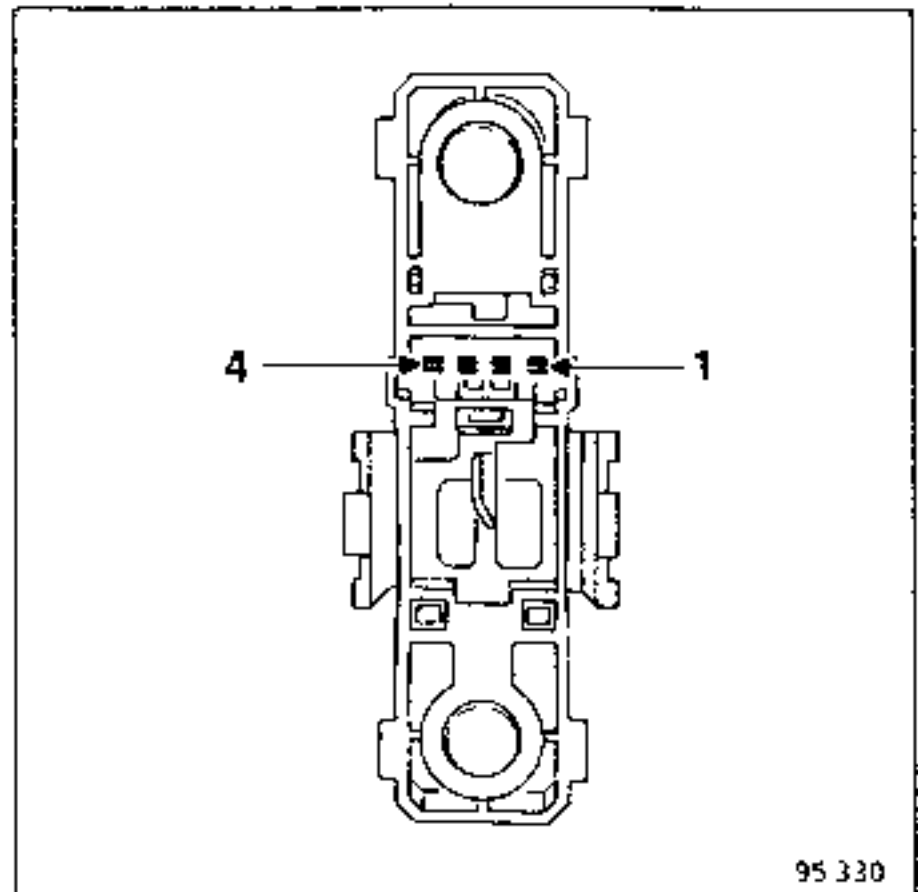
Disconnect the connector

Remove the three mounting nuts (A).

Pull the light unit out backwards.



**CONNECTIONS**



Track	Allocation
1	Earth
2	Light
3	Indicator
4	Stop

**NOTE :** The bulbs may be replaced without removing the light unit.



**REMOVAL - REFITTING TAILGATE LIGHTS**

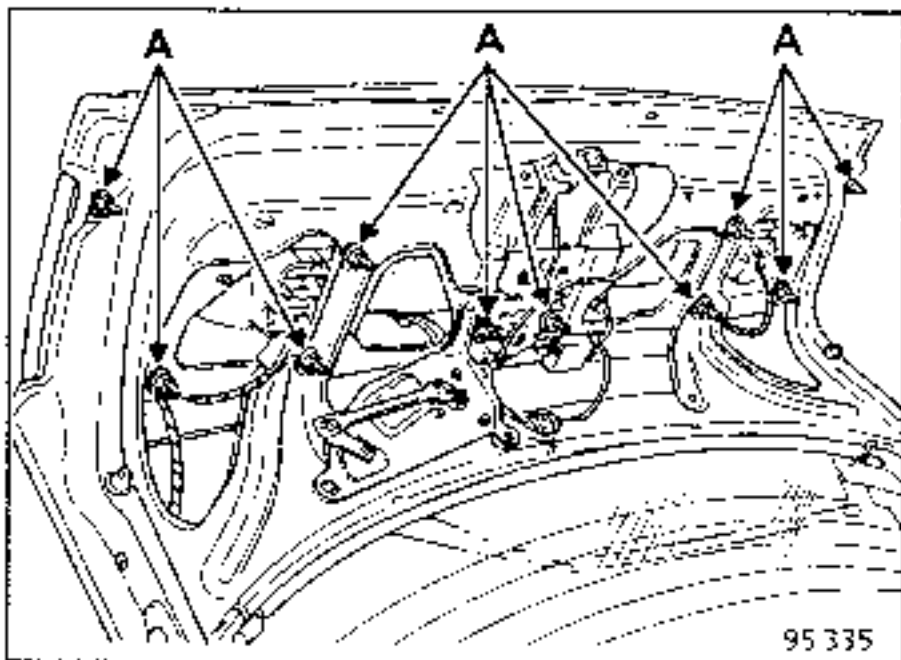
Remove:

- the registration plate and the nut behind it,
- the tail gate lining by the 9 Torx bolts.

Disconnect the rear lights and registration plate lights connectors.

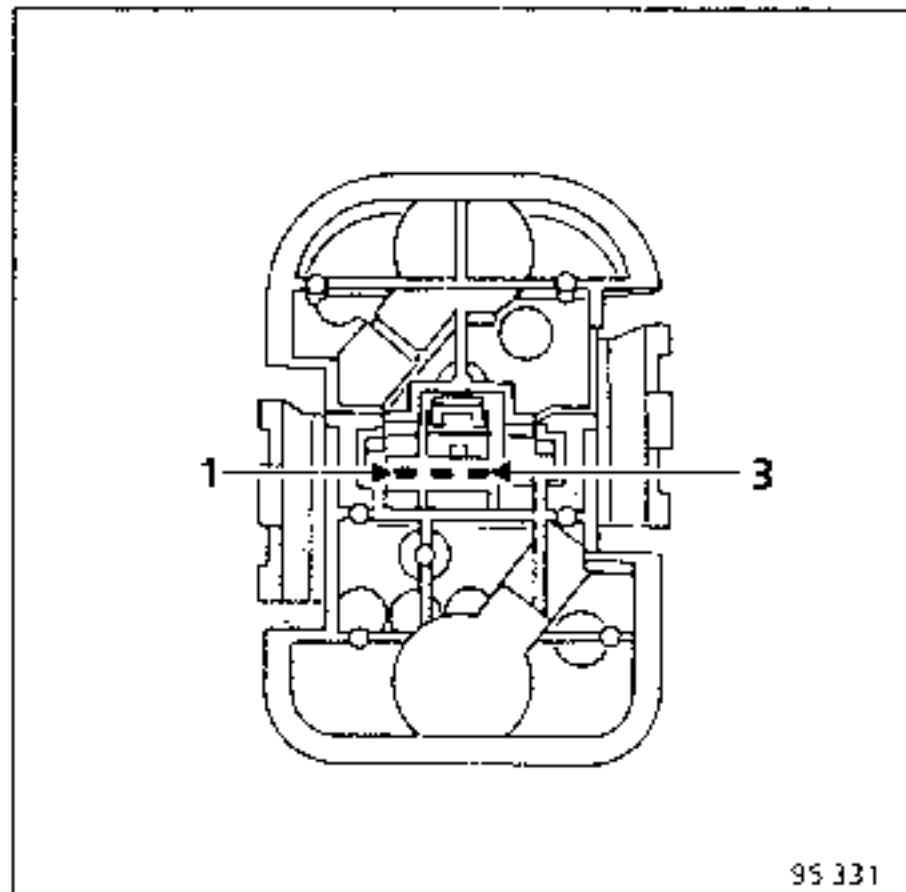
Remove the 10 mounting bolts (A).

Remove the assembly.



95 335

**CONNECTIONS**



95 331

Track	Allocation
1	Reversing light
2	Earth
3	Fog light

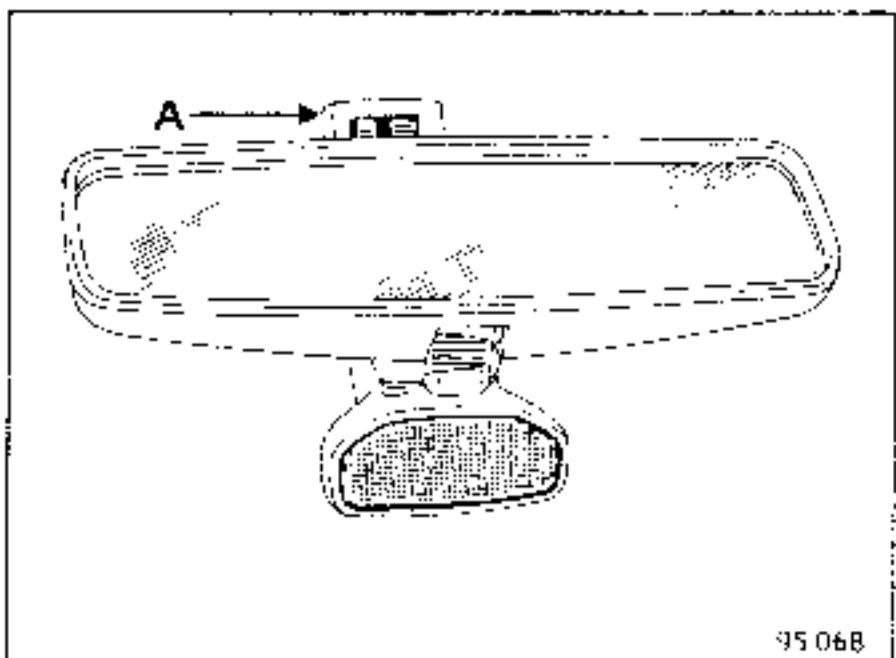
**FRONT COURTESY LIGHT ON REAR VIEW MIRROR**

**REMOVAL**

Unclip the upper cover (A).

Disconnect the connector on the rear view mirror support.

Remove the assembly.



**NOTE :** to replace the bulb, remove the glass cover using a small screwdriver.

**READING LIGHT**

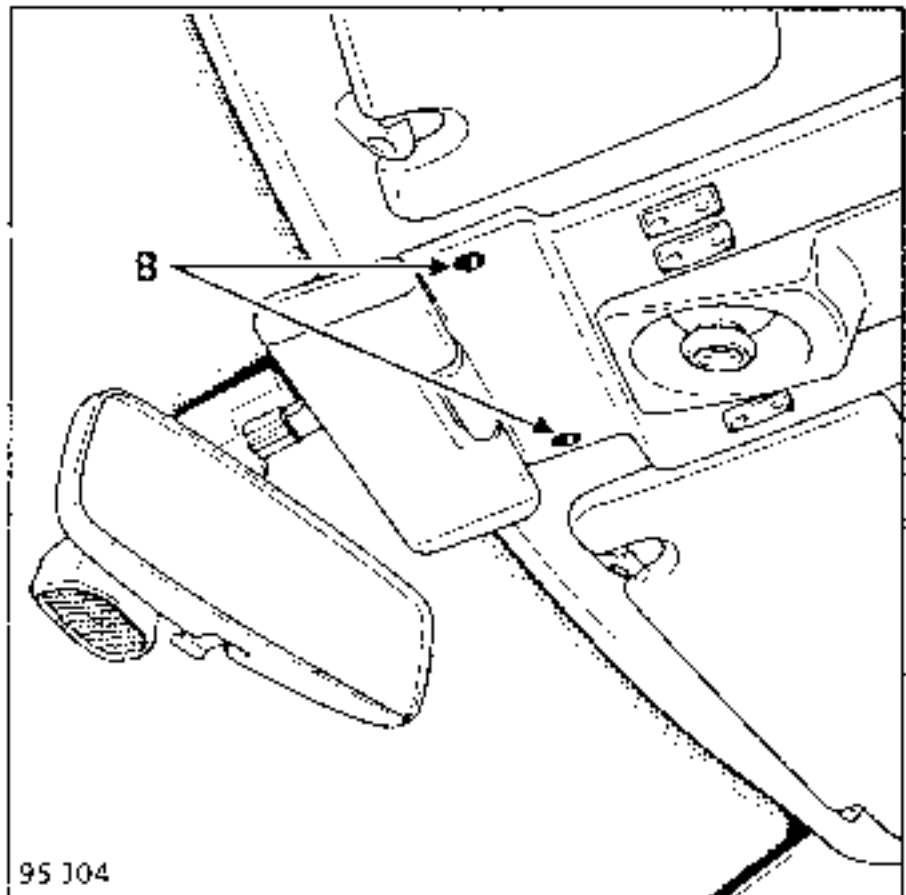
**REMOVAL**

Remove the roof console by undoing the two Torx bolts (B) after removing the upper rear view mirror cover and disconnecting its connector.

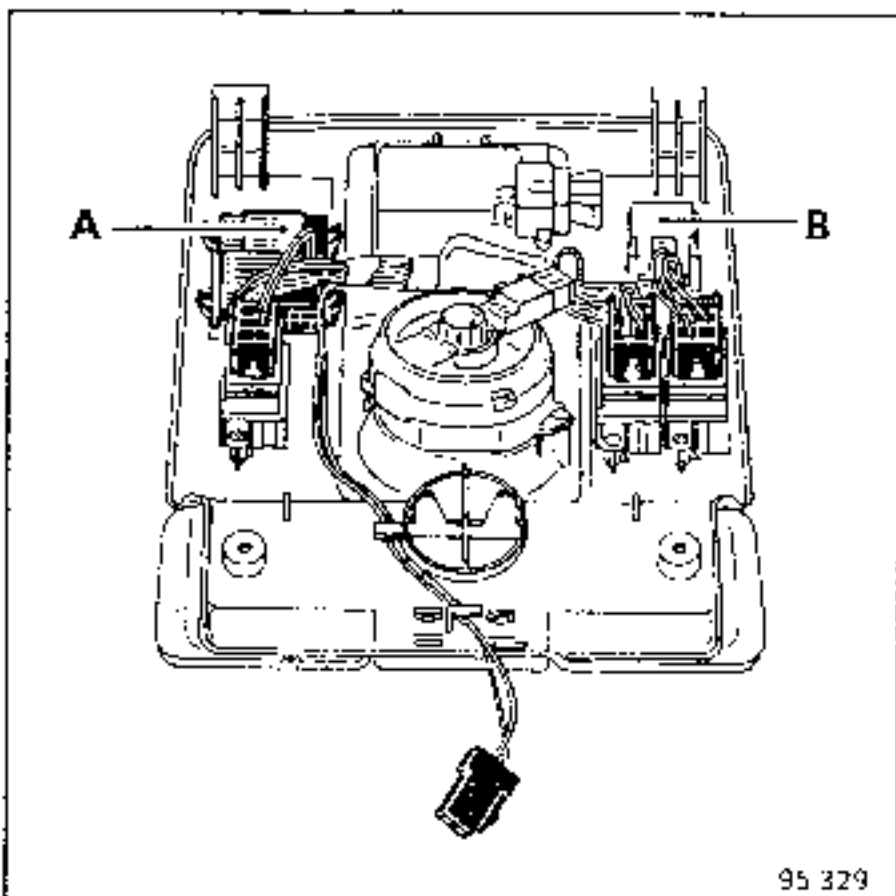
Release the console by pulling to the front.

Disconnect the 2 connectors.

Remove the assembly.



**CONNECTIONS (most complete)**



**Connector (B)**

Track	Allocation
A1	+ before ignition
A2	Not used
A3	Courtesy light earth via switch
B1	+ after ignition
B2	Not used
B3	Earth

**Connector (A)**

**Terminal board (white)**

Track	Allocation
1	Earth
2	Opening signal for door locks
3	Closing signal for door locks
4	Not used
5	Not used
6	Sun roof

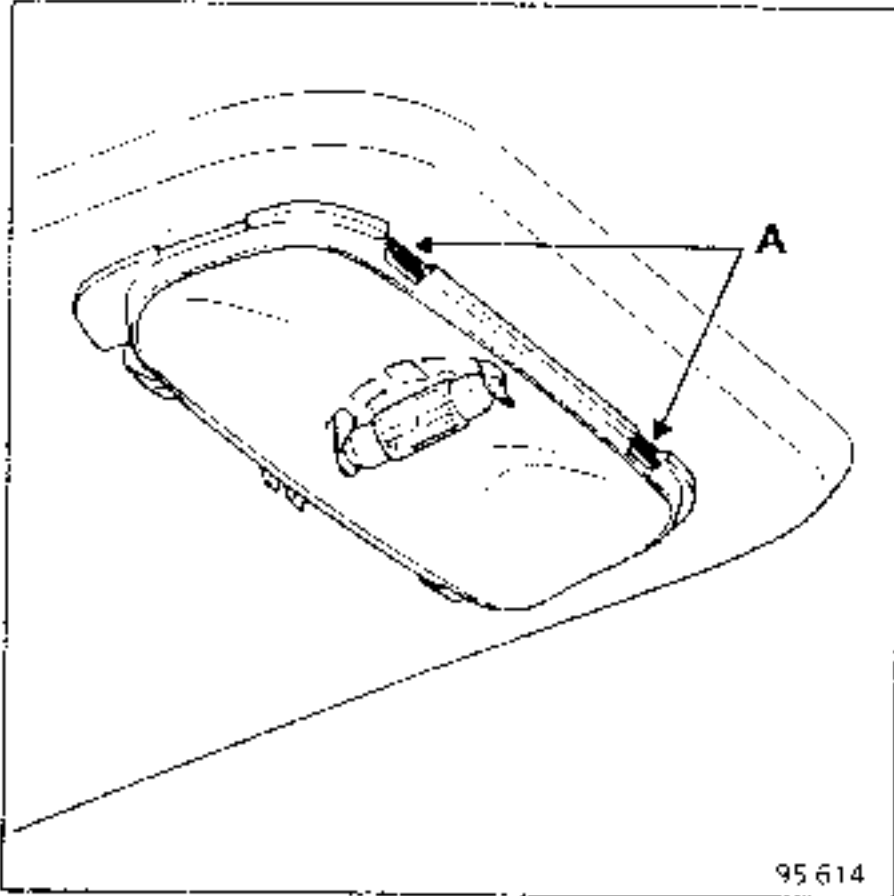
**Terminal board (black)**

Track	Allocation
1	Alarm stand by warning light
2	Ultrasound feed
3	Ultrasound sensing signal
4	IRT information
5	IRT information
6	Not used
7	+ after ignition
8	Courtesy light timer
9	+ before ignition

**CENTRAL COURTESY LIGHT**

**REMOVAL**

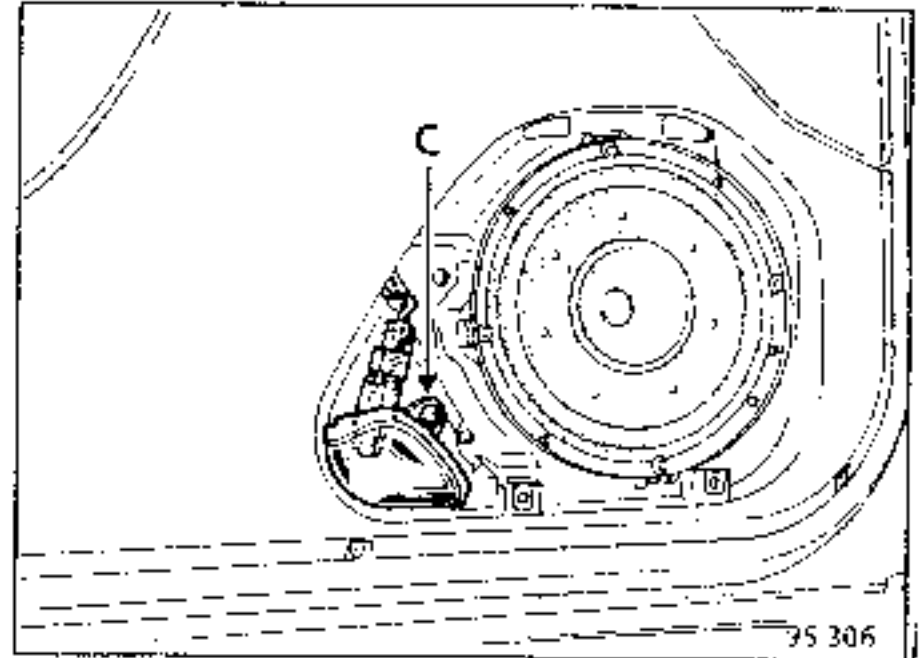
- Unclip:
- the lens,
  - the metal unit, releasing the two metal tabs (A)



**LIGHT AT BOTTOM OF DOOR**

**REMOVAL**

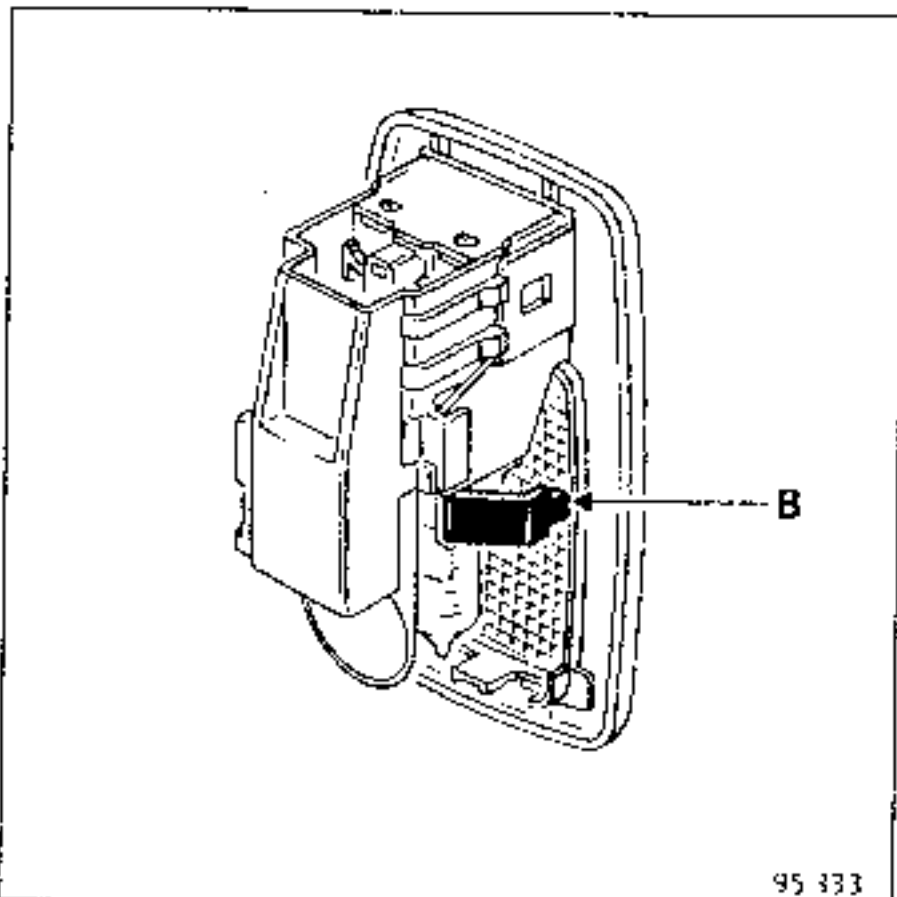
- Remove:
- the 2 Torx bolts for the loudspeaker cover and remove the cover,
  - the light bolt (C).



**REAR SEAT COURTESY LIGHT**

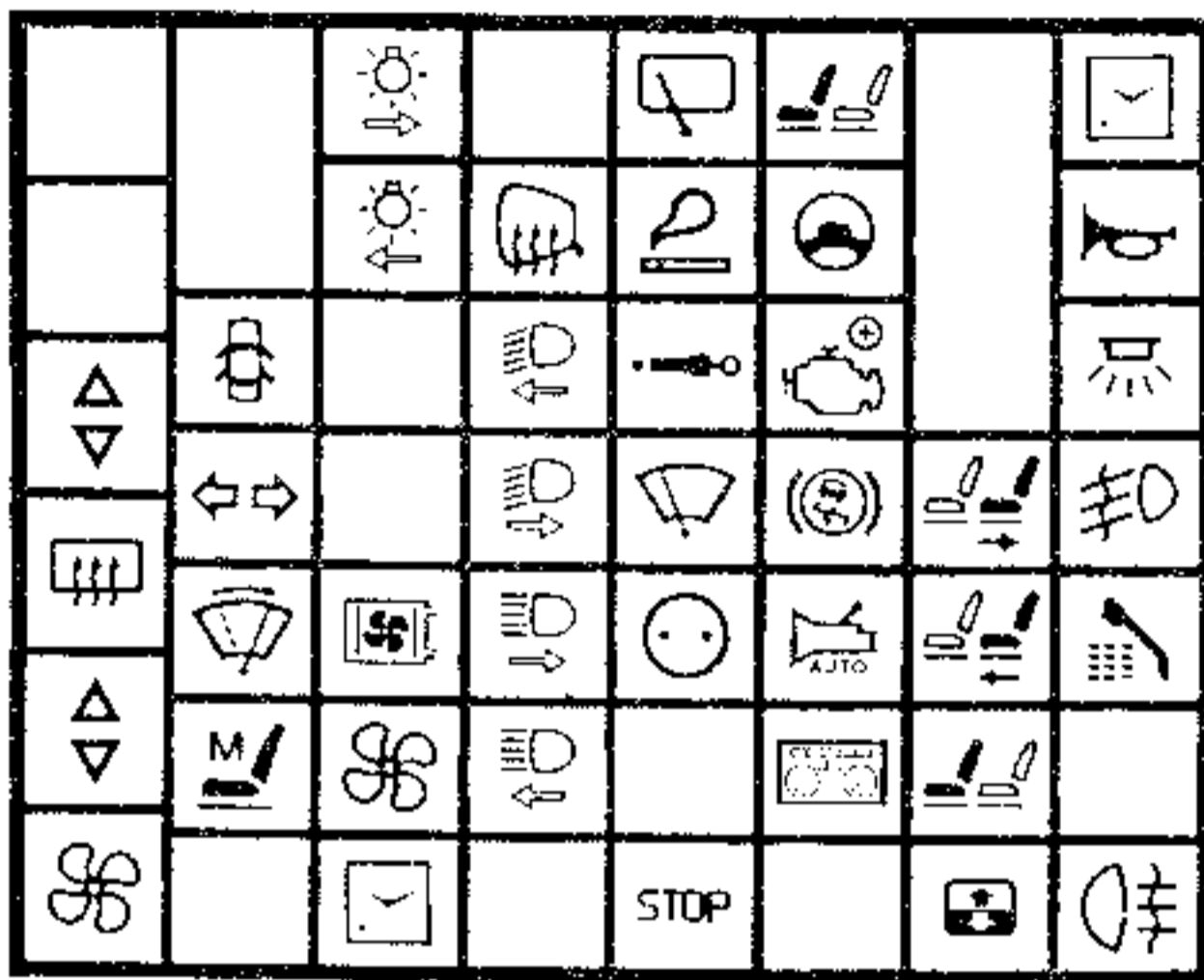
**REMOVAL**

Separate the light from the trim slightly and press the metal tab (B) with a small screwdriver.



**FUSE BOX (passenger compartment side)**

This fuse box is located in the passenger compartment on the driver's side




























95 041-1






Allocation of fuses (depending on equipment level)

Symbols	Rating (A)	Allocation
	40	Front and rear right hand window winders
	40	Rear screen de-icer
	40	Front and rear left hand window winders
	40	Heating
	25	Central door locking
	10	Direction indicators, hazard warning lights
	20	Front windscreen wiper park
	25	Driver's seat (memory)
	10	Right hand side light - lighting rheostat
	10	Left hand side light

Allocation of fuses (depending on equipment level) (Cont)

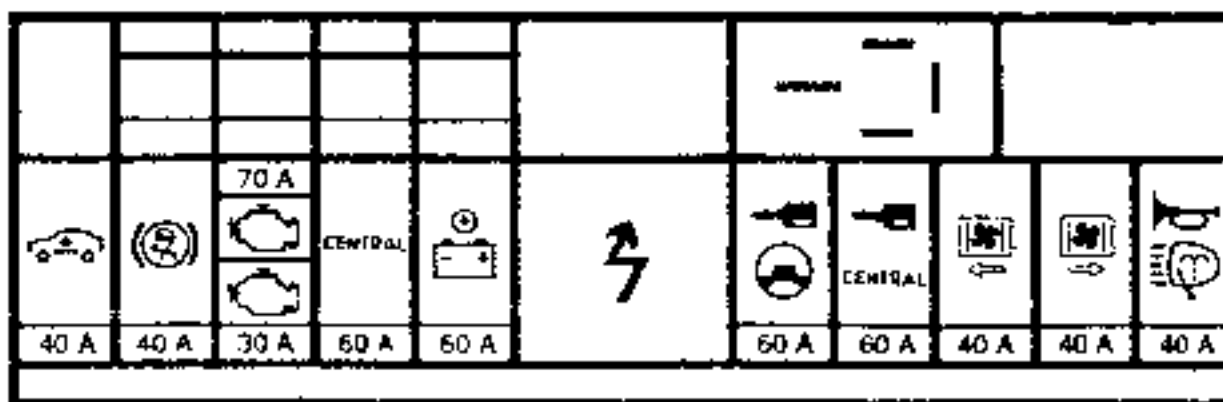
Symbols	Rating (A)	Allocation
	20	Engine cooling fan
	15	Heating control
	10	Courtesy mirror lighting, alarm, driver's seat position memory
	10	Rear view mirror de-icer
	15	Left hand dipped headlight - Headlight adjustment
	15	Right hand dipped headlight
	15	Right hand full beam headlight
	15	Left hand full beam headlight
	15	Rear screen wiper - Reversing lights
	20	Cigar lighter
	15	Trim height correction
	25	Front windscreen wiper and washer
	7,5	Accessories socket
	10	Stop lights
	30	Passenger seat (seat back)
	5	Variable assistance power steering
	20	engine + after ignition
	10	A.B.S.
	5	Automatic transmission
	10	Instrument panel
	30	Right hand rear seat
	30	Left hand rear seat
	30	Passenger seat (vertical and longitudinal position)
	25	Sun roof - heated seats
	10	Clock- Alarm - Computer memories

Allocation of fuses (depending on equipment level) (Cont)












Symbols	Rating (A)	Allocation
	25	Horn
	10	Courtesy lights
	25	Front fog lights
	15	Radio- telephone
	10	Rear fog lights

FUSE BOX (engine side)

This fuse box is located in the engine compartment behind the battery.



Allocation of fuses (depending on equipment level)

Symbols	Allocation
 40 A	Controlled suspension
 40 A	A.B.S.
 70 A  30 A	Petrol engine injection relay (30 A), pre and post heating unit for diesel engine (70 A)
 50 A	After ignition relay, horn, telephone, central door locking, courtesy light, clock*
 60 A	Heating, sun roof, electric seats, electric windows*
 50 A	Anti-theft switch, dipped headlights, starter relay, AT, alarm*
 60 A	After ignition relay, front windscreen wiper, rear screen wiper, cigar lighter*
 40 A	Left hand engine cooling fan
 40 A	Right hand engine cooling fan
 40 A	Horn, headlight washers

\* Certain functions also use a fuse in the passenger compartment



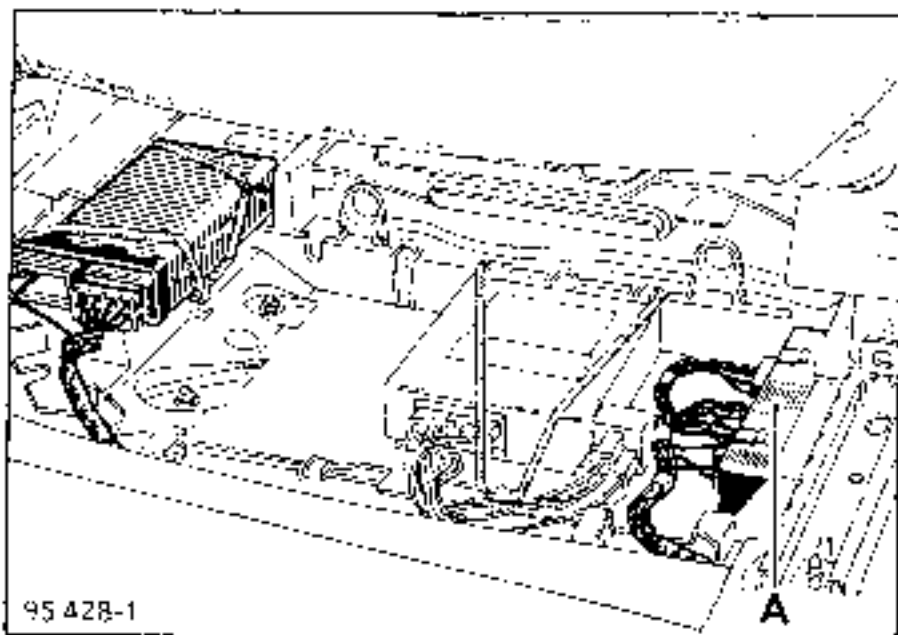
**DESCRIPTION**

The anti-intrusion alarm comprises :

- 1 alarm computer,
- 1 volumetric detection unit, (ultrasound), with warning light,
- 1 auto-feed siren with key lock to enable or disable,
- 1 key lock for deactivating the horn,
- 1 decoder which receives IRT information allowing the alarm to be put on standby or deactivated.

**LOCATION OF COMPONENTS**

- Alarm computer (A).  
Held by a strap under the passenger seat on the right hand side.



- Volumetric detection unit.  
In the roof console with the IRT receiver and the warning light.
- Auto-fed siren (B)  
On the right hand side under the scuttle panel, It is fitted with a lock with a remote key, located on the cover. The ignition key is used here. Ensure the cover is closed to prevent dust and water entering.

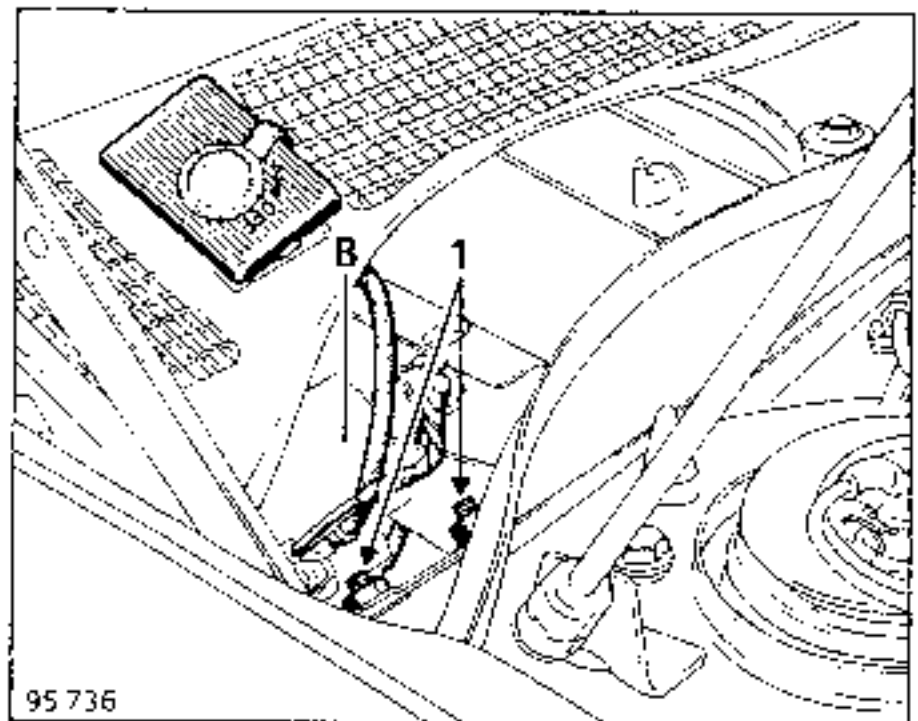
**REMOVING THE SIREN**

Open the bonnet.

Remove:

- the two wiper arms,
- the two mounting bolts for the scuttle panel and turn the five quarter turn clips,
- the scuttle panel seal.

Remove the siren lock mounted on the scuttle panel and turn it half a turn to give as much wire as possible to move the scuttle panel as far up on the windscreen as possible (see picture).



Position the key on "OFF".

Disconnect the siren 3 track feed connector.

Remove the two siren mounting nuts (1)

Remove the siren and its mounting.

Disconnect the lock connector to remove it from the scuttle panel and reconnect it immediately, to disarm the auto-feed.

**NOTE :** When replacing the siren with a new unit, after removing the old unit as described above, the new unit must be operated three times with a pause of  $25 \pm 5$  seconds between each operation.

Dampen the siren sound by putting it on a cloth, diaphragm side down.

When fitting the new siren, drive for 2 1/2 hours to ensure the internal battery is fully charged, to allow correct automatic operation.

**IMPORTANT :** do not forget to return the key to the "ON" position before returning the vehicle to the customer.

#### Alarm disarming lock.

This is located in the glovebox, at the top, next to the light.

The ignition key is used here.

When working on the vehicle, disarm the alarm. Ensure the siren is also switched off.

Remember to rearm the alarm and the siren before returning the vehicle to the customer.

#### Decoder.

This is located behind the glovebox. To gain access to this unit, the 6 mounting bolts inside the glovebox must be removed.

After receiving the IRT information, this unit controls the alarm condition (stand by or disarmed)

This unit also controls central door locking and the courtesy light timer

#### OPERATION

This alarm gives the vehicle:

- volumetric protection of the passenger compartment by an ultrasound field. Any change in interior noise level (disruption of emission and reception of ultrasound signals), will activate the alarm,
- perimeter protection ; the alarm is connected to the opening elements on the vehicle (front and rear doors, tail gate and bonnet), if one of these elements is opened, the alarm will be activated immediately.

#### ALARM SIGNALS - VISUAL AND AURAL

As determined by current legislation, when the alarm is activated, the dipped headlights\*, the hazard warning lights and the siren will operate alternately for 25 seconds ( $\pm 5$  s). After 25 seconds ( $\pm 5$  s) silence, the alarm will reset.

(\* depending on country)

**NOTE :** after 3 successive activations, the alarm de-activates, but the warning light remains flashing, simulating stand by.

#### PUTTING THE ALARM INTO STAND BY.

The alarm is put into stand by when the infra red control is used to lock the doors (does not operate with the door key). A closing signal is sent via track A7 of the decoder via the IRT, to track 10 of the alarm computer (15 track green).

This signal operates the perimeter and volumetric monitoring systems. The light on the roof console illuminates and the hazard warning lights flash twice to indicate the systems are active. The roof console warning light remains illuminated for 20 seconds, then flashes. During this period, the sensors monitor and assess the passenger compartment. They reset each time the alarm is set to take into account any change in volume (luggage, parcels etc).

After the alarm has been set, any change in volume (example : a window is broken, a foreign body comes into the passenger compartment or any other movement in the passenger compartment) disturbs the ultrasound emission and reception fields and sets the alarm off immediately.

The same applies for the vehicle's opening elements which send an earth to the computer if opened via the door, bonnet and tail gate switches.

The alarm may only operate correctly if all the doors, the bonnet, the tail gate, the windows and the sun roof (depending on version) are correctly closed.

**ATTENTION** : If an animal is left in the vehicle, its movements may trigger the alarm.

If the alarm is set off incorrectly, check that the user has nothing on the rear view mirror which could swing.

When setting the alarm system, check the hazard warning lights flash. if they do not, one of the doors, the bonnet or the tail gate is not correctly closed. Perimeter detection is not ensured.

When the element is closed, the lights flash to show the system is correctly activated..

#### TURNING THE ALARM OFF

The alarm is turned off when the infra red remote control is used to unlock the doors. An opening signal is sent via track **A6** from the decoder via the IRT, to track **11** of the alarm computer (**15** track green ) (see diagram).

This signal turns the volumetric and perimeter detection systems off (this also applies when the alarm has been set off).

The hazard warning lights flash and the roof console warning light extinguish.

**ATTENTION** : if the door key is used, the alarm is still on stand by and will not be turned off if it has been set off.

The lock in the glove box confirms or cancels the last alarm condition authorised by the remote control.

#### DURATION OF OPERATION

After 5 weeks of continuous stand by, the battery will be drained so that the vehicle will not operate correctly.

#### TESTING THE ALARM

Use the IRT to set the alarm.

Check that the hazard warning lights flash twice and the warning light illuminates ; if not, turn the alarm disarming lock in the glovebox.

#### PERIMETER DETECTION TEST

Use the IRT to set the alarm.

Unlock a door using the key and open it ; the alarm should sound (dipped headlights\*, hazard warning lights, and siren operate alternately).

(\* depending on country)

Stop the alarm using the IRT.

#### VOLUMETRIC DETECTION TEST

Half open a front or rear window.

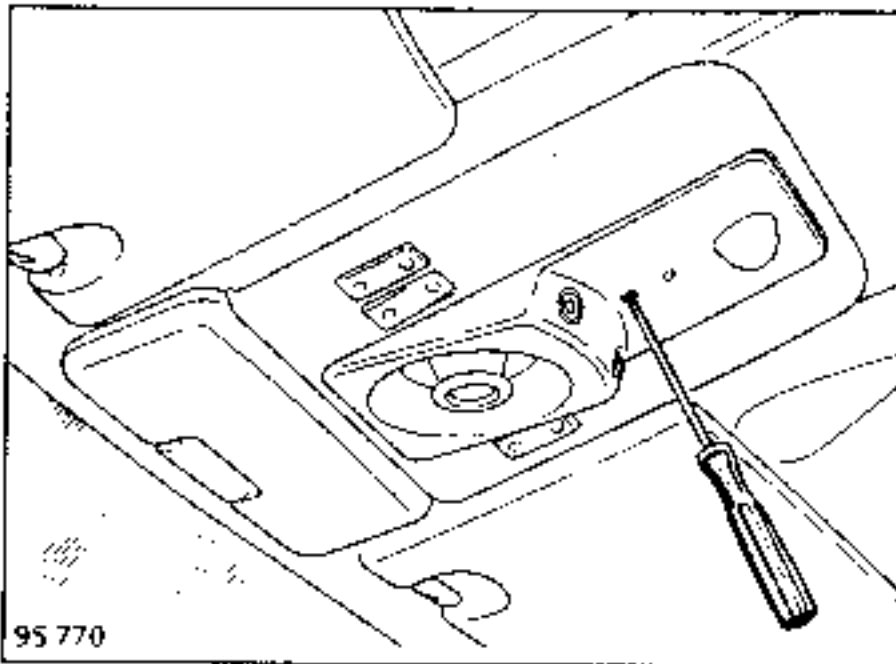
Set the alarm using the IRT and wait until the warning light flashes.

Put your arm through the half open window and move it around in the passenger compartment ; the alarm should sound. If it does not, adjust the sensitivity of the ultrasound module.

**ADJUSTING ULTRASOUND SENSITIVITY**

Remove the rubber plug next to the warning light.

Use a small screwdriver. Turn the potentiometer clockwise to increase sensitivity, or anti clockwise to reduce sensitivity.



**SENSITIVITY ADJUSTMENT TABLE**

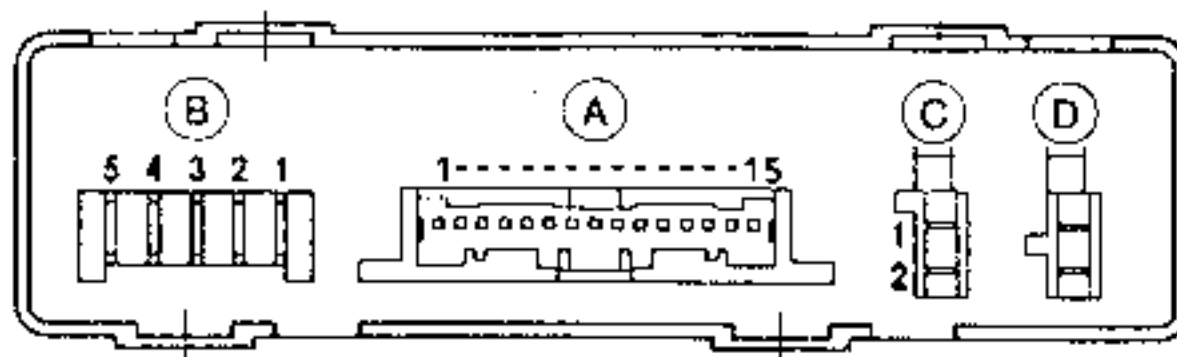
Adjust at the potentiometer

Reduce the value to reduce sensitivity and vice versa. The value is measured between tracks **B1** and **B2** of the detection computer circuit.

**NOTE :** the ultrasound receiver circuit boards, obtained as a spare part are set for "cloth" trim .  
Adjust the setting for "leather" trim versions.

Trim	
Cloth	Leather
90 kΩ	70 kΩ

ALARM COMPUTER CONNECTOR TRACK ALLOCATION



(A) 15 track

- 1 Alarm warning light
- 2 Ultrasound detection
- 3 Ultrasound activation
- 4 Front right hand door 1st notch switch
- 5 Bonnet 1st notch switch
- 6 Tail gate switch
- 7 Rear right hand door 1st notch switch
- 8 Rear left hand door 1st notch switch
- 9 Front left hand door 1st notch switch
- 10 Closing information IRT
- 11 Opening information IRT
- 12 Earth
- 13 + 12 V accessories (1st position on ignition switch)
- 14 + 12 V after ignition
- 15 Siren auto-feed control

(B) 5 track

- 1 Left hand direction indicators
- 2 Right hand direction indicators
- 3 Dipped headlights\*
- 4 Siren
- 5 + 12 V before ignition

(C) 2 track

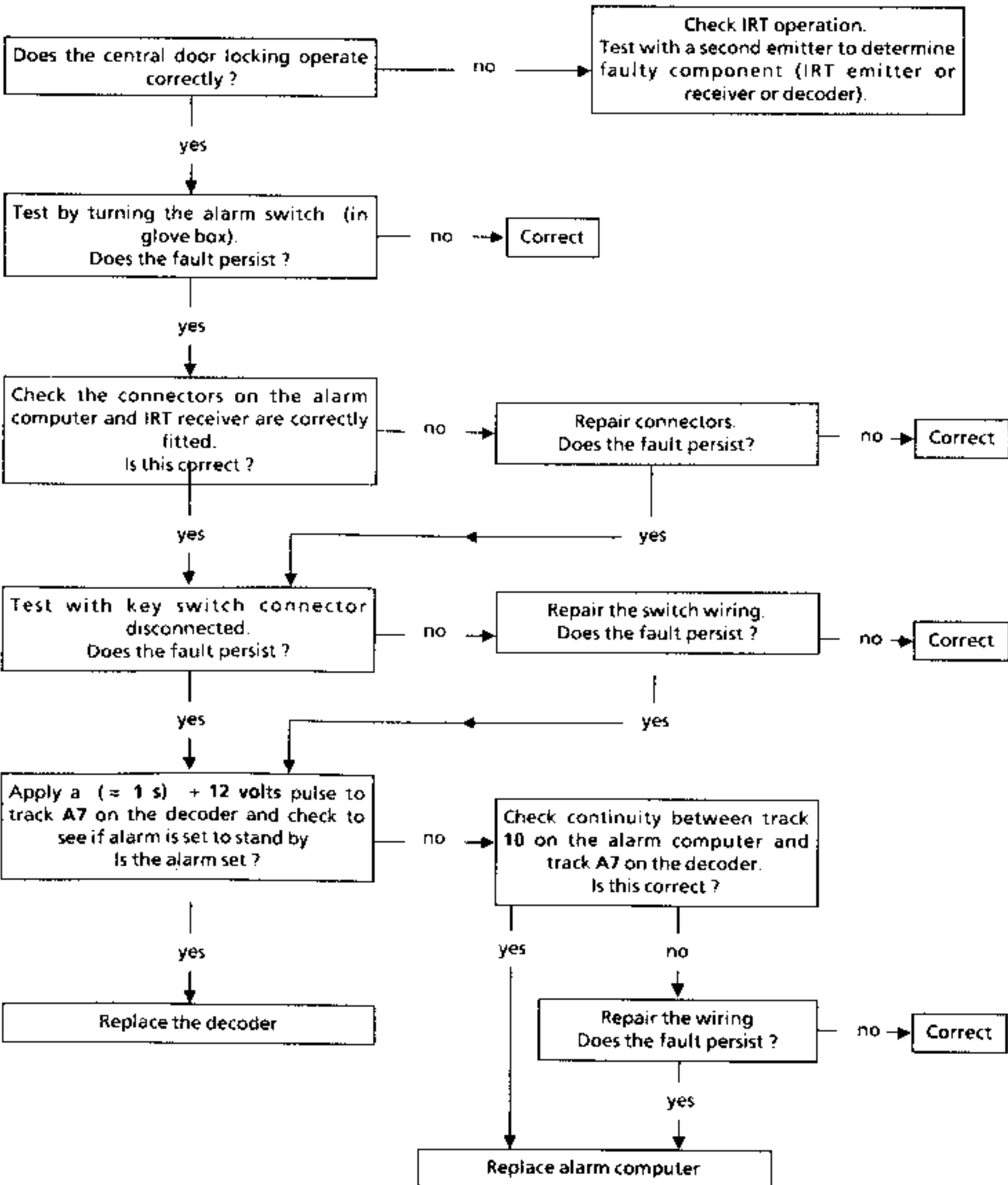
- 1 Key switch (glovebox)
- 2 Key switch (glovebox)

(D) Not used

\* depending on country.

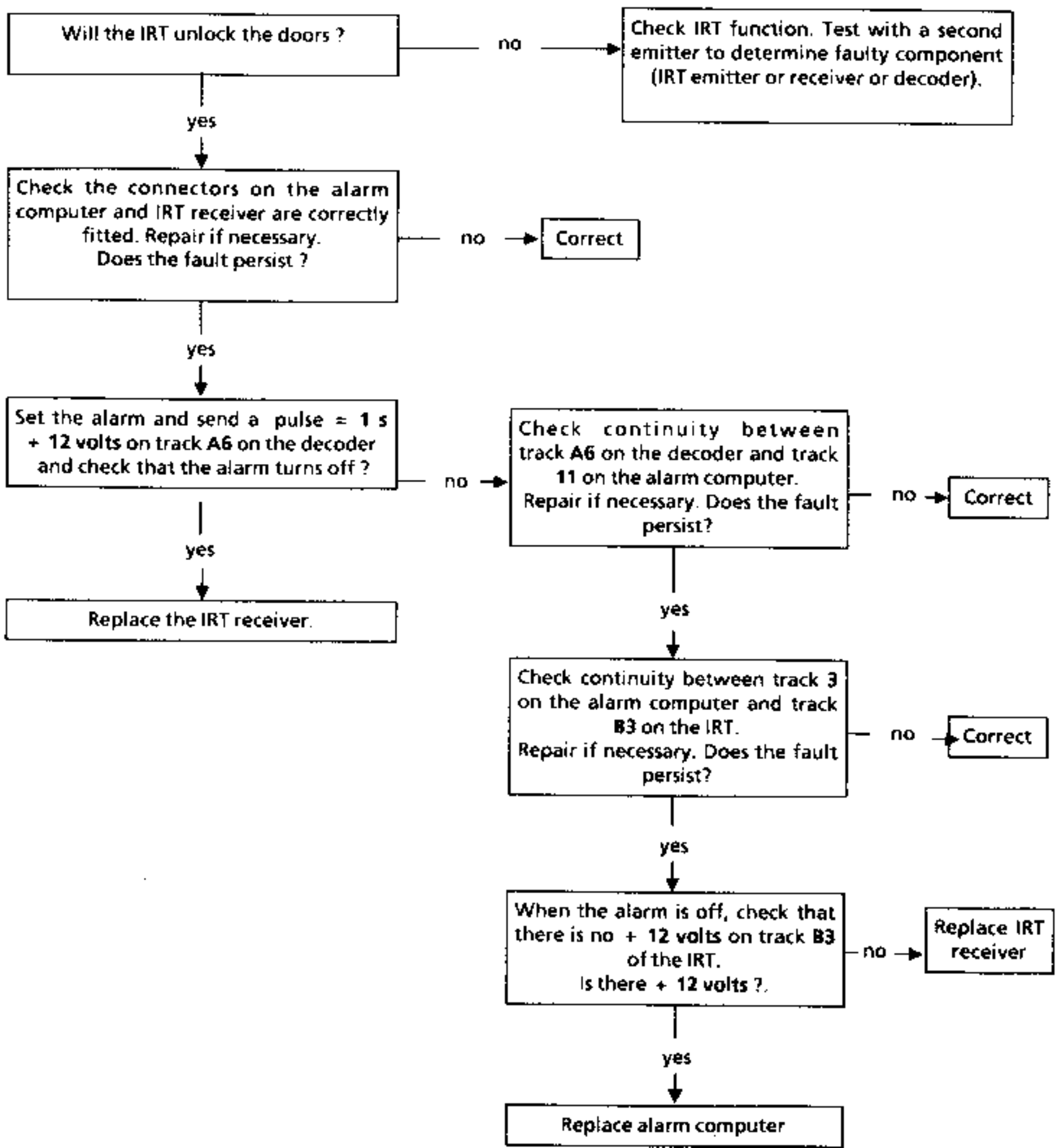
**FAULT FINDING (ALP1)**

**IRT WILL NOT SET ALARM**



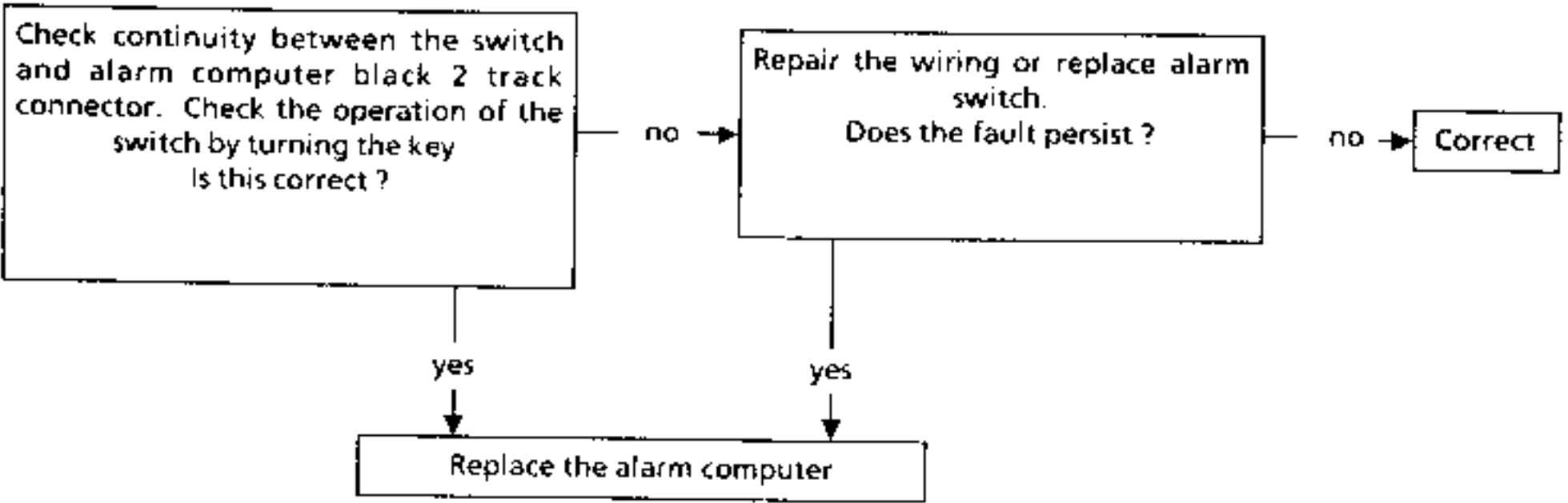
FAULT FINDING (ALP2)

IRT WILL NOT DE-ACTIVATE THE ALARM



FAULT FINDING (ALP3)

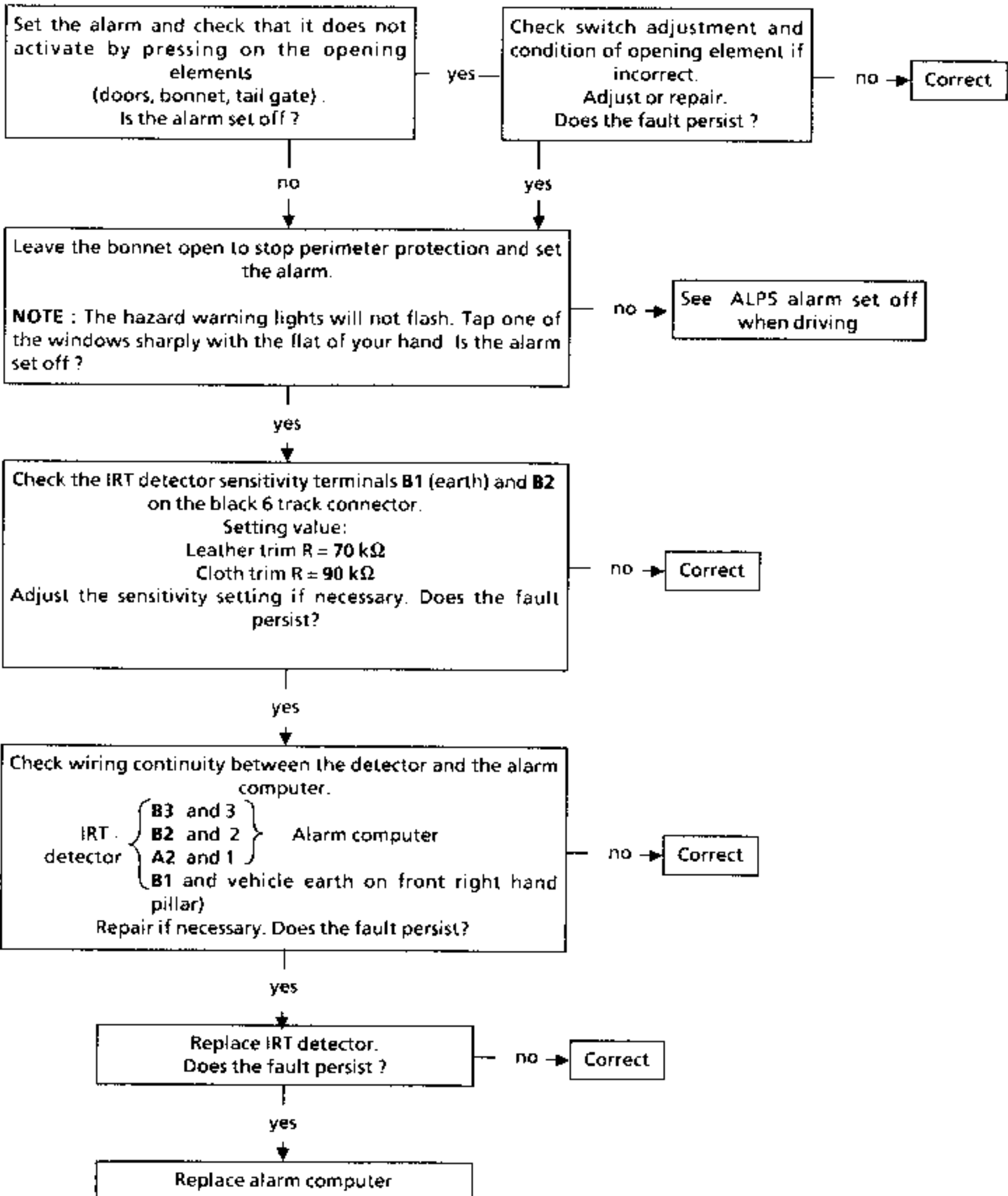
KEY SWITCH WILL NOT TURN ALARM OFF





FAULT FINDING (ALP4)

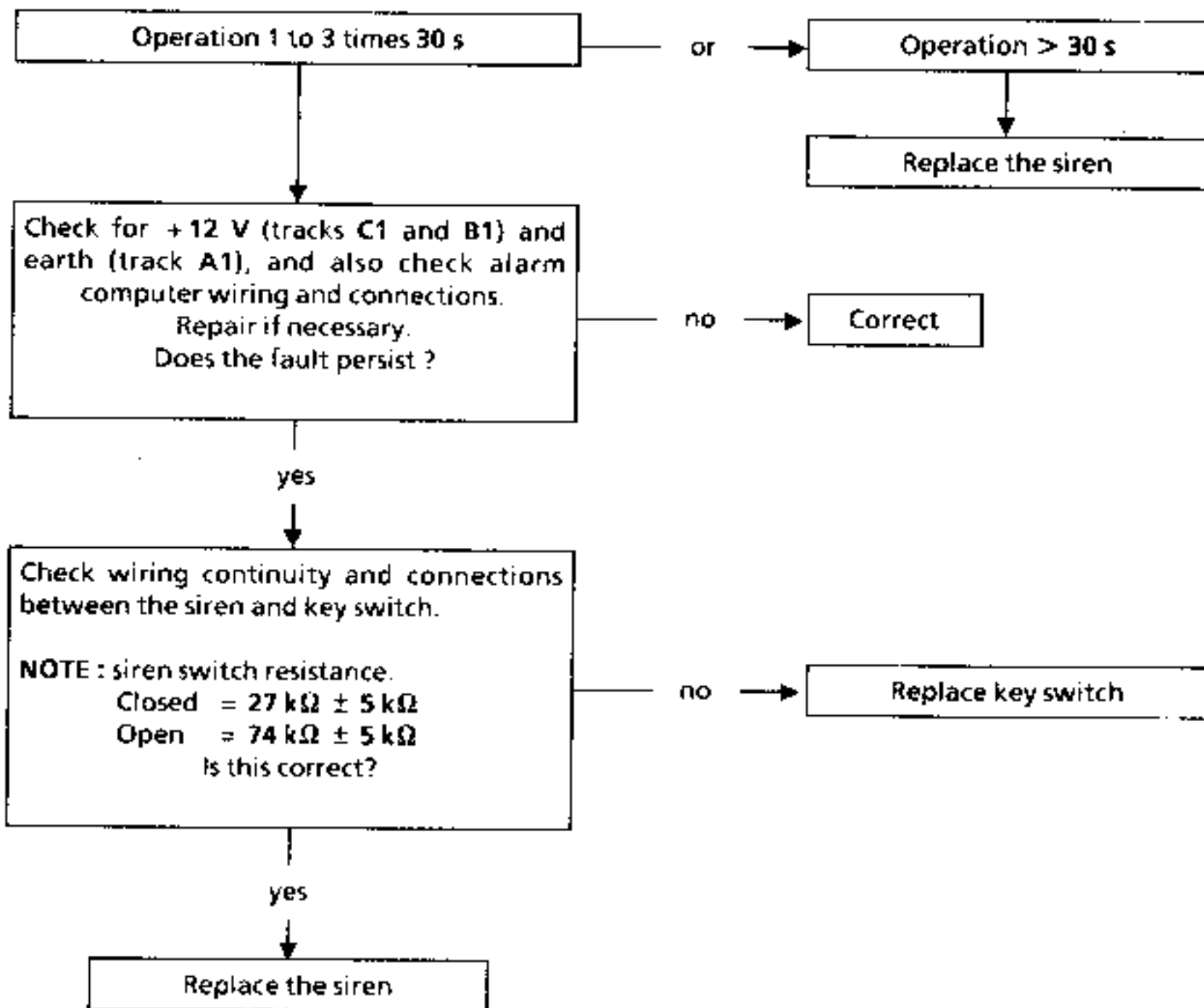
ALARM SET OFF INCORRECTLY - ALARM ON STAND BY



FAULT FINDING (ALP5)

INCORRECT OPERATION

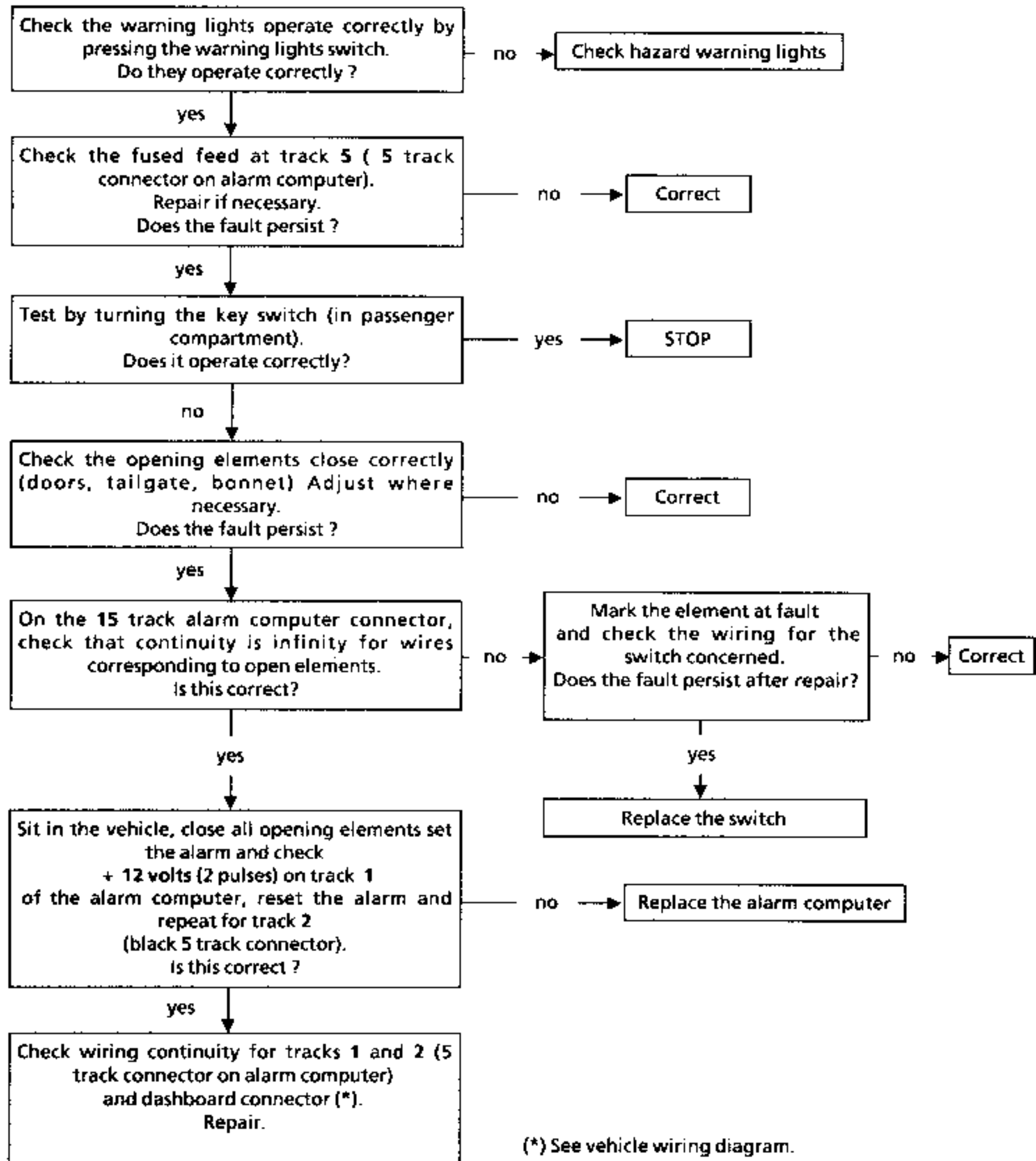
Alarm set off while driving



**FAULT FINDING (ALP6)**

**INCORRECT OPERATION**

Hazard warning lights do not illuminate when the alarm is set

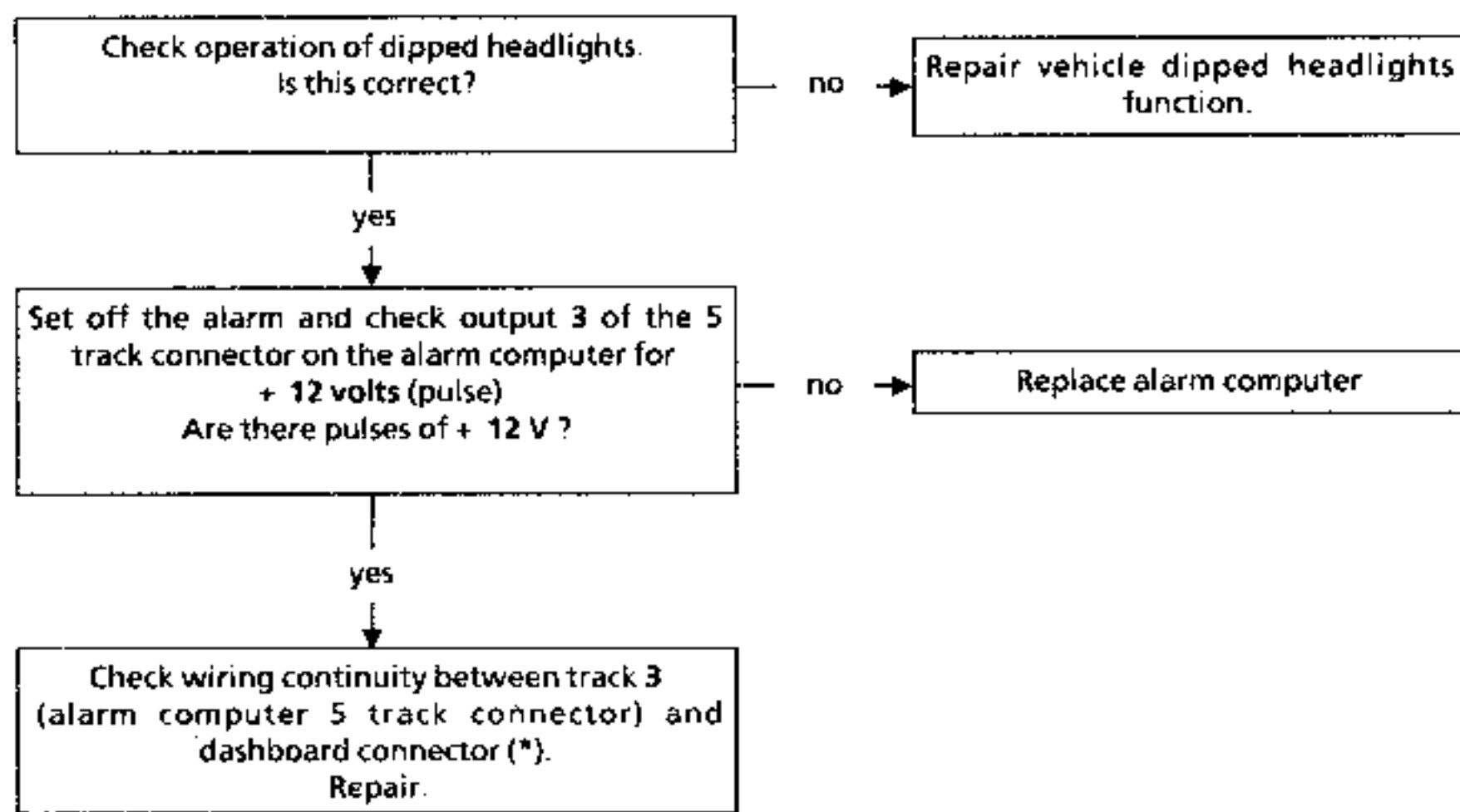


(\*) See vehicle wiring diagram.

**FAULT FINDING (ALP7)**

**INCORRECT OPERATION**

Dipped headlight do not operate when alarm is set off

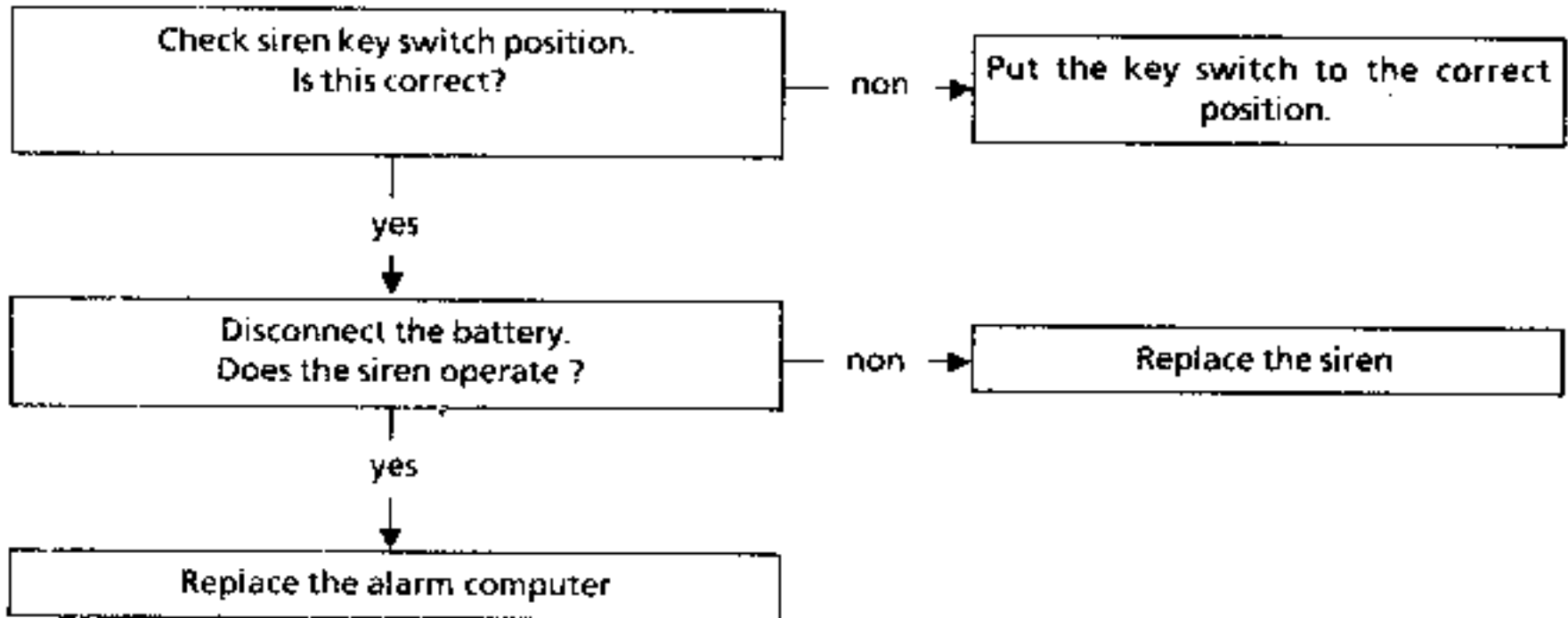


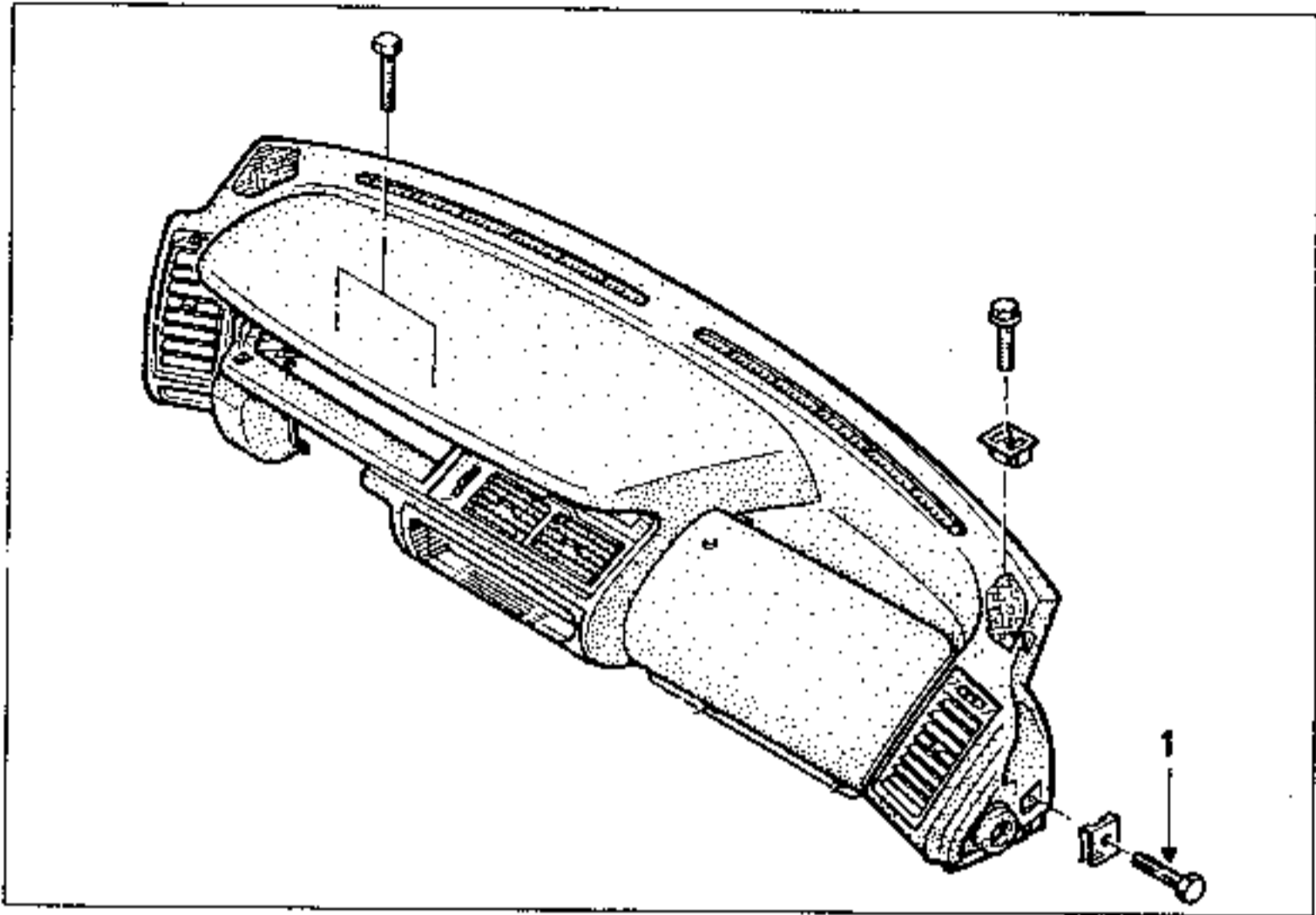
(\* ) see vehicle wiring diagram

**FAULT FINDING (ALP8)**

**INCORRECT OPERATION**

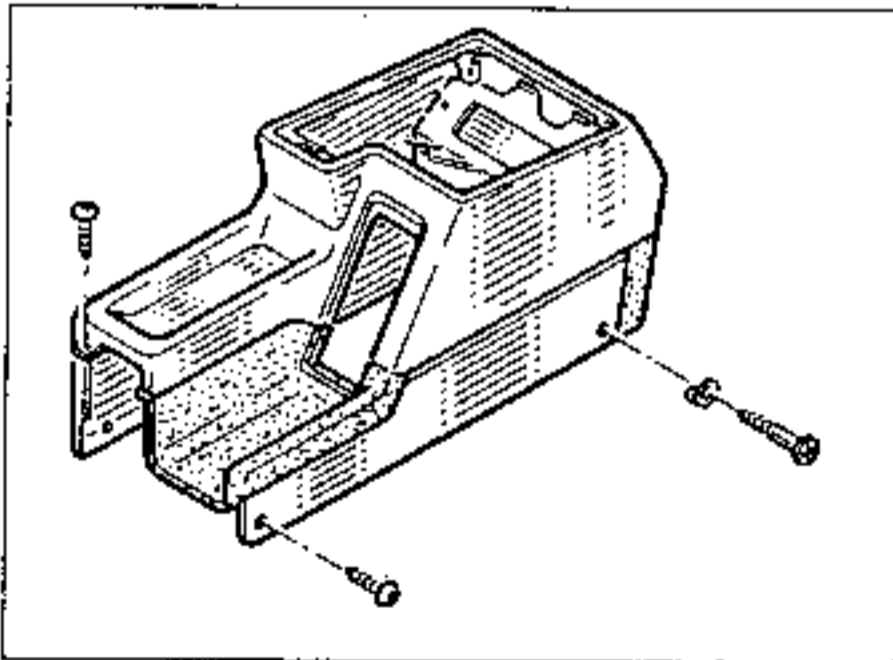
**No siren**



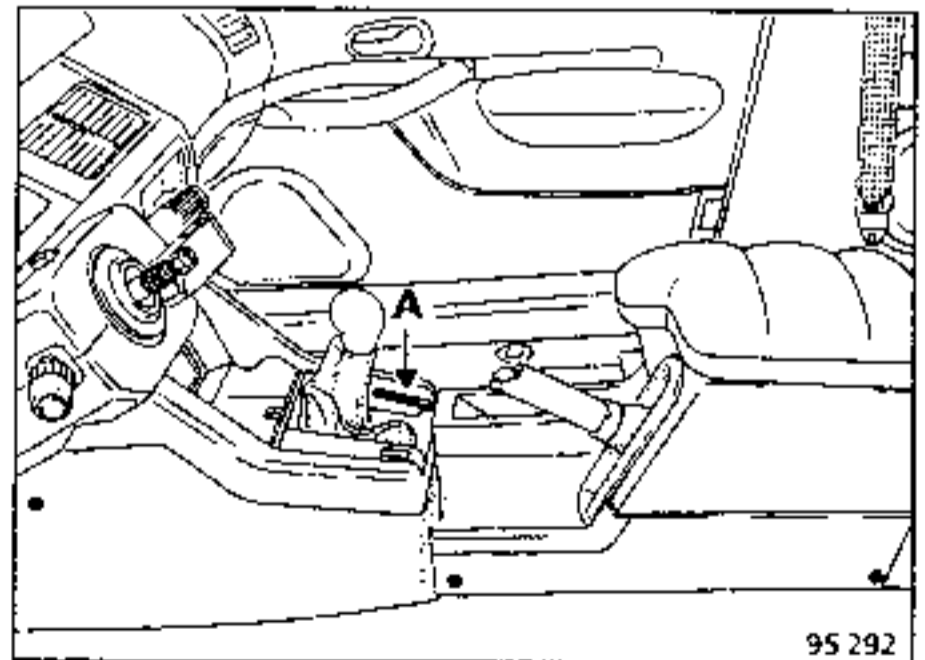


**NOTE:** When removing and refitting, note the length and location of the mounting bolts used. (Large head Torx bolts at 1)

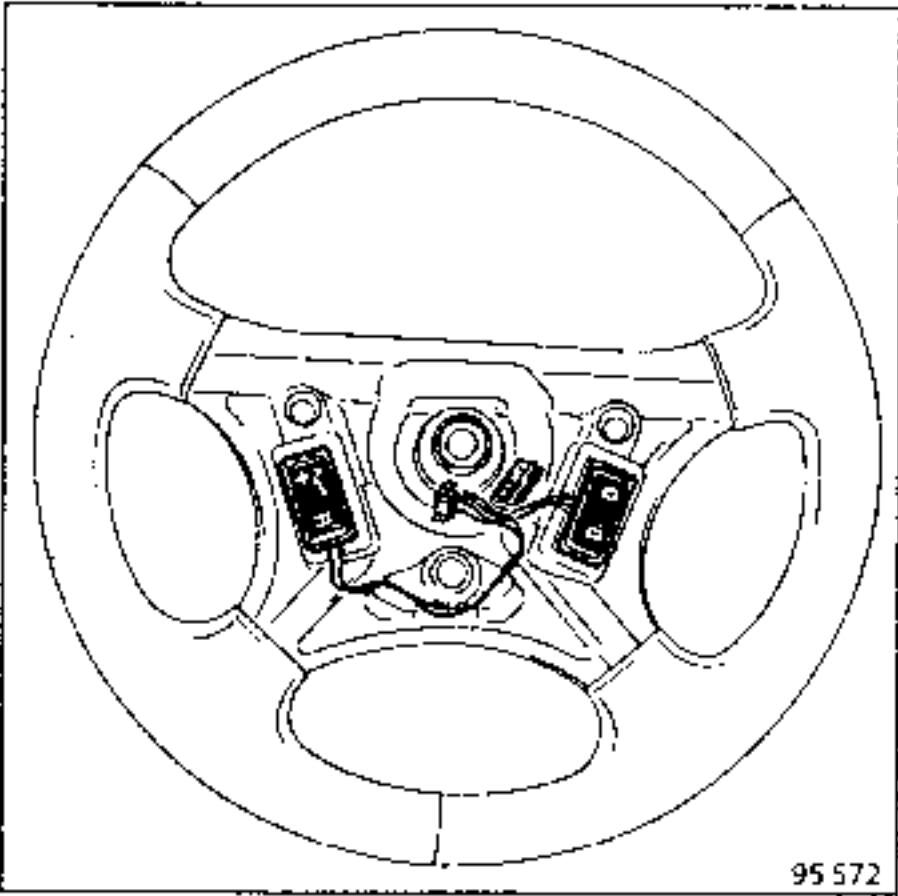
**REMOVAL**



Remove cover (A)  
Remove 5 rear console bolts.  
Disconnect connectors.  
A cut out is provided for removing from the handbrake lever.  
Put the steering column in the high position and push the seats back.  
Disconnect the battery.



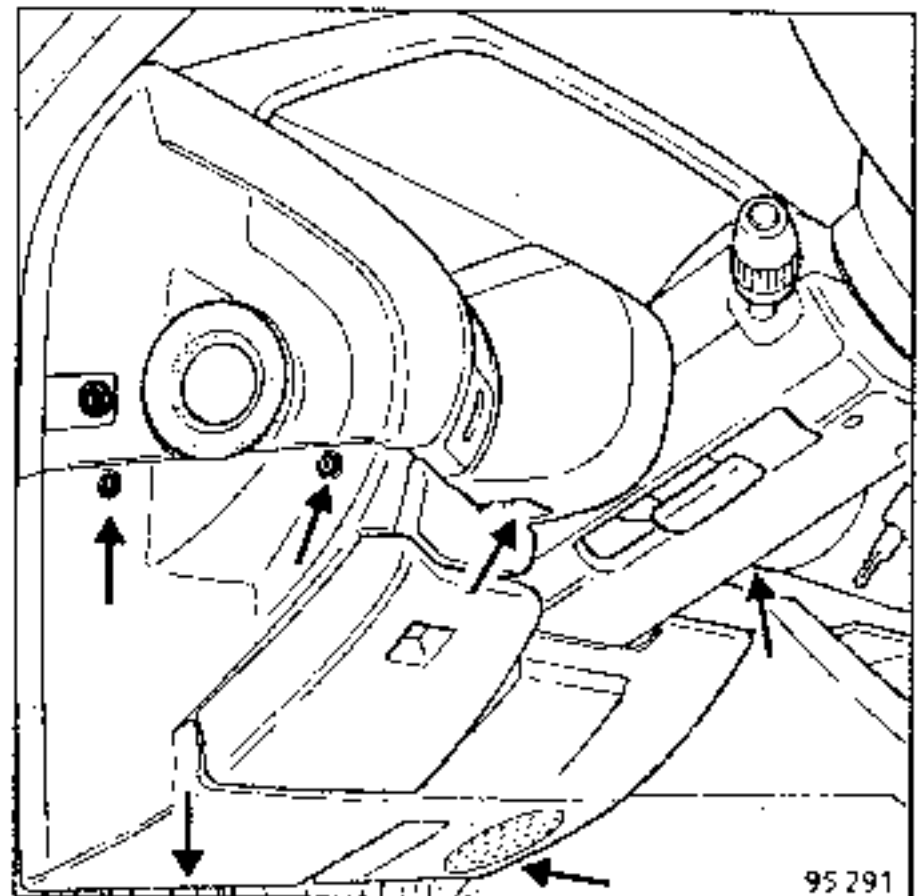
Remove the front console.



95 572

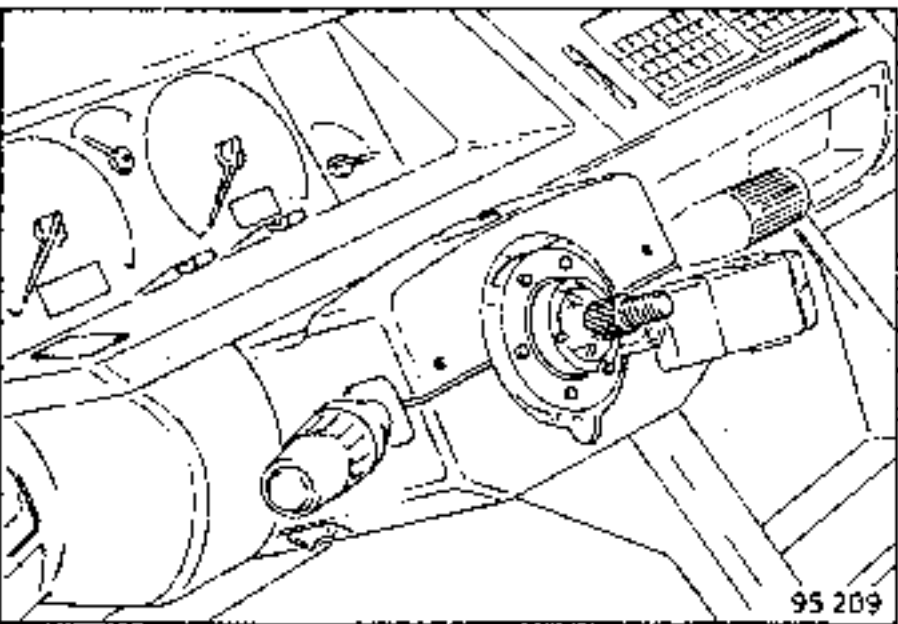
**Remove:**

- the steering wheel.
- the windscreen pillar trim.



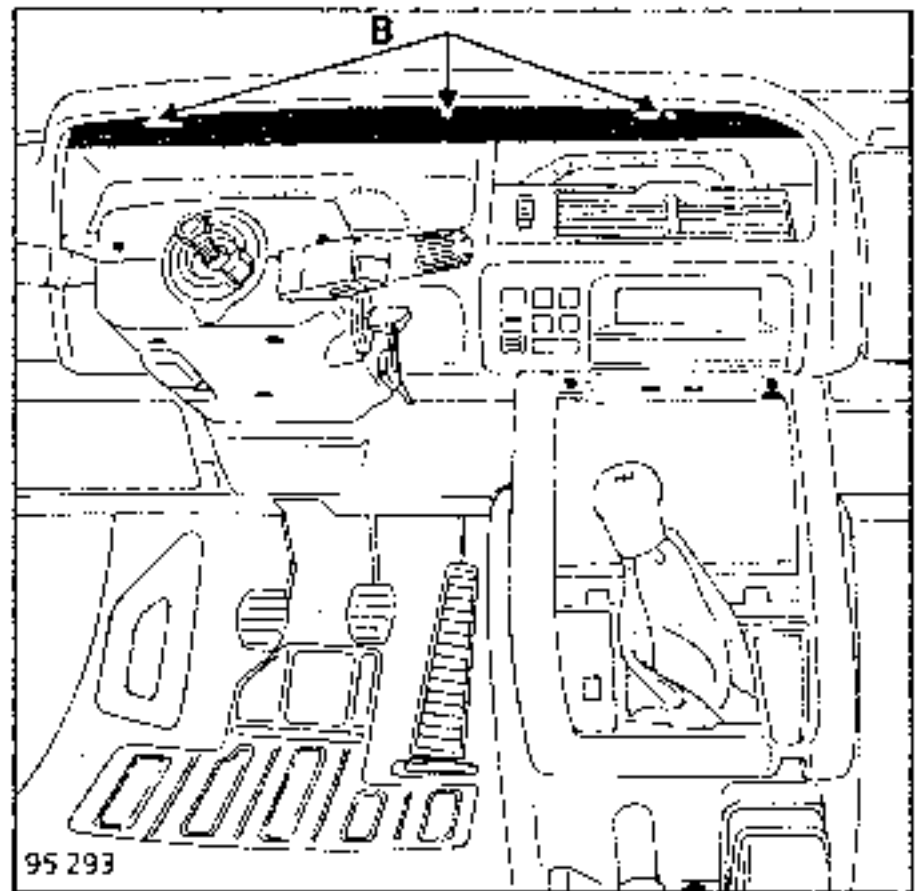
95 291

- the side panels under the dashboard.
- the glove box



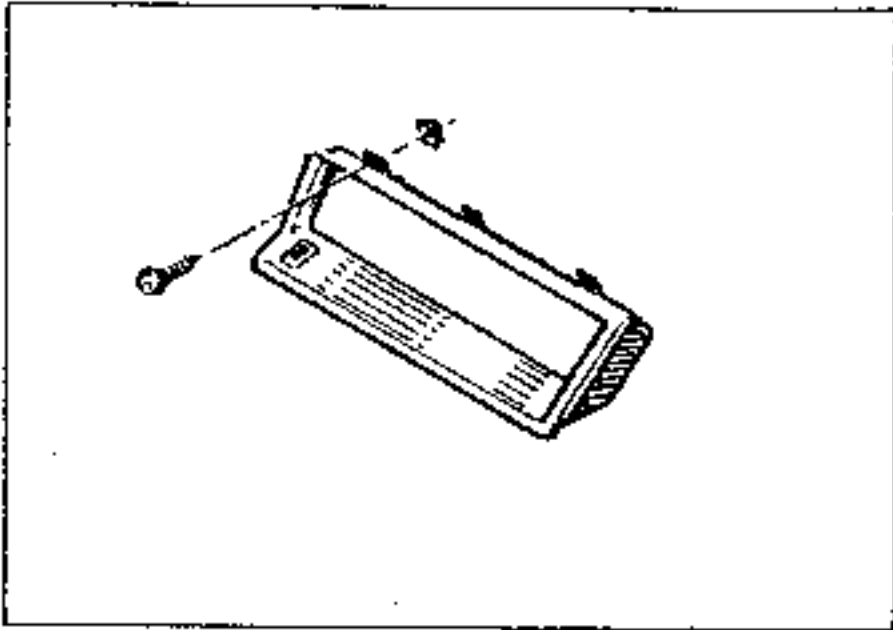
95 209

- the cowling under the steering wheel (steering column in high position)

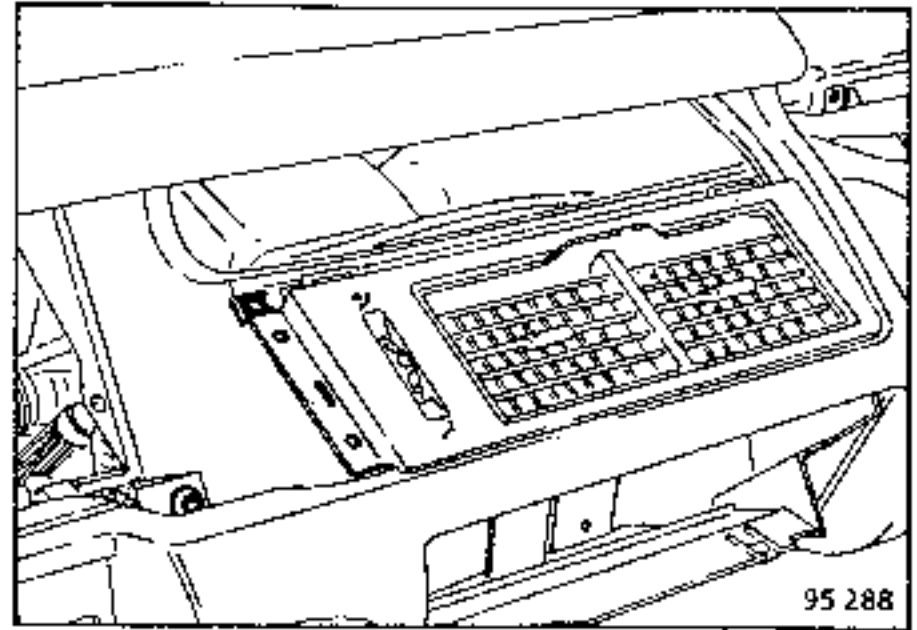


95 293

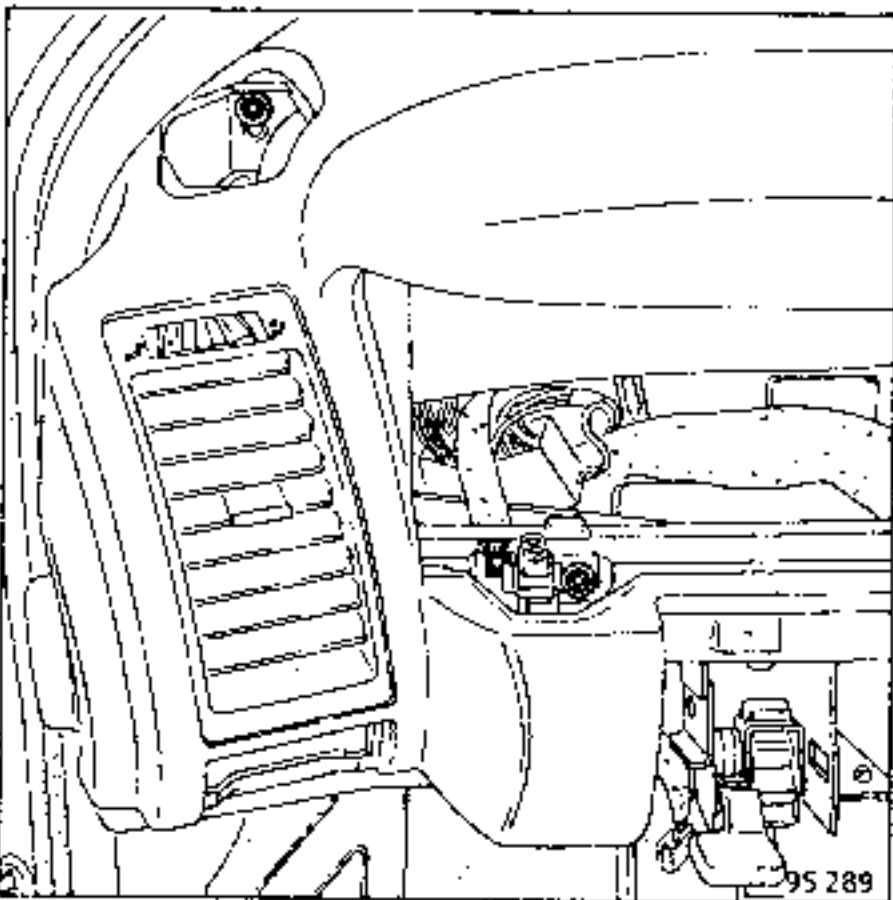
- the upper dashboard visor, bolts (B).



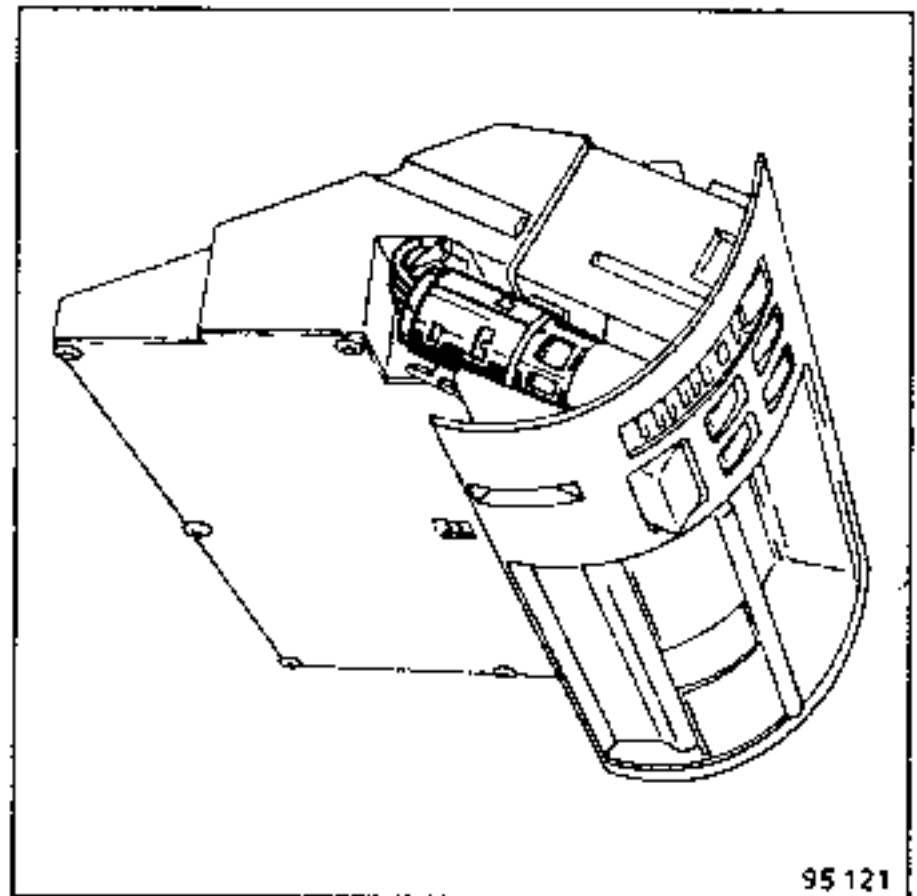
- the instrument panel visor (5 bolts), first lifting the lower left hand edge to avoid the lighting rheostat then carefully unclip the lower right hand edge.



-the clock and central ventilator.

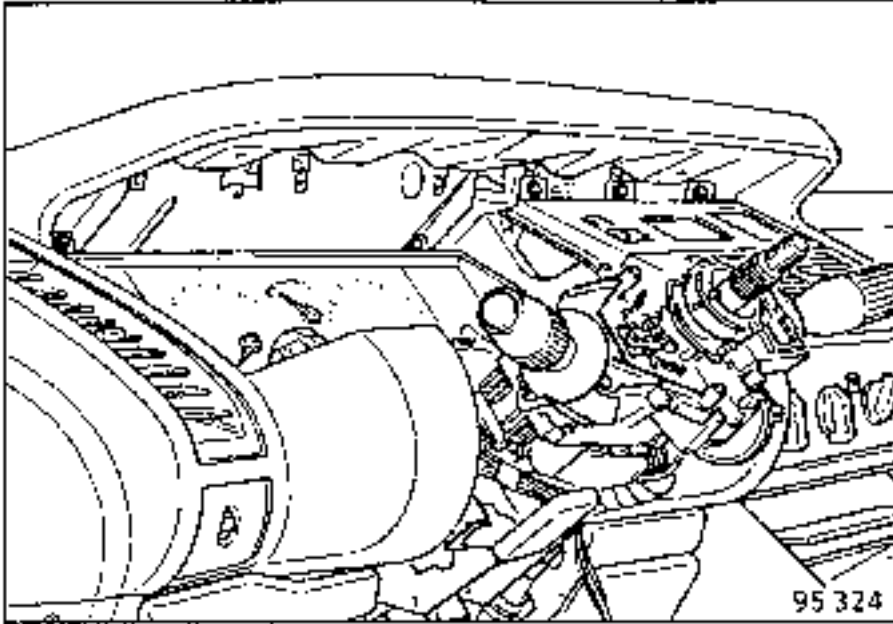


- the lighting rheostat.



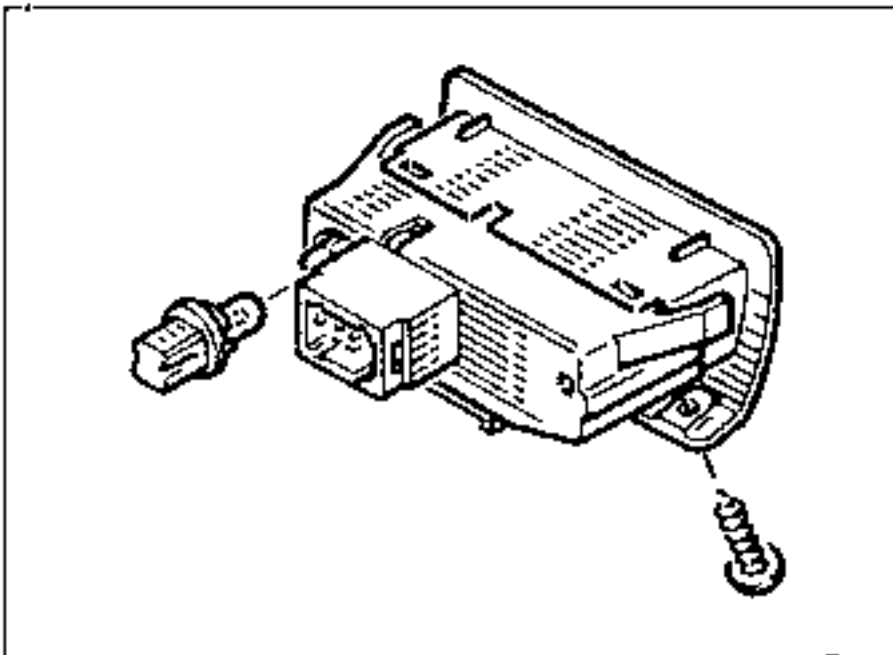
- the air conditioning unit



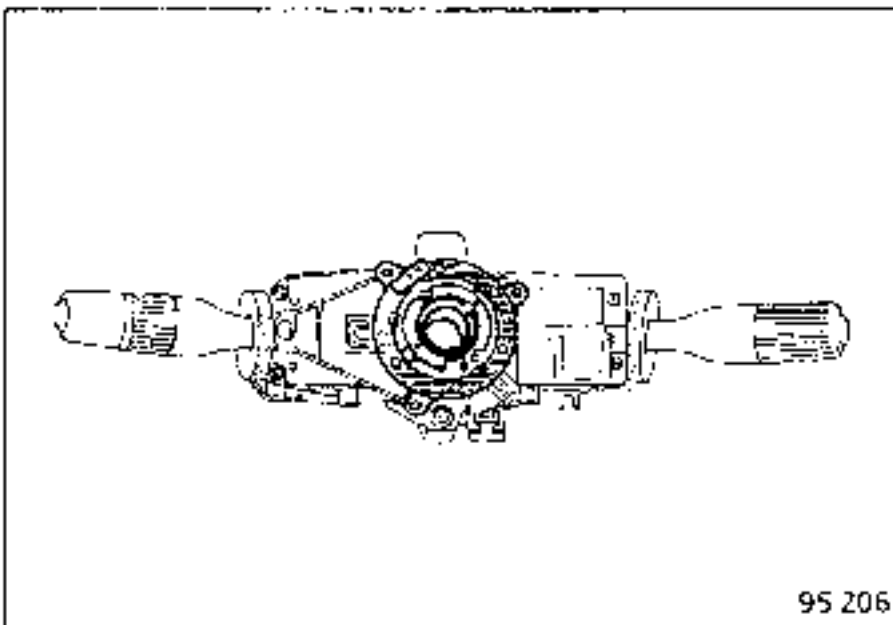


**Remove:**

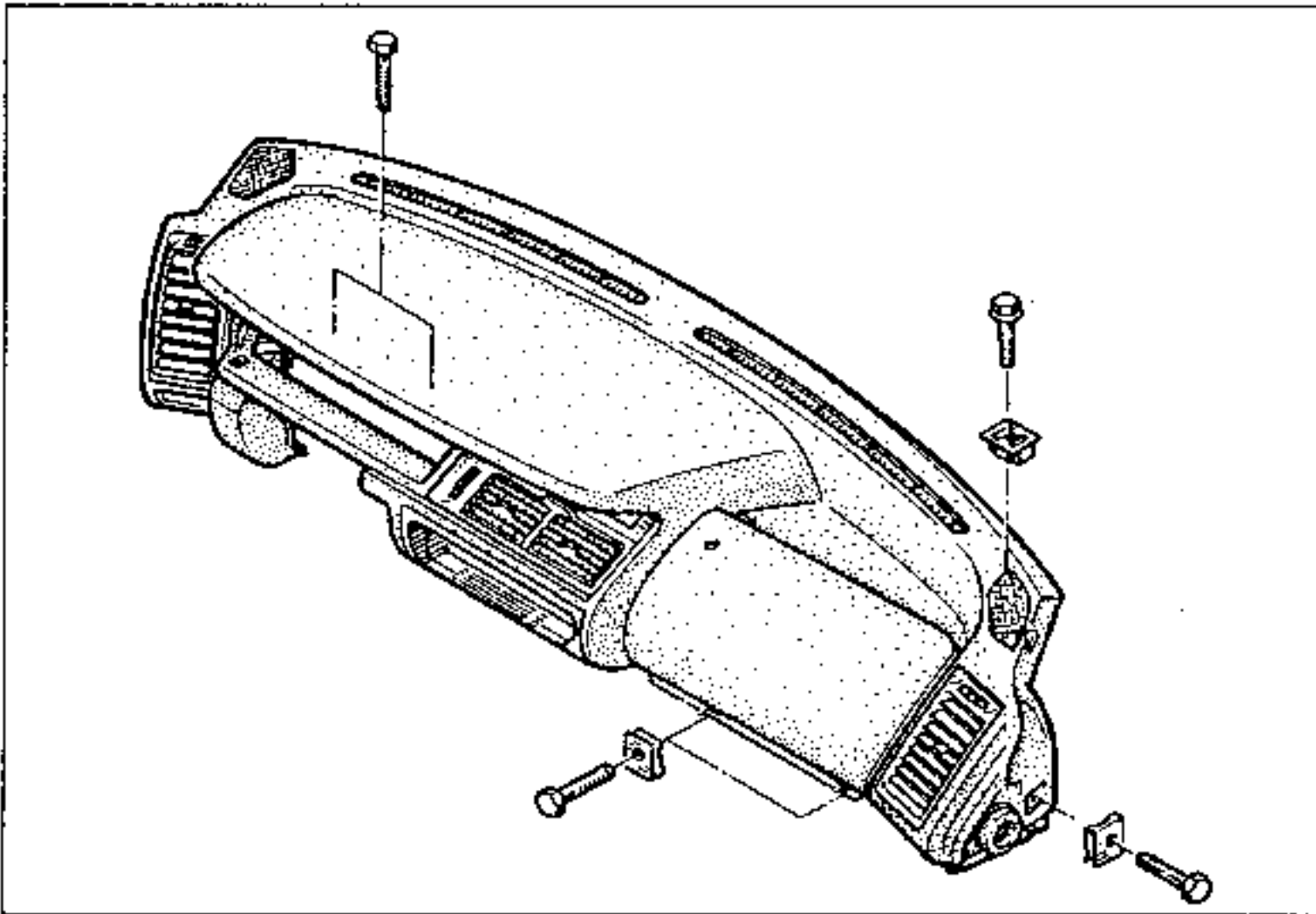
- the instrument panel (see page 83-7).



- the headlight adjustment control



- the switch assembly.



Remove the dashboard mounting screws.

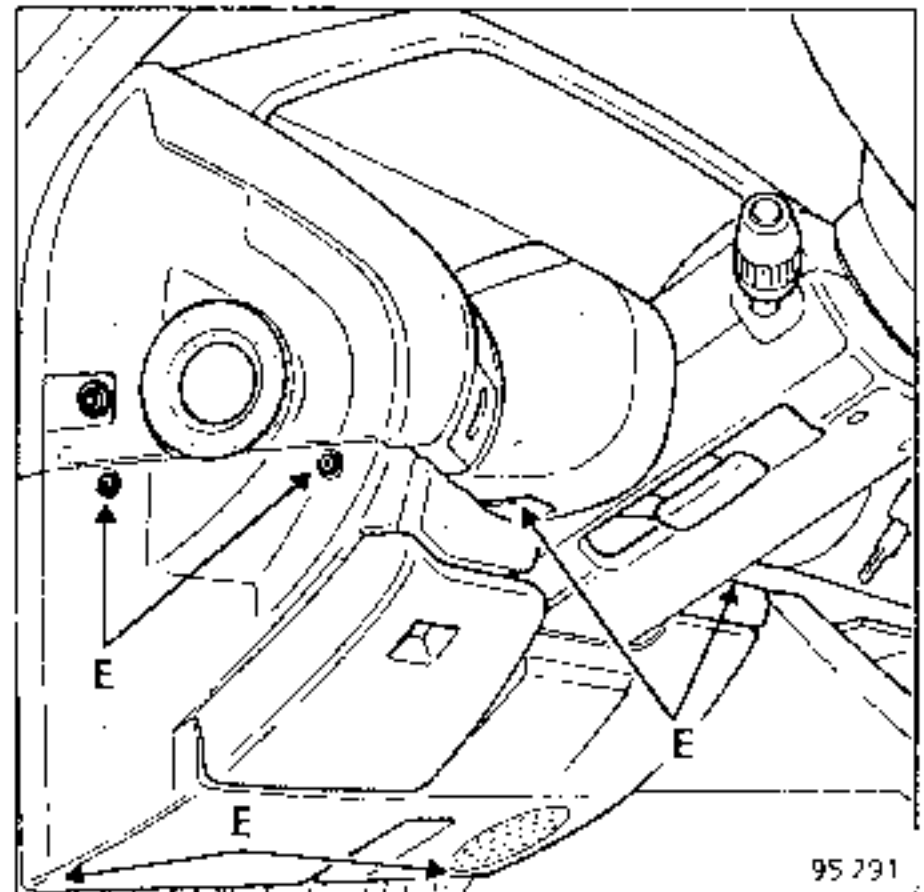
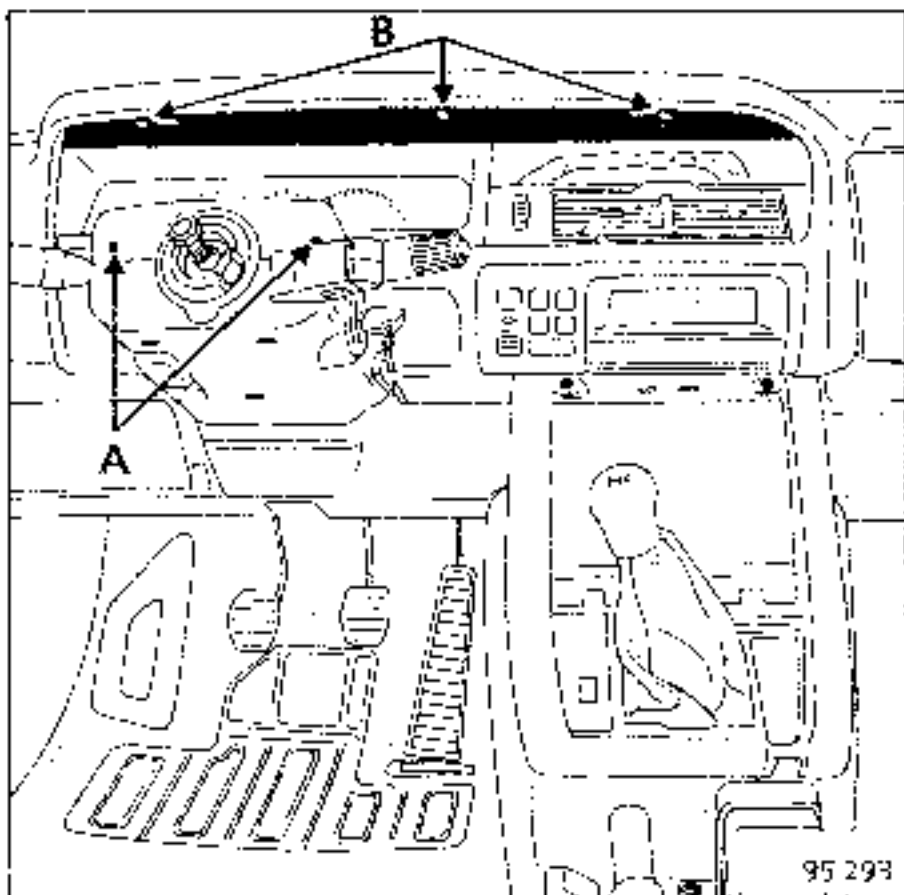
**REMOVAL - REFITTING**

Raise the steering column as high as possible

- Disconnect the battery.
- remove the steering wheel with the wheels centralised, .
- unclip and remove the hazard warning lights button
- remove the upper half cowling by undoing the two bolts (A).
- unclip the lighting rheostat cover.

For the conventional instrument panel (without Adac) :

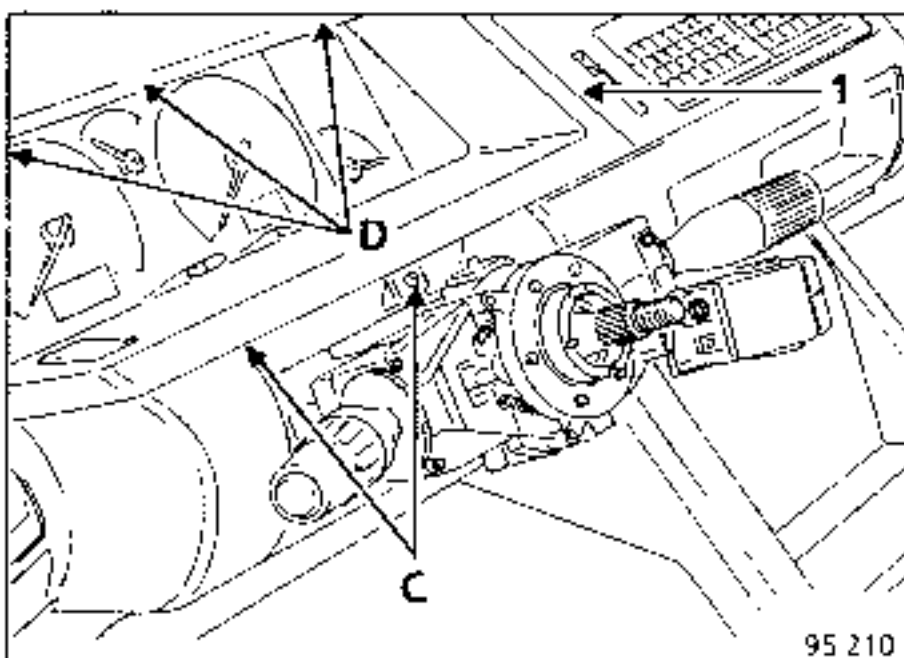
- remove the six bolts for the steering column cover and remove the cover (E).
- unclip the speedometer cable below.



Remove:

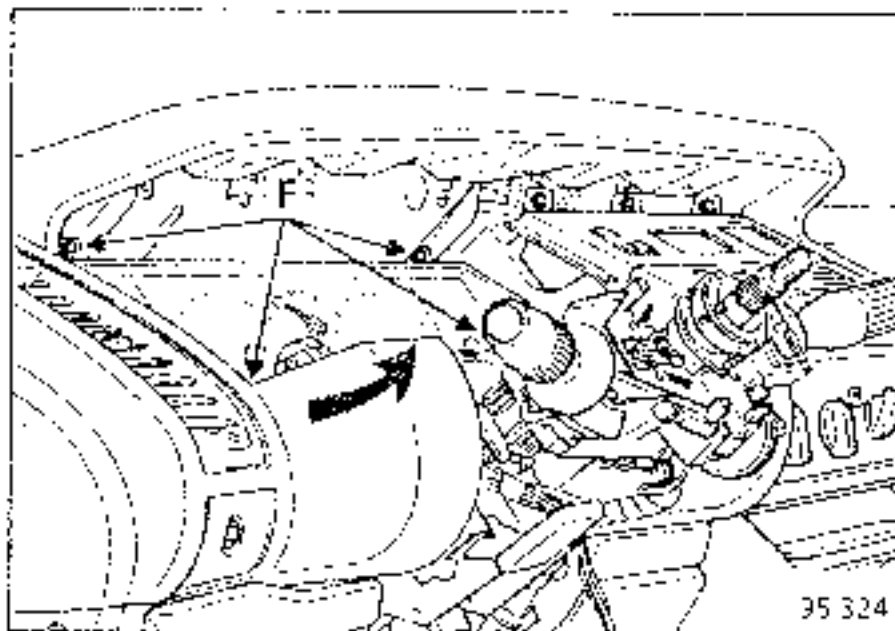
- the three bolts (B).
- the two lower bolts (C) for the dashboard visor.
- the three upper bolts (D).

Remove the visor, first lifting the lower left hand edge to avoid the lighting rheostat then carefully unclip the lower right hand edge at (1).



Remove the four instrument panel mounting bolts (F).

Remove the instrument panel tipping it up to release the two rubber clips used for locating the instrument panel on the dashboard.



### Special notes for refitting

Use long nose pliers to replace the mounting bolt holding the dashboard behind the lighting rheostat.

Before reconnecting, check the connectors and wires are in good condition.

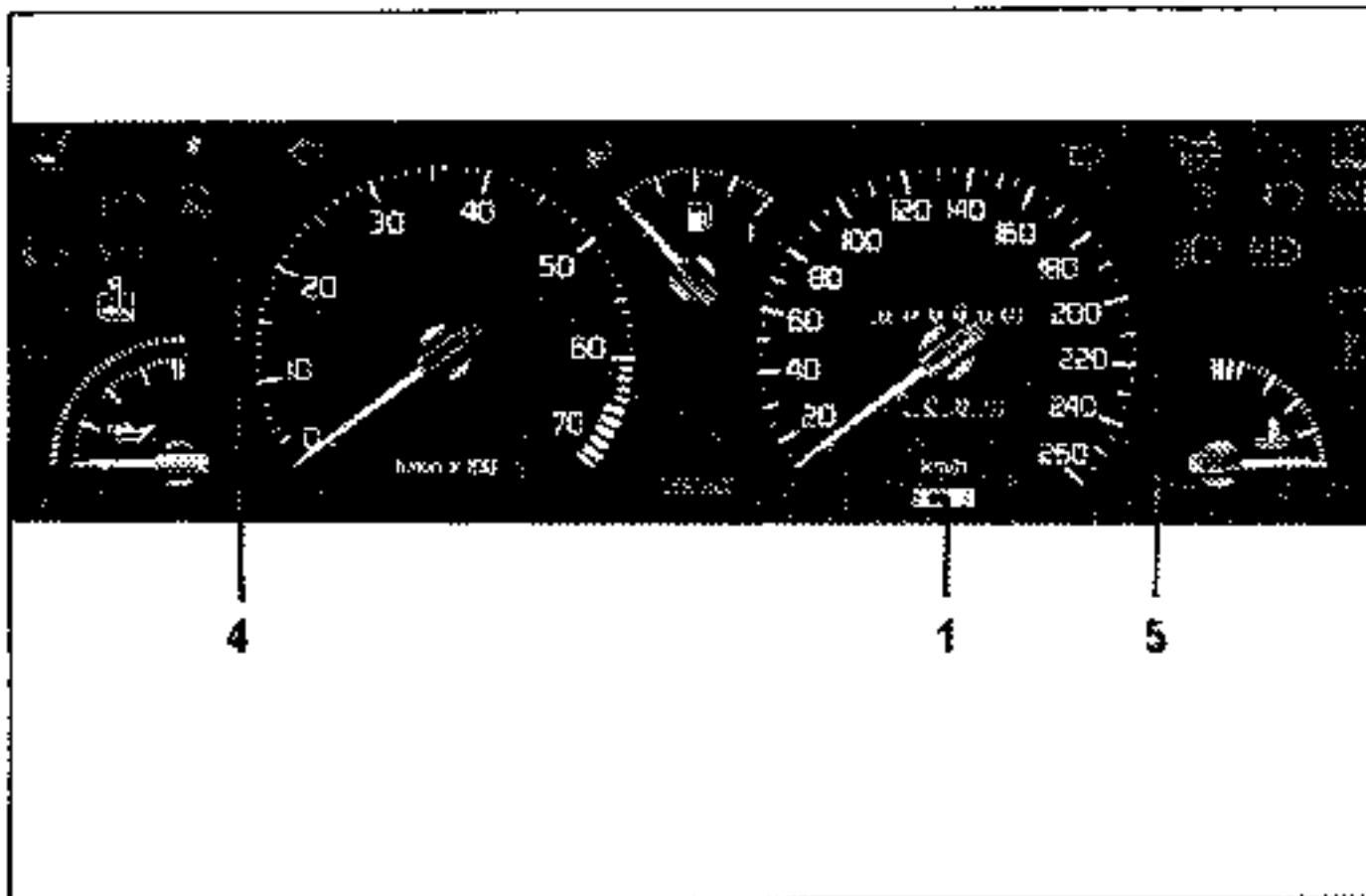
Clip the connectors in correctly.

Reconnect the speedometer cable for the conventional instrument panel (without Adac).

Check the instrument panel functions are operating correctly.

**DESCRIPTION**

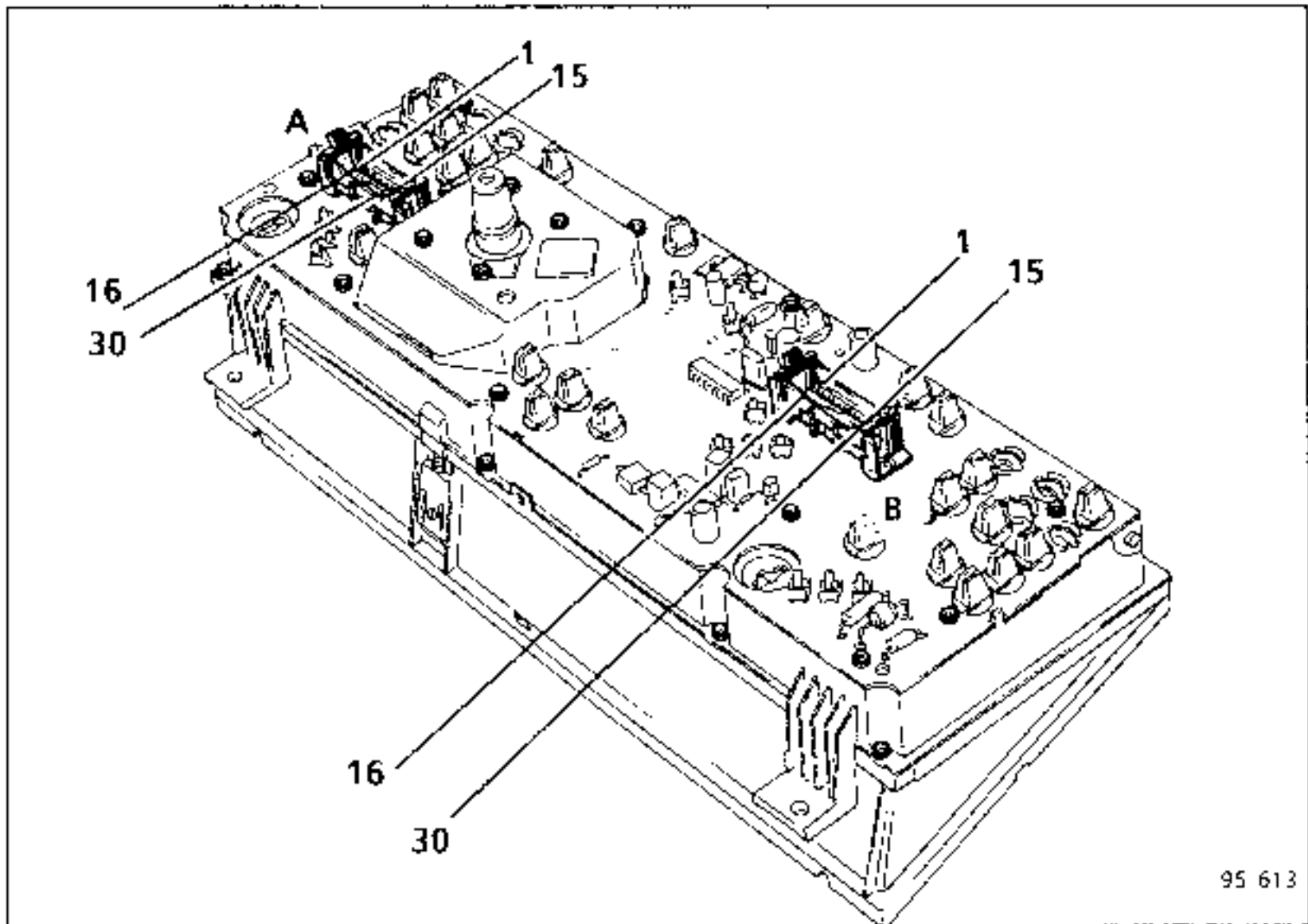
- Mechanical counter
- Rev counter with specific integrated circuit
- Coolant temperature
- Oil pressure and level with specific integrated circuit
- Fuel gauge
- Printed circuit assembly
- Warning light function



1 - Trip counter reset button

4 and 5 - Receiving unit block separators

CONNECTIONS



95 613

Connector A (red)

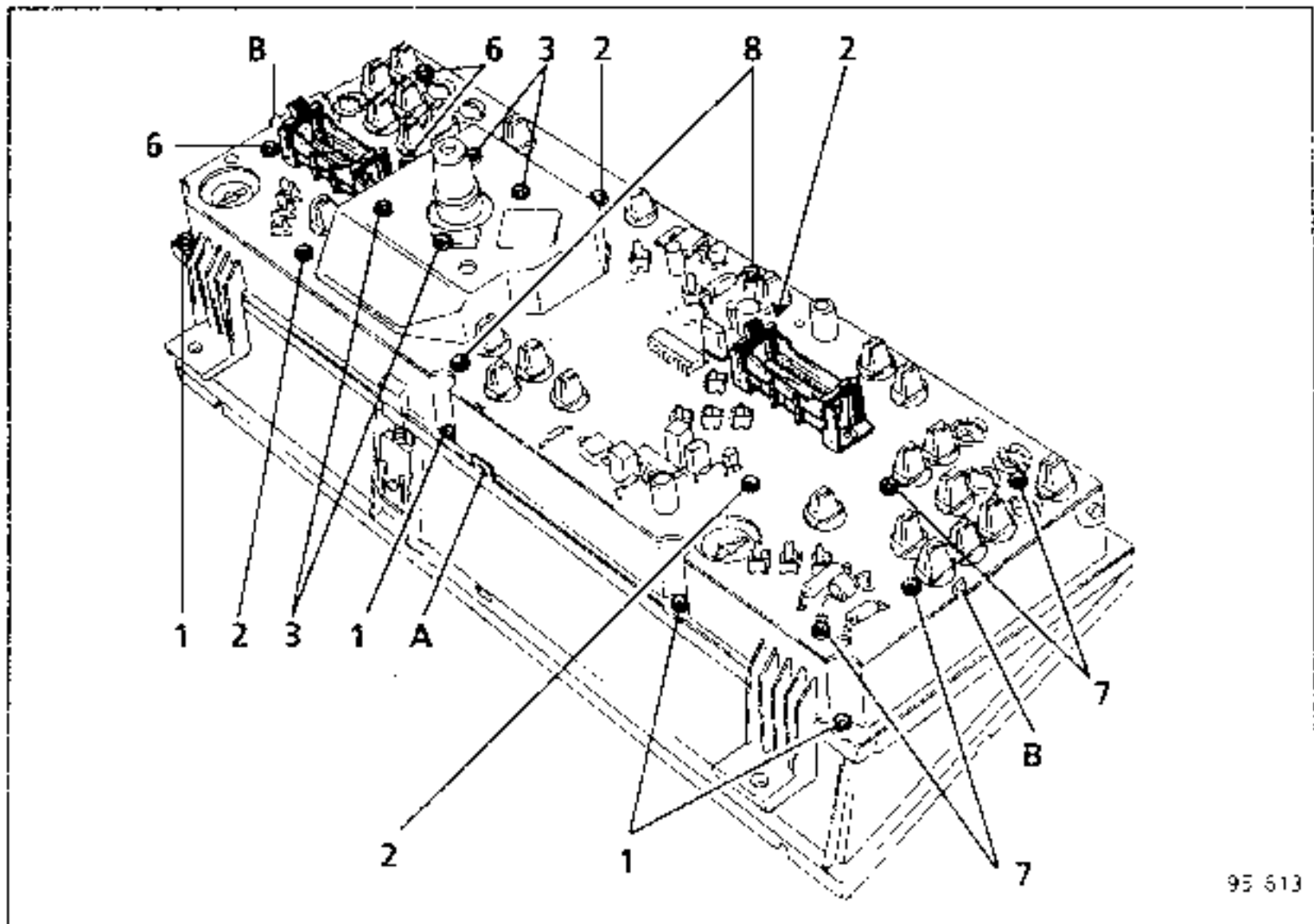
- |   |  |
|---|--|
| 1 - Main beam headlights warning light.           | 16 - Charging warning light.               |
| 2 - Rear fog lights warning light.                | 17 - Coolant temperature warning light.    |
| 3 - Main beam headlights warning light.           | 18 - Injection or preheating warning light |
| 4 - Dipped beam headlights warning light          | 19 - Not used.                             |
| 5 - Front fog lights warning light.               | 20 - Not used.                             |
| 6 - Not used.                                     | 21 - Oil pressure warning light.           |
| 7 - Right indicators warning light.               | 22 - Coolant temperature warning light.    |
| 8 - Left indicators warning light.                | 23 - Electronic earth.                     |
| 9 - + after ignition.                             | 24 - Oil level sensor information          |
| 10 - + after ignition.                            | 25 - Oil level sensor information.         |
| 11 - + before ignition.                           | 26 - Rev counter information               |
| 12 - Not used.                                    | 27 - Not used.                             |
| 13 - Not used.                                    | 28 - Not used.                             |
| 14 - Instrument panel lighting.                   | 29 - Not used.                             |
| 15 - Driving position lighting via rheostat relay | 30 - Oil pressure information              |

## CONNECTIONS (Cont)

### Connector B (Blue)

- 1 - Electronic earth.
- 2 - Not used
- 3 - Not used
- 4 - Not used
- 5 - 0 volt. and fuel gauge
- 6 - Fuel level information
- 7 - Not used.
- 8 - Low fuel level warning light
- 9 - Earth
- 10 - Earth
- 11 - Not used
- 12 - Not used
- 13 - Not used
- 14 - Not used
- 15 - Not used
- 16 - Not used
- 17 - Not used
- 18 - Not used
- 19 - Not used
- 20 - Low screen wash level warning light
- 21 - Not used
- 22 - Not used
- 23 - Not used
- 24 - Brake information (nivocode)
- 25 - Brake pad wear warning light
- 26 - Brake pad wear warning light
- 27 - ABS warning light
- 28 - Not used
- 29 - Handbrake information
- 30 - Not used

REMOVAL



95 513

Remove:

- the rear plastic cover by its two quarter turn clips and release the two hinges.
- the four bolts (1).

Separate the unit from the visor by undocking at (A) the counter, rev counter and fuel level gauge assemblies.

Remove:

- the four bolts (2).
- the four bolts (3).

By gently separating the counter, rev counter and fuel level gauge assembly from the unit, remove the two separators (4) and (5) (see page 83-8 ) by sliding them out.

Remove the counter, rev counter and fuel level gauge assemblies.

**COOLANT TEMPERATURE RECEIVER**

Remove the three bolts (6).

By gently separating the coolant temperature receiver, slide the separator out (4), and remove the receiver.

**OIL PRESSURE AND LEVEL RECEIVER**

Remove the four bolts (7).

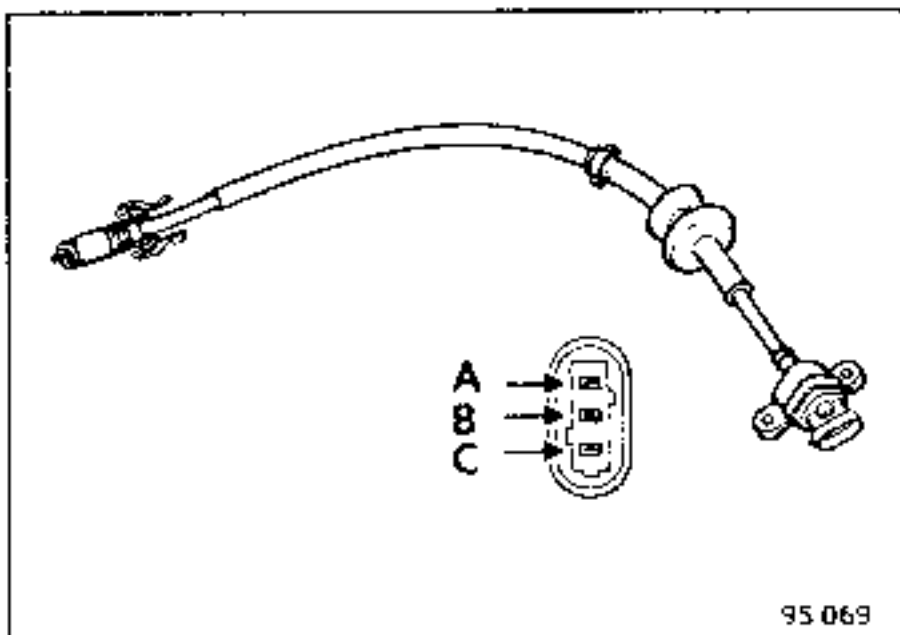
By gently separating the oil pressure and level receiver, slide the separator out (5), and remove the receiver.



### SPEED INFORMATION

The speedometer cable is fitted with a speed sensor. Vehicle speed information is transmitted to the on board computer and the injection computer.

Connections on 3 track grey connector



- A + 12 V after ignition
- B Vehicle speed information
- C Earth

### PRINTED CIRCUIT ASSEMBLY

This may be removed without affecting the receivers.

Remove:

- the rear plastic cover by its 2 quarter turn clips and release the two hinges,
- bolts (2), (6), (7) and the two bolts (8).

Carefully remove the printed circuit by unclipping at (B).

### SPECIAL NOTES

The fuel gauge receiver is bi-metallic, and its response time after the ignition has been turned on or off is about 20 seconds.

It also has a voltage stabilizer built in to the printed circuit assembly.

The oil level electronic circuit is also part of the electronic circuit assembly.

**DESCRIPTION**

Electronic speedometer.

Milometer (total and trip counters).

Electronic rev counter

Electronic oil pressure and level.

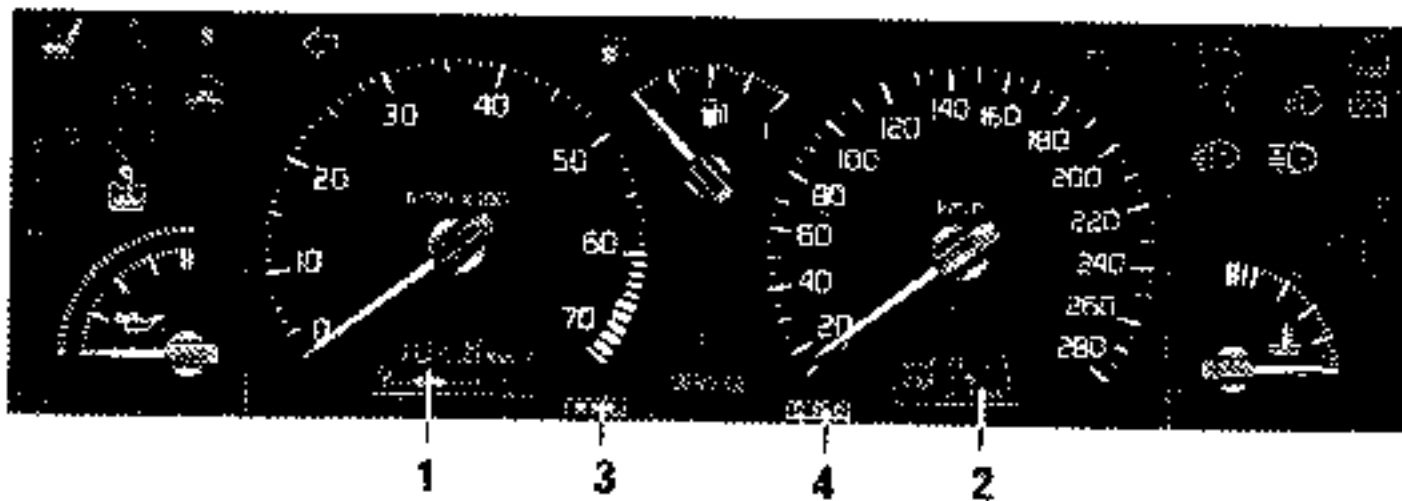
On board computer (travelling parameters)

Coolant temperature

Fuel gauge

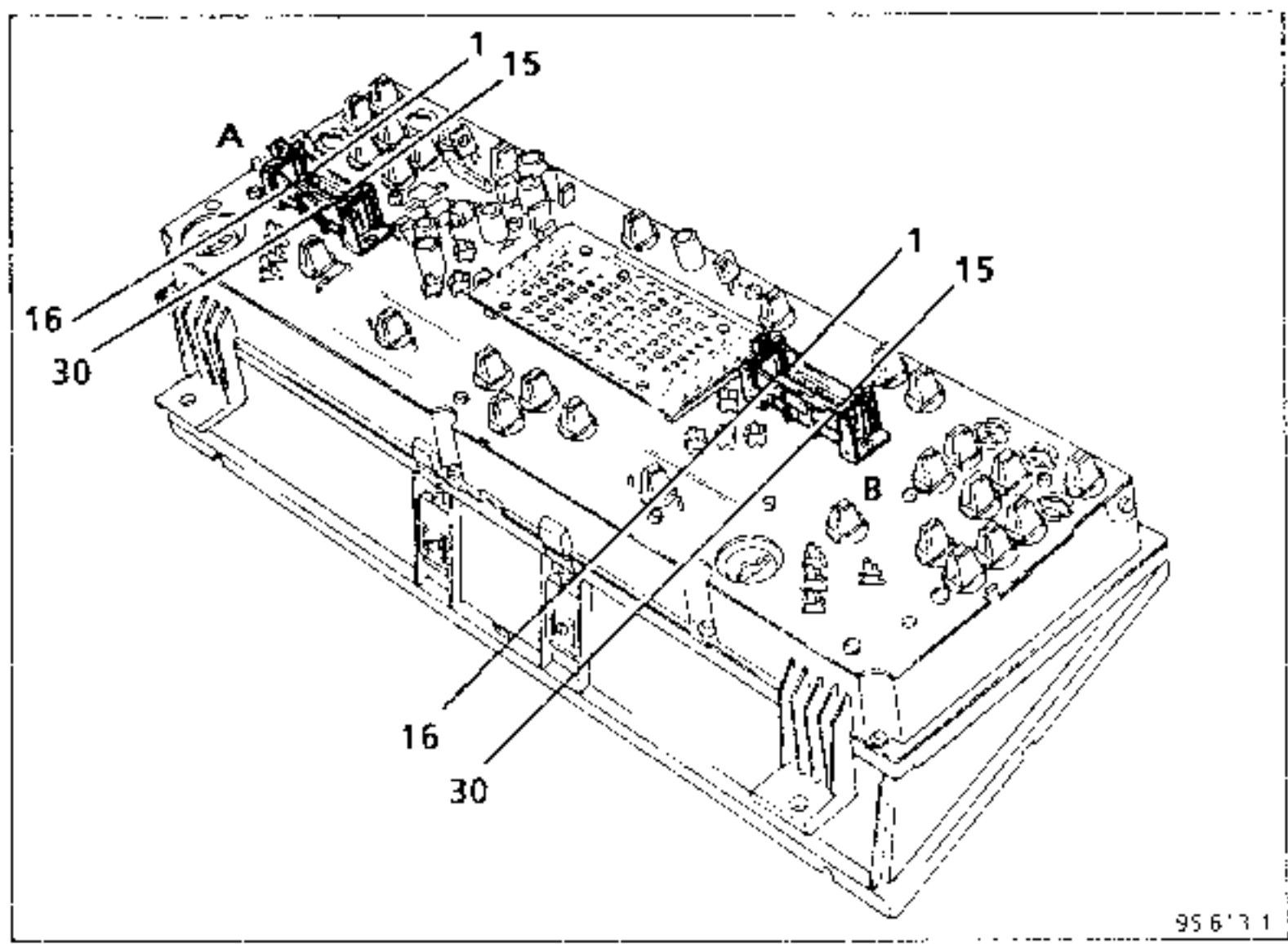
Printed circuit assembly.

Warning lights



- 1 On board computer
- 2 Milometer
- 3 Reset key - Memory zero (on board computer)
- 4 Trip computer zero key

CONNECTIONS



95 6'3 1

CONNECTOR A (Red)

- 1 Main beam headlights warning light
- 2 Rear fog light warning light
- 3 Main beam headlight warning light
- 4 Dipped headlight warning light
- 5 Front fog light warning light
- 6 Not used
- 7 Right indicators warning light
- 8 Left indicators warning light
- 9 + after ignition
- 10 + after ignition
- 11 + before ignition
- 12 ADAC displays
- 13 Lighting rheostat
- 14 Instrument panel lighting

- 15 Driving position lighting via rheostat relay
- 16 Charging warning light
- 17 Engine coolant temperature via temperature switch
- 18 Preheating / injection fault warning light
- 19 Injection fault warning light
- 20 AT fault warning light
- 21 Oil pressure warning light
- 22 Engine coolant temperature via thermistor
- 23 Electronic earth
- 24 Oil level sensor information
- 25 Oil level sensor information
- 26 Rev counter information
- 27 Fuel flow information
- 28 Oil temperature information
- 29 0 volt oil temperature
- 30 Oil pressure information

**CONNECTIONS****CONNECTOR B (Blue)**

- 1 Electronic earth
- 2 Not used
- 3 Not used
- 4 0 volt low fuel warning light
- 5 0 volt common fuel gauge  
ADAC/indicator
- 6 Fuel gauge indicator
- 7 Not used
- 8 Low fuel warning light or ADAC gauge info
- 9 Earth
- 10 Earth
- 11 Heated seats warning light
- 12 Not used
- 13 Not used
- 14 Not used
- 15 Not used
- 16 Not used
- 17 Not used
- 18 Not used
- 19 Not used
- 20 Low screen wash warning light
- 21 Speed information
- 22 Not used
- 23 Not used
- 24 Brake warning light (nivocode)
- 25 Brake pad wear warning light
- 26 Brake pad wear warning light
- 27 ABS warning light
- 28 Variable power assisted steering warning light
- 29 Handbrake warning light
- 30 Electronically managed suspension system  
warning light/ SERVICE warning light

**OPERATION**

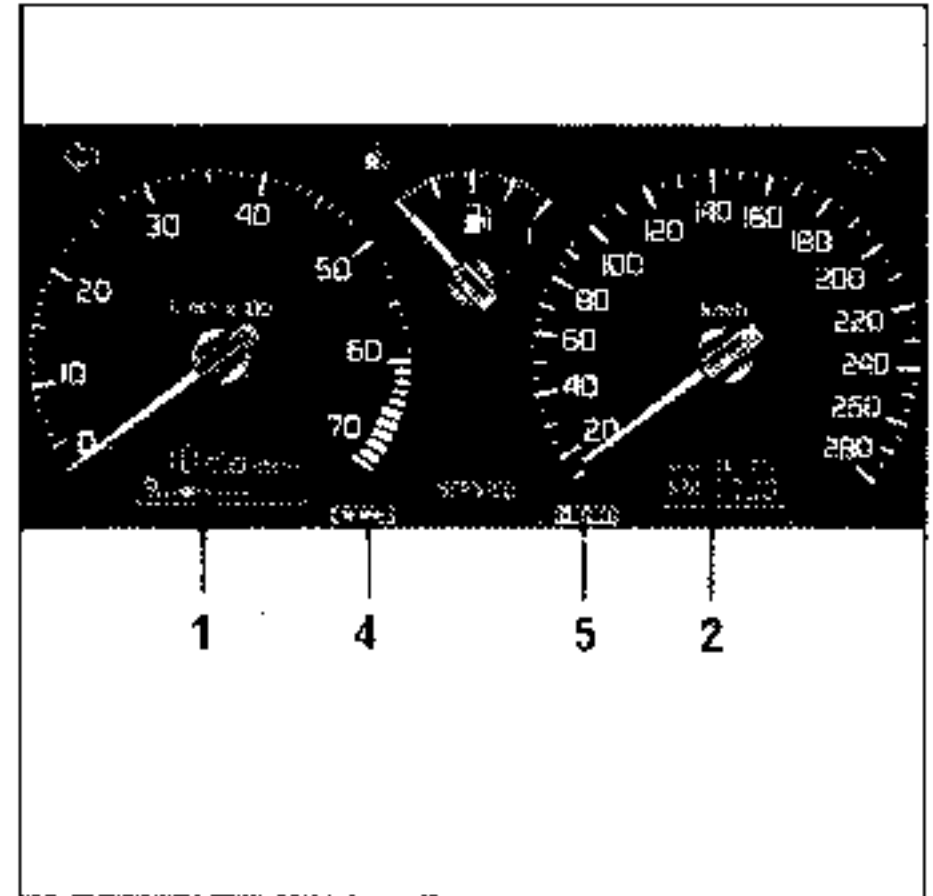
The instrument panel differs outwardly from the previous version by the omission of counter windows on the speed indicator and the addition of two liquid crystal displays.

A microcomputer manages all the electronic functions

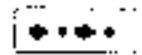
The microcomputer receives the signals across a protection or adapting circuit and send information to 3 indicators (vehicle speed, rev counter, oil pressure and oil level) and to two liquid crystal displays (on board computer and milometer).

The microcomputer also has a fault finding function.

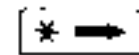
The fuel level and coolant temperature indicators are conventional and are similar to those in the previous instrument panel



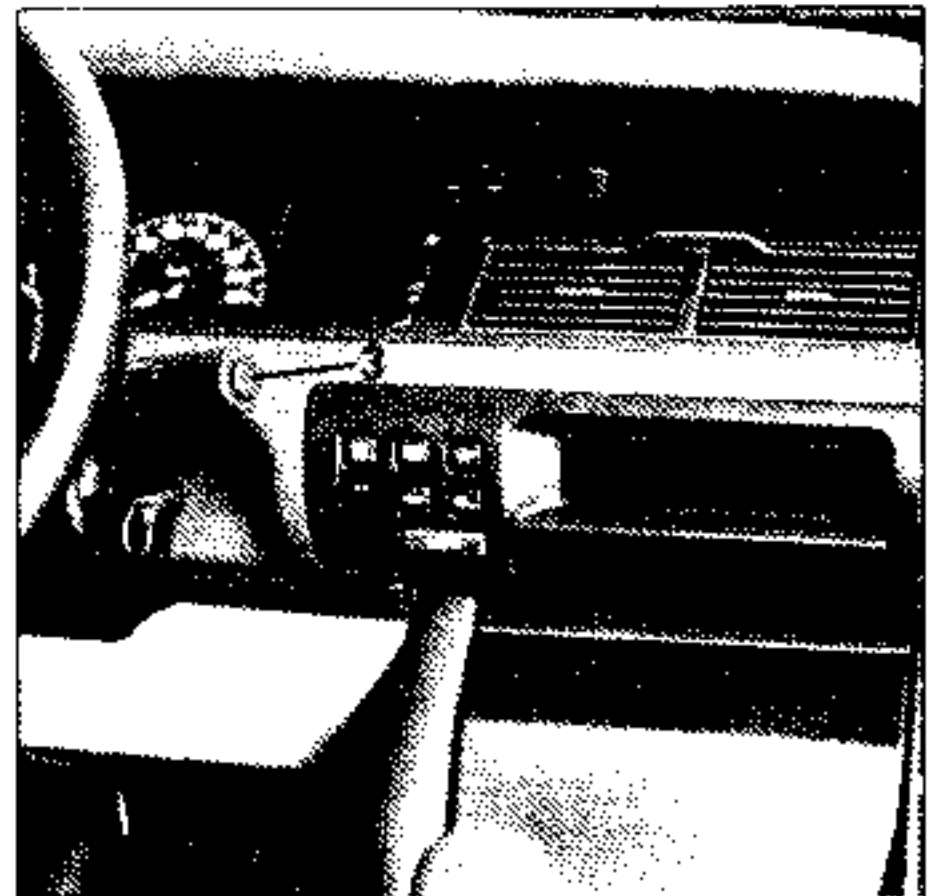
- 1 On board computer
- 2 Milometer
- 3 Display selection key for on board computer



- 4 Reset key for zeroing memories



- 5 Trip counter zero key



## OPERATION

### Milometer

This type of numerical milometer with memory permanently displays the total and trip mileage.

### Total counter

This function calculates and displays the number of miles travelled since the vehicle was put into service, or since the instrument panel was replaced.

This function is retained in the memory, even if the battery is disconnected.

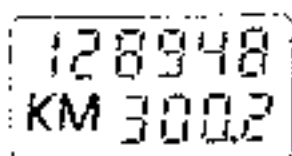
### Trip counter

This function calculates and displays the number of miles travelled since the trip counter was last reset.

This function is retained in the memory, even if the battery is disconnected.

To reset the trip counter, press key 5 (see page 83-16).

After the memory capacity has been exceeded, the counter resets automatically (9 999 km).

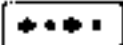


**NOTE** : if the speed sensor is faulty, the diagnostic function does not detect this but :

- no speed is displayed,
- the following parameters are incorrectly displayed :
  - distance covered,
  - distance remaining before fuel refill,
  - average speed,
  - average consumption,
  - current consumption,
  - distance remaining before oil change,
- incorrect milometer displays :
  - total counter,
  - trip counter

## On board computer

The on board computer loop has 7 displays (journey parameters).

When the ignition is turned on, or when the system is reset, select the display required using key 3 

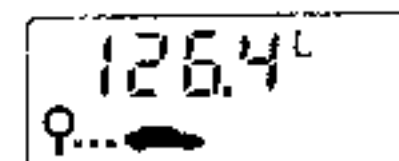
The display shown when the ignition is turned on is the same as before the ignition was last turned off.

The information is displayed in the following order:

- Distance covered (in km)
  - Since the last reset
  - Display of hundreds of metres below 1 000 km.
  - Max capacity : 9 999 km.



- Fuel used ( in l)
  - Since the last reset.
  - Max capacity : 1 999 l.

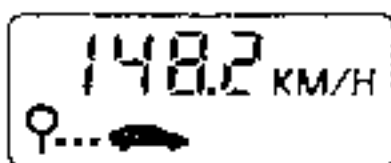


**OPERATION**

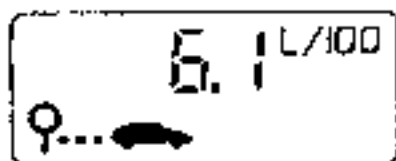
- **Distance remaining before fuel refill (in km)**  
Since the last reset  
Distance remaining calculated on the basis of distance covered, fuel used and fuel remaining  
Max capacity : 9 999 km.  
When the fuel remaining is less than 5 litres, dashes are displayed : - - - - km.



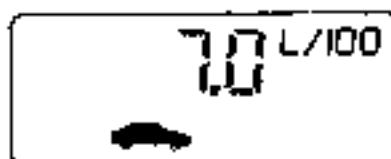
- **Average speed (in km/h)**  
Obtained by dividing the distance covered by the time elapsed since the last reset.  
Uses the internal clock for the on board computer.



- **Average consumption (in l/100 km)**  
Calculated from the distance covered and the fuel used since the last reset.



- **Current consumption (in l/100 km)**  
No value displayed if speed is below 30 km/h.  
The display cannot exceed 35 l/100 km.



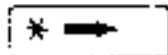
- **Distance remaining before oil change (in km)**  
Display of distance remaining before oil change is due, based on distance covered and oil temperature (memory).  
Max display : 10 000 km.

**NOTE :** The display counts down in stages of 10 kilometres.



**NOTE :** For journey parameters to be displayed the vehicle must have travelled at least 400 m since the last reset.

**Resetting the on board computer**

The computer may be reset when any display is shown by pressing 

This does not alter the trip counter or the distance remaining before oil change.

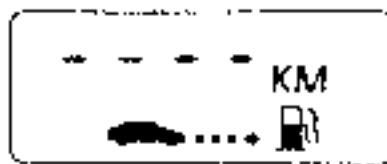
**NOTE :** If the maximum capacity of the displays is exceeded or the current is cut (battery disconnected) the memories are reset in the on board computer.

**OPERATION**

**Individual displays**

**Low fuel level :** The low fuel level procedure is activated when the fuel tank only contains 5 litres. The instrument panel electronic circuit sends a signal to the voice synthesiser and illuminates the warning light

The distance remaining remains displayed for 30 seconds approx, then is replaced by 4 dashes.



**NOTE :** when the ignition is turned on, the 4 dashes are displayed, the voice synthesiser gives a message and the warning light is illuminated immediately.

**ATTENTION**

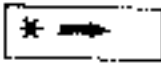
If one of the displays flashes (SEE FAULT FINDING)

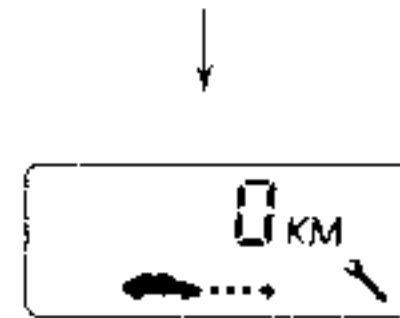
**NOTE :** if a gauge or flow information fault has been detected (see fault finding), the low fuel value changes from 5 litres to 8 litres.

**RESETTING DISTANCE REMAINING TO OIL CHANGE**

This function may be reset (to 10 000 km) when it reaches 0 km or at any other time.

Procedure : Ex. : (Vehicle has reached oil change).

Press the Reset key  and switch on the ignition while holding the key down.

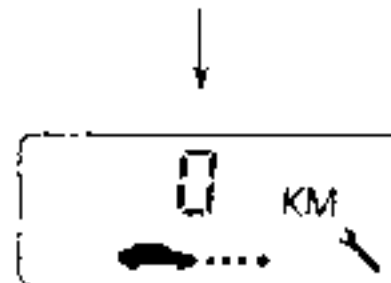


Keep the key depressed 

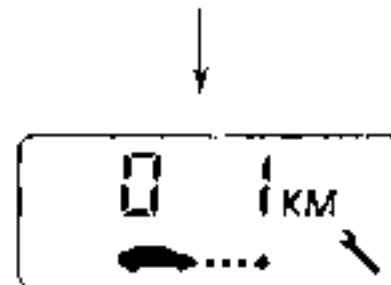
8 types of display will be shown one after the other :



**DISPLAY 1**  
(spanner flashing)



**DISPLAY 2**  
(spanner flashing)



**DISPLAY 3**  
(spanner flashing)



**DISPLAY 4**  
(spanner flashing)



**RESETTING DISTANCE REMAINING TO OIL CHANGE (cont)**



**DISPLAY 5**  
(spanner flashing)



**DISPLAY 6**  
(spanner flashing)

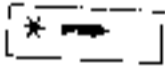


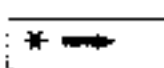
**DISPLAY 7**  
(spanner flashing)




ADAC spanner fixed. Return to computer function (distance displayed).

**NOTE** - only changing from DISPLAY 7 to the computer mode validates the reset, otherwise the old distance value will be displayed.

If the key  is released during the procedure after 20 seconds the display returns to the mode shown before the ignition was turned off or to the low fuel mode.

The reset may be cancelled before validation, by releasing key  and pressing key

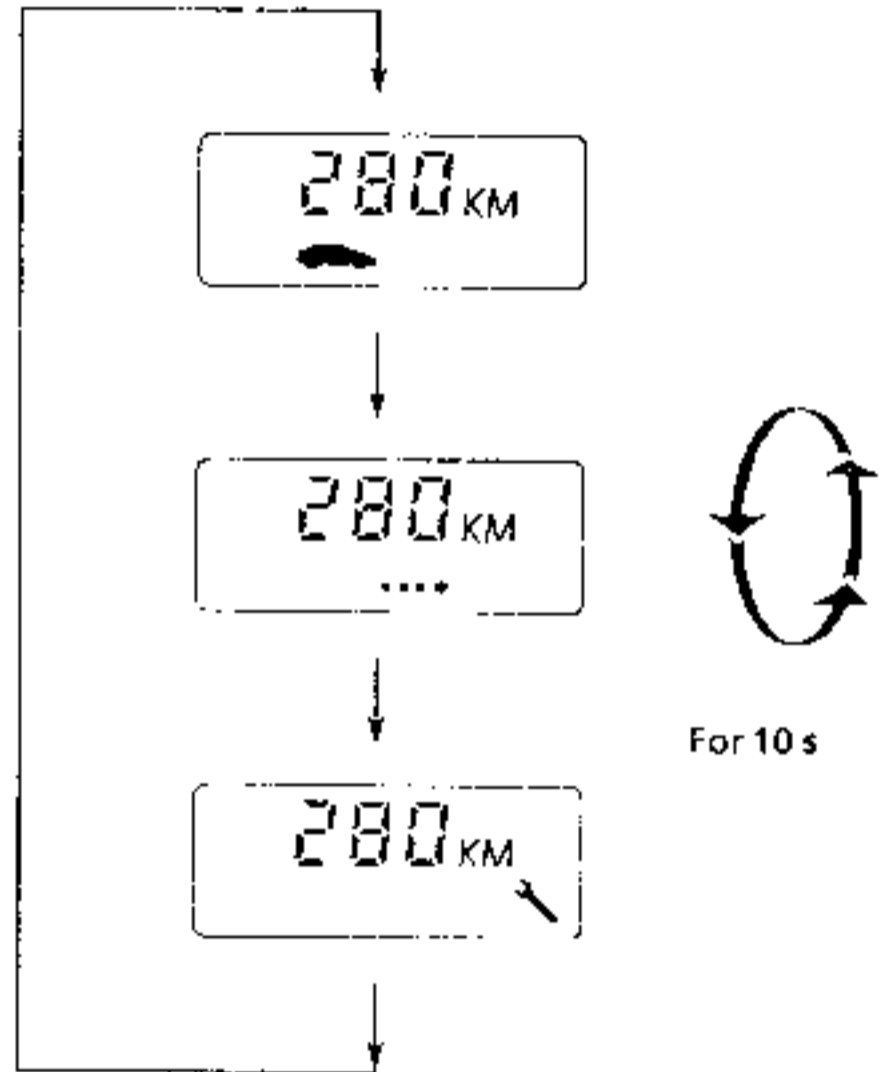
 at the end of the windscreen wash control

Once the reset procedure has been carried out and validated, the distance remaining before oil change is displayed or the low fuel display is shown after 20 seconds.

**Special note**

If the distance remaining before oil change is less than 2 000 kilometres when the ignition is turned on the distance remaining is displayed for 10 seconds and 3 symbols illuminate successively at the bottom of the display (see example).

Example :



Then the low fuel display is shown (if the fuel is low) or the last display before the ignition was turned off is shown.

**NOTE:** if the vehicle is used despite the distance before oil change being 0 km, the counter continues to count, but the display remains on 0 km.

To display the distance covered after oil change was due, see fault finding sequence.

**FAULT FINDING**

**Fault detection**

The on board computer has been studied to determine what faults could affect it

If { fuel used  
distance remaining before refill  
average consumption } flash

and flashing dashes are displayed in current consumption this indicates a fuel flow fault for more than 10 miles (16 km).

If only the distance remaining before refill flashes, this indicates a gauge information fault for over 100 seconds.

If the distance remaining before oil change flashes, this indicates an oil temperature sensor fault for more than 10 seconds.

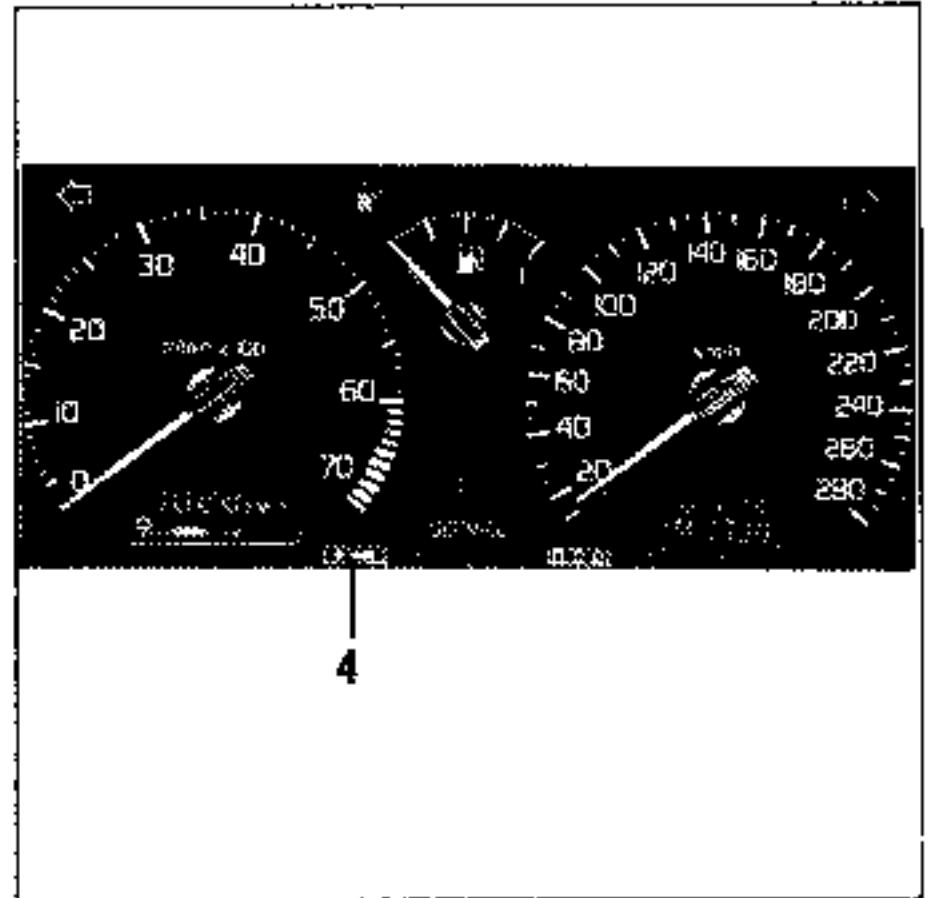
In addition to signalling a fault by a flashing display, the computer stores the fault in its memory.

in the case of a flashing display, or dashes, or to display the sensor faults memorised, follow the fault finding sequence.

The on board computer microprocessor has a test function :

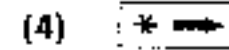
- for the receivers it controls (speedometer , rev counter, oil pressure and level and the liquid crystal displays) and,
- the sensors it requires (oil level sensor, oil pressure sensor, oil temperature sensor, fuel gauge, flow information).

**Access to diagnostic sequence**



Turn the ignition on, engine stopped.

Press the two keys :



and



(3) at the same time

for over 2 seconds.



**FAULT FINDING**

The first fault finding phase is entered, which checks the displays.

The microprocessor checks the two liquid crystal displays (all segments are illuminated except for one, which moves across all the possible positions).



Test segments

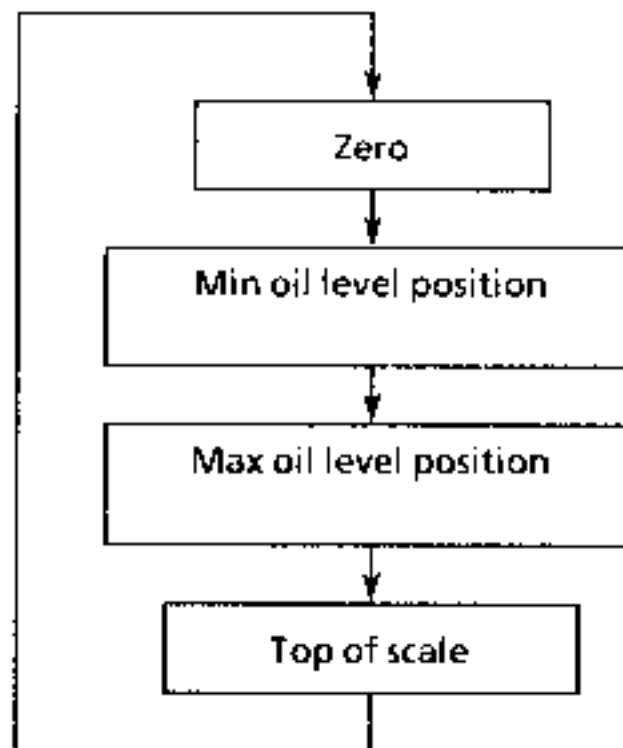


Test segments

At the same time the microprocessor moves the speed counter needle in stages of 40 km/h and the rev counter in stages of 1 000 rpm.

The test is performed up and down the scales for these two instruments.

The oil pressure receiver needle is also moved for 1 second across 4 positions :




During this initial phase, the "low fuel" warning light is illuminated as well as the "service" warning light and the oil level graphic.

When all these units are extinguished once, all the instruments are extinguished, then the operation is repeated as long as the operator remains in the initial phase of the diagnostic sequence.

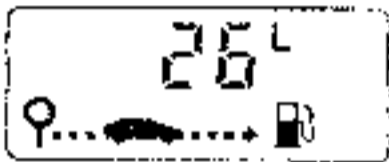
This phase may not be entered or continued if the vehicle speed is not zero.

Any malfunction during this first phase means that the complete unit must be replaced.

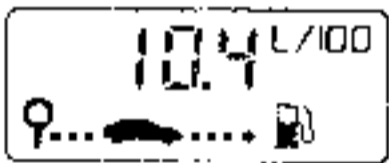
**FAULT FINDING**

The second phase for testing the sensors is accessed by pressing the selection key 3  of the on board computer display, or if a vehicle speed is displayed during the first fault finding phase.

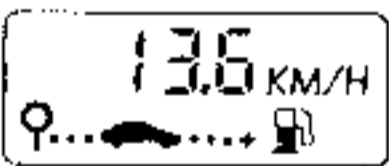
**On board computer**



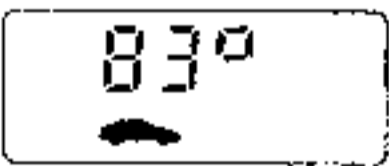
Current fuel level remaining\*



Current consumption in litres/hour (engine running).



Current speed in km/hour (vehicle moving).



Current oil temperature in degrees.

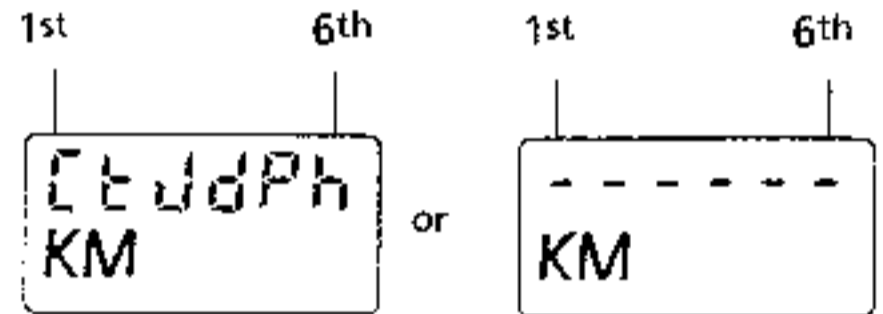


Oil change distance exceeded, 0 km if not exceeded

\* if display is less than or equal to 5 litres, the low fuel signal is transmitted

**Milometer**

The 6 upper digits on the total counter are used for the tests



**Signification :**

**1° digit :**

- : a dash, original instrument panel.
- C : letter C, instrument panel replaced.

**2° digit :**

- : a dash, no oil temperature fault detected.
- t : letter t, oil temperature fault detected.

**3° digit :**

- : a dash, no fuel gauge fault detected.
- J : letter J, fuel gauge fault detected.

**4° digit :**

- : a dash, no flowmeter fault detected.
- d : letter d, flowmeter fault detected.

**5° digit :**

- : a dash, no oil pressure fault detected.
- P : letter P, oil pressure fault detected.

**6° digit :**

- : a dash, no oil level fault detected.
- h : letter h, oil level fault detected.

## FAULT FINDING

Messages are transmitted from the on board computer, after pressing key 3



The display remains unchanged for the milometer.

During this phase, the displays for speed, coolant temperature, engine speed, oil level and oil pressure are displayed normally.

### Special notes for the fault finding function

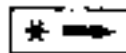
The fault finding function displays faults memorised in the past, but does not test any sensors in a direct manner.

The fuel level receiver, and the coolant temperature receiver, sensor and warning light are the only functions not tested by the fault finding function.

If you are in the fault finding phase when the ignition is turned off, when the ignition is turned on again the 1<sup>st</sup> diagnostic phase returns.

### Resetting sensor fault indicators.

To leave the fault finding mode, press key 4



This has the following effects :

- if in the 1<sup>st</sup> diagnostic phase, all journey parameters and trip totaliser are reset to zero, but sensor faults are stored (flashing display).
- if in the 2<sup>nd</sup> diagnostic phase, all journey parameters and trip totaliser are reset to zero, and memorised faults are erased.

On the other hand when leaving the diagnostic phase, the system automatically returns to distance covered.

**FAULT FINDING**

SPEED COUNTER DOES NOT OPERATE, INCORRECT ON BOARD COMPUTER DISPLAYS AND MILOMETER TOTALS

Enter diagnostic sequence : { \* → + ← ← ← }  
For over 2 seconds

Check the indicator moves from 40 in 40 km/h

CORRECT

INCORRECT

Check:  
- connection of sensor cable to speed unit,  
- correct cable connection on sensor,  
- + APC feed on track A and earth on track C on sensor connector.

Replace instrument panel

INCORRECT

Repair

CORRECT

INCORRECT

Check:  
- continuity and insulation of speed info line on track B of sensor connector to track B4 of shunt unit (on left, under dashboard) and continuity between track A3 of shunt unit and track 21 of blue connector on dashboard.

CORRECT

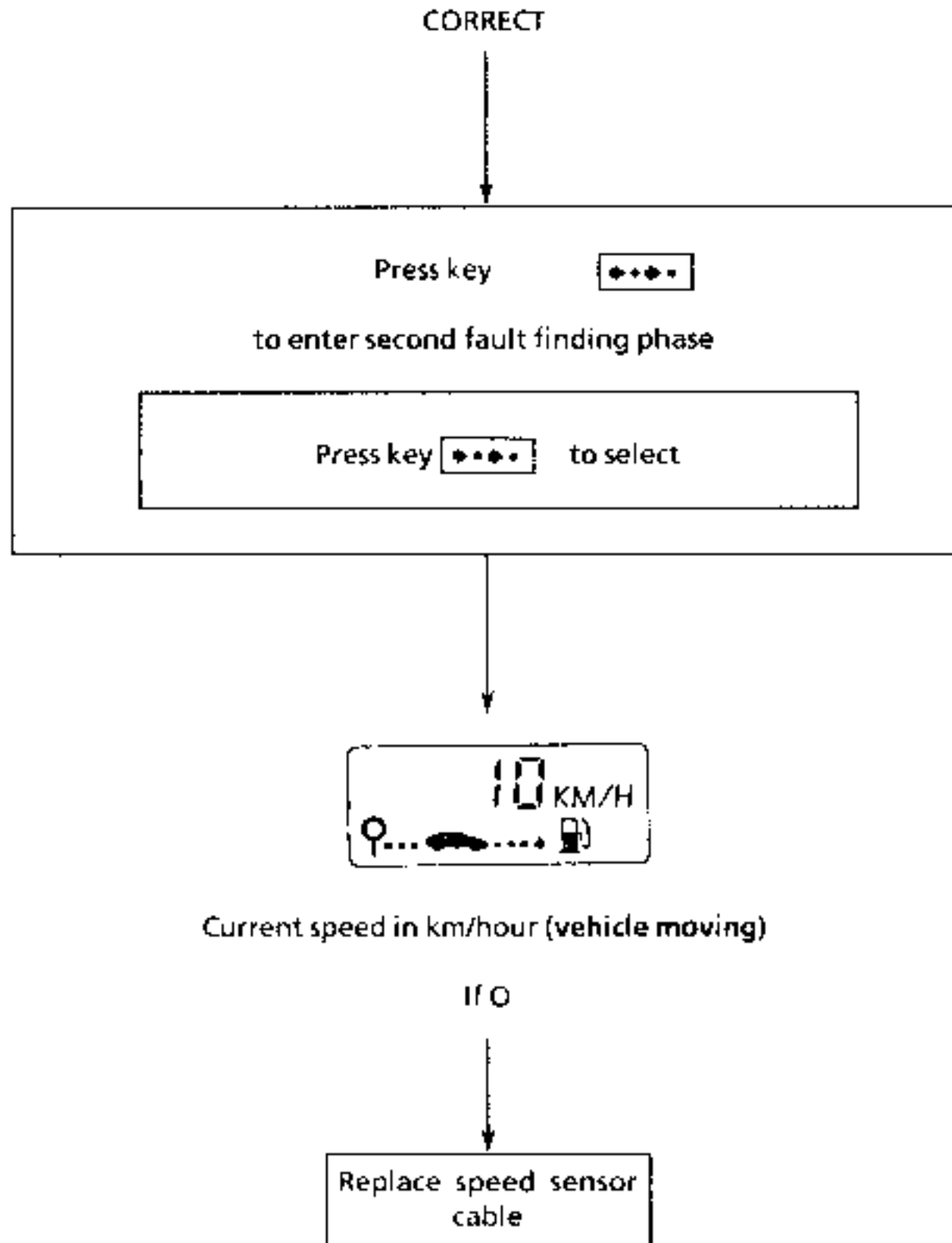
Check correct connection and condition of dashboard connector and pins.

CORRECT

INCORRECT

Repair

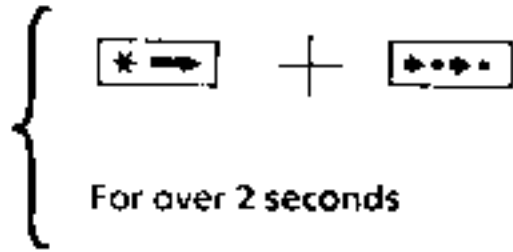
FAULT FINDING



FAULT FINDING

REV COUNTER IS NOT WORKING

Enter diagnostic sequence :



Check indicator movement from 1 000 in 1 000 rpm steps

CORRECT

INCORRECT

Check continuity and insulation of rev counter info wire between track 12 on computer and track 26 on red instrument panel connector.

Replace instrument panel

CORRECT

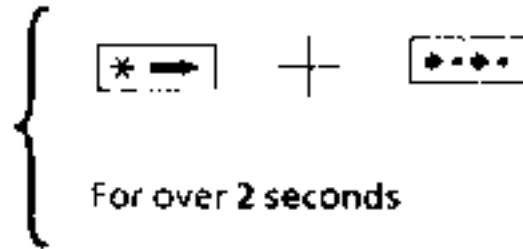
Replace injection computer



**FAULT FINDING**

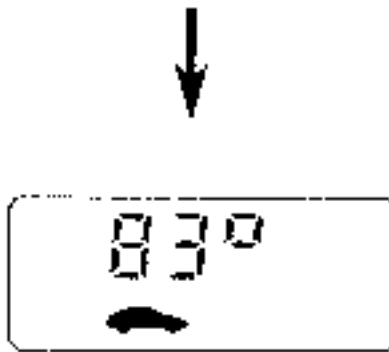
DISTANCE REMAINING BEFORE OIL CHANGE FLASHING

Enter diagnostic sequence :

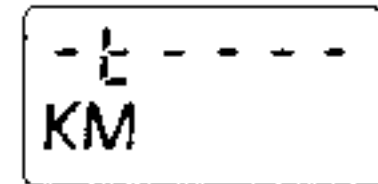


Press key ◆◆◆ to select

1<sup>st</sup> case



Current oil temperature



Detection of oil temperature fault

Temporary fault

Oil temperature sensor information fault for  
more than 10 seconds

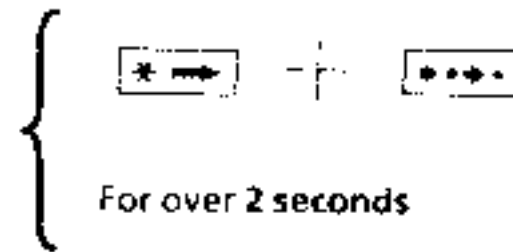
Check:

- condition of sensor connection and red dashboard connector and their connections

FAULT FINDING

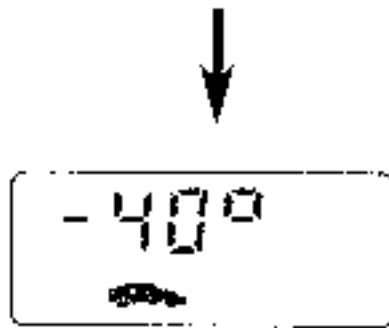
DISTANCE REMAINING BEFORE OIL CHANGE FLASHING

Enter diagnostic sequence :

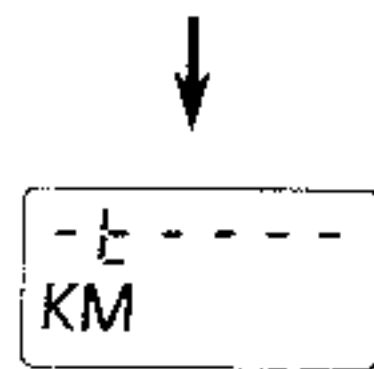


Press key to select

2nd case



Current oil temperature



Detection of oil temperature fault

Oil temperature sensor information cut (min 10 seconds)

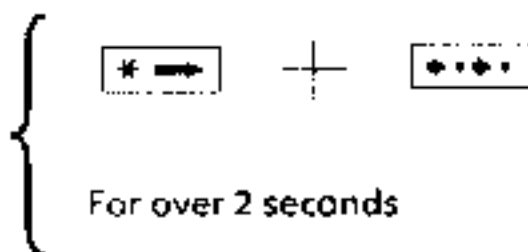
Check:

- condition of sensor connector and red dashboard connector and their connections,
- continuity of oil temperature lines (between track 28 of red dashboard connector and track 1 of sensor connector, and between track 29 of red dashboard connector and track 2 of sensor connector),
- continuity for oil temperature sensor.

FAULT FINDING

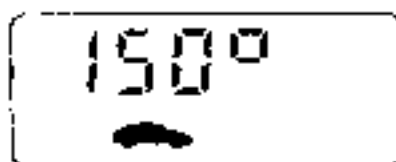
DISTANCE REMAINING BEFORE OIL CHANGE FLASHING

Enter diagnostic sequence :

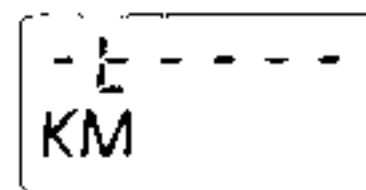


Press key to select

3rd case



Current oil temperature



Detection of oil temperature fault

Short circuit for oil temperature sensor information (min 10 seconds)

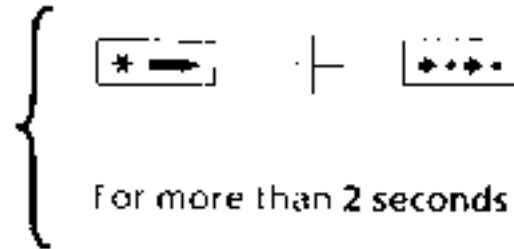
Check:

- condition of sensor connector and red dashboard connector and their connections,
- insulation of oil temperature line (between track 28 of red dashboard connector and track 1 of sensor connector,
- there is a resistance on the oil temperature sensor.

FAULT FINDING (cont)

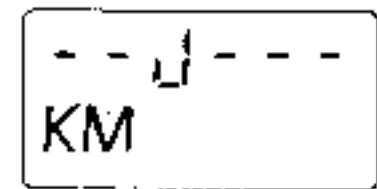
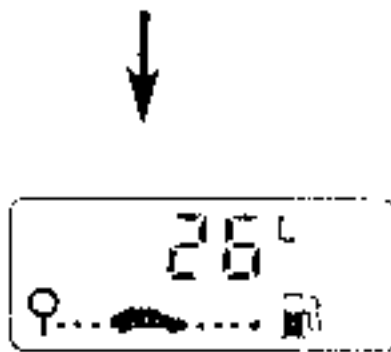
DISTANCE REMAINING FLASHING

Enter the fault finding sequence



Press key to select

1st case



The value displayed (amount of fuel remaining) must be interpreted from the sensor resistance  
If the display is less than or equal to 5 litres the low fuel level signal is transmitted.

Sensor fault detected

Temporary fault  
Sensor information fault for more than 100 seconds

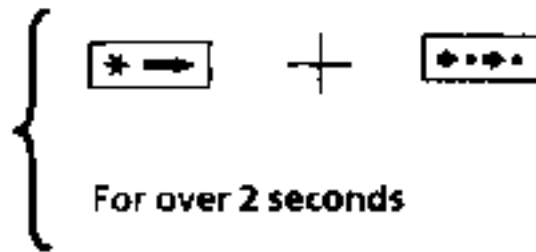
Check:

- the condition of the fuel sensor connector and the blue connector on the dashbard, and their connections
- fuel sensor continuity across the complete operating range (- 5 Ω/l).

**FAULT FINDING**

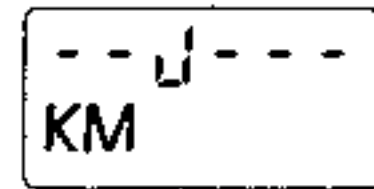
DISTANCE REMAINING BEFORE FUEL REQUIRED FLASHING

Enter diagnostic sequence :



Press key to select

2nd case



Current fuel level.  
Low fuel level warning light illuminated and  
voice synthesiser message transmitted

Detection of gauge fault

Gauge information cut off

Check:

- fuel gauge continuity (- 5  $\Omega$ /l),
- gauge line continuity :
  - . between track 5 of blue dashboard connector and track A of the gauge connector,
  - . between track 8 of blue dashboard connector and track A of the gauge connector

FAULT FINDING

INCORRECT DISTANCE REMAINING DISPLAY BUT  
DISPLAY DOES NOT FLASH

Enter diagnostic sequence:

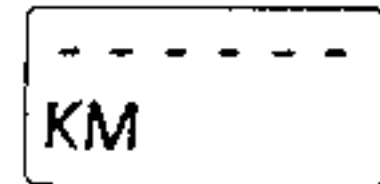


For over 2 seconds

Press key  to select



Maximum fuel level displayed when tank is  
not full



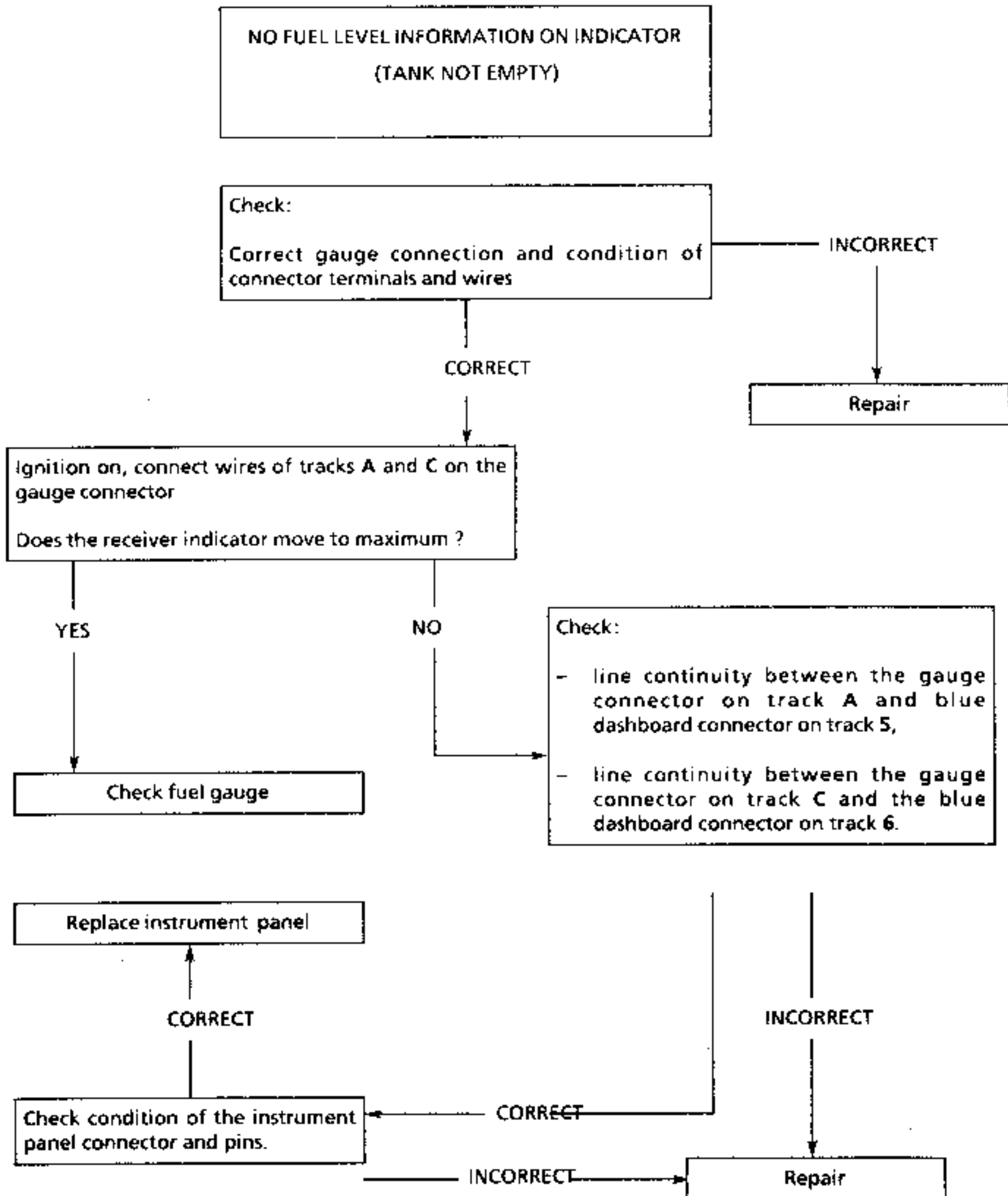
No gauge fault detected

Gauge information short circuit

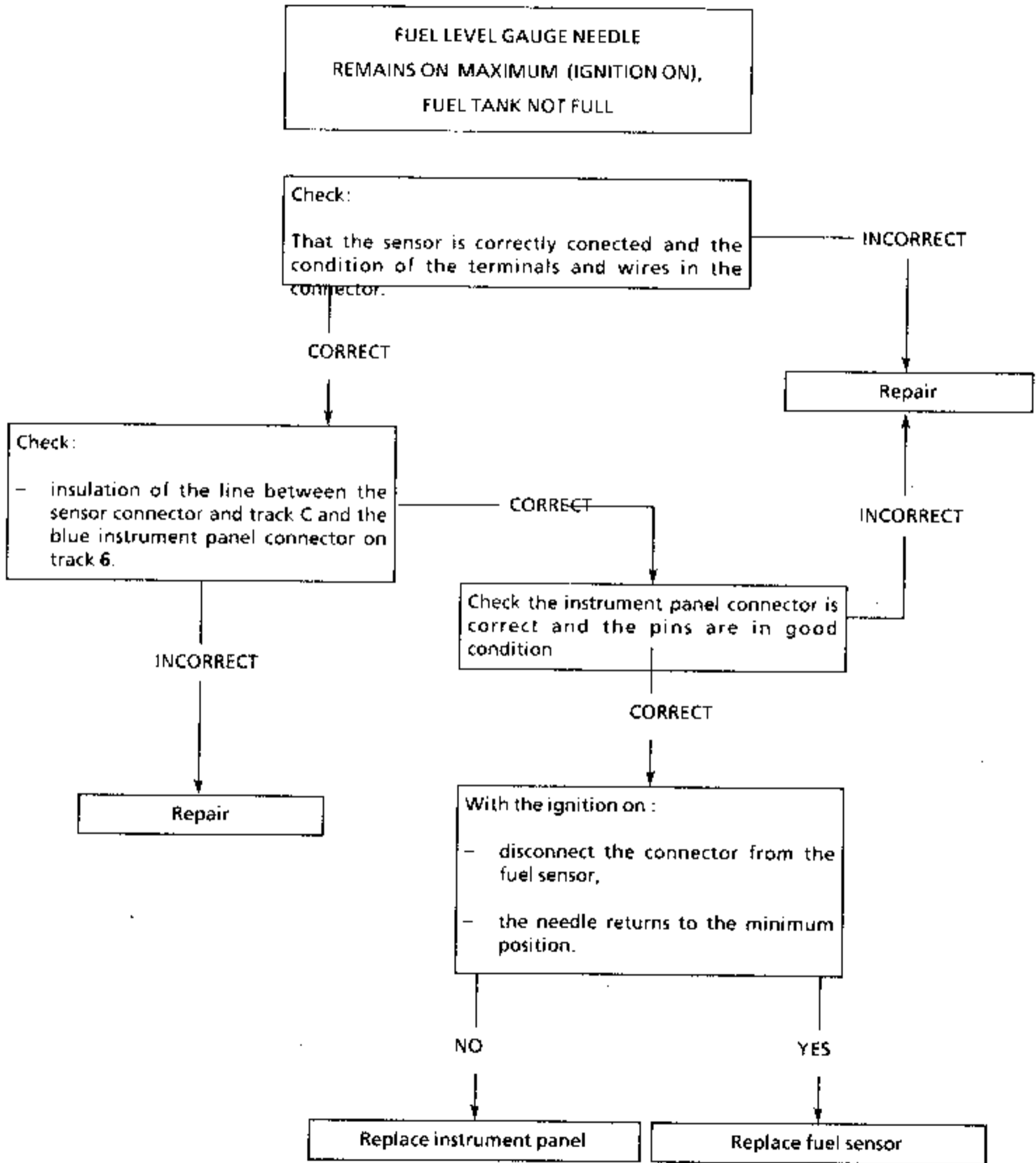
Check:

- fuel gauge resistance (- 5  $\Omega$ /l),
- gauge line insulation :
  - between track 8 of blue dashboard connector and track 8 on gauge connector.

**FAULT FINDING**



FAULT FINDING

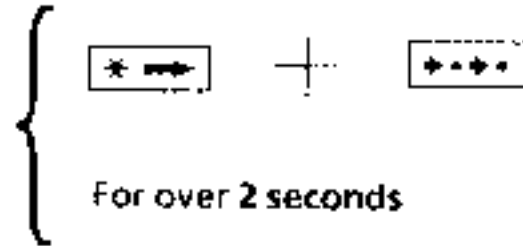




**FAULT FINDING**

SEVERAL FUNCTIONS FLASH - NO CURRENT  
FUEL CONSUMPTION

Enter diagnostic mode :



Press key ←←← to select

1<sup>st</sup> case :



Current fuel consumption in litres/hour

Detection of fuel consumption information fault

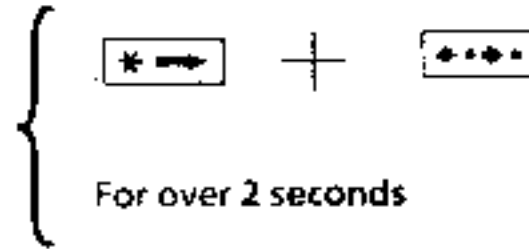
Temporary fault  
Consumption information fault for over 16 km.

Check condition of connection on injection computer and dashboard connector and their connections.

**FAULT FINDING**

SEVERAL FUNCTIONS FLASH - NO CURRENT  
FUEL CONSUMPTION

Enter diagnostic sequence :

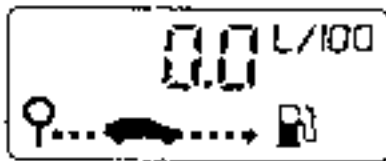


Press key ... to select

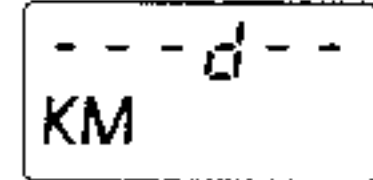
2nd case :



Engine running



Current fuel consumption in litres/hour

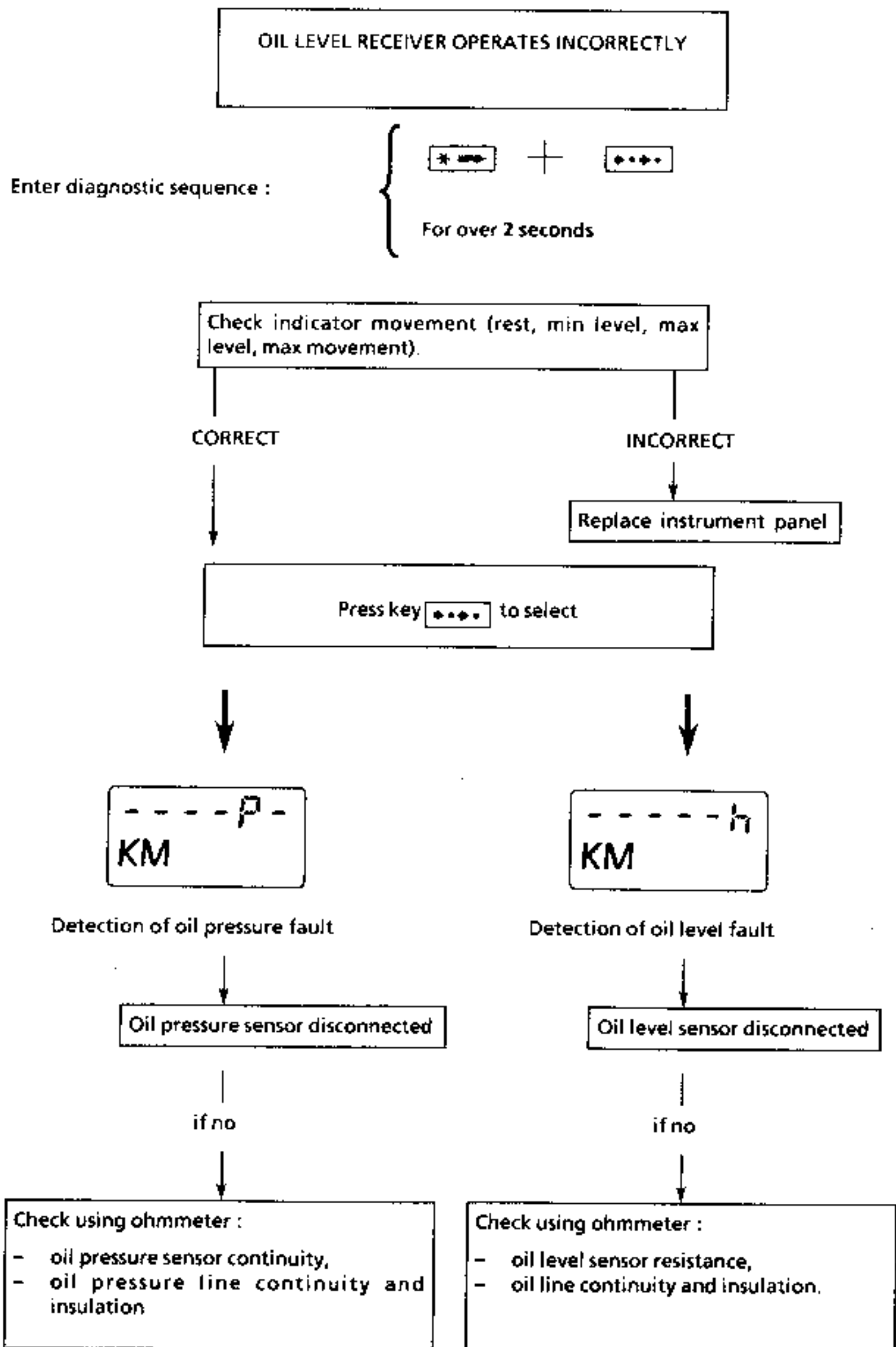


Detection of fuel consumption information fault

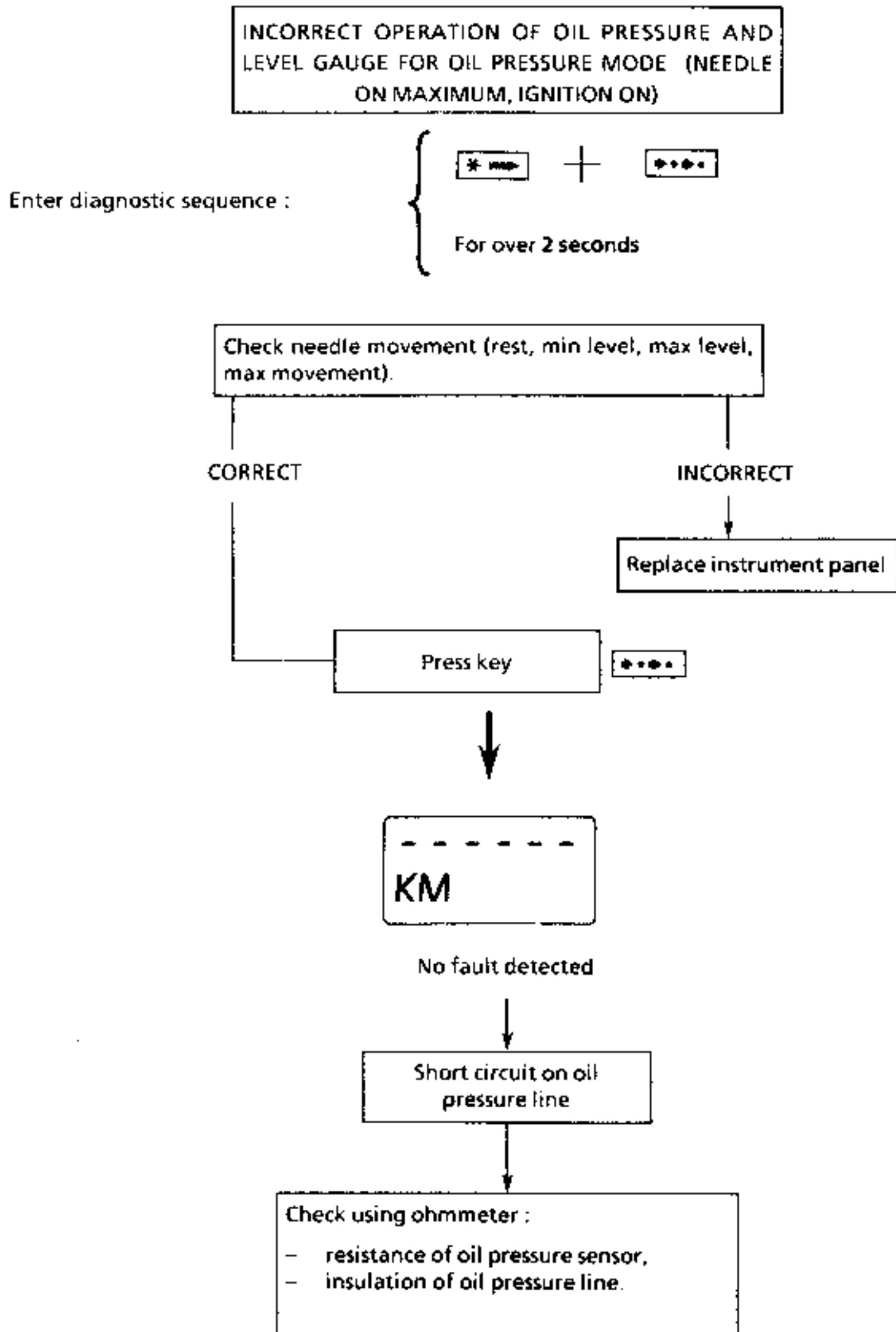
Consumption information cut off

Check continuity and insulation of consumption information line between injection computer track 26 and red dashboard connector track 27.

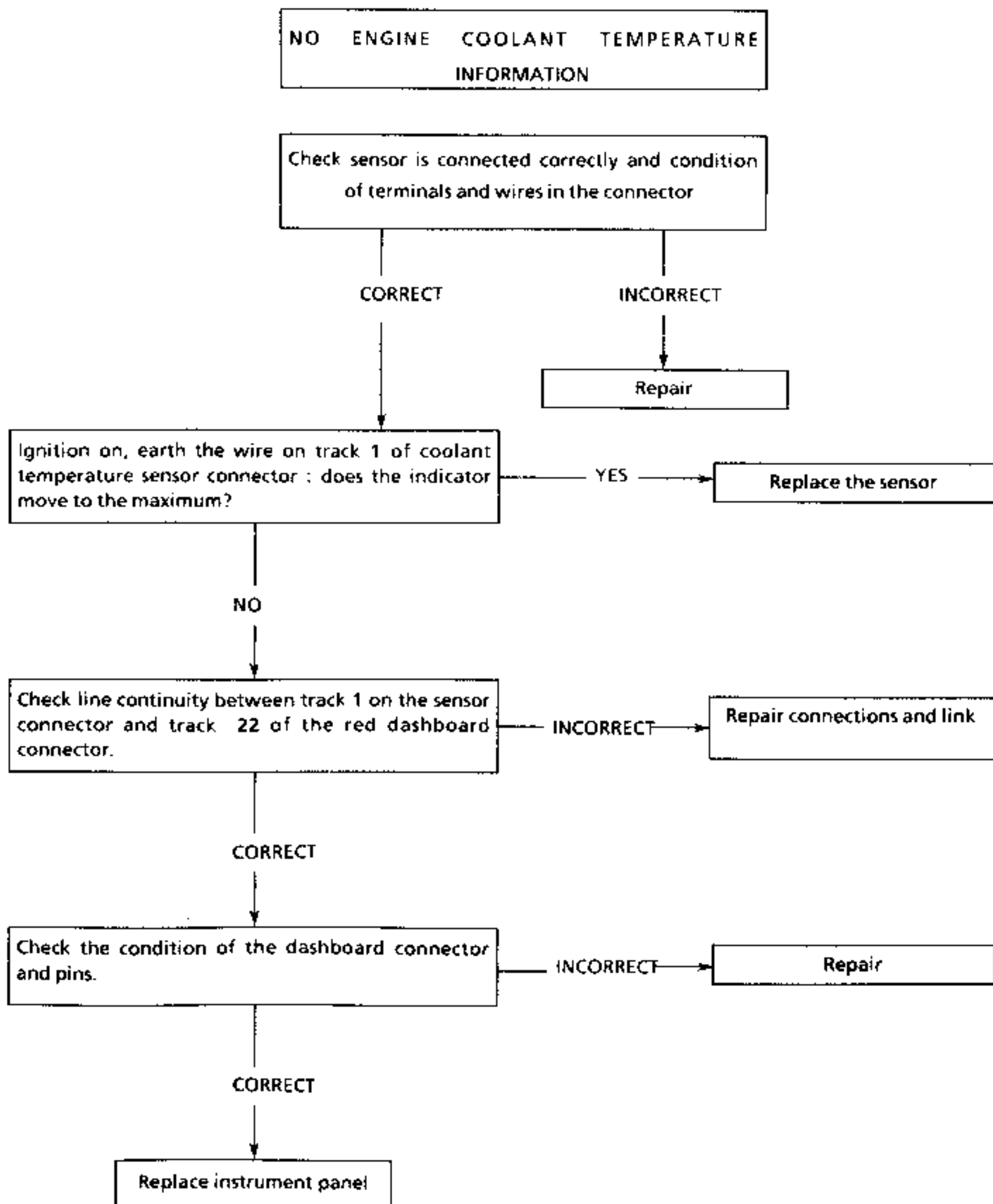
FAULT FINDING



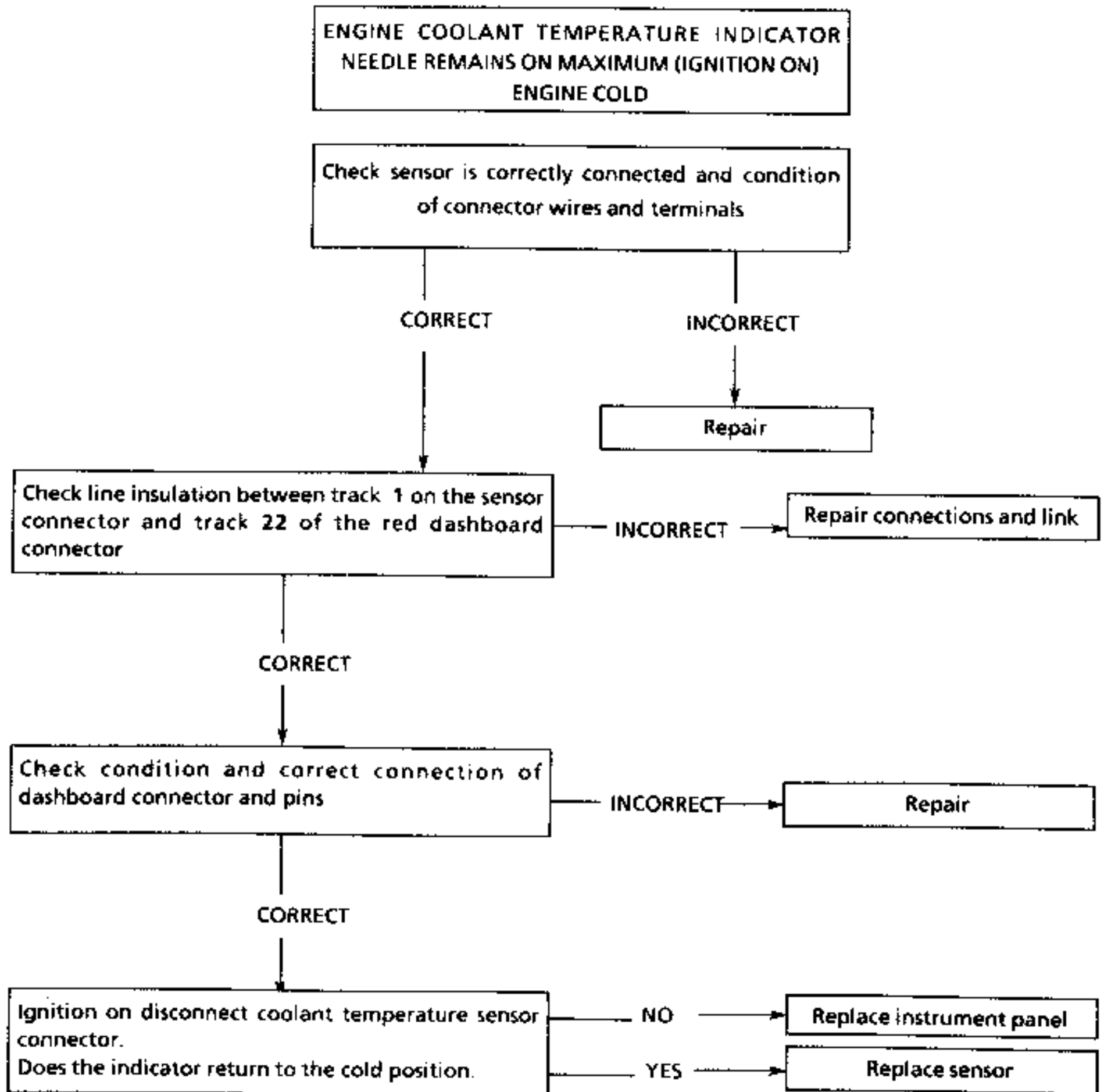
FAULT FINDING



FAULT FINDING



FAULT FINDING



**OPERATION****Milometer**

This type of permanent memory milometer displays the general total and the trip total all the time.

**General total**


This function calculates and displays the number of miles covered since the vehicle was first used, unless the instrument panel has subsequently been changed.

This function is stored in the memory after the battery has been disconnected.

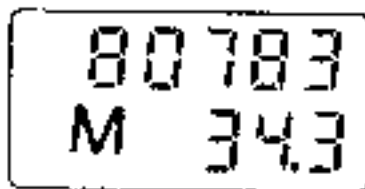
**Trip total**

This function calculates and displays the number of miles covered since the trip function was last reset.

This function is stored in the memory after the battery has been disconnected.

To reset the trip counter, press key 5  (see page 83-16).

When the memory capacity has been exceeded the function resets automatically (9 999 miles).

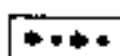


**NOTE** : if there is a speed sensor fault, the diagnostic mode does not show this but the following functions do, since :

- no speed is displayed,
- incorrect display of the following functions :
  - distance covered,
  - distance remaining,
  - average speed,
  - average consumption,
  - distance remaining before oil change,
- incorrect display of all milometer information :
  - general total
  - trip total.

**On board computer**

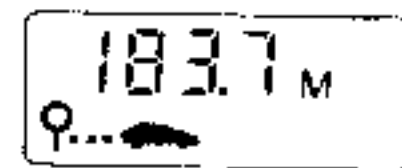
The on board computer loop has six displays (journey parameters).

When the ignition is turned on or when the system is reset, select the display required using key 3  (see page 83-16)

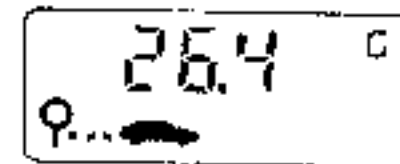
The display shown when the ignition is turned on is the same as before the ignition was last turned off

The information is displayed in the following order :

- Distance covered in miles (M).  
since the last reset.  
display of tenths of miles below 1 000 miles.  
Max capacity : 9 999 miles.



- Fuel used in gallons (G)  
since the last reset.  
Max capacity : 1 999 gallons.



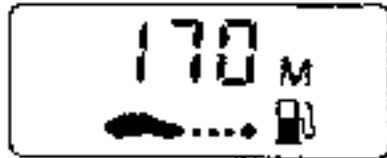
**OPERATION**- **Distance remaining before fuel refill (in M)**

Since the last reset

Distance remaining calculated on the basis of distance covered, fuel used and fuel remaining

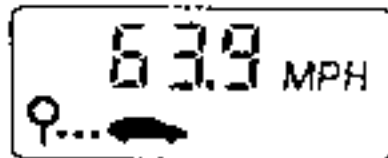
Max capacity : 9 999 miles.

When the fuel remaining is less than 1.1 gallons dashes are displayed : - - - - . (see page 83-44)

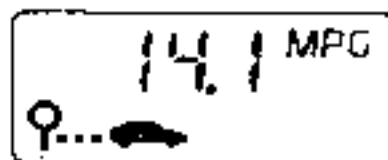
- **Average speed (in mph)**

Obtained by dividing the distance covered by the time elapsed since the last reset.

Uses the internal clock for the on board computer.

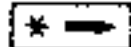
- **Average consumption in miles per gallon (mpg)**

Calculated from the distance covered and the fuel used since the last reset.

- **Distance remaining before oil change (in M)**

Display of distance remaining before oil change is due, based on distance covered and oil temperature (memory).

Max display : 6 000 miles.

**NOTE :** The display counts down in stages of 5 miles.**NOTE :** For journey parameters to be displayed the vehicle must have travelled at least 0.2 miles since the last reset.**Resetting the on board computer**The computer may be reset when any display is shown by pressing  (see page 83-16)

This does not alter the trip counter or the distance remaining before oil change.

**NOTE :** If the maximum capacity of the displays is exceeded or the current is cut (battery disconnected) the memories are reset in the on board computer.



**OPERATION****Individual displays**

**Low fuel level** : The low fuel level procedure is activated when the fuel tank only contains **1.1 gallons**. The instrument panel electronic circuit sends a signal to the voice synthesiser and illuminates the warning light.

The distance remaining remains displayed for **30 seconds** approx, then is replaced by 4 dashes.



**NOTE** : when the ignition is turned on, the 4 dashes are displayed, the voice synthesiser gives a message and the warning light is illuminated immediately.

**ATTENTION**

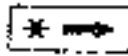
If one of the displays flashes (SEE FAULT FINDING)

**NOTE** : if a gauge or flow information fault has been detected (see fault finding), the low fuel value changes from **1.1 gallons** to **1.8 gallons**

**RESETTING DISTANCE REMAINING TO OIL CHANGE**

This function may be reset (to **6 000 miles**) when it reaches **0 miles** or at any other time.

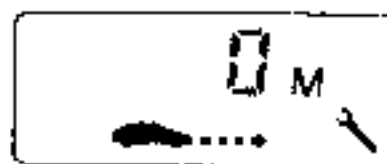
Procedure : Ex. : (Vehicle has reached oil change).

Press the Top depart key  and start the ignition while holding the key down.



Keep the key depressed 

8 types of display will then be shown one after the other:



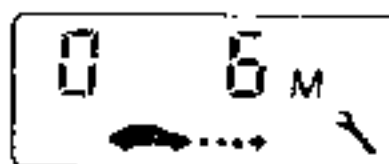
**DISPLAY 1**  
(spanner flashing)



**DISPLAY 2**  
(spanner flashing)

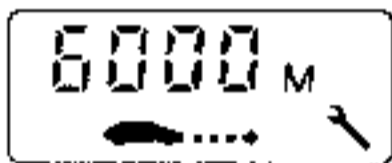


**DISPLAY 3**  
(spanner flashing)



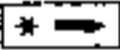
**DISPLAY 4**  
(spanner flashing)


## RESETTING DISTANCE REMAINING TO OIL CHANGE (cont)


DISPLAY 5  
(spanner flashing)DISPLAY 6  
(spanner flashing)DISPLAY 7  
(spanner flashing)

ADAC spanner fixed. Return to computer function (distance displayed).

**NOTE :** only changing from DISPLAY 7 to the computer mode validates the reset, otherwise the old distance value will be displayed

If the key  is released during the procedure after 20 seconds the display returns to the mode shown before the ignition was turned off or to the low fuel mode.

The reset may be cancelled before validation, by releasing key  and pressing key

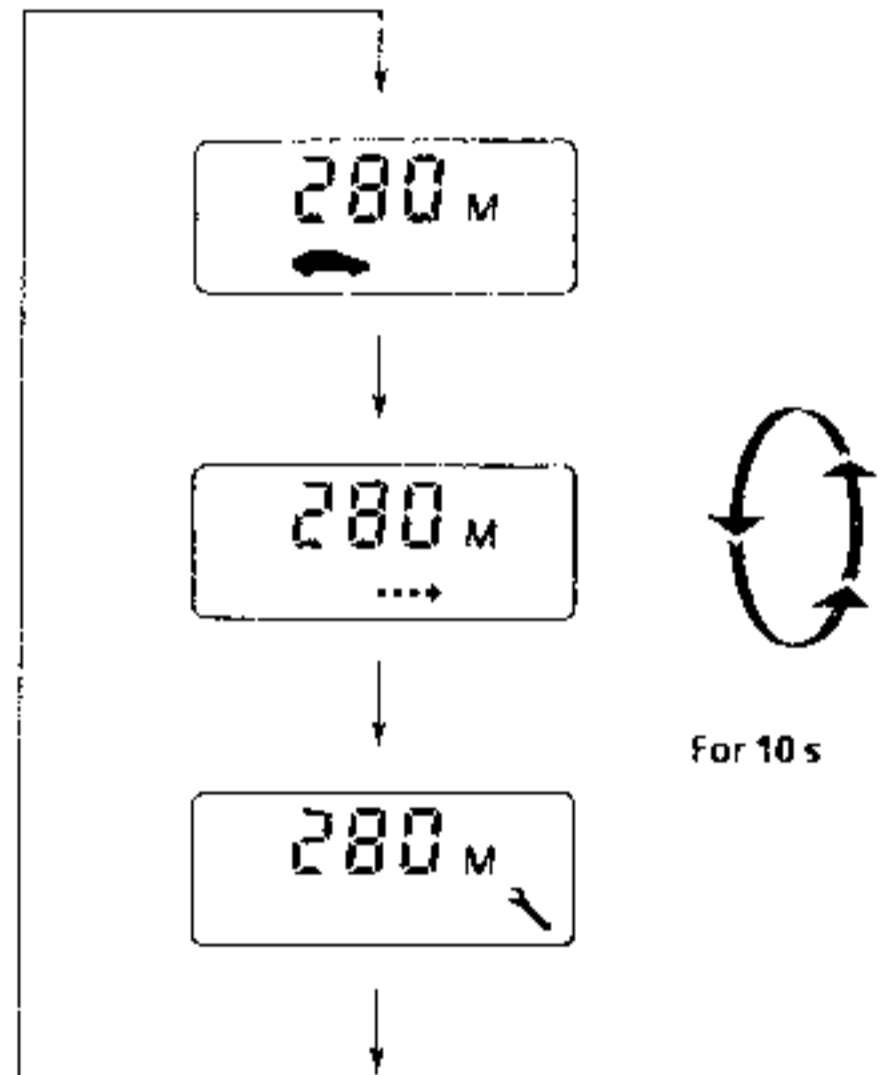
 at the end of the windscreen wash control.

Once the reset procedure has been carried out and validated, the distance remaining before oil change is displayed or the low fuel display is shown after 20 seconds.

## Special note

If the distance remaining before oil change is less than 2000 miles when the ignition is turned on the distance remaining is displayed for 10 seconds and 3 symbols illuminate successively at the bottom of the display (see example).

Example :



For 10 s

Then the low fuel display is shown (if the fuel is low) or the last display before the ignition was turned off is shown.

**NOTE:** if the vehicle is used despite the distance before oil change being 0 miles, the counter continues to count, but the display remains on 0 miles.

To display the distance covered after oil change was due, see fault finding sequence.

**FAULT FINDING****Fault detection**

The on board computer has been studied to determine what faults could affect it.

If { fuel used  
distance remaining  
before refill  
average consumption } flash

and flashing dashes are displayed in current consumption this indicates a fuel flow fault for more than 10 miles (16 km).

If only the distance remaining before refill flashes, this indicates a gauge information fault for over 100 seconds

If the distance remaining before oil change flashes, this indicates an oil temperature sensor fault for more than 10 seconds.

In addition to signalling a fault by a flashing display, the computer stores the fault in its memory

in the case of a flashing display, or dashes, or to display the sensor faults memorised, follow the fault finding sequence

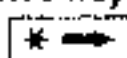
The on board computer microprocessor has a test function :

- for the receivers it controls (speedometer , rev counter, oil pressure and level and the liquid crystal displays) and,
- the sensor it requires (oil level sensor, oil pressure sensor, oil temperature sensor, fuel gauge, flow information).

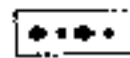
**Access to diagnostic sequence**

Press the two keys :

(4)



and



(3) at the same time

for over 2 seconds (see page 83-21)

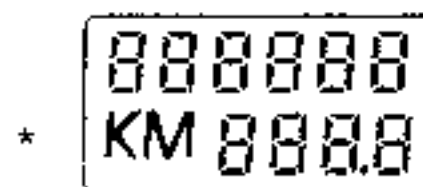
**FAULT FINDING (cont)**

The first fault finding phase is entered, which checks the displays.

The microprocessor checks the two liquid crystal displays (all segments are illuminated except for one, which moves across all the possible positions).



Test segments



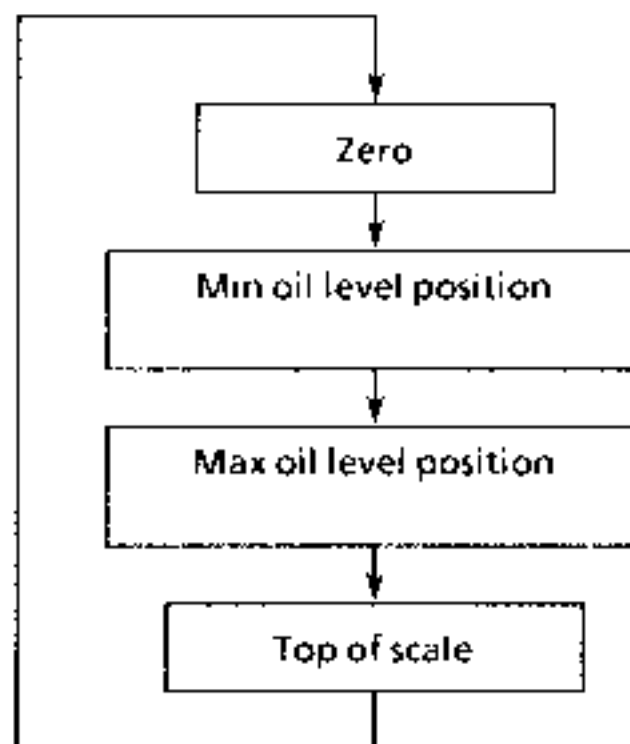
Test segments

\*It is normal that "K" appears in the test segments, despite this being a British display.

At the same time the microprocessor moves the speed counter needle in stages of 20 mph (40 km/h) and the rev counter in stages of 1 000 rpm

The test is performed up and down the scales for these two instruments.

The oil pressure receiver needle is also moved for 1 second across 4 positions :




During this initial phase, the "low fuel" warning light is illuminated as well as the "service" warning light and the oil level graphic.

When all these units have operated once, all the instruments off for one second, then the operation is repeated as long as the operator remains in the initial phase of the diagnostic sequence.

This phase may not be entered or continued if the vehicle speed is not zero.

Any malfunction during this first phase means that the complete unit must be replaced.

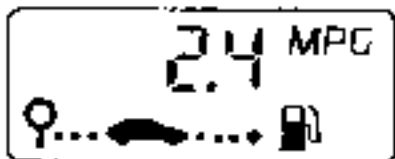
## FAULT FINDING

The second phase for testing the sensors is accessed by pressing the selection key 3  of the on board computer display, or if a vehicle speed is displayed during the first fault finding phase.

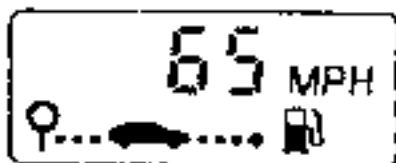
## On board computer



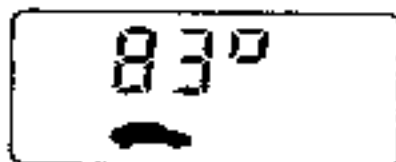
Current fuel level remaining \*



Current consumption in gallons/hour  
(engine running).



Current speed in mph  
(vehicle moving).



Current oil temperature in degrees.

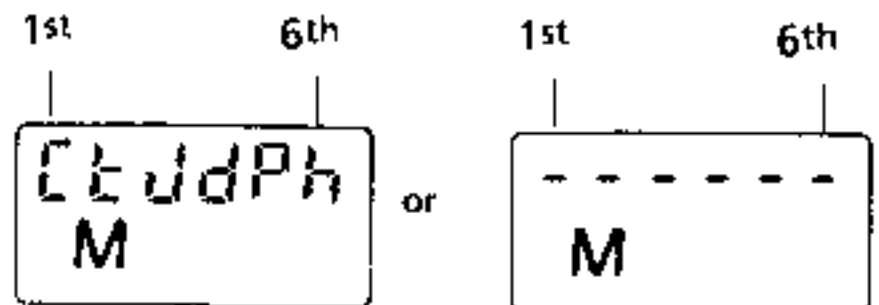


Oil change distance exceeded, 0 miles if not exceeded

\* if display is less than or equal to 1.1 gallons, the low fuel signal is transmitted

## Milometer

The 6 upper digits on the total counter are used for the tests



## Signification :

## 1° digit :

- : a dash, original instrument panel.
- C : letter C, instrument panel replaced.

## 2° digit :

- : a dash, no oil temperature fault detected.
- t : letter t, oil temperature fault detected.

## 3° digit :

- : a dash, no fuel gauge fault detected.
- J : letter J, fuel gauge fault detected.

## 4° digit :

- : a dash, no flowmeter fault detected.
- d : letter d, flowmeter fault detected.


## 5° digit :

- : a dash, no oil pressure fault detected.
- P : letter P, oil pressure fault detected.

## 6° digit :

- : a dash, no oil level fault detected.
- h : letter h, oil level fault detected.

## FAULT FINDING

Messages are transmitted from the on board computer, after pressing key 3 

The display remains unchanged for the milometer.

During this phase, the displays for speed, coolant temperature, engine speed, oil level and oil pressure are displayed normally

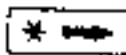
### Special notes for the fault finding function

The fault finding function displays faults memorised in the past, but does not test any sensors in a direct manner.

The fuel level receiver, and the coolant temperature receiver, sensor and warning light are the only functions not tested by the fault finding function.

If you are in the fault finding phase when the ignition is turned off, when the ignition is turned on again the 1<sup>st</sup> diagnostic phase returns.

### Resetting sensor fault indicators.

To leave the fault finding mode, press key 4 

This has the following effects :

- if in the 1<sup>st</sup> diagnostic phase, all journey parameters and trip totaliser are reset to zero, but sensor faults are stored (flashing display).
- if in the 2<sup>nd</sup> diagnostic phase, all journey parameters and trip totaliser are reset to zero, and memorised faults are erased.

On the other hand when leaving the diagnostic phase, the system automatically returns to **distance covered**.

## FAULT FINDING

SPEED COUNTER DOES NOT OPERATE, INCORRECT ON BOARD COMPUTER DISPLAYS AND MILOMETER TOTALS

Enter diagnostic sequence :



For over 2 seconds

Check the indicator moves from 40 in 40 mph steps

CORRECT

INCORRECT

Check:

- connection of sensor cable to speed unit,
- correct cable connection on sensor,
- + APC feed on track A and earth on track C on sensor connector.

INCORRECT

Repair

CORRECT

Check:

- continuity and insulation of speed info line on track B of sensor connector to track B4 of shunt unit (on right, under dashboard) and continuity between track A3 of shunt unit and track 21 of blue connector on dashboard.

INCORRECT

CORRECT

Check correct connection and condition of dashboard connector and pins.

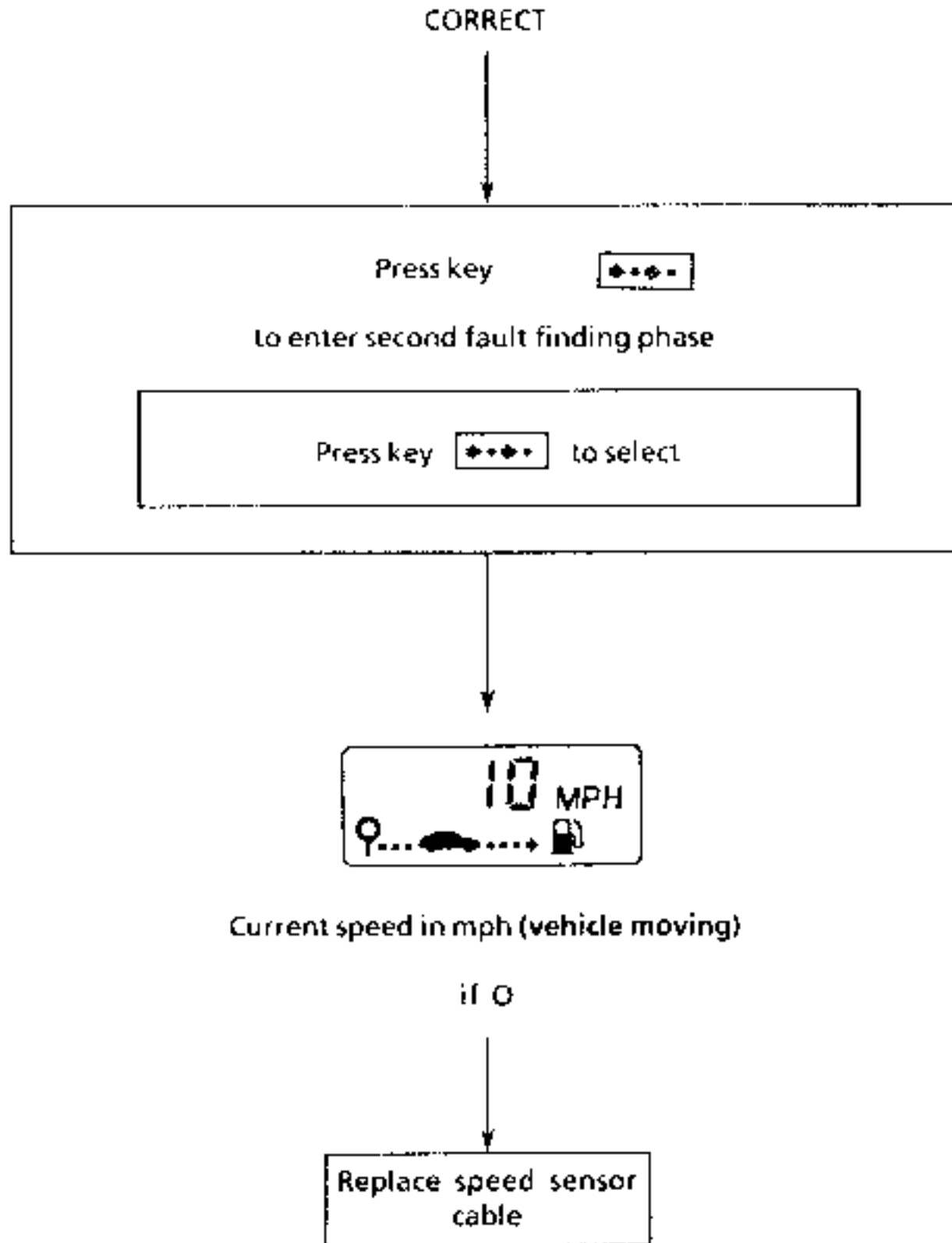
CORRECT

INCORRECT

Repair

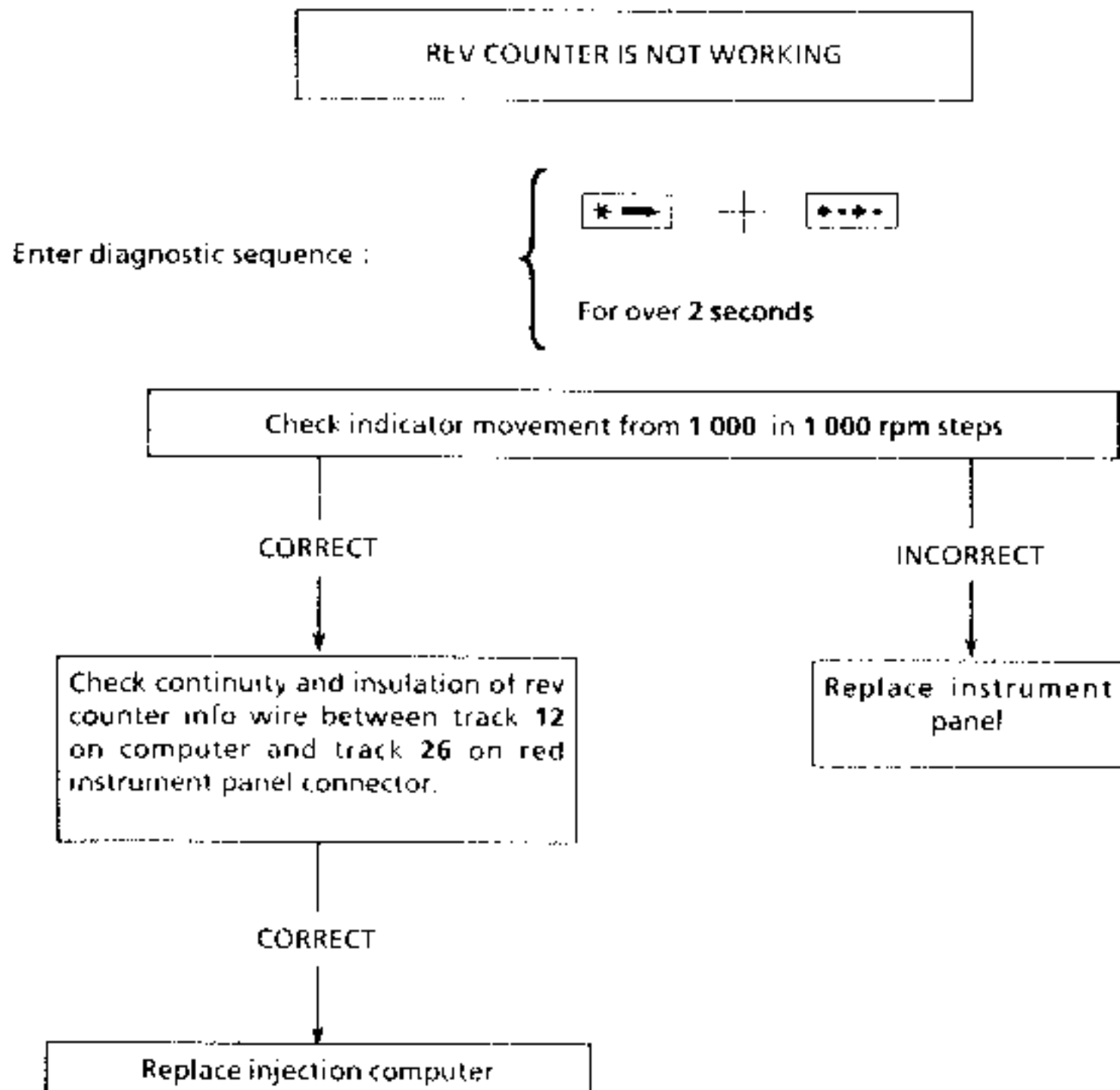


FAULT FINDING





## FAULT FINDING (cont)



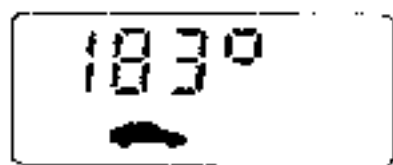
## FAULT FINDING

DISTANCE REMAINING BEFORE OIL CHANGE FLASHING

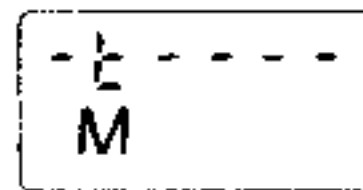
Enter diagnostic sequence :



For over 2 seconds

Press key  to select1<sup>st</sup> case

Current oil temperature



Detection of oil temperature fault

Temporary fault

Oil temperature sensor information fault for  
more than 10 seconds

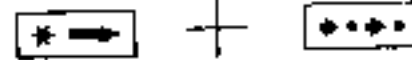
Check:

- condition of sensor connection and red dashboard connector and their connections.

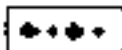
## FAULT FINDING

DISTANCE REMAINING BEFORE OIL CHANGE FLASHING

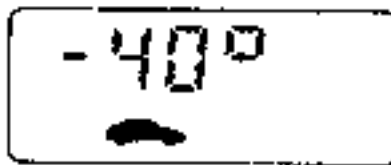
Enter diagnostic sequence :



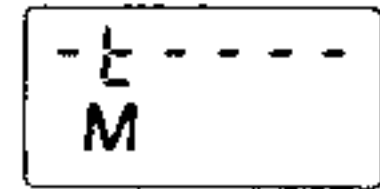
For over 2 seconds

Press key  to select

2nd case



Current oil temperature



Detection of oil temperature fault

Oil temperature sensor information cut (min  
10 seconds)

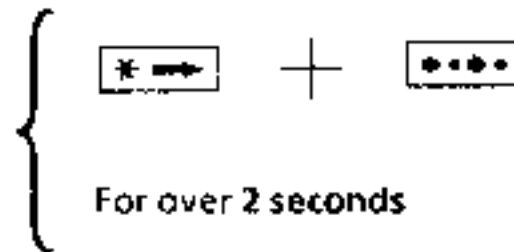

Check:

- condition of sensor connector and red dashboard connector and their connections,
- continuity of oil temperature lines (between track 28 of red dashboard connector and track 1 of sensor connector, and between track 29 of red dashboard connector and track 2 of sensor connector),
- continuity for oil temperature sensor.

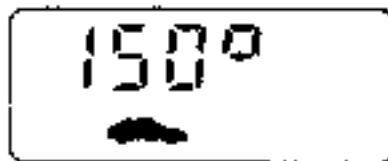
## FAULT FINDING

DISTANCE REMAINING BEFORE OIL CHANGE FLASHING

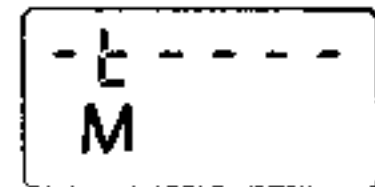
Enter diagnostic sequence :

Press key  to select

3rd case



Current oil temperature



Detection of oil temperature fault

Short circuit for oil temperature sensor  
information (min 10 seconds)

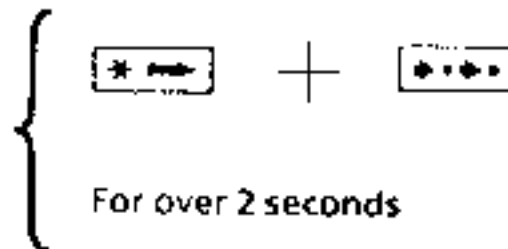
Check:

- condition of sensor connector and red dashboard connector and their connections,
- insulation of oil temperature line (between track 28 of red dashboard connector and track 1 of sensor connector,
- there is a resistance on the oil temperature sensor.

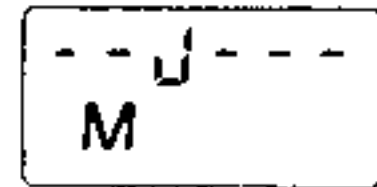
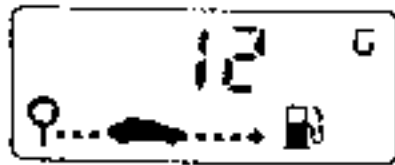
## FAULT FINDING (cont)

DISTANCE REMAINING BEFORE FUEL REQUIRED FLASHING

Enter diagnostic sequence :



Press key to select

1<sup>st</sup> case

Detection of gauge fault

The value displayed (quantity of fuel remaining) must be the product of the gauge resistance.  
If the display is equal to or less than 1.1 gallons the low fuel signal is transmitted.

Temporary fault  
Gauge information fault for more than  
100 seconds

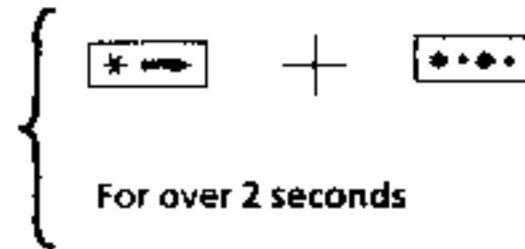
Check:

- condition of fuel gauge connector and blue dashboard connector and their connections,
- continuity for the fuel gauge over the complete operating range (- 22.5  $\Omega$ /G).

## FAULT FINDING

DISTANCE REMAINING BEFORE FUEL REQUIRED FLASHING

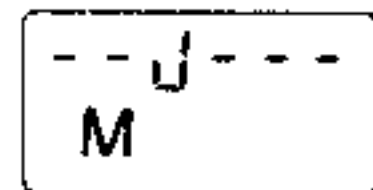
Enter diagnostic sequence :

Press key  to select

2nd case



Current fuel level.  
Low fuel level warning light illuminated and  
voice synthesiser message transmitted



Detection of gauge fault

Gauge information cut off

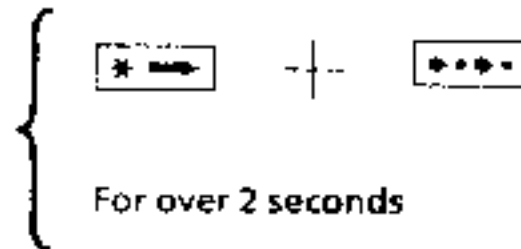
Check:

- fuel gauge continuity (- 22.5  $\Omega$ /G),
- gauge line continuity :
  - . between track 5 of blue dashboard connector and track A of the gauge connector,
  - . between track 8 of blue dashboard connector and track A of the gauge connector

## FAULT FINDING

INCORRECT DISTANCE REMAINING DISPLAY BUT  
DISPLAY DOES NOT FLASH

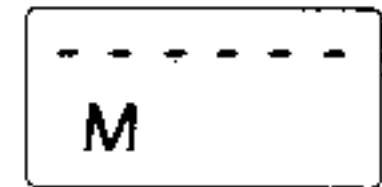
Enter diagnostic sequence:



Press key to select



Maximum fuel level displayed when tank is not full



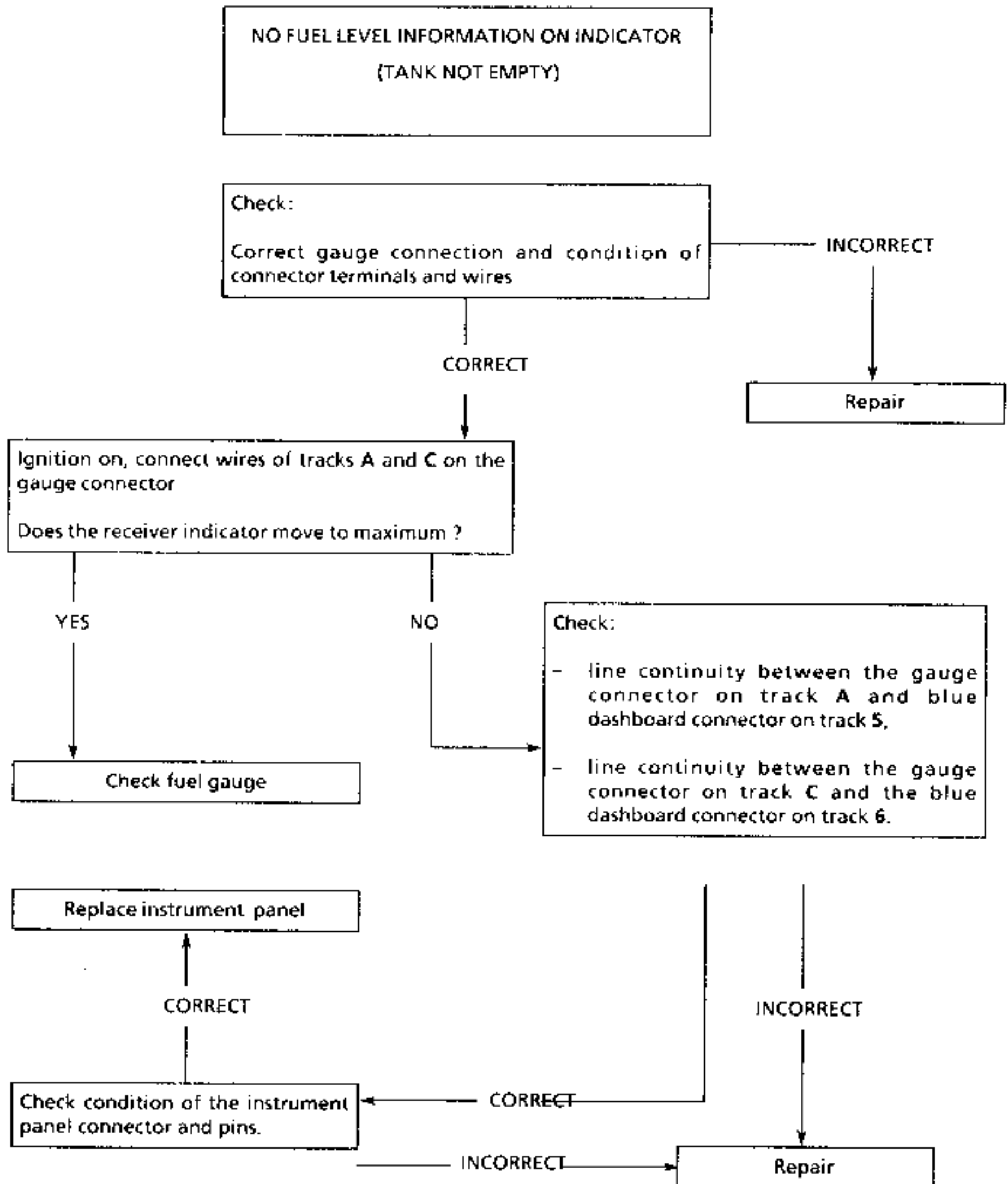
No gauge fault detected

Gauge information short circuit

Check:

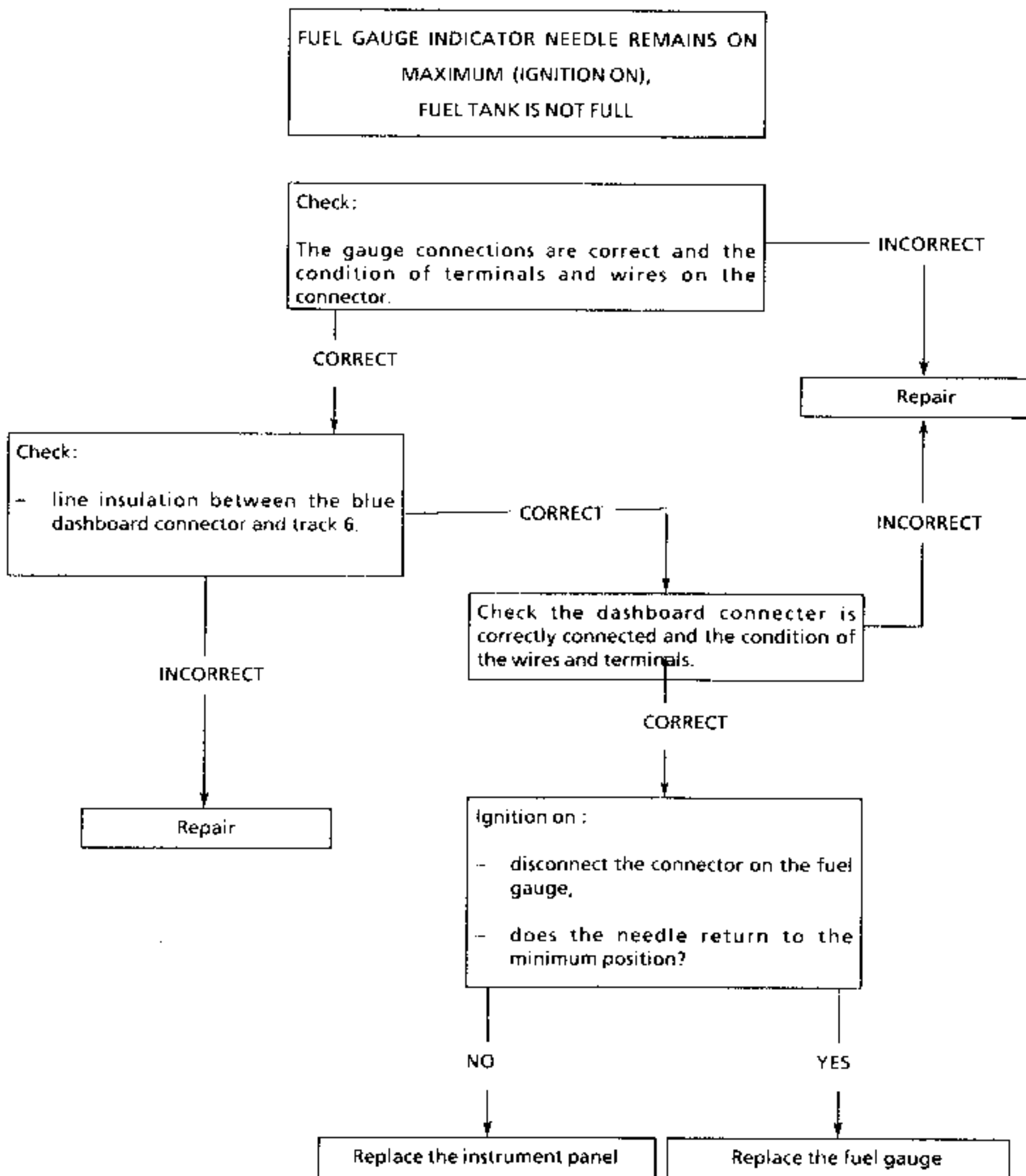
- fuel gauge resistance (- 22.5  $\Omega$ /G),
- gauge line insulation :
  - . between track **B** of blue dashboard connector and track **B** on gauge connector.

## FAULT FINDING





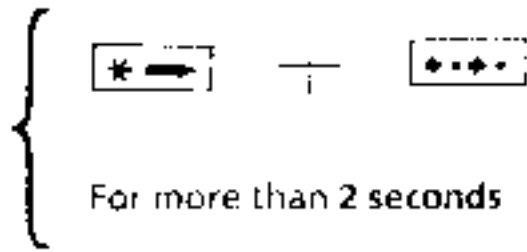
## FAULT FINDING




FAULT FINDING (cont)

SEVERAL FUNCTIONS FLASHING

Enter the fault finding mode :

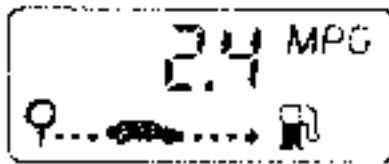


Press key  to select

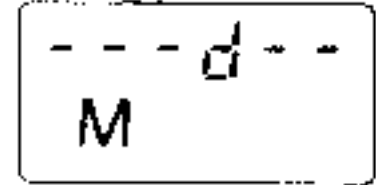
1st case :



Engine running



Current consumption in gallons/hour



Consumption information fault detected



Temporary fault  
Consumption information fault for more than  
10 miles

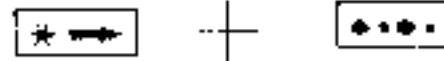


Check the connector on the injection computer and the instrument panel connector and their connections.


## FAULT FINDING (cont)

SEVERAL FUNCTIONS FLASHING

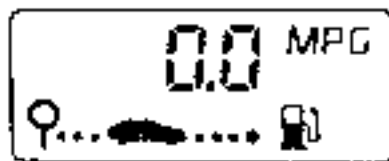
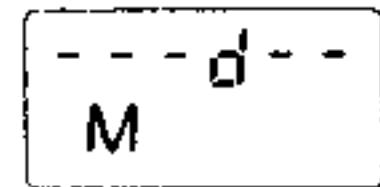
Enter the fault finding mode :



For more than 2 seconds

Press key  to select

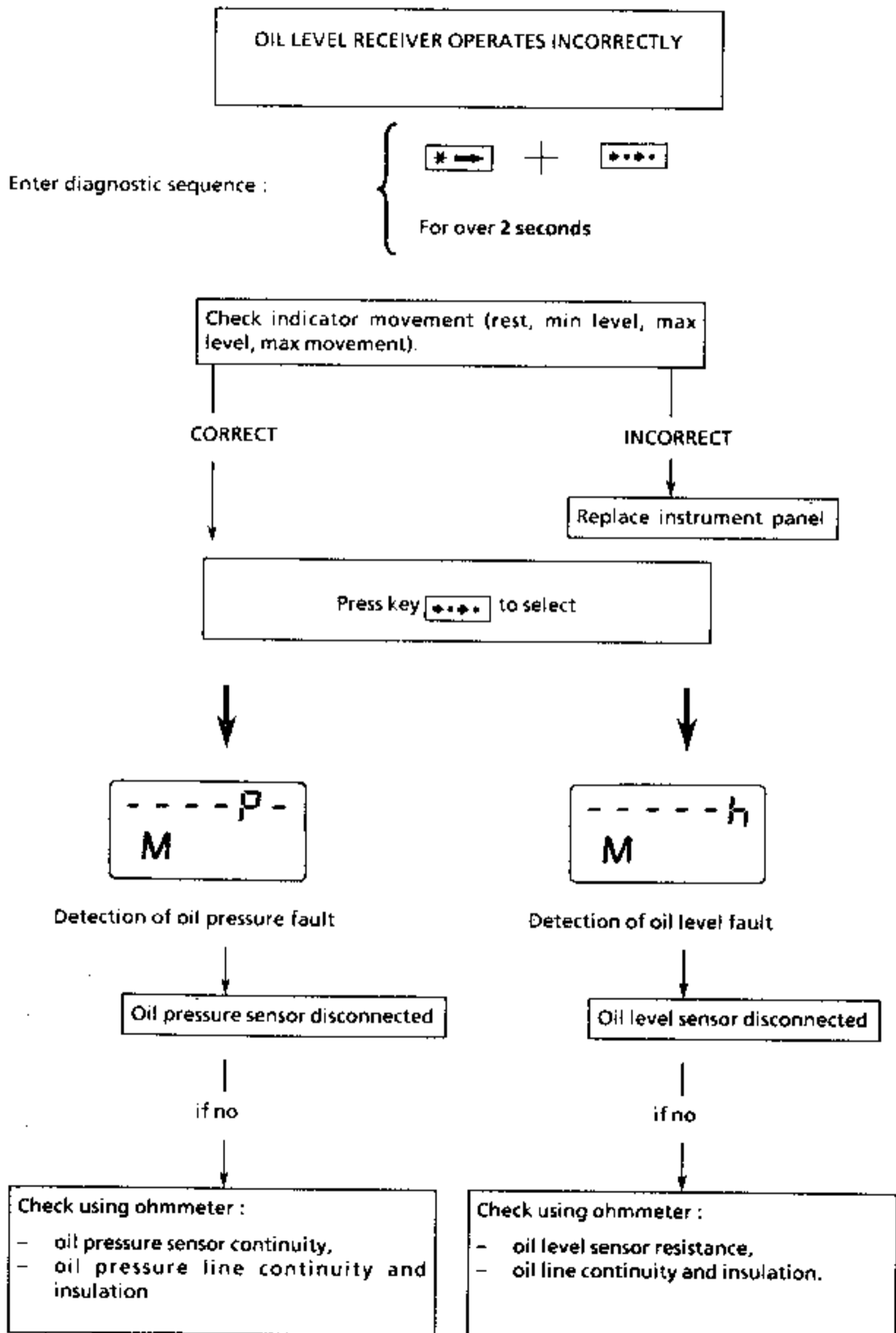
2nd case :

Engine  
runningCurrent consumption in  
gallons/hourConsumption information fault  
detected

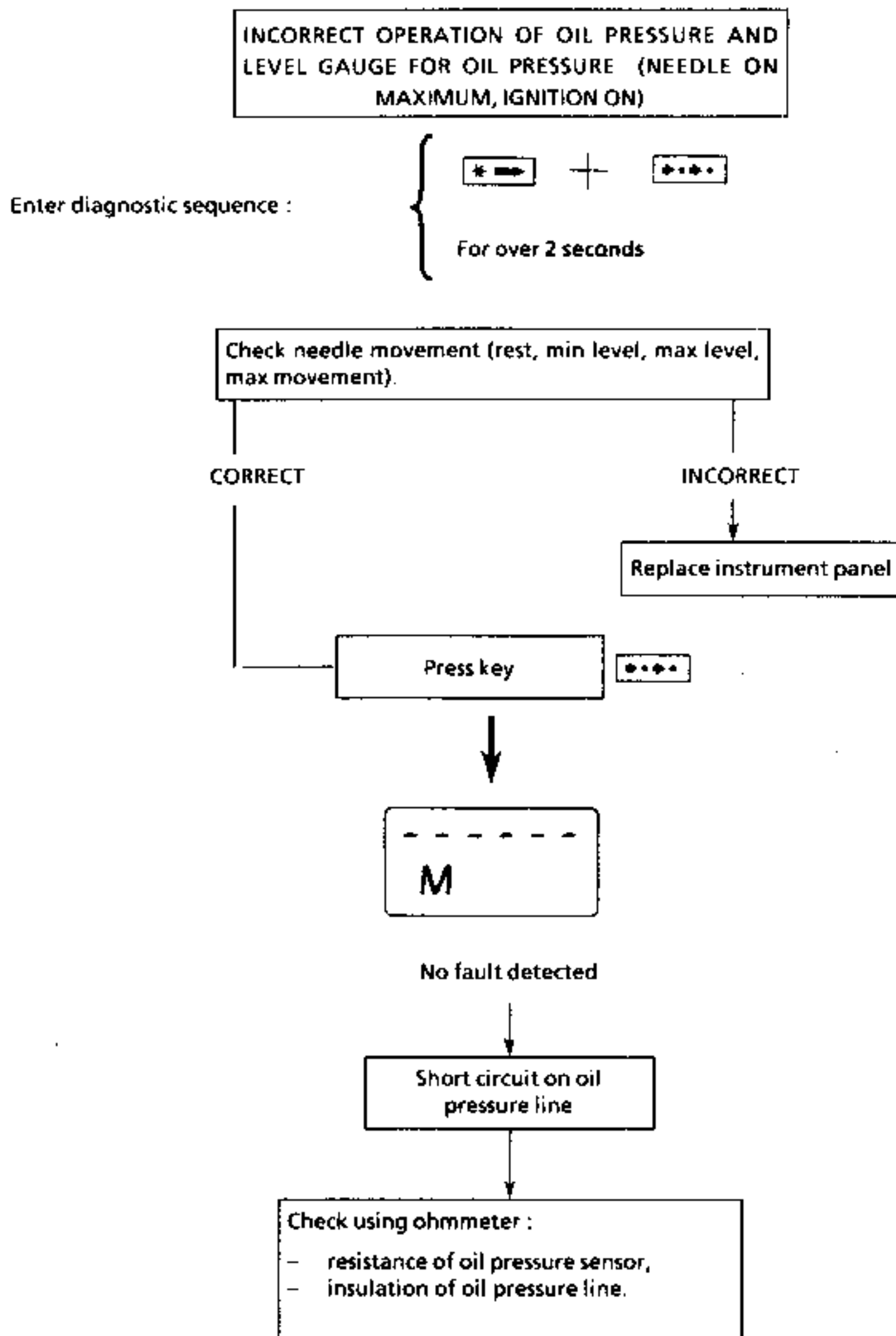
Consumption information cut

Check the continuity and insulation of the consumption information line between the injection computer track 26 and the red instrument panel connector track 27.

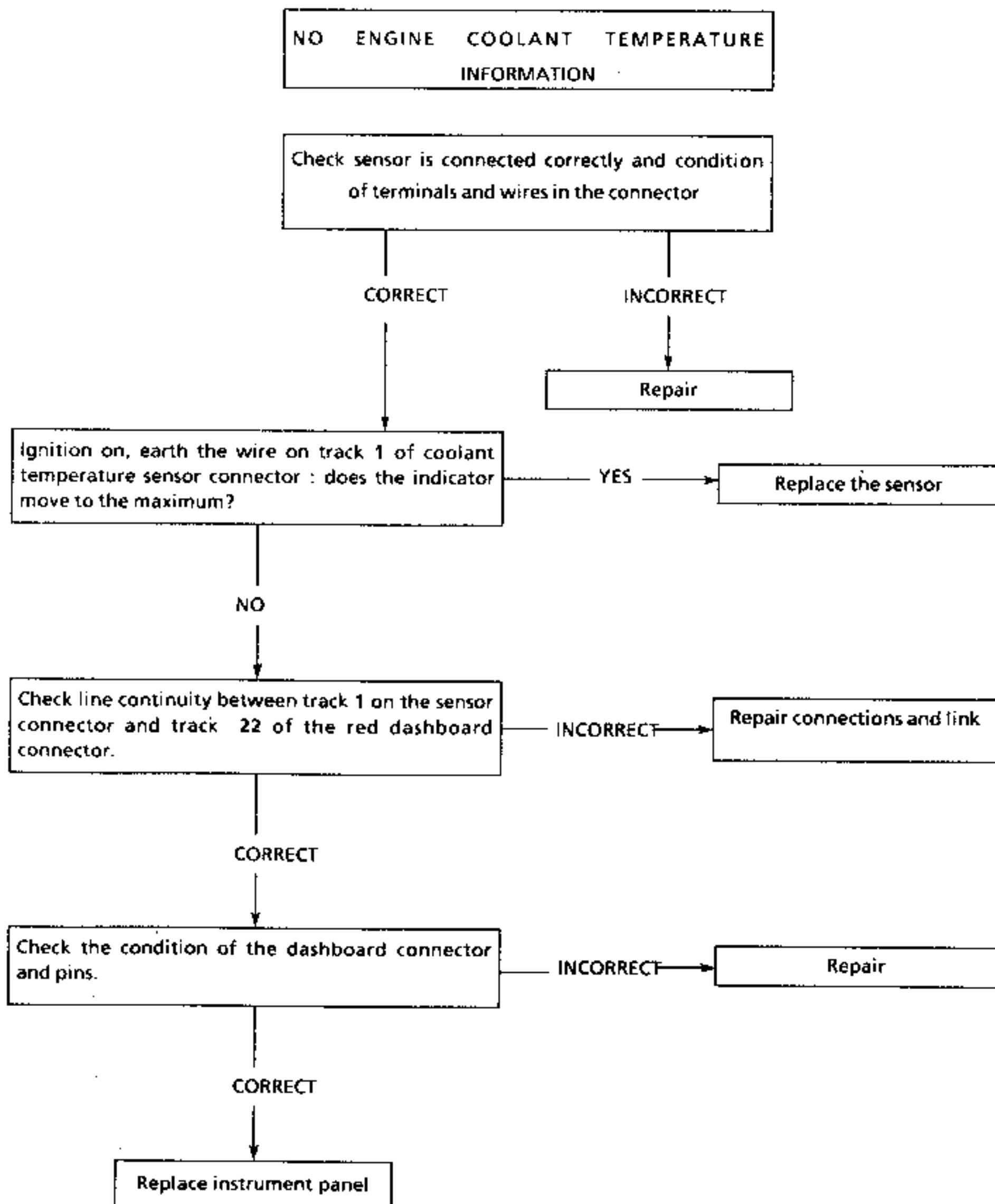
## FAULT FINDING



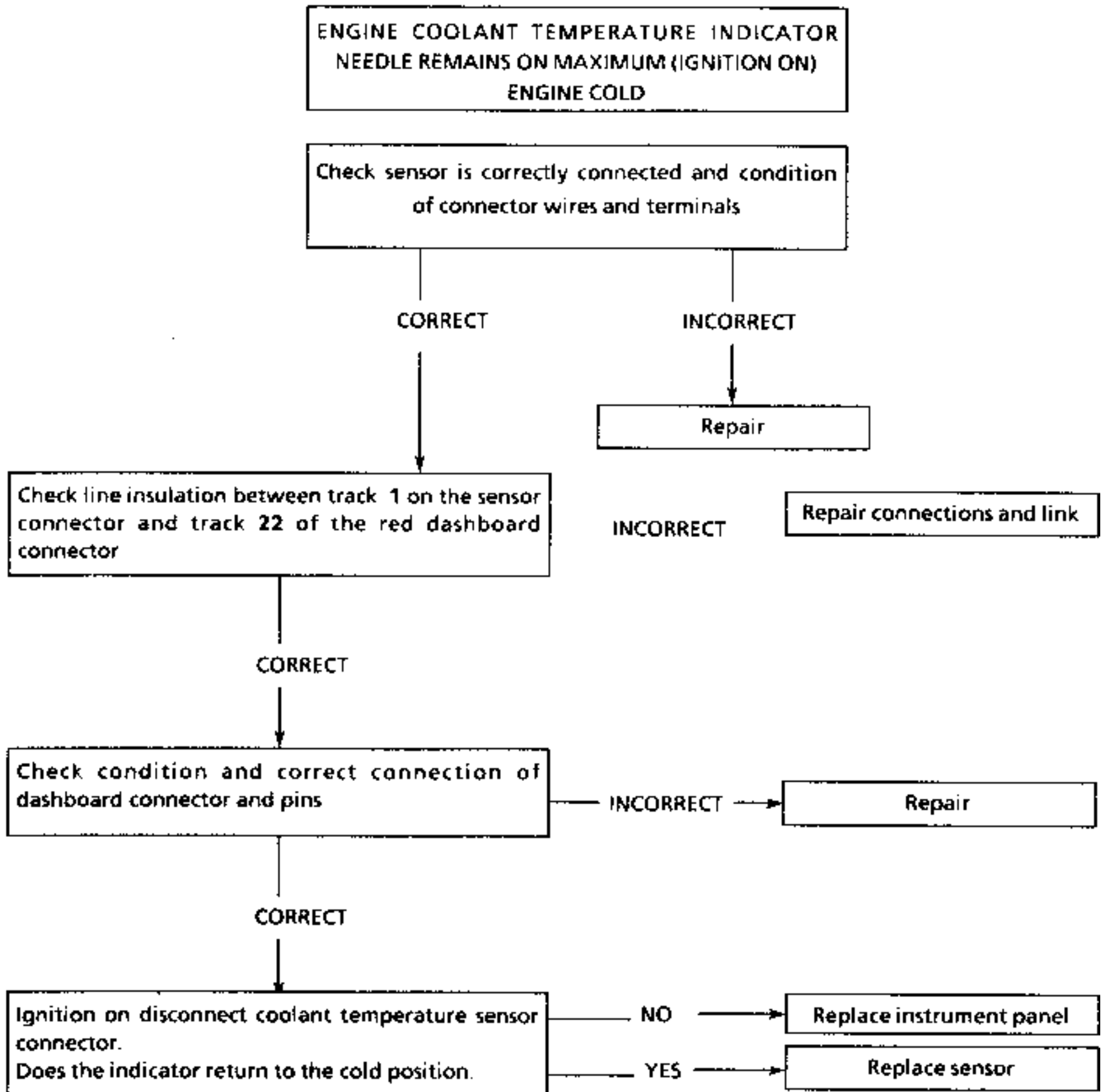
## FAULT FINDING



## FAULT FINDING



## FAULT FINDING



The vehicle is fitted with a double track fuel level sensor. One is used by the needle gauge, and the other by the on board computer.

This function measures, interprets and uses the gauge information to calculate the amount of fuel remaining in the tank and therefore the distance remaining before refilling is required.

### REMOVAL

Before removing the fuel level sensor, the following precautions must be noted :

- Do not smoke.
- Do not bring naked flames or glowing materials into the working area (welding, etc...).

After draining the fuel from the tank, close the container firmly.

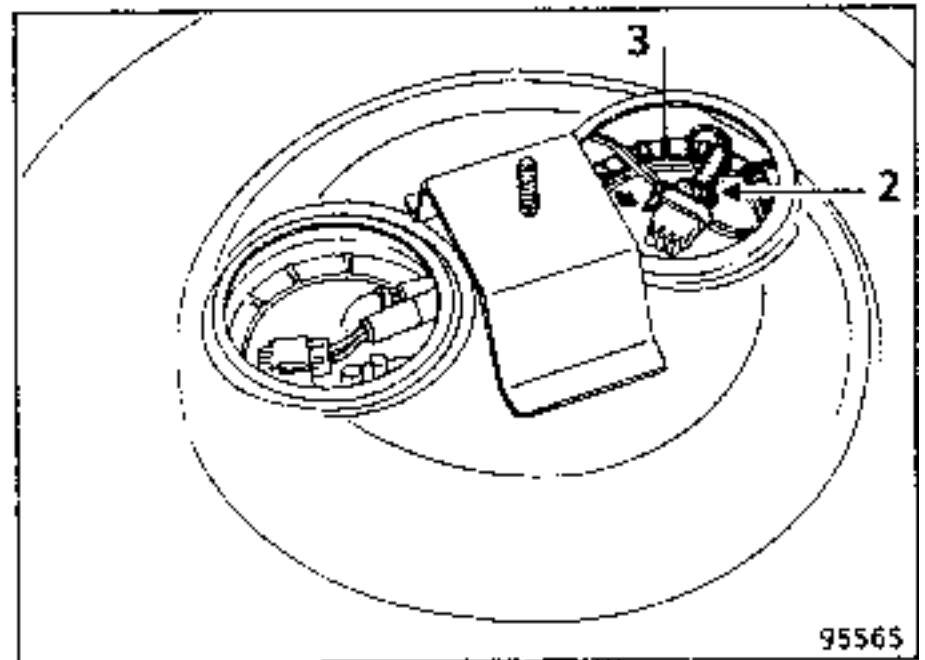
Disconnect the battery.

Remove the luggage compartment liner.

Remove the fuel sensor cover (1).

Disconnect the connector (2).

Unscrew the plastic nut (3) using tool Mot. 1242, while holding the sensor against the tank, stopping the arrow moving round out of the marked zone (see sensor drawing on following page).



4 x 4 vehicle

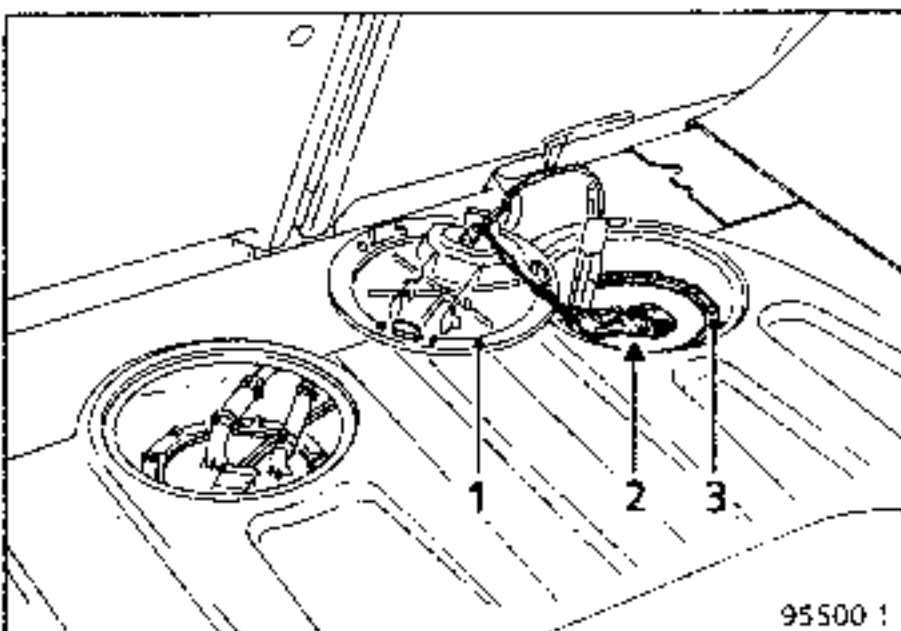
**Note :** on 4 x 4 vehicles, there is an access cover under the emergency wheel. The fuel tank must be removed to remove the sensor (see chapter 19).

### IMPORTANT :

After removing the sensor, retighten the mounting nut on the fuel tank immediately, as this will not be possible after a few minutes.

The hole widens if there is fuel in the tank and the sensor is not fitted.

If the nut is not replaced immediately and the hole widens, the fuel tank must be replaced.



4 x 2 vehicle

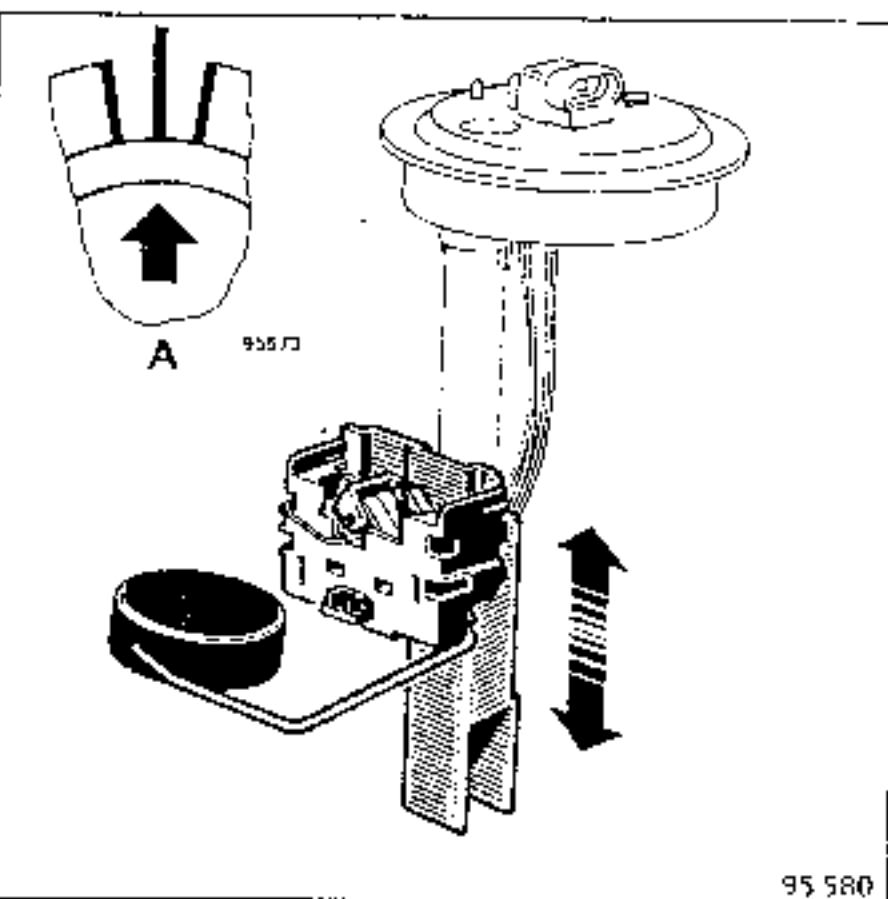


**REFITTING**

**Special notes:**

Replace the seal

Refit the sensor in the fuel tank, positioning the central marker on the fuel tank in line with the location arrow on the sensor, the 2 outer markers show the location tolerance limits (see drawing).



A : Obligatory reference area on sensor

Torque tighten the sensor nut to 4,5 to 5 daN.m using Mot. 1242 holding the sensor in position to avoid it turning, which could damage the float arm against an internal partition.

**Note :** When refitting the sensor, compress the base of the sensor (internal spring) which presses against the bottom of the fuel tank.

**CONNECTIONS:**

*Versions with on board computer*

Track	Allocation
A	Earth
B	Info to on board computer
C	Info to fuel gauge receiver

*Versions without on board computer*

Track	Allocation
A	Earth
B	Low fuel level warning light
C	Info to fuel gauge receiver

**Checking:**

(Variation of - 5 Ω per litre  
or - 22,5 Ω/G)

Indication	Values between terminals A and C (Ω)
4/4	4 ± 2
3/4	27 ± 5
1/2	48 ± 5
1/4	80 ± 5
Reserve	246 ± 30

**Note :** All these values are for information only. Check the variation in resistance by moving the float.

**OPERATION**

**Oil level function:**

The sensor (A) comprises a highly resistant wire. When the wire is crossed by a current, it does not have the same thermal conductivity when in air as when it is in a liquid.

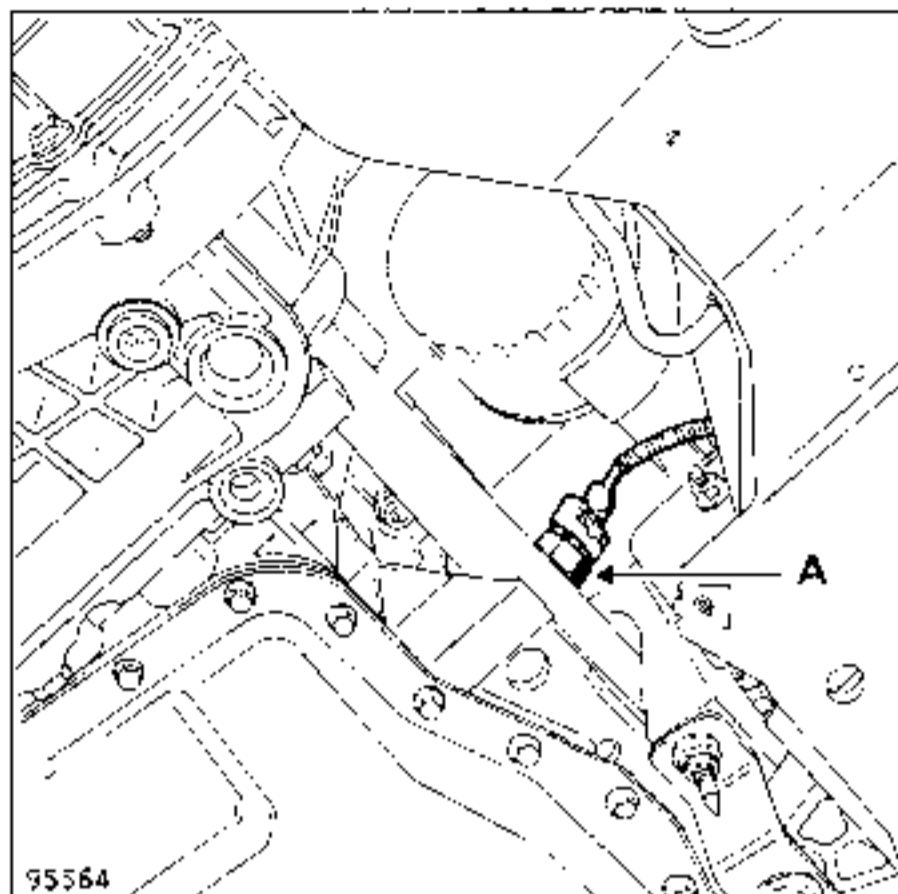
When the ignition is turned on, the oil pressure warning light illuminates ; a computer (in the dashboard) transmits a current to the sensor terminals.

After a fixed period, a difference in the voltage at the terminals is obtained, depending on how far the wire is immersed in the oil. This difference is registered by the computer which transmits this information to the oil level gauge receiver.

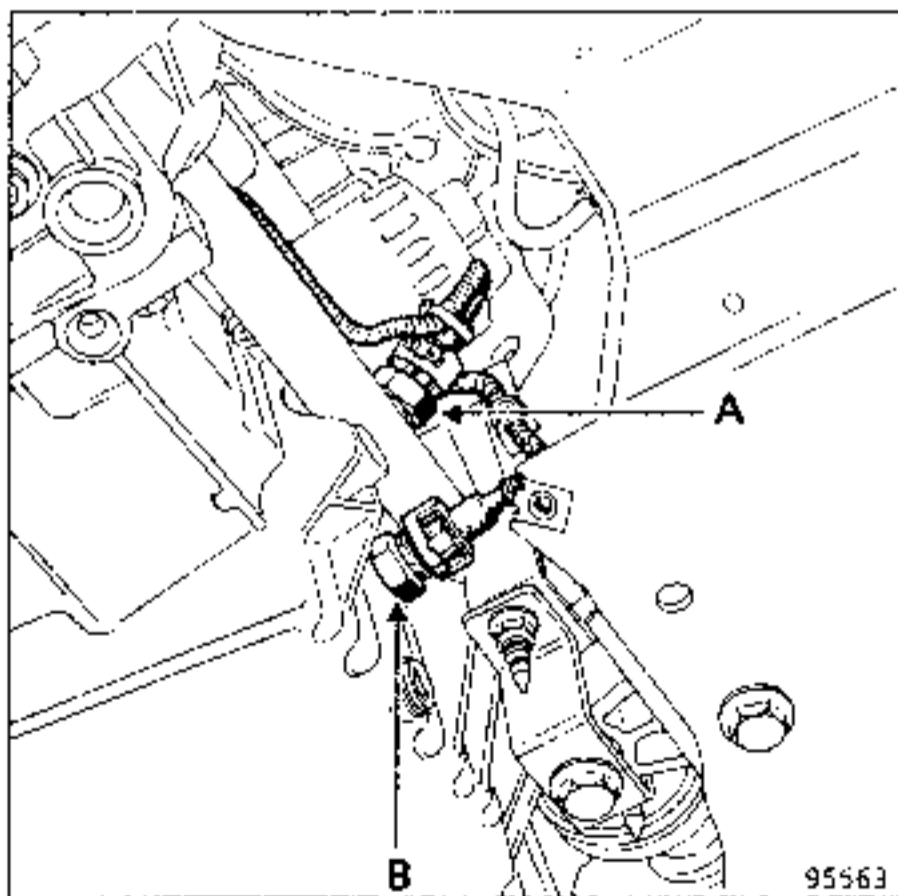
When the engine is running, and the oil pressure is sufficient, the pressure gauge cuts the warning light circuit. This blocks the computer so the oil level is no longer displayed.

**Oil temperature function :**

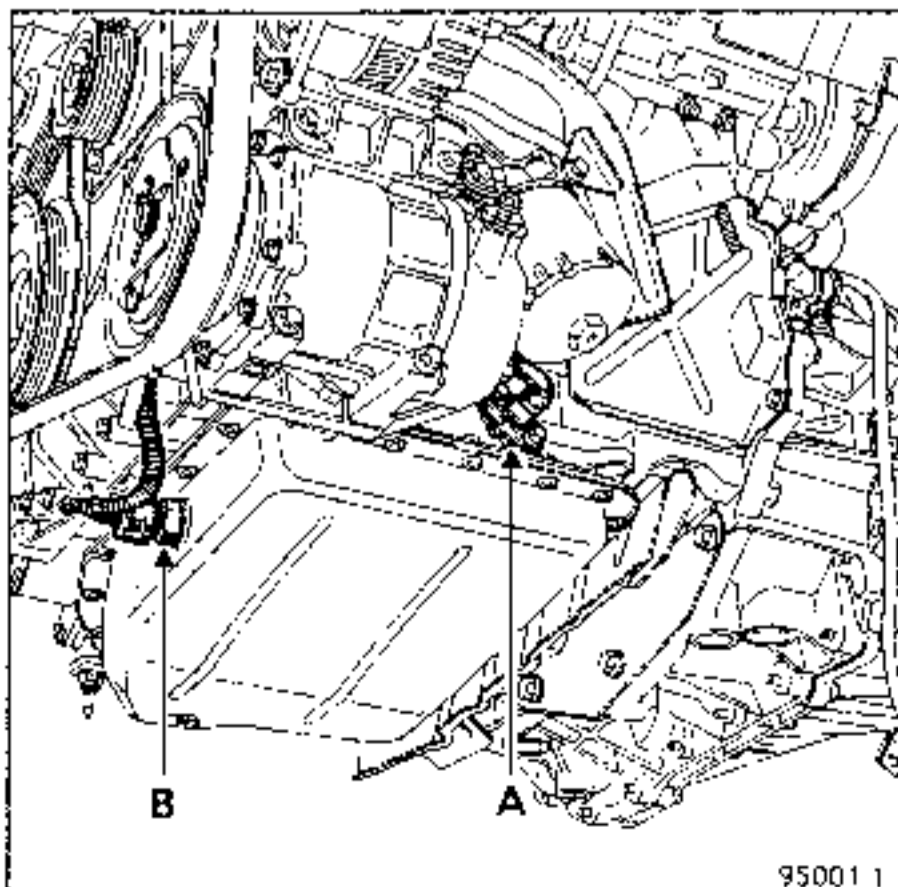
A thermistor (B) transmits a resistance variation depending on the variation in the oil temperature to the receiver.



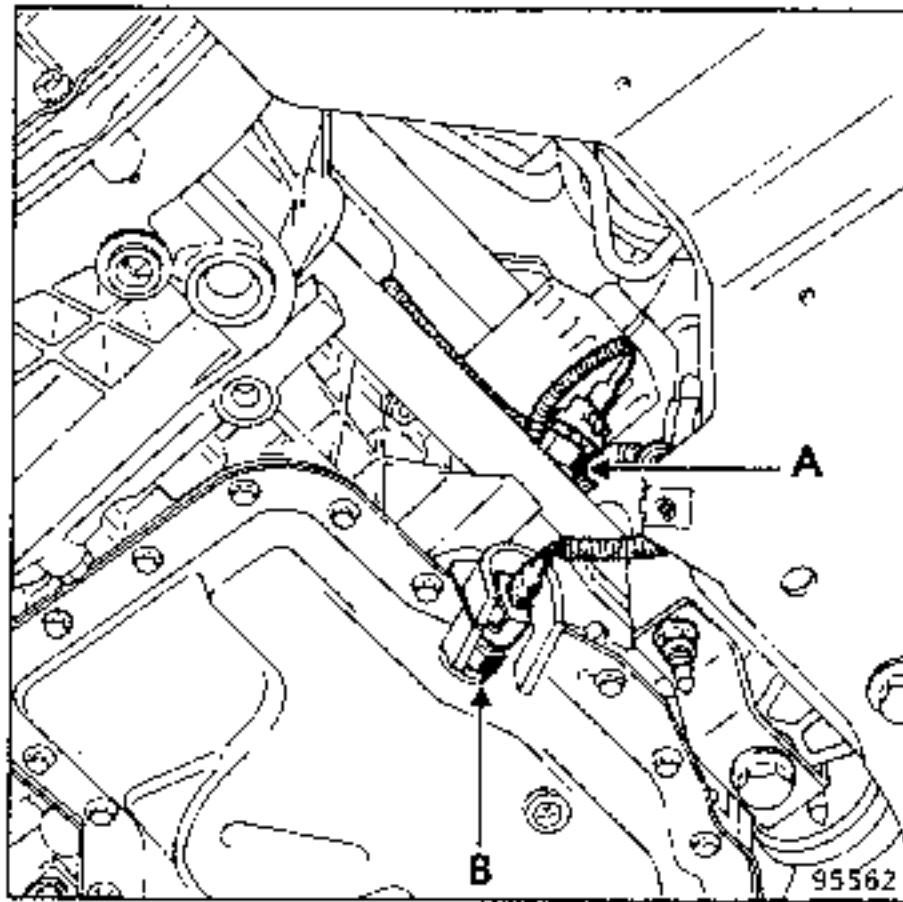
**J engine diesel**



**J engine, 2.0 litres**

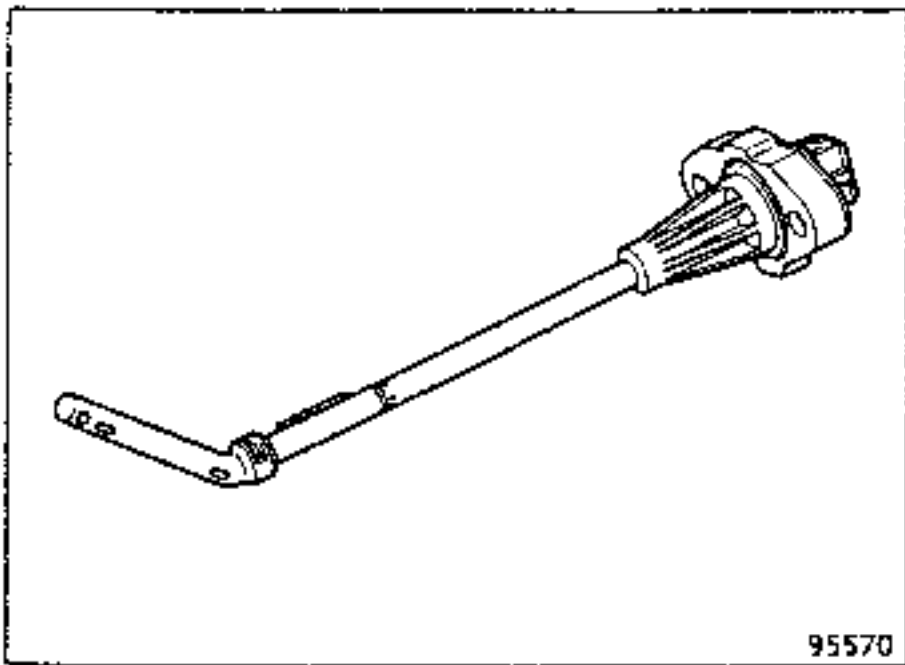


**V6 engine**

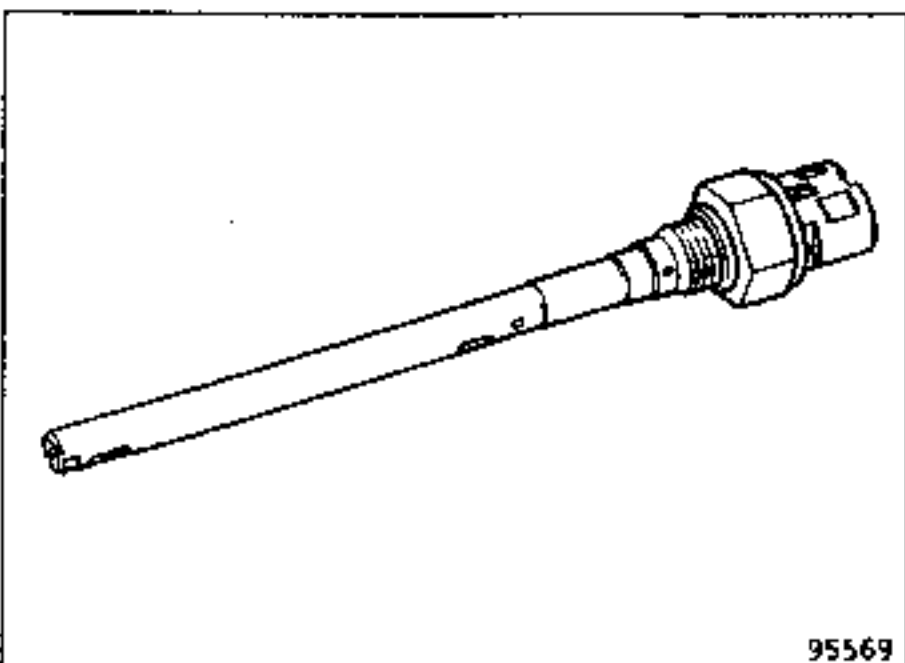


J engine, 2.2 litres

**TESTING**



Z engine



With the oil level sensor removed, connect an ohmmeter to the two terminals on the sensor.

Correct value : 5 to 30Ω.

**J engine**

With the oil temperature sensor not removed, connect an ohmmeter to the two terminals on the sensor.

Infinity : sensor broken.  
0Ω : Sensor short circuit

The ohmmeter shows a resistance : sensor correct.

**Note :** The oil temperature sensor is only fitted to vehicles with the ADAC instrument panel.

**GENERAL**

**Description :**

The cruise control allows the vehicle to maintain a constant speed without the driver keeping his foot on the accelerator pedal.

There is no limiting action.

The function only operates from 25 mph (40 km/h).

The function has three sections:

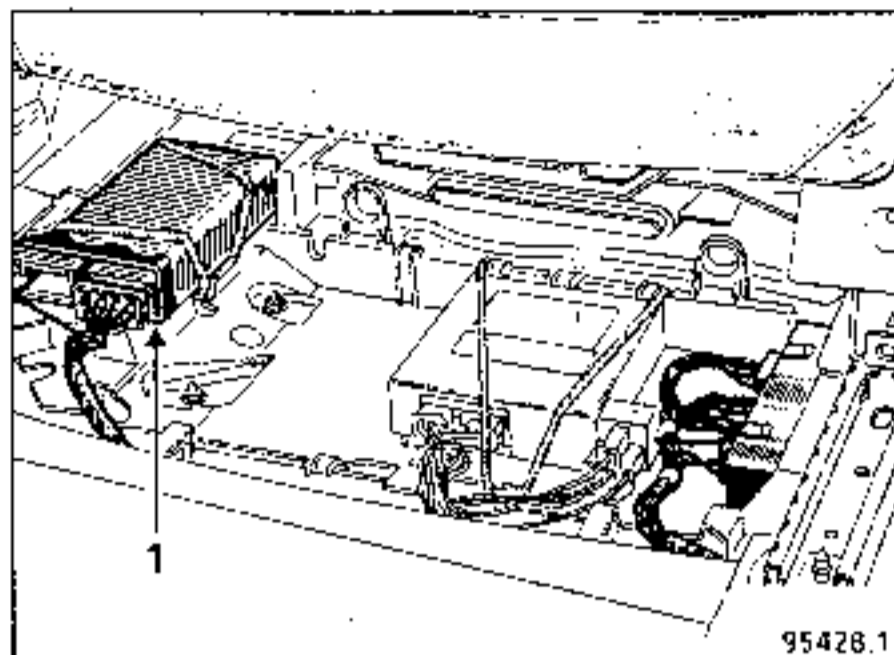
- 1) A pneumatic section with :
  - a vacuum pump, with a regulation solenoid valve,
  - a safety vent solenoid valve,
  - a control valve acting by deforming a flexible diaphragm on the throttle control
- 2) An electronic section with :
  - the cruise control computer which compares the vehicles actual speed to the driver's required speed
- 3) A control and safety section with:
  - the on/off control,
  - the steering wheel switches which alter regulation and cancel the function ,
  - the brake and clutch switches which cancel regulation when activated, even if only slightly.

**Location of elements :**

● **Regulator computer (1)**

This is located under the passenger seat. To reach the computer, push the seat as far forward as possible, remove the carpet and undo the plastic cover by the two bolts..

The computer is held in place by a rubber strap.



● **The vacuum pump and the safety solenoid valve**

These are located underneath the right hand side headlight unit.

**Removal - refitting :**

**Remove:**

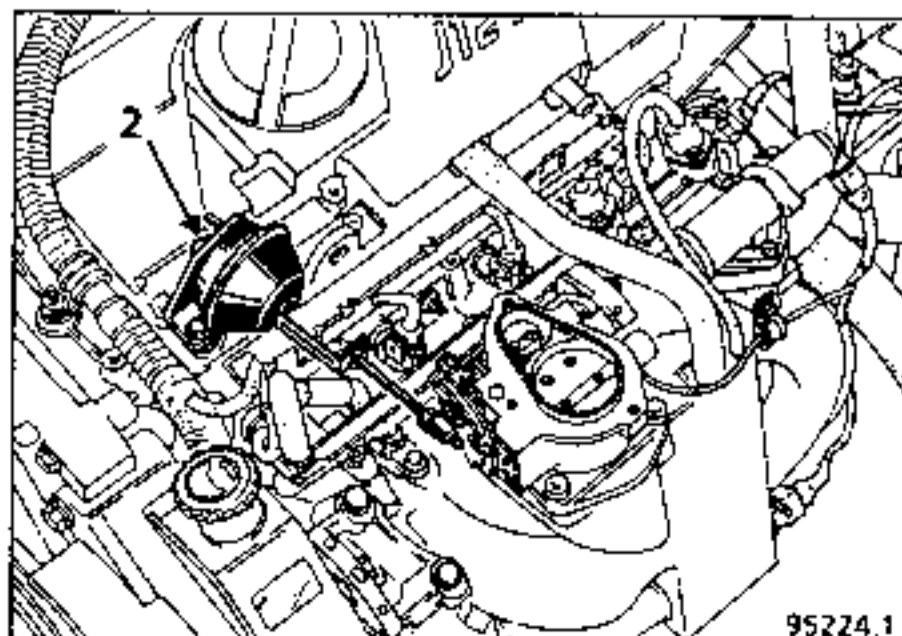
- the bumper,
- the radiator grille,
- the front panel,
- the pump/solenoid valve assembly.

For more information on removal and refitting, see the "Chassis" section.

● **Control valve (2)**

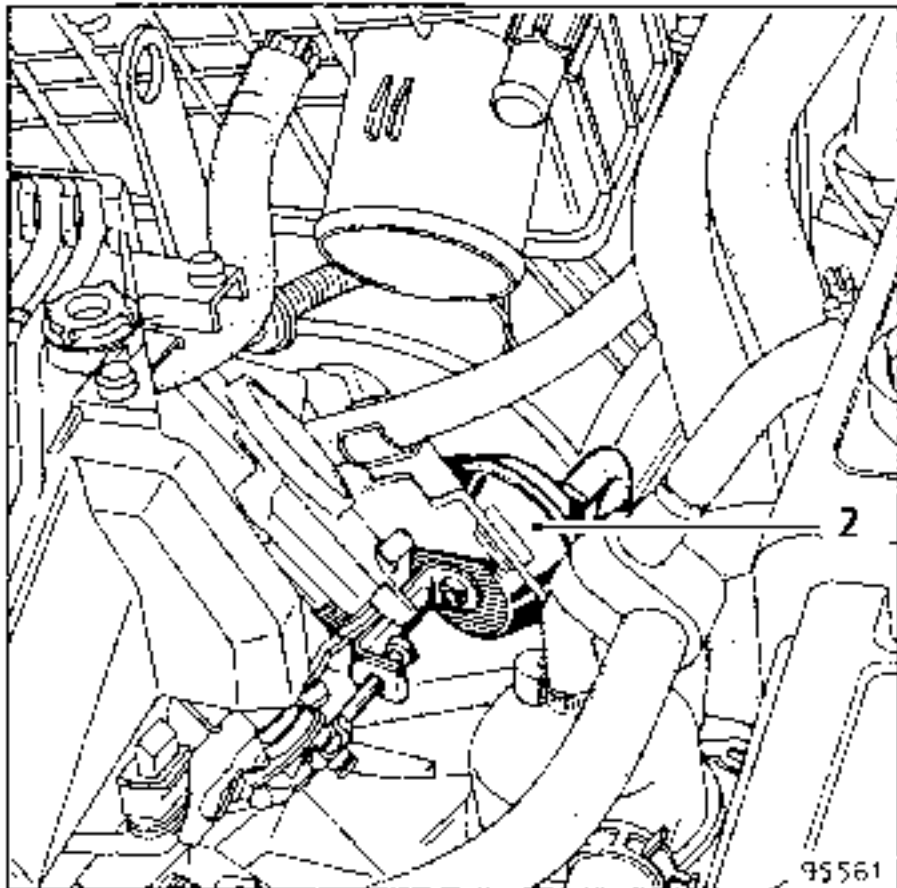
**Engine:**

The valve is located under the cylinder head cover and acts on the accelerator control.



**Engine :**

The valve is located on a metal bracket mounted on the rear cylinder head (on gear box side).



The valve operates on the throttle control as well as the pedal control.

The assembly does not affect foot control of the accelerator especially during regulation.

The pedal's weight ensures it follows all the valve's movements, so that the driver may increase the vehicle speed himself at any moment.

• **Steering wheel switches**

**Left hand switch :**

This has three functions :

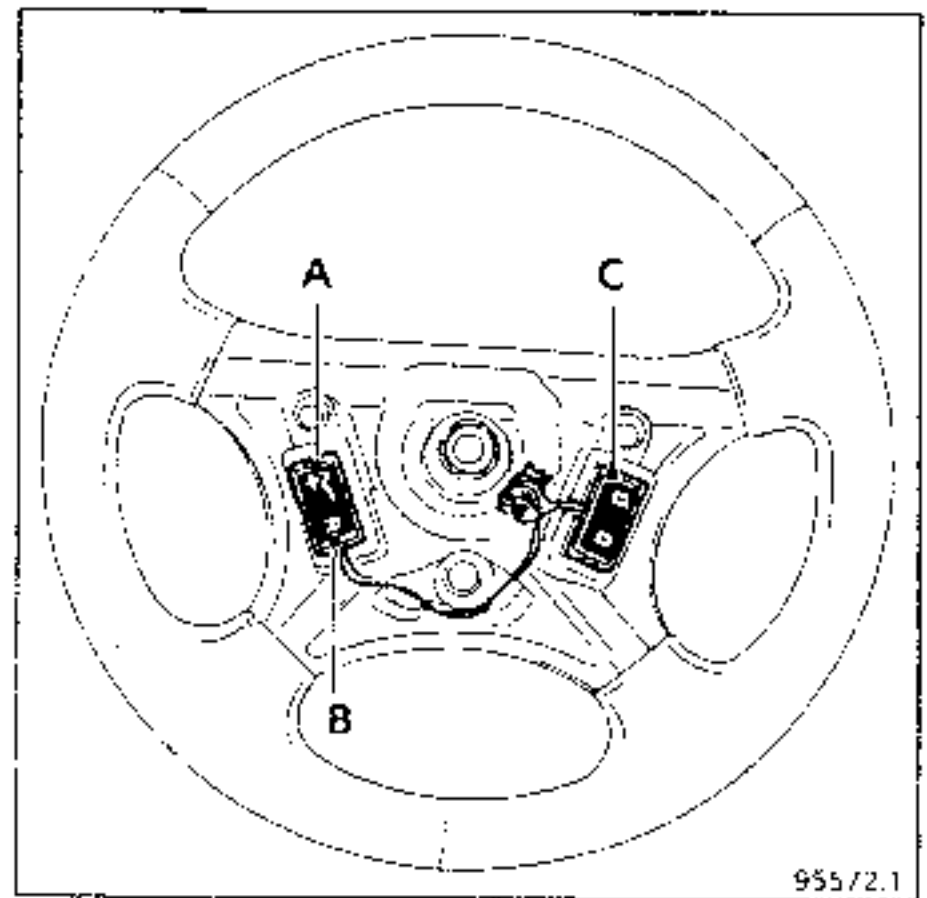
- regulation operation on side A ( $V + \overrightarrow{}$ ),
- increase in speed on side A ( $\overrightarrow{V +}$ ),
- return to previously stored speed and regulation on side B (R).

**Right hand switch : (C)**

**One function only :**

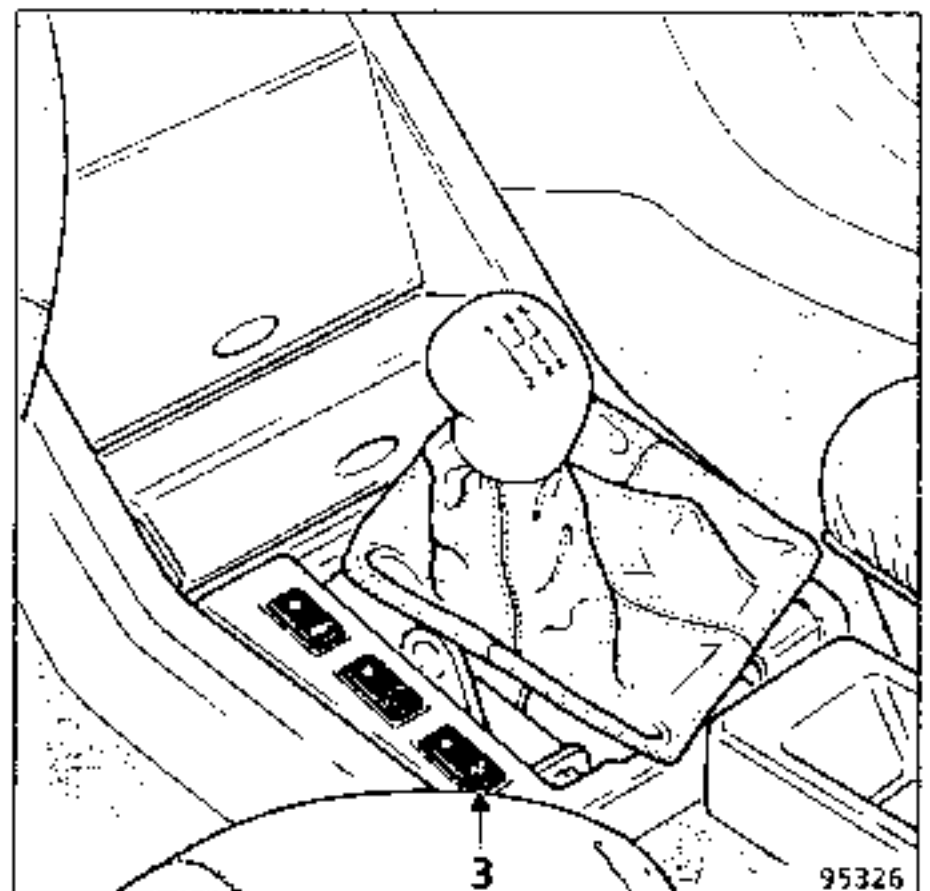
- cancels regulation when it is operative, no function when cruise control is not activated.

In both cases, the speed previously memorised is retained.



• **Stop/start switch (3)**

This is located on the central console, on the left hand side of the gear lever. The switch includes an operation warning light.



**Operation:**

When the ignition is on, the + after ignition feed supplies the cruise control switch.

When the ignition is on, the + after ignition feeds the cruise control computer on track 5 and the brake and clutch switches.

The brake and clutch switches which are fed in series feed the vacuum pump and the safety solenoid and track 7 on the computer.

The cruise control electronic system monitors two parameters :

- 1) Actual vehicle speed measured by the vehicle speed sensor.
- 2) Memorisation of the desired vehicle speed on track 3 of the cruise control computer.

These two items of information are continually compared, to control the vacuum pump which creates a vacuum at the pneumatic valve, acting on the accelerator control.

The stability of the vehicle speed (regulated speed) is ensured by the pulsing commands of the earth from the vacuum pump or the regulating valve in the vacuum pump.

**Note :** The safety solenoid valve vents the circuit when its earth is suppressed. This earth which operates the valve is only transmitted by the cruise control computer if the vehicle speed is at least 40 km/h / 25 mph

**Regulation :**

Having pressed the cruise control switch, when the vehicle is moving at a stable speed (above 40 km/h) press the left hand side on switch A ( $V^+$ ). The voltage on track 3 of the computer (5 volts) crosses a resistance of 100  $\Omega$ .

The control speed is memorised and the accelerator pedal no longer needs to be depressed.

From this moment, by pressing the left hand side of switch A ( $V^+$ ) the control speed may be increased, or the accelerator pedal may be depressed and then the left hand side of switch A ( $V^+$ ) pressed, when the desired speed is reached, in order to store it in the memory.

**Note :** The memorised speed may be exceeded by pressing the accelerator pedal. When the accelerator pedal is no longer depressed, the vehicle returns to the programmed speed. Speed memorisation is continuous from 40 km/h / 25 mph

**Safety:**

Safety is ensured by :

- 2 brake switches,
- 1 clutch switch (manual gearbox only).

When the brake or clutch pedal is pressed, the + feed for the safety circuit for the cruise control computer (which runs from track 5 to track 7) is cut and the + feed for the safety solenoid valve and the vacuum pump is also cut. The computer electronics cut the earth on track 1, feed track 1 for the safety solenoid valve and the pneumatic circuit is vented; the vehicle speed is no longer controlled. The other brake switch sends a + (stop) information to the cruise control computer on track 2 to give a second level of safety.

The right hand switch (C) on the steering wheel (either side (O)), stops cruise control, by directly earthing track 3 of the cruise control computer.

The computer electronics cut :

- the earth on track 1, feeding track 1 for the safety solenoid valve.
- the earth on track 6 feeding the regulating solenoid valve in the vacuum pump.

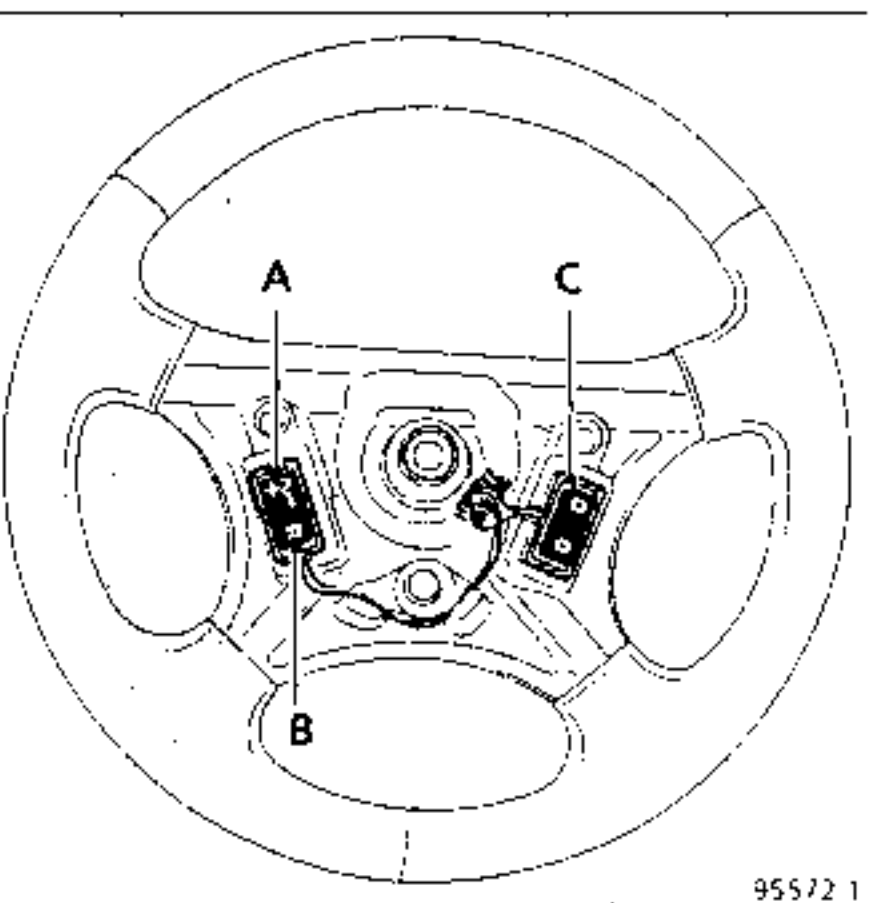
The safety solenoid valve and the regulation solenoid valve vent the pneumatic circuit.

The speed remains stored in the memory for all these safety functions.

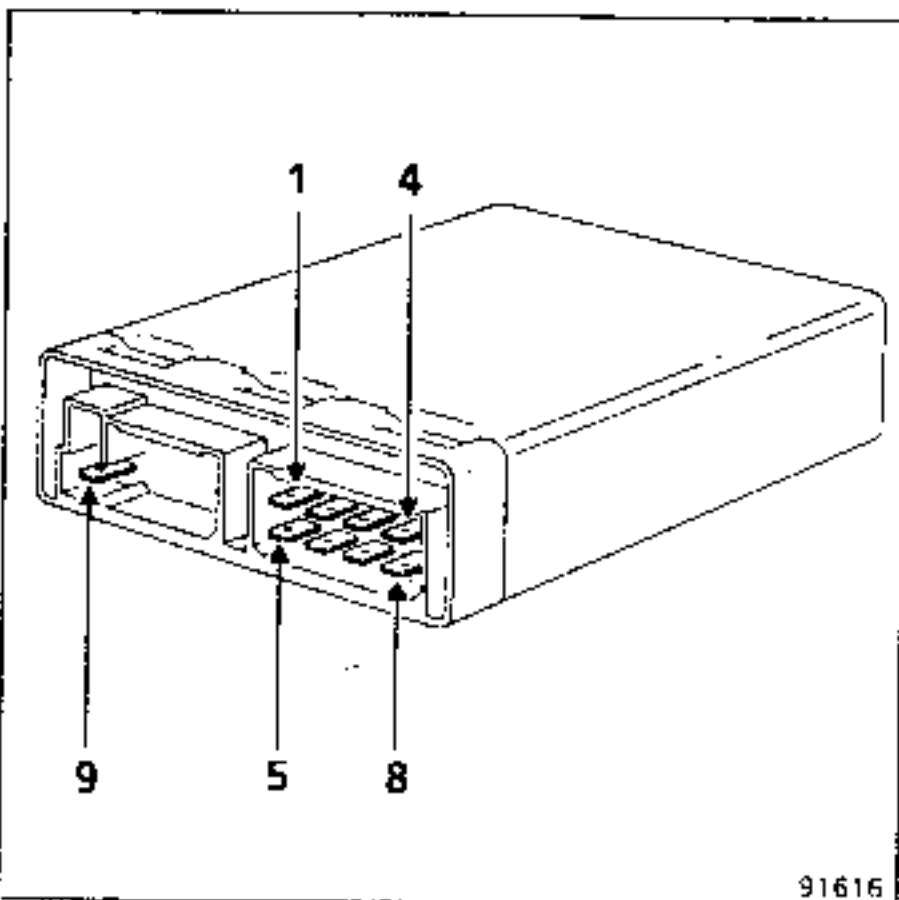
To recall the stored speed, press the left hand steering wheel switch on side B (R). The voltage on track 3 of the computer (5 volts) crosses a resistance of 330  $\Omega$ .

The computer electronics automatically return the vehicle to the memorised speed (as soon as the vehicle reaches 40 km/h/25 mph).

**Note :** Cutting the feed to the cruise control regulator by the stop/start switch, or by turning the ignition off, cancels the speed stored in the memory.



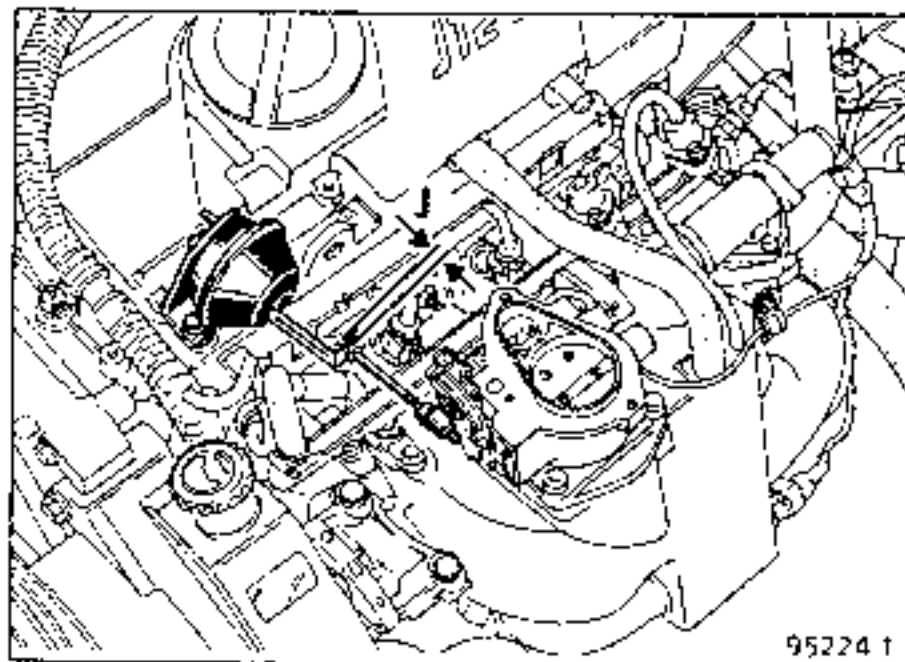
Computer connections



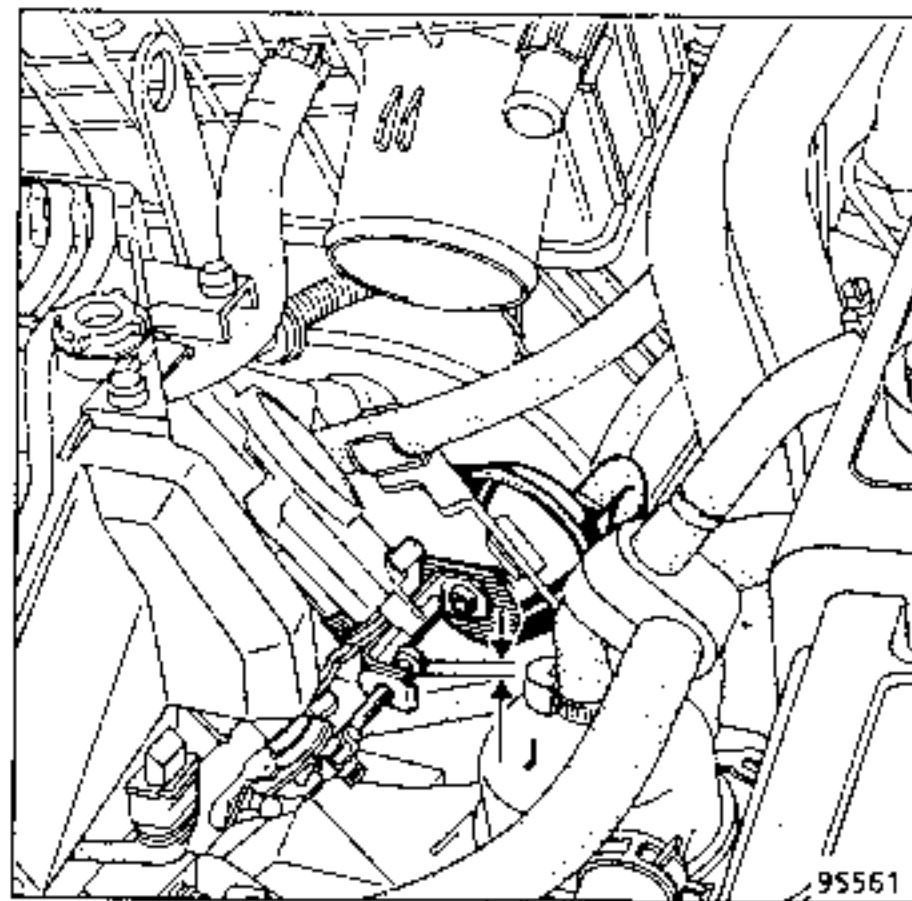
- 1 - Solenoid valve control
- 2 - Brake input
- 3 - Steering wheel control
- 4 - Pump control (accelerator)
- 5 - Feed (+ 12 volts)
- 6 - Deceleration control
- 7 - Brake and clutch safety
- 8 - Earth
- 9 - Speed information

ADJUSTING THE MECHANICAL CONTROL

With the valve in the rest position and the throttle control in the idle speed position, there should be a play (J) of 1,5 mm maximum.



J engine



Z engine

Loosen the locking nut.  
Adjust the play (J) by altering the rod length, by unscrewing or tightening.  
Retighten the locking nut.

**FAULT FINDING**

**SYMPTOM CHART**

**One or more of the steering wheel functions do not operate**

- \_\_\_\_\_ Memory recall and operation
- \_\_\_\_\_ De-activation (keys 0)

**ALP 1**

**Cruise control does not work**

- \_\_\_\_\_ Activation and speed increase are not possible
- \_\_\_\_\_ On/off switch light extinguished
- \_\_\_\_\_ on/off switch light illuminated

**ALP 2**

**ALP 3**

**The on/off switch light is extinguished but the cruise control function operates**

**ALP 4**

**Cruise control will not cancel**

- \_\_\_\_\_ By clutch pedal (except for automatic gear box)
- \_\_\_\_\_ Cancellation key (0)

**ALP 5**

**ALP 6**

**Engine speed increases sharply  
(automatic transmission only)**

**ALP 7**

**Cruise control cancels for no apparent reason**

**ALP 8**

**ALP = Fault finding tree**



**ALP 1 : One or more of the steering wheel functions do not operate**

Computer connector connected, check voltage + 5 volts between tracks 1 and 2 of white connector under steering wheel cover then press each key and check voltages :

- pressing      R      = 2,5 volts  
                   V $\rightarrow$     = 1,3 volts  
                   0      = 0 volt

Is this correct ?

yes

no

Replace computer.

**ALP 1A**

Check wiring continuity between computer and electric rotary connector under steering wheel.

computer { 3 ----> 1 } connector (tracks) { 8 ----> 2 } (tracks)

Repair wiring or connection if necessary.

Does the fault persist ?

no

Correct

yes

Check continuity between input and output of electric rotary connector under steering wheel.

Is this correct ?

no

Replace electric rotary connector under steering wheel.

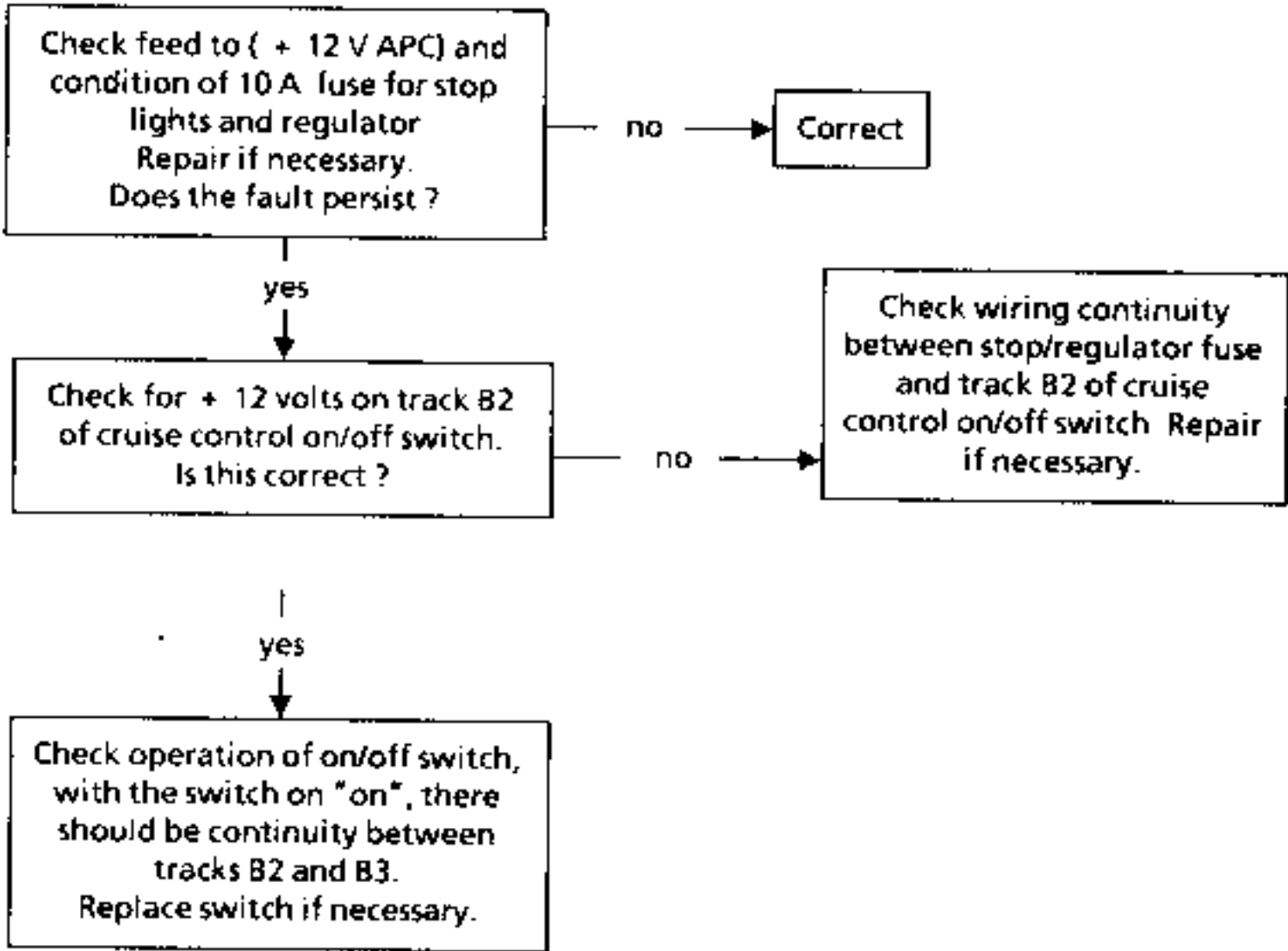
yes

Disconnect white 2 track connector from steering wheel switches and check, using an ohmmeter between tracks 1 and 2, the following values :

- pressing      R      =  $330 \Omega \pm 15$   
                   V $\rightarrow$     =  $100 \Omega \pm 5$   
                   0 =  $0 \Omega$

Replace the steering wheel switches if necessary.

ALP 2 - Cruise control does not work  
(On/off switch light extinguished)



**ALP 3 - Cruise control does not work**  
*(On/off switch light illuminated)*

Check for + 12 volts between tracks 5 and 8 on the computer.  
Is this correct?

no

Check continuity between track 5 on the computer and track B3 on the cruise control on/off switch.  
Check computer electronic earth (track 8) (earth connected to computer shunt on right hand side behind dashboard).

yes

Check for + 12 volts between tracks 7 and 8 on the computer.  
Is this correct?

no

Check settings of brake and clutch switches for cruise control (brown and grey).  
Re-adjust if necessary.

yes

Check that there is not + 12 volts on track 2 of the computer.  
Is there + 12 volts?

yes

Check adjustment of brake switch (black).  
Check if brake lights are working.  
Repair if necessary.

no

Check for + 5 volts between tracks 3 and 8 of the computer.  
Is this correct?

no

See ALP 1A under ALP 1.

yes

Using XR 25 generate a frequency (G2 = 100 Hz) on track 9 of the computer.  
Does the accelerator control valve move?

yes

Check speed sensor line between track 9 on computer and track B2 on speed information shunt. Repair if necessary.

no



**ALP 3 - Cruise control does not work**  
*(On/off switch light illuminated)*  
(cont)

**A**

Cruise control on/off switch on "on".  
on computer connector, earth successively tracks  
4/1/6 and check the vacuum pump and the  
solenoid valves operate correctly.

- 4 earthed ---> vacuum pump
- 4 + 1 earthed ---> vacuum pump  
+ safety solenoid valve (valve should move).
- 4 + 1 + 6 earthed ---> vacuum pump  
+ solenoid valves (the valve should return).

Is this correct?

Turn the ignition off and check the  
resistances of the vacuum pump and  
solenoid valves on the computer  
connector.

measure resistance between tracks :

- 7 and 4 R ≈ 30 Ω
- 7 and 6 R ≈ 100 Ω
- 7 and 1 R ≈ 30/40 Ω

Is this correct?

yes  
↓  
Replace computer

yes  
↓  
Check pneumatic circuit.  
- pipe between valve and  
vacuum pump,  
- valve,  
- safety solenoid valve.  
Repair if necessary.

no  
↓  
- If 7/4 or 7/6 incorrect, replace  
vacuum pump and solenoid valve  
assembly.  
- If 7/1 incorrect, replace safety  
solenoid valve.

7/4 vacuum pump  
7/6 regulation solenoid valve  
7/1 safety solenoid valve

The on/off switch light is extinguished but the cruise control function operates

Switch on the side lights and check the switch illuminates.  
Is this correct?

yes

no

Check earth :  
- between the switch track A1 and computer earth shunt track B5,  
- between computer shunt track A1 and front right hand pillar earth.  
Repair if necessary.

Replace cruise control on./off switch operation warning light bulb.

**ALP 5: Cruise control will not cancel by clutch pedal**

Before replacing the brown clutch switch (531) ensure there is no continuity between the computer track 7 and the cruise control on/off switch track B3 (switch connector (531) disconnected).

**ALP 6 : Cruise control will not cancel by the cancellation keys (0) on steering wheel.**

Check wiring continuity for cancellation keys (0) between tracks 1 and 2 of white 2 track connector (connector under steering wheel cover).  
Replace the switch set if necessary.

**ALP 7 : Engine speed increases sharply when the vehicle is moving in cruise control (automatic transmission only)**

When moving, changing from drive (D) to neutral (N) increases the engine speed to the value imposed by the injection computer ( $\approx 6300$  rpm). There is no over-revving relay.

**ALP 8 : Cruise control cancels for no apparent reason.**

Check the on/off switch for the cruise control and its connections. Also check the switch remains engaged when moving. Is this correct?

Replace cruise control on/off switch

non

yes

Check the settings of the brake-clutch and brake switches for cruise control. Are they correct?

Re-adjust the switch settings.

no

yes

Check all connections.  
- computer,  
- black connector (R152) in passenger compartment,  
- cruise control connector,  
- switch connectors.  
Repair if necessary.

GENERAL

• Control keys :

Operation:

1) Key ①

On/off switch

When this key is **depressed**, all sound and spoken messages are suppressed.

2) REP key (REPetition)

Push button.

Stored or current messages are repeated (\*)

If no fault is detected, the message is :  
"Welcome, the vehicle's computer is now checking systems for you".

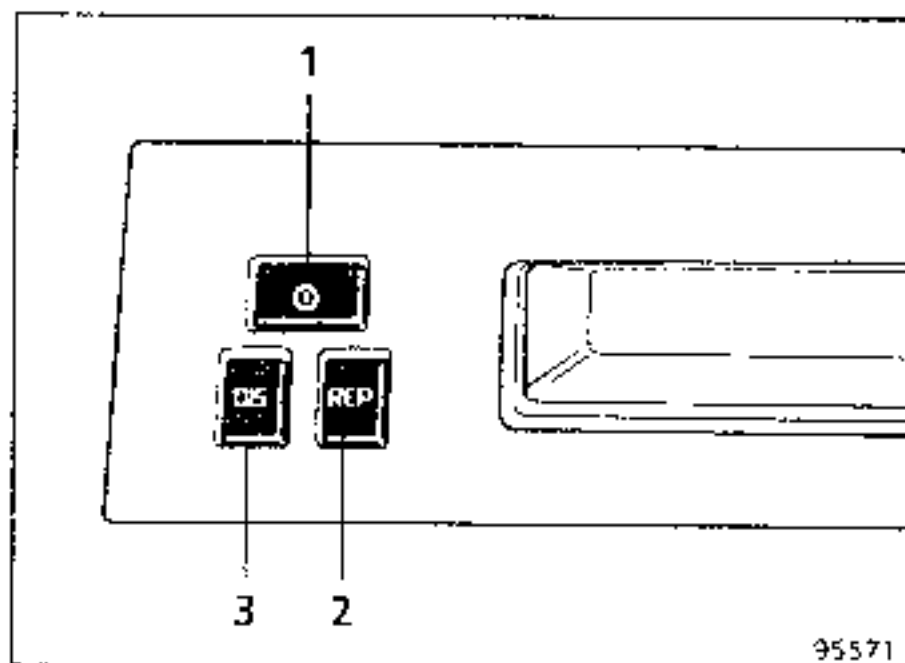
**Note:** if the REP button is pressed during a message, it is interrupted and repeated from the beginning.

3) DIS key (DIScreet)

When the key is **depressed**, the discreet mode is activated.

All spoken messages are replaced by a tone.

**Note:** Pressing the REP key broadcasts the spoken message or messages concerned.



**Removal - refitting:**

Remove the clock support or the display unit (depending on equipment level) (see method in chapter 84, page 84-21).

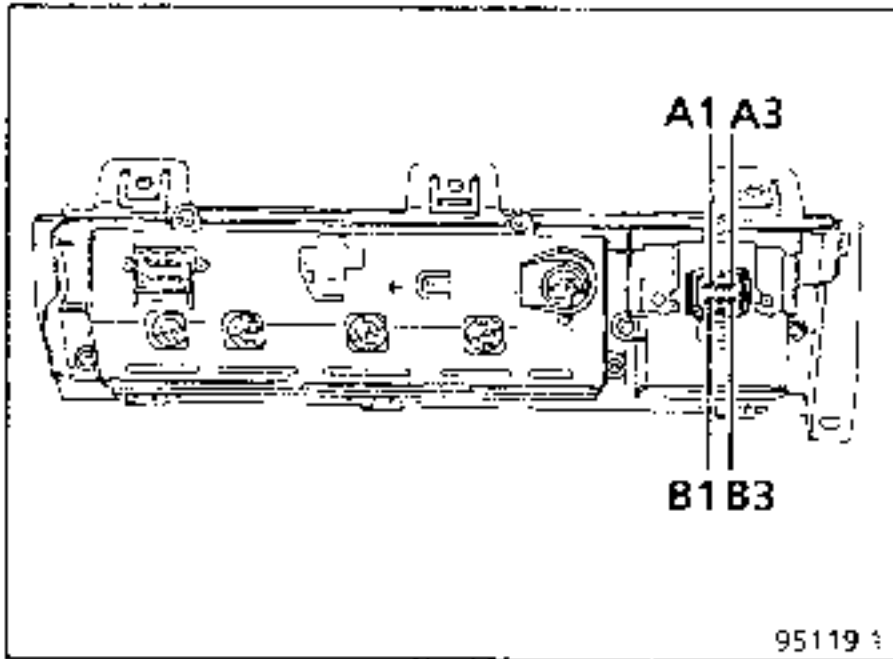
Remove the assembly and disconnect the connectors.

Remove the 3 key mounting bolts.

(\*) see page 83-88.

**Connections:**

- *White connector*



**Track**

**Allocation**

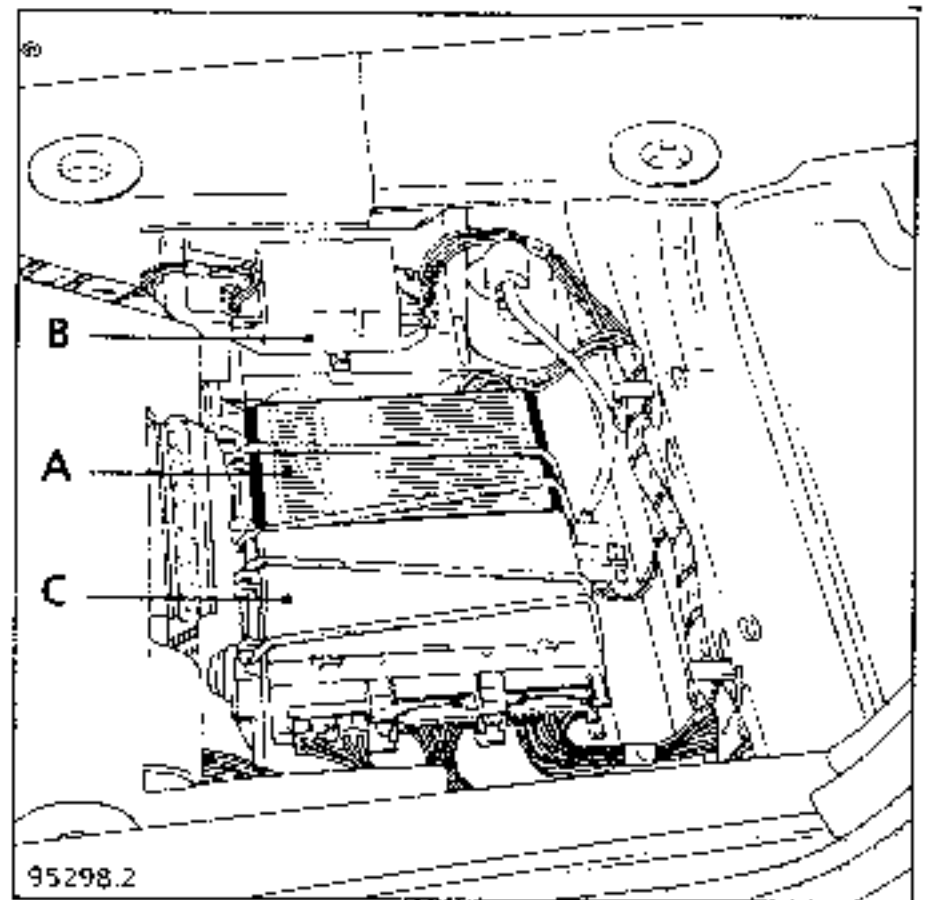
A1	Discreet
A2	Repetition
A3	+ Before ignition
B1	+ Side lights
B2	Earth
B3	On/off

• **Computer**

The computer is located underneath the driver's seat.

**Removal - refitting :**

- Move the driver's seat as far forward as possible.
- lift the carpet under the seat.
- Unscrew the two mounting bolts on the plastic cover and remove it.
- Remove the rubber retaining strap from the computer.



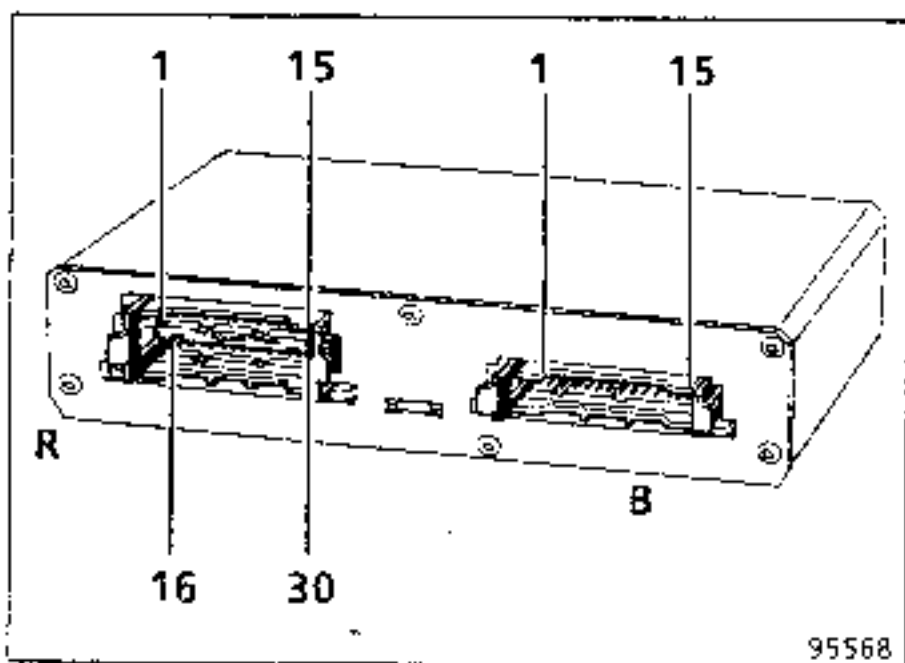
**A** : Voice synthesiser computer

**B** : Bulb monitor

**C** : Driver's seat position memorisation computer



Connections



21	Low fuel
22	Information rev counter diesel
23	Bonnet switch
24	Side lights fault
25	Oil pressure warning light
26	Air conditioning fault
27	DIS key (DIScreeT)
28	Information braking pressure drop
29	Not used
30	REP key (REPetition)

- Red 30 track connector (R) :

- Blue 15 track connector (B) :

Track	Allocation
1	Brake pad warning light
2	Front RH door switch
3	Handbrake switch
4	Rear LH door switch
5	4 x 4 switch
6	Front LH door switch
7	Rear RH door switch
8	RH stop fault
9	Coolant temperature warning light
10	Tail gate switch
11	Not used
12	Information diag socket
13	Information side lights
14	Radio cut out
15	Information diag socket
16	ABS warning light
17	Charging warning light
18	Injection fault warning light
19	AT fault warning light
20	Information speed

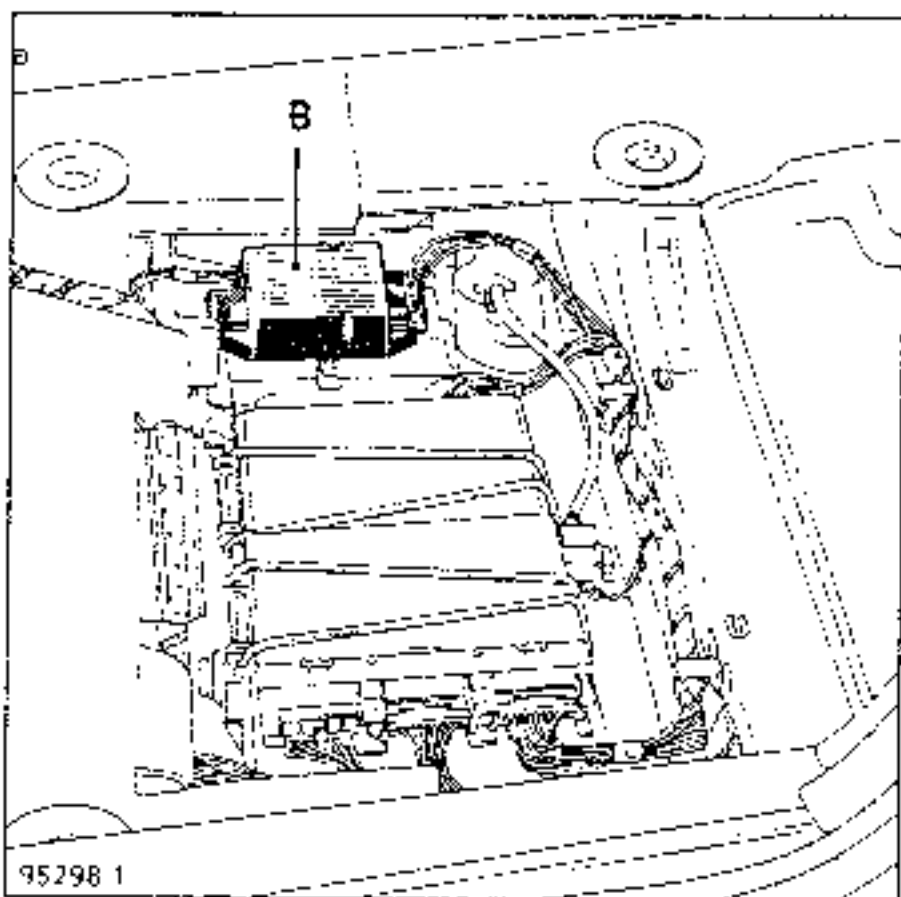
Track	Allocation
1	Not used
2	Not used
3	Not used
4	Not used
5	Not used
6	Not used
7	Not used
8	LH stop fault
9	Not used
10	Voice synthesiser loud speaker
11	Voice synthesiser loud speaker
12	Earth
13	+ after ignition
14	Key ⓐ on/off
15	Information rev counter petrol

● **Bulb monitor (B)**

This is located under the driver's seat, next to the voice synthesiser computer.

To remove this unit, slide it towards the voice synthesiser computer

**Connections:**

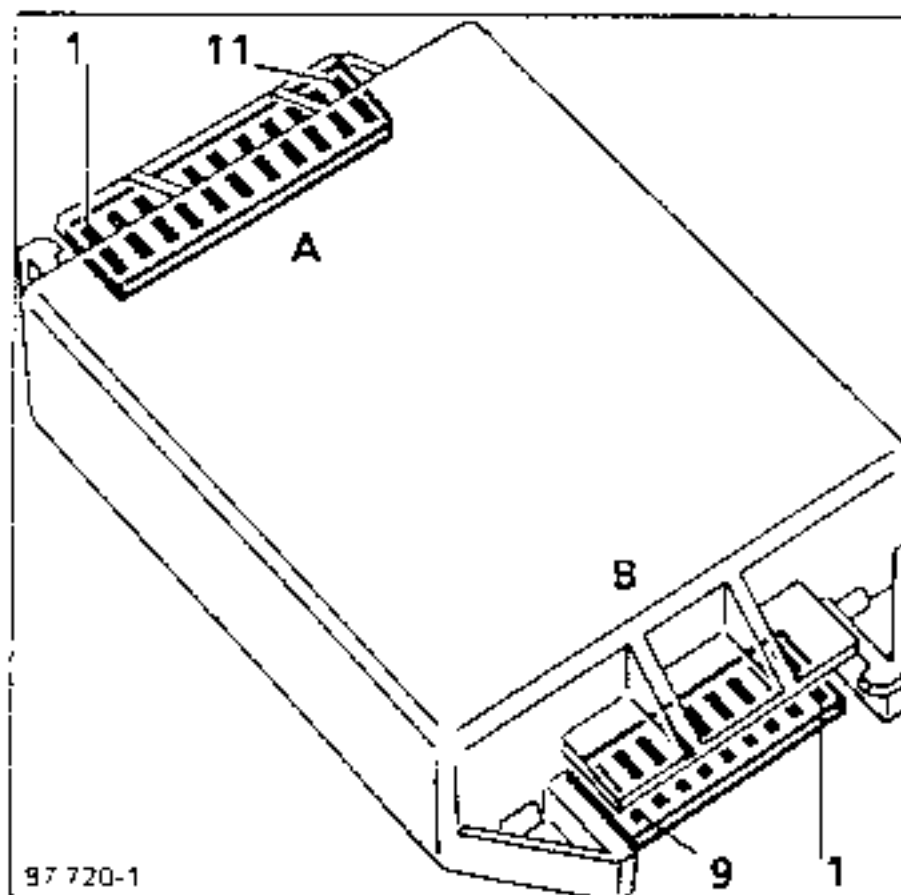


**Connector A : (11 track)**

- 1 - Front right hand lights
- 2 - After fuse feed for right hand side light
- 3 - Rear right hand light
- 4 - Front left hand light
- 5 - Ditto track 7
- 6 - Rear left hand light
- 7 - After fuse feed for left hand side light
- 8 - Number plate lights
- 9 - Left hand stop light
- 10 - After stop switch
- 11 - Right hand stop light

**Connector B : (9 track)**

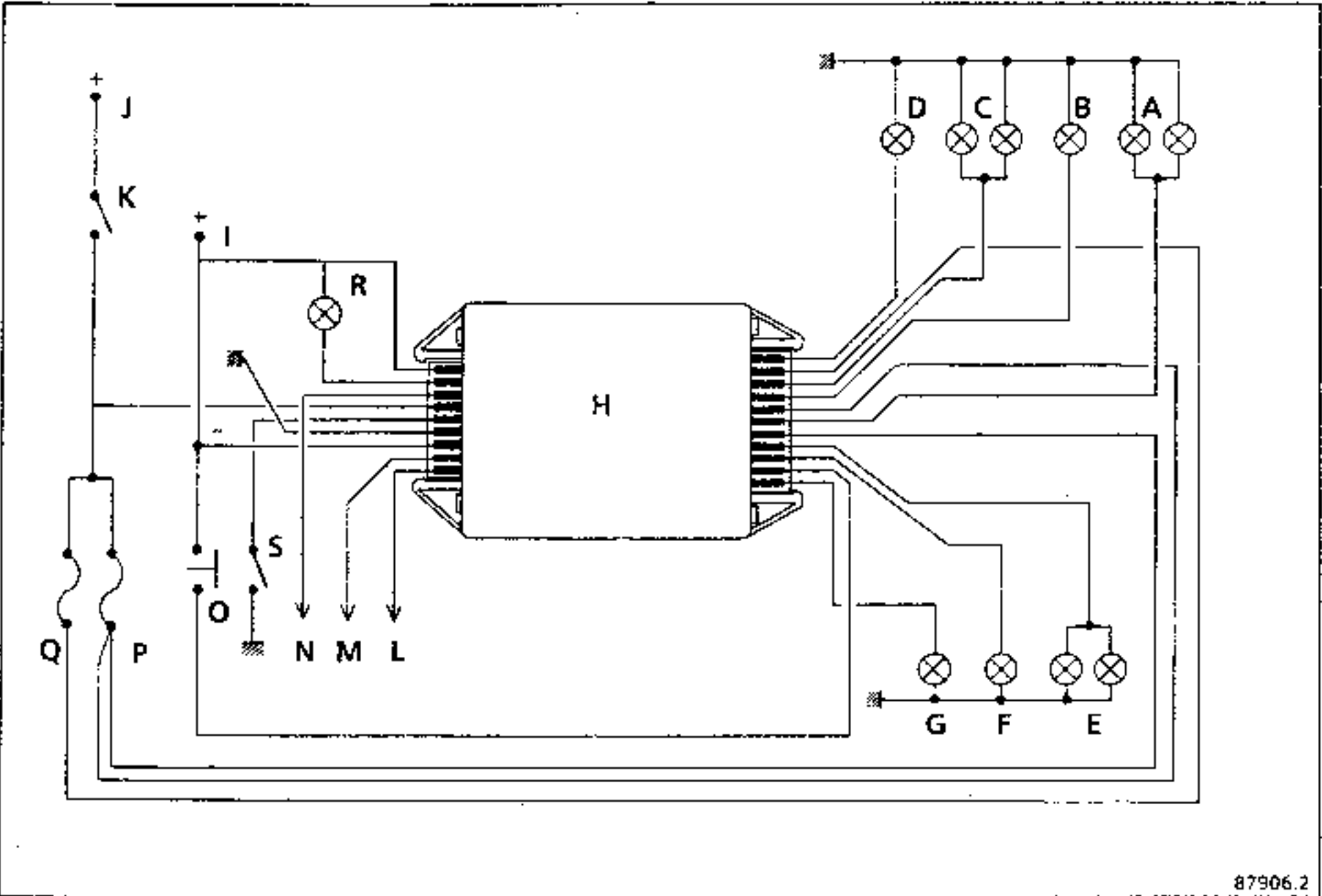
- 1 - Right hand stop fault
- 2 - Left hand stop fault
- 3 - Before stop switch
- 4 - Earth
- 5 - Handbrake switch
- 6 - + front side lights before fuse
- 7 - Side lights fault
- 8 - Handbrake warning light feed
- 9 - + after ignition



**ATTENTION**

Fault detection is not carried out if the bulb monitor is not fed (example : fuse).

Principle layout:



87906.2

- A - Rear left hand side light
- B - Front left hand side light
- C - Rear right hand side light
- D - Front right hand side light
- E - Number plate lights
- F - Left hand stop light
- G - Right hand stop light
- H - Computer
- I - + After ignition
- J - + Before ignition

- K - Side lights switch
- L - Right hand stop fault
- M - Left hand stop fault
- N - Side lights fault
- O - Stop switch
- P - Left hand side lights fuse
- Q - Right hand side lights fuse
- R - Handbrake warning light
- S - Handbrake switch

NOTE :

The wires for tracks R and S are connected in the unit by a shunt except for vehicles in Germany where there is a stop fault detector (see following page) on the handbrake warning light.

Stop switch fault detector  
(Germany only)

	Vehicle action	Warning light	Fault finding
	Ignition turned on	Flashing	CORRECT
	Brake pedal released	Extinguished	Check: - condition of warning light*. - instrument panel printed circuit. - wiring continuity  Replace wiring fault unit
I G N I T I O N	Press brake pedal and release	Stops flashing	CORRECT
		Flashing	Stop switch fault or fuse or stop light circuit fault
	Handbrake on	Illuminated	CORRECT
		Extinguished	Handbrake switch fault
	Handbrake off	Extinguished	CORRECT
		Illuminated	Handbrake switch fault

\* Earth wire (8) on connector (B), and replace the computer if the warning light illuminates.

NOTE :

If there is a fault in the stop lights circuit or with the fuse, the voice synthesiser should give a spoken message.

**REMINDER:**

In discreet mode, all messages are replaced by a tone.

**Notes:**

If there is a fault of any kind, spoken and tone messages are only broadcast once by the voice synthesiser before the ignition is turned off. To hear them again (before turning off the ignition) press the REP key.

All spoken messages are preceded by a tone.

A message is said to be stored when it may only be broadcast once, since turning the ignition off will reset the system.

A stored message can always be recalled by pressing the REP key, even if the fault has disappeared.

If the reason for the message is remedied during a message relating to doors, handbrake or lights on reminder, the message is interrupted immediately.

**Sound levels :**

The messages are broadcast at 3 sound levels depending on engine speed :

- Low level : engine speed < about 2000 rpm.
- Average level : engine speed between 2000 and 4000 rpm.
- High level : engine speed > about 4000 rpm.

**Special note :**

The handbrake message is given only if the handbrake is applied before reaching 15 km/h. Applying the handbrake while moving will not initiate a message.

Conditions under which messages are given :

Type of spoken message	Condition	Fault detection by :	Stored (*)
Oil pressure. Stop the vehicle. Turn the ignition off. Probable cause : oil level Refer to drivers handbook.	<ul style="list-style-type: none"> <li>- Ignition on</li> <li>- Engine running more than 10 s.</li> <li>- Fault for 2 s.</li> </ul>	Pressure switch (earthed)	No
Engine overheating. Stop the vehicle. Do not work while the engine is warm. Refer to drivers handbook.	<ul style="list-style-type: none"> <li>- Ignition on.</li> <li>- Oil pressure correct for 20 s.</li> <li>- Fault for 1 s.</li> </ul>	Temperature switch (earthed)	No
Attention : avoid sharp braking, safety circuit activated. Refer to drivers handbook.	<ul style="list-style-type: none"> <li>- Ignition on.</li> <li>- Fault for 2 s.</li> </ul>	Brake fluid reservoir sensor (earthed)	Yes
Battery charging circuit. Faulty operation. Probable cause : Alternator drive belt Refer to drivers handbook	<ul style="list-style-type: none"> <li>- Ignition on.</li> <li>- Oil pressure correct for 60 s.</li> <li>- Fault for 10 s.</li> </ul>	Alternator regulator (warning light wire earthed)	No
Reserve fuel tank activated . Limited travelling distance remaining .	<ul style="list-style-type: none"> <li>- Ignition on.</li> <li>- Fault for 30 s.</li> <li>- Less than 5 litres.</li> </ul>	Petrol: on board computer. Diesel : fuel sensor (earthed)	Yes
Left hand stop light faulty.	<ul style="list-style-type: none"> <li>- Ignition on.</li> <li>- brake applied.</li> <li>- Fault for 2 s.</li> </ul>	Wiring fault unit (earthed)	Yes
Right hand stop light faulty	<ul style="list-style-type: none"> <li>- Ignition on.</li> <li>- brake applied.</li> <li>- Fault for 2 s.</li> </ul>	Wiring fault unit (earthed)	Yes
Side lights faulty	<ul style="list-style-type: none"> <li>- Ignition on</li> <li>- Lights on.</li> <li>- Fault for 4 s.</li> </ul>	Wiring fault unit (earthed)	No
Brake pads. Check soon.	<ul style="list-style-type: none"> <li>- Ignition on.</li> <li>- Fault for 30 s in total since ignition on</li> </ul>	Brake pads (earthed)	Yes

Conditions under which messages are given : (cont)

Types of spoken message	Condition	Detected by :	Stored (*)
Handbrake on (see note page 83-88)	<ul style="list-style-type: none"> <li>- Ignition on.</li> <li>- Speed above 15 km/h.</li> <li>- Fault for 1 s.</li> </ul>	Handbrake switch (earthed)	No
ABS Out of service. Conventional braking activated Check soon. Refer to drivers handbook	<ul style="list-style-type: none"> <li>- Ignition on, engine running</li> <li>- Speed above 15 km/h, clutch not engaged.</li> <li>- Fault for 4 s.</li> </ul>	ABS computer (earthed)	Yes
Injection. Faulty operation. Refer to drivers handbook	<ul style="list-style-type: none"> <li>- Serious fault for 1 s.</li> </ul>	Complex signal from injection computer. No simple simulation (1).	Yes
Injection. Check soon. Refer to drivers handbook	<ul style="list-style-type: none"> <li>- Serious fault for 5 s.</li> </ul>	Injection computer (earthed) (2)	Yes
Electronic anti-theft out of service. Check soon. Refer to drivers handbook. (If fitted)	<ul style="list-style-type: none"> <li>- Engine running for 10 s.</li> <li>- Fault for 2 s.</li> </ul>	Complex signal from injection computer. No simple simulation (1).	Yes
Attention electronic anti-theft. Starting is not possible. Refer to drivers handbook. (If fitted)	<ul style="list-style-type: none"> <li>- Ignition on</li> <li>- Fault for 2 s.</li> </ul>	Complex signal from injection computer. No simple simulation (1).	No
Gear box. Safety operation. Refer to drivers handbook	<ul style="list-style-type: none"> <li>- Engine running speed above 15 km/h.</li> <li>- Oil pressure correct for 10 s.</li> <li>- Fault for 4 s.</li> </ul>	AT computer (earthed).	Yes
Gear box. High temperature. Slow down. Refer to drivers handbook.	<ul style="list-style-type: none"> <li>- Engine running, speed above 15 km/h.</li> <li>- Fault for 4 s.</li> </ul>	Complex signal from AT computer. No simple simulation (3).	No

Conditions under which messages are given (cont) :

Type of spoken message	Condition	Fault detection by	Stored (*)
Turn air conditioning for required temperature (not used)	- Ignition on Fault for 2 s.	Heating regulation unit (earthed)	No
Air conditioning. Faulty operation. Check soon Refer to drivers handbook.	- Ignition on - Fault for 1 s.	Complex signal from heating regulation unit. No simple simulation (4).	Yes
Air conditioning out of service. Check soon Refer to drivers handbook	- Ignition on - Fault for 2 s.	Complex signal from heating regulation unit. No simple simulation (4).	Yes
Lights on	- Ignition off. - lights on. - Fault for 1 s. - Driver's door open	Driver's door switch (earthed) and + side lights	No
The rear LH door is incorrectly closed The rear RH door is incorrectly closed The front LH door is incorrectly closed The driver's door is incorrectly closed Boot incorrectly closed Bonnet incorrectly closed	- Ignition on. - Speed above 15 km/h. - Fault for 1 s.	Opening element switch (earthed)	No

(1) These tests are carried out while the injection fault message is given (2).

(2) Testing the AT - voice synthesiser line is carried out while the AT fault message is given.

(3) Testing the temperature regulation - voice synthesiser line is carried out while the required temperature message is given.



**FAULT FINDING**

● **Checking the voice synthesiser computer**

Computer feed :

Track/ Connector	Allocation	Test
13 / blue	+ 12 V APC	10A fuse on dashboard
14 / blue	+ 12 V AVC	Ⓞ not depressed. 15A clock fuse
12 / blue	Earth	Front right hand pillar earth

● **Specific problem for one message**

Simulation of a fault (blue connector connected, ignition on), by earthing the corresponding track (red connector disconnected).

Track/ Connector	Allocation	Time required	Information required	
			Engine running	Speed
1 / Red	Brake pads worn	30 s	no	no
2 / Red	Front right hand door	1 s	no	yes
3 / Red	Handbrake	1 s	no	yes
4 / Red	Rear left hand door	1 s	no	yes
5 / Red	Info diff lock engaged (4 x 4)	1 s	no	no
6 / Red	Front left hand door	1 s	no	yes
7 / Red	Rear right hand door	1 s	no	yes
8 / Red	Right hand stop	2 s	no	no
9 / Red	Coolant temperature	1 s	yes	no
10 / Red	Tail gate	1 s	no	yes
16 / Red	ABS	4 s	no	yes
17 / Red	Alternator charge	10 s	yes	no
18 / Red	Injection	1 s	no	no
19 / Red	Automatic transmission	4 s	yes	yes
21 / Red	Low fuel level	30 s	no	no
23 / Red	Bonnet	1 s	no	yes
24 / Red	Side lights	4 s	no	no
25 / Red	Oil pressure	2 s	yes	no
26 / Red	Air conditioning	2 s	yes	no
28 / Red	Low brake fluid	2 s	no	no
30 / Red	Repetition	1 s	no	no

• Particular simulation

Track/connector	Description	Time required	information needed	
			Engine running	Speed
8 / Blue	Stop left	2 s	no	no

When the blue connector is connected, the fault on this track must be simulated by using a fine pointed instrument to prick the wire (multimeter probe for example).

• Loudspeaker and radio cut out

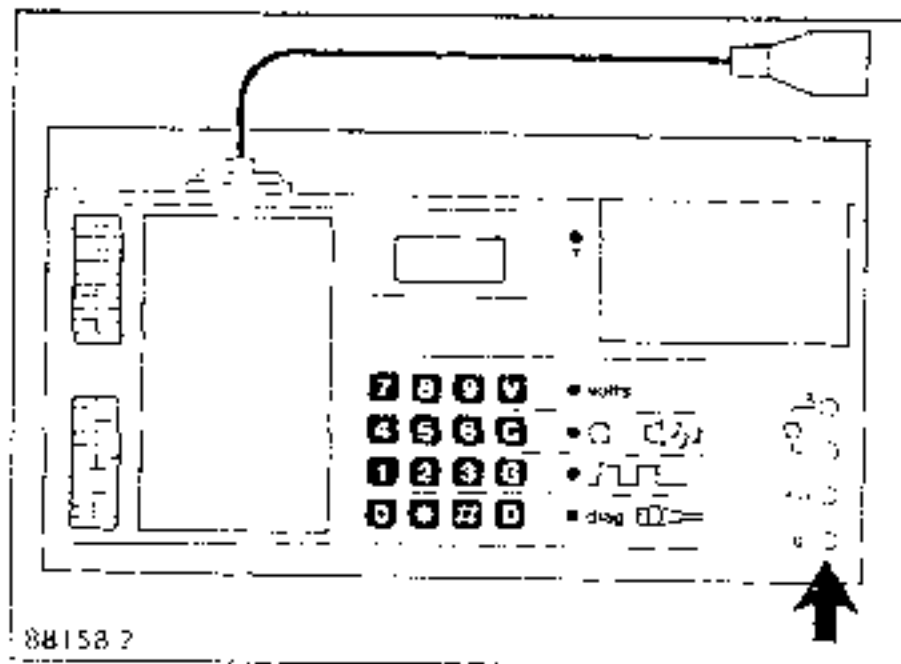
Track/connector	Description
14 / Red	Radio cut out
10 / Blue 11 / Blue	Loud speaker not polarised

**FAULT FINDING (cont)**

• **Simulation with XR 25**

For messages requiring engine speed or vehicle speed information, this information may be simulated using XR 25.

- Connect to diagnostic socket
- Put a cassette in the XR25 (any number).
- Connect the sensor cable to the blue terminal (**G**) on the XR 25 (impulse generator).



- Position the sensor on the track :
  - 20 red connector for vehicle speed information,
  - 22 red connector for engine speed information (diesel),
  - 15 blue connector for engine speed information (petrol)
- Press **G** then **6** on the keyboard on XR 25.

**Note:**

if the message is given under simulation, check continuity, and insulation of the wires and connections for the sensor/s concerned (vehicle or engine speed information).

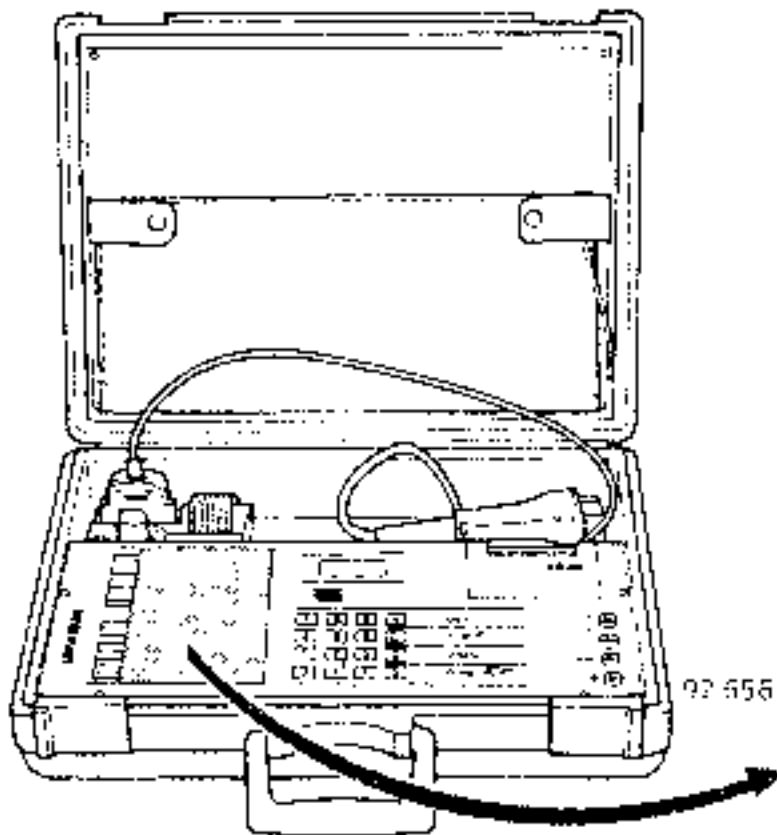
For a lighting fault message, the bulb monitor must also be tested.

**Fault finding (cont)**

If there is a fault with the voice synthesiser XR 25 may be used to diagnose the problem.

**Connections**







Use cassette N° 10 and the corresponding diagnostic fiche.



N° 20		IDENTIFICATION FICHE : LIRE SUR AFFICHEUR →		1, SYP
1	<input type="checkbox"/>	ALLUME SI APC PRESENT	CODE PRESENT	<input type="checkbox"/>
2	<input type="checkbox"/>	TOUCHE REPETITION ←	ALLUME SI PRESSEE →	TOUCHE DISCRETION <input type="checkbox"/>
3	<input type="checkbox"/>	S'ALLUME FREIN A MAIN SERRE	TEST FEUX DE POSITION	
4	<input type="checkbox"/>	ALLUME DEFALT DE LIASON ELECTRIQUE	ALLUME EN FEUX DE POSITION	<input type="checkbox"/>
5	<input type="checkbox"/>	DEFALT STOP GAUCHE ←	FREIN PRESSE DOIT RESTER ETEINT →	DEFALT STOP DROIT <input type="checkbox"/>
6	<input type="checkbox"/>	CIRCUIT CAPOT	ETEINT SI LES 2 CONTACTS SONT PRESSES S'ALLUME SI UN DES CONTACTS EST LEVE	
7	<input type="checkbox"/>	AVG	CONTACTS PORTES	AVD <input type="checkbox"/>
8	<input type="checkbox"/>	APG	ALLUME SI PORTE OUVERTE ETEINT SI PORTE FERMEE	ARD <input type="checkbox"/>
9	<input type="checkbox"/>	S'ALLUME : COFFRE OUVERT	ALLUME : SI CARBURANT BAS	<input type="checkbox"/>
10	<input type="checkbox"/>	ALLUME : SI LIQUIDE DE FREIN BAS	ALLUME : SI PLAQUETTE DE FREIN A LA MASSE	<input type="checkbox"/>
<b>CODE : D 20 (S 8)</b>			<b>BOUTON SUR MARCHÉ POUR LE DIAGNOSTIC</b>	
<b>SYNTHESE DE LA PAROLE</b> (FIN DE DIAGNOSTIC : G13 *)				
11	<input type="checkbox"/>	CIRC. THERMOCONTACT : S'ALLUME SI SURCHAUFFE MOTEUR		
12	<input type="checkbox"/>	LIASON INJ →	SYP	A LA MISE DU APC CHAQUE BARREGRAMME DOIT S'ALLUMER SIMULTANEMENT AVEC LE TEMOIN CORRESPONDANT
13	<input type="checkbox"/>	LIASON TAA →	SYP	
14	<input type="checkbox"/>	LIASON ABS →	SYP	
15	<input type="checkbox"/>	LIASON AC →	SYP	⚠
16	<input type="checkbox"/>	GRABOT : S'ALLUME SI ENCLENCHE	MOTEUR TOURNANT DEBRAYE EN TERE OU MARCHÉ ARRIERE	
17	<input type="checkbox"/>	CHARGE BATTERIE ←	ALLUME MOTEUR ARRETE ETEINT : MOTEUR TOURNANT	PRESSION HUILE <input type="checkbox"/>
18	<input type="checkbox"/>	INFO VITESSE MOTEUR : S'ETEINT MOTEUR TOURNANT > A 500 tr/min		
19	<input type="checkbox"/>	INFO VITESSE VEHICULE : S'ETEINT SI VITESSE > 15 Km/h		
20		MEMOIRE XR25 (C)		
⚠			VOIR MANUEL DE REPARATION	
				FRA

- Connect the XR25 to the diagnostic socket.
- Position the ISO selector switch on 58.
- Turn the ignition on (ensure the on/off key is off).
- Enter the specific voice synthesiser code **D20**

Interpreting the bar graphs

Bar graph	
<p>1 Right</p> 	<p>Code present (ignition on and on/off button off).</p> <p>If extinguished check :</p> <ul style="list-style-type: none"> <li>- correct position of selector switch on XR25 (S8).</li> <li>- Presence of + after ignition on track 13 of VSYN computer (blue connector).</li> <li>- Presence of + 12 V before ignition on track 14 of VSYN computer (blue connector) voice synthesiser on/off key off.</li> <li>- VSYN computer earth on track 12 (blue connector).</li> <li>- Continuity between track 12 (red connector) for VSYN computer and track 11 of diagnostic socket and continuity between track 15 of VSYN computer (red connector) and track 10 of the diagnostic socket.</li> </ul>
<p>1 Left</p> 	<p>Illuminated if + after ignition present on track 13 of blue connector for VSYN computer (on/off key off).</p> <p>If extinguished, check :</p> <ul style="list-style-type: none"> <li>- Continuity between track 13 on blue connector of VSYN computer and instrument panel fuse</li> <li>- Instrument panel fuse.</li> </ul>
<p>2 Right</p> 	<p>Illuminated if discreet key depressed :</p> <p>If extinguished, check:</p> <ul style="list-style-type: none"> <li>- Discreet key depressed, presence of earth on track 27 (red connector) on VSYN computer</li> <li>- The VSYN computer and presence of earth on track B2.</li> </ul>
<p>2 Left</p> 	<p>Illuminated if repeat key depressed :</p> <p>If extinguished, check:</p> <ul style="list-style-type: none"> <li>- Repeat key depressed, presence of earth on track 30 (red connector) on VSYN computer</li> <li>- The VSYN computer and presence of earth on track B2.</li> </ul>
<p>3 Left</p> 	<p>Illuminated if handbrake applied :</p> <p>If extinguished, check:</p> <ul style="list-style-type: none"> <li>- Handbrake switch.</li> <li>- Presence of earth on switch.</li> <li>- Continuity between track 3 on VSYN computer (red connector) and handbrake switch wire</li> </ul>
<p>4 Right</p> 	<p>Illuminated for side lights :</p> <p>If extinguished, check:</p> <ul style="list-style-type: none"> <li>- Side lights on, presence of 12 V on track 13 of VSYN computer (red connector).</li> </ul>

Interpreting the bar graphs (cont)

4 Left



Illuminated for side light fault.  
Extinguished if there is no fault.

If illuminated and there is no fault check :

- bulb conformity.
- insulation of wire on track 24 of VSYN computer (red connector) in relation to earth ( 9 track bulb monitor connector disconnected).
- bulb monitor.

If extinguished and there is a fault :

- continuity between track 24 of VSYN computer (red connector) and track 7 of bulb monitor (9 track connector).
- bulb monitor.

5 Right



Illuminated for right hand stop light fault  
Extinguished if there is no fault

If illuminated and there is no fault check:

- bulb conformity.
- insulation of wire on track 8 of VSYN computer (red connector) in relation to earth ( 9 track bulb monitor connector disconnected).
- bulb monitor.

If extinguished and there is a fault :

- continuity between track 8 of VSYN computer (red connector) and track 1 of bulb monitor (9 track connector).
- bulb monitor

5 Left



Illuminated for left hand stop light fault  
Extinguished if there is no fault

If illuminated and there is no fault check:

- bulb conformity
- insulation of wire on track 8 of VSYN computer (blue connector) in relation to earth ( 9 track bulb monitor connector disconnected).
- bulb monitor.

If extinguished and there is a fault :

- continuity between track 8 of VSYN computer (blue connector) and track 2 of bulb monitor (9 track connector).
- bulb monitor.

6 Left



Illuminated if bonnet is open (1 or 2 switches up).

If extinguished and bonnet is open check :

- the switches and their earth on track A.
- Continuity between track 23 of VSYN computer (red connector) and track B of 2 switches

If illuminated and bonnet is closed check :

- The switches
- Insulation of wire for track 23 for VSYN computer (red connector) in relation to earth.

Interpreting the bar graphs (cont)

7 Left



Illuminated when front left hand door is open (switch in door lock mechanism).

If extinguished and front left hand door is open check :

- the switch and its connections
- presence of earth on track 1 of switch.
- continuity between track 6 on VSYN computer (red connector) and track 3 of door switch

If illuminated and front left hand door is closed check :

- the switch.
- insulation of the wire on track 6 of VSYN computer (red connector) in relation to earth

7 Right



Illuminated when front right hand door is open (switch in door lock mechanism).

If extinguished and front right hand door is open check :

- the switch and its connections
- presence of earth on track 1 of switch.
- continuity between track 2 on VSYN computer (red connector) and track 3 of door switch

If illuminated and front right hand door is closed check :

- the switch.
- insulation of the wire on track 2 of VSYN computer (red connector) in relation to earth

8 Left



Illuminated when rear left hand door is open (switch in door lock mechanism).

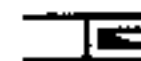
If extinguished and front left hand door is open check :

- the switch and its connections
- presence of earth on track 1 of switch.
- continuity between track 4 on VSYN computer (red connector) and track 3 of door switch

If illuminated and rear left hand door is closed check :

- the switch.
- insulation of the wire on track 4 of VSYN computer (red connector) in relation to earth

8 Right



Illuminated when rear right hand door is open (switch in door lock mechanism).

If extinguished and front left hand door is open check :

- the switch and its connections
- presence of earth on track 1 of switch.
- continuity between track 7 on VSYN computer (red connector) and track 3 of door switch

If illuminated and rear right hand door is closed check :

- the switch.
- insulation of the wire on track 7 of VSYN computer (red connector) in relation to earth

Interpreting the bar graphs (cont)

9 Left



Illuminated if boot open.

If extinguished and boot is open check :

- the switch and connections.
- presence of earth on track 2 of switch.
- continuity between track 10 of VSYN computer (red connector) and track 1 of boot switch

if illuminated and boot is closed check :

- the switch.
- insulation of the wire on track 10 on VSYN computer (red connector) in relation to earth

9 Right



Illuminated if low fuel level.

Without ADAC : earth by fuel gauge.

With ADAC : earth by computer when less than 1.1 gallons (5 litres) remaining

If extinguished and there is a low fuel level :

- if the low fuel warning light on instrument panel is illuminated, check continuity between track 21 of VSYN computer (red connector) and track 4 on instrument panel (blue and white connector).
- if the low fuel warning light on instrument panel is illuminated (bulb OK) :
  - For vehicles without ADAC check continuity between track 8 on instrument panel (blue and white connector) and track 8 on sensor and correct operation of sensor (min switch).
  - For vehicles with ADAC replace the instrument panel.

If illuminated and more than 1.1 gallons (5 litres) of fuel remain, check :

- insulation of wire on track 21 on VSYN computer (red connector) in relation to earth
- For vehicles without ADAC, check min switch on sensor.

10 Left



Illuminated if brake fluid level is low.

If extinguished and brake fluid level is low, check :

- the reservoir switch.
- presence of earth on the connector on track 1.
- continuity between track 28 of VSYN computer (red connector) and track 2 of reservoir switch

If illuminated and brake fluid level is correct check :

- The switch on the reservoir
- insulation of the wire on track 28 on VSYN computer (red connector) in relation to earth

10 Right



Illuminated if brake pads are worn.

If extinguished and brake pads are worn, check :

- correct connection of wires on the brake pads
- continuity between track 1 of VSYN computer (red connector) and brake pad wires

If illuminated and brake pads are correct, check :

- insulation of the wire on track 1 on VSYN computer (red connector) in relation to earth



Interpreting the bar graphs (cont)

11 Left



Illuminated if engine overheats.

If extinguished and engine overheats, check :

- correct connection of coolant sensor.
- the sensor
- continuity between track 9 of VSYN computer (red connector) and sensor wire.

If illuminated and engine is not overheated check :

- the sensor.
- insulation of the wire on track 9 of VSYN computer (red connector) in relation to earth

12 Left



Illuminated when ignition is turned on for 3 seconds, or if there is an injection fault

If it is not illuminated check :

- continuity between track 18 of VSYN computer (red connector) and track 13 of injection computer

If it remains illuminated and there is no fault check :

- insulation of the wire on track 18 of VSYN computer (red connector) in relation to earth

13 Left



Illuminated when ignition is turned on

If it is not illuminated check :

- continuity between track 19 of VSYN computer (red connector) and track C6 of AT computer

If it remains illuminated and there is no fault check :

- insulation of the wire on track 19 of VSYN computer (red connector) in relation to earth

14 Left



Illuminated when ignition is turned on for 3 seconds, or if there is an ABS fault

If it is not illuminated check :

- continuity between track 16 of VSYN computer (red connector) and track 1 (4 x 2) or 29 (4 x 4) of ABS computer

If it remains illuminated and there is no fault check :

- insulation of the wire on track 16 of VSYN computer (red connector) in relation to earth

15 Left



Illuminated when the ignition is turned on if there is an air conditioning fault (warning light illuminated on air conditioning control)

If it is not illuminated and there is a fault check :

- continuity between track 26 of VSYN computer (red connector) and track B1 of heating control unit

If it remains illuminated and there is no fault check :

- insulation of the wire on track 26 of VSYN computer (red connector) in relation to earth

Interpreting the bar graphs (cont)

16 Left



Illuminated if diff lock engaged in 1st or reverse gear

If not illuminated check :

- continuity between track 5 of VSYN computer (red connector ) and track B2 of 4 x 4 switch on console.
- 4 x 4 switch

If it remains illuminated and the diff lock is not engaged check :

- 4 x 4 switch.

17 Left



Illuminated when the ignition is turned on and the engine is stationary  
Extinguished when engine is running.

If not illuminated when the ignition is turned on and the engine is stationary, check:

- continuity between track 17 of VSYN computer (red connector) and track L of alternator regulator.
- voltage control on the alternator

If illuminated when the engine is running and there is no charging fault, check :

- the insulation of the wire on track 17 of VSYN computer (red connector) in relation to earth
- the voltage regulator.

17 Right



Illuminated when the ignition is turned on and the engine is stationary  
Extinguished when engine is running.

If not illuminated when the ignition is turned on and the engine is stationary, check:

- the connection of the oil pressure gauge.
- continuity between track 25 of the VSYN computer (red connector) and the oil pressure gauge wire.
- the oil pressure gauge.

If illuminated when the engine is running and there is no oil pressure fault, check:

- the insulation of the wire on track 25 of VSYN computer (red connector) in relation to earth
- the pressure gauge

18 Left



Illuminated for engine speed < 500 rpm.  
Extinguished for engine speed > 500 rpm

If extinguished for engine speed < 500 rpm., check:

- VSYN computer (internal problem).

If illuminated for engine speed > 500 rpm. :

- Re-enter code D20 on the XR 25 when the engine is running, the bar graph should extinguish.

If the bar graph does not extinguish, check the continuity between track 15 on VSYN computer (blue connector) and track 12 of the injection computer (petrol version).

For diesel versions, check the continuity between track 22 of the VSYN computer (red connector) and the alternator revolution counter wire.

Interpreting the bar graphs (cont)

19 Left



Illuminated for vehicle speed  $< 15$  Km/h.  
Extinguished for vehicle speed  $> 15$  Km/h.

If extinguished and vehicle speed  $< 15$  Km/h., check :  
– The VSYN computer (internal problem).

if illuminated and vehicle speed  $> 15$  Km/h., check:  
– Continuity between track 20 of VSYN computer (red connector) and track B1 of speedometer sensor.

**REMOVAL REFITTING**

lift the steering wheel to its highest position, in order to remove the two half cowlings.

Disconnect the battery

Remove the steering wheel having undipped the switch connector for the cruise control system (depending on equipment level), with the wheels in a straight line.

Having removed the cover (1) for the satellite by pulling to the left, loosen the mounting bolt (2) for the satellite but do not remove it (depending on equipment level).

Unclip and remove the hazard warning light button and warning light.

Remove:

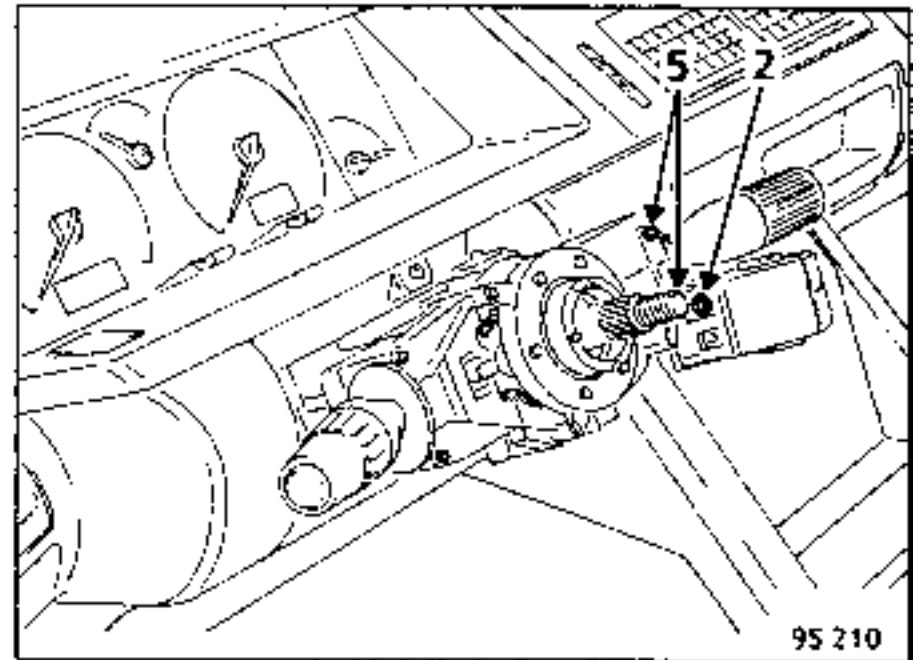
- the two mounting bolts (3) for the upper half cowling,
- the three mounting bolts (4) for the lower half cowling.

Remove the plastic surround from the ignition switch.

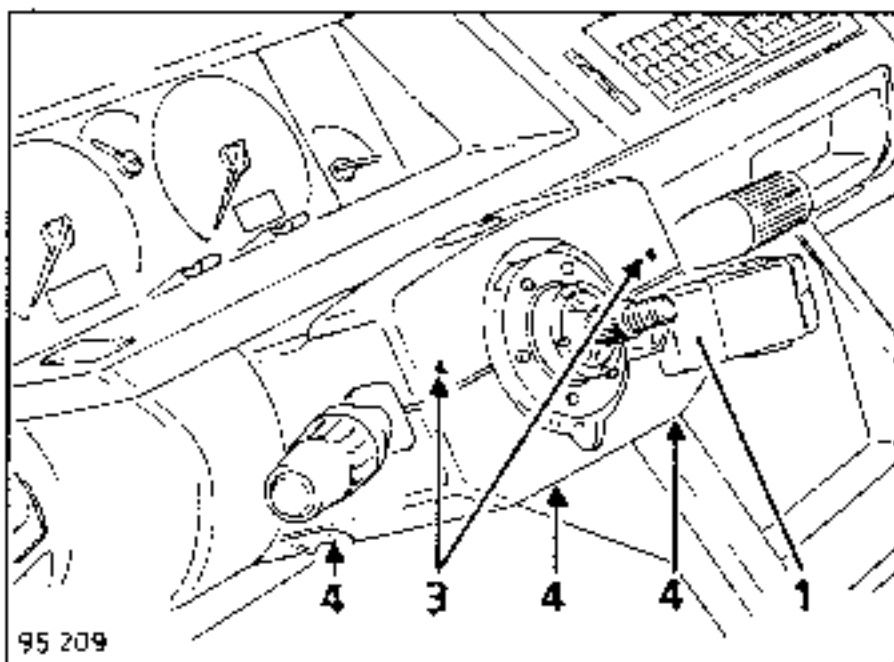
Disconnect the windscreen wiper switch.

Remove the switch mounting and satellite mounting and let it hang on the wiring (depending on equipment level).

Remove the 2 mounting bolts (5) for the switch mounting.

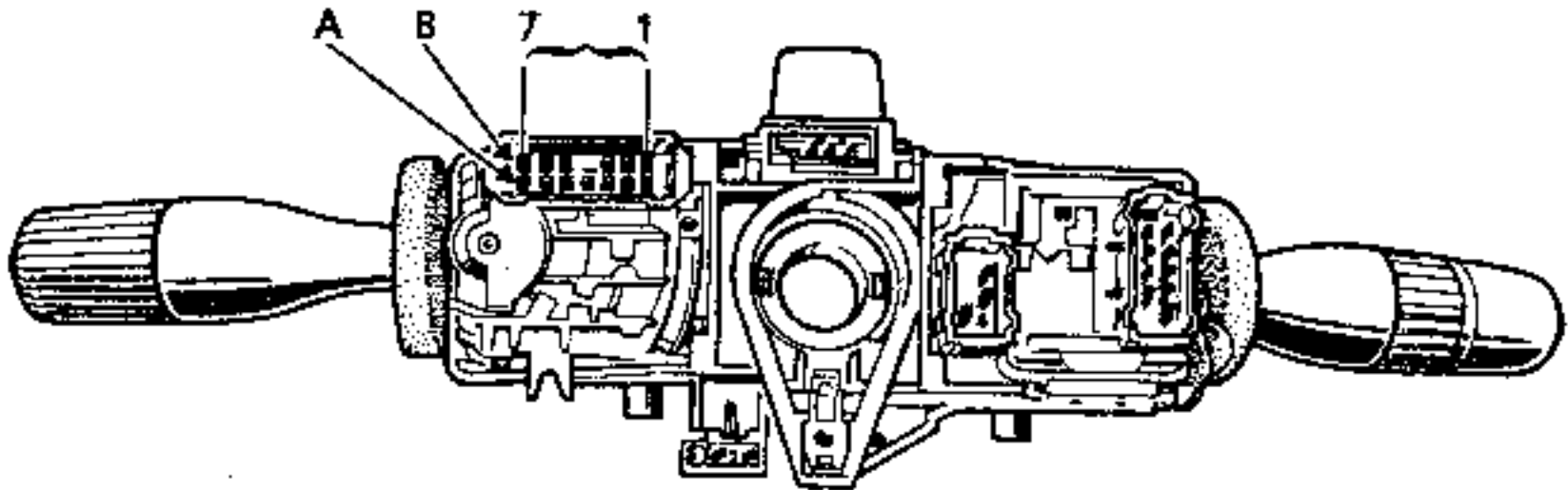


95 210



95 209

CONNECTIONS (most complete)



95 :02

Track	Allocation
A1	+ APC front windscreen wiper
A2	High speed wiper
A3	Low speed wiper
A4	Earth
A5	Front windscreen washer pump
A6	Front intermittent slow speed wiper
A7	Front timer
B1	Not used
B2	Rear timer
B3	Rear screen washer pump
B4	Not used
B5	Injection/diesel coded information
B6	ADAC display
B7	+ APC rear wiper

**REMOVAL - REFITTING**

Lift the steering wheel column to the highest possible position.

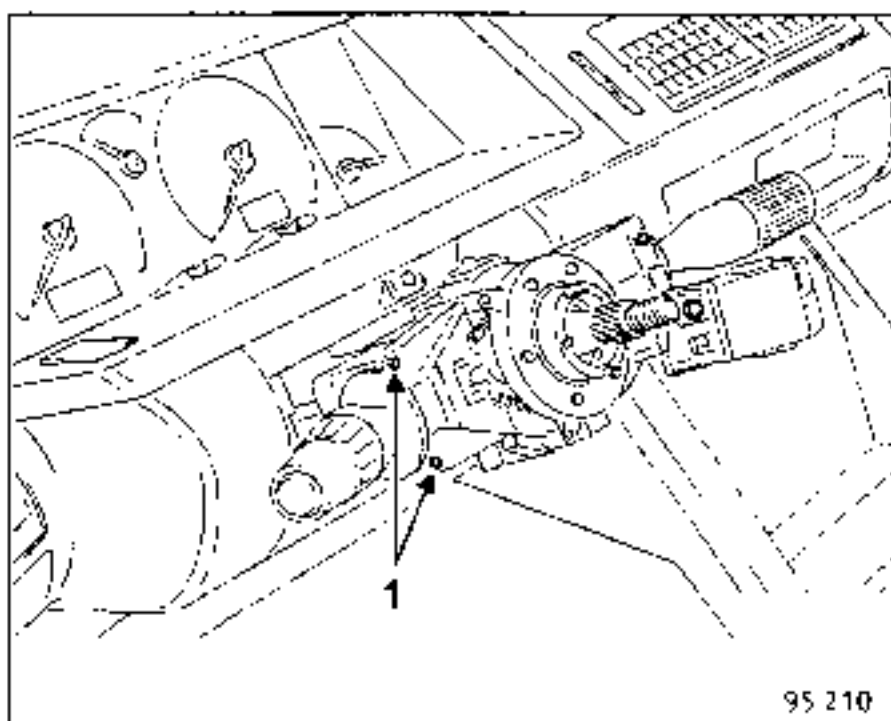
Disconnect the battery

Remove:

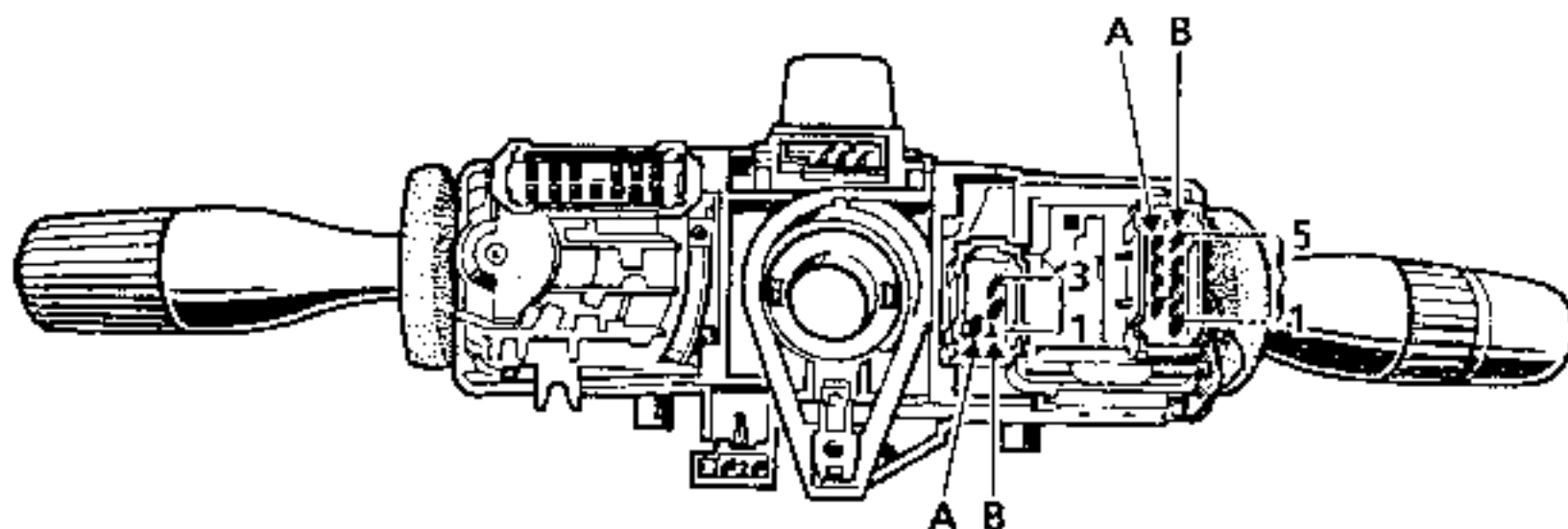
- the steering wheel with the wheels in a straight line,
- the two half cowlings.

Disconnect the two lights switch connectors

Remove the 2 mounting bolts (1) for the switch mounting.



CONNECTIONS (most complete)



95 107

BLACK 10 TRACK CONNECTOR

Track	Allocation
A1	Not used
A2	Side lights output
A3	+ AVC side lights, front and rear fog lights
A4	+ AVC dipped headlights
A5	Dipped headlights output
B1	Rear fog lights output
B2	+ AVC horn
B3	+ AVC main beam headlights
B4	Main beam headlights output
B5	Horn output

BLACK 6 TRACK CONNECTOR

Track	Allocation
A1	Left hand indicators
A2	Not used
A3	Not used
B1	Front fog lights
B2	Right hand indicators
B3	Indicator flasher unit

### REMOVAL - REFITTING

Lift the steering wheel column to the highest possible position

Disconnect the battery

Remove:

- the steering wheel with the wheels in a straight line,
- the two half cowlings.

Disconnect:

- the two connectors for the lights switch,
- the windscreen wiper switch connector,
- the hazard warning lights switch connector,
- the rotary electric connector switch for cruise control (depending on equipment level).

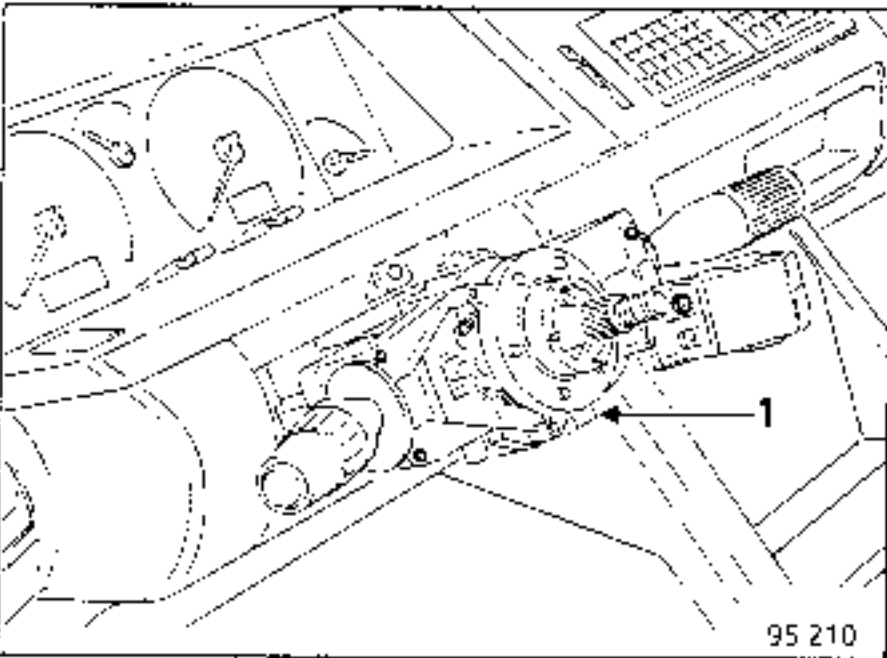
### SPECIAL NOTES FOR REFITTING

Locate the mounting and components on the steering column, on the stop.

Continue with the refitting, but only tighten bolt (1) when the two half cowlings have been refitted, in order to correctly position the switches in the dashboard and instrument panel alignments.

This operation is made easier by using a special cut out section to reach bolt (1) in the lower half cowlings.

Check the cruise control rotary switch drive pin is correctly positioned in the indicator return ring slot.



Remove the satellite and switch mounting and let it hang on the wiring (depending on equipment level).

Loosen bolt (1) and unscrew by a few turns, then tap the screwdriver sharply to loosen the cone.

Remove the switches and mounting and separate the components (if the mounting is being replaced).



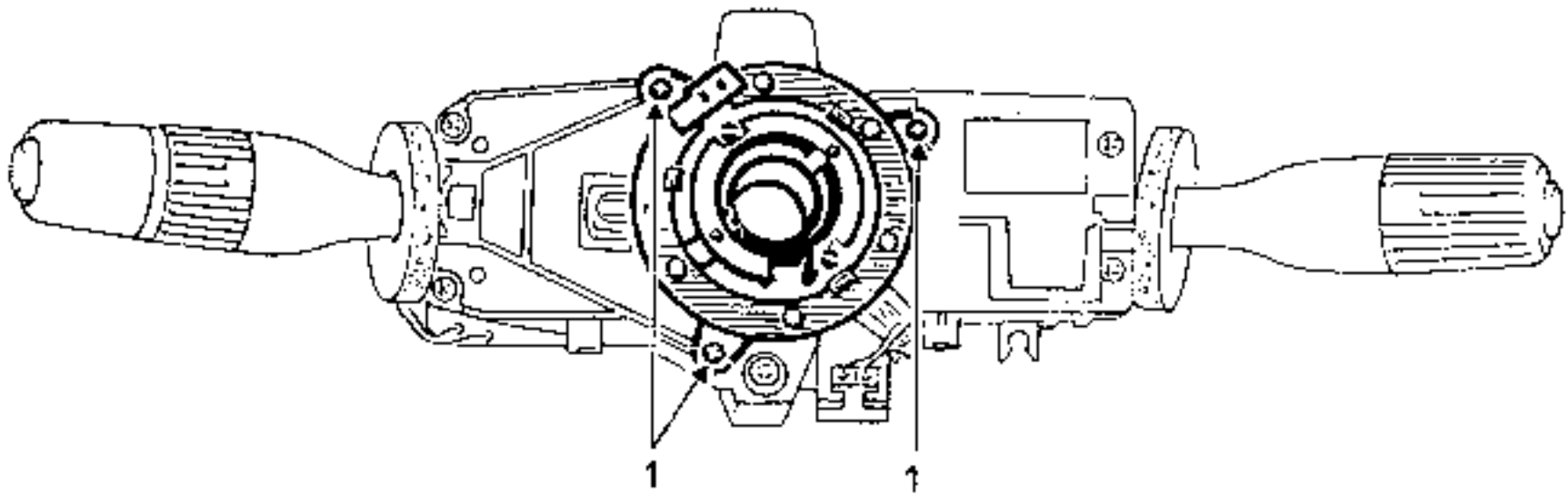
### REMOVAL - REFITTING

Lift the steering column to the highest possible setting.

Disconnect the battery.

Remove:

- the steering wheel with the wheels in a straight line,
- the 2 half cowlings.



95 206

Disconnect the electrical feed wire for the rotary electrical switch.

Unclip the connector from the switch mounting by pushing it and passing the 2 wires through the groove provided.

Remove the three mounting bolts (1) for the board on the switch mounting.

When refitting, check the cruise control rotary switch drive pin is correctly positioned in the indicator return ring slot.

**REMOVAL - REFITTING**

Lift the steering column to the highest possible setting.

Disconnect the battery.

Remove:

- the steering wheel with the wheels in a straight line,
- the 2 half cowlings.

Remove the plastic surround from the ignition switch.

Remove the steering column cover by the two upper bolts, the two lower bolts and the two bolts on the left hand side.

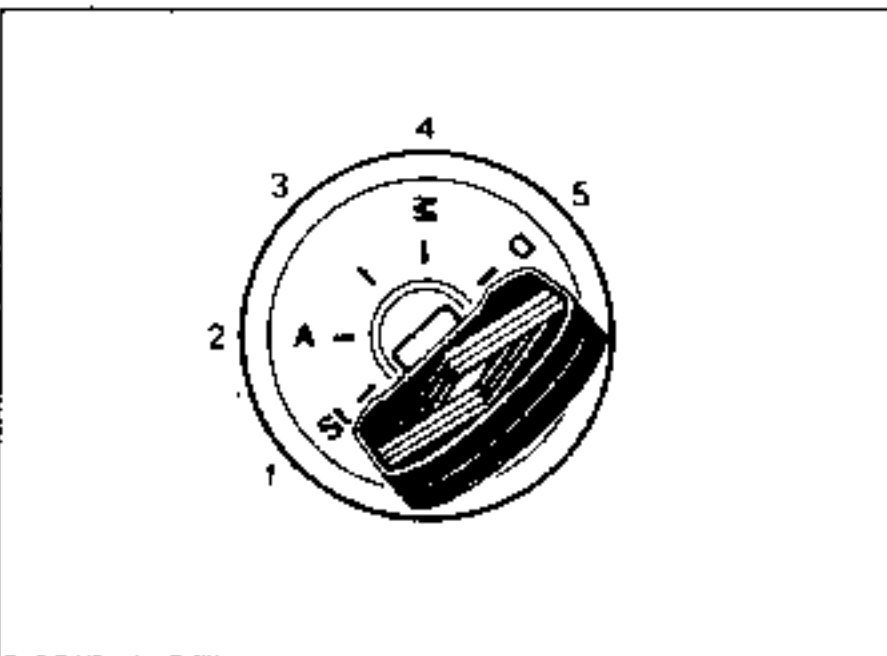
Disconnect:

- the voice synthesiser loud speaker connector (if fitted),
- the two connectors (A) and (B) for the ignition switch

Remove the ignition switch mounting bolt.

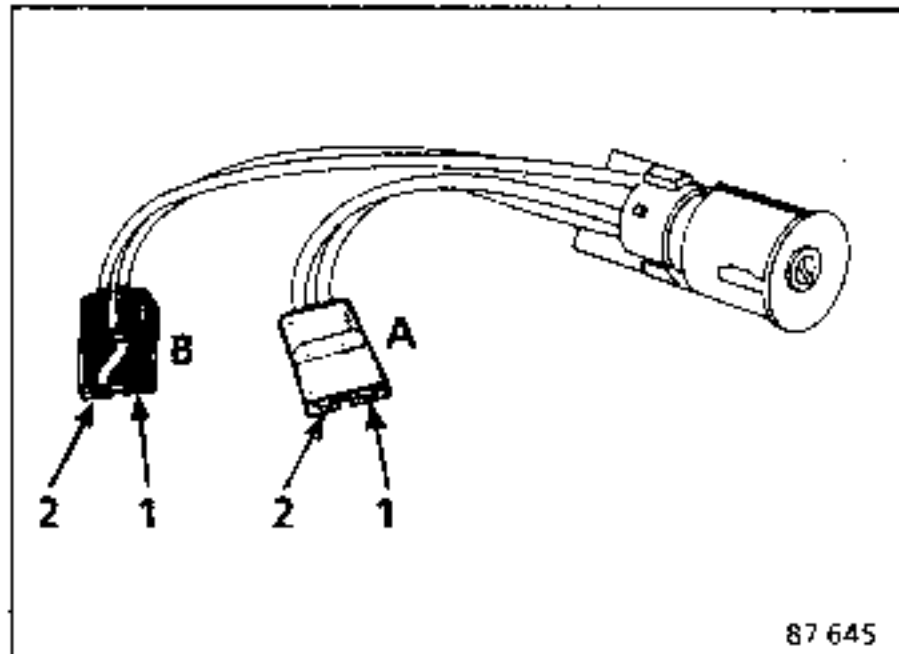
Put the key in position (3).

Press the retaining lug and remove the ignition switch



When refitting ensure the wiring has enough room.

**CONNECTIONS**



87 645

**Black connector (B)**

Track	Allocation
1	+ AVC
2	Starter

**Grey connector (A)**

Track	Allocation
1	Accessories
2	+ APC

The switches for the rear screen and windscreen electric de-icers\* are integrated in the heating unit or the air conditioning control unit\*, and are therefore not replaceable.

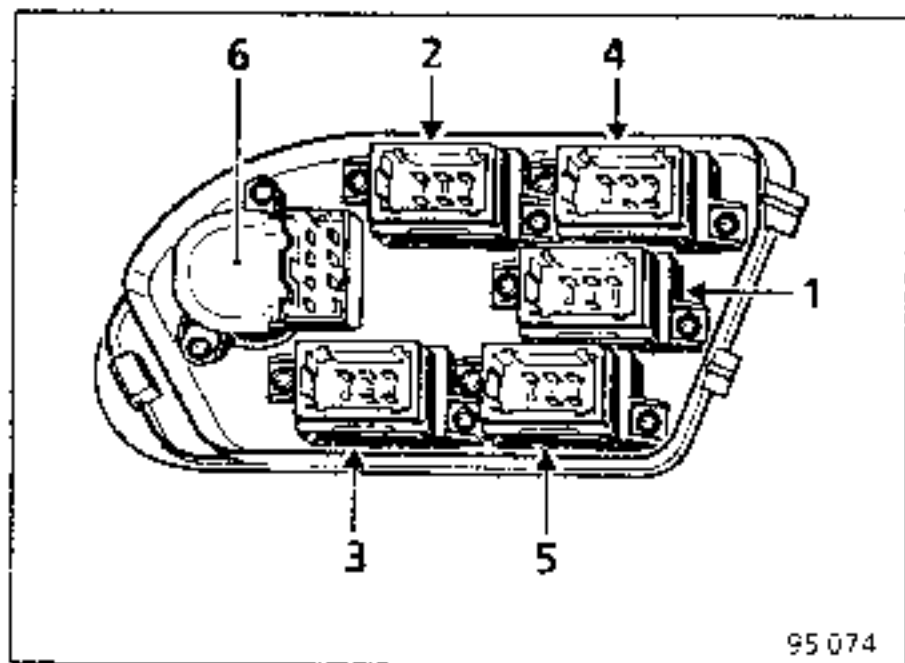
To replace the heating unit or the air conditioning control unit \* see the method explained in chapter 6.

#### CONNECTIONS

See chapter 6 "Fault finding" for the connections and wiring diagrams for these switches.

\* depending on equipment level.

**ARM REST BOARD**  
(most complete)



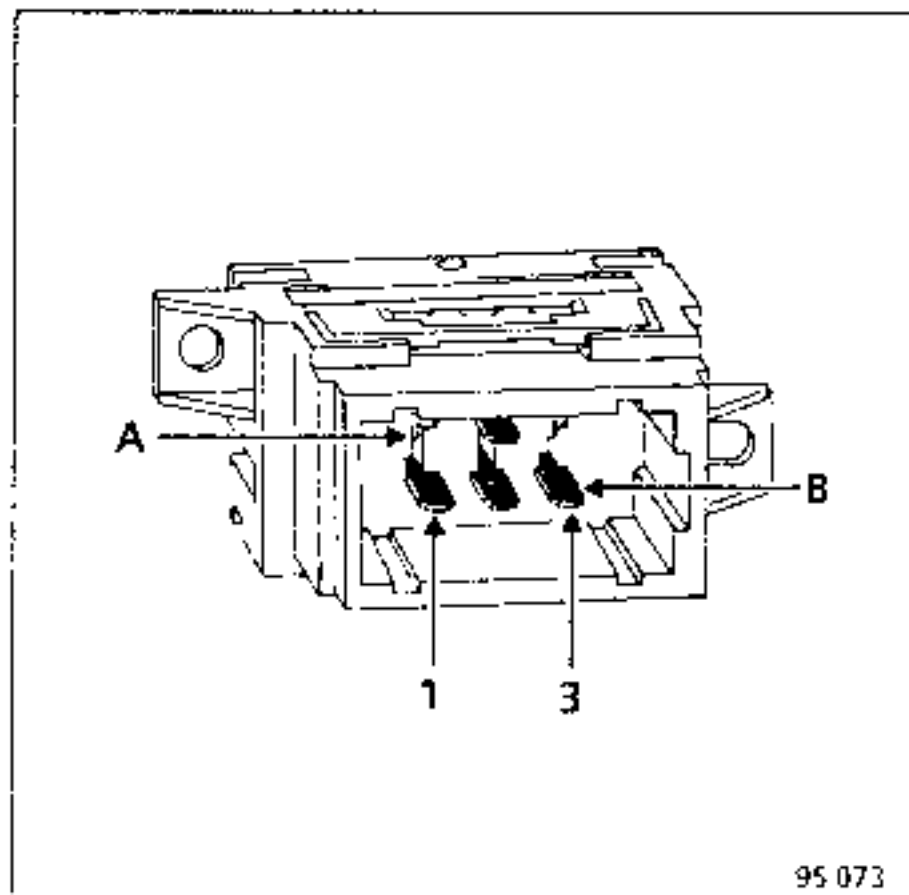
- 1 Child safety relay switch (electric)
- 2 Drivers window winder switch
- 3 Passenger window winder switch
- 4 Rear left hand window winder switch
- 5 Rear right hand window winder switch
- 6 Rear view mirror control

**REMOVING THE SWITCHES**

Having removed the arm rest board (see method in chapter 72), remove the two mounting bolts for the switch in question.

**CHILD SAFETY RELAY SWITCH**

Prevents operation of the rear window winders, the rear cigar lighter and the accessories socket.



**CONNECTIONS**

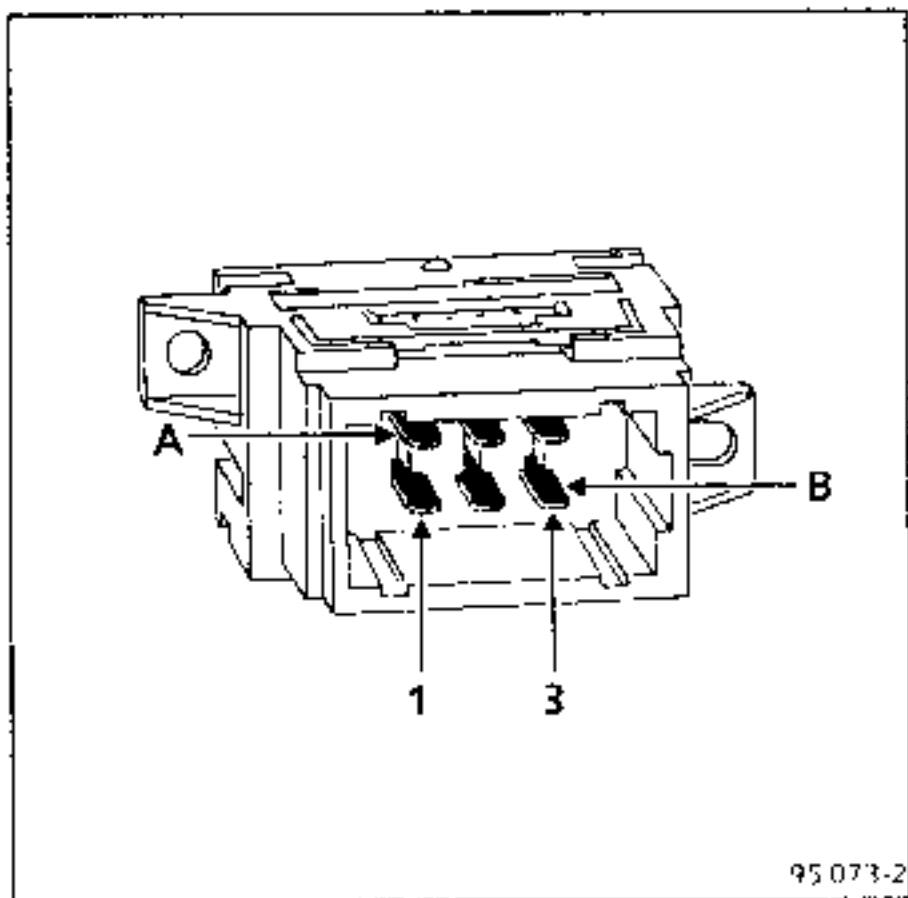
Black connector

Track	Allocation
A2	+ Lighting
B1	Prevention relay feed
B2	Earth
B3	Not used

Symbols : white in the day  
              amber at night

The inner lighting in the switch cannot be repaired.

**PULSE WINDOW WINDER SWITCH**



**CONNECTIONS**

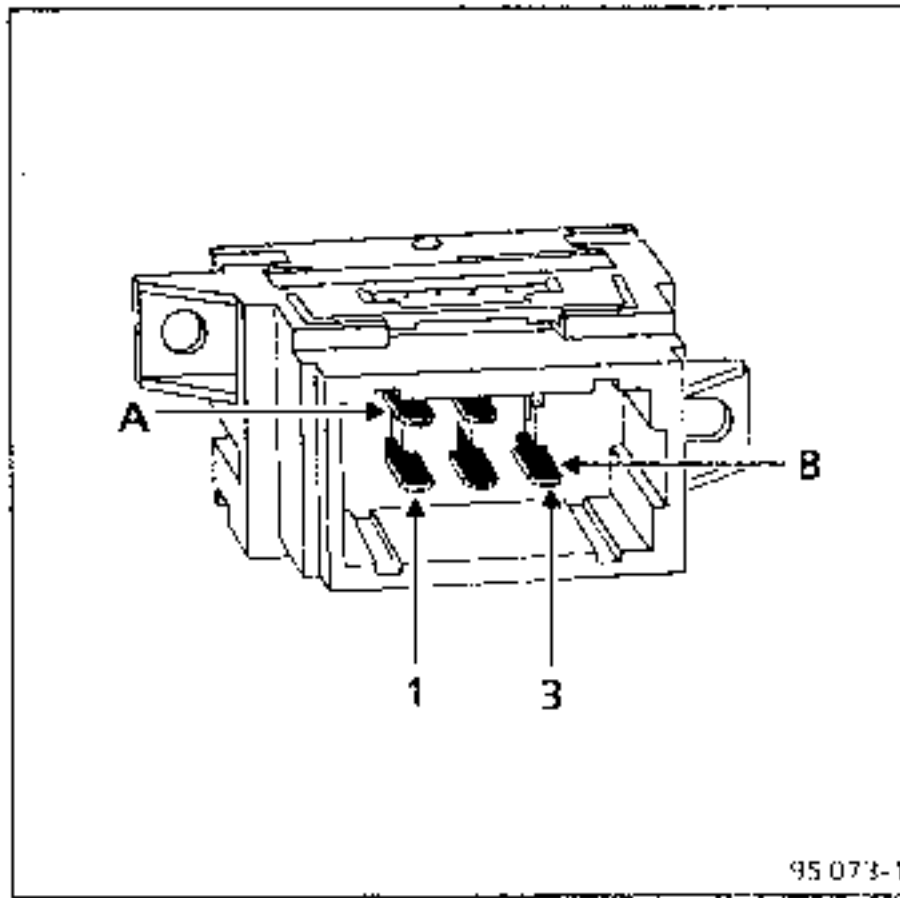
**Brown connector**

Track	Allocation
A1	+ Lighting
A2	Normal down control
A3	Pulse down control
B1	Pulse up control
B2	Normal up control
B3	Earth

Symbols : white in the day  
              amber at night

The inner lighting in the switch cannot be repaired.

**PASSENGER WINDOW WINDER CONTROL ON DRIVER'S DOOR**



**CONNECTIONS**

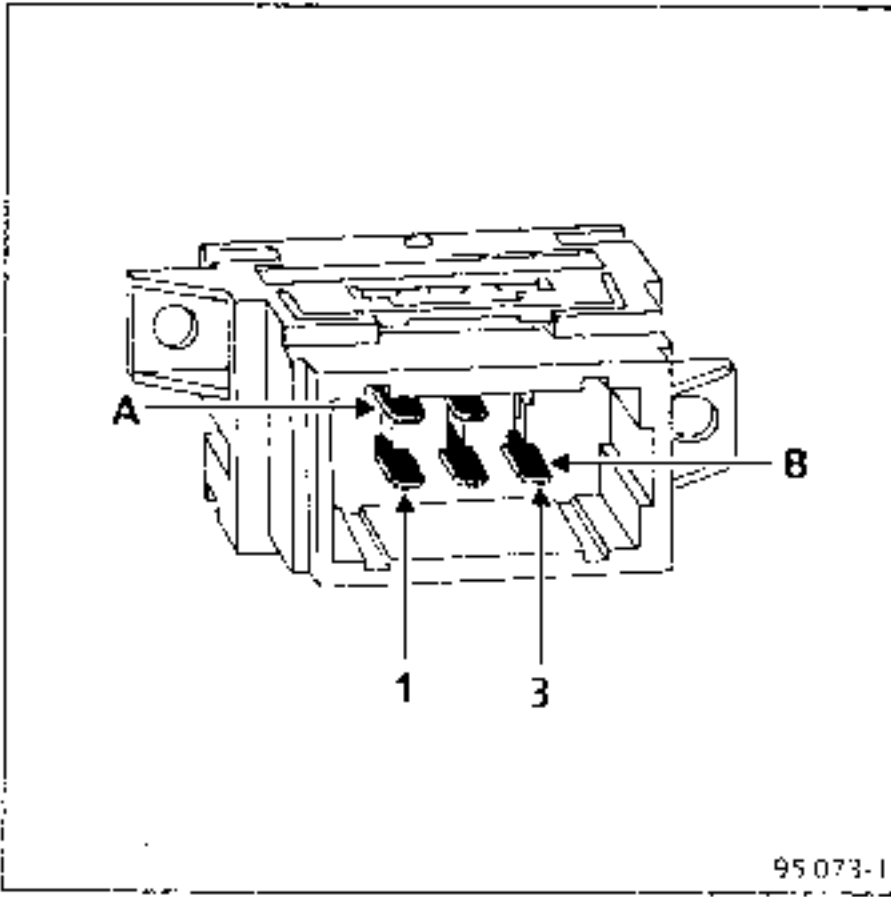
**White connector**

Track	Allocation
A1	+ or - motor
A2	+ lighting
B1	+ APC
B2	Earth
B3	+ or - motor

Symbols : white in the day  
              amber at night

The inner lighting in the switch cannot be repaired.

**REAR LEFT HAND WINDOW WINDER CONTROL ON DRIVER'S DOOR**



**CONNECTIONS**

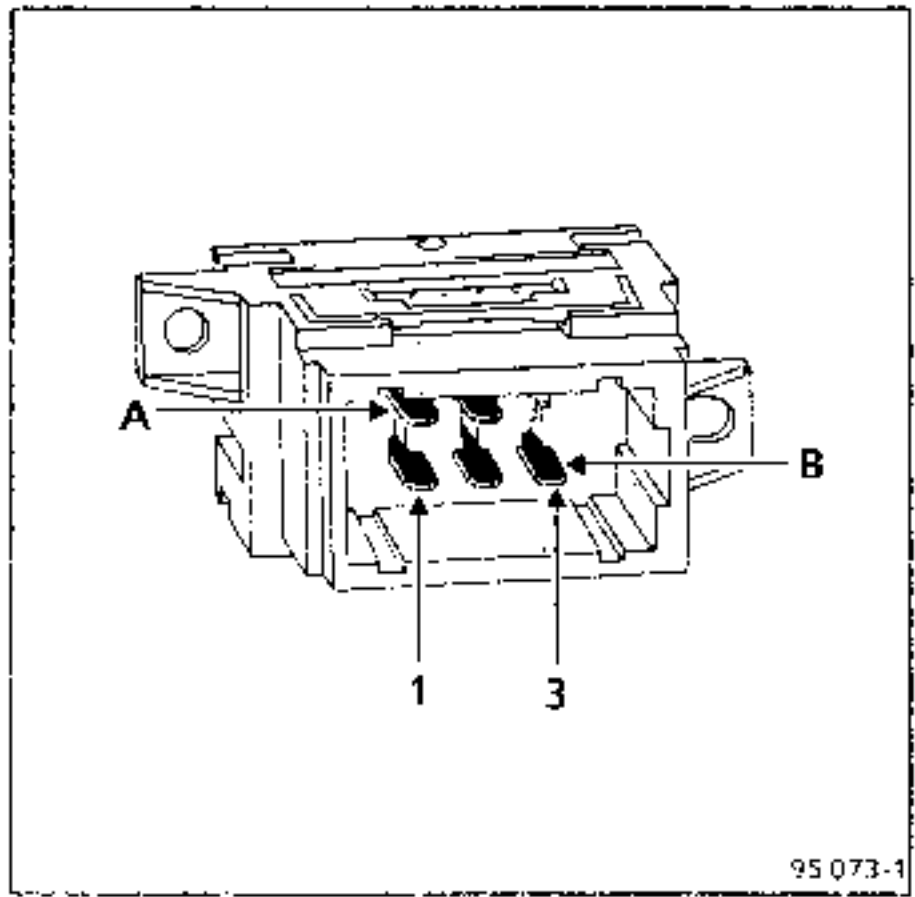
**Blue connector**

Track	Allocation
A1	+ or - engine
A2	+ lighting
B1	+ APC
B2	Earth
B3	+ or - motor

Symbols : white in the day  
              amber at night

The inner lighting in the switch cannot be repaired.

**REAR RIGHT HAND WINDOW WINDER CONTROL ON DRIVER'S DOOR**



**CONNECTIONS**

**Grey connector**

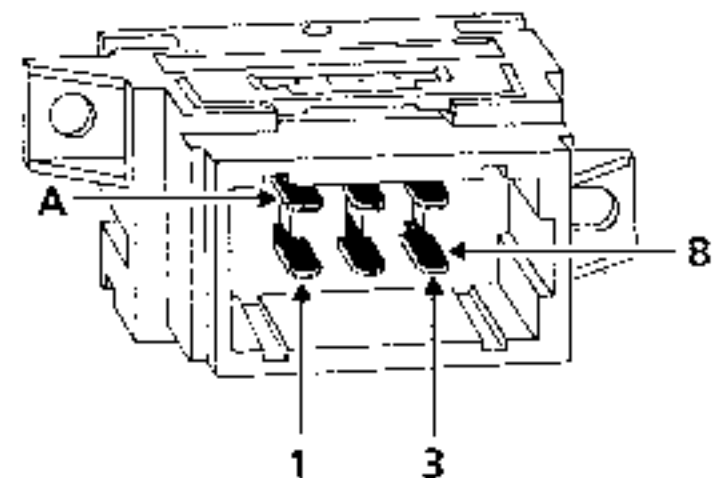
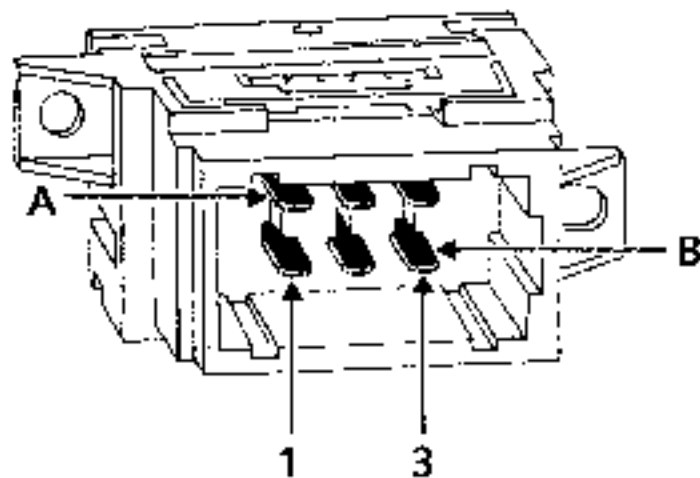
Track	Allocation
A1	+ or - motor
A2	+ lighting
B1	+ APC
B2	Earth
B3	+ or - motor

Symbols : white in the day  
              amber at night

The inner lighting in the switch cannot be repaired.

**REAR WINDOW WINDER CONTROL ON REAR DOOR**

**PASSENGER WINDOW WINDER CONTROL ON RIGHT HAND DOOR**



95 073-2

95 073 2

**CONNECTIONS**

**Red connector**

track	Allocation
A1	Motor feed
A2	+ lighting
A3	+ or - motor
B1	+ or - motor
B2	Earth via prevention relay
B3	Motor feed

Symbols : white in the day  
              amber at night

The inner lighting in the switch cannot be repaired.

**CONNECTIONS**

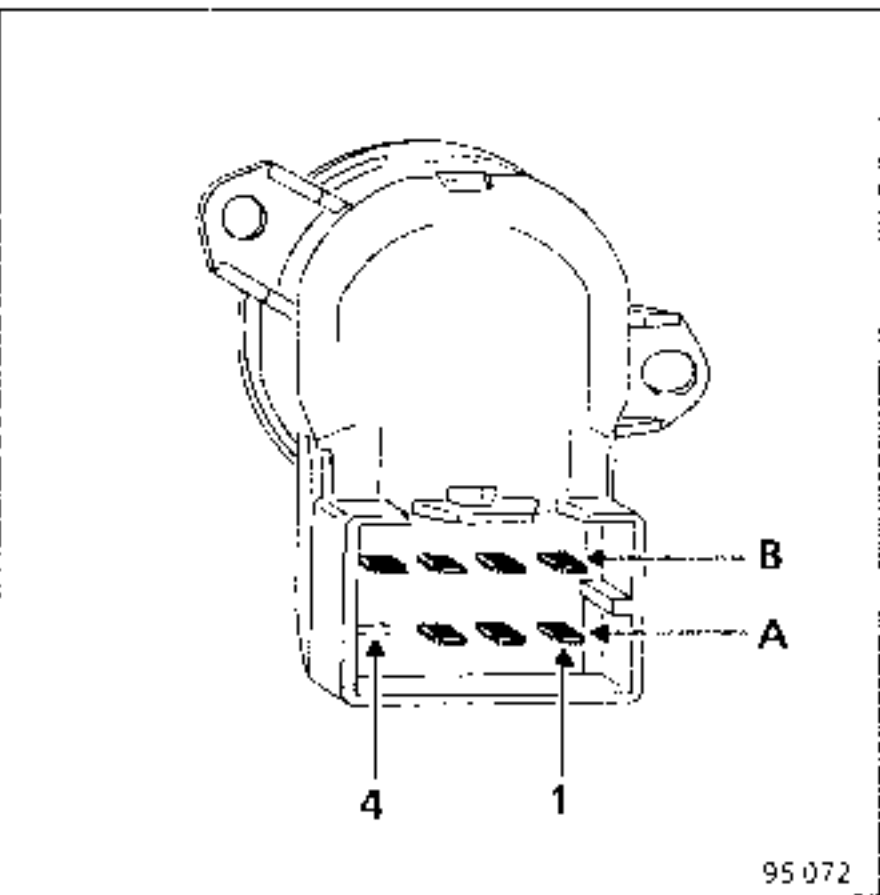
**Red connector**

Track	Allocation
A1	Motor feed
A2	+ lighting
A3	+ or - motor
B1	+ or - motor
B2	Earth
B3	Motor feed

Symbols : white in the day  
              amber at night

The inner lighting in the switch cannot be repaired.

**REAR VIEW MIRROR CONTROL**



Control position	Outputs				
	B4	B2	B1	A1	A3
Right hand mirror { ↑ ↓ ← →	-	+			
	+	-			
	-		+		
	+		-		
Left hand mirror { ↑ ↓ ← →	-				+
	+				-
	-			+	
	+			-	

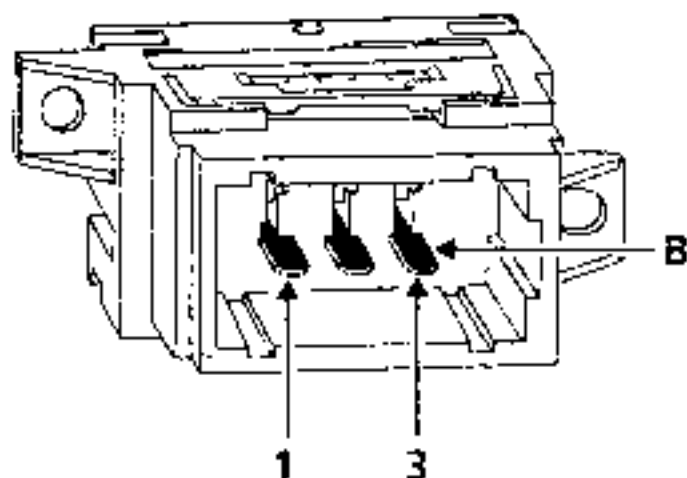
NOTE : symbols white both day and night

**CONNECTIONS**

Track	Allocation
A1	Driver's rear view mirror control left and right orientation
A2	Earth
A3	Driver's rear view mirror control up and down orientation
A4	Not used
B1	Passenger's rear view mirror control left and right orientation
B2	Passenger's rear view mirror control up and down orientation
B3	Common rear view mirror (store) or + AVC (not stored)
B4	Common rear view mirror (not stored)



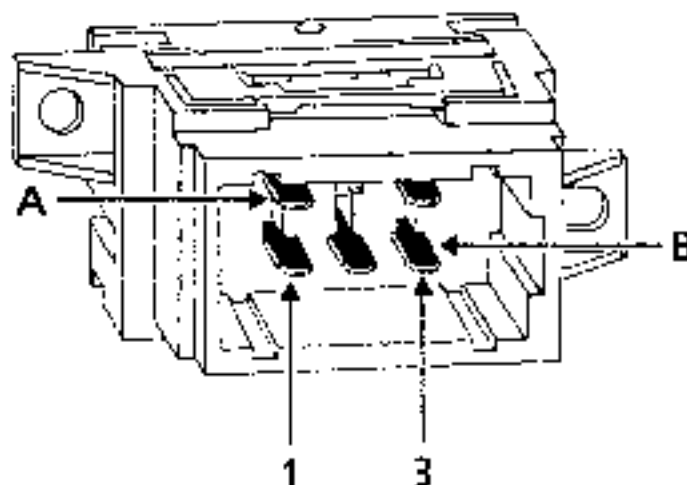
**READING LIGHT SWITCH**



95 073-5

**INTERIOR LIGHTING SWITCH**

(Central roof light - ground light - rear view mirror light)



95 073-6

**CONNECTIONS**

Grey connector

Track	Allocation
B1	Not used
B2	Earth
B3	Earth feed for reading light

Symbols white both day and night

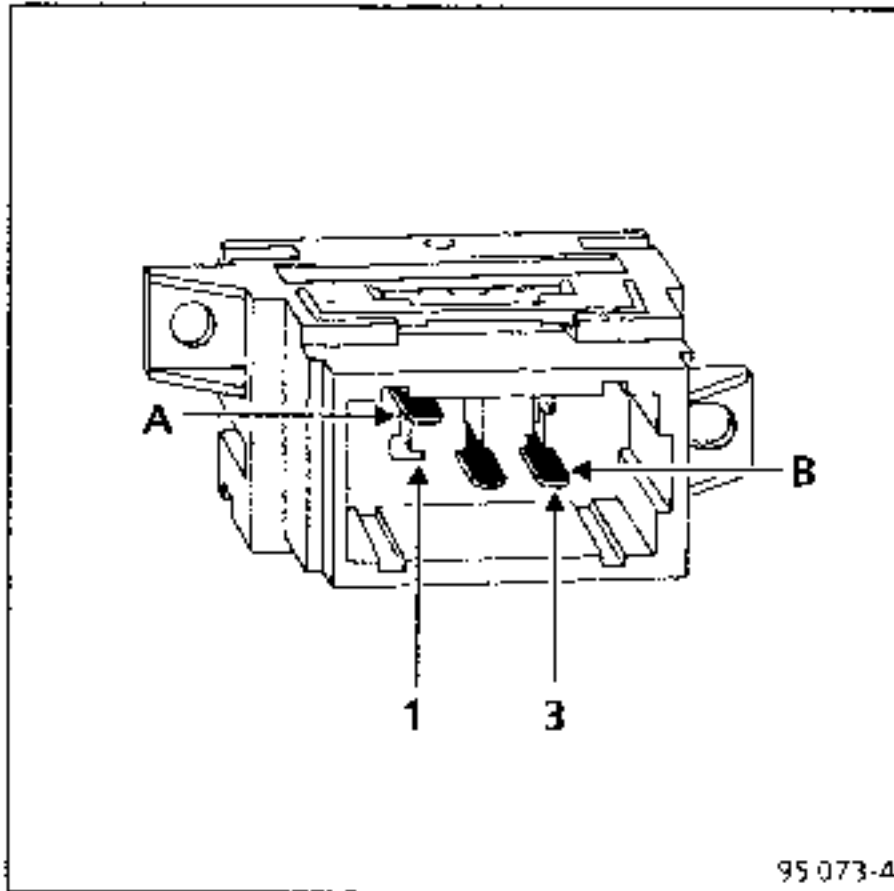
**CONNECTIONS**

Black connector

Track	Allocation
A1	Central roof light and rear view mirror light
A3	Not used
B1	Ground lights
B2	Earth
B3	Not used

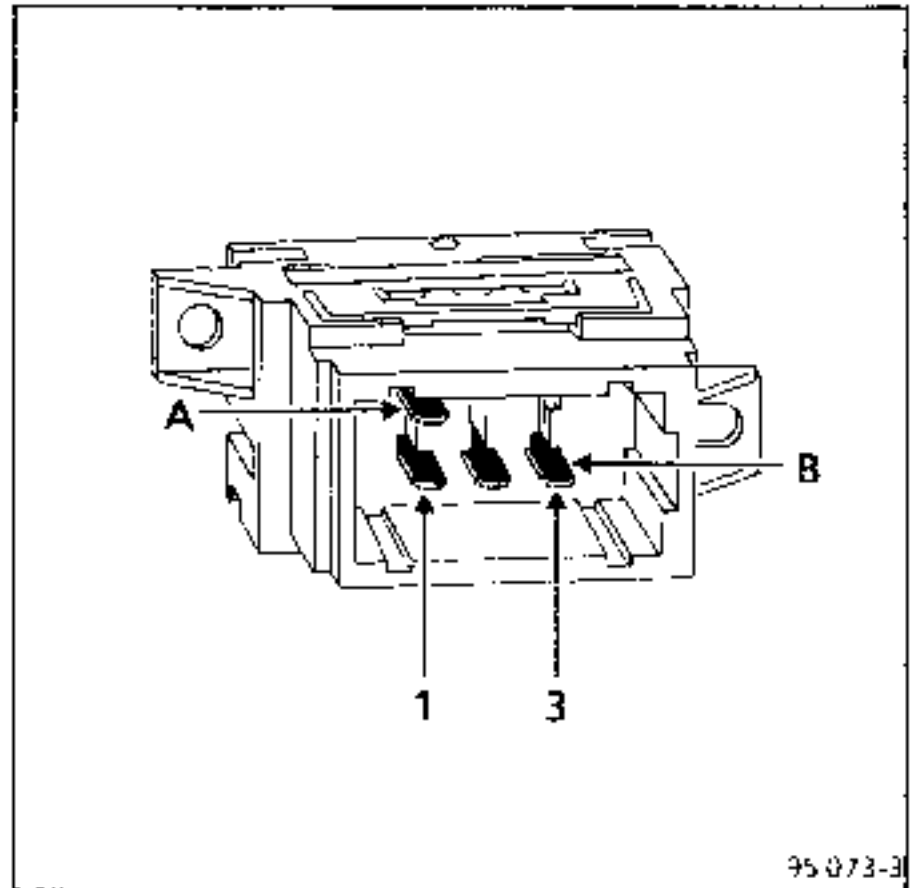
Symbols white both day and night

**DOOR LOCKING SWITCH**



95 073-4

**SUN ROOF SWITCH**



95 073-3

**CONNECTIONS**

**Brown connector**

Track	Allocation
A1	Central door locking open command
B2	+ AVC
B3	Central door locking close command

Symbols white both day and night

**CONNECTIONS**

**White connector**

Track	Allocation
A1	+ or - motor
B1	+ APC
B2	Earth
B3	+ or - motor

Symbols white both day and night

**REMOVAL - REFITTING**

Lift the steering wheel column to the highest possible position.

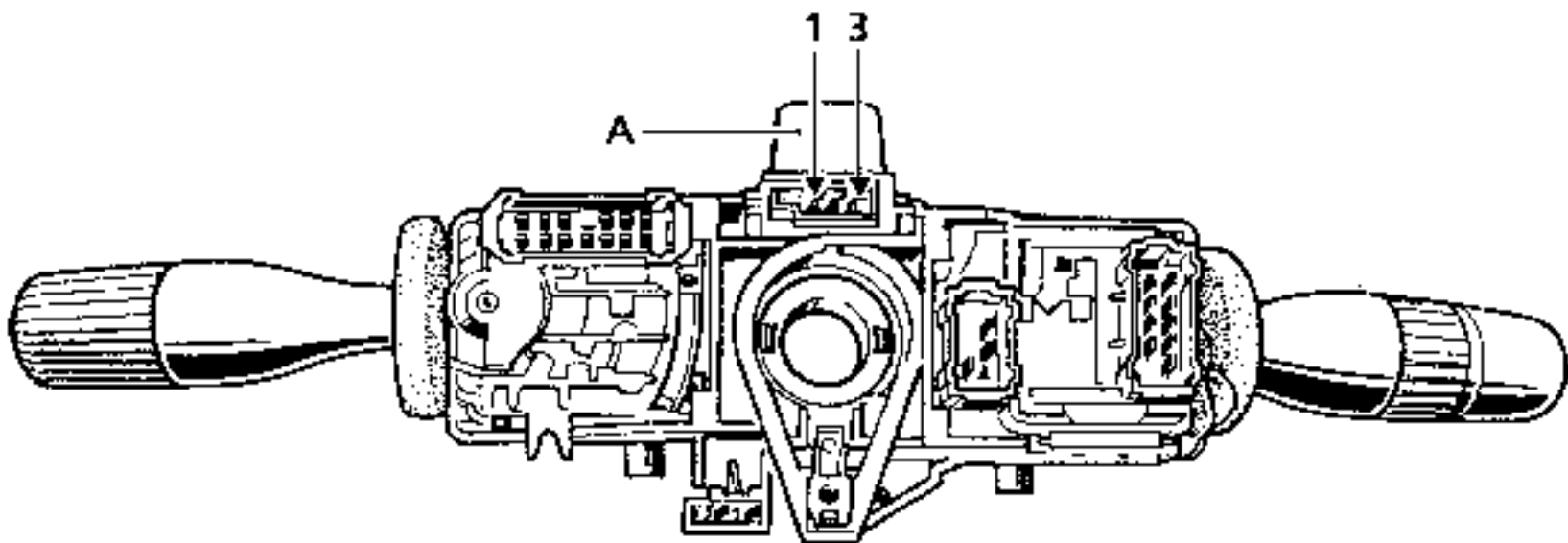
Disconnect the battery.

Remove:

- the steering wheel with the wheels in a straight line,
- the upper half cowling by the 2 bolts having unclipped the switch button and warning light (A).

Disconnect the connector on the hazard warning light switch.

Slightly unscrew the 2 mounting bolts on the switch and remove it by sliding backwards.



95 '02

**CONNECTIONS**

3 track white connector

Track	Allocation
1	Hazard warning light earth via central flasher
2	Central flasher unit control + AVC
3	unit

**NOTE :** The bulb may be replaced in the button and warning light unit by unclipping it at (A).

**REMOVAL - REFITTING**

Lift the steering wheel column to the highest possible position.

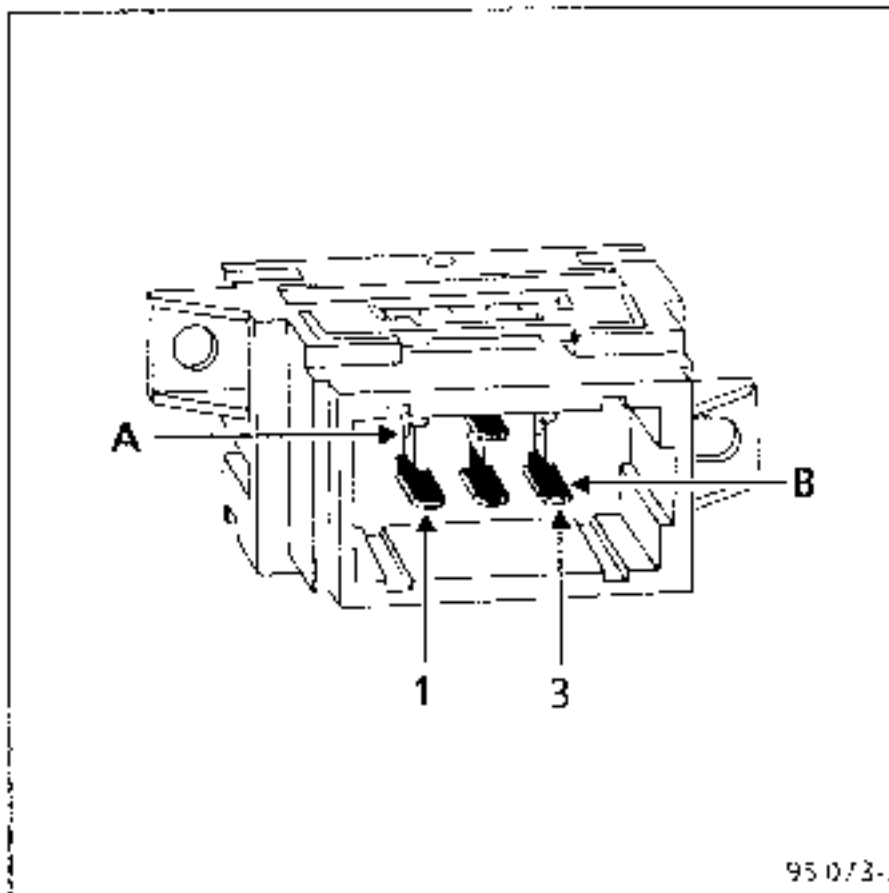
Disconnect the battery.

Remove:

- the steering wheel with the wheels in a straight line,
- the upper half cowling by the 2 bolts
- the lower half cowling by the three bolts.

Disconnect the switch feed wiring connector.

Remove the two switch mounting bolts on the lower half cowling.



**CONNECTIONS**

White connector

Track	Allocation
A1	Rearward steering column control
B1	Not used
B2	Earth
B3	Forward steering column control

**FRONT CIGAR LIGHTER**

**REMOVAL**

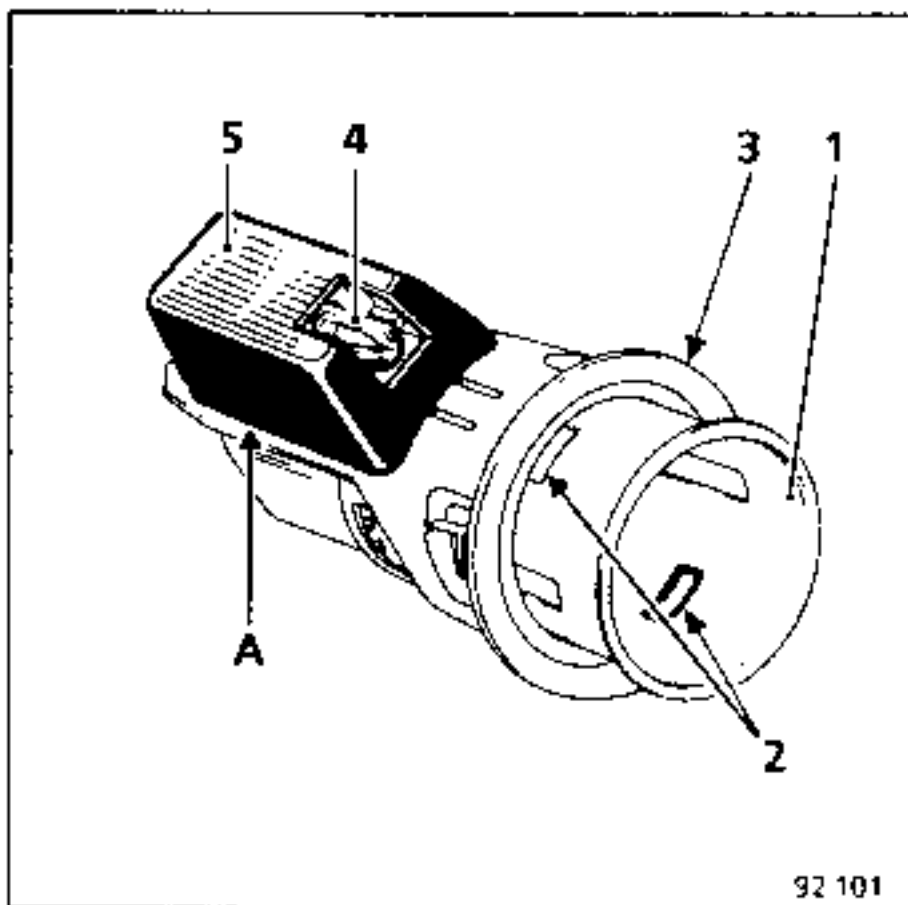
Ignition off, remove the ashtray.

Remove the ashtray mounting by the two bolts.

Remove the cigar lighter heater element.

Disconnect the connector and wire.

To remove the cigar lighter body (1), push the back of the body, while unclipping the 2 lugs (2).



Remove the plastic lighting surround (3) by pushing on the back.

**NOTE :** to replace the bulb (4), remove the complete cigar lighter unit and unclip the shield (5) at point (A), then remove the bulb.

**CONNECTIONS**

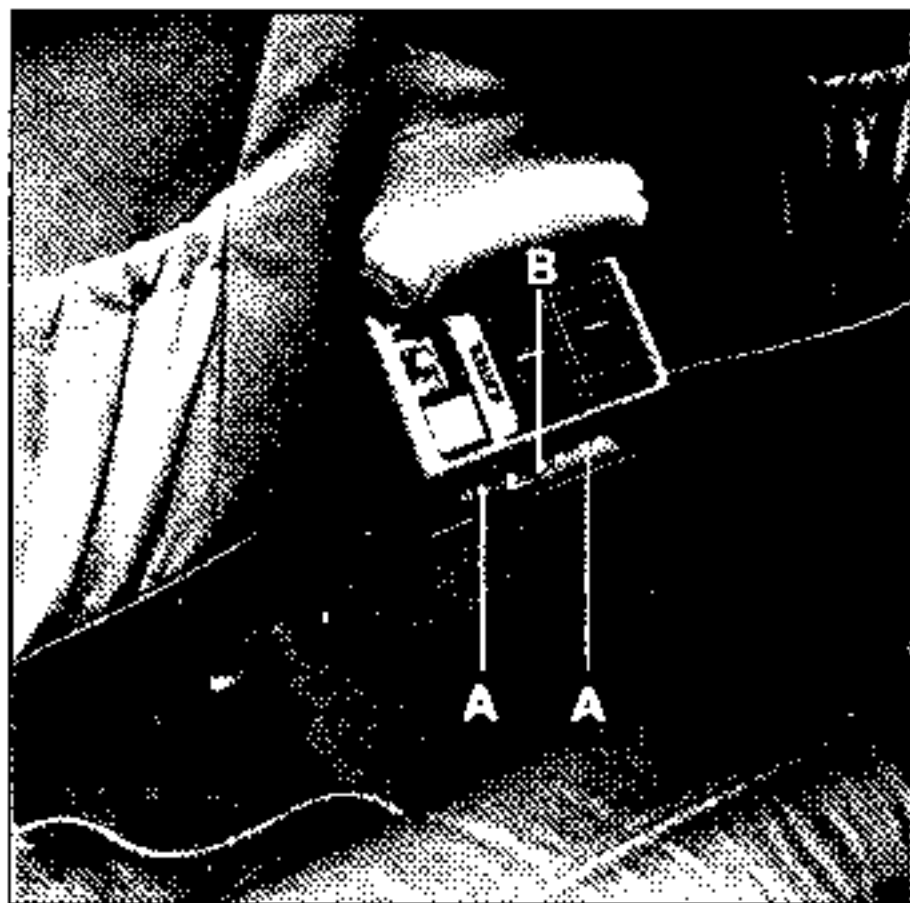
Track	Allocation
1	Earth
3	+ APC

Single wire: + lighting.

**REAR CIGAR LIGHTER**

**REMOVAL**

Ignition off, remove the 2 mounting bolts (A) for the headphone socket mounting (B) on the rear console.



Remove the headphone socket mounting (2) after disconnecting the connector.

Via the mounting location, remove the cigar lighter following the method above.

**CONNECTIONS**

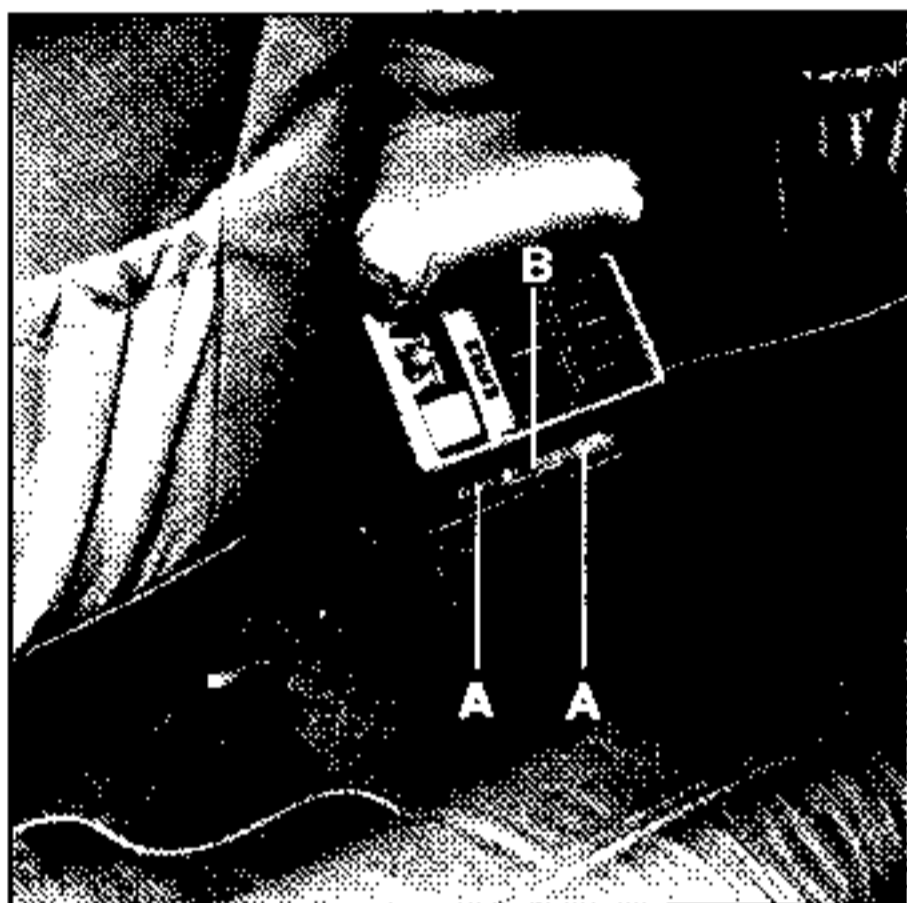
Black connector

Track	Allocation
1	Earth via child safety relay
3	+ APC

Single wire: + lighting.

**REMOVAL**

Ignition off, remove the 2 mounting bolts (A) for the headphones socket mounting (B) on the rear console.



Remove the headphones socket mounting (2) having disconnected the connector.

Unclip the accessories socket through the mounting location and remove it.

Disconnect the connector.

**CONNECTIONS**

**Brown connector**

Track	Allocation
1	Earth via child safety relay
3	+ APC

Symbols : white in the day  
amber at night (lit by the cigar lighter lighting)

**NOTE** : accessories socket output limited to 120 Watts.

### REMOVAL - REFITTING

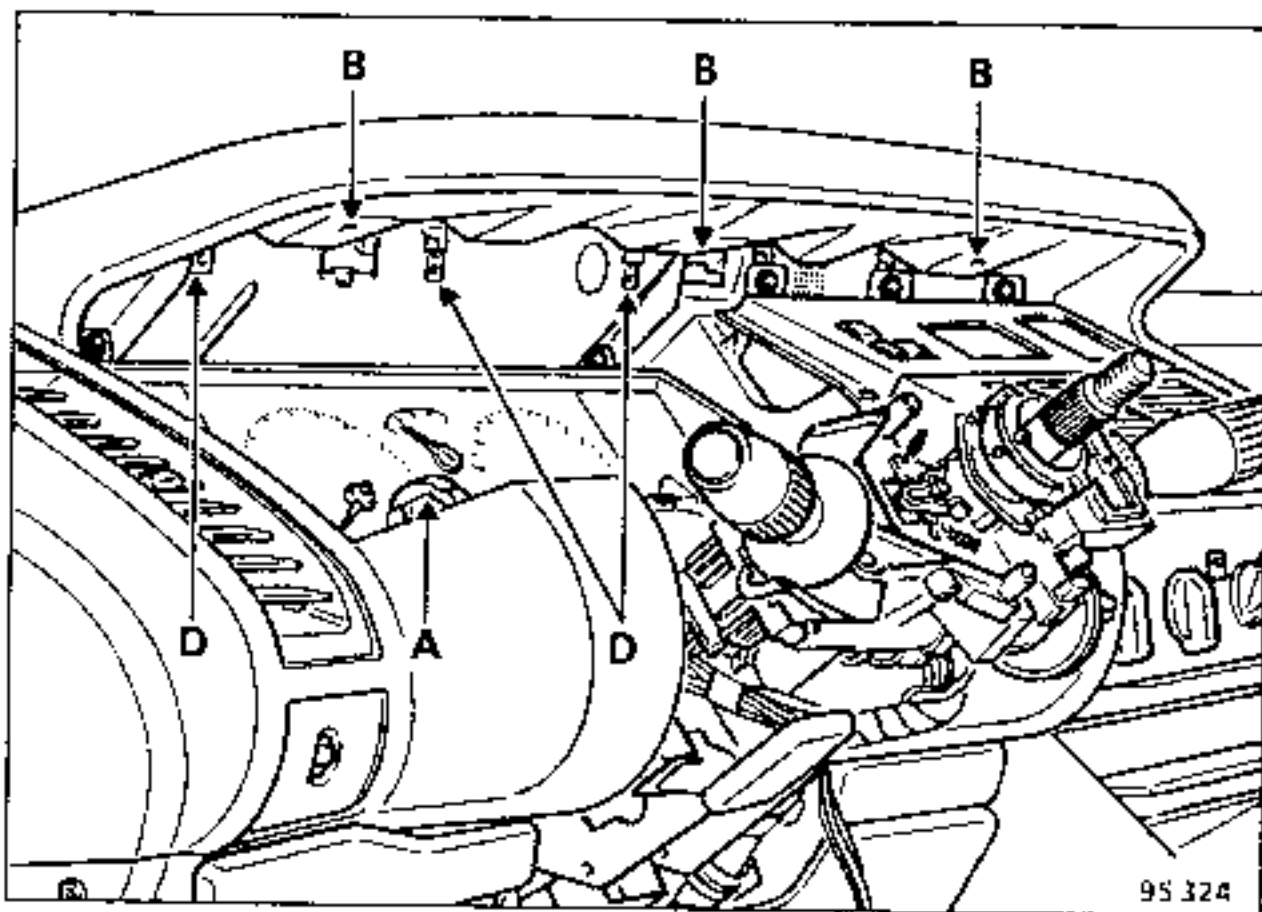
Lift the steering wheel column to the highest possible position.

Disconnect the battery.

Remove:

- the steering wheel with the wheels in a straight line,
- the half cowlings

Unclip the rheostat surround (A).



Remove:

- the 3 bolts (B) for the dashboard visor trim,
- the 2 lower bolts for the dashboard visor,
- the 3 upper bolts (D) for the dashboard visor.

Remove the visor and remove the rheostat mounting bolt.

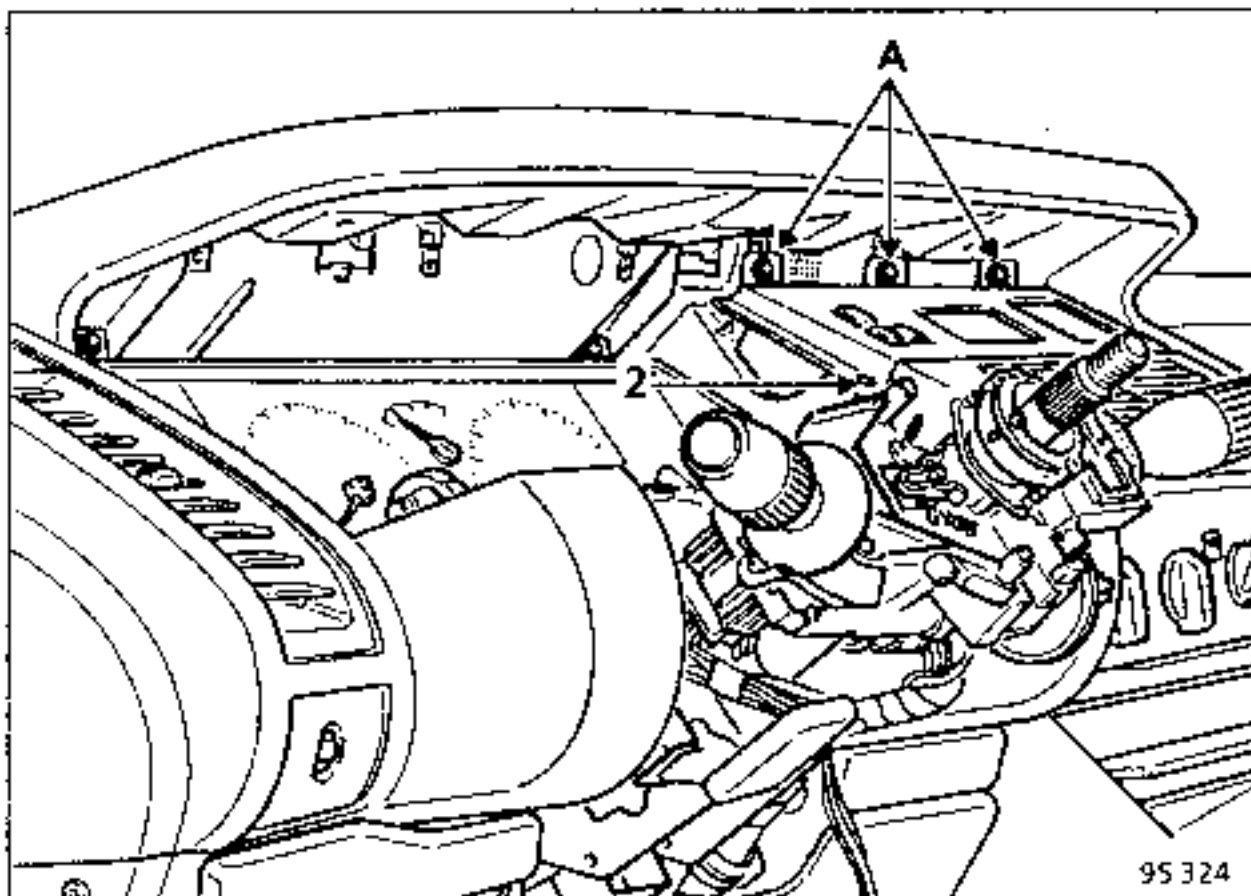
Unclip the rheostat connector through the space left by the lower half cowling (the connector is mounted on the right hand side of the fuse board).

**NOTE :** when refitting, ensure the rheostat is firmly clipped in before replacing its mounting bolt.

## REMOVAL - REFITTING

Remove:

- the dashboard visor (see method on page 84-20),
- the clock mounting or display unit (depending on equipment-level) by the 3 upper bolts(A) and the bolt on the left hand side (2).



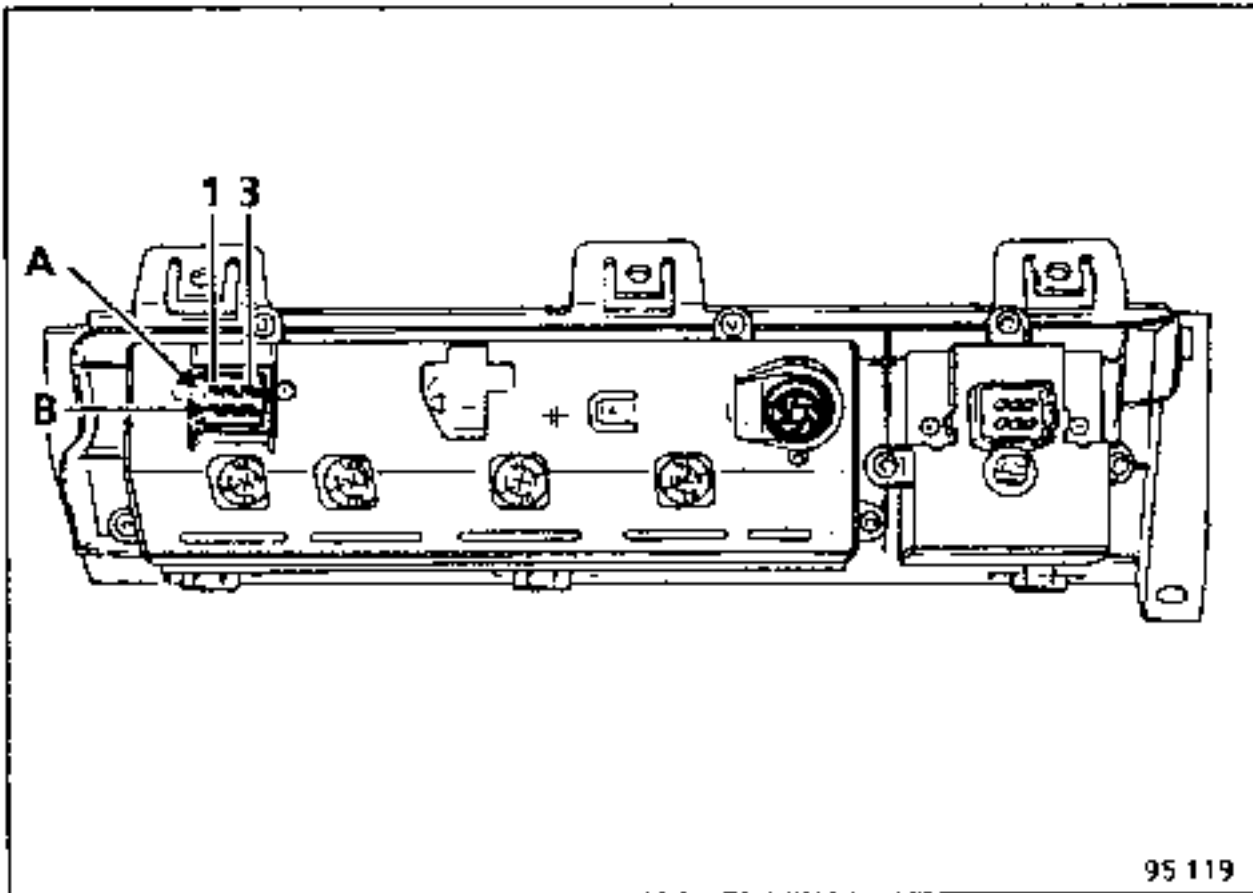
Disconnect the connector/s (depending on equipment level).

Separate the clock mounting or display unit (depending on equipment level) by their respective bolts.



**CONNECTIONS (most complete)**

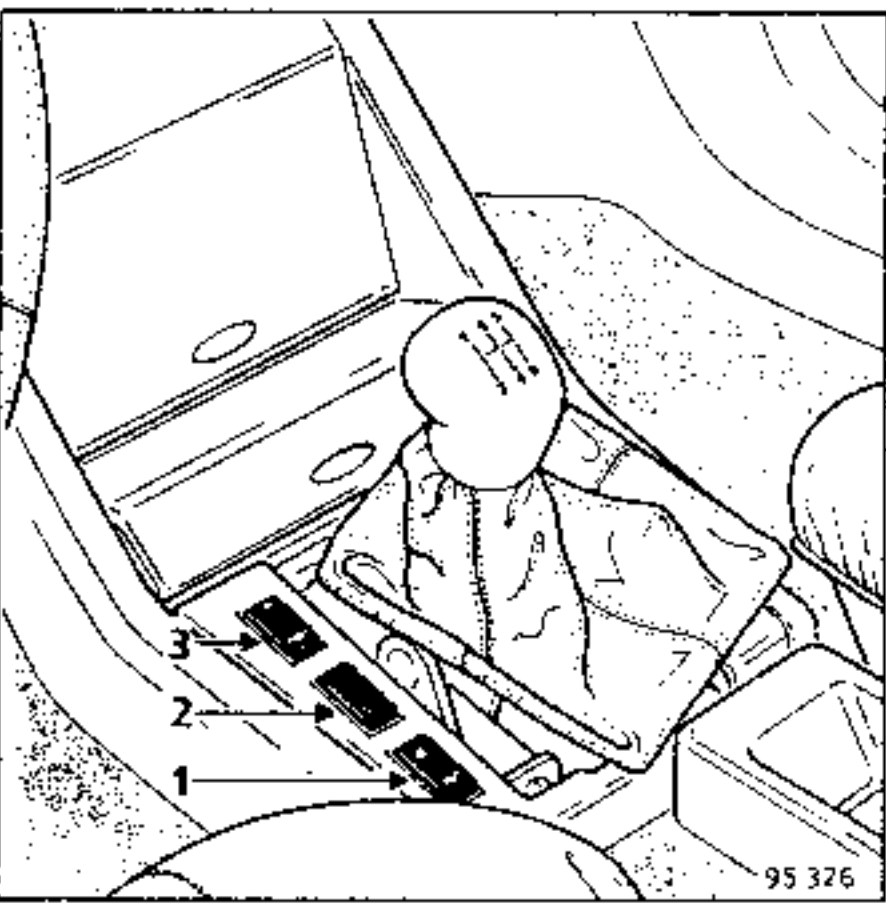
**Black connector**



Track	Allocation
A1	External temperature sensor
A2	Lighting information via day/night relay
A3	+ lighting
B1	+ AVC
B2	Earth
B3	+ accessories

**NOTE :** the clips on tracks A1 and B2 (on passenger compartment wiring connector ) are gilded connections.

**CENTRAL CONSOLE BOARD**

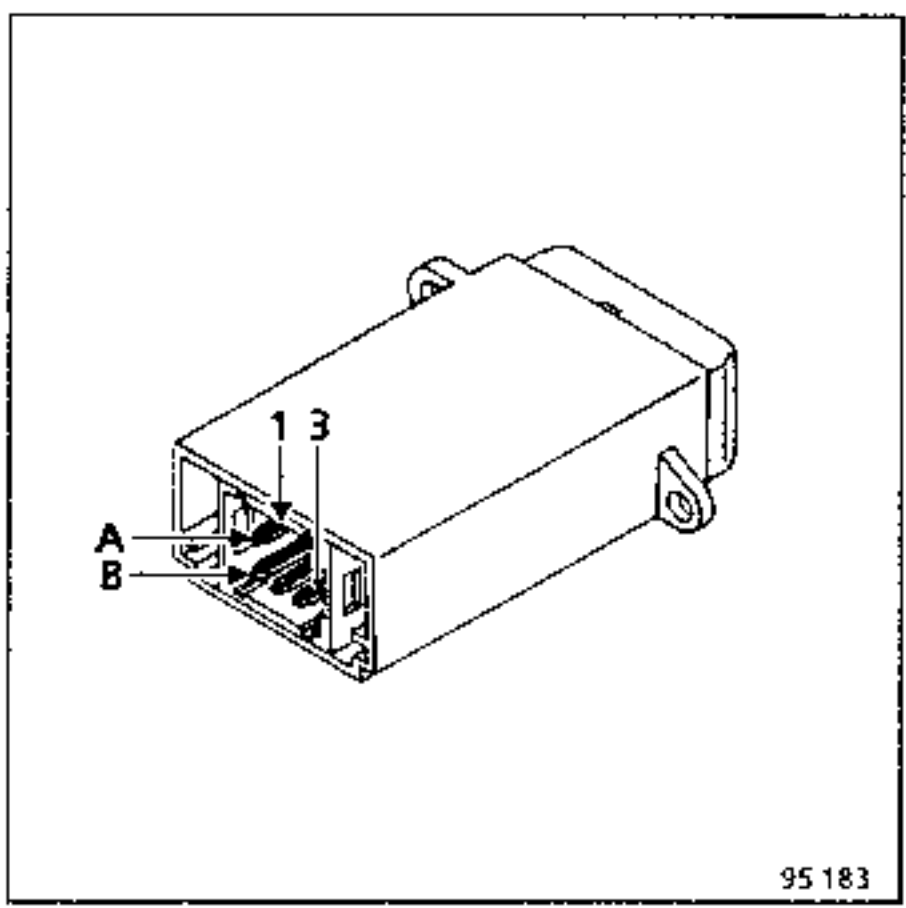


- 1 Cruise control switch
- 2 Trim height control switch
- 3 Variable shock absorber system switch

**REMOVING THE SWITCHES**

Unclip the board from the central console, then remove the 2 mounting bolts for the switch in question.

**CRUISE CONTROL SWITCH**



**CONNECTIONS**

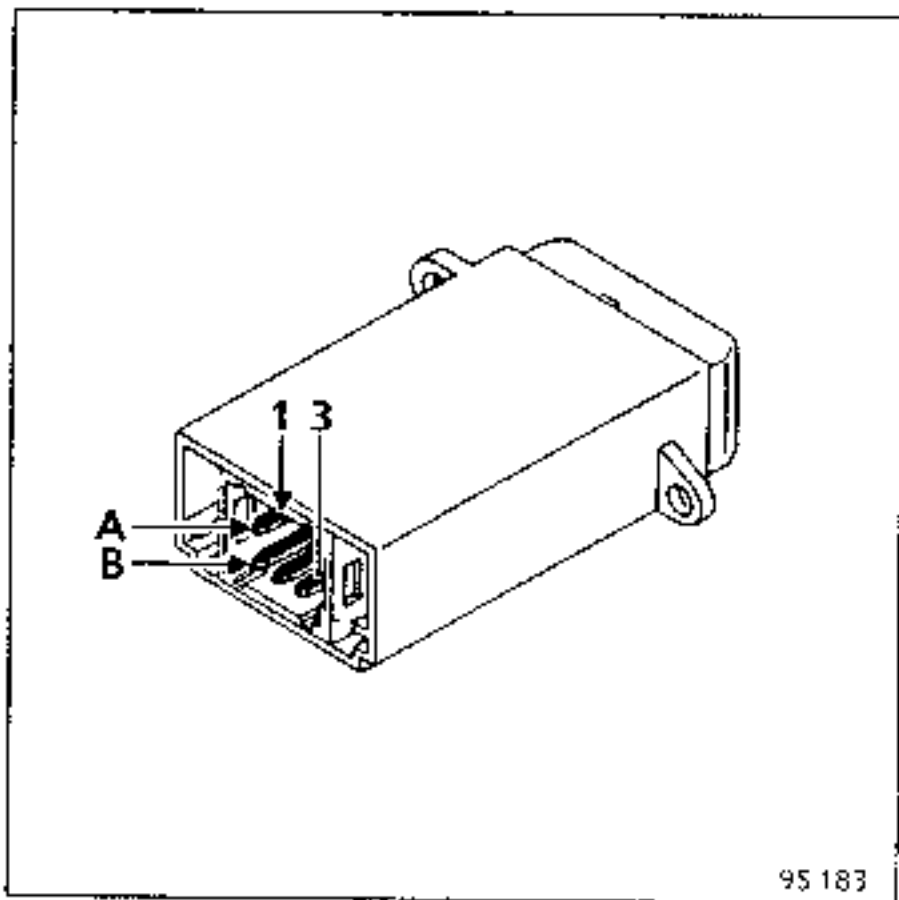
Grey connector

Track	Allocation
A1	Earth
B1	+ lighting
B2	+ APC
B3	Cruise control feed

Symbols : white in the day  
              amber at night

The internal lighting for the switch cannot be repaired.

**TRIM HEIGHT CORRECTION SWITCH**



**CONNECTIONS**

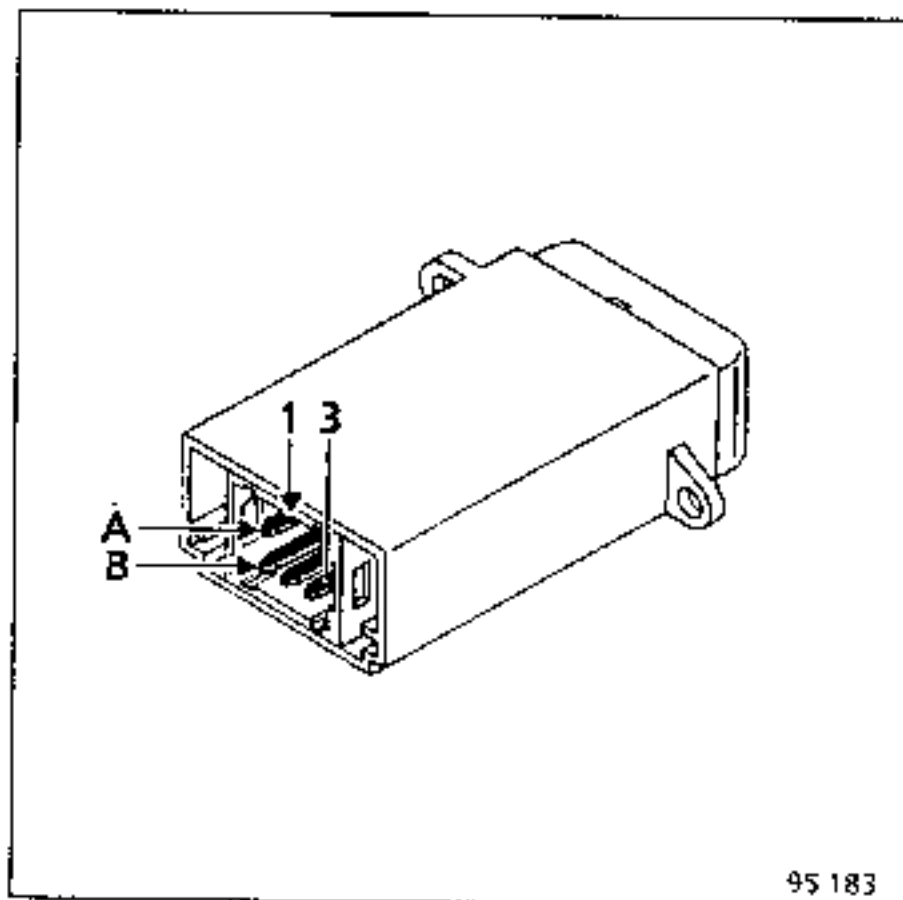
**White connector**

Track	Allocation
A1	Earth
B1	Switch warning light feed
B2	Computer control
B3	+ lighting

Symbols : white in the day  
              amber at night

The internal lighting for the switch cannot be repaired.

**VARIABLE SHOCK ABSORBING SYSTEM SWITCH**



**CONNECTIONS**

**Black connector**

Track	Allocation
A1	Earth
B1	Switch warning light feed
B2	Computer control
B3	+ lighting

Symbols : white in the day  
              amber at night

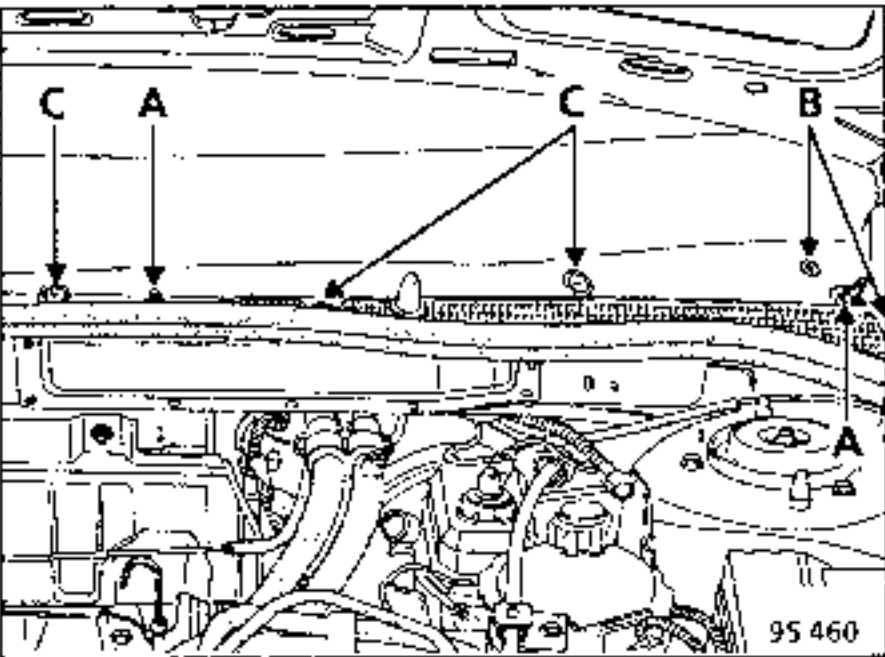
The internal lighting for the switch cannot be repaired.

### REMOVING THE MOTOR ONLY

Ensure the motor is in the park position.  
Disconnect the battery

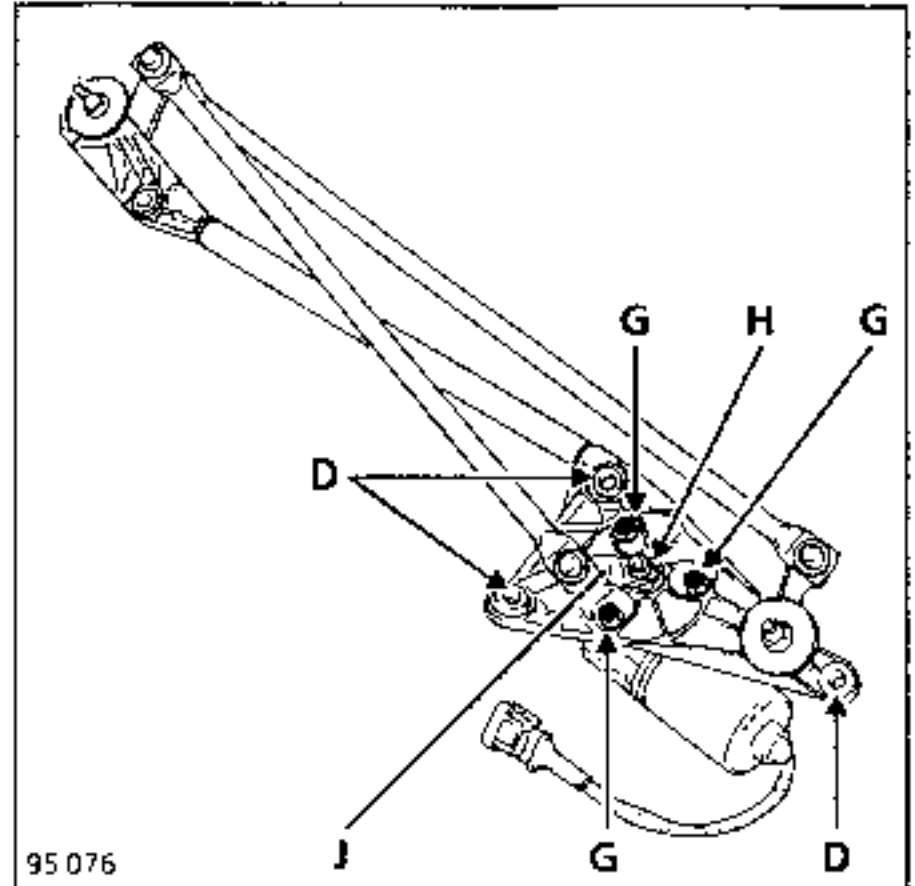
Remove :

- the two wiper arms by nuts (A),
- the scuttle panel by the 4 bolts (B) and 5 quarter turn clips (C),
- the seal.



- the motor shaft nut (H) and remove the drive link (J) after marking its position,
- the 3 motor mounting bolts (G),
- the 3 mechanism mounting bolts (D),

Remove the motor having disconnected it.



### REFITTING

Reposition the drive link using the reference mark made when it was removed.

### REMOVING THE MECHANISM AND THE MOTOR

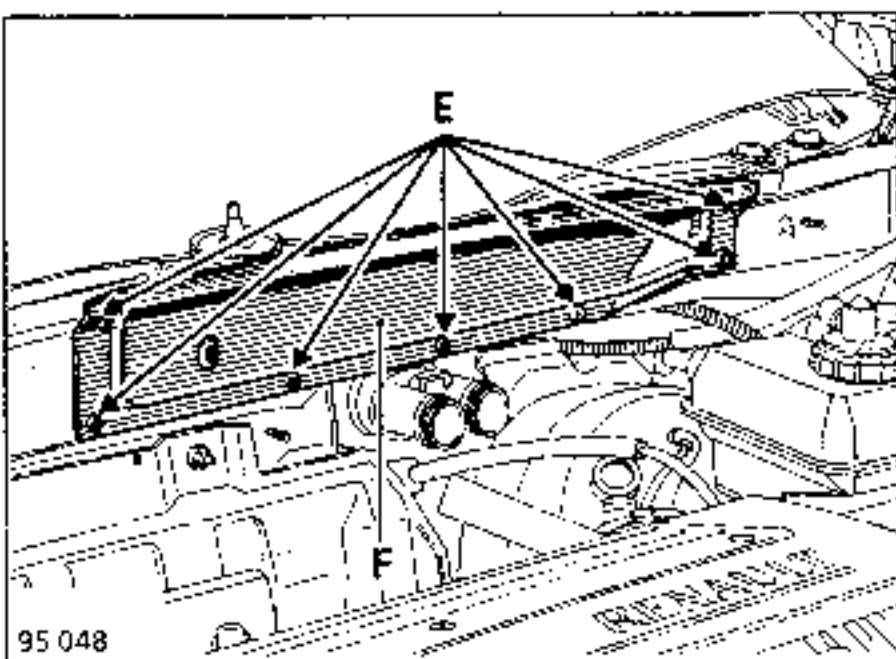
Disconnect the battery

Remove :

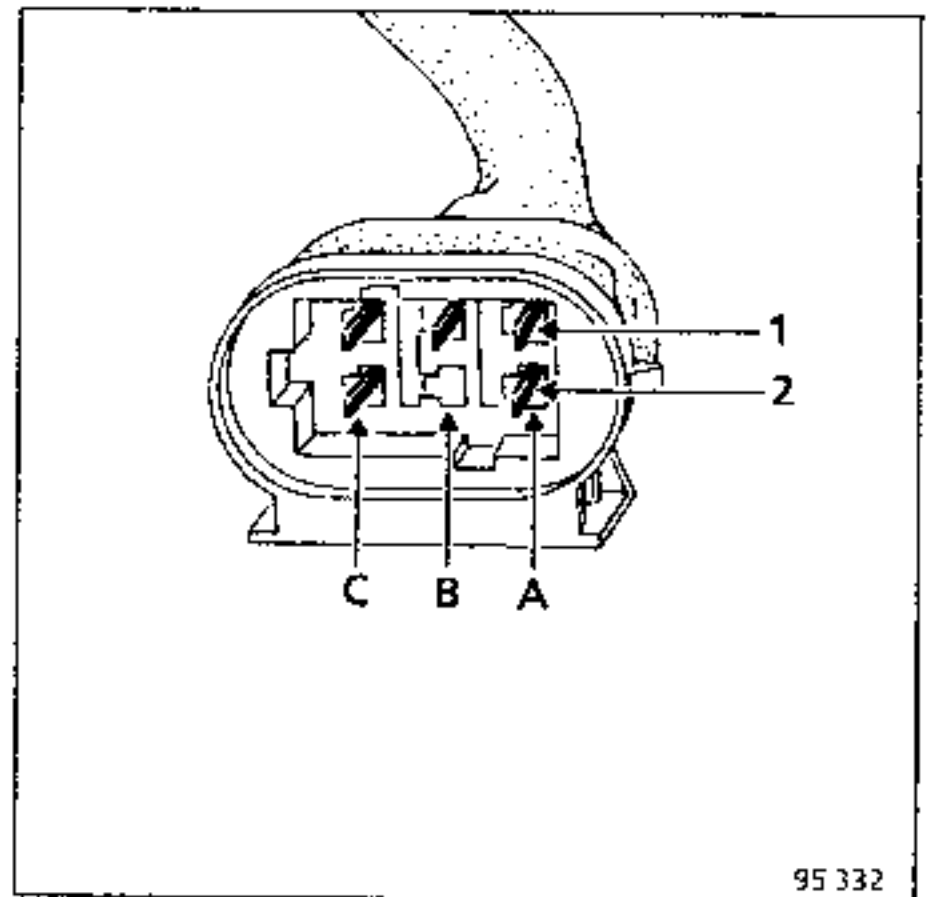
- the two wiper arms
- the scuttle panel
- the seal.

Drill the 7 rivets (E) and remove plate (F), and the 5 mechanism mounting bolts (D) .

Remove the assembly.



### CONNECTIONS



Track	Allocation
A1	Slow wipe
A2	Park
B1	Fast wipe
B2	Not used
C1	+ park
C2	Earth

### REFITTING

Reconnect the link unit after refitting the mechanism.

Check the motor is in the park position before refitting the wiper arms.

### REMOVAL - REFITTING

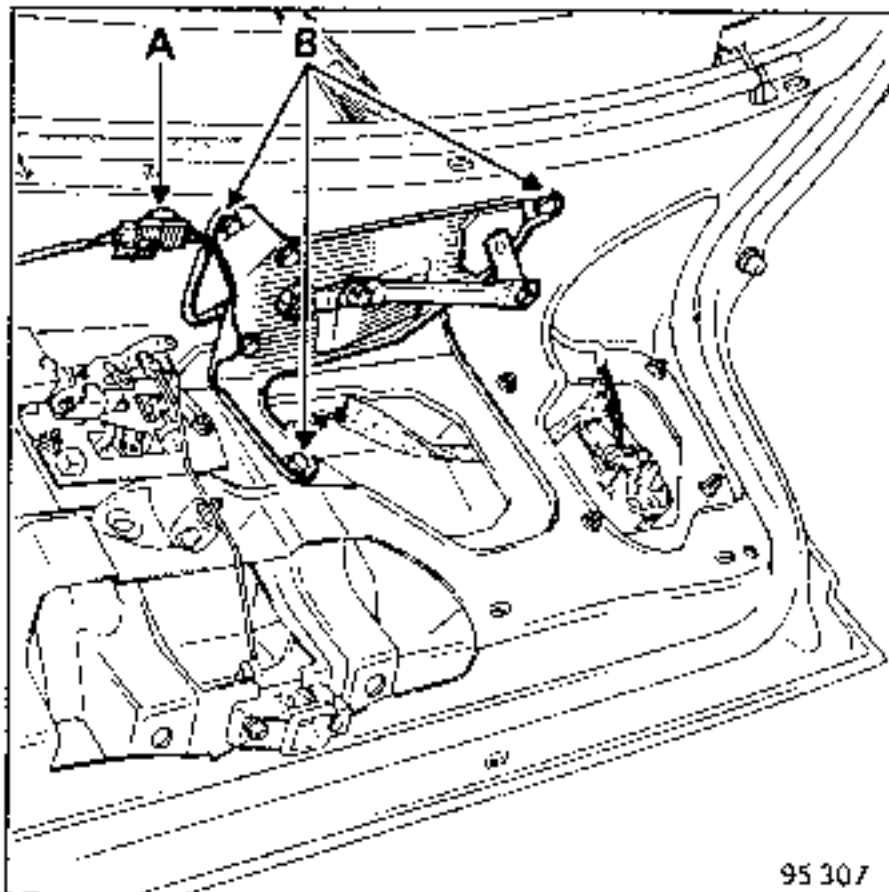
Disconnect the battery

Remove:

- the wiper arm,
- the inner tailgate trim (9 Torx bolts).

Disconnect the connector (A).

Remove the motor by the 3 bolts (B).



### REFITTING

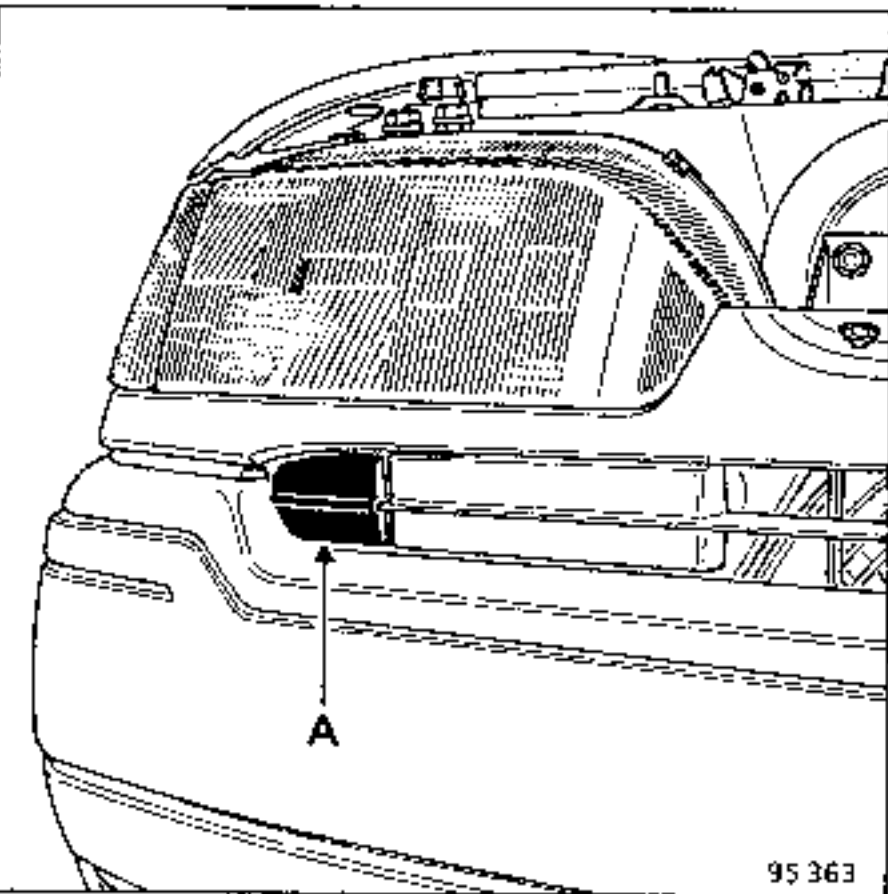
When refitting, ensure the motor is in the park position before refitting the wiper.

### CONNECTIONS

Track	Allocation
1	Rear screen wiper
2	Earth
3	+ after ignition

**REMOVING - REFITTING A NOZZLE**

Unclip the nozzle surround (A)



- Remove:
- the 2 nozzle mounting bolts,
  - the lens (see chapter 80).

Disconnect the nozzle pipe.

Remove the nozzle

There are no special notes for refitting.

**REMOVING - REFITTING THE PUMP**

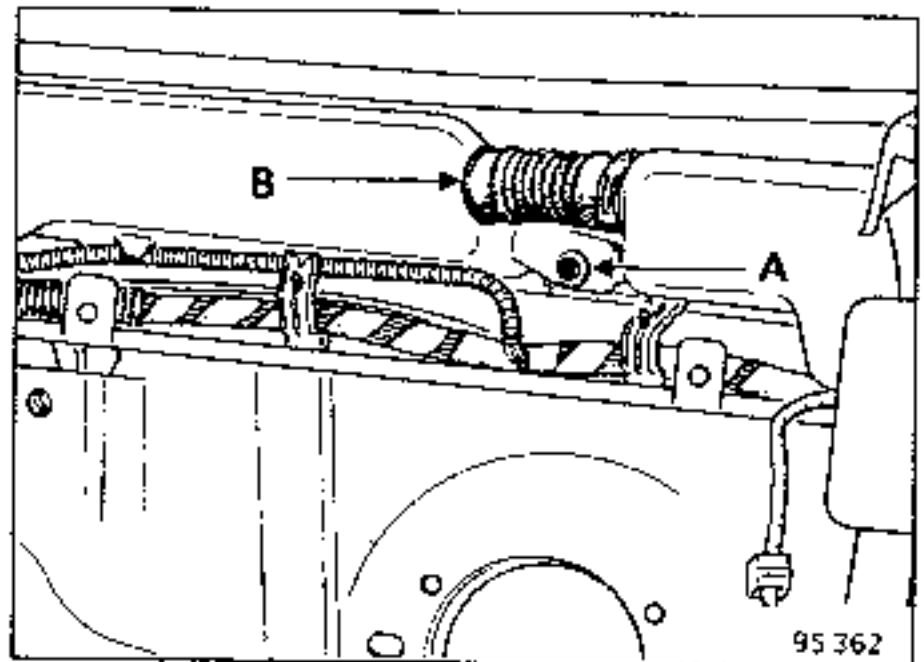
To remove the headlight washer pump, the headlight washer reservoir must be removed. It is located in the front right hand wing.

- Remove:
- the filler neck located on the front right hand wheel arch, mounted by 2 nuts,
  - the front right hand lens (see chapter 80).

Disconnect the pipe between the reservoir and the front right hand nozzle

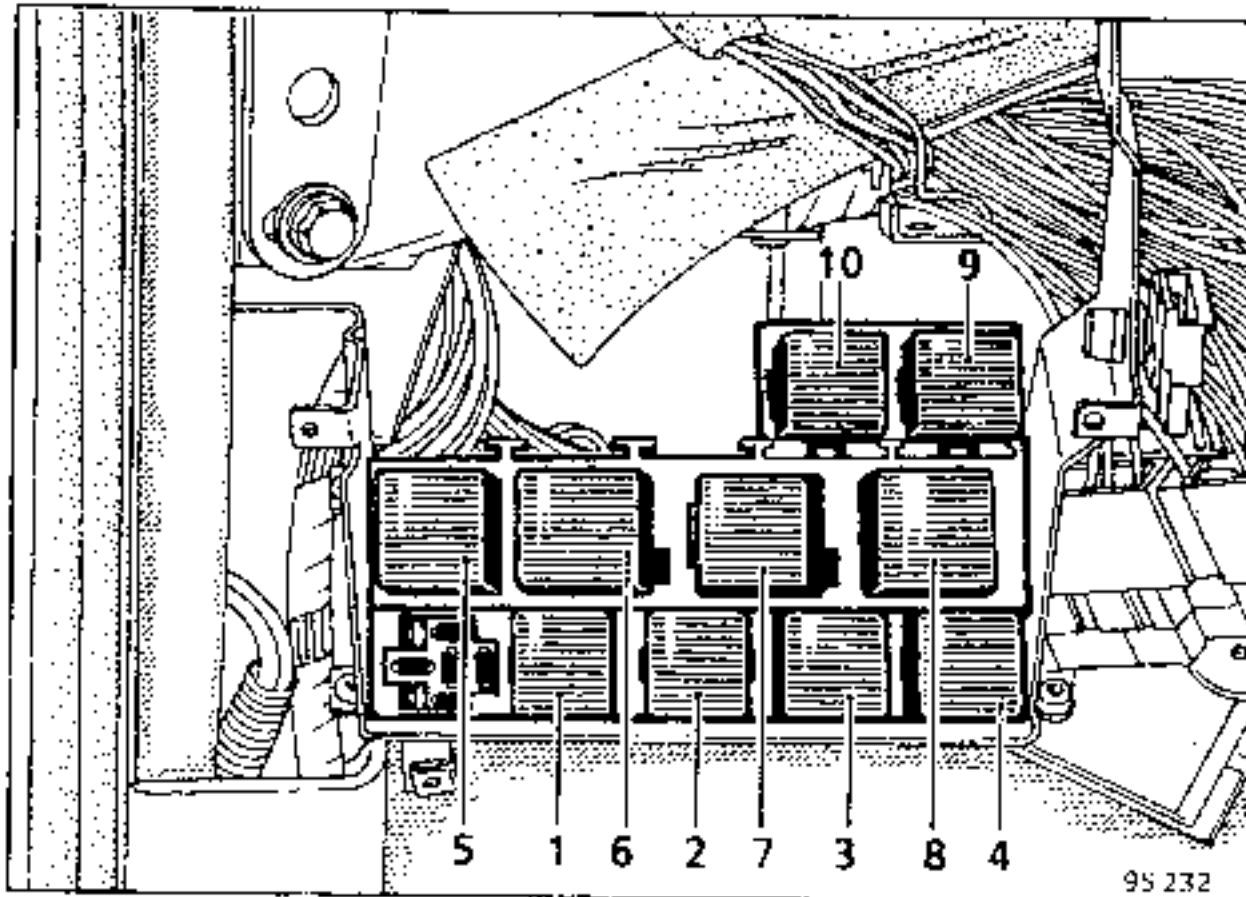
Lift the right hand side of the vehicle.

- Remove:
- The front right hand mudflap by its 7 clips and Torx bolt,
  - mounting bolt (A) for the two reservoirs and remove the gaiter (B).



Remove the assembly

There are no special notes for refitting.

**POSITION AND ALLOCATION**

(Most complete board)

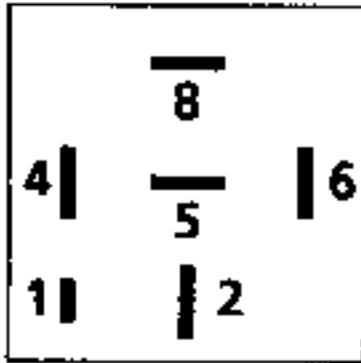
The relays are located below the fuse box at the bottom of the dashboard.

To gain access to this unit, open the fuse box cover for the upper two rows of fuses or remove the steering column cover for the lower row (depending on accessibility).

- 1 After ignition feed distribution relay
- 2 Rear screen de-icer relay
- 3 Front fog lights relay
- 4 Day/night relay
- 5 Lights on reminder buzzer
- 6 Rear screen wiper timer
- 7 Front screen wiper timer
- 8 Central flasher unit
- 9 Child safety relay
- 10 Electric window winder feed relay

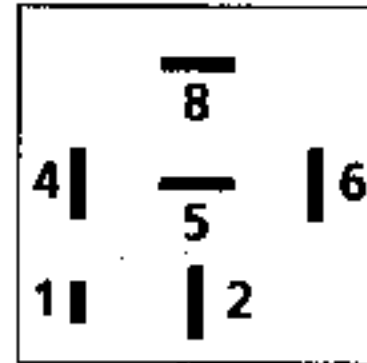


**FRONT WIPER TIMER**



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**REAR WIPER TIMER**



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**CONNECTIONS**

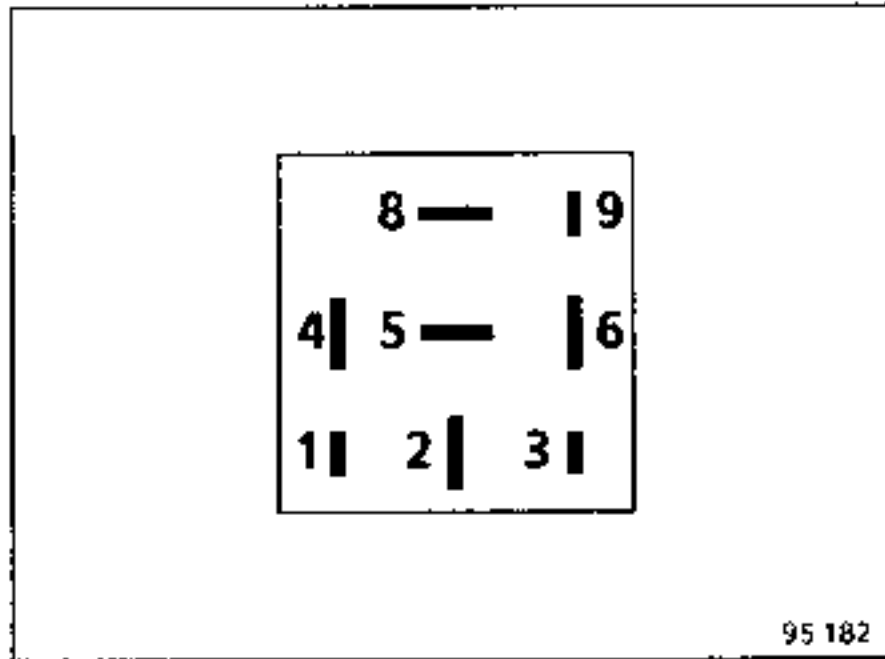
Track	Allocation
1	Timer output to motor
2	Timer control
4	Earth
5	Wiper park
6	+ washer pump
8	+ after ignition

**NOTE :** the number of tracks used is marked on the assembly

**CONNECTIONS**

Track	Allocation
1	Timer output to motor
2	Timer control
4	Electronic earth
5	Earth
6	+ washer pump
8	+ after ignition

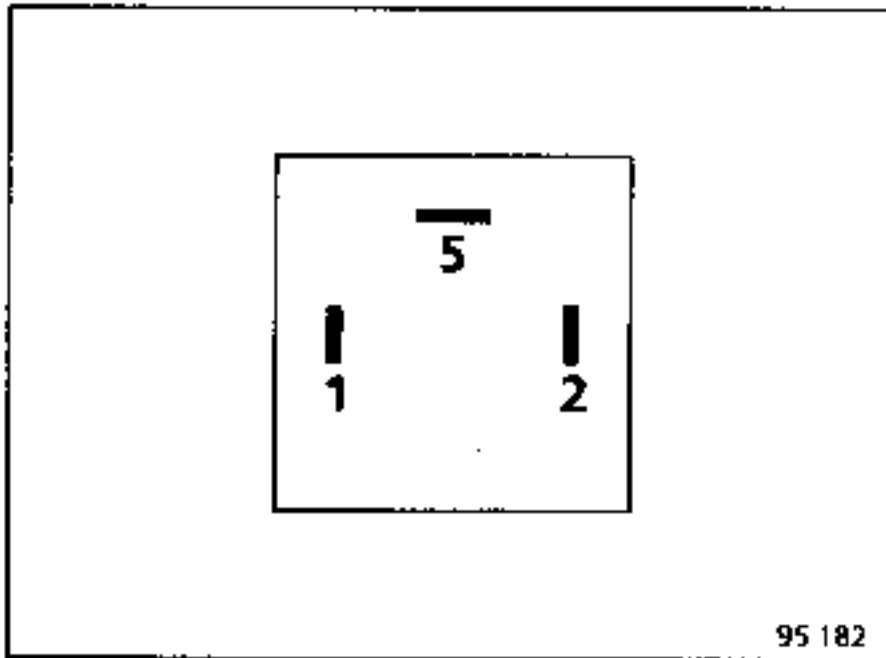
**NOTE :** the number of tracks used is marked on the assembly



**CONNECTIONS**

Track	Allocation
1	Hazard warning lights warning light
2	Central control from switch
3	Control from hazard warning lights switch
4	Right hand side indicators feed
5	Left hand side indicators feed
6	+ after ignition
8	+ before ignition
9	Earth

**NOTE :** the number of tracks used is marked on the assembly

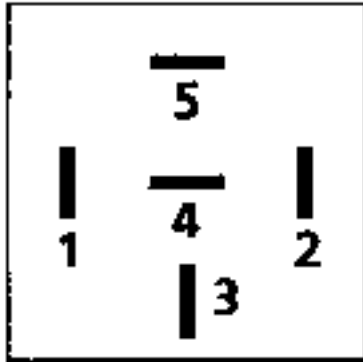


**CONNECTIONS**

Track	Allocation
1	+ after ignition
2	Right hand side bulb information
5	Door switch information

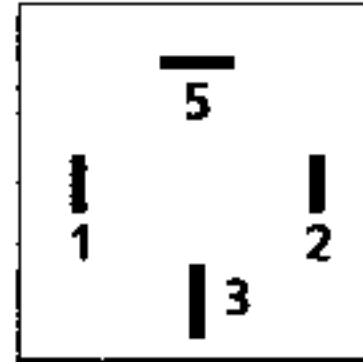
**NOTE :** the number of tracks used is marked on the assembly

**DAY/NIGHT RELAY**



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**CHILD SAFETY RELAY**



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**CONNECTIONS**

Track	Allocation
1	+ lighting
2	Earth
3	Lighting for clock, radio, on board computer, heating control
4	+ after ignition
5	Lighting rheostat, on board computer

**NOTE :** the number of tracks used is marked on the assembly

**CONNECTIONS**

Track	Allocation
1	+ after ignition
2	Child safety lock switch
3	Earth
5	Cigar lighter, accessories socket, window winders

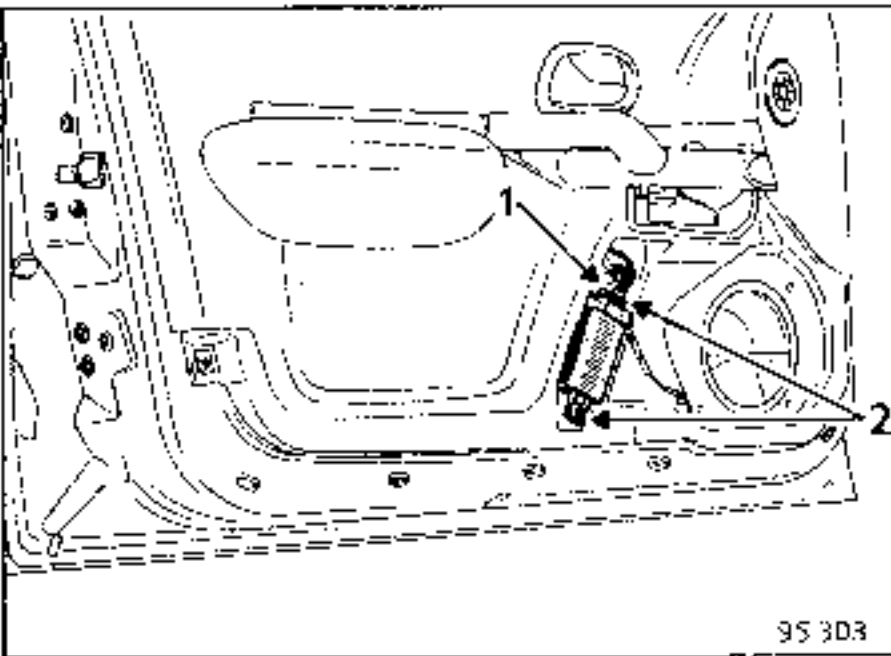
**NOTE :** the number of tracks used is marked on the assembly

**REMOVAL**

Remove the lower door trim (see method in chassis manual).

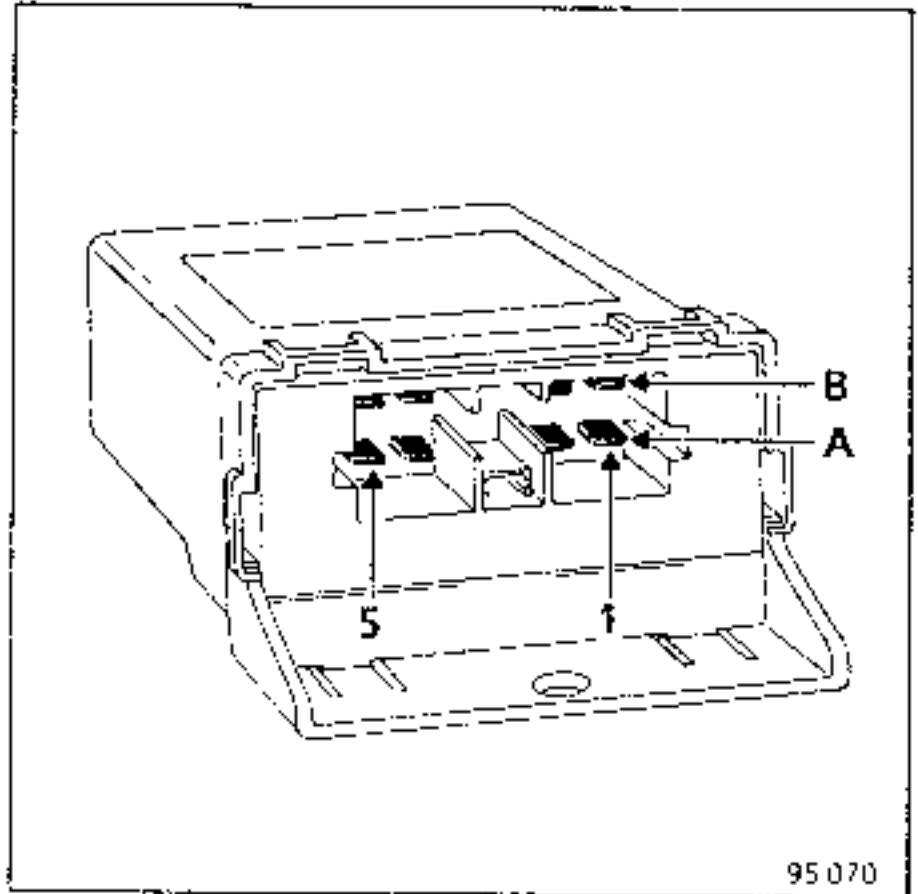
Disconnect connector (1) on pulse unit.

Remove the 2 mounting bolts (2) for the unit.



**CONNECTIONS**

**Black connector**

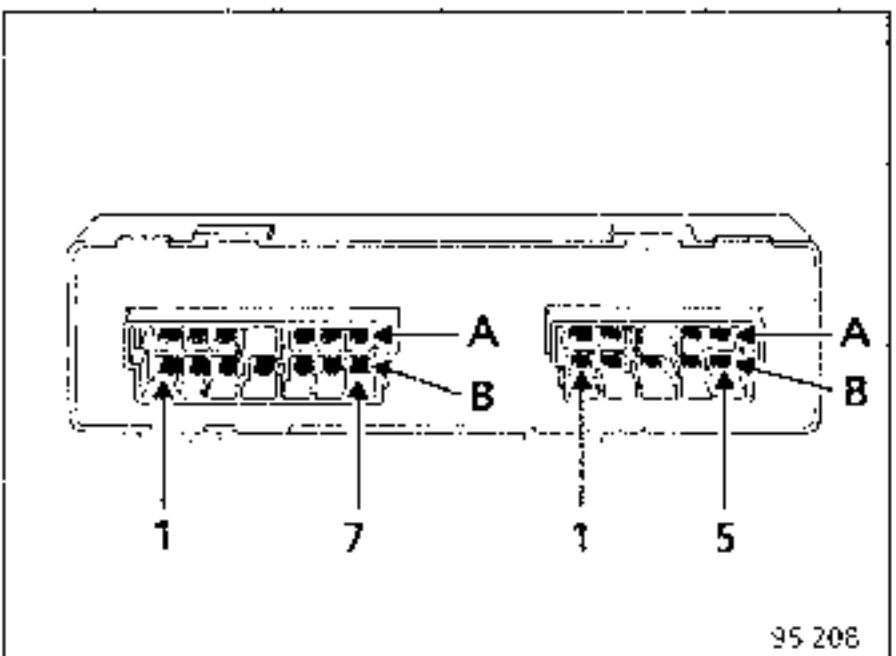


Track	Allocation
A1	Normal up control
A2	+ after ignition
A4	Pulse up control
A5	Normal down control
B1	Earth
B2	Driver's window up
B4	Pulse down control
B5	Driver's window down.

The unit has the following functions :

- courtesy light timer,
- door locking timer.

**NOTE :** only the simple decoder is dealt with here.  
See chapter 82 for vehicles with a computer lock.



**10 track connector**

Track	Allocation
A1	+ before ignition
A2	Not used
A3	Not used
A4	Not used
A5	Earth
B1	Not used
B2	+ doors open
B3	Courtesy light timer
B4	+ doors close
B5	Not used

**CONNECTIONS**

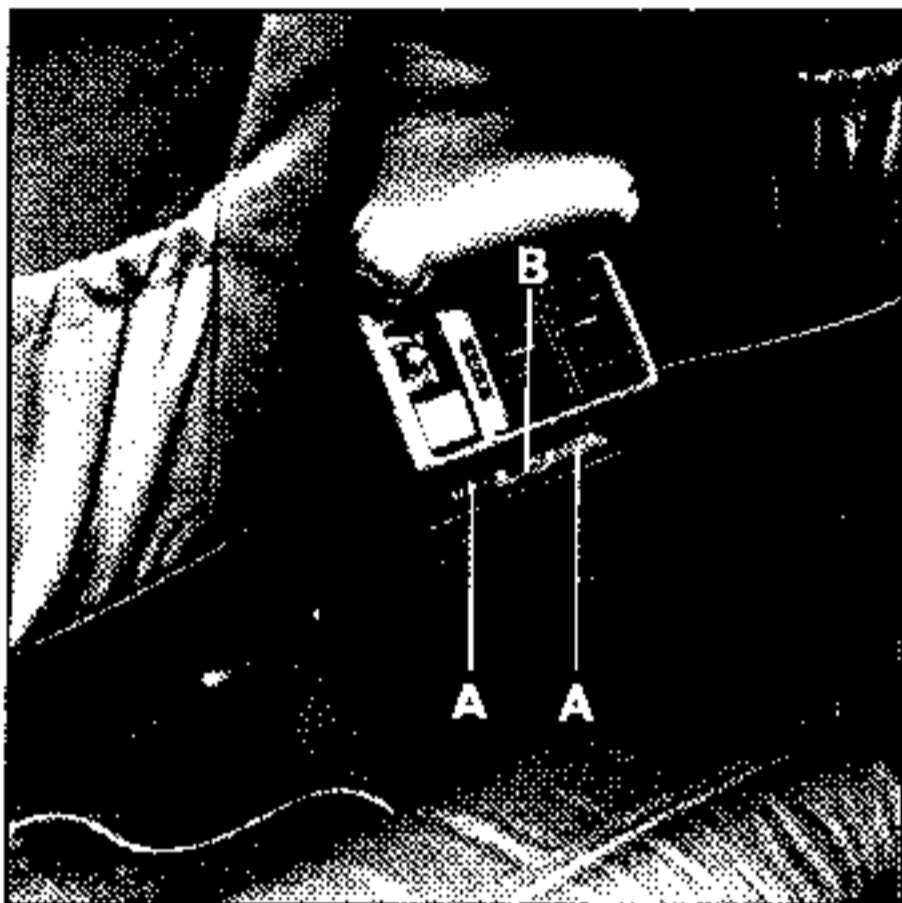
**14 track connector**

Track	Allocation
A1	infra red reception
A2	infra red receiver feed
A3	Not used
A4	Not used
A5	Electric stop information (diesel)
A6	Not used
A7	Not used
B1	Unlck door signal
B2	Lock door signal
B3	+ after ignition
B4	Driver's door switch information
B5	Passenger's door switch information
B6	Rear left hand door switch information
B7	Rear right hand door switch information

**REMOVAL**

With the ignition off:

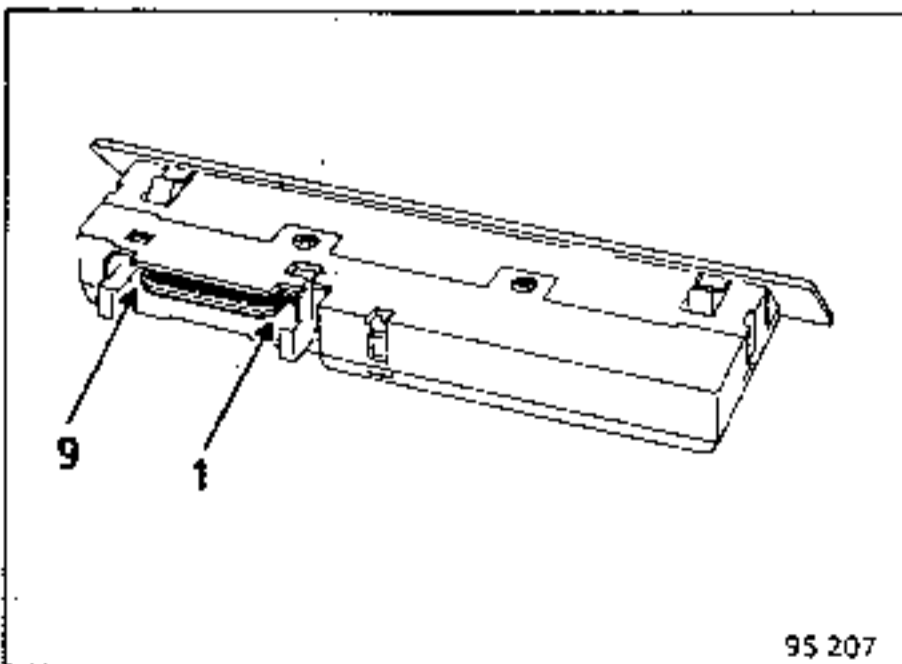
Remove the 2 mounting bolts (A) for the headphones socket mounting (B) on the rear console.



Remove the headphones socket mounting (2) after disconnecting the connector.

**CONNECTIONS**

Black connector



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Track	Allocation
1	Feed + rear right hand speaker
2	Information + rear left hand speaker via radio
3	Feed - rear left hand speaker
4	Information - rear right hand speaker via radio
5	+ lighting via radio
6	Electrical earth
7	Information - rear left hand speaker via radio
8	Information + rear right hand speaker via radio

**NOTE :** the switch on the headphones socket mounting is to suppress the feed to the rear speakers (eg. if headphones are being used).

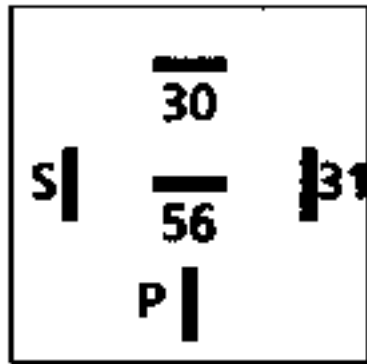
If headphones are being used , the mounting electronics automatically cut the feed to the rear speakers.

If the rear speakers are faulty, check the position of the mounting switch.

The mounting lighting cannot be repaired.

These timers are located in the fuse box in the engine compartment.

**HEADLIGHT WASHER TIMER**



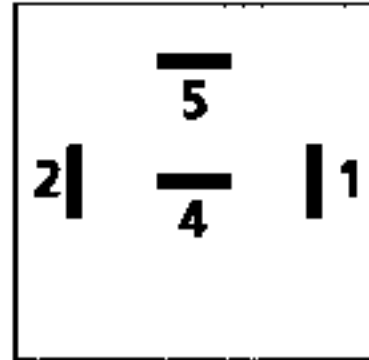
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**CONNECTIONS**

Track	Allocation
S	Windscreen wiper control
31	Earth
P	Headlight washer pump
56	Dipped headlight information
30	+ before ignition

**NOTE :** the number of tracks used is marked on the assembly

**ANTI-PERCOLATION TIMER**



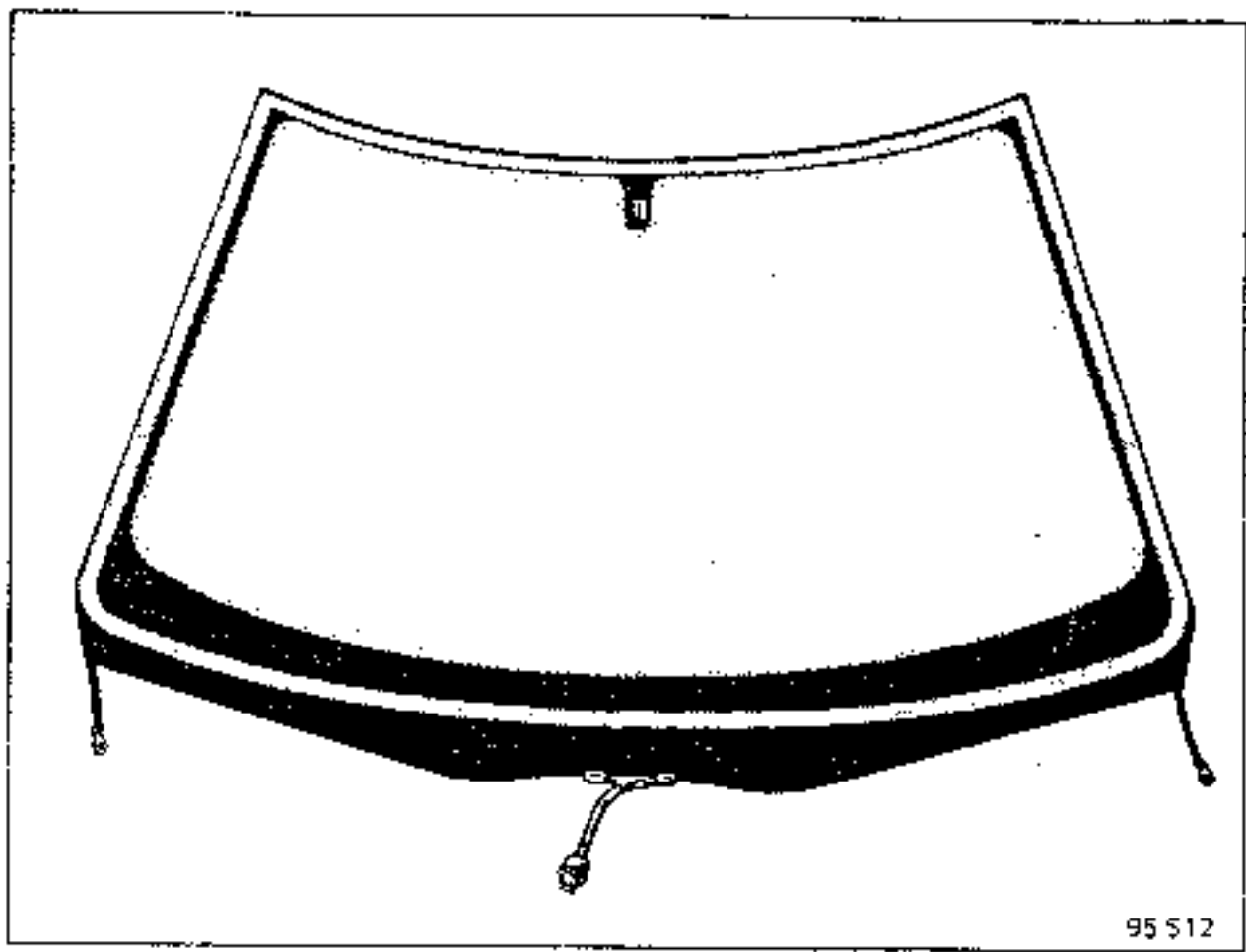
05 182

**CONNECTIONS**

Track	Allocation
1	+ after ignition
2	Temperature switch
4	Earth
5	+ anti-percolation relay control

**NOTE :** the number of tracks used is marked on the assembly





**DESCRIPTION**

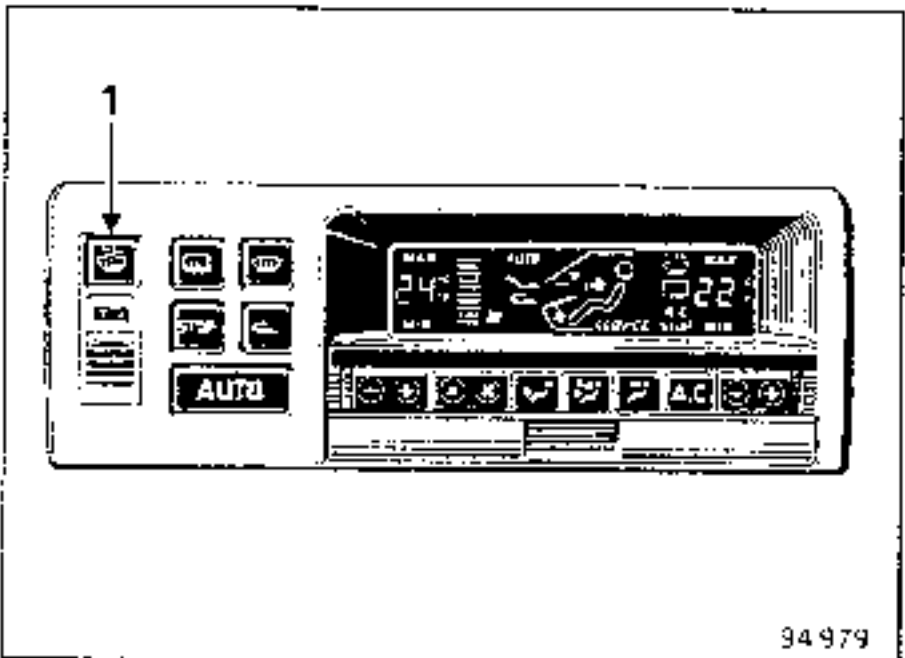
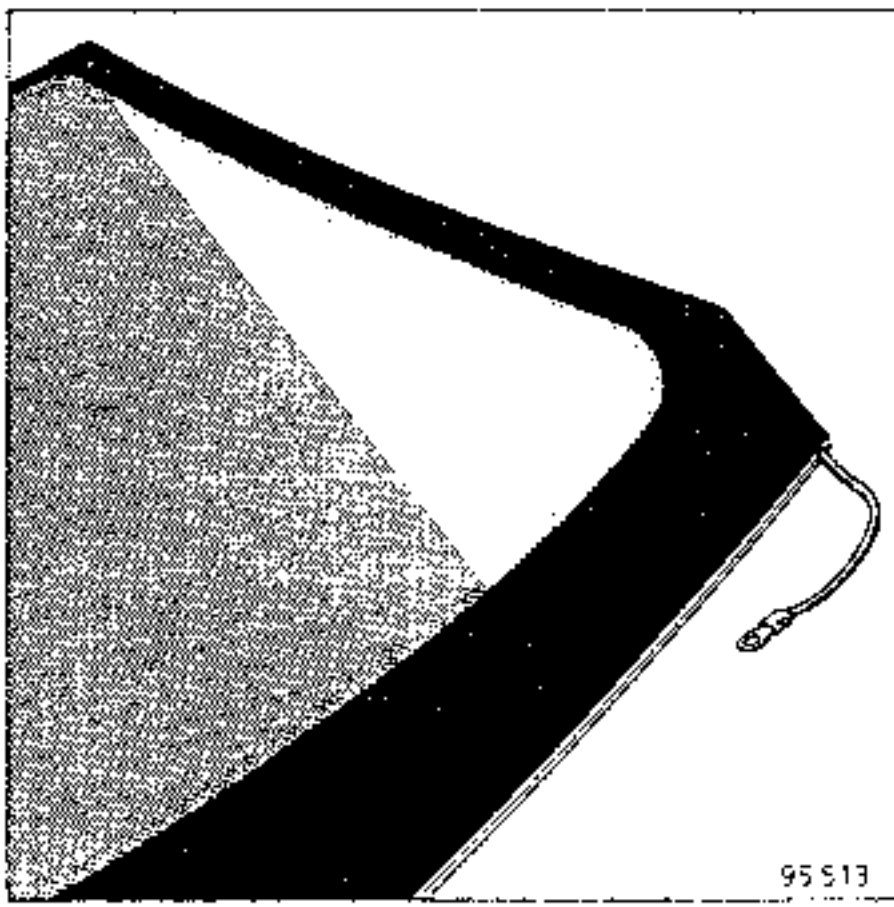
This system electrically demists and de-ices the windscreen using 2 separate half heating grids which are electrically identical. The tungsten heating wires are arranged vertically in the windscreen structure.

The operation of the electric windscreen de-icer is time controlled. The time period depends on the vehicle's heating selection and the external temperature.

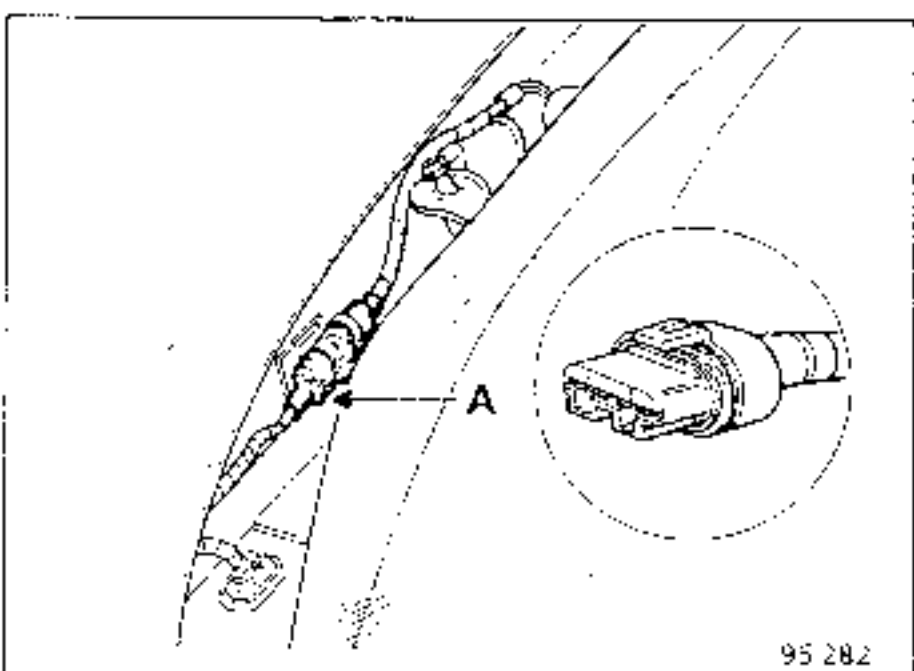
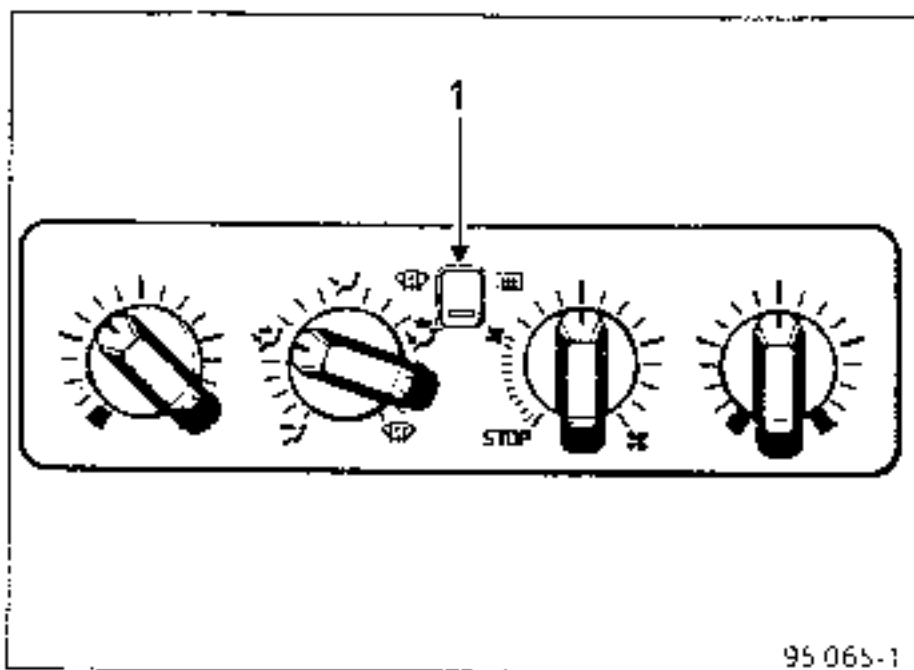
For vehicles with basic heating, the operation period is 10 minutes.

For vehicles with air conditioning, the operation period is 4 minutes if the external temperature is above 6°C and 8 minutes if it is below 6°C.

Pressing the control (1) will stop the de-icer and demister operation before the operation period has expired.



The system is turned on by pressing key (1) on the heating control panel.



### OPERATION

By pressing key (1), the heating unit sends a time controlled earth, via track B6 of the black 13 track connector, to track 2 of relay 612 (variable timer; see above).

As the coil of this relay is fed on track 1 for + after ignition, pressing key (1) energises relay 612 which then feeds in + before ignition :

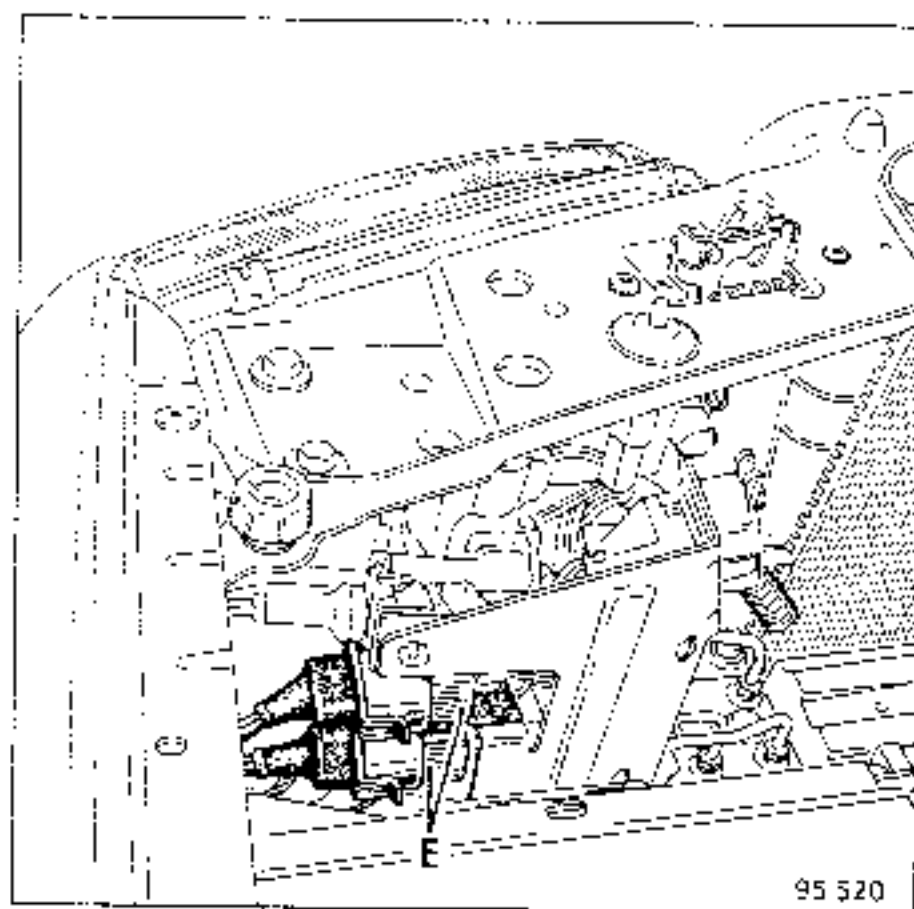
- the left hand side of the heating grid via track 1 on connector (A),
- track 1 of relay 629. Track 2 has a permanent earth, the relay is energised in turn feeds the right hand side of the heating grid with + before ignition via track 2 of connector (A),

- track B2 of the brown connector in the heating control unit, only if the vehicle is fitted with basic heating. (See operating diagram B).

A shunt in the heating control between track B2 on the brown connector and track B5 of the black 13 track connector allows information to be transmitted to track 34 of the injection computer.

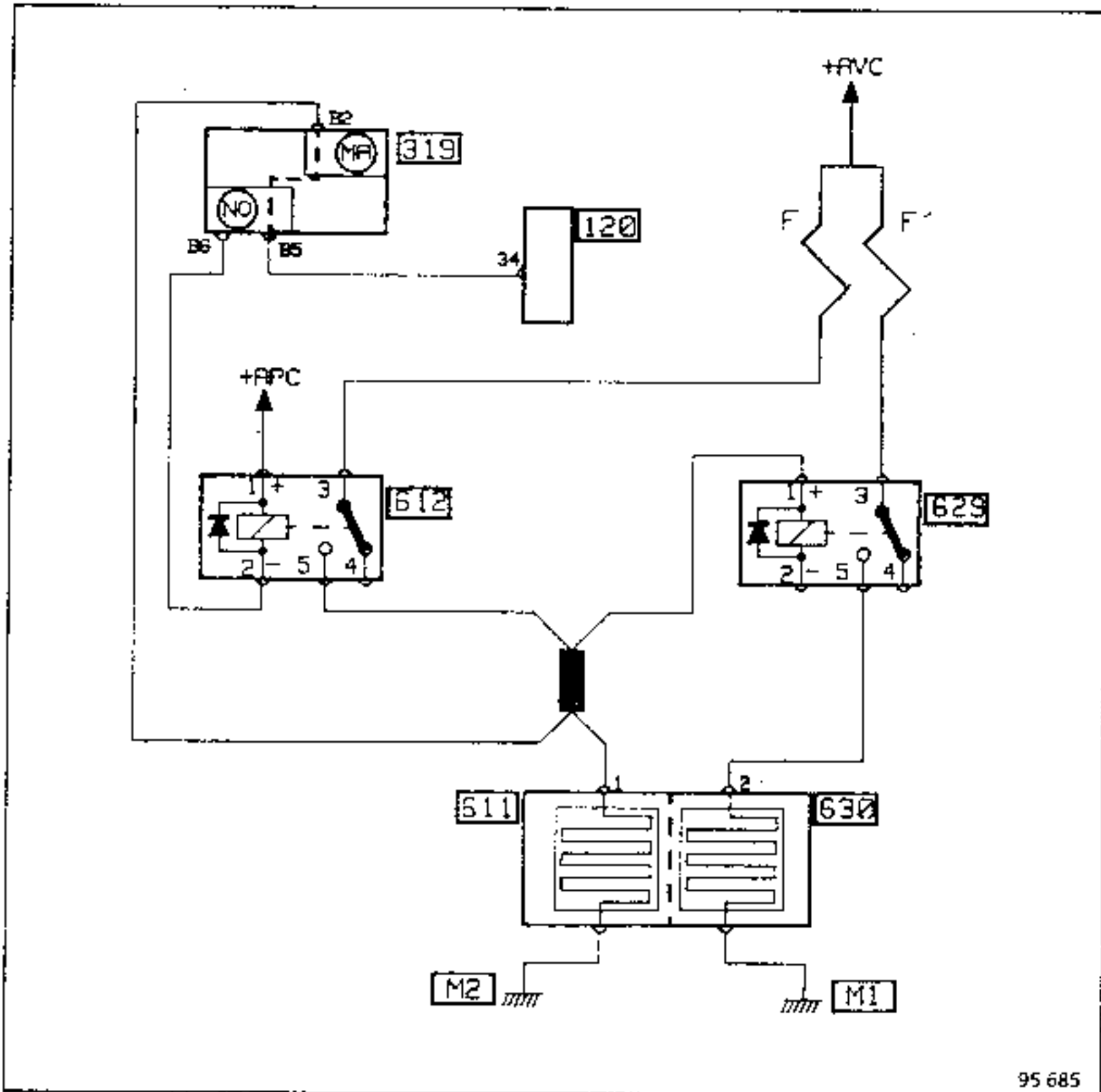
For a vehicle fitted with air conditioning (see operating diagram C), the heating control sends information directly to the injection computer via track B5 of the black 13 track connector.

### RELAY LOCATION



The electric windscreen de-icer (E) are located behind the diagnostic socket, next to the battery.

OPERATING DIAGRAM 8 : VEHICLE FITTED WITH BASIC HEATING



95 685

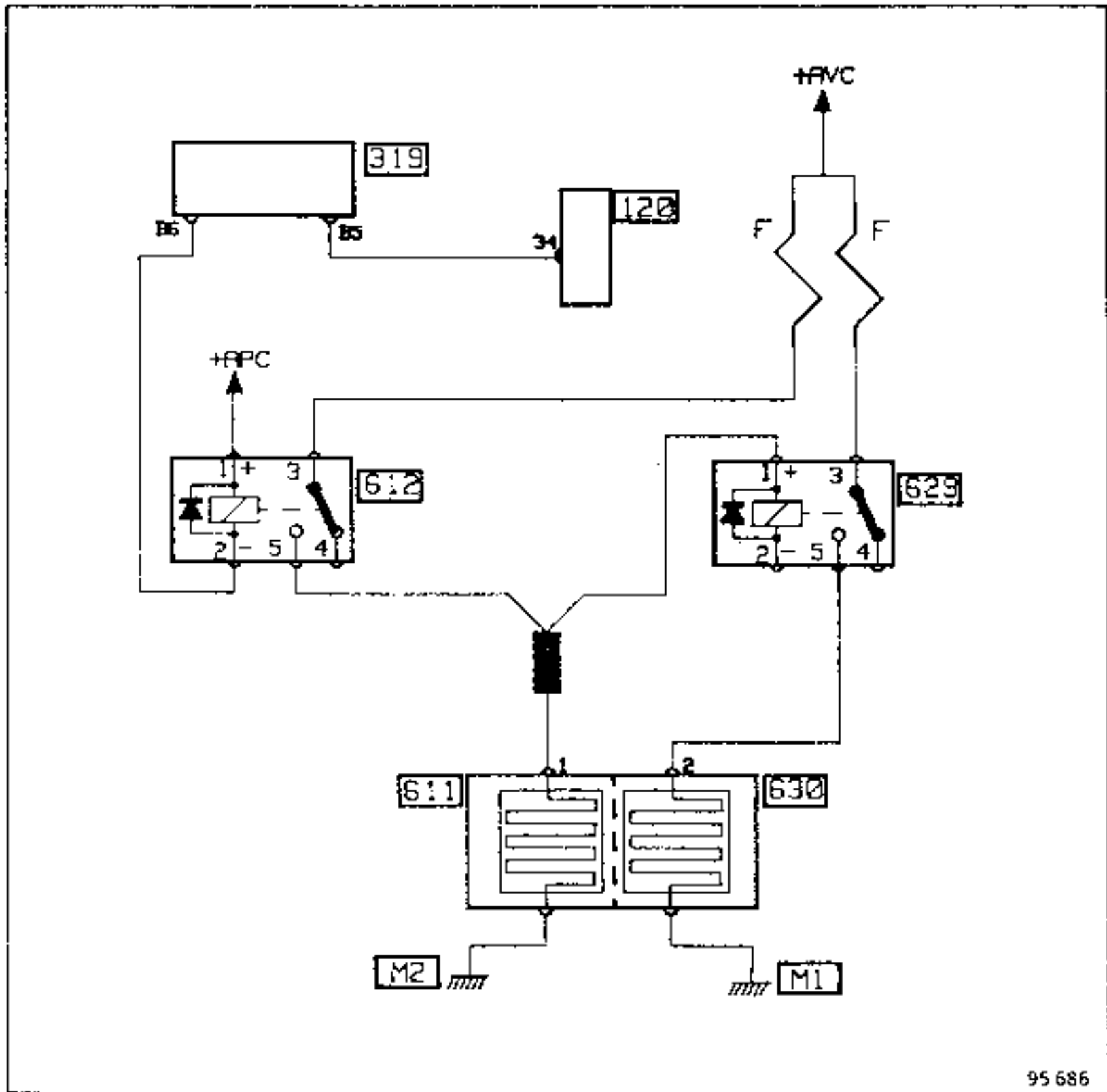
+ AVC + before ignition  
+ APC + after ignition

M1 Front right hand earth  
M2 Front left hand earth

F Left hand de-icer fuse wire  
F' Right hand de-icer fuse wire

120 Injection computer  
319 Heating control panel  
611 Left hand electric windscreen unit  
612 Left hand windscreen de-icer relay  
629 Right hand windscreen de-icer relay  
630 Right hand electric windscreen unit

OPERATING DIAGRAM C : VEHICLE FITTED WITH AIR CONDITIONING



95 686

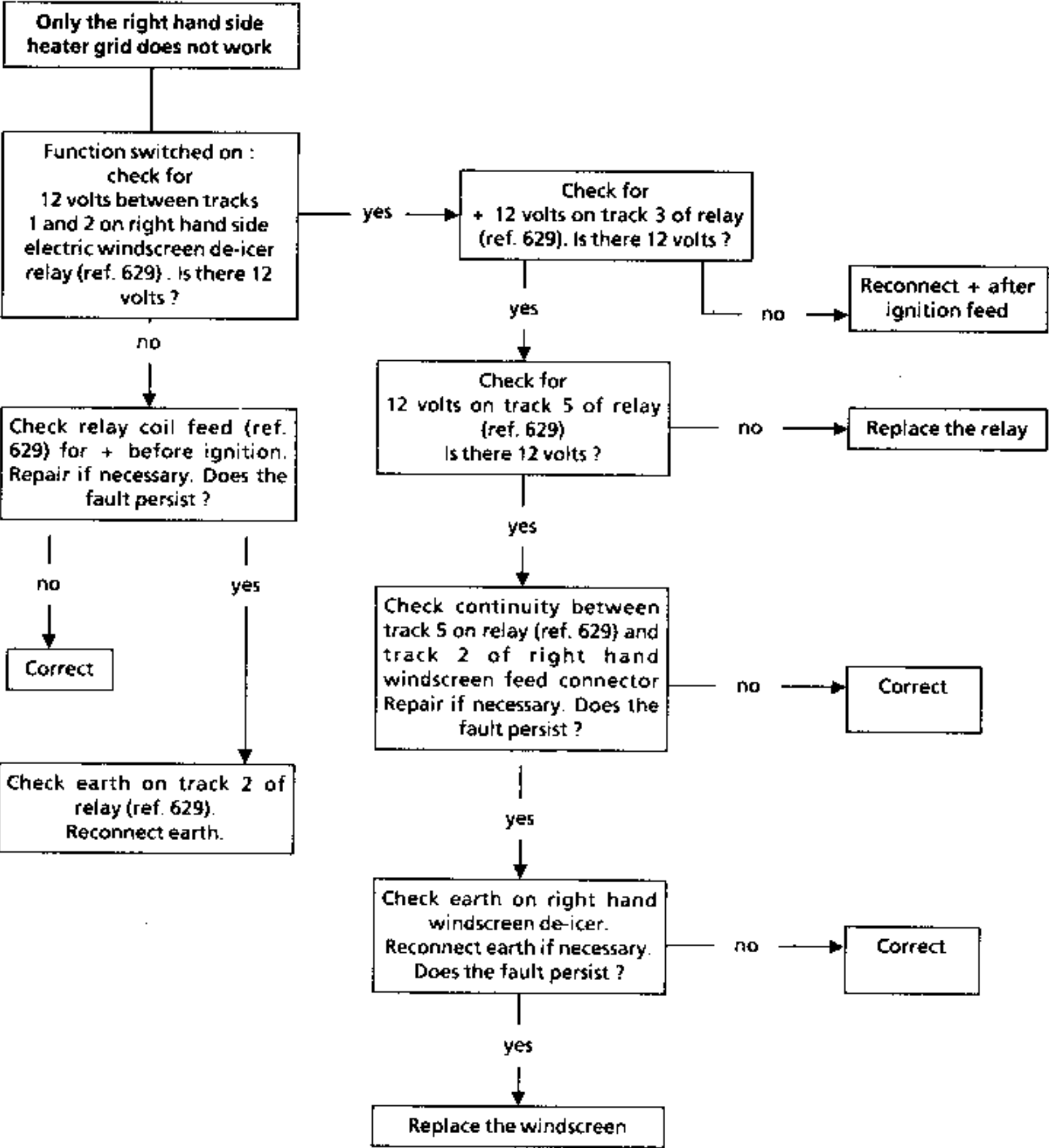
+ AVC + before ignition  
+ APC + after ignition

M1 Front right hand earth  
M2 Front left hand earth

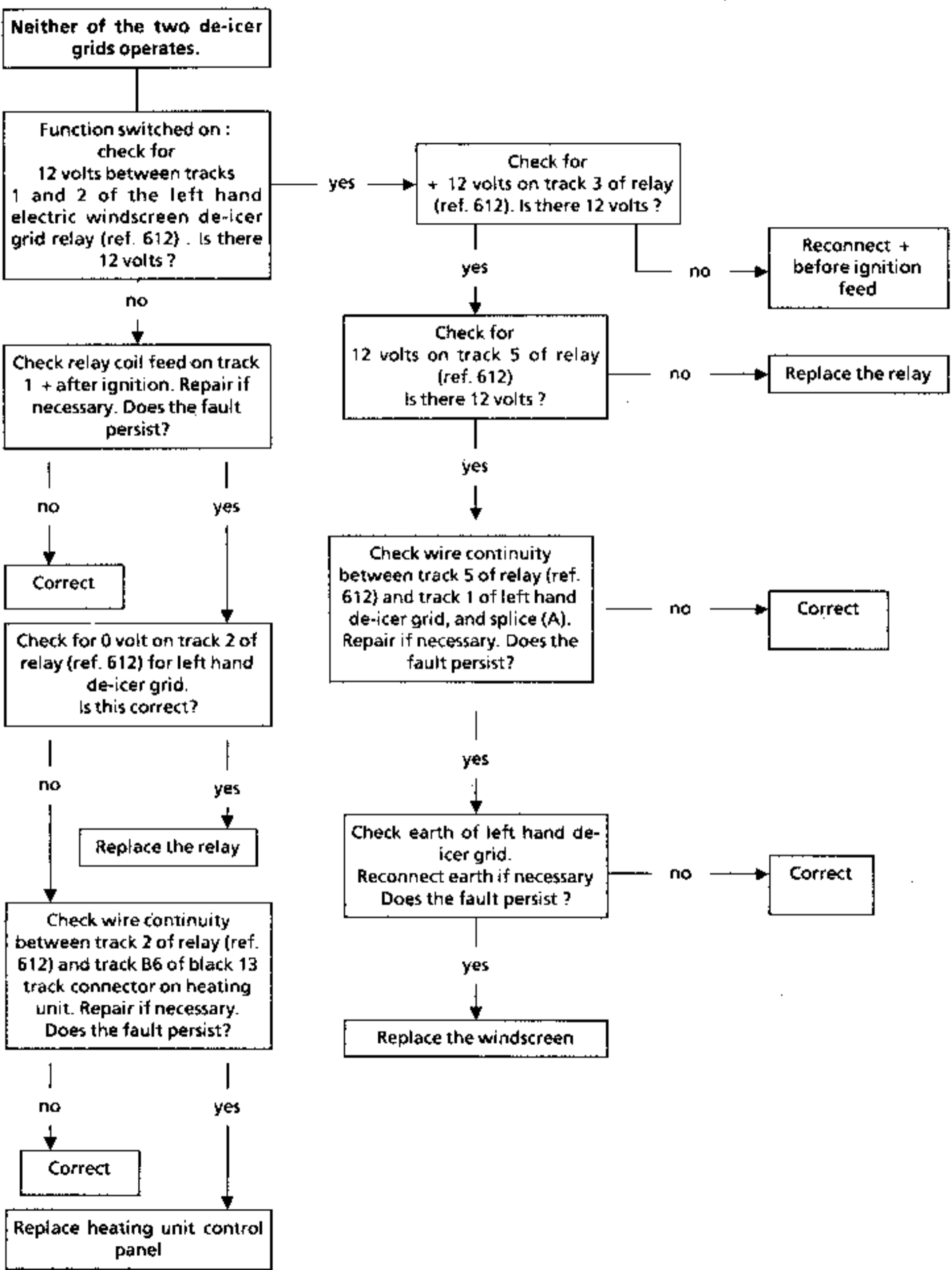
F Left hand de-icer fuse wire  
F' Right hand de-icer fuse wire

120 Injection computer  
319 Air conditioning control panel  
611 Left hand electric windscreen unit  
612 Left hand windscreen de-icer relay  
629 Right hand windscreen de-icer relay  
630 Right hand electric windscreen unit

OPERATING FAULTS : FAULT FINDING



**ATTENTION** : idle speed may be affected if there is a fault on the line ending on track 34 of the injection computer.



**DESCRIPTION**

This system electrically de-ices the rear screen using a de-icer grid applied to the inside of the screen.

The system is operated by pressing key (1) on the heating control unit.

The operation of the rear screen de-icer is timed.

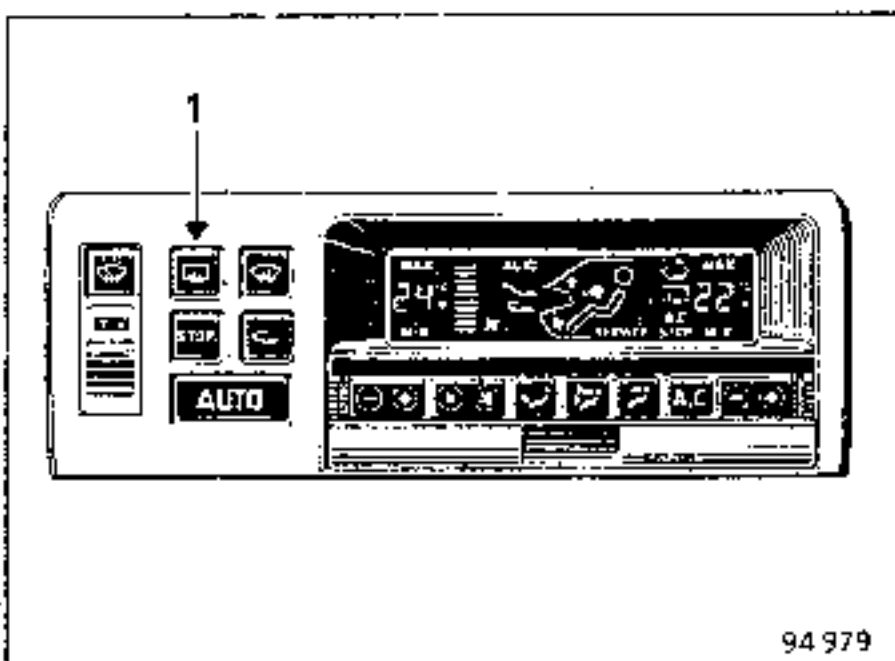
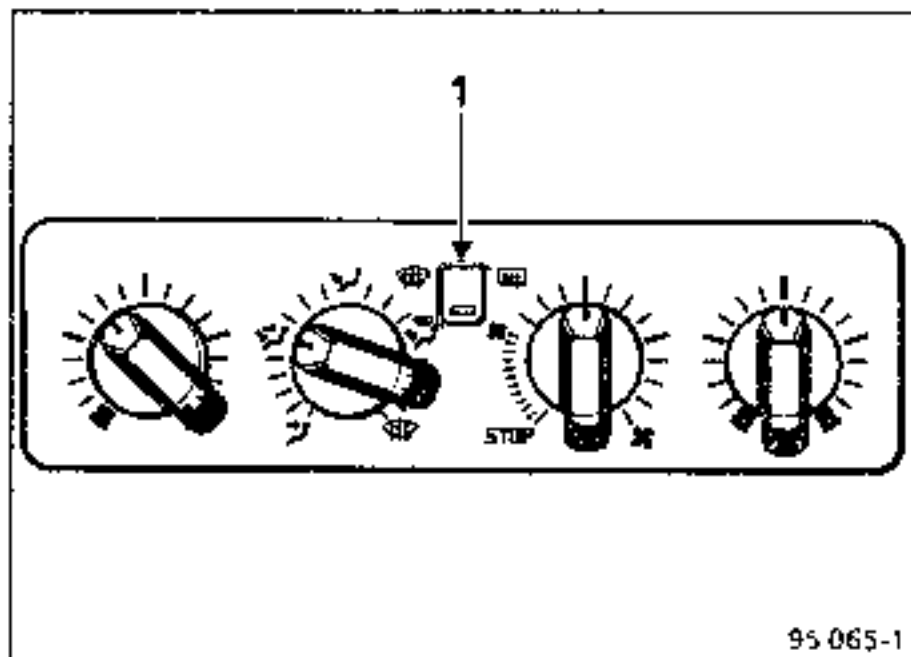
The time period, which is controlled by the heating unit, depends on the heating and ventilation settings for the vehicle.

For vehicles with air conditioning the time period is 15 minutes.

For vehicles with basic heating :

- with the electric windscreen de-icer option, the period is 10 minutes,
- without the electric windscreen de-icer option, the period is 15 minutes

The function may be stopped before the period has expired by pressing key (1).

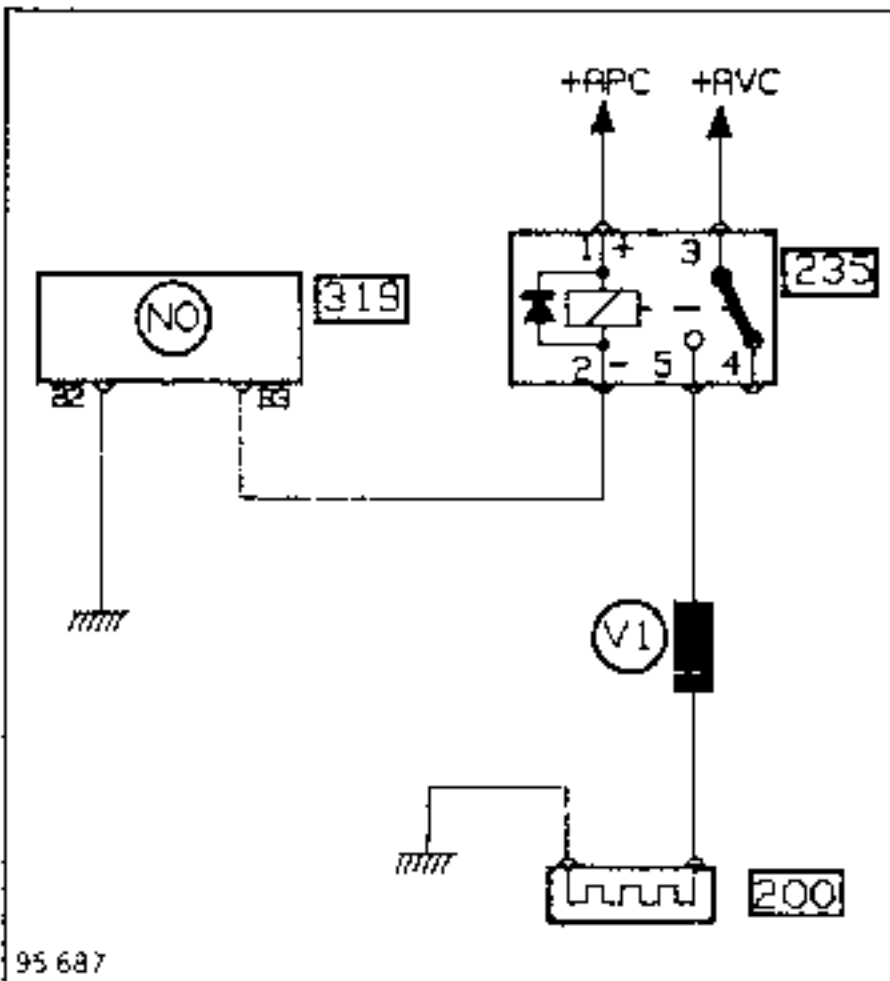


**OPERATION**

By pressing key (1) (see above), the heating unit transmits, via track B3 of the black 13 track connector, a limited earth via track 2 of relay 235 (time period is variable, see DESCRIPTION).

The relay coil is fed on track 1 + after ignition, and pressing key (1) energises relay 235 which feeds + after ignition to the de-icer grid.

**OPERATING DIAGRAM**



+ APC + after ignition

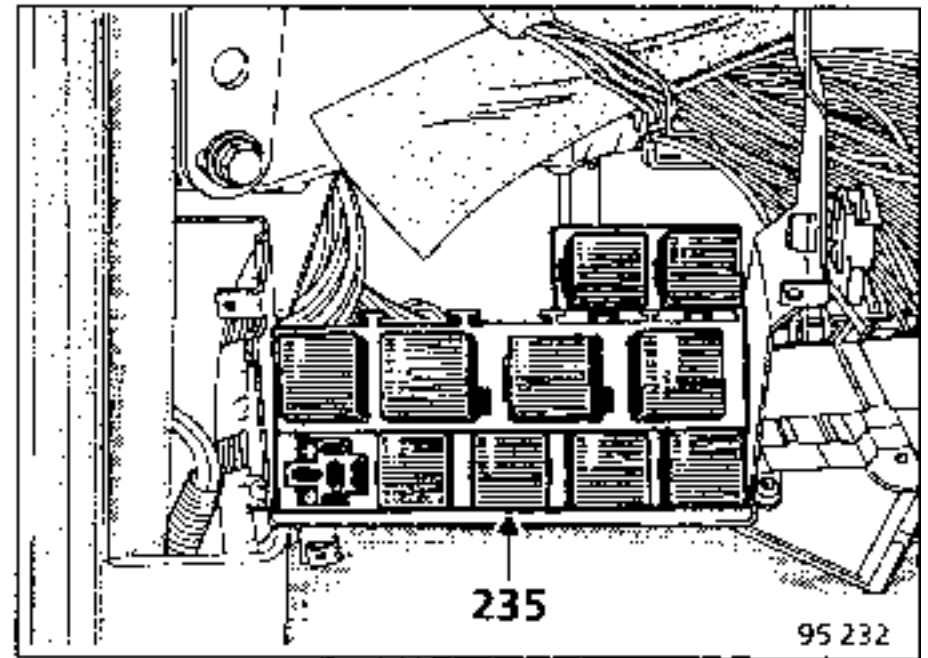
V1 splice

200 rear screen de-icer

235 rear screen de-icer relay

319 heating control unit.

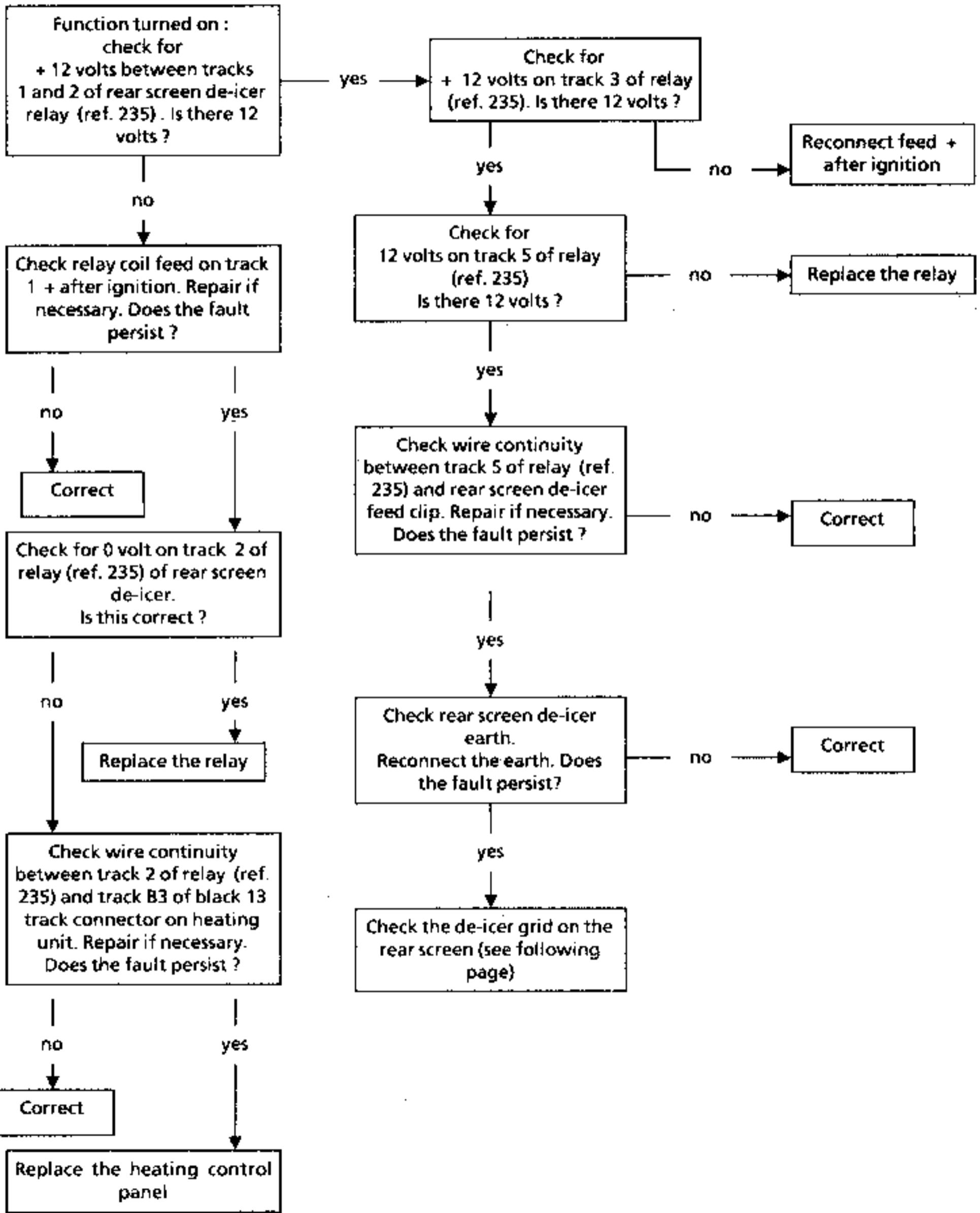
**LOCATION OF THE RELAY**



The relay (ref. 235) is located behind the fuse box in the passenger compartment.



OPERATING FAULTS



The rear screen de-icer grid which is applied to the internal surface of the rear screen may have an accidental break in the grid, affecting the operation of that section.

A voltmeter is used to determine the exact location of the break.

This type of break may be repaired using rear screen de-icer varnish, part number 77 01 421 135 (2 g pack).

#### USING A VOLTMETER TO DETERMINE THE EXACT LOCATION OF A BREAK IN THE GRID.

Turn the ignition on.

Turn the rear screen de-icer on.

#### DETECTION BETWEEN LINES B AND A

Connect the + wire from the voltmeter to the + feed terminal of the de-icer grid.

Put the - voltmeter wire on a filament on the - terminal side of the grid (line B). A voltage close to the battery voltage should be read.

Move the - wire towards line A (arrow) : the voltage should drop progressively.

If the voltage drops sharply, the grid is broken at this point (carry out this operation for each filament).

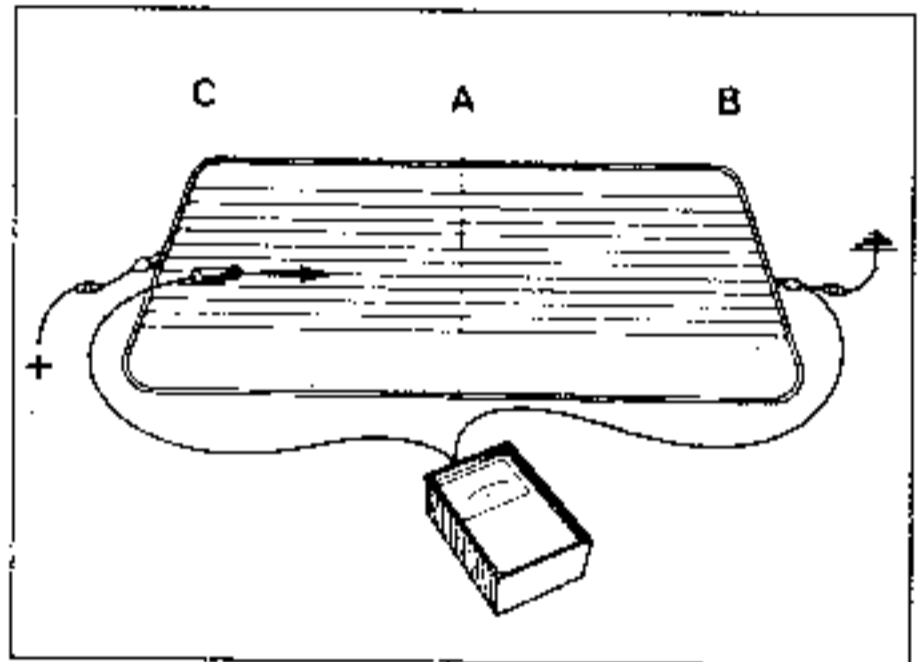
#### DETECTION BETWEEN LINES C AND A

Connect the - wire of the voltmeter to the - terminal on the grid.

Put the + wire from the voltmeter on a filament on the + terminal side of the grid (line C). A voltage close to the battery voltage should be read.

Move the + wire towards line A (arrow) : the voltage should drop progressively.

If the voltage drops sharply, the grid is broken at this point (carry out this operation for each filament).

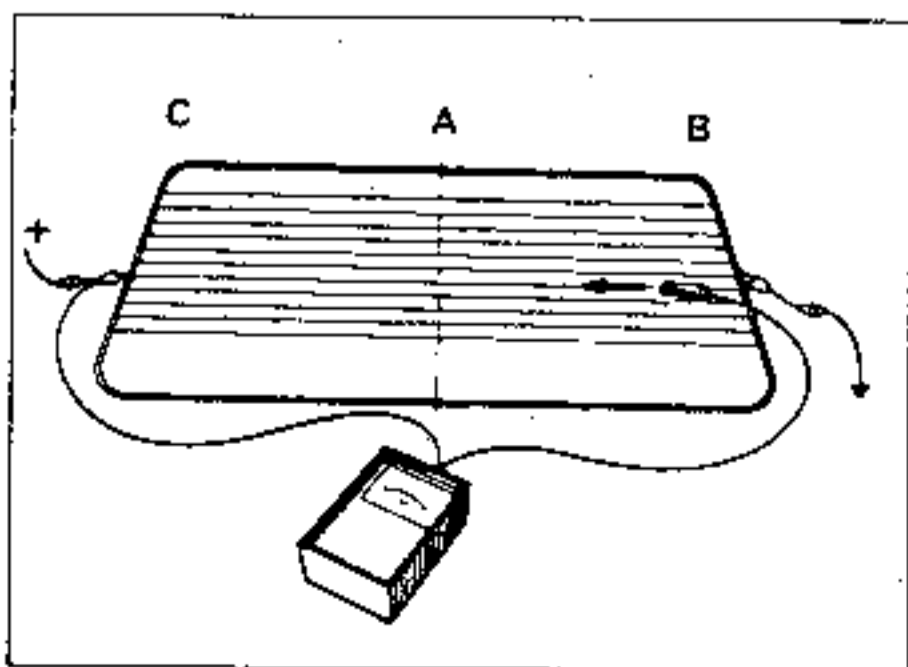


#### REPAIRING THE FILAMENT

Clean the area in question to remove all grease and dust using alcohol or a glass cleaning agent. Dry with a clean dry cloth.

In order to obtain a straight line when repairing, apply adhesive tape either side of the filament to be repaired, leaving the filament exposed in the centre.

Before using the varnish, shake the bottle well to mix in any silver deposits.

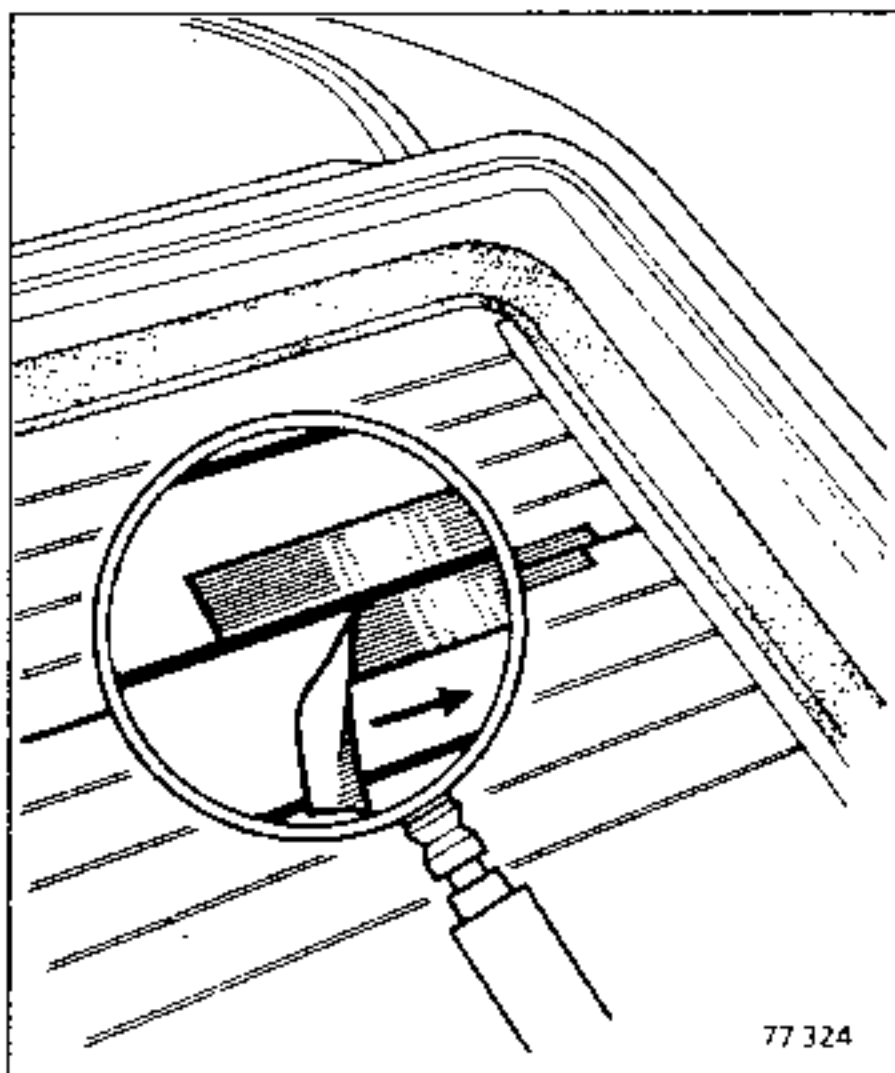


## REPAIR

Using a small paintbrush, apply a sufficient thickness of varnish to make the repair. If applying successive coats, allow each coat to dry before applying the next, to a maximum of three coats.

If the varnish is too thick, any excess may be removed using a knife or razor blade after several hours have passed, to ensure that the product has hardened correctly.

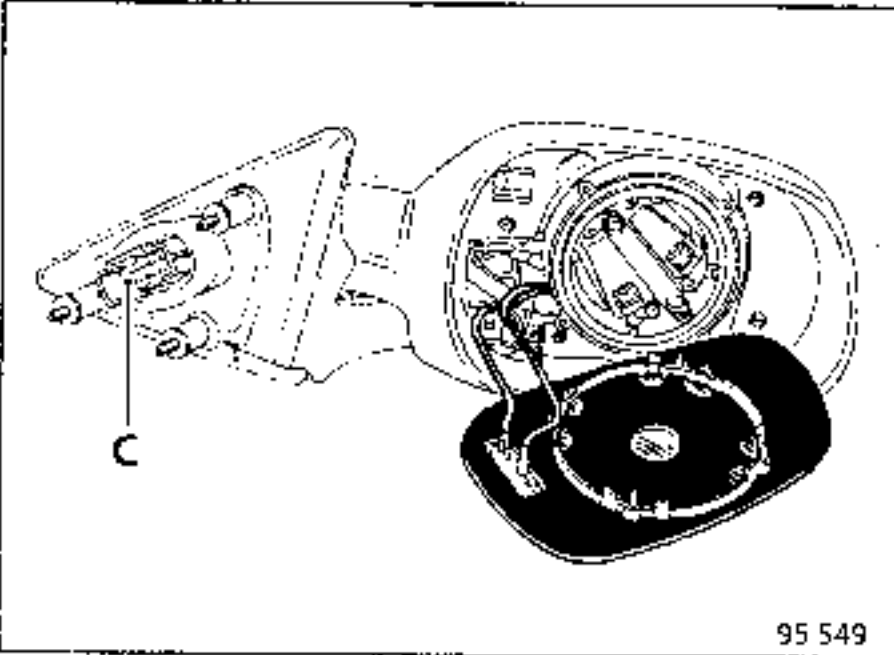
The adhesive tape should only be removed after an hour. The tape should be pulled off at right angles to the filament, as shown in the diagram. The varnish should be applied at an ambient temperature of 20°C and is completely hardened after 3 hours. If it is applied at a lower temperature, it may take slightly longer to harden fully.



**DE-ICING REAR VIEW MIRRORS**

**Description**

This system demists and de-ices the rear view mirrors (depending on option) using a de-icer grid between the mirror glass and the plastic mounting.



**Operation**

The system is turned on by pressing the "rear screen de-icer" key on the heating control panel.

The rear view mirror de-icer system is linked to the rear screen de-icer system. The same time limitations therefore apply.

The feed for the left and right hand rear view mirror de-icer grids is in parallel to the rear screen de-icer grid from splice (V1) (see sub section on "rear screen de-icer", page 88-8).

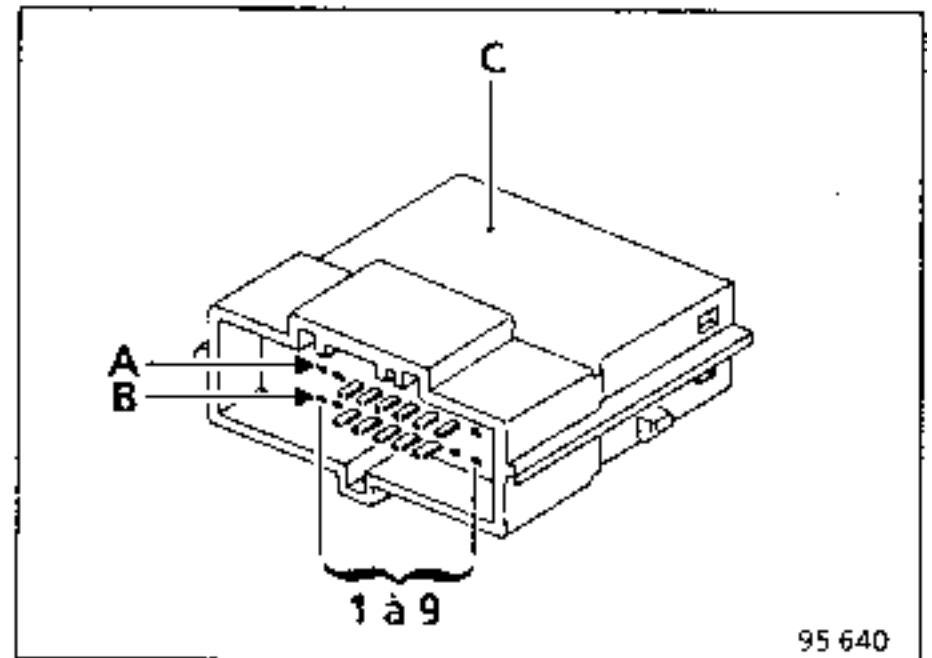
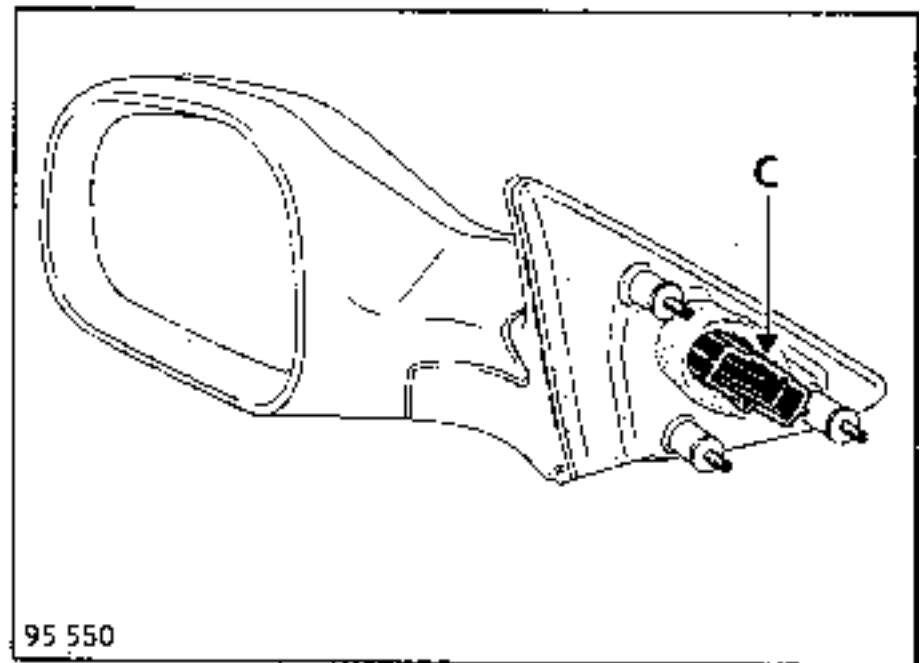
**Operational faults**

**Check:**

- condition of the 10A fuse.
- the glass connections,
- line insulation and continuity (see wiring diagram).

**NOTE :** to replace the rear view mirror glass, see the notes in chapter 56.

**Connections**

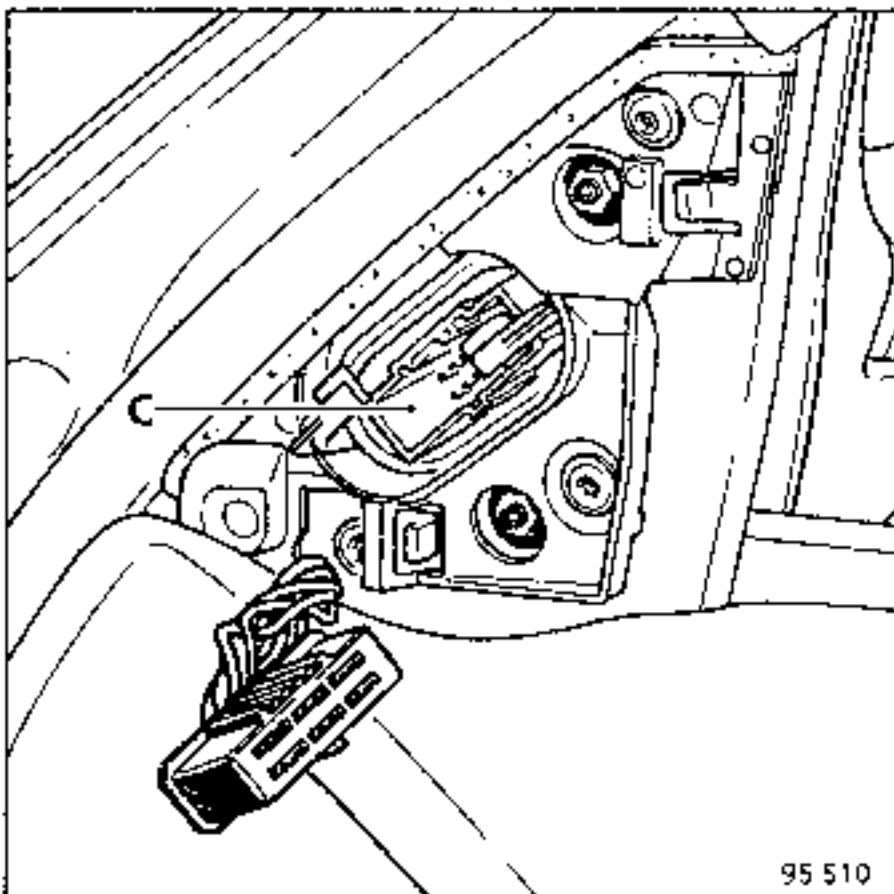
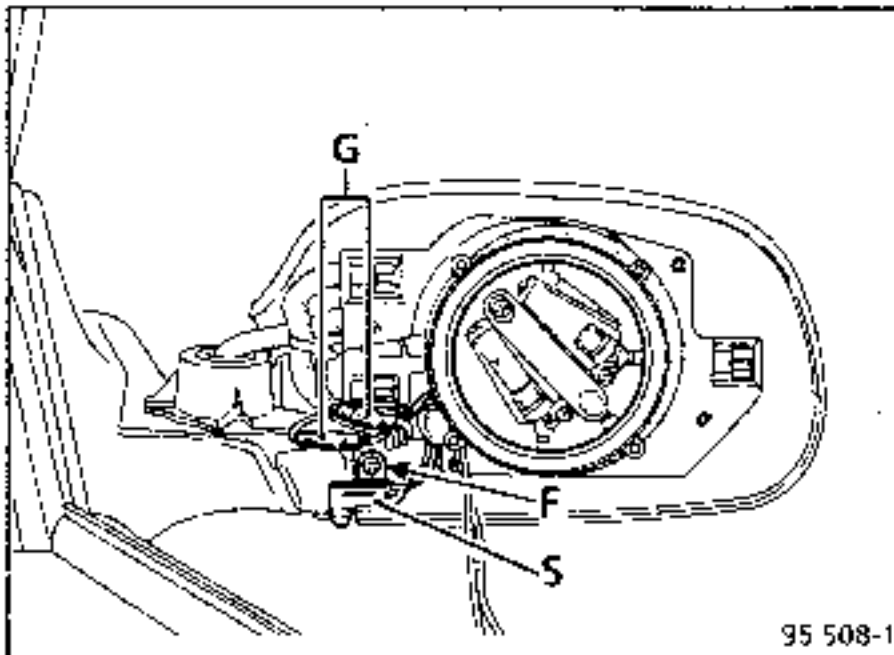


Track	Allocation
A3	+ after ignition rear view mirror de-icer
A4	Rear view mirror earth
A5	Rear view mirror motors, common
A6	Rear view mirror left/right orientation
A7	Rear view mirror up/down orientation
A8	External temperature sensor information (passenger side only)
B3	Common, potentiometer (+) rear view mirror
B4	Common, potentiometer (-) rear view mirror
B5	Potentiometer slide up/down
B6	Potentiometer slide left/right
B7	Rear view mirror earth (passenger side only)

**EXTERNAL TEMPERATURE SENSOR**

The sensor (S) is located in the rear view mirror, on the passenger side.

Connector (C) for the rear view mirror is accessible by carefully removing the inner cover and disconnecting the wiring harness.



The sensor can be checked using an ohmmeter between tracks A6 and B5 (C).

The correct values are :

Temperature	Resistance
0°C	6 kΩ ± 500 Ω
20°C	3 kΩ ± 300 Ω
25°C	2,5 kΩ ± 300 Ω
30°C	2 kΩ ± 300 Ω

**Operating faults**

- The external temperature display flashes at -30°C :  
the sensor is disconnected or the wiring is broken.
- The external temperature display flashes at +60°C :  
the sensor or wiring is short circuited
- The external temperature display shows an incorrect value:  
replace the sensor

**NOTE :** see chapter 84 for more information on the time / temperature display unit.

**Replacing the external temperature sensor**

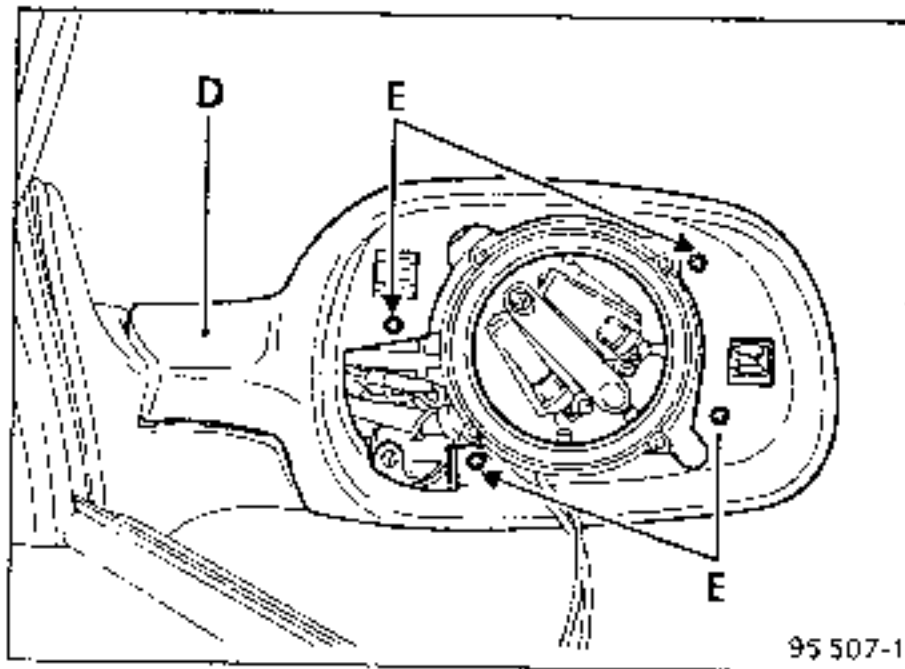
Unclip the rear view mirror glass (see chapter 56).

Remove the protective cover (D) by unscrewing the four bolts (E).

Remove the sensor after unscrewing bolt (F).

Cut the feed wire for the sensor after the sleeves (G) on the wiring side.

Replace the sensor and refit the sleeves.



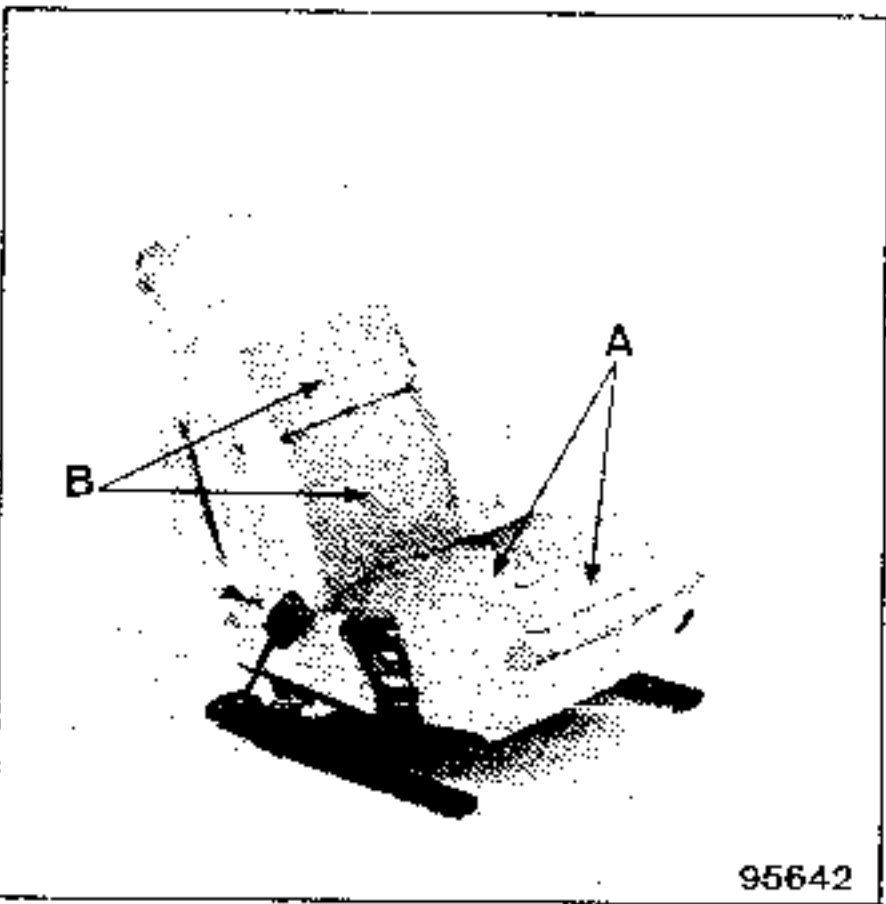
**DESCRIPTION**

This system heats the front seats trim, using a heating layer between the seat material and the foam.

Each seat (depending on version) is fitted with an independent system. Only the warning light on the instrument panel is common to the 2 seats.

The heating layer is composed of

- 2 resistances :
- one resistance of 29 Watts in the seat (A),
- one resistance of 12 Watts in the seat back (B),

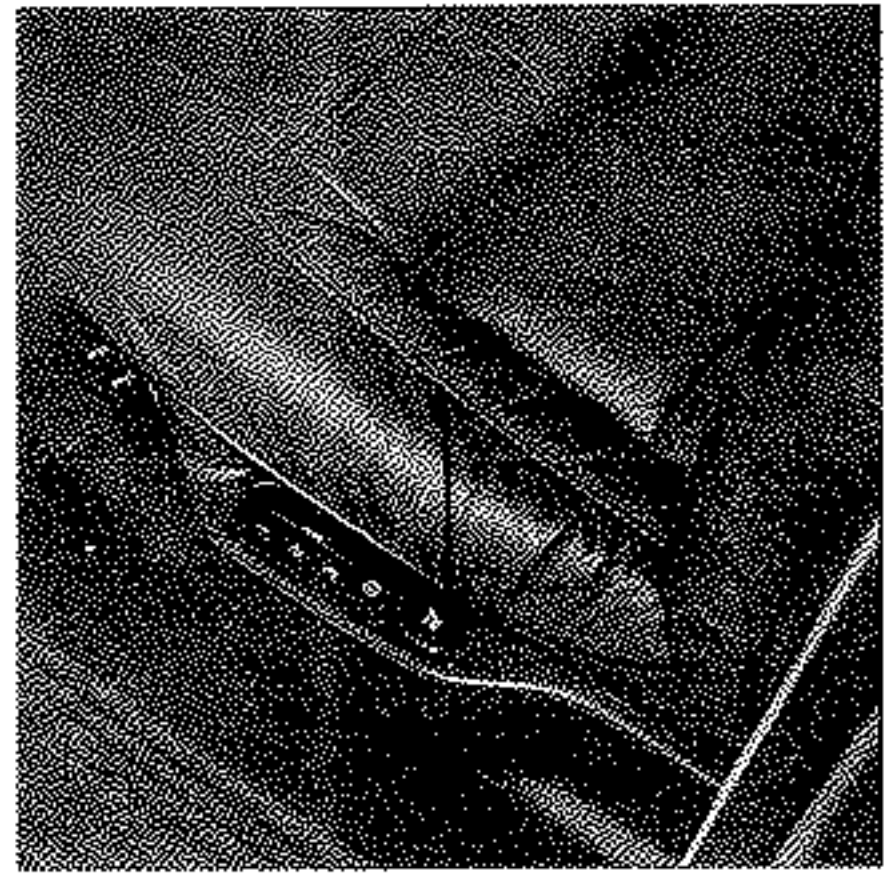


- a temperature switch in the cushion, which is in series with the resistance circuits, which allows or prevents the heating system to be fed.

**NOTE :** for more information, see chapter 77.

**OPERATION**

The system is operated by pressing switch (1).



A warning light illuminates on the instrument panel, if one or both heating systems are activated.

**ATTENTION :**

When the warning light is illuminated, this does not necessarily mean that the heating systems are fed.

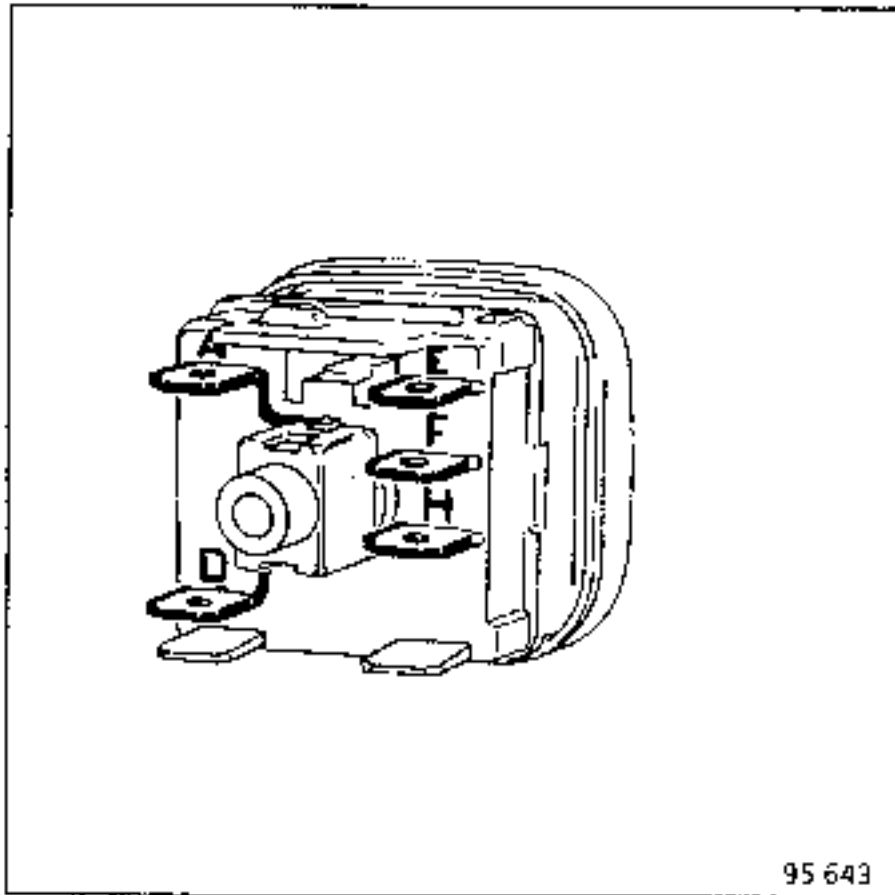
At temperatures below  $12 \pm 4^{\circ}\text{C}$  in the passenger compartment at the temperature switch, the system operates.

The temperature switch cuts the feed to the heating system when the temperature reaches  $27 \pm 3^{\circ}\text{C}$ .

The system remains activated (warning light illuminated), and the temperature switch allows the heating system to be fed once more when the temperature falls back to  $12 \pm 4^{\circ}\text{C}$ .

The warning light only extinguishes when the system is turned off by pressing key (1).

CONNECTIONS



95 643

Track	Allocation
A	+ after ignition switch lighting
D	Switch lighting earth
E	Heating layer switch
F	+ after ignition
H	Heated seats warning light



### DESCRIPTION

The infra red remote control is in the vehicle key.

The remote control alone can be replaced, by ordering a replacement using the number on the inside (label) (compatibility with decoder)

### INFRA RED RECEIVER

This is located in the roof console

This receives the infra red code from the infra red transmitter and transmits the code to the decoder. It amplifies the infra red signal.

On vehicles fitted with an alarm, the ultrasound sensors are integral with the infra red receiver.

The infra red receiver (with or without ultrasound sensors) may be replaced independently of the infra red transmitter and decoder

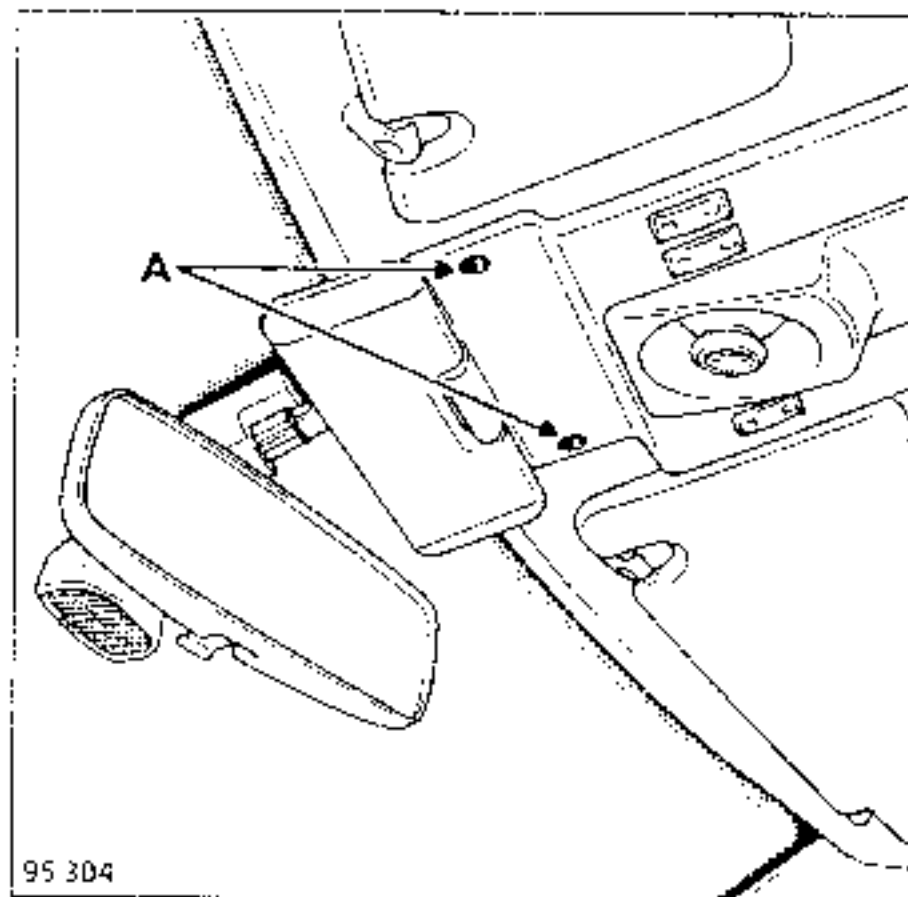
### Removal

Remove the roof console by the 2 Torx bolts (A) having removed the upper cover of the rear view mirror and disconnected its connector.

Remove the console forwards.

Disconnect the 2 connectors.

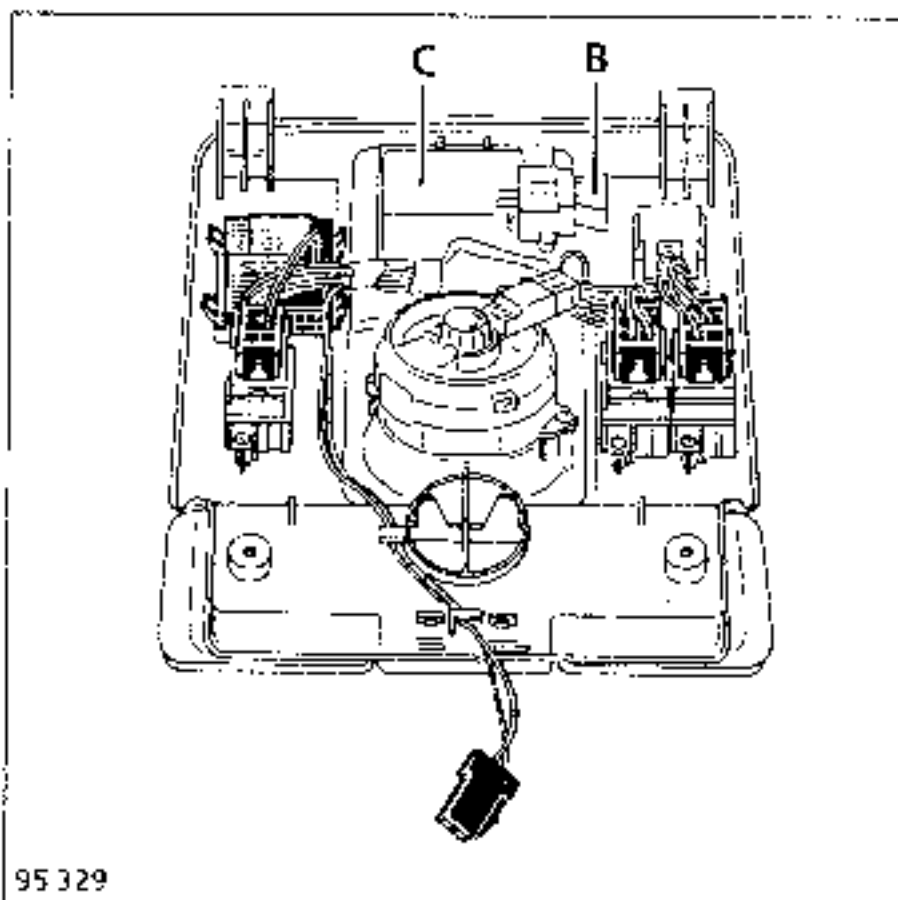
Remove the assembly



95 304

Disconnect connector (B).

Carefully unclip the printed circuit (C) for the receiver (and the 2 ultrasound sensors depending on version).



95 329

### Connections

#### Black connector (B)

Track	Allocation
A1	Infra red receiver return
A2	Alarm standby warning light
A3	Infra red receiver feed
B1	Earth
B2	Ultrasound detection information
B3	Ultrasound feed

### DECODER

This is located behind the glove box.

It combines the central door locking relay, the courtesy light timer, and reception of the infra red signal from the transmitter - receiver system.

#### Removal

To gain access to the decoder, remove the glove box by its 6 bolts.,

Remove the rubber clip and lift the decoder out.

### Connections

See chapter 87

**NOTE :** There is a ("simplified") decoder fitted to vehicles which do not have an infra red remote control

This unit looks the same as an infra red remote control unit, do not confuse the two (creates a fault).

if there is a fault, check the conformity of the decoder with the vehicle equipment fitted.

## GENERAL

This system comprises an electrically controlled drivers seat, a steering column fitted with electrical position control and electric rear view mirrors.

The driver of the vehicle has two possibilities:

- to control the seat position on request using the electrical control systems for the various driver position system elements, known as **manual adjustment mode**,
- to store or recall in one movement all the settings of the various elements of the driver position system, which is known as **automatic adjustment mode**.

A computer permanently monitors the position of all the elements in the system.

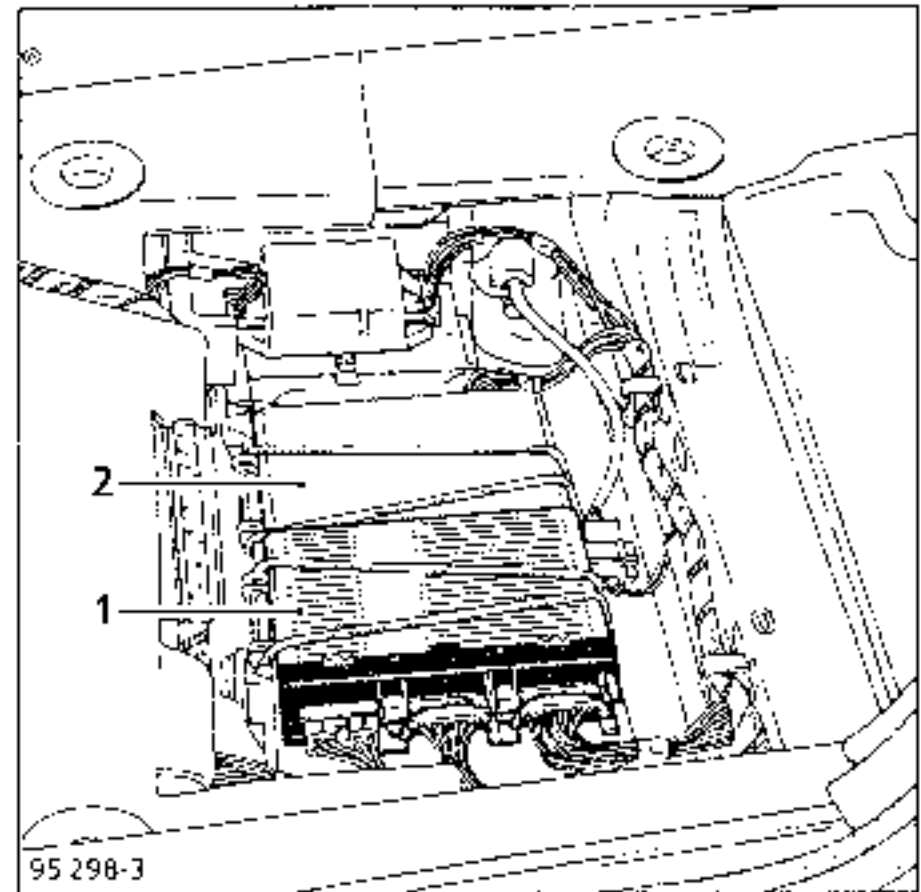
It analyses the driver's requests and operates the motors of the various components accordingly.

## DESCRIPTION

### THE COMPUTER (1)

The computer is located under the driver's seat, and is held in place by a rubber strap, next to the voice synthesiser computer (2)

To reach the computer, push the seat as far forward as possible, remove the carpet and then remove the cover by the two bolts which hold it in place.



Depending on the control arrangement, the computer has :

- a monitoring mode ,
- an active mode

One of the following three signals will alter the mode status from inactive to active :

- 1) Infra red remote control door opening signal for **15 seconds**.

This information triggers a recall (see "recalling stored positions").

- 2) Driver's door open information (switch on 1<sup>st</sup> notch of door lock) for **4 minutes**.

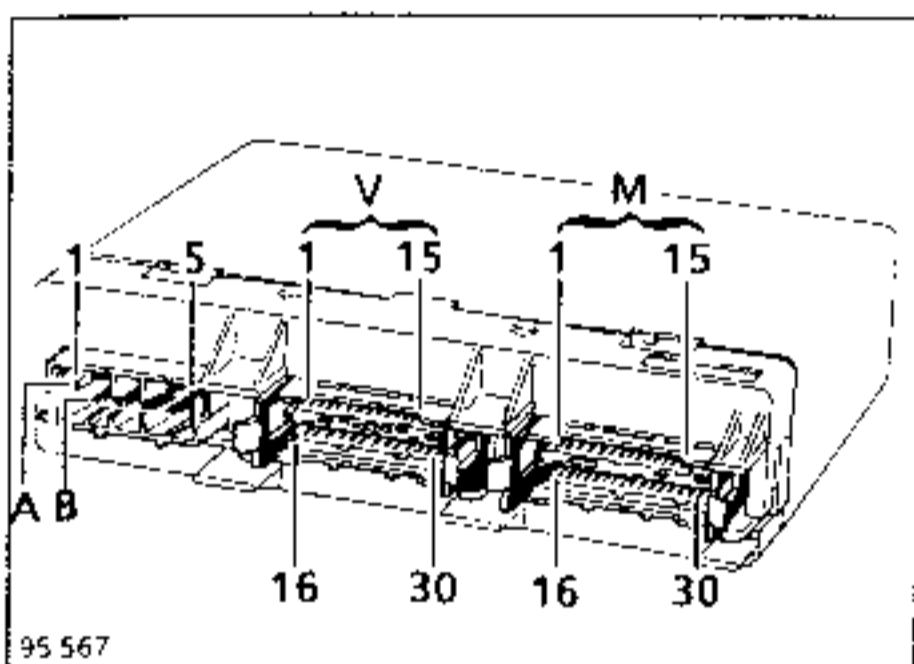
- 3) Anti theft switch in position + after ignition information for the **whole time the system is fed**.

The system returns to inactive from active after **4 minutes**, after the + after / before ignition feed is cut as soon as the driver's door is opened and closed (driver leaving the vehicle).

The computer retains its memory even if the permanent feed is cut (battery disconnected..)

**NOTE :** for vehicles which are not fitted with a driver's seat position memory system, the computer is replaced by a shunt unit (which looks the same ), in order to ensure the external rear view mirrors can be moved by the control on the driver's arm rest on the door.

### CONNECTIONS



### White connector (9 track)

Track	Allocation
A1	Longitudinal motor for driver's seat
A2	+ before ignition fuse for driver's seat
A4	Driver's seat head restraint motor
A5	Motor for lifting front of driver's seat
B1	Motor for lifting rear of driver's seat
B2	Steering column motor
B3	Earth
B4	Steering column and driver's seat motor common
B5	Driver's seat back motor

### Green connector (30 track)

Track	Allocation
1	Not used
2	Passenger rear view mirror up/down slide potentiometer
3	Passenger rear view mirror left/right slide potentiometer
4	Driver's rear view mirror up/down slide potentiometer
5	Driver's rear view mirror left/right slide potentiometer
6	Passenger rear view mirror up/down control and store control (memo key)
7	Passenger rear view mirror left/right control and first memory (key 1)
8	Driver's rear view mirror up/down control
9	Driver's rear view mirror left/right control and third memory (key 3)
10	Not used
11	Second memory (key 2)
12	Diagnostic socket information
13	Diagnostic socket information
14	Reversing lights feed information
15	Rear view mirror memory common
16	Not used
17	Not used
18	Rear view mirror common (except memory)
19	- Passenger rear view mirror potentiometer common
20	Memory control keyboard common
21	- Driver rear view mirror potentiometer common
22	Not used
23	Passenger rear view mirror up/down motor
24	Passenger rear view mirror left/right motor
25	Driver rear view mirror up/down motor
26	Driver rear view mirror left/right motor
27	+ driver and passenger rear view mirror potentiometer common
28	Rear view mirror motors common
29	Not used
30	Not used

**Brown connector (30 track)**

Track	Allocation
1	Driver head restraint down control
2	Driver head restraint up control
3	Driver rear squab cushion down control
4	Driver rear squab cushion up control
5	Driver front squab cushion down control
6	Driver front squab cushion up control
7	Driver seatback backwards control
8	Driver seatback forwards control
9	Driver seat backwards control
10	Driver seat forwards control
11	Steering column potentiometer slide
12	Driver rear squab cushion potentiometer slide
13	Driver front squab cushion potentiometer slide
14	Driver seat back potentiometer slide
15	Driver seat position potentiometer slide
16	+ before ignition memory fuse
17	+ after ignition via on/off switch
18	+ after ignition
19	Electronic earth
20	Information front left hand door 1st notch switch
21	+ driver seat and steering column potentiometer
22	Information electric door open command
23	+ accessories
24	Not used
25	- steering column potentiometer
26	Head restraint potentiometer slide
27	Steering column back control
28	Steering column forward control
29	- Driver seat potentiometers
30	Not used

**THE SEAT**

The seat comprises .

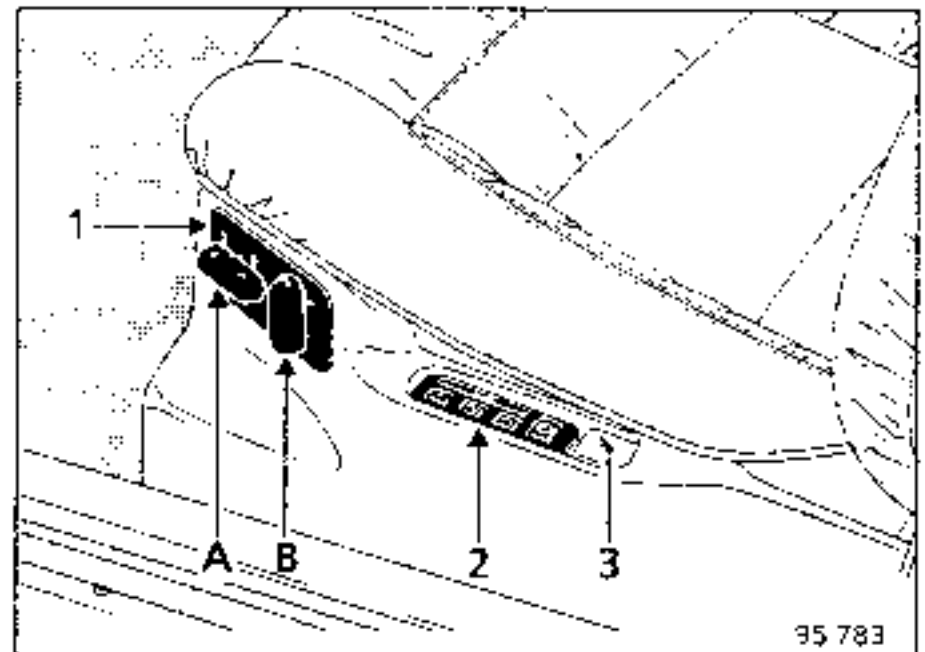
- 4 motors (for 4 movements) :  
longitudinal (runners),  
front squab cushion,  
rear squab cushion,  
seatback incline,

Each motor has a cable and a reduction gear to transmit the movement.

- 4 position potentiometers (one for each movement),
- 1 electric head restraint (depending on equipment),
- 1 control keyboard for automatic adjustment mode,
- 1 control keyboard for manual adjustment mode.

**Control keyboard for manual adjustment mode (1)**

This is located on the side of the drivers seat on the front section.



The control keyboard comprises:

- a seat squab key (A) giving seat position movement and front and rear squab cushion adjustments
- a seatback key (B) adjusting the seatback incline and the head restraint height.

**REMOVAL**

Adjust the front and rear seat squab cushions to maximum height.

Remove the 3 runner cover mounting bolts

Move the seat forward far enough to remove the runner cover.

Disconnect the control keyboard connector (2) and the heated seats switch (3).

Unclip the computer in manual adjustment mode (1) from the runner cover.

Unclip the buttons from the 2 switches (A) and (B), and separate the two switches from the board (clipped).

Remove the runner cover.

Unclip and disconnect the passenger compartment / seat connector.

Remove the blue module and the grey module from the seat modular connector.

Remove the clip for track 5 from the grey module.

Disconnect the seat earth wire under the rubber sleeve.

Remove the switches and wiring.

**REFITTING- Special notes**

Ensure the wiring for the switches is correctly replaced

Refit the clip in track 5 of the grey module.

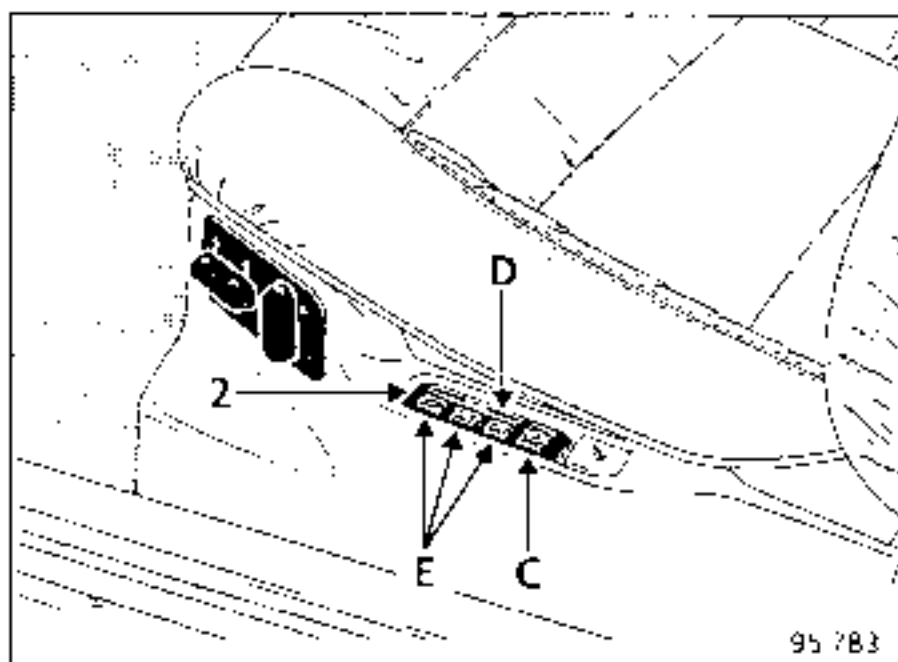
Replace the two modules in the seat modular connector.

- A white module
- B black module
- C grey module
- D blue module

Reconnect and secure the passenger compartment / seat connector.

**Control keyboard for automatic adjustment mode (2)**

This is also located on the outside section of the driver's seat, in the centre of the seat side panel.

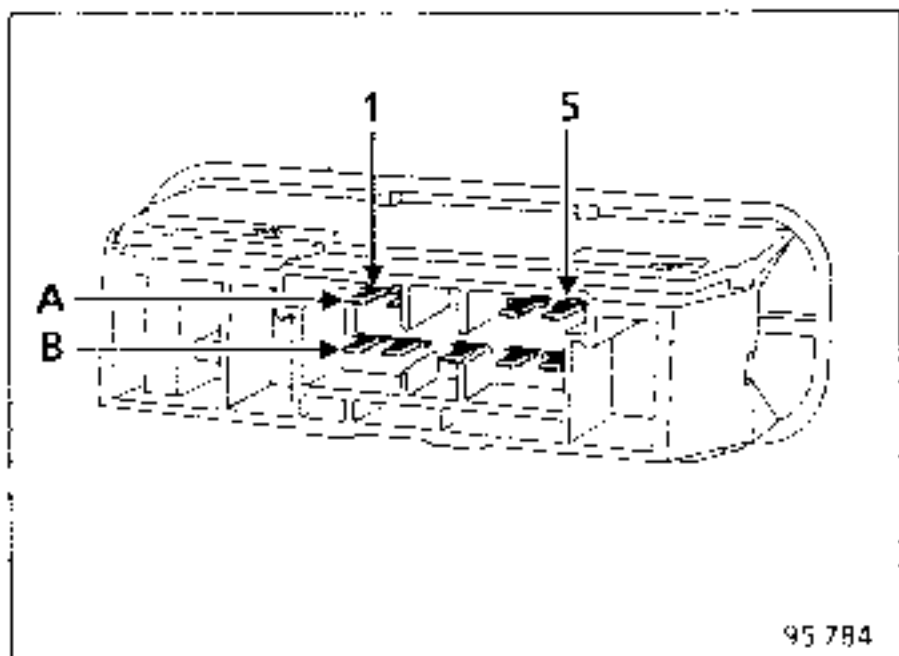


**REMOVAL**

Remove the control keyboard from the runner cover using a small screwdriver.

Disconnect the connector.

**CONNECTIONS**



Track	Allocation
A1	Earth
A2	+ before ignition
A4	Memory key control
A5	Memory control common
B1	Memory unit feed via switch
B2	+ after ignition (lighting)
B3	Key 3 control
B4	Key 2 control
B5	Key 1 control

The control keyboard comprises :

- a stop/start switch (C) which, when pressed in, feeds the computer.

If the feed is cut by this switch, all functions for the driver's seat, for both manual mode and automatic mode are cut (this switch does not affect the passenger seat).

- a "Memo" button (D), which stores all adjustments made previously.

- three buttons 1 - 2 - 3 (E), which allow three preset positions to be selected, either in memory mode, or in recall mode.

**Position potentiometers**

There is one potentiometer for each motor.

They inform the computer of the position of each motor shaft (longitudinal, front squab cushion, rear squab cushion, seatback incline).

**The head restraint**

The head restraint height can be adjusted.

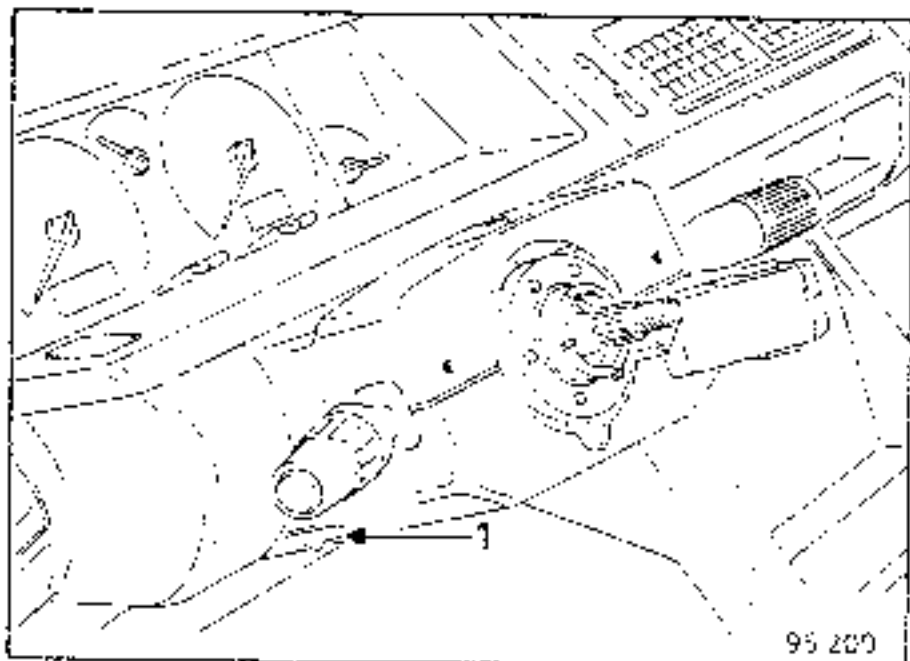
The motor and position potentiometer are part of the head restraint. A connector connects them to the seat.

**CONNECTIONS**

Track	Allocation
1	+ potentiometer
2	potentiometer slide
3	- potentiometer
4	Motor
5	Motor

**STEERING COLUMN****Control switch (1)**

This is located under the steering column surround lower half cowling.



This controls (by tilting), in the **manual adjustment mode**, the position of the steering column (distance from the driver).

In **automatic adjustment mode**, the steering column is automatically controlled by the computer.

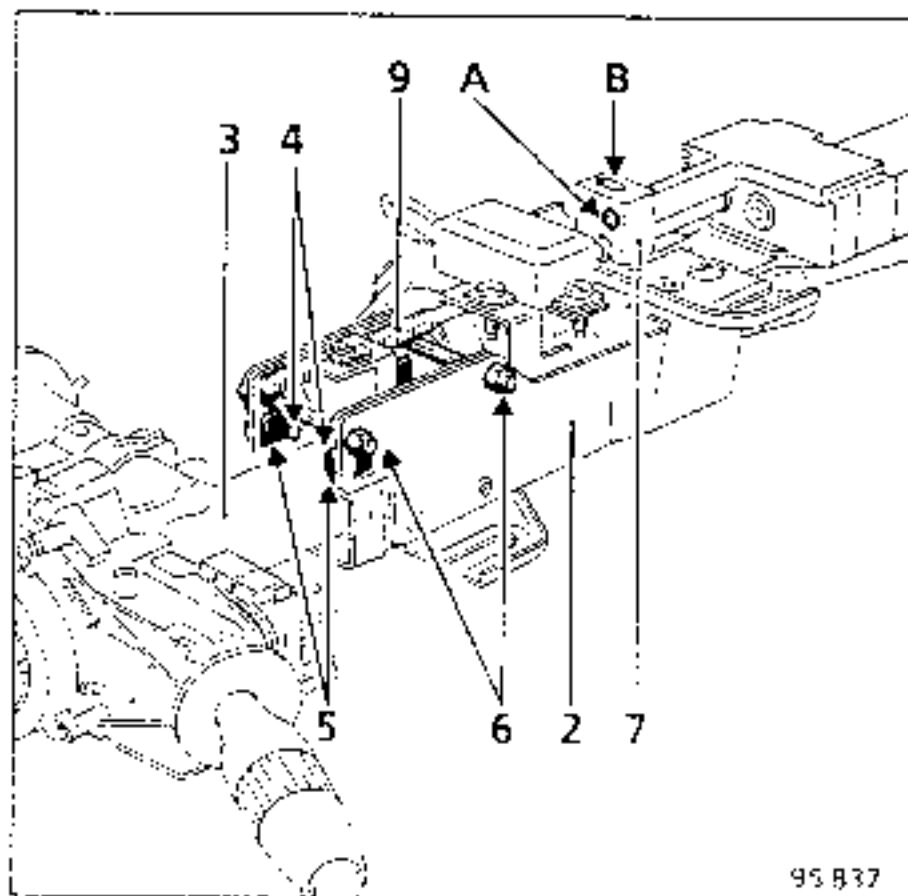
**REMOVAL - REFITTING - CONNECTIONS** see method, chapter 84.

**Position adjustment**

The steering column is in two parts :

- a fixed part (2) known as the "column body" mounted on the bulkhead and the pedal support by 4 bolts,
- a moving part (3) known as the "column tube" which moves inside the column body.

2 sliding blocks (4) running on 2 plastic guides (5) ensure the column tube moves correctly.



A sliding force which is preset in the factory ensures there is no operating play

**Never touch the adjustment bolts (6).**

The steering shaft also has two shafts :

- the "steering wheel shaft", which has the steering wheel mounted on the end of it and which is used for the steering lock, for the anti-theft ignition switch,
- the "sliding shaft", which at one end joins the steering rack with a universal joint and at the other slides inside the steering wheel shaft.

When adjusting the position of the steering column, the steering column tube assembly, the steering wheel shaft, the steering wheel, the lights switches, the windscreen washer switches, and the steering wheel surround half cowling assemblies all move together.



Repairs:

Only the motor is available.

### REPLACING THE MOTOR

Remove the steering column (see method, chapter 36).

Place the column flat on a work bench (column motor on the top), and slightly lift the column on the motor side

Remove:

- the motor support bearing (7) by the two bolts (A) and (B),
- circlips (8) and the drive dog(9),
- the two mounting bolts (C) and (D) from the motor mounting.

**NOTE :** the motor is sold on the support to avoid incorrect connections. Do not separate the two units

### REFITTING-Special notes

Ensure the feed wires are correctly connected.

- track A1 : brown / green wire
- track A2 : orange wire

Apply a drop of Loctite FRENBLOC on the two bolts (C) and (D) and tighten with moderate force.

Coat bolt (B) with a drop of Loctite FRENBLOC and refit this bolt and also bolt (A) but do not tighten them fully.

Tighten bolt (A) and then bolt (B) with moderate force.

### Position potentiometer

This is mounted on the steering column body and is bonded in place in the factory.

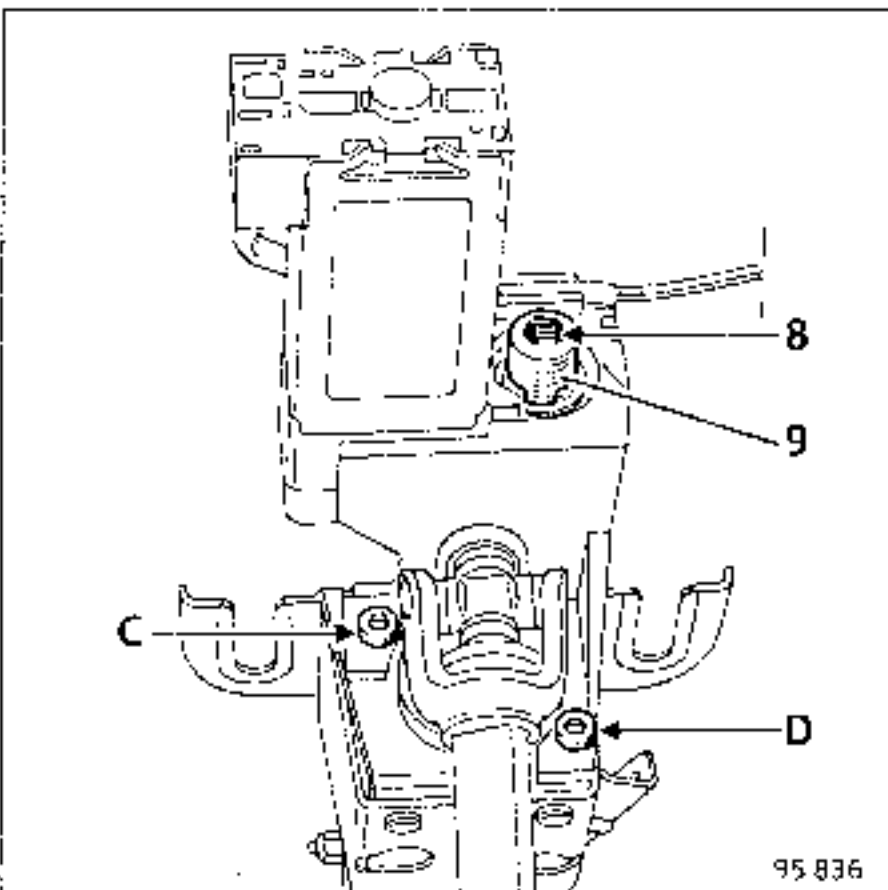
A slide on the steering column tube informs the computer of the steering column position at all times.

In view of the difficulty in gaining access to the potentiometer and its complexity, it cannot be replaced.

### REAR VIEW MIRRORS

These are adjustable in four directions (up, down, left, right) :

- using the control lever on the driver's door in **manual adjustment mode** (see rear view mirror section pages 88-12 to 88-14),
- by the computer in **automatic adjustment mode**.

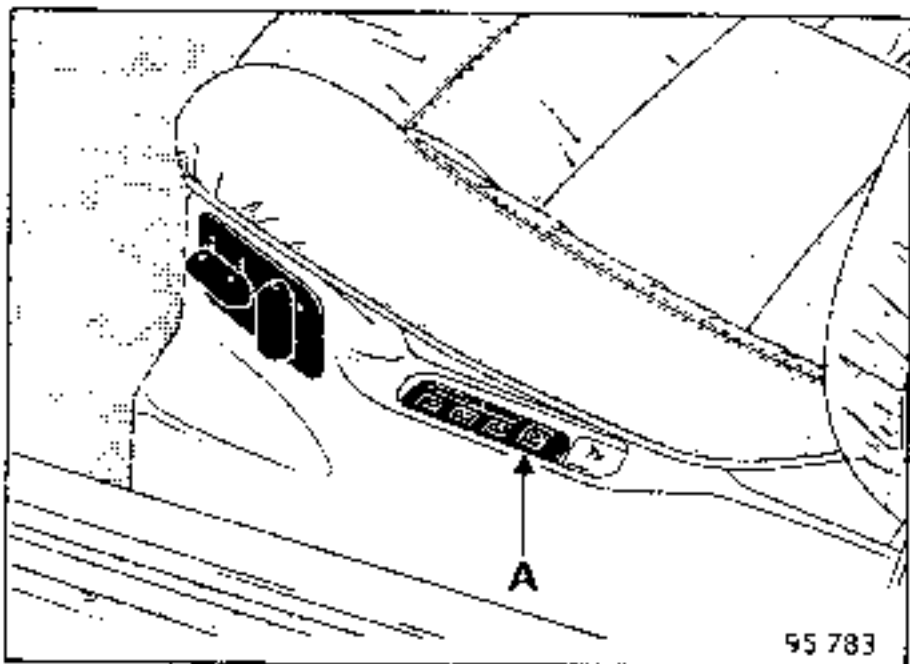


Remove the two wire clips for tracks A1 and A2 from the grey motor feed connector (see method in Technical Note 8074 on connectors) .

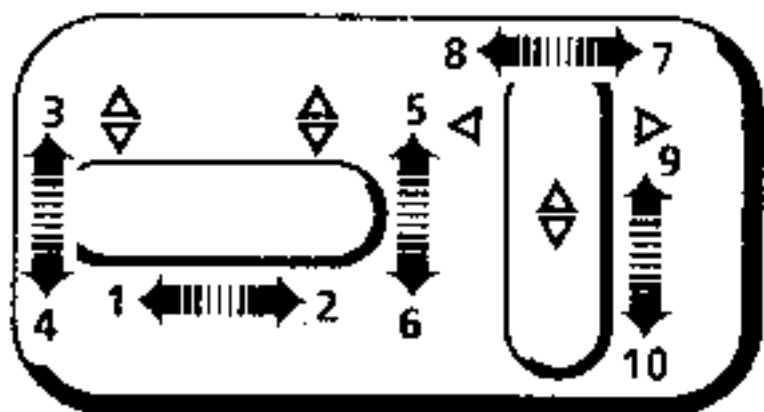
Remove the motor/support assembly sliding it backwards to release the drive bolt (10).

**OPERATION****Manual adjustment mode:**

- computer active,
- switch (A) in depressed position.



Adjust the position of the seat and head restraint by holding down the button for the required direction :

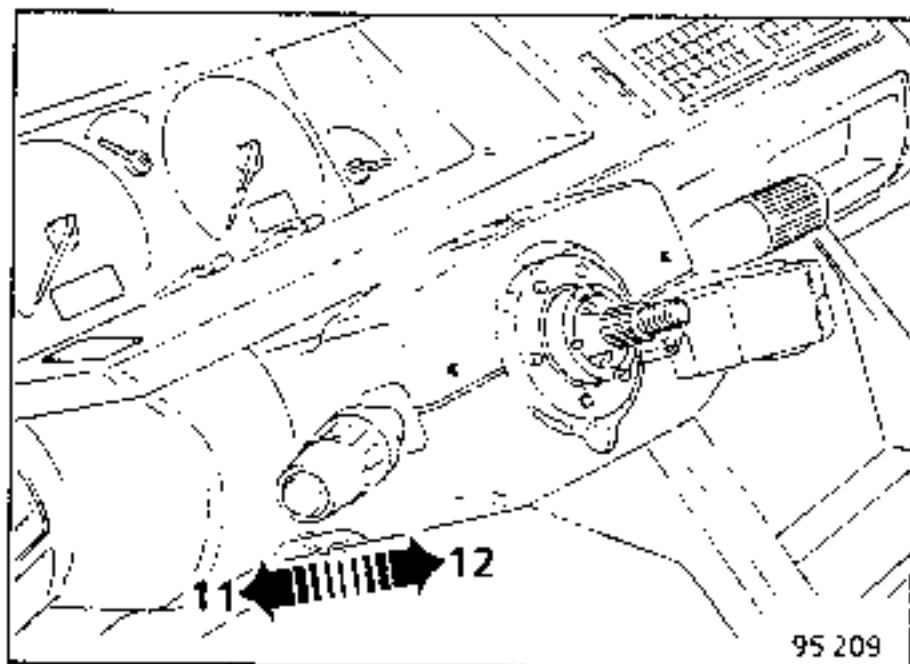


- 1 seat position forwards
- 2 seat position backwards
- 3 front squab cushion up
- 4 front squab cushion down
- 5 rear squab cushion up
- 6 rear squab cushion down
- 7 seatback tilted back
- 8 seatback tilted forward
- 9 head restraint up
- 10 head restraint down

Position the left and right hand rear view mirrors using the control lever on the driver's door.

Adjust the steering column position using the control switch :

- 11 forward
- 12 backward



### Automatic adjustment mode

#### Storing positions.

In the manual adjustment mode, **adjust the positions of the seat, the head restraint, the rear view mirrors and the steering column to the required positions.**

Press the **Memo key** to store all the adjustments.

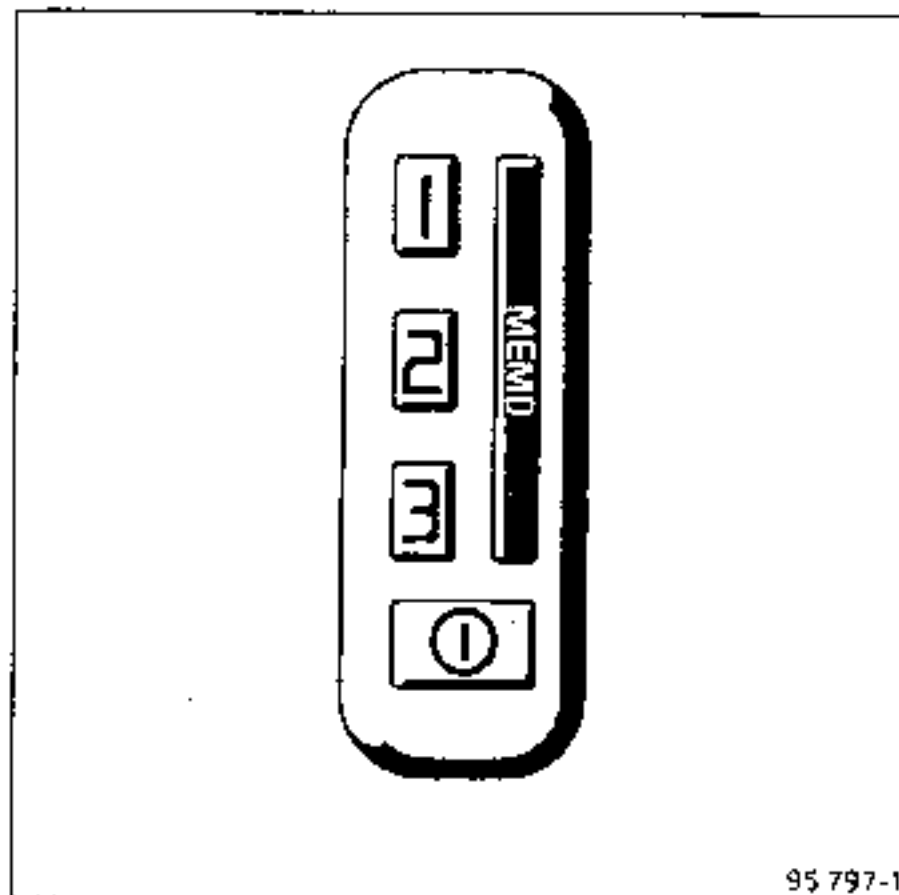
**Within 3 seconds, press key 1, or 2, or 3 to select the adjustments for one particular driver (key 1 for the 1st driver, key 2 for the second driver etc.).**

**NOTE :** when memorising the positions of the various elements, the gear lever should not be in reverse (gear engaged).

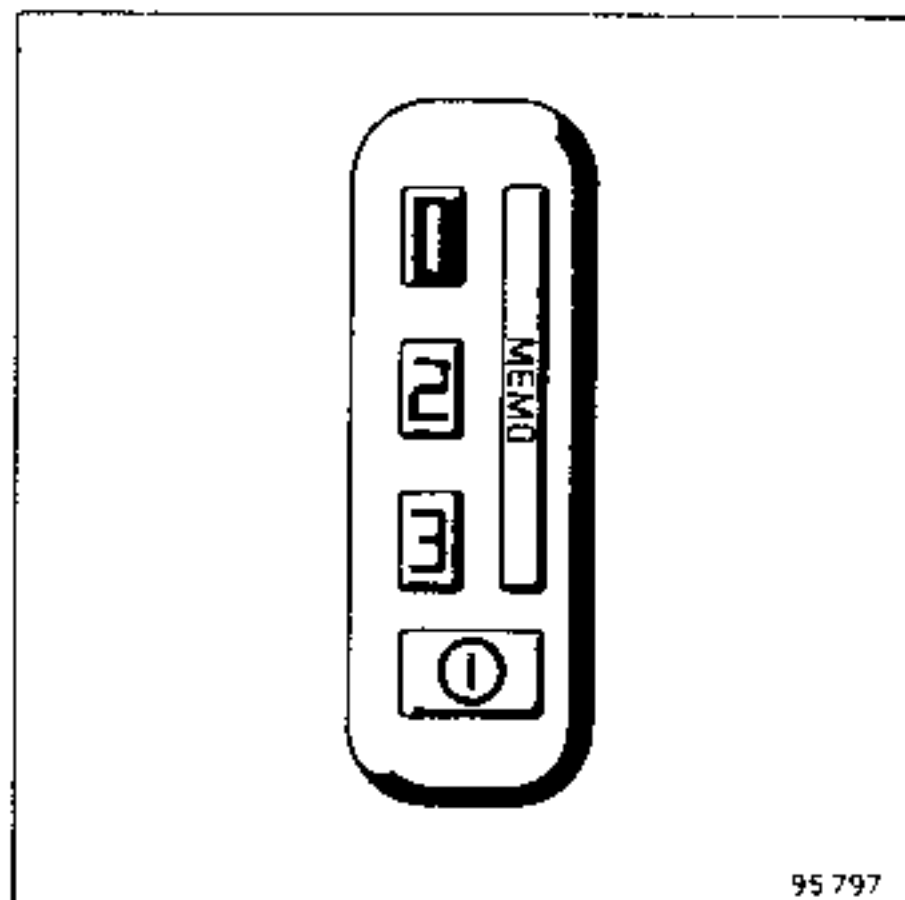
Memorisation example for a driver having selected key 1.

Computer active, adjust the seat, the steering column, and external rear view mirrors using the appropriate controls in manual adjustment mode.

Store the positions by pressing "MEMO"



Select by pressing key "1" for this example



## RECALLING STORED ADJUSTMENTS

This may be done in three ways:

- 1) Within 15 seconds from the infra red door open information, a single pulse on the appropriate key for the driver in question, recalls all the position settings stored under this key.

If + after ignition appears during this period, single pulse recall is not permitted, but continuous pressure recall is permitted

Starter information totally cancels the pulse recall command

- 2) In the 4 minutes which follow the opening of the driver's door, continuous pressure on the key for the driver in question, will recall all the positions stored for this key.

**NOTE :** if a driver enters the vehicle after using the infra red control to unlock the doors, the computer will be active for 15 seconds for pulse control, then for 4 minutes for continuous pressure

- 3) If there is + after ignition, continuous pressure on the key for the driver in question will recall all the adjustments memorised under this key.

If the starter is used during this phase, the recall process is stopped.

It starts again when the anti-theft switch is returned to the + after ignition position (key released).

**NOTE :** during a recall, the positions of the seat, steering column and head rest are altered one after the other (seat first) in the order determined by the computer depending on the position of each shaft, before the recall begins.

The adjustment of the rear view mirror positions starts with the driver's mirror, at the same time as the seat is adjusted.

For safety reasons, the seatback position cannot be memorised for all possible positions.

A limit position will be applied where a position beyond the safety limit has been requested for storing.

If several buttons are pressed on the control unit when in automatic mode, only the first or last key is activated.

If a key is locked when the computer is activated, the computer is not operational until the block is released.

If the computer detects a stop (or resistance) on a shaft during recall, the feed to the motor is suppressed after 2 seconds and recall is interrupted.

If the computer detects any seat movement which is not intentional, all seat commands are blocked. (see fault finding).

### Special case for engaging reverse gear

A special position where the passenger rear view mirror is lowered is automatically engaged when reverse gear is selected.

The lower position of the passenger rear view mirror is used to assist the driver of the vehicle when parking next to the pavement.

A personal position can be selected and stored under one of the selections : 1, 2 or 3.

Storing the additional position :

- stop/start switch depressed,
- engage reverse gear,
- adjust the passenger's rear view mirror to the required position (left, right, up, down),
- press **Memo**,
- press key 1, or 2, or 3 for the driver in question.

### RECALLING THE SELECTION

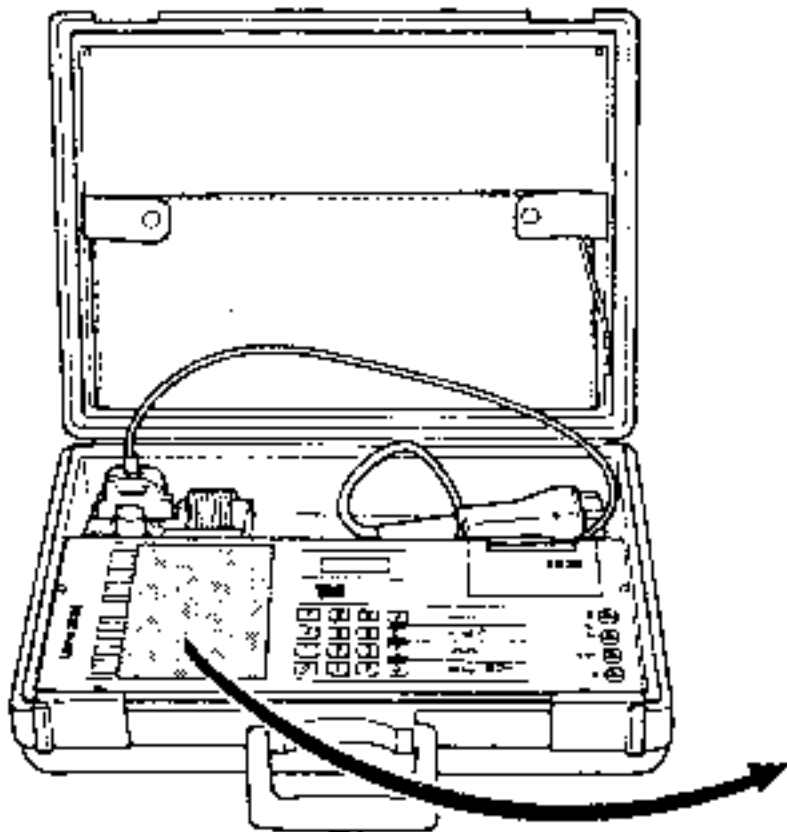
Recall of the passenger rear view mirror position in reverse gear is carried out automatically when reverse gear is selected, depending on the last driver selection 1, or 2, or 3 made.

If no position is stored, the rear view mirror assumes a default position (up/down adjustment only).

**FAULT FINDING**

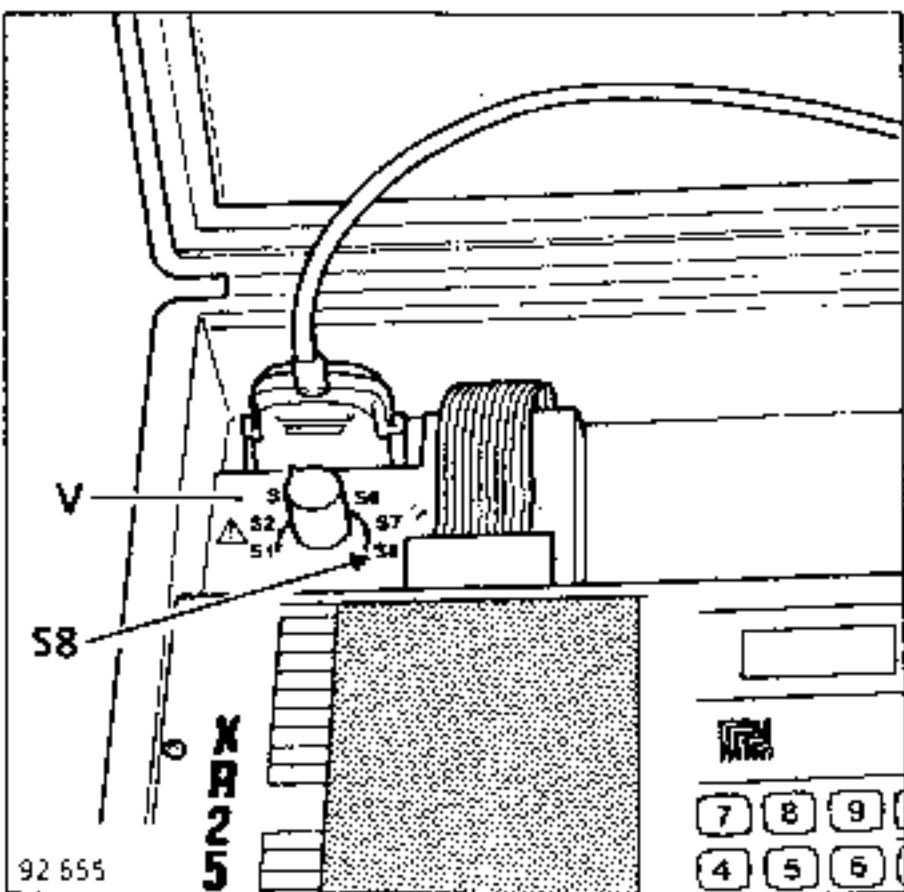
if there is a fault with drivers seat position memory, select the fault chart for the fault in question, then connect the XR 25 and follow the fault finding chart.

**CONNECTING THE XR25**



92 656

Connect the XR25 to the vehicle's diagnostic socket and put the selector switch on S8.



92 655

**NOTE :** warning light "V" must be extinguished. If it is illuminated disconnect and then reconnect the diagnostic socket. If it remains illuminated, check the XR25 wiring and the battery voltage.

Recto

N° 16 IDENTIFICATION FICHE LIRE SUR AFFICHEUR → 1 PC	
1	ETIENNE TESTI EN COURS / TOURNER LA FICHE (FIN TESTI EN COURS) / (RETOUR A L'ALLUMAGE) <span style="float: right;">CODE PRESENT</span>
2	ALLUMAGE - ARC PRESENT <span style="float: right;">ALIMENTATION FAIBLE</span>
3	ALLUMAGE - INTER ALAR MARCHE <span style="float: right;">ALLUMAGE SUR MARCHE ARRIERE</span>
4	ALLUMAGE - ACCESSOIRE PRESENT <span style="float: right;">ALLUMAGE SI PORTIL OUVERT</span>
5	ALLUMAGE SI INFO TIR PRESENTE <span style="float: right;">AL OUVRE RE LINE</span>
6	DEFAULT CLAVIER RETROVISEUR <span style="float: right;">RECALIBRAGE</span>
7	CONDUCTEUR ← <span style="float: right;">PASSAGER →</span>
8	SELECTIONNER LE RETROVISEUR PLUS COMMUNIER LES 4 MOUVEMENTS VERRER L'ALLUMAGE DES BARRE GRAPHIQUES CORRESPONDANTS
9	HAUT ↑ <span style="float: right;">BAS ↓</span>
10	GAUCHE ← <span style="float: right;">DROIT →</span>
<b>CODE : 016 (S8)</b> <b>POSTE DE CONDUITE (TEST1)</b> (EFF.MEM : G0 * 4) (FIN DE DIAGNOSTIC : 013 * 1)	
BOUTON SUR MARCHE POUR LE DIAGNOSTIC (OG ALLUMAGE) DE 1 à 14 PRESSER CHAQUE TOUCHE ET VERRER L'ILLUMINATION DE LA BARRE GRAPHIQUE CORRESPONDANT	
11	AVANT LONGITUDINAL (SIEGE) <span style="float: right;">ARRIERE</span>
12	AVANT DOSSIER (SIEGE) <span style="float: right;">ARRIERE</span>
13	HAUT REHAUSSE ARRIERE (SIEGE) <span style="float: right;">BAS ↓</span>
14	HAUT REHAUSSE AVANT (SIEGE) <span style="float: right;">BAS ↓</span>
15	HAUT APPUI TETE (SIEGE) <span style="float: right;">BAS ↓</span>
16	AVANT COLONNE DIRECTION <span style="float: right;">ARRIERE</span>
17	1 PRESSE
18	2 PRESSE
19	3 PRESSE
MEMO PRESSE <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
FRA	

Verso

N° 16 BIS IDENTIFICATION FICHE LIRE SUR AFFICHEUR → 2 PC		
1	ETIENNE TESTI EN COURS / TOURNER LA FICHE (FIN TESTI EN COURS) / (RETOUR A L'ALLUMAGE) <span style="float: right;">CODE PRESENT</span>	
2	DEFAULT DE MOUVEMENT	
3	BLOCAGE LONGITUDINAL (SIEGE) <span style="float: right;">INTEMPESTIF</span>	
4	BLOCAGE DOSSIER (SIEGE) <span style="float: right;">INTEMPESTIF</span>	
5	BLOCAGE REHAUSSE ARRIERE (SIEGE) <span style="float: right;">INTEMPESTIF</span>	
6	BLOCAGE REHAUSSE AVANT (SIEGE) <span style="float: right;">INTEMPESTIF</span>	
7	BLOCAGE APPUI TETE (SIEGE) <span style="float: right;">INTEMPESTIF</span>	
8	BLOCAGE COLONNE DIRECTION <span style="float: right;">INTEMPESTIF</span>	
9	BLOCAGE RETRO PASSAGER	
10	BLOCAGE RETRO CONDUCTEUR	
<b>POSTE DE CONDUITE (TEST2-G02*)</b> POUR REFAIRE TEST1 : TAPER G01* ET TOURNER LA FICHE (EFF.MEM : G0 * 4) (FIN DE DIAGNOSTIC : 013 * 1)		
CONTROLES POTENTIOMETRIQUES # : 01 LONGITUDINAL 02 REHAUSSE AVANT 03 APPUI TETE 04 DOSSIER 05 REHAUSSE ARRIERE 06 COLONNE DE DIRECTION 08 RETRO CONDUCTEUR G0 11 RETROVISEUR PASSAGER H4 12 RETROVISEUR PASSAGER H2		
11		
12	LONGITUDINAL <span style="float: right;">DOSSIER</span>	
13	REHAUSSE AV <span style="float: right;">REHAUSSE AR</span>	
14	APPUI TETE <span style="float: right;">COLONNE DIR</span>	
15	VEHICULE NON EQUIPE DE RETRO INTERIEUR ELECTRIQUE NE PAS TENIR COMPTE DES ALLUMAGES LIGNES 11/15/16	
16		
17	MOTEUR RETRO CONDUCTEUR <span style="float: right;">CIRC POTEN ↓</span>	
18	MOTEUR RETRO CONDUCTEUR <span style="float: right;">CIRC POTEN ↔</span>	
19	MOTEUR RETRO PASSAGER <span style="float: right;">CIRC POTEN ↓</span>	
20	MOTEUR RETRO PASSAGER <span style="float: right;">CIRC POTEN ↔</span>	
VOIR MANUEL DE REPARATION		
FRA		

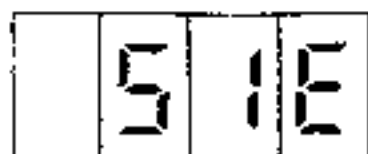
**FAULT FINDING (cont)**

System operation analysis using the XR25 and cassette n° 10.

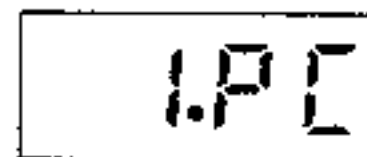
- Vehicle stationary, ignition on, on/off switch depressed

- Enter code **D 1 6**

- The central display shows :

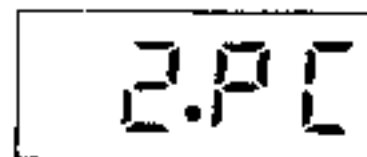


(1 second) then



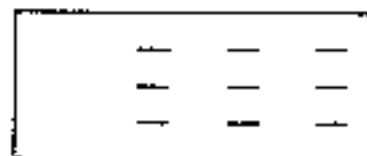
Test 1 driver position

or



Test 2 driver position

or



Shows dialogue has not been established.

**TEST 1**

Check computer feed and input information

Check keys and controls for adjustable elements of driver position system

**TEST 2**

Check faults on motors and potentiometers for adjustable elements of driver position system

After TEST 1, to go to TEST 2, enter **G02\*** then turn the fiche over.

After TEST 2, to go to TEST 1, enter **G01\*** then turn the fiche over.

For complete accurate testing, begin with **TEST 1**

## FAULT FINDING (cont)

## TEST 1 and TEST 2



Code present  
Illuminated: correct

If extinguished after entering D16, there is a communication fault between the XR25 and the computer

Check:

- the diagnostic socket to computer connection,
- continuity between track 12 (green connector) for the computer and track 10 for the diagnostic socket across the shunt unit and connection R150 (front LH wing /passenger compartment),
- continuity between track 13 (green connector) for the computer and track 11 for the diagnostic socket across the shunt unit and connection R150 (front LH wing /passenger compartment),
- the voltage on track 6 of the diagnostic socket,
- the presence of earth on track 2 of the diagnostic socket
- the computer feeds (+ before ignition, + after ignition, earth).

See connections, pages 88-20 and 88-21.



Identification of the test :

- the display shows



1.PC

Extinguished: start of TEST 1

Flashing: turn fiche to side 2.PC

Fixed: TEST 1 running (TEST 2 remaining)

- the display shows



2.PC

Extinguished: start of TEST 1, turn the fiche to side 1.PC












Flashing: TEST 2 running

Fixed : enter G02\* to run TEST 2










**FAULT FINDING (cont)**

**TEST 1 only**

2		<p>Illuminated: feed voltage too low.</p> <p>Check the battery condition and voltage</p> <p>Recharge if necessary and carry out test again</p>
2		<p>Illuminated when + after ignition present</p>
3		<p>Illuminated when reverse gear engaged</p>
3		<p>Illuminated when on/off switch is depressed</p>
4		<p>Illuminated when driver's door open</p>
4		<p>Illuminated when + accessories present</p>
5		<p>Illuminated when infra red remote control is used to unlock doors</p>
6		<p>Illuminated.</p> <p>Fault in rear view mirror control on driver's door arm rest (fault present before connection of XR 25)</p>
7		<p>Illuminated when driver's rear view mirror is selected and controlled</p>
7		<p>Illuminated when passenger's rear view mirror is selected and controlled</p>
9 10		<p>Illuminated when rear view mirror is moved depending on side (driver or passenger mirror).</p>






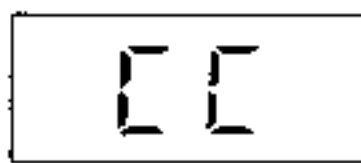
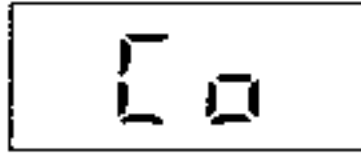
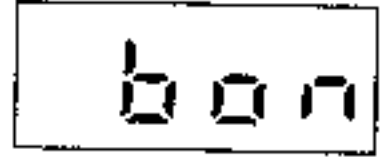
FAULT FINDING (cont)

TEST 1 only

<p>11 12 13  14 15 16</p>	<p>Illuminated when adjustable element controls are activated depending on side in question.</p>
<p>17 </p>	<p>Illuminated when selection key "1" is pressed.</p>
<p>18 </p>	<p>Illuminated when selection key "2" is pressed.</p>
<p>19 </p>	<p>Illuminated when selection key "3" is pressed.</p>
<p>17  18  19 </p>	<p>Illuminated when Memo key pressed</p>

FAULT FINDING (cont)

TEST 2 only

<p>3 4 5 6 7 8</p> 	<p>Fault with corresponding movement during a recall of a set of adjustments, stored under one of the selection keys. Illuminated on the left : blocked (seat, head restraint, steering column) Illuminated on the right : unwanted movement (movement occurred at the same time as another movement)</p>
<p>9 10</p> 	<p>Illuminated when passenger rear view mirror blocked. Illuminated when driver rear view mirror blocked.</p>
<p>12 13 14</p> 	<p>Illuminated for corresponding potentiometer circuit (seat, head restraint, steering column). If illuminated, see additional tests # {...%}</p>
<p>17 18 19 20</p> 	<p>Illuminated for corresponding potentiometer circuit (driver or passenger rear view mirror). If illuminated, see additional tests # {...%}</p>
<p>17 18 19 20</p> 	<p>Illuminated for corresponding motor fault. If illuminated enter * and number of bar graph concerned</p> <p>On display :</p> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">  </div> <span>= motor feed short circuit</span> </div> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">  </div> <span>= motor feed cut</span> </div> <p><b>NOTE :</b> if * is entered on the keyboard and the bar graph number (17 or 18 or 19 or 20) and there is no bar graph illuminated, the display shows :</p> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-left: 20px;">  </div>

**IMPORTANT :** FOR VEHICLES NOT FITTED WITH INTERIOR ELECTRICAL REAR VIEW MIRRORS, DISREGARD BAR GRAPHS 11 - 15 - 16.

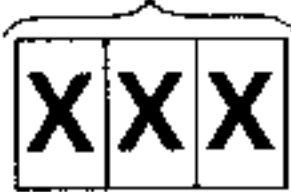


Vehicle fitted with electrical position memory control head restraint only

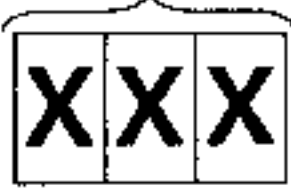
**ADDITIONAL TESTS**

In TEST 2, enter :


# 0 1 → Seat position potentiometer value (in %)



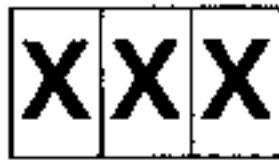
# 0 6 → Steering column position potentiometer value





# 0 2 → Front squab cushion potentiometer value




# 0 9 → Driver mirror up/down potentiometer position




# 0 3 → Head restraint potentiometer value 




# 1 0 → Driver mirror left/right potentiometer position




# 0 4 → Seatback potentiometer value



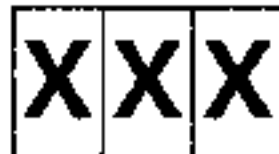
# 1 1 → Passenger mirror up/down potentiometer position



# 0 5 → Rear squab cushion potentiometer value



# 1 2 → Passenger mirror left/right potentiometer position



These tests allow the potentiometer values to be displayed after one or more of the potentiometer fault bar graphs has illuminated, by moving each control in the manual adjustment mode, by brief action on the switch in question, check the percentage variation for the potentiometer/s in question.

This variation should be seen without cut out, as an increase or decrease depending on the direction of movement for all potentiometers.

At the end of TEST 2, erase the computer memory (see following page).

**ERASING THE MEMORY WITH CASSETTE N° 10**

Connect the XR25 to the vehicle's diagnostic socket

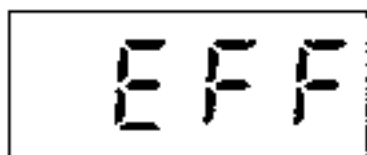
Put the selector on position 58.

Turn the ignition on but do not start the engine.

Enter the drivers position memory code **D 1 6**

Enter : **G 0 \***

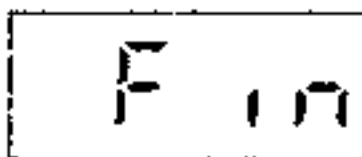
The display shows :



Validate the erase request by pressing



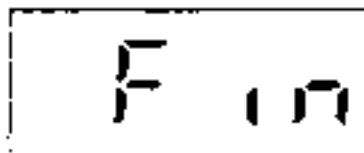
The display then shows :



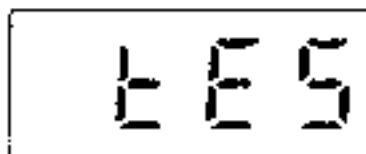
The memory is erased.

Validate the end of the test : **4 1 3 \***

The display shows :

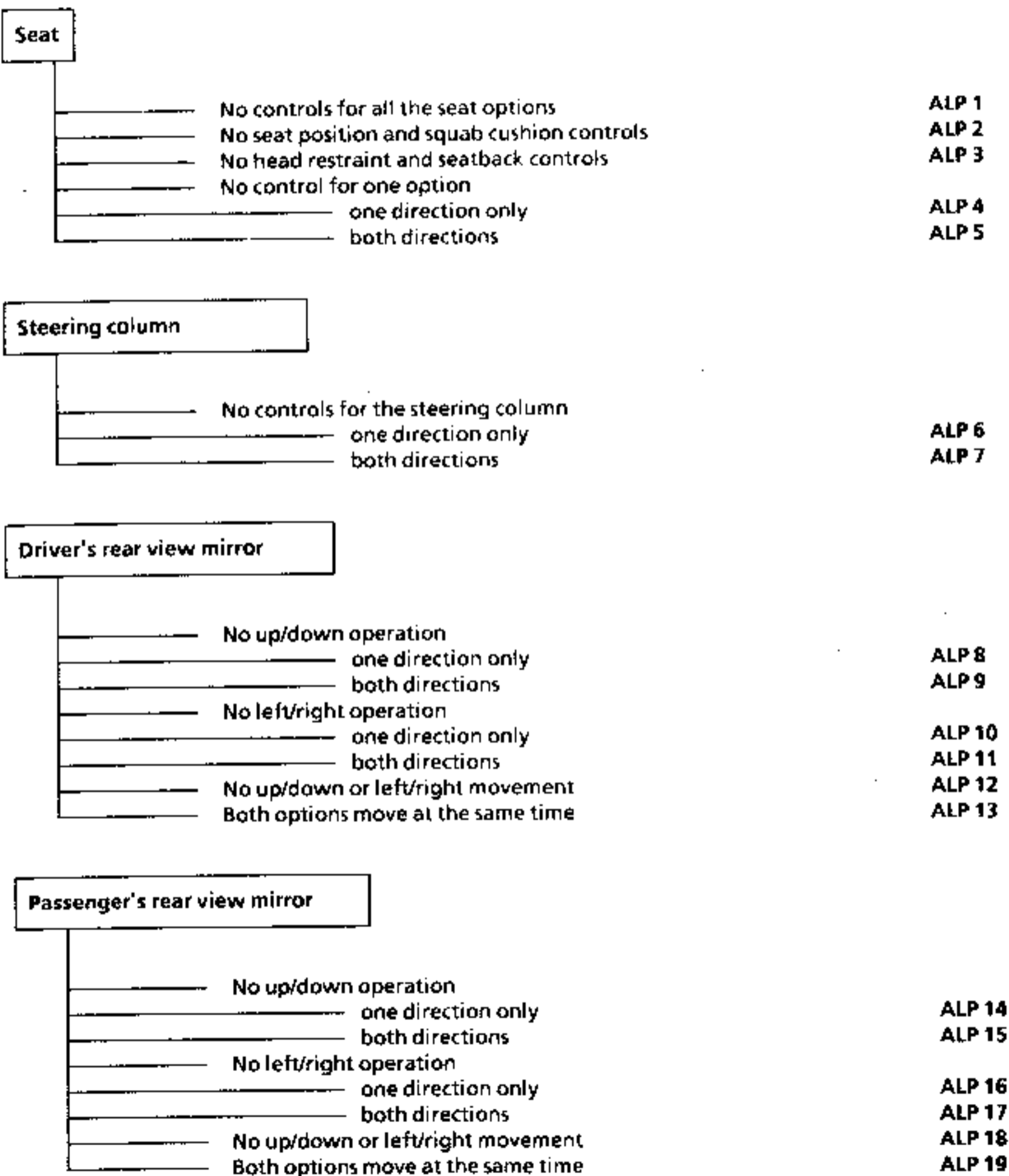


Then:



**FAULT CHART**

**I - PROBLEMS IN MANUAL OPERATION MODE**



**FAULT CHART**

**I - PROBLEMS IN MANUAL OPERATION MODE**

**Both rear view mirrors**

- \_\_\_\_\_ No operation for both movements (left and right and up and down) **ALP 20**
- \_\_\_\_\_ No operation for one movement (left or right) and (up or down) **ALP 21**

**General system fault**

- \_\_\_\_\_ Seat - steering column - rear view mirrors **ALP 22**

**Slow movement on one option (Seat - steering column - rear view mirrors) and additional movement on another option (Seat - steering column - rear view mirrors)**

- \_\_\_\_\_ Slow movement on one option (seat or steering column) and additional movement on another option **ALP 23**
- \_\_\_\_\_ Slow movement for one rear view mirror and additional movement on another option **ALP 24**

**FAULT CHART**

**II - PROBLEMS IN AUTOMATIC OPERATION MODE**

- No recall for 4 seat movements and head restraint **ALP 25**
- No recall for 4 seat movements **ALP 26**
- No recall for head restraint **ALP 27**
- No recall for steering column **ALP 28**
- No recall for 2 rear view mirrors **ALP 29**
- No recall for driver's mirror  
(one or several movements) **ALP 30**
- No recall for passenger mirror  
(one or several movements) **ALP 31**
- No recall for :  
seat, head restraint, steering column **ALP 32**
- No recall for :  
seat, head restraint, steering column and rear view mirrors **ALP 33**
- No recall for one stored position  
(1, 2 or 3) **ALP 34**
- Memorising impossible **ALP 35**
- No pulse recall **ALP 36**
- Passenger mirror does not move in reverse gear **ALP 37**
- Incorrect recall of stored position  
(one or more movements) **ALP 38**



MANUAL OPERATION MODE

Seat faults

**ALP 1 : No controls for all the seat options**

Connect the XR 25, enter code D16 (S8). Test 1.  
Check seat control button operation  
Condition of bar graphs 11 to 15 left and right hand sides. Is this operation correct ?

Check the control button common earth wire :  
- Between wire joint\* and passenger compartment / seat connector, black module track B1.  
- Between passenger compartment / seat connector, black module track B1 and shunt unit (track A5 for earth on front LH pillar).  
Repair the wiring.

\* Earth wire joint.

Check the 25 A seat fuse, connection and condition of passenger compartment / seat connector under driver's seat (white module).  
Repair if necessary.  
Does the fault persist ?

Correct

Check continuity of black common motor wire between one of motors (except seatback), marking see page 88-81 and white module (track A2) and passenger compartment / seat connector.  
Is this correct ?

Check the wire joint and common motor wire between white module (track A2) and the wire joint.  
Repair electric wiring.

Check continuity between white connector, white module track A2 and computer (track B4 white connector).  
Repair if necessary.  
Does the fault persist ?

Correct

Replace the computer

yes

no

no

no

no

yes

yes

MANUAL OPERATION MODE

Seat faults

ALP 2 : No seat position and squab cushion controls

Connect the XR 25,  
enter code D16 (S8). Test 1.  
Check seat control button operation.  
Condition of bar graphs 11 right and left,  
13 and 14 right and left hand sides. Is this  
operation correct ?

Check earth wire common to seat position  
and squab cushions between seat switch  
track 5 and earth wire joint in seat.  
Repair

yes

Check if seatback and head restraint  
operate correctly.  
Is this correct?

See ALP 1.

yes

Check connection of common motor wire  
(seat position and squab cushions)  
with wire joint.  
Repair.

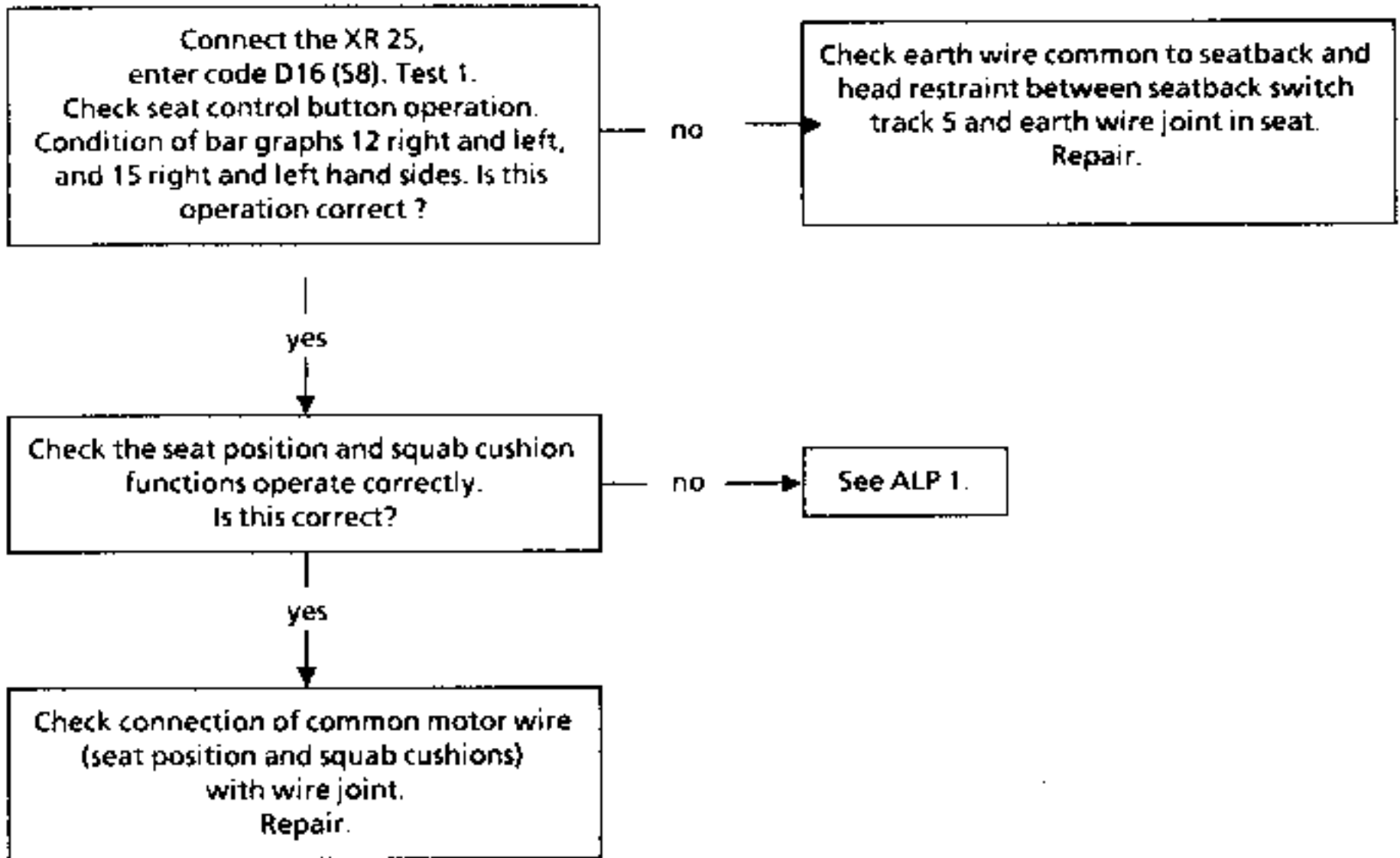
no

no

MANUAL OPERATION MODE

Seat faults

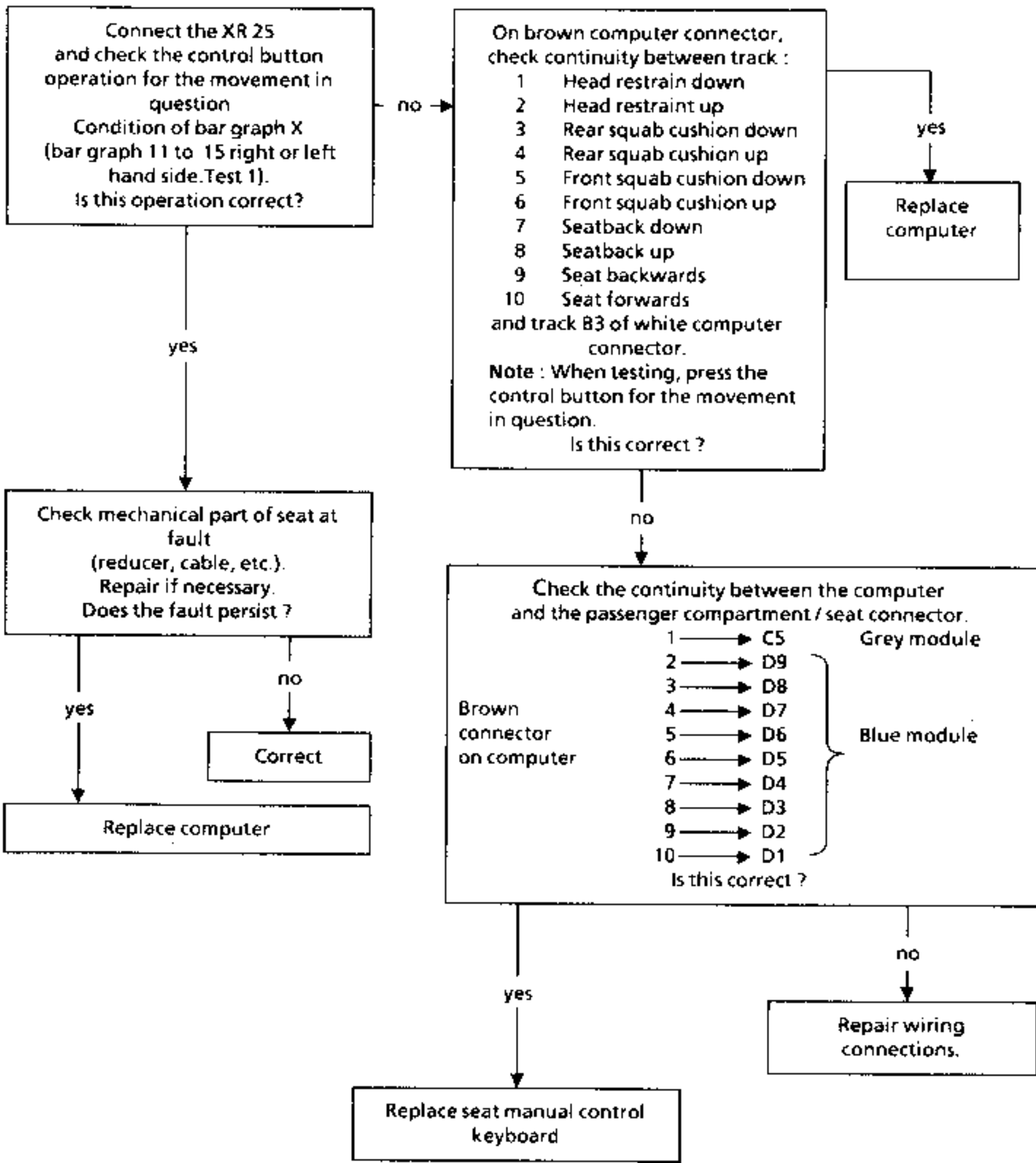
ALP 3 : No head restraint and seatback controls



MANUAL OPERATION MODE

Seat faults

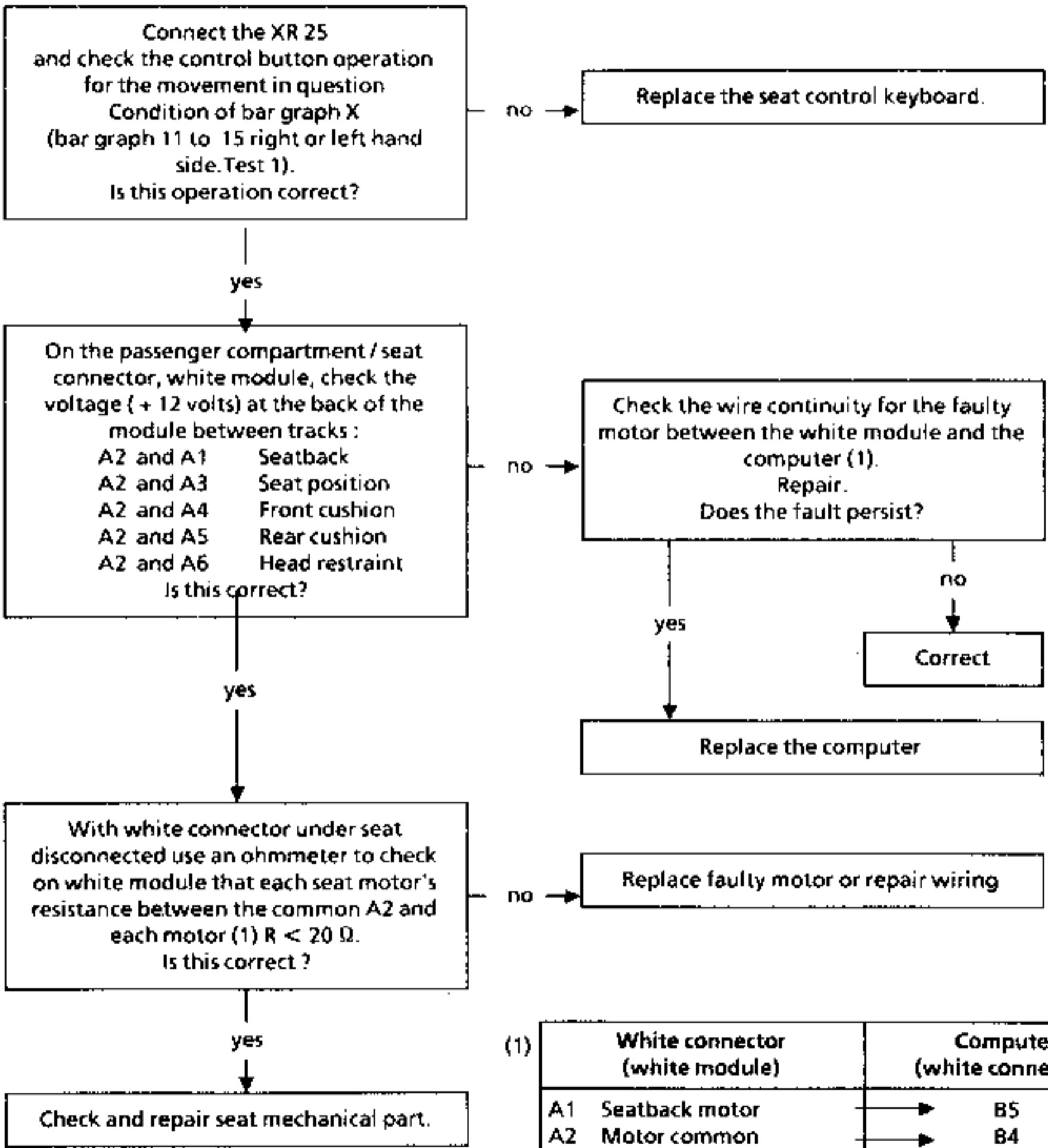
**ALP 4 : No control for one option in one direction only**



MANUAL OPERATION MODE

Seat faults

ALP 5 : No control for one option in both directions



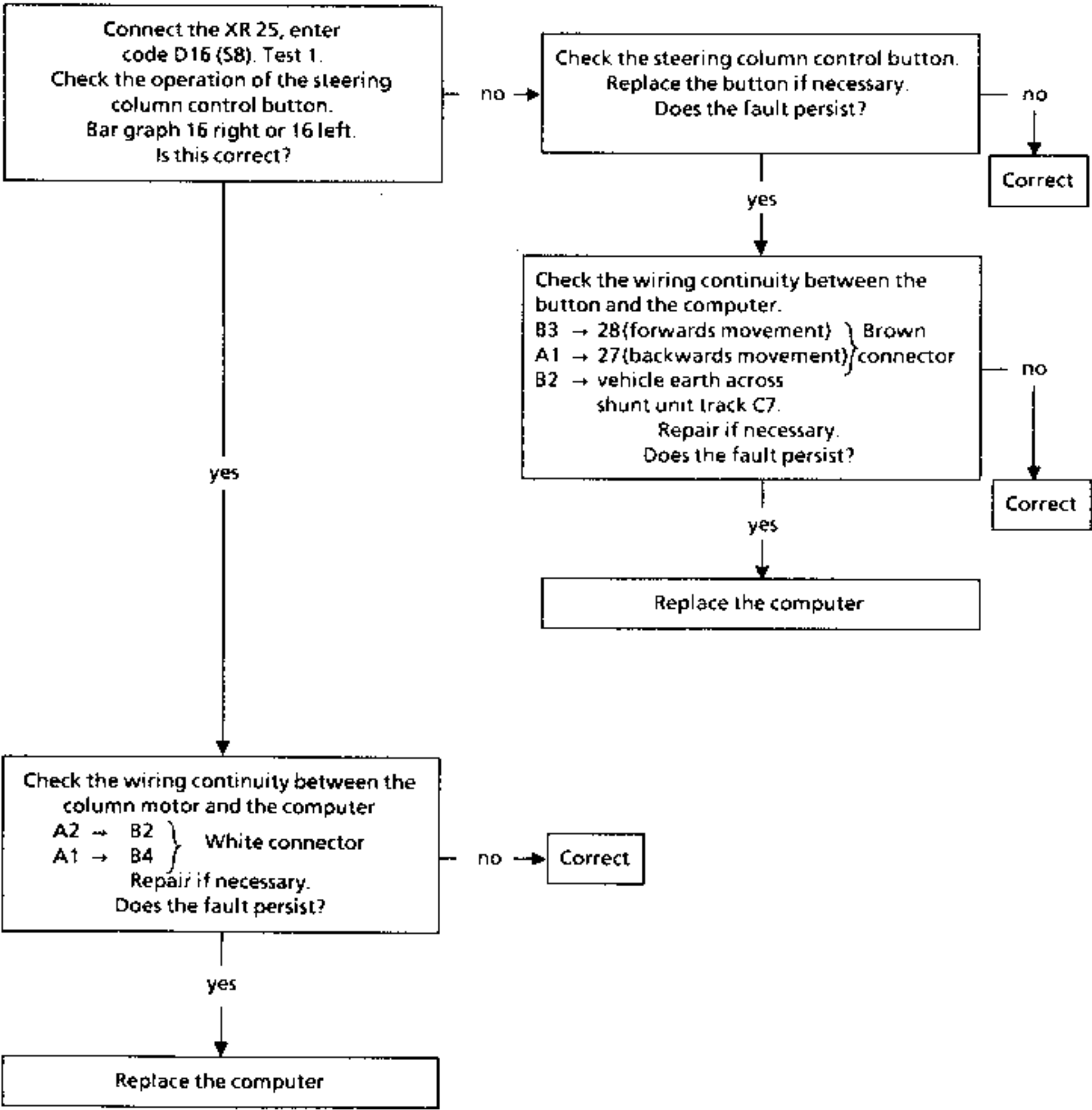
(1)

White connector (white module)	Computer (white connector)
A1 Seatback motor	B5
A2 Motor common	B4
A3 Seat position motor	A1
A4 Front squab cushion motor	A5
A5 Rear squab cushion motor	B1
A6 Head restraint motor	A4

MANUAL OPERATION MODE

Steering column faults

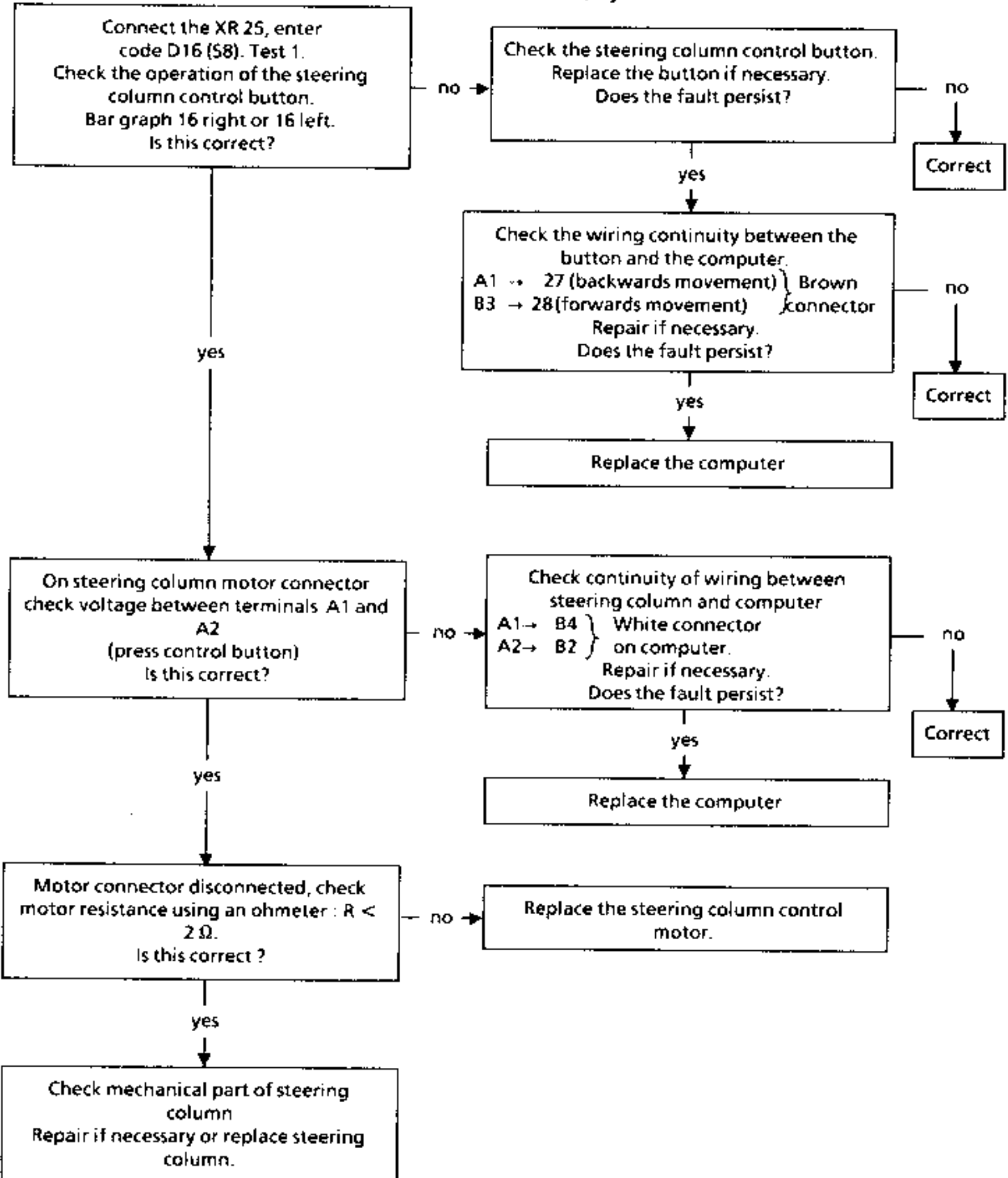
ALP 6 : No controls for the steering column in one direction only



MANUAL OPERATION MODE

Steering column faults

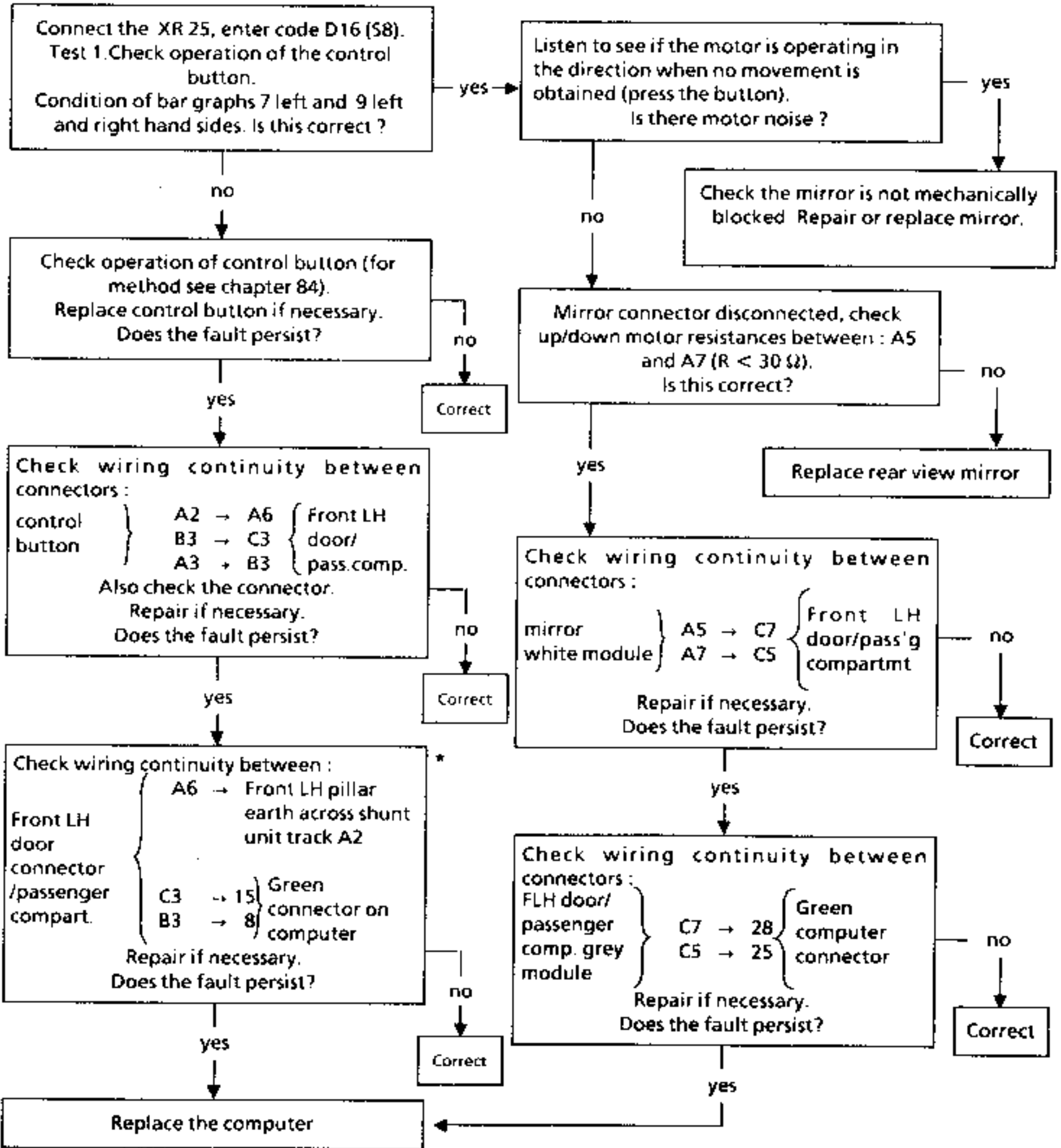
ALP 7 : No controls for the steering column in both directions only



MANUAL OPERATION MODE

Driver's rear view mirror fault

**ALP 8 : No up/down operation in one direction only**



\* Note : the front left hand door / passenger compartment connector has 5 modules, colour coded for memorisation purposes: A = white, B = black, C = grey.



## MANUAL OPERATION MODE

## Driver's rear view mirror fault

ALP 9 : No up/down operation in both directions

Connect the XR 25, enter code D16 (58)  
Test 1 Check operation of the control  
button  
Condition of bar graphs 7 left and 9 left  
and right hand sides. Is this correct?

no

Check operation of control button (for  
method see chapter 84).  
Replace control button if necessary  
Does the fault persist?

no

Correct

yes

Check wire continuity between control  
button track A3 and front LH  
door/passenger compartment connector  
track B3. Repair if necessary  
Does the fault persist?

no

Correct

yes

Check wire continuity between front left  
hand door/passenger compartment  
connector (black module) track  
B3 and computer (green connector)  
track 8.  
Repair if necessary.  
Does the fault persist?

no

Correct

yes

Replace the computer

Is bar graph 17 left illuminated on XR25?  
Test 2.

no

With mirror connector disconnected,  
check up/down motor resistance  
between tracks A5 and A7  
( $R < 30 \Omega$ ). Is this correct?

no

Replace  
mirror

yes

Replace computer.

yes

(1)

no

With mirror connector disconnected,  
check up/down motor resistance between  
tracks A5 and A7  
( $R < 30 \Omega$ ). Is this correct?

yes

Check continuity and insulation of wires  
between connectors :

mirror white module	A5 → C7	FLH door/ passenger compart.
	A7 → C5	

Repair if necessary.  
Does the fault persist?

no

Correct

yes

Check continuity and insulation of wires  
between connectors :

FLH door/ passenger compart. grey module	C7 → 28	Computer green connector
	C5 → 25	

Repair if necessary.  
Does the fault persist?

no

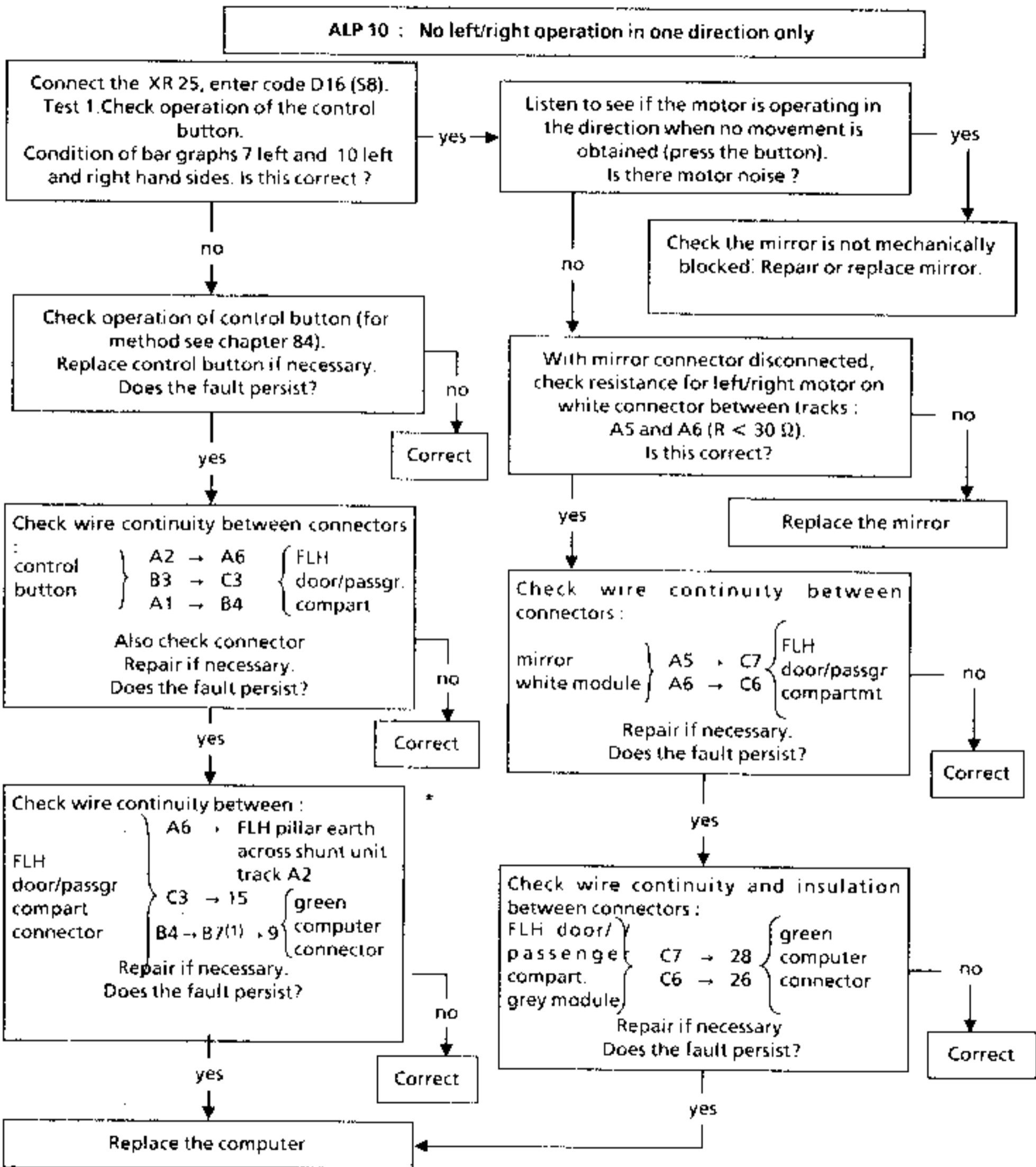
Correct

yes

(1) Enter \*17 on XR25 to discover  
fault type  
CC : short circuit  
CO : open circuit

MANUAL OPERATION MODE

Driver's rear view mirror fault



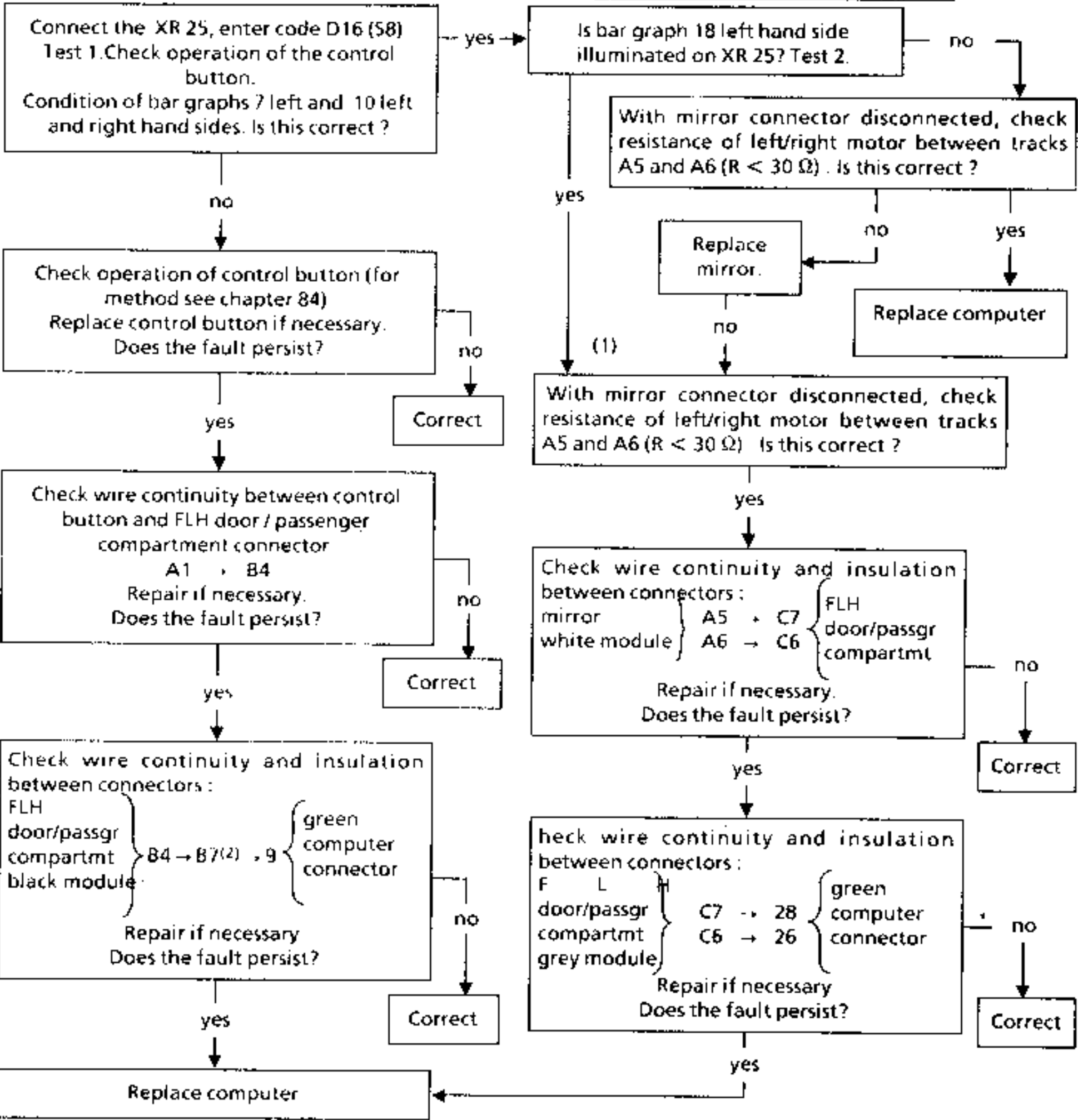
(1) intermediate wire connection on black module of seat/passenger compartment connector (under driver's seat).

\* Note : the FLH door/passenger compartment connector has 5 modules, colour coded for memorisation purposes : A = white, B = black, C = grey.

MANUAL OPERATION MODE

Driver's rear view mirror fault

ALP 11 : No left/right operation in both directions



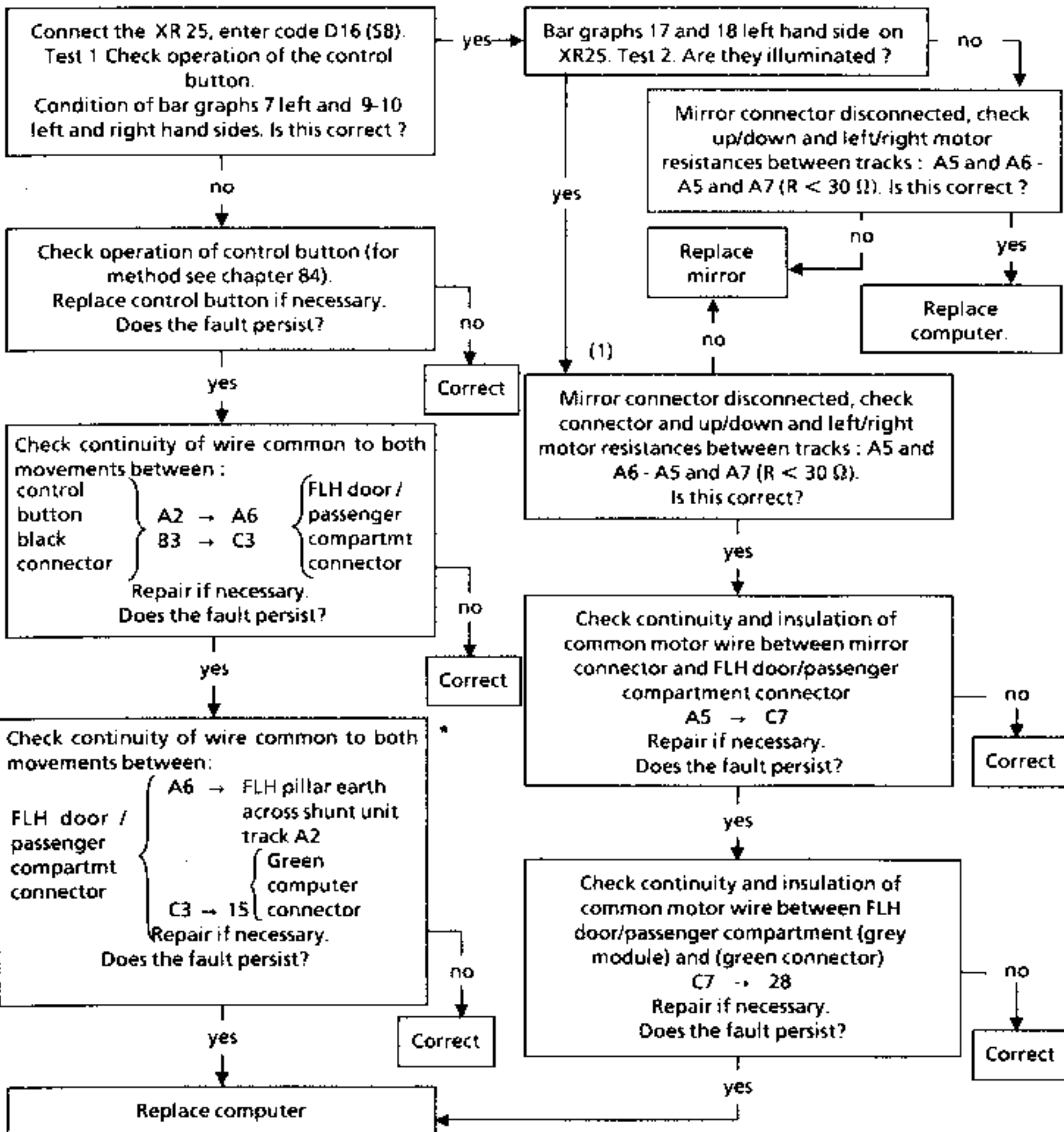
(1) Enter \*18 on XR25 to discover fault type  
 CC : short circuit  
 CO : open circuit

(2) intermediate wire connection on black module of seat/passenger compartment connector (under driver's seat)

## MANUAL OPERATION MODE

## Driver's rear view mirror fault

ALP 12 : No up/down or left/right movement

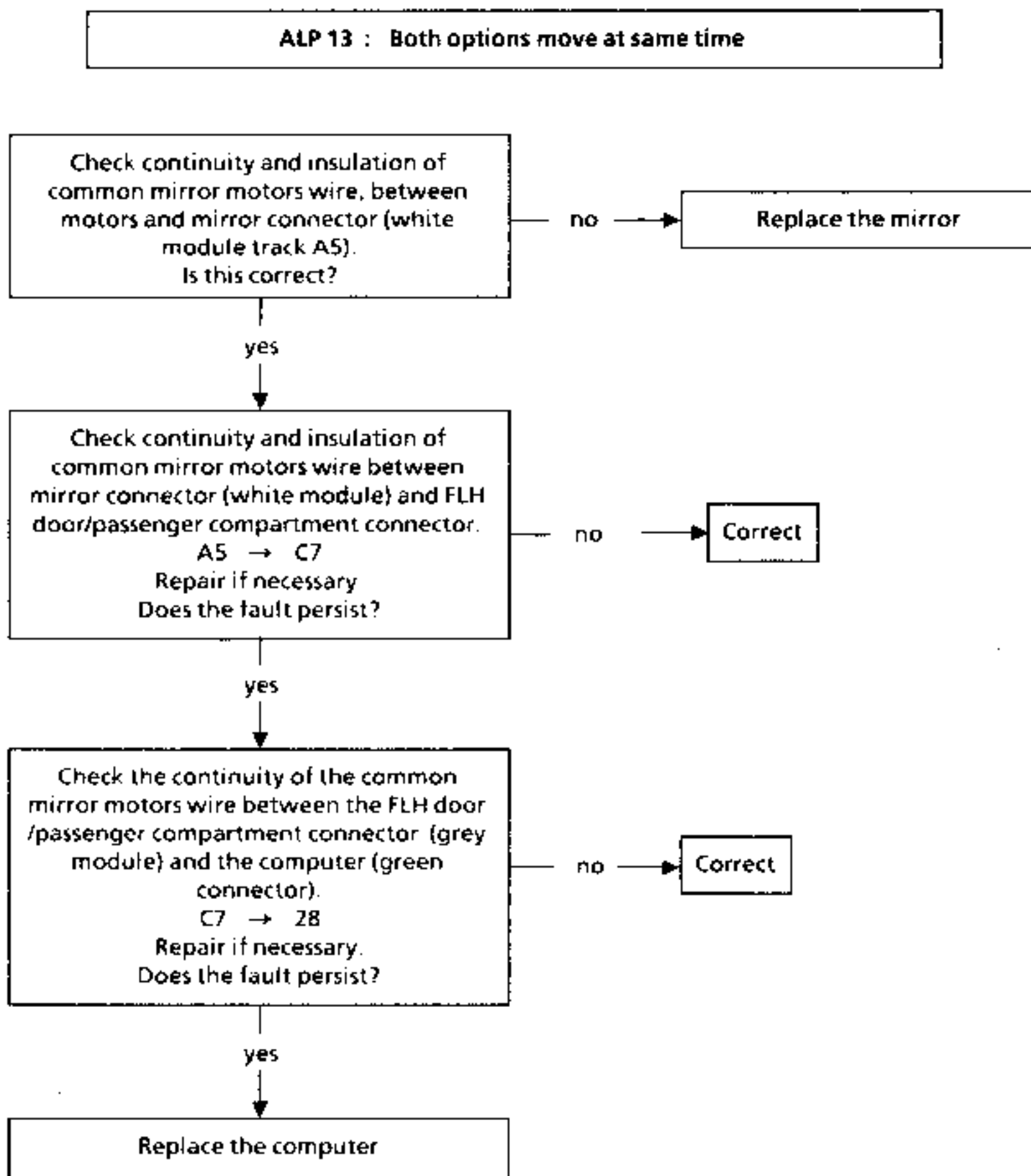


(1) Enter \*18 on XR25 to discover fault type  
 CC : short circuit  
 CO : open circuit

\* Note : the FLH door/passenger compartment connector has 5 modules, colour coded for memorisation purposes :  
 A = white, B = black, C = grey.

## MANUAL OPERATION MODE

## Driver's rear view mirror fault



## MANUAL OPERATION MODE

## Passenger's rear view mirror faults

ALP 14 : No up/down operation in one direction only

Connect the XR 25, enter code D16 (S8).  
Test 1 Check operation of the control button.  
Condition of bar graphs 7 left and 9 left and right hand sides. Is this correct?

no

Check operation of control button (for method see chapter 84).  
Replace control button if necessary.  
Does the fault persist?

yes

Check the continuity of wires between connectors:  
control button } A2 → A6 { FLH  
                          B3 → C3 { door/passgr.  
                          B2 → C2 { compart.

Repair if necessary  
Does the fault persist?

yes

Check wire continuity between:  
Black connector } A6 → FLH earth across shunt unit track  
FLH door/passgr. } C3 → 15 { Green computer connector  
compart. } C2 → B8<sup>(1)</sup> → 6 {

Repair if necessary  
Does the fault persist?

yes

Replace computer

Listen to see if the motor is operating in the direction when no movement is obtained (press the button).  
Is there motor noise?

yes

Check the mirror is not mechanically blocked. Repair or replace mirror.

no

Mirror connector disconnected, check up/down motor resistances between : A5 and A7 ( $R < 30 \Omega$ )  
Is this correct?

no

Replace the mirror

yes

Check the continuity of wires between connectors:  
mirror white module } A5 → C7 { FRH  
                                  A7 → C5 { door/passgr.  
  compart.

Repair if necessary  
Does the fault persist?

no

Correct

yes

Check wire continuity and insulation between connectors:  
FRH door/passenger } C7 → C7<sup>(2)</sup> → 28 { green computer connector  
compartmt grey module } C5 → 23 {

Repair if necessary  
Does the fault persist?

no

Correct

yes

\* Note : the front left hand door / passenger compartment connector has 5 modules, colour coded for memorisation purposes: A = white, B = black, C = grey.

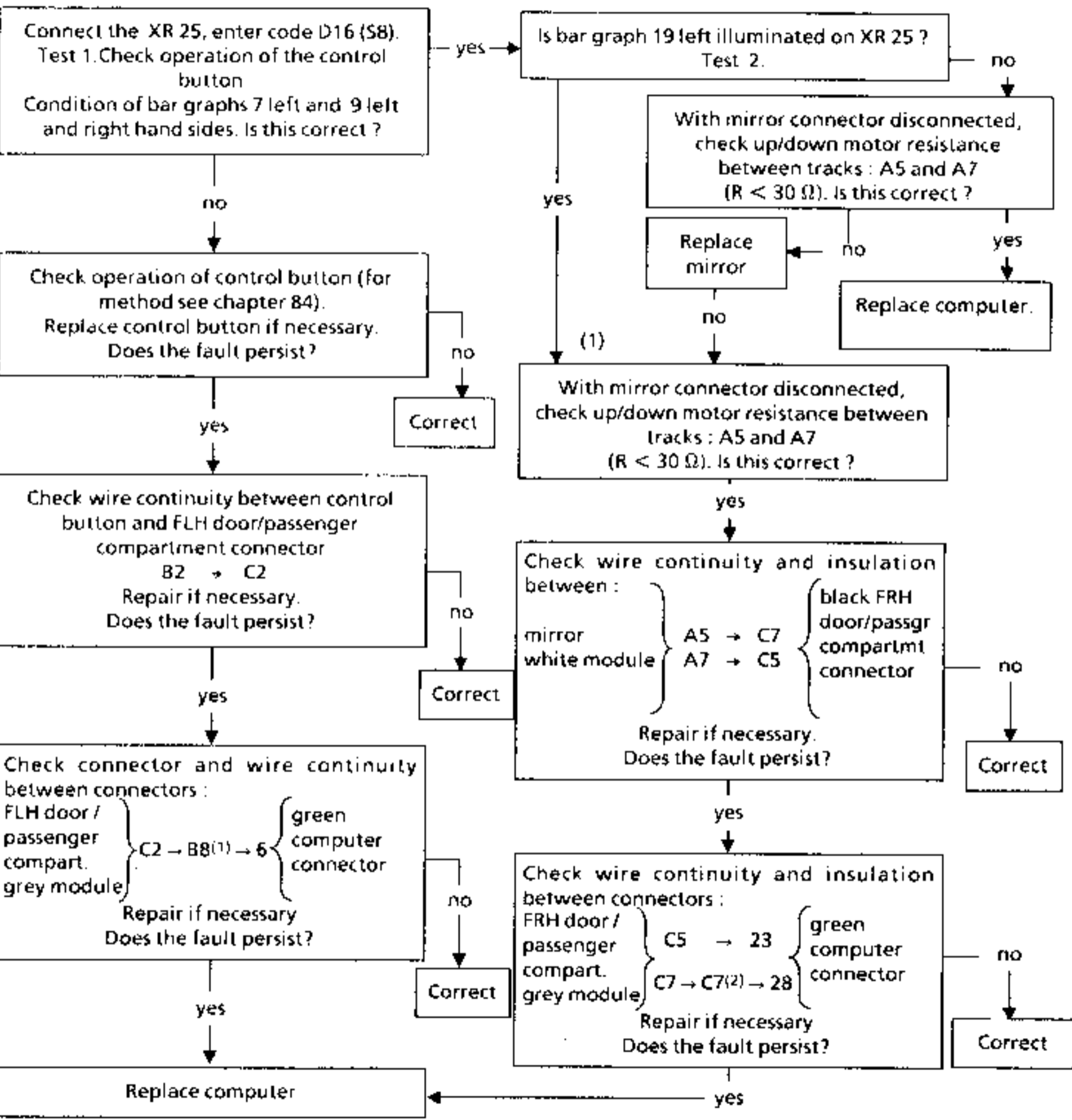
(1) intermediate wire connection on black module of connector under driver's seat

(2) intermediate wire connection on black connector for front left hand door (grey module)

MANUAL OPERATION MODE

Passenger's rear view mirror faults

ALP 15 : No up/down operation in both directions



(3) Enter \*19 on XR25 to discover fault type  
CC : short circuit  
CO : open circuit

(1) intermediate wire connection on black module of connector under driver's seat  
(2) intermediate wire connection on black connector for front left hand door/passenger compartment (grey module)

## MANUAL OPERATION MODE

## Passenger's rear view mirror faults

ALP 16 : No left/right operation in one direction only

Connect the XR 25, enter code D16 (S8).  
Test 1. Check operation of the control button.  
Condition of bar graphs 7 left and 10 left and right hand sides. Is this correct?

no

Check operation of control button (for method see chapter 84).  
Replace control button if necessary.  
Does the fault persist?

yes

Check wire continuity between:

control button	}	A2	→	A6	black FLH door/passgr compartment connector
		B3	→	C3	
		B1	→	C4	

Repair if necessary.  
Does the fault persist?

yes

Check wire continuity between:

black FLH door/passgr compartment connector	}	A6	→	FLH pillar earth across shunt unit track A2	
		C3	→	15	green computer connector
		C4	→	B5(1) → 7	

Repair if necessary.  
Does the fault persist?

yes

Replace computer

Listen to see if the motor is operating in the direction when no movement is obtained (press the button).  
Is there motor noise?

yes

Check the mirror is not mechanically blocked. Repair or replace mirror.

no

With mirror connector disconnected, check left/right motor resistance between tracks: A5 and A6  
( $R < 30 \Omega$ ) Is this correct?

no

Replace mirror

yes

Check wire continuity between:

mirror white module	}	A5	→	C7	FRH door/passgr compartment
		A6	→	C6	

Repair if necessary.  
Does the fault persist?

no

Correct

yes

Check wire continuity between connectors

F L H door/passgr compartment grey module	}	C6	→	24	green computer connector
		C7	→	C7(2) → 28	

Repair if necessary.  
Does the fault persist?

no

Correct

yes

Correct

\* Note: The front left hand door / passenger compartment connector has 5 modules, colour coded for memorisation purposes: A = white, B = black, C = grey.

(1) intermediate wire connection on black module of connector under driver's seat

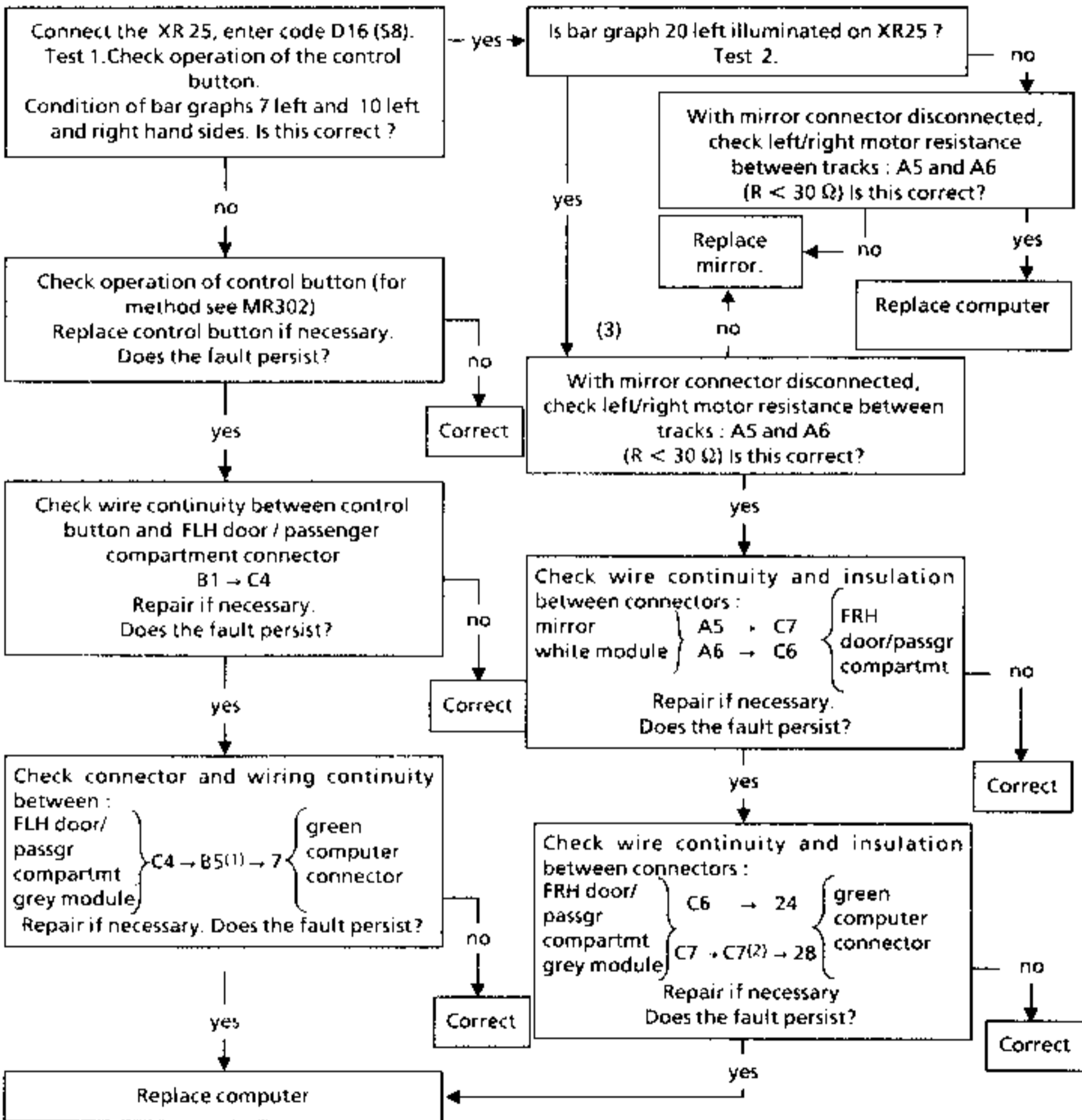
(2) intermediate wire connection on black connector for front left hand door (grey module)



MANUAL OPERATION MODE

Passenger's rear view mirror faults

ALP 17 : No left/right operation in both directions



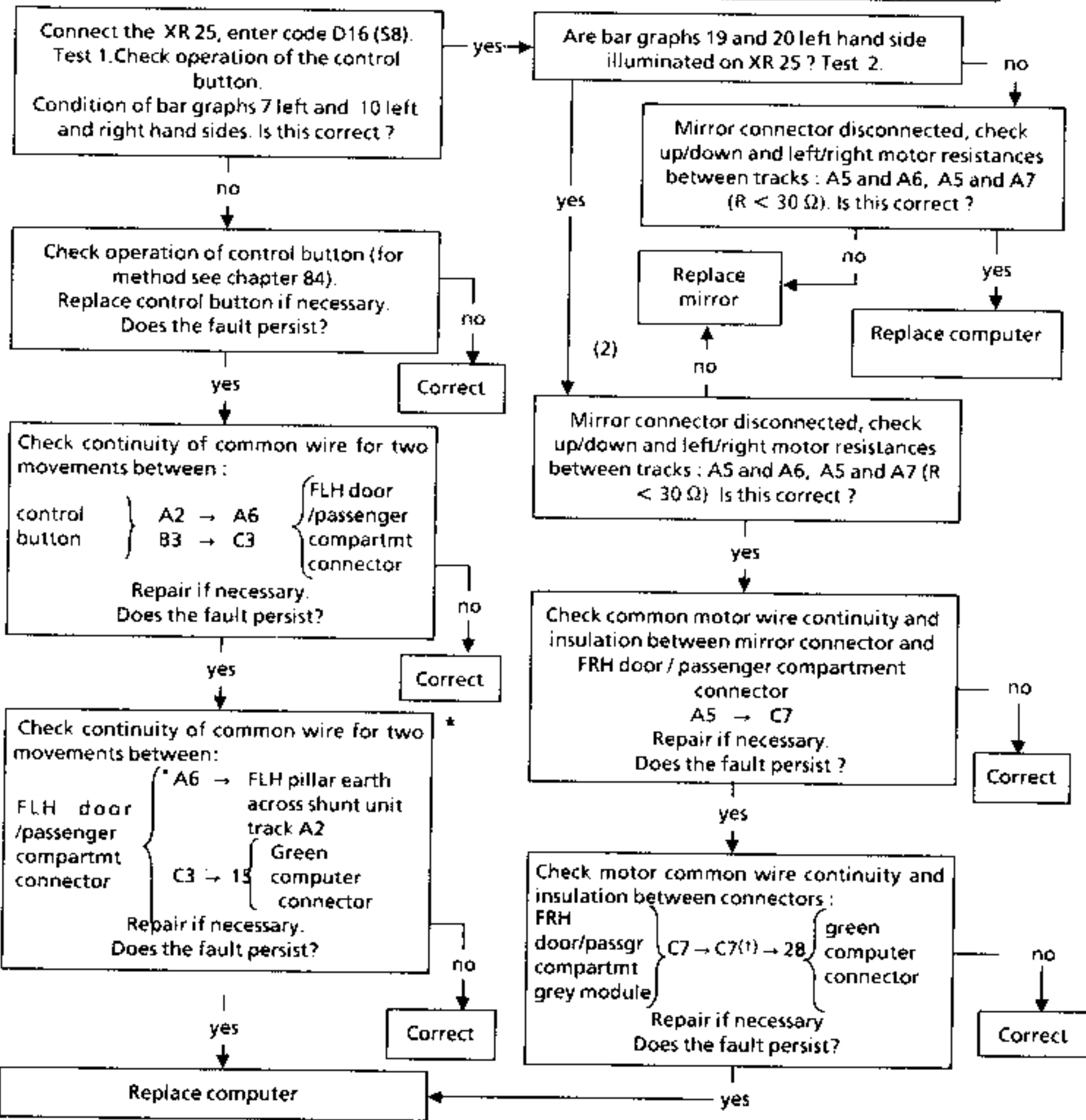
(1) Enter \*20 on XR25 to discover fault type  
CC : short circuit  
CO : open circuit

(1) intermediate wire connection on black module of connector under driver's seat  
(2) intermediate wire connection on black connector for front left hand door/passenger compartment (grey module)

MANUAL OPERATION MODE

Passenger's rear view mirror faults

ALP 18 : No up/down or left/right movement



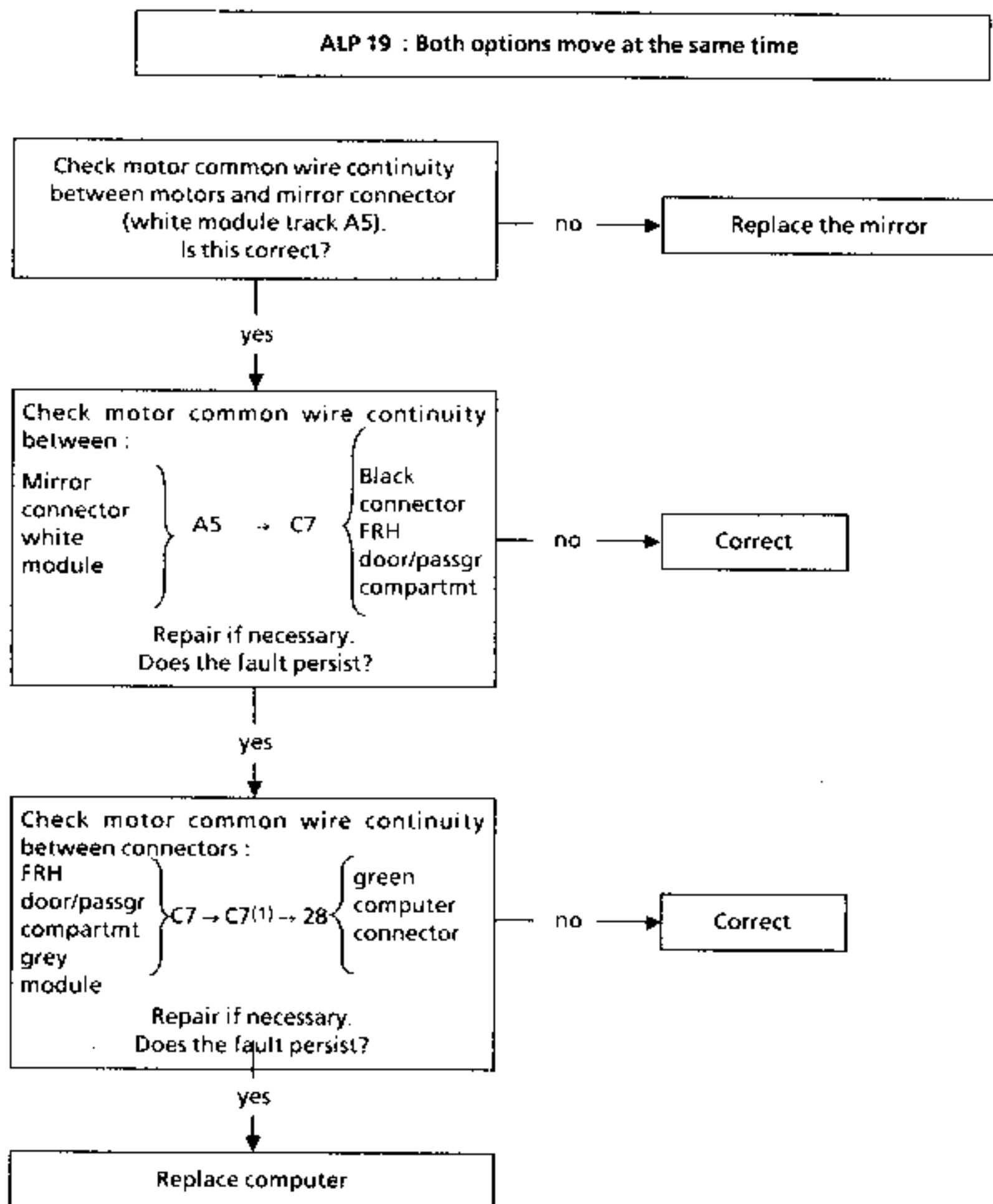
\* Note : the front left hand door / passenger compartment connector has 5 modules, colour coded for memorisation purposes: A = white, B = black, C = grey.

(1) intermediate wire connection on black connector for front left hand door (grey module)

(1) Enter \*19 and 20 on XR25 to discover fault type  
CC : short circuit  
CO : open circuit

MANUAL OPERATION MODE

passenger's rear view mirror faults

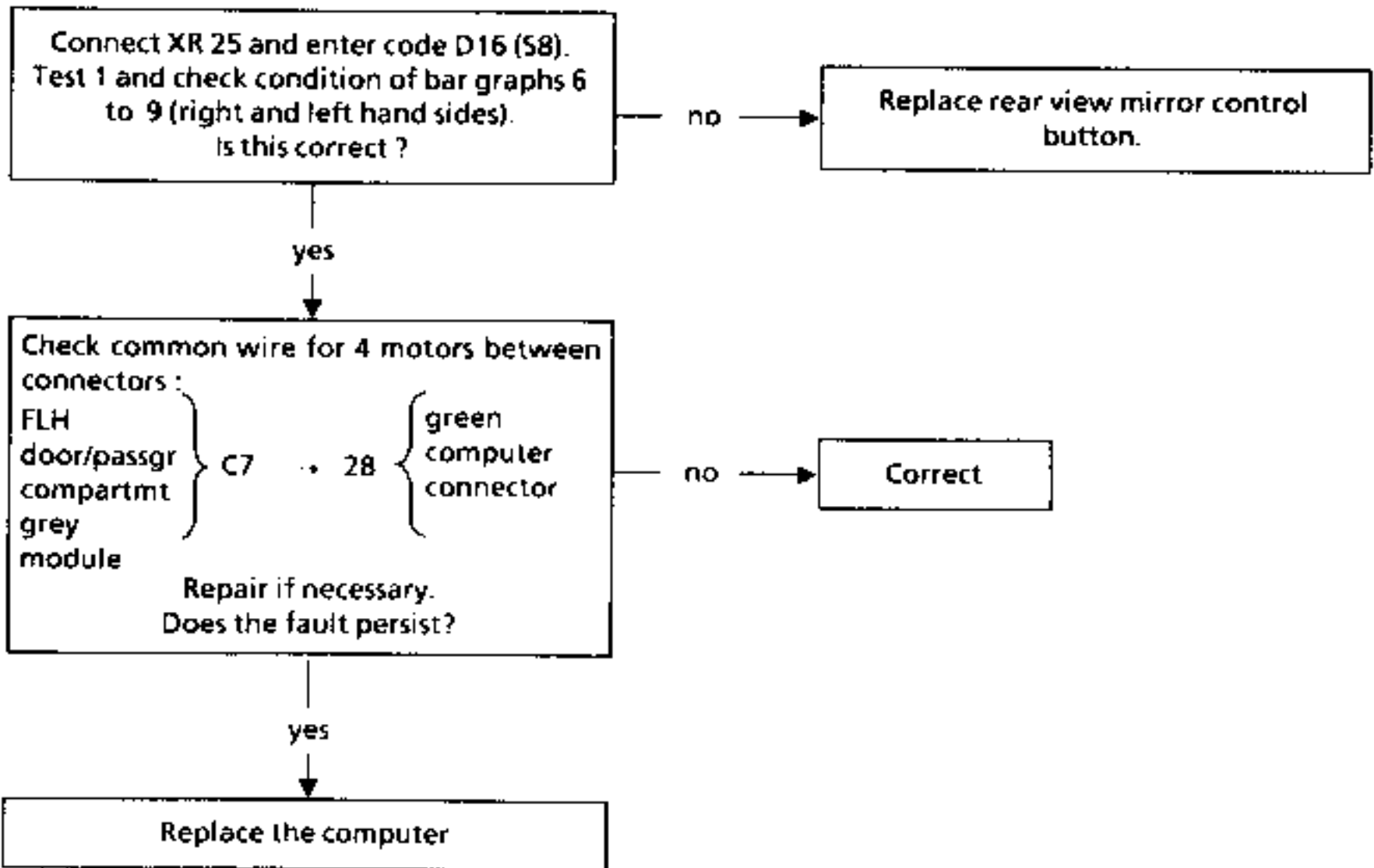


(1) Intermediate wire connection on black front left hand door / passenger compartment connector (grey module).

MANUAL OPERATION MODE

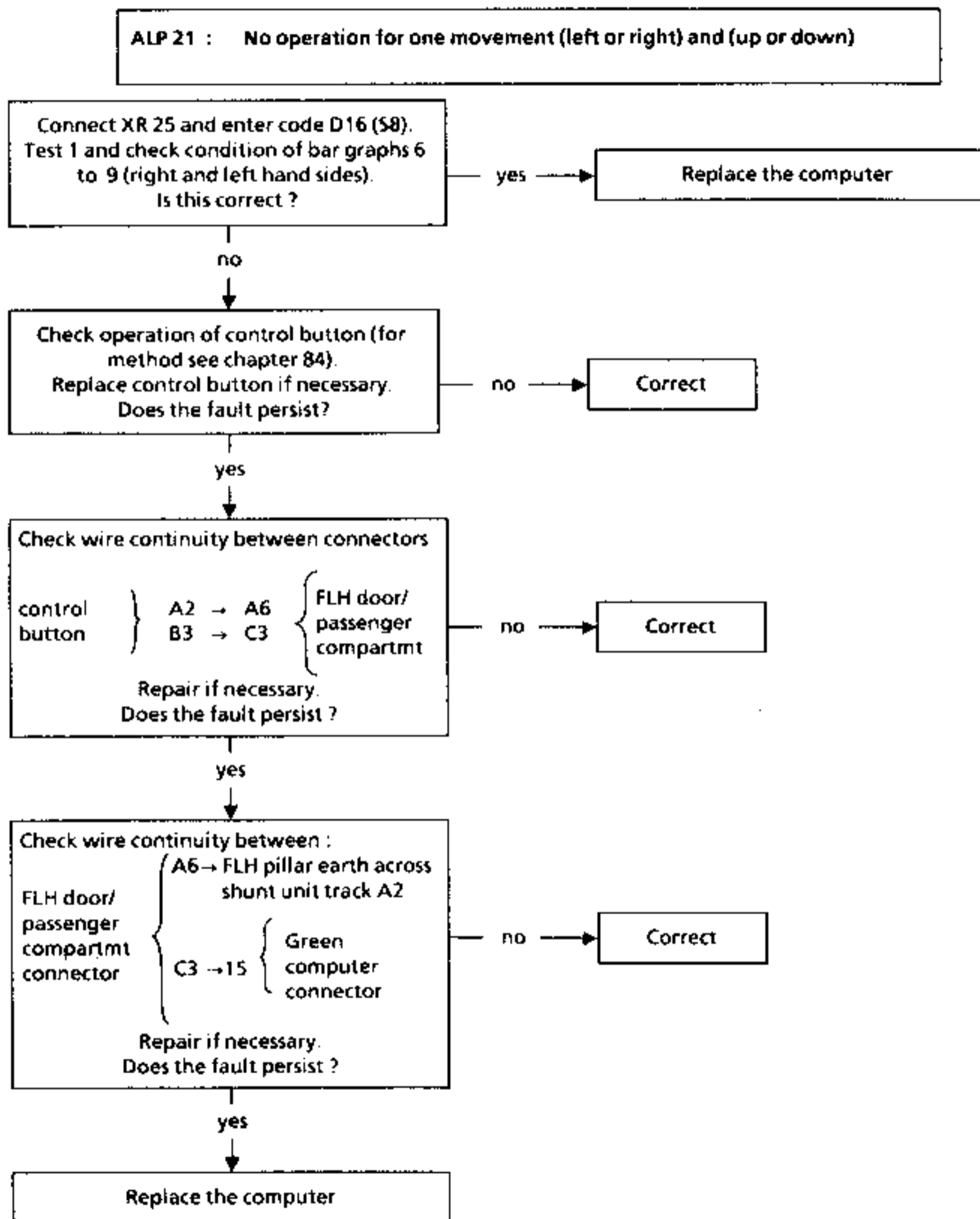
Fault with both rear view mirrors

ALP 20 : No operation for both movements (right and left and up and down)



MANUAL OPERATION MODE

Fault with both rear view mirrors

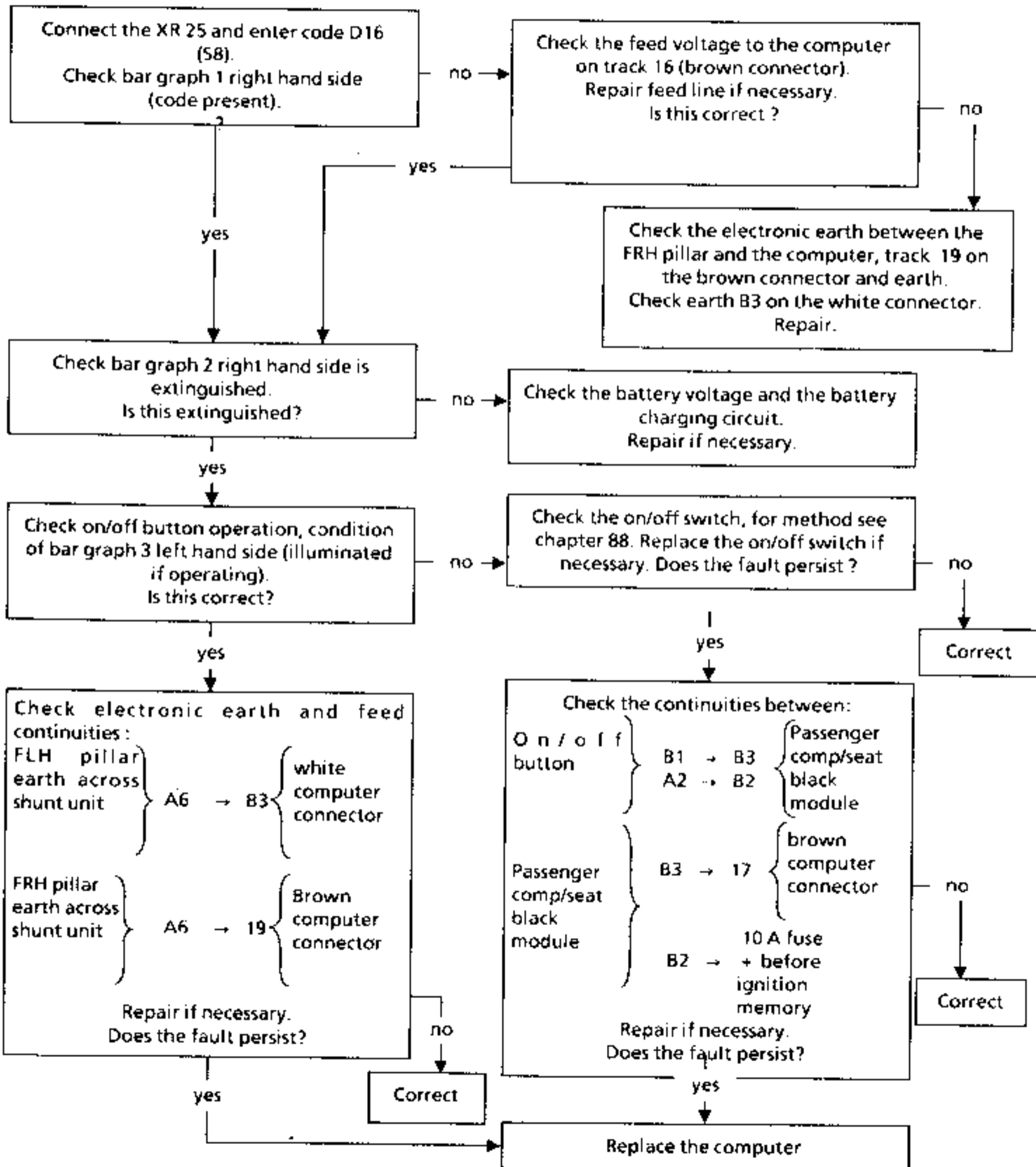


\* Note : the front left hand door / passenger compartment connector has 5 modules, colour coded for memorisation purposes: A = white, B = black, C = grey.

MANUAL OPERATION MODE

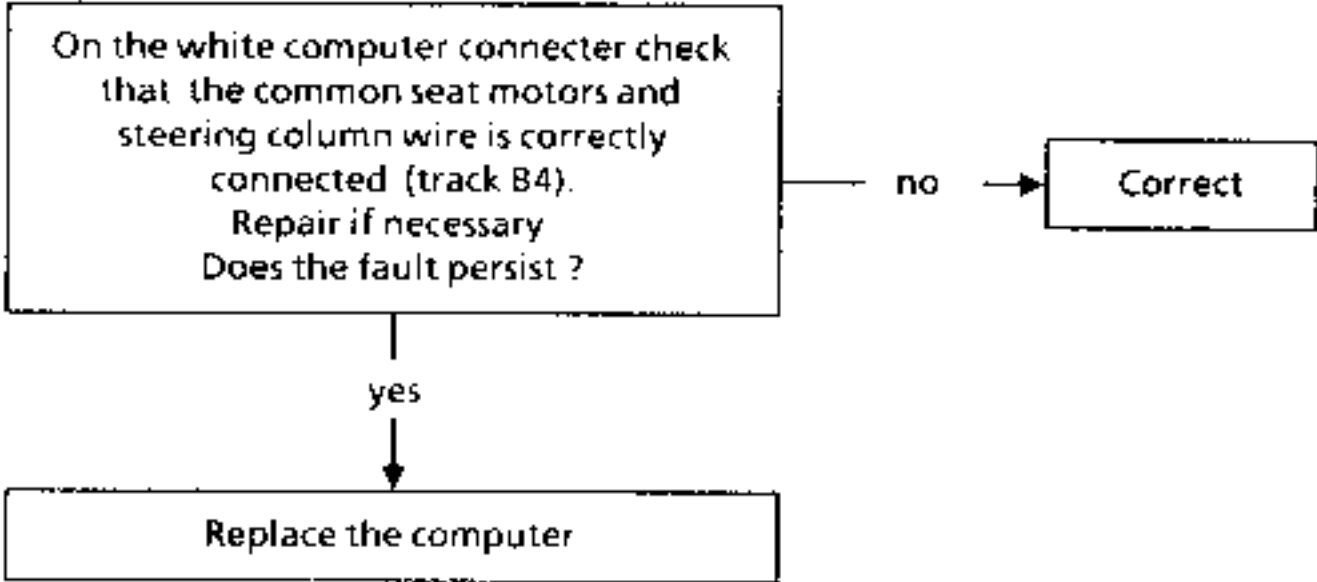
General system fault

ALP 22 : Seat - steering column - rear view mirrors



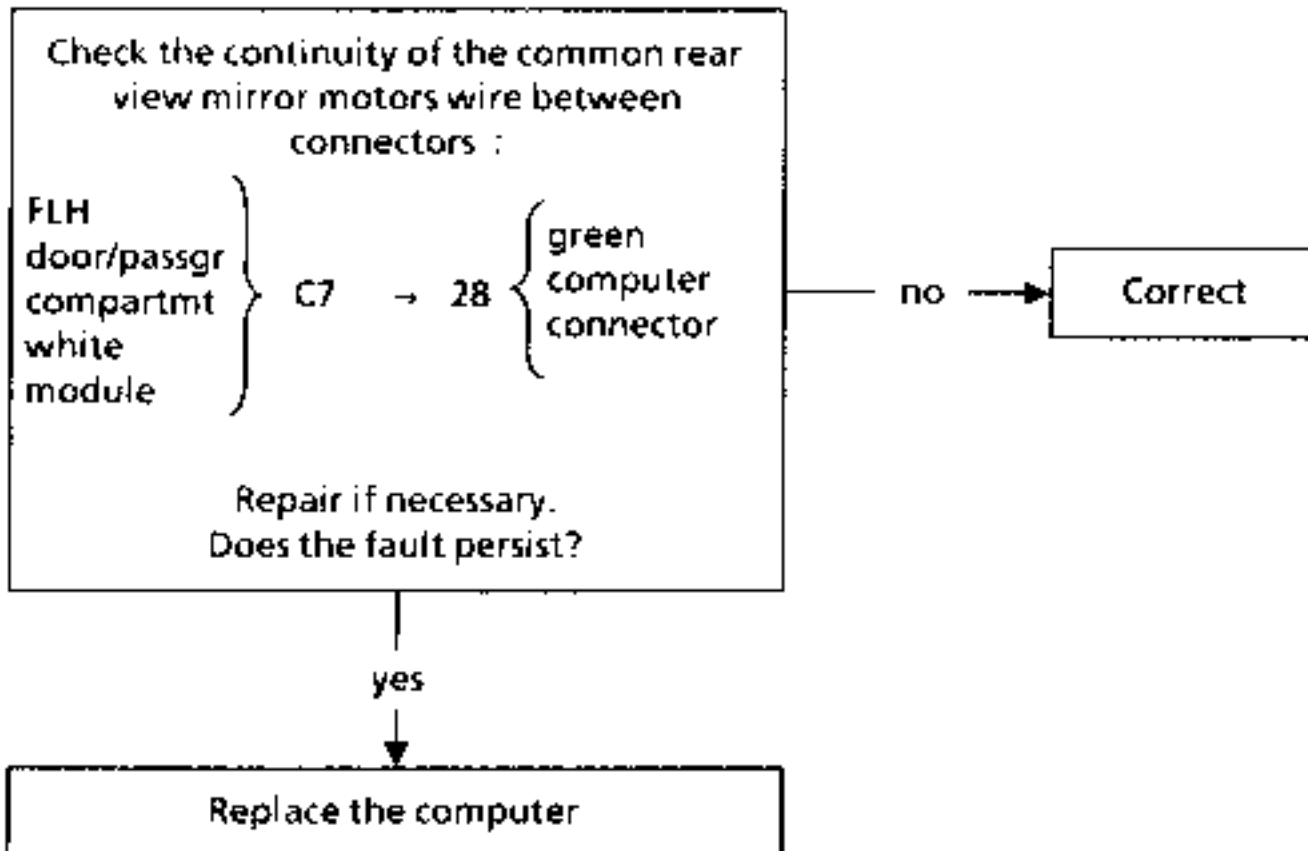
MANUAL OPERATION MODE

ALP 23 : Slow movement on one option (seat or steering column) with additional movement on another option.



MANUAL OPERATION MODE

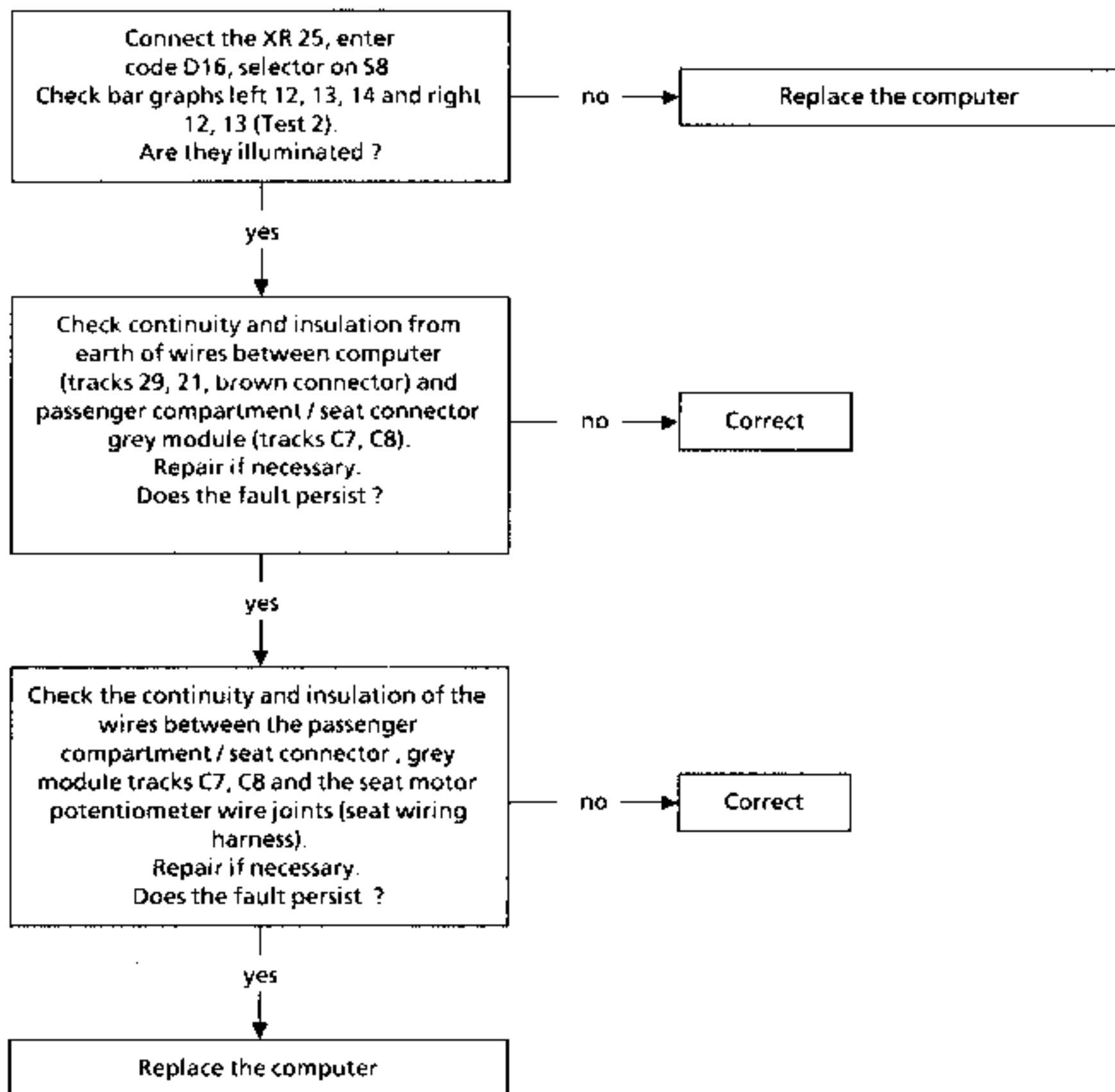
ALP 24 : Slow movement for one rear view mirror and additional movement on another option





AUTOMATIC OPERATION MODE

ALP 25 : No recall for 4 seat movements and head restraint



## AUTOMATIC OPERATION MODE

ALP 26 : No recall for 4 seat movements

Connect the XR 25, enter code D16, selector on S8.  
Check bar graphs left 12, 13, and right 12, 13 (Test 2).  
Are they illuminated?

Carry out the 4 movements in manual mode and using # 01, 02, 04, 05 check the motor potentiometers.  
Min/max variations from 10 to 85%.  
Is this correct?

Adjust the potentiometer (for method see chapter 88) or replace the faulty potentiometer.

Replace the computer

Check the continuity of the wire at fault:

- Longitudinal seat position potentiometer  
Track 15\* on computer → C1 pass comp / seat connector (grey module) → potentiometer
- Seatback potentiometer  
Track 14\* on computer → C2 pass comp / seat connector (grey module) → potentiometer
- Front squab cushion potentiometer  
Track 13\* on computer → C3 pass. comp / seat connector (grey module) → potentiometer
- Rear squab cushion potentiometer  
Track 12\* on computer → C4 pass comp / seat connector (grey module) → potentiometer

Repair if necessary.  
Does the fault persist?

Correct

Manually position the faulty seat shaft in the centre of its movement range and use an ohmmeter to check the resistances  $R = 1$  to  $3 \text{ k}\Omega$  on the pass. comp / seat connector (grey module) between tracks  
C1/C7 and C1/C8 seat position shaft  
C2/C7 and C2/C8 seatback shaft  
C3/C7 and C3/C8 front cushion shaft  
C4/C7 and C4/C8 rear cushion shaft  
Is this correct?

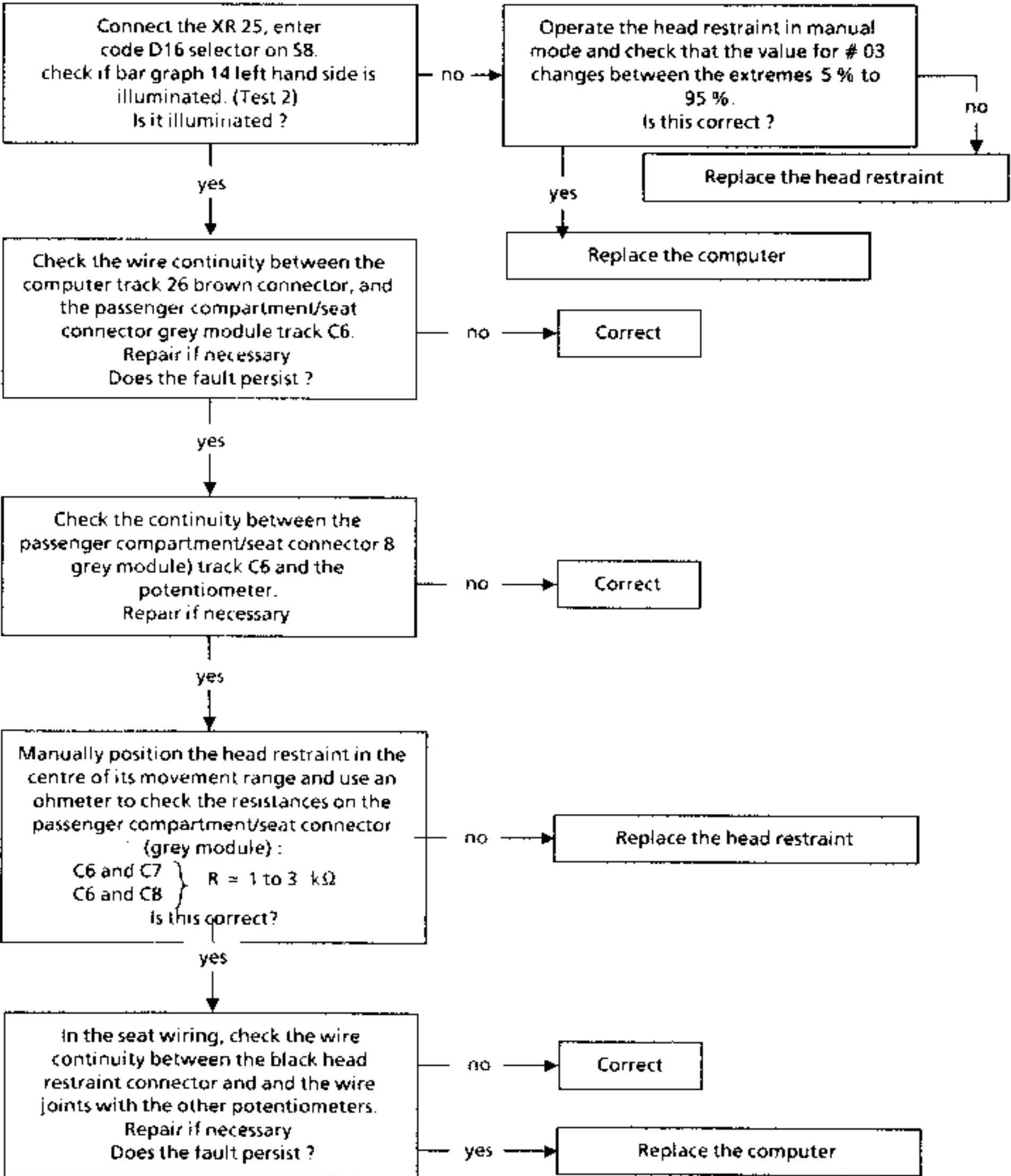
Replace the computer

Replace the potentiometer

\* Brown computer connector.

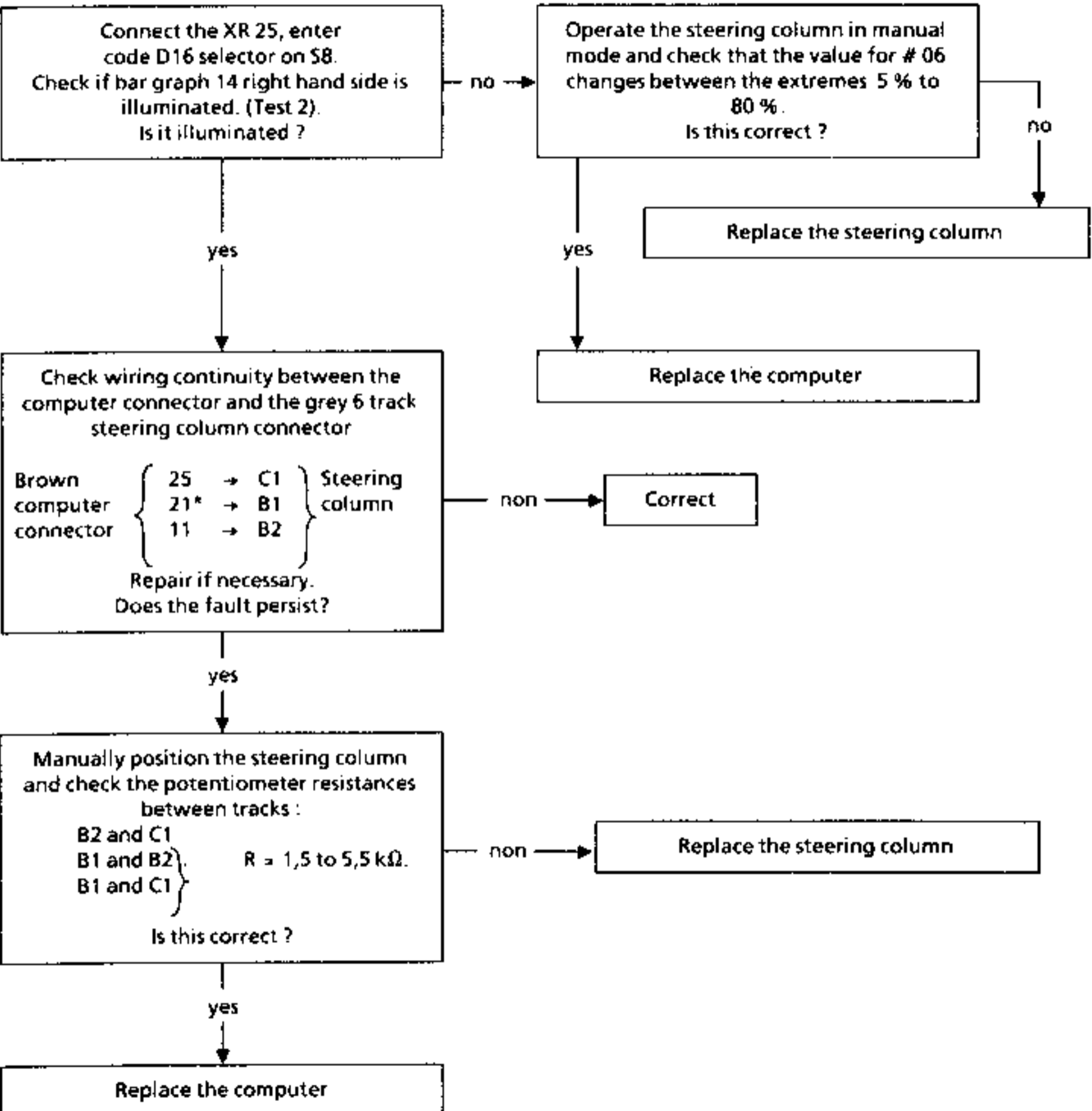
**AUTOMATIC OPERATION MODE**

**ALP 27 : No recall for head restraint**



**AUTOMATIC OPERATION MODE**

**ALP 28 : No recall for steering column**



\* Intermediate wire connection on the passenger compartment / seat connector on track C8 of the grey module.

AUTOMATIC OPERATION MODE

ALP 29 : No recall for 2 rear view mirrors

Connect the XR 25, enter code D16 selector on S8.  
Check if bar graphs 17, 18, 19 and 20 right hand side are illuminated (Test 2).  
Are they illuminated ?

no

See fault charts ALP 30 and ALP 31.

yes

Check common potentiometer wire continuity between the black FLH door/passenger compartment connector, grey module and the computer (green connector).  
C1 → 27  
Repair if necessary.  
Does the fault persist?

no

Correct

yes

Replace the computer

**AUTOMATIC OPERATION MODE**

ALP 30 : No recall for driver's mirror  
(one or several movements)

Connect the XR 25, enter code D16 selector on S8.  
Check if bar graphs 17, 18, right hand side are illuminated (Test 2).  
Is one or more illuminated ?

Operate the mirror in manual mode and check that the values for # 09 and 10 change between the extremes of 8 % and 88 %.  
Is this correct?

Replace driver's mirror

Replace computer

On mirror connector (black module) check the potentiometer resistance.  
Between tracks B3 and B4  
Between tracks B4 and B6  
Between tracks B3 and B6  
Between tracks B3 and B5  
Between tracks B4 and B5 }  $R = 1 \text{ to } 3 \text{ k}\Omega$   
Is this correct?

Replace the mirror

Check wire continuity between :

Mirror connector	FRH door/passenger compart. connector
black module	B3 → C1
	B4 → B1
	B5 → B5
	B6 → B2

Repair if necessary.  
Does the fault persist?

Check wire continuity between :

FLH door/passenger compart. connector	Green computer connector
grey module	C1 → 27
	B1 → 21
black module	B2 → 5
	B5 → 4

Repair if necessary.  
Does the fault persist?

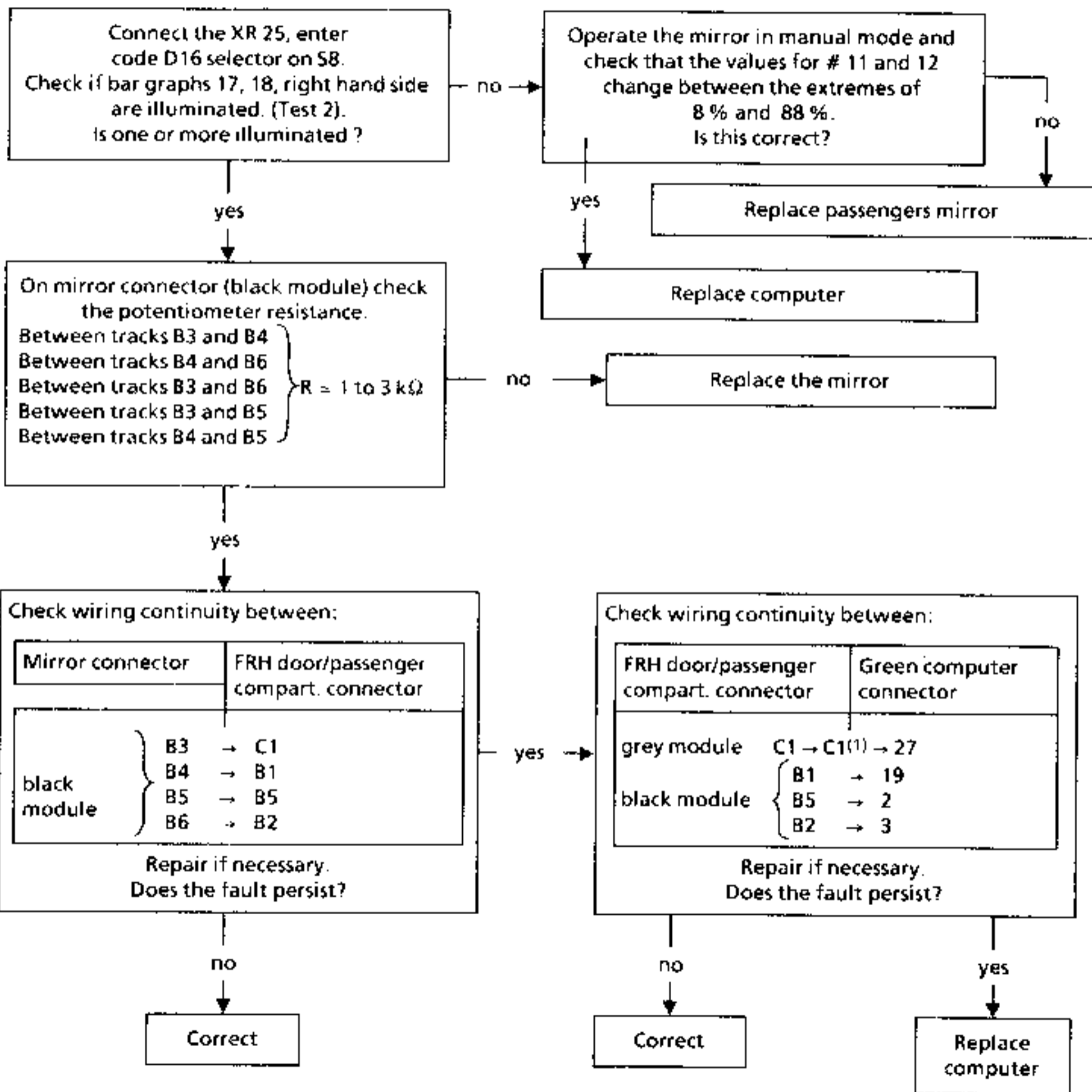
Correct

Correct

Replace computer

**AUTOMATIC OPERATION MODE**

**ALP 31 : No recall for passenger mirror  
(for one or more movements)**



(1) intermediate wire connection on black front left hand door connector (grey module)

AUTOMATIC OPERATION MODE

ALP 32 : No recall for: seat, head restraint, steering column

Connect the XR 25, enter code D16 selector on S8.  
Check bar graphs 12, 13, 14 right hand side and 12, 13, 14 left hand side are illuminated. (Test 2).  
Are they all illuminated?

no

Check continuity and insulation of common wire between passenger compartment/seat connector grey module track C8 and computer track 21 (brown connector).  
Repair if necessary.  
Does the fault persist?

no

Correct

yes

Replace computer

yes

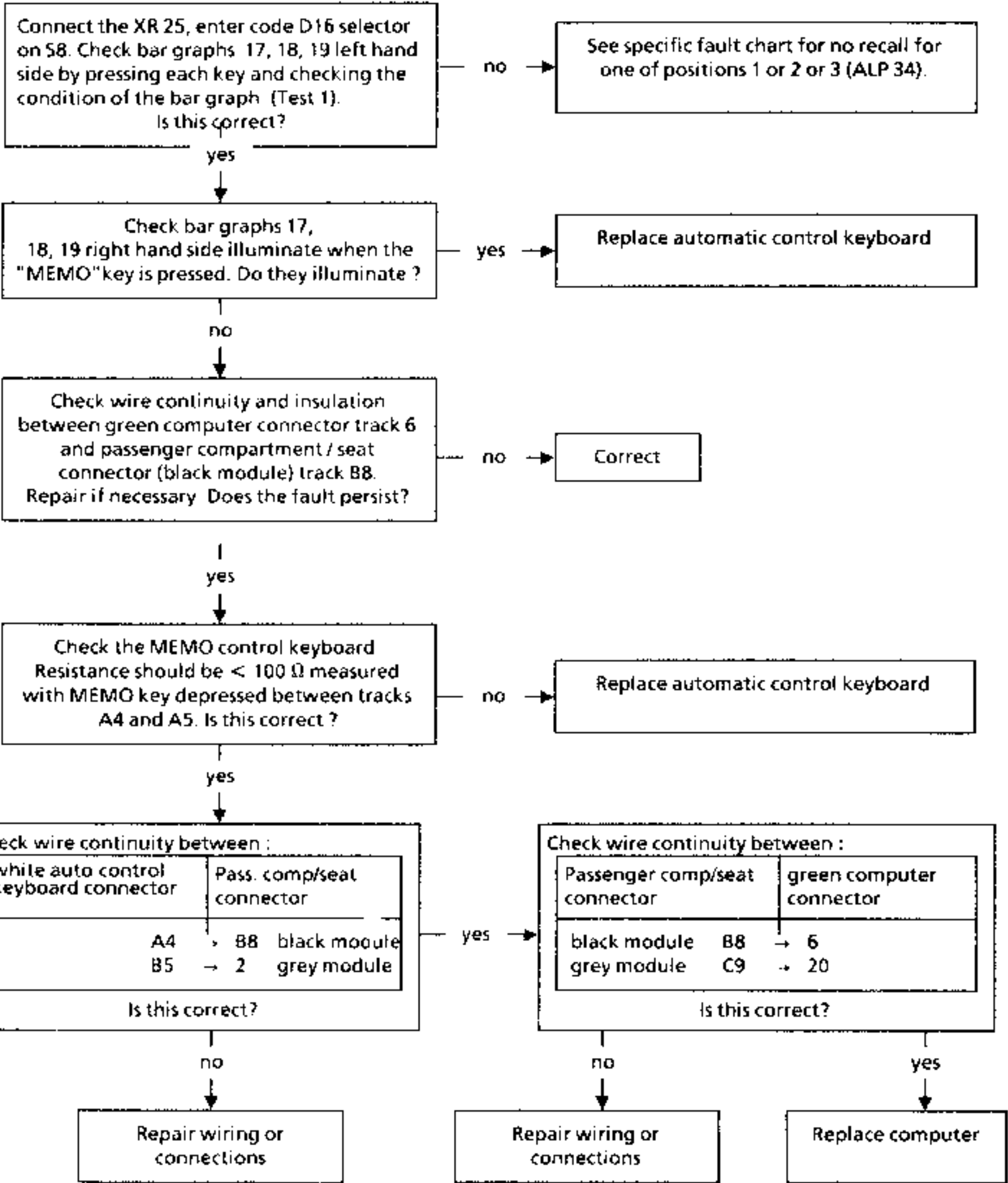
See specific fault chart for illumination of one or more bar graphs.

Steering column bar graph 14 right hand side	see ALP 28.
Seat bar graphs 12, 13 left hand side	see ALP 26
Seat bar graphs 12, 13 right hand side	see ALP 26
Head restraint bar graph 14 left hand side	see ALP 27



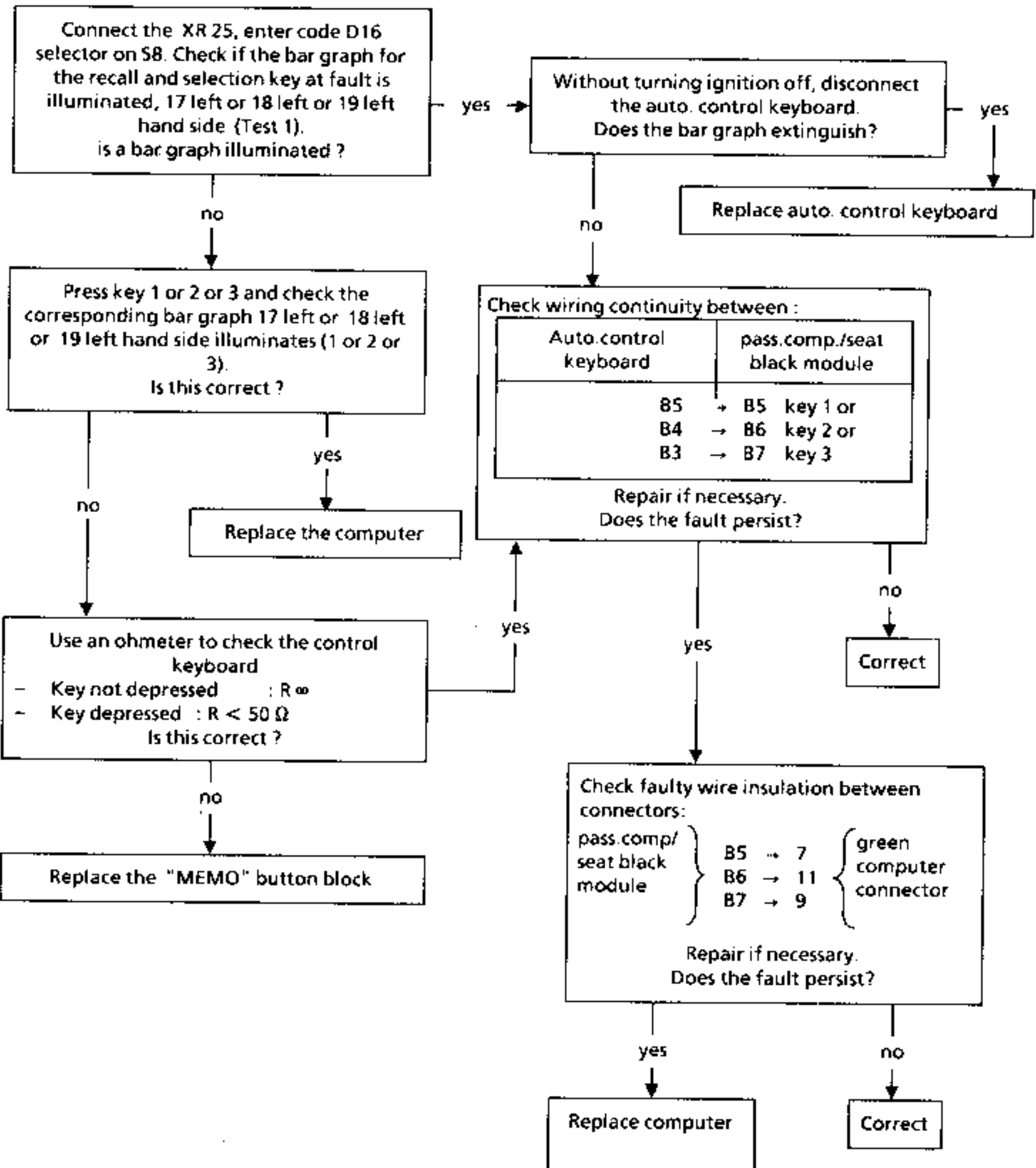
**AUTOMATIC OPERATION MODE**

**ALP 33 : No recall for: seat, head restraint, steering column and rear view mirrors**



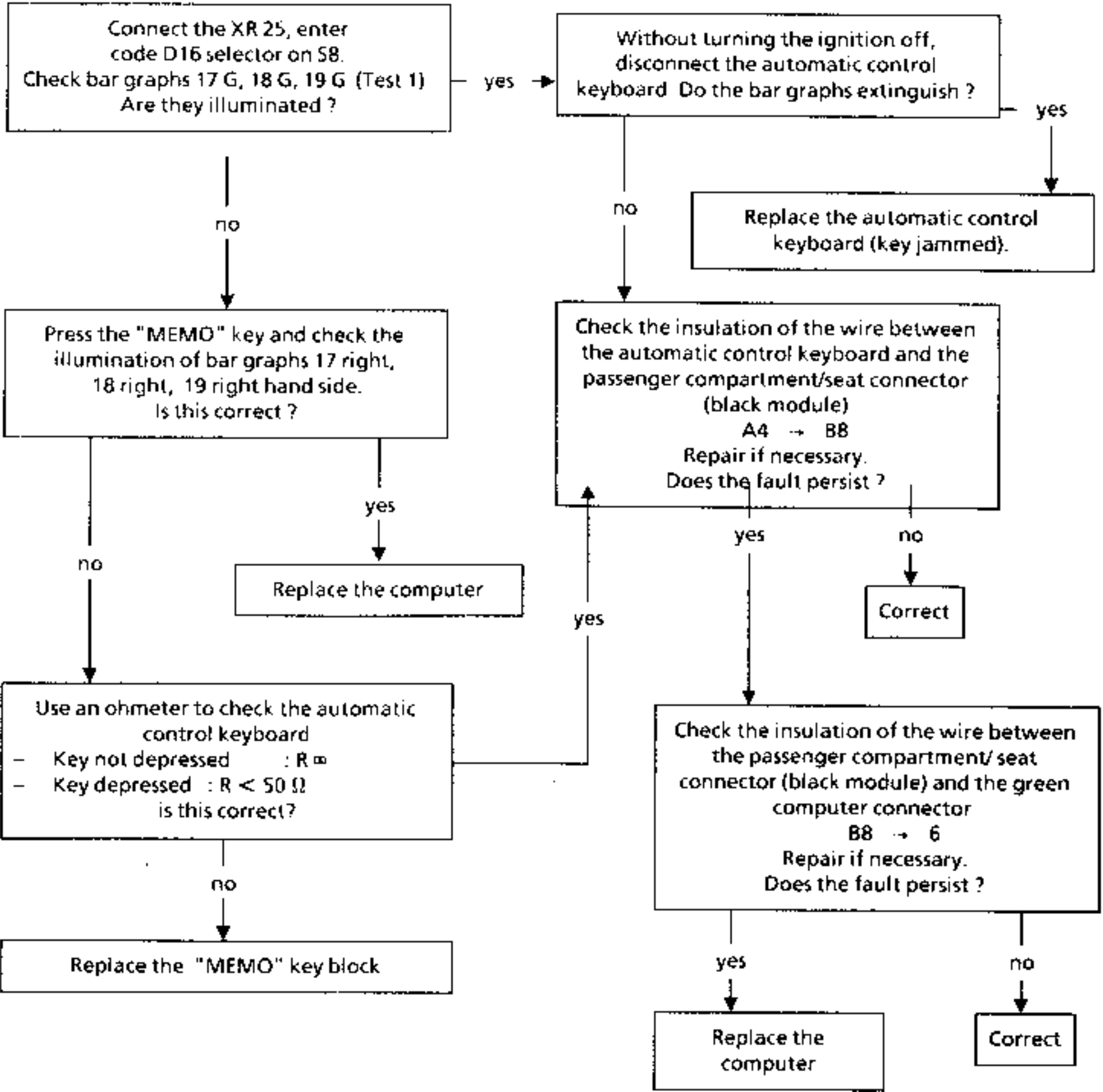
AUTOMATIC OPERATION MODE

ALP 34 : No recall for one stored position (1, 2 or 3)



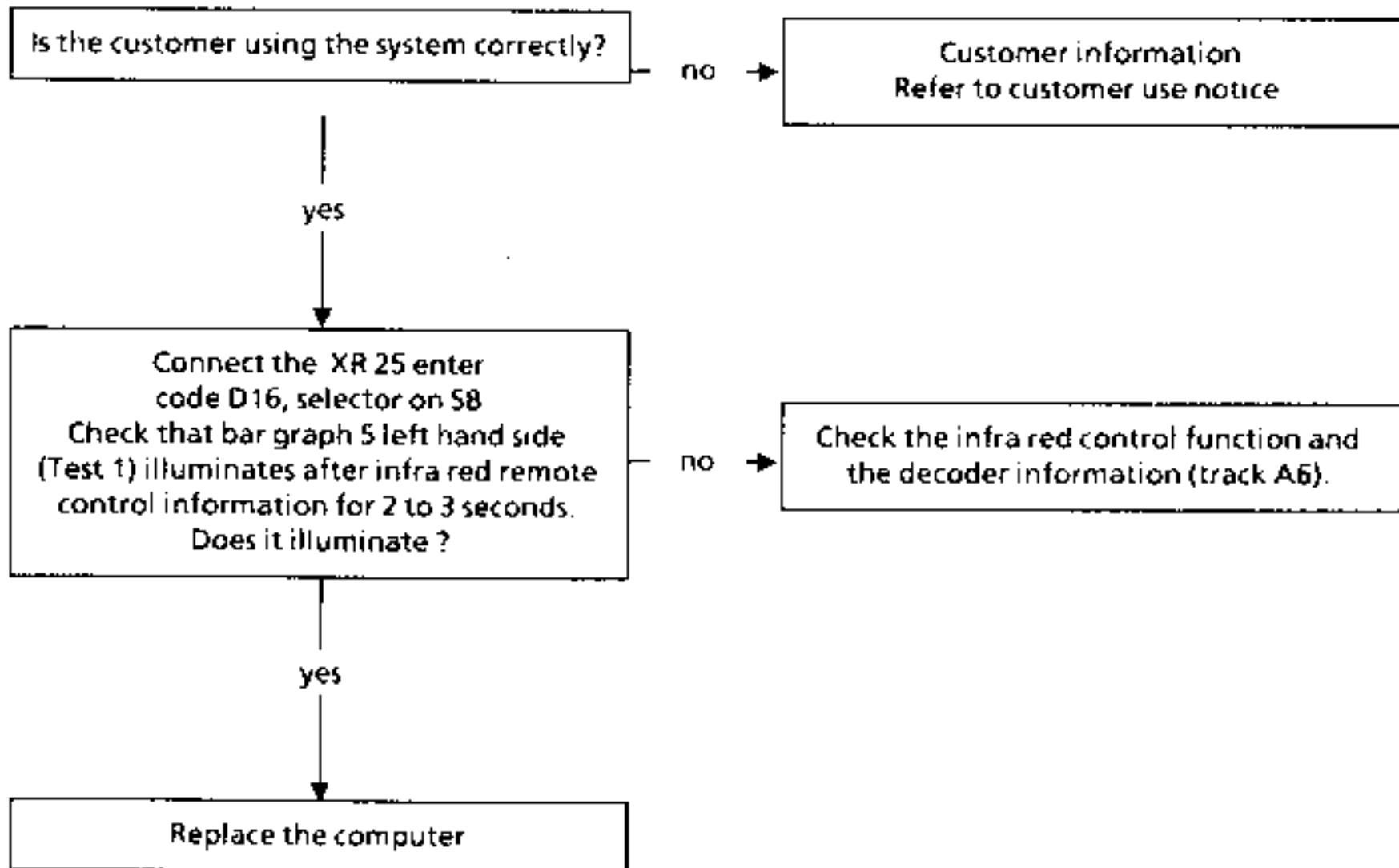
AUTOMATIC OPERATION MODE

ALP 35 : Memorising impossible



**AUTOMATIC OPERATION MODE**

ALP 36 : No pulse recall



**Note :** the pulse function is only possible if :

- the computer is put into "inactive" mode 4 minutes after the + 12 volts after or before ignition feed has been cut from the moment when the driver's door is closed,
- the remote control is used to open the doors.

If the computer is not put on standby after the driver's door has been shut check the door lock 1st notch switch.

AUTOMATIC OPERATION MODE

ALP 37 : Passenger mirror does not move in reverse gear

First ensure that the position stored for reverse gear is not the same as for positions stored under selections 1 or 2 or 3.

yes

Connect the XR 25 enter code D16, selector on S8. Check that bar graph 3 right hand side illuminates when reverse gear is engaged. Does it illuminate?

no

Check the connection for the reversing lights switch then check the wire continuity between the computer track 14 (green connector on computer) and the reversing lights multifunction switch. Repair if necessary. Does the fault persist?

no

Correct

yes

Check the reversing lights switch. Replace this part if necessary. Does the fault persist?

no

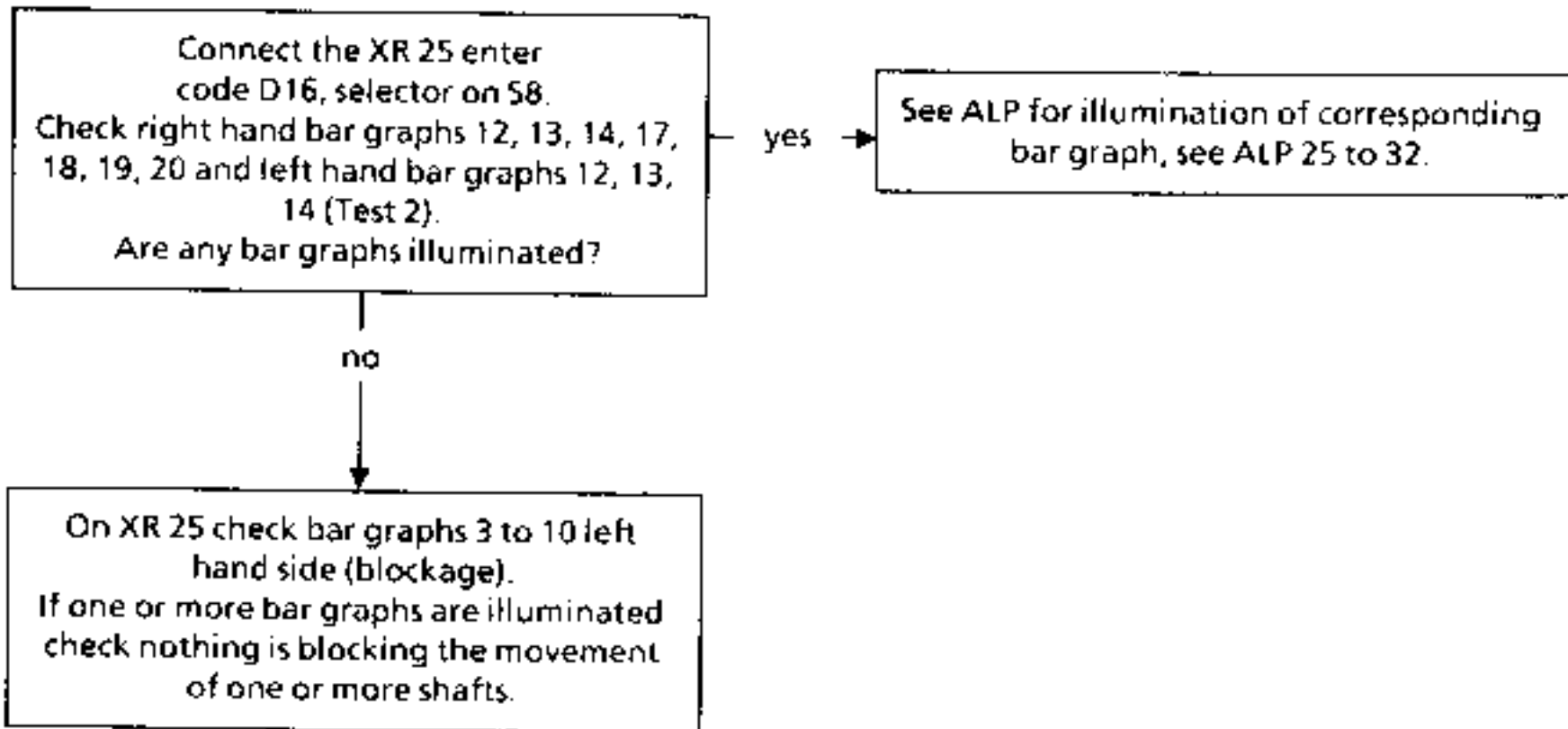
Correct

yes

Replace the computer

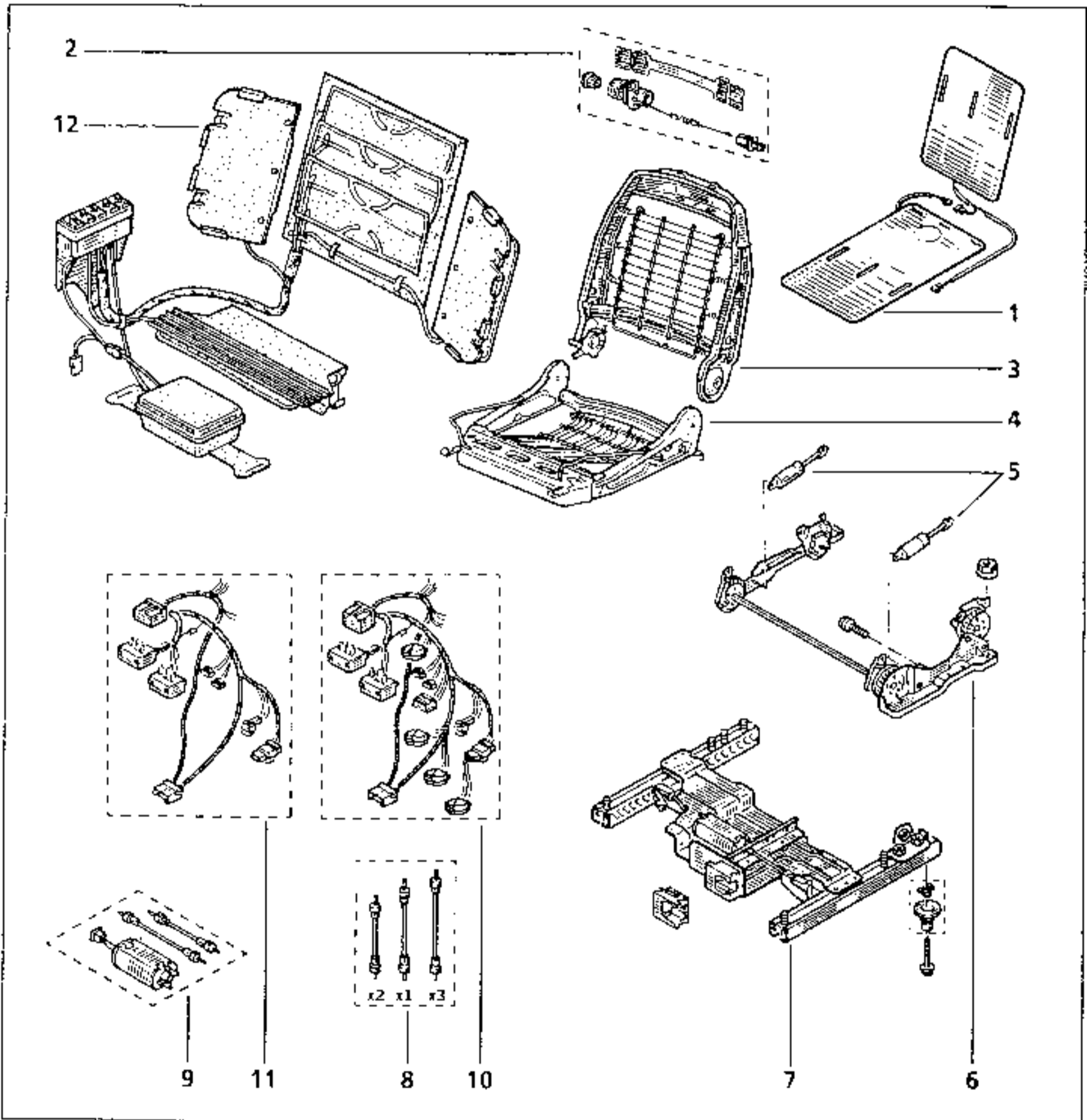
## AUTOMATIC OPERATION MODE

**ALP 38 : Incorrect recall of stored position  
(one or more movements)**



FRONT SEAT REFERENCE

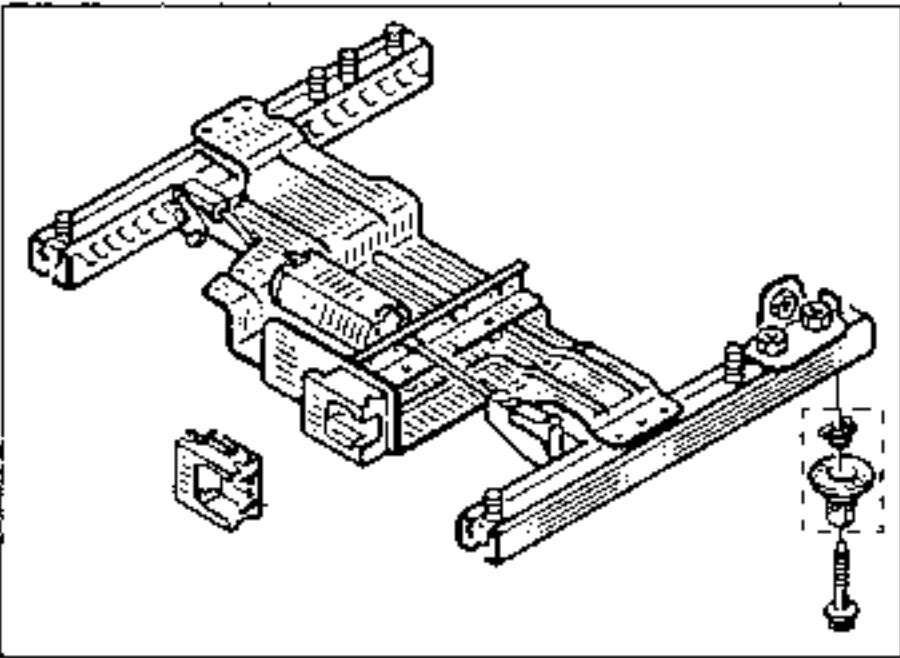
DESCRIPTION



- 1 Heating system
- 2 Lumbar adjustment
- 3 Seatback frame
- 4 Seat squab frame
- 5 Cushion jacks
- 6 Cushion

- 7 Runners
- 8 Cable kit
- 9 Motor
- 10 Left hand wiring connector
- 11 Right hand wiring connector
- 12 Ergomatic system

## RUNNERS

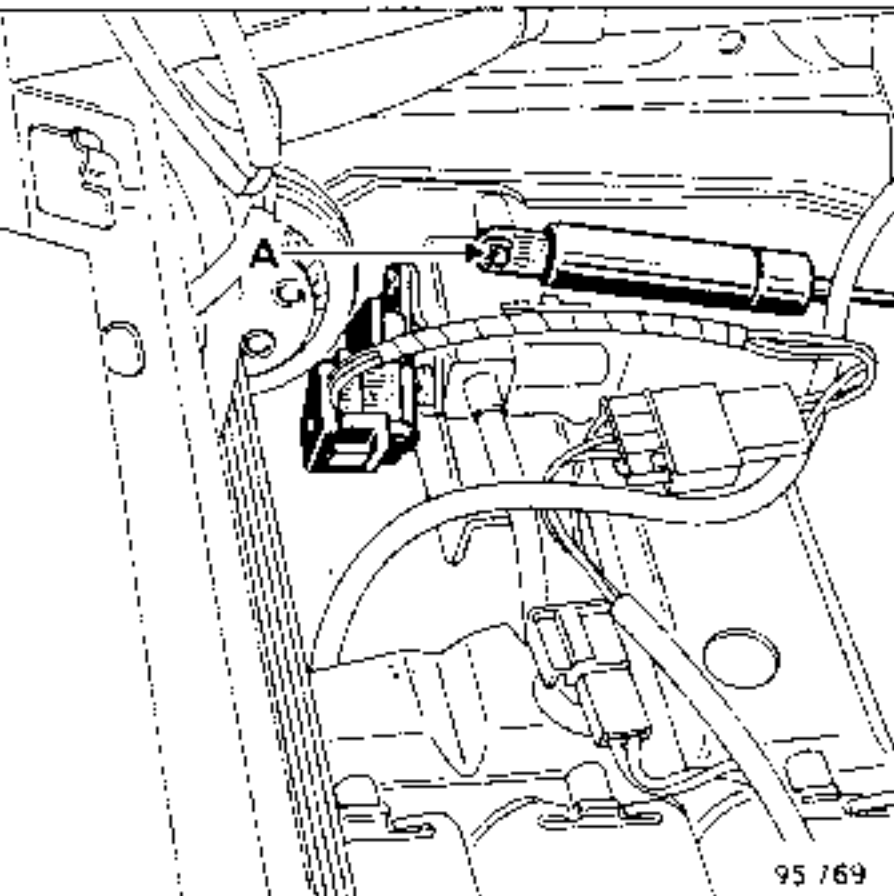


**NOTE:** The seat runners are supplied fitted with the motor, reducer and potentiometer.

The potentiometer is pre-adjusted in the factory.

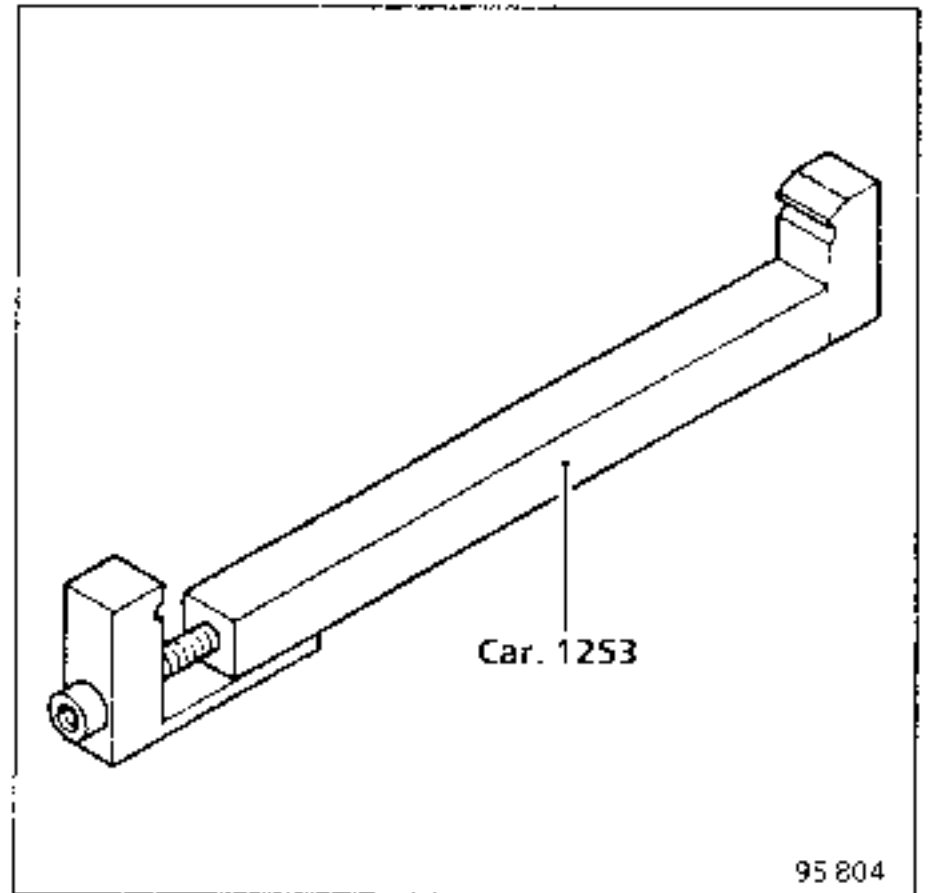
## REAR CUSHION JACKS

(Driver's seat only)



95 769

After removing the seat covers and the jack clips (A), compress the jack using tool Car. 1253.



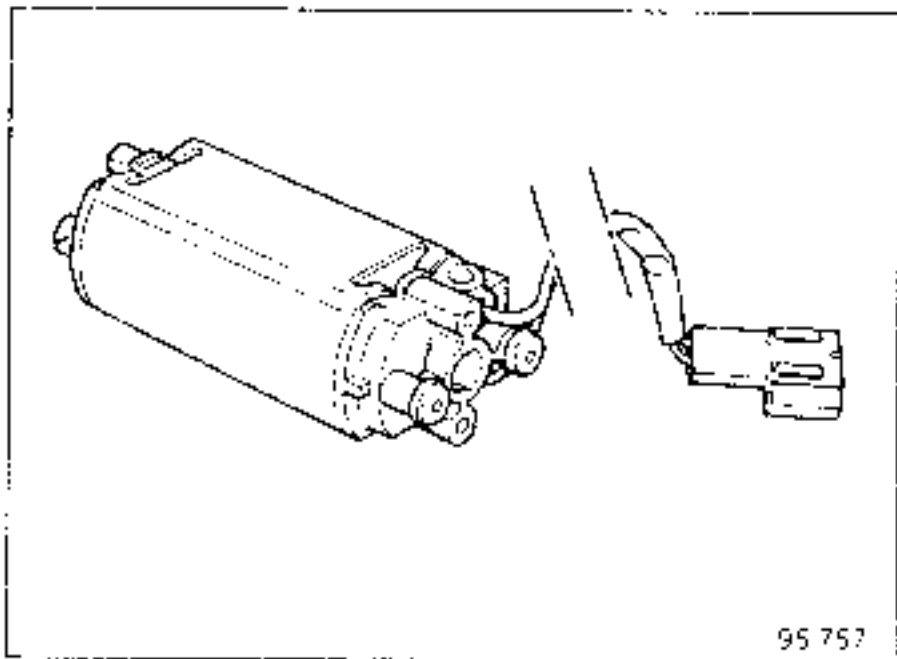
95 804

**NOTE:** removal and refitting is easier when the squab cushion is in the low position as the least compression is required



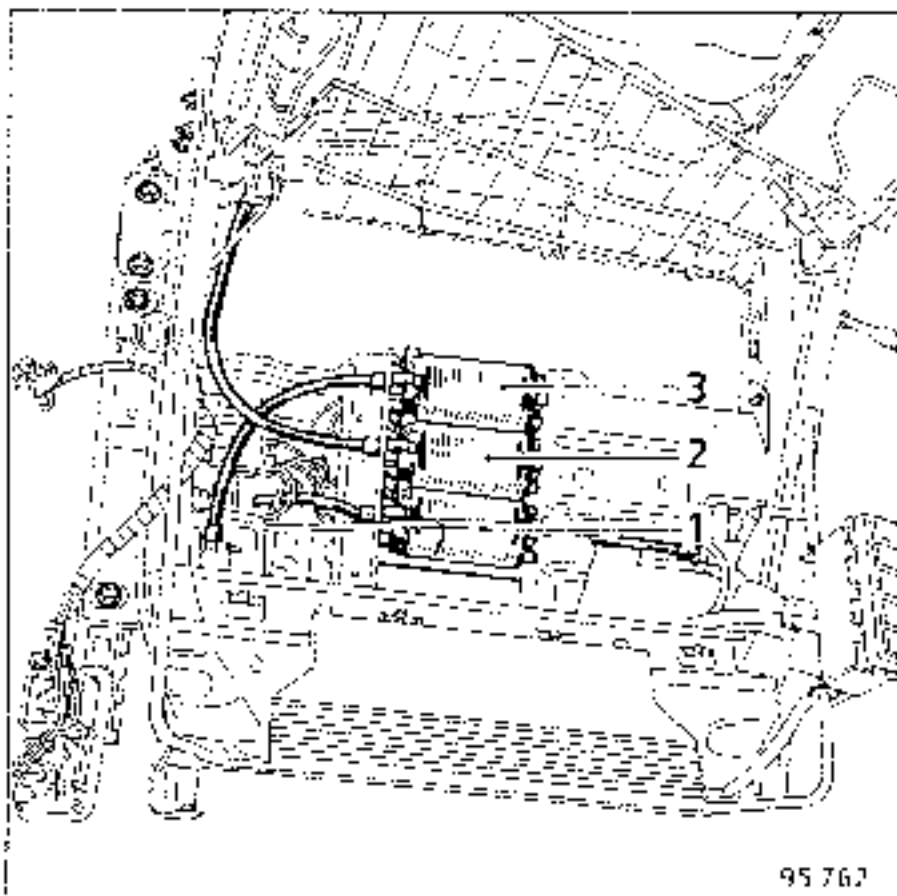
**MOTORS**

1) Location



Motor supplied from Parts Department

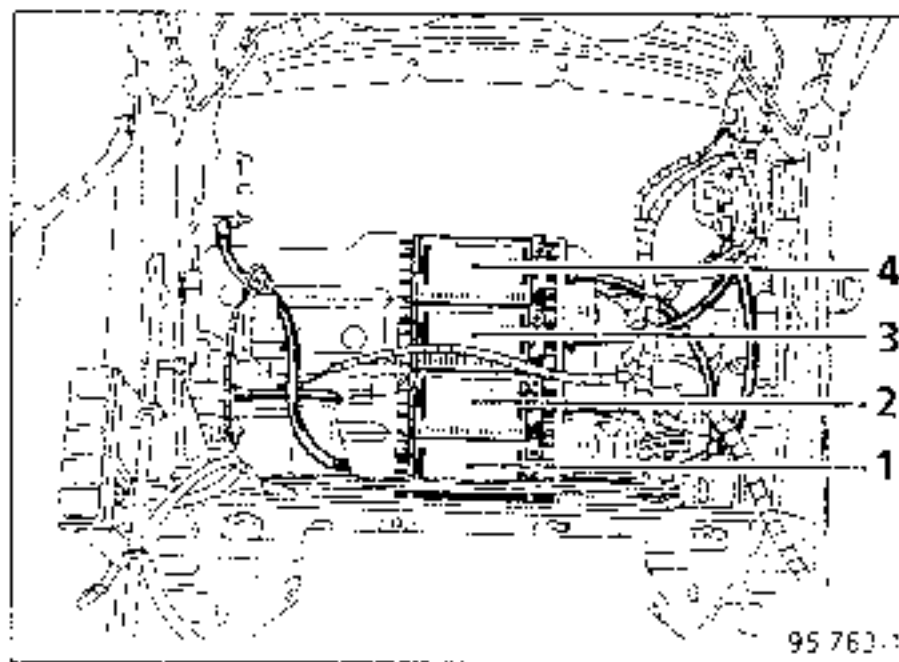
**Passenger seat**



Functions :

- 1 Longitudinal (runners)
- 2 Seatback incline
- 3 Front cushion

**Driver's seat**

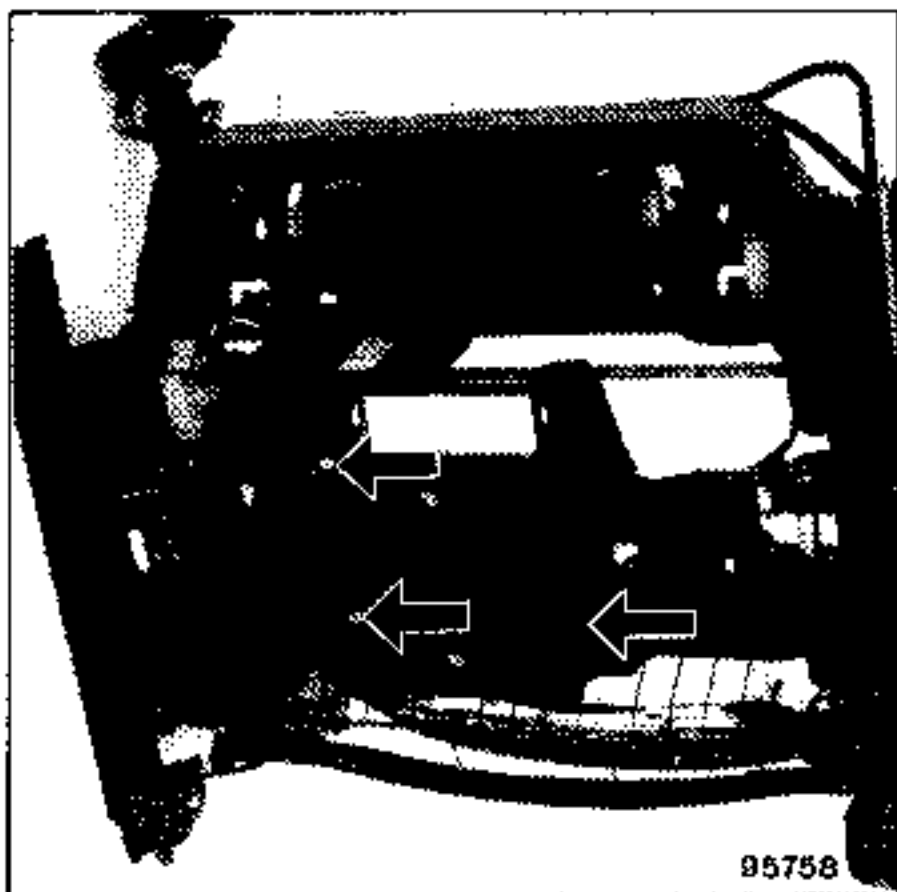


Functions :

- 1 Rear cushion
- 2 Longitudinal (runners)
- 3 Seatback incline
- 4 Front cushion

**MOTORS (cont)**

**2) Replacement**



Cut:

- the plastic wire and cable retaining collar,
- the wires, as close to the motor to be replaced as possible (to be shortened).

Remove the motor

**IMPORTANT :** the motor supplied by the Parts Department is identical to that for the rear seats. This gives a faster movement speed and there is a connector(C) which must be removed before fitting to the front seats.

**REFITTING**

Cut the new motor wires as close as possible to the connector.

Replace the new motor on the plate ensuring the feed wires are correctly located under the plate.

Refit the plate on the seat frame.

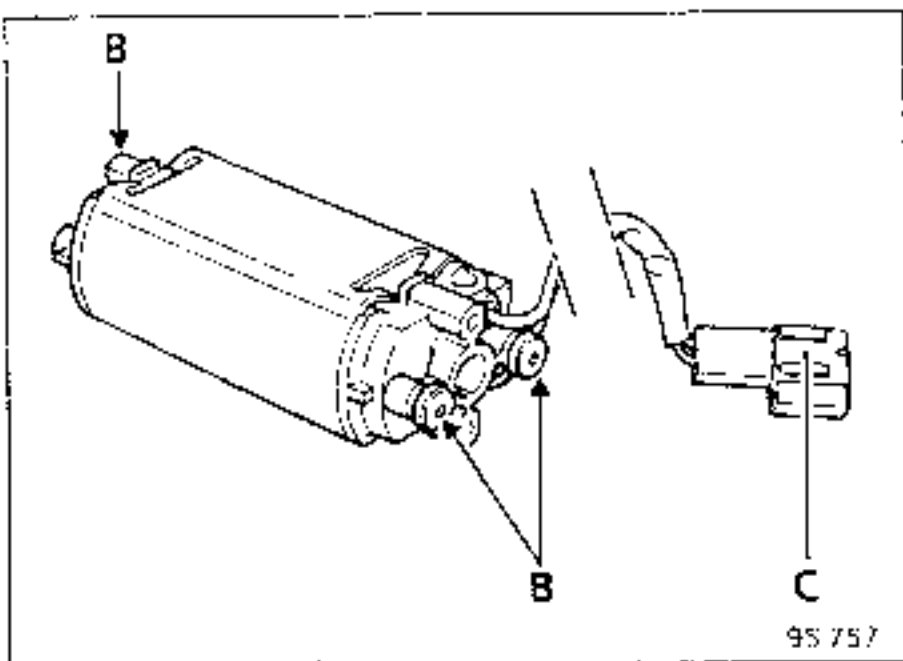
Adjust the length of the feed wire to the motor to that of the harness wires.

Connect the two motor feed wires to the connector using two heat shrink sleeves with metal cores (see P.R. 830 and method in Technical Note 8075) carefully noting the wire colours.

Reconnect the connectors

Fit a new plastic wire and cable retaining collar.

Test the motor operation before refitting the seat covers.



**REMOVAL**

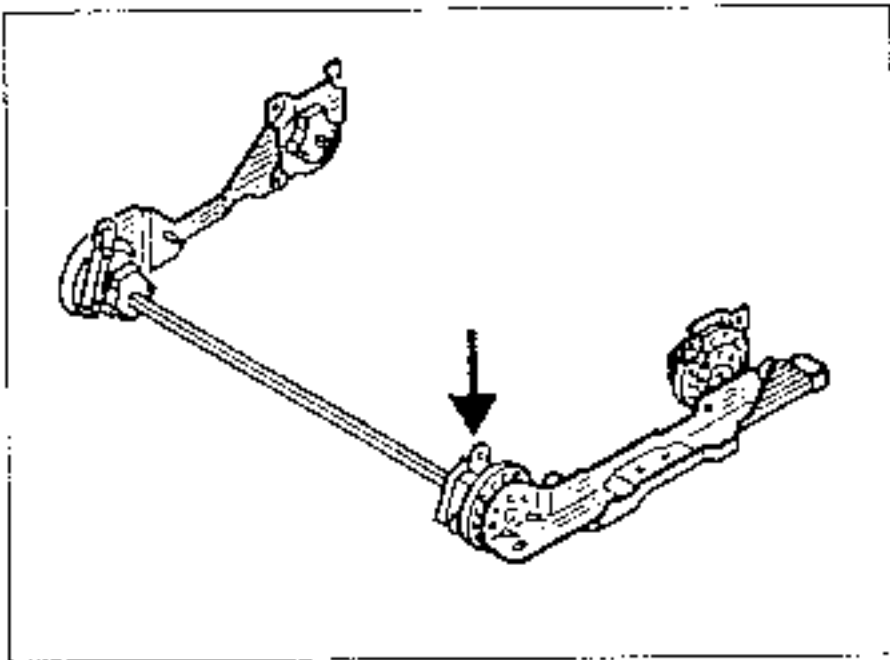
After removing the seat and the squab cover, drill the rivets in order to loosen the motor support plate from the frame.

Remove the 3 bolts (B) for the motor in question.

Disconnect the cable connections.

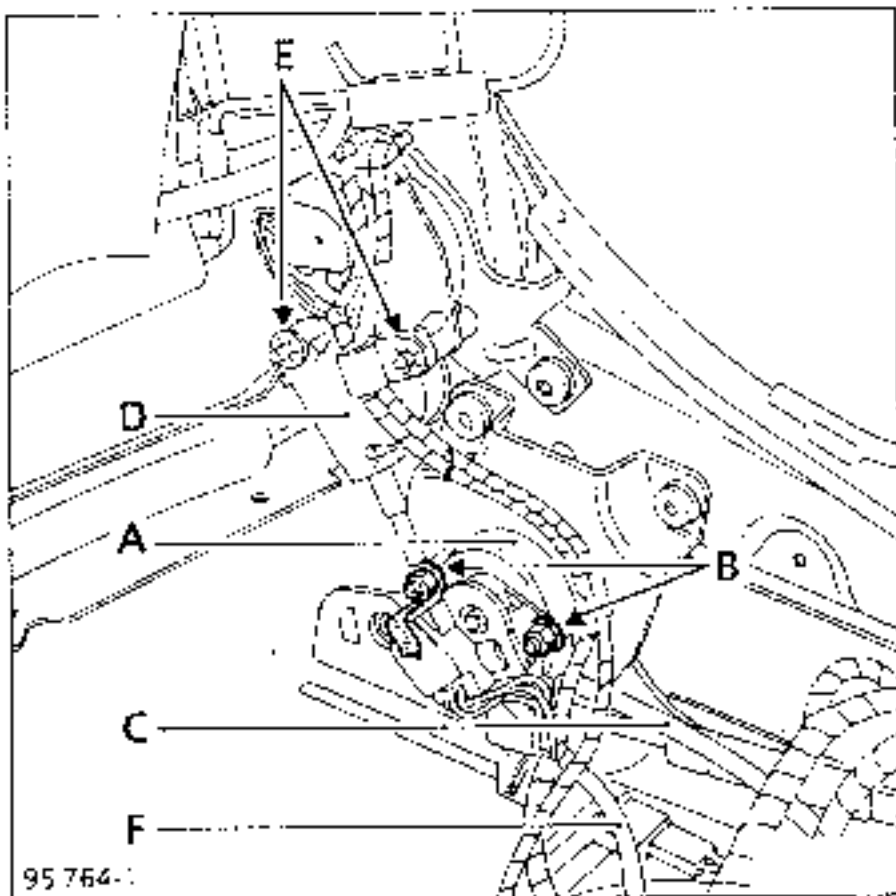
REDUCERS

1) Location

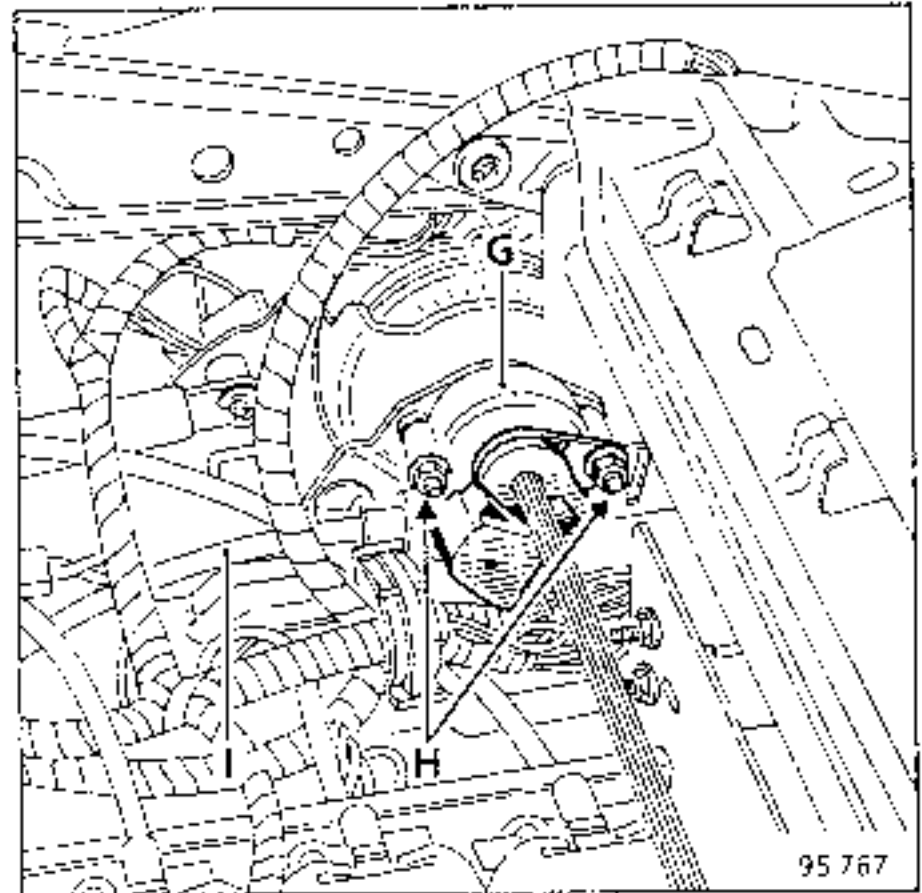


The reducers are not sold individually but are located on the corresponding frame.

Driver's seat

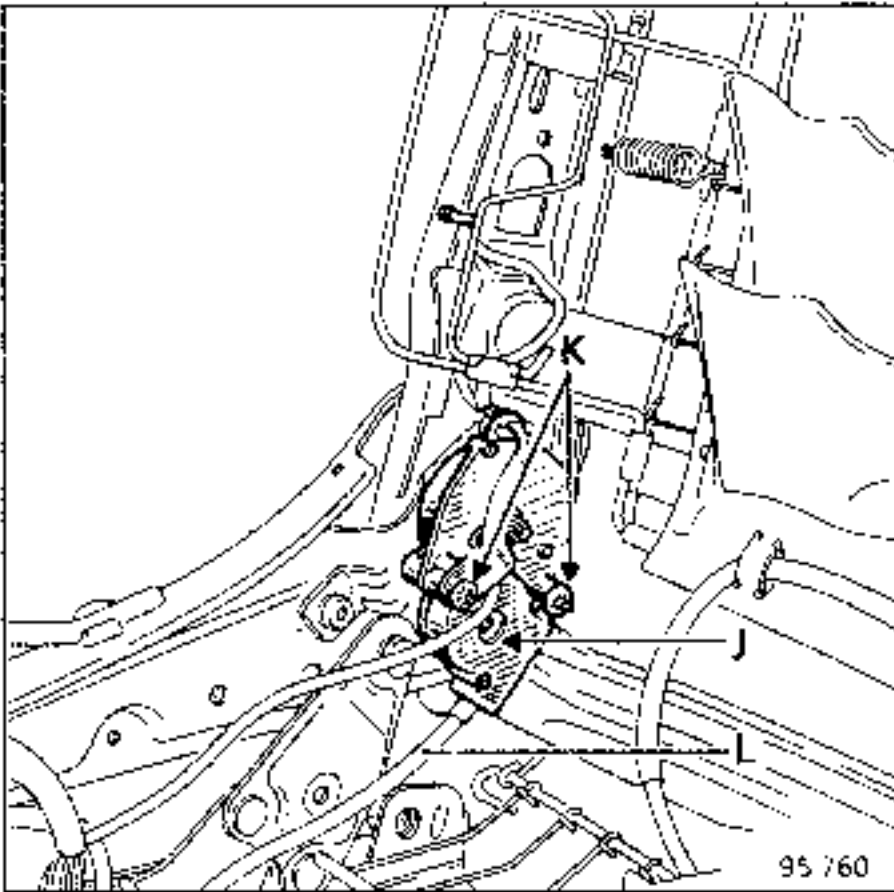


The rear cushion reducer (A) is mounted by 2 nuts (B), and is connected to the motor by cable (C). The seatback reducer (D) is mounted by 2 clips (E) and is connected to the motor by cable (F).

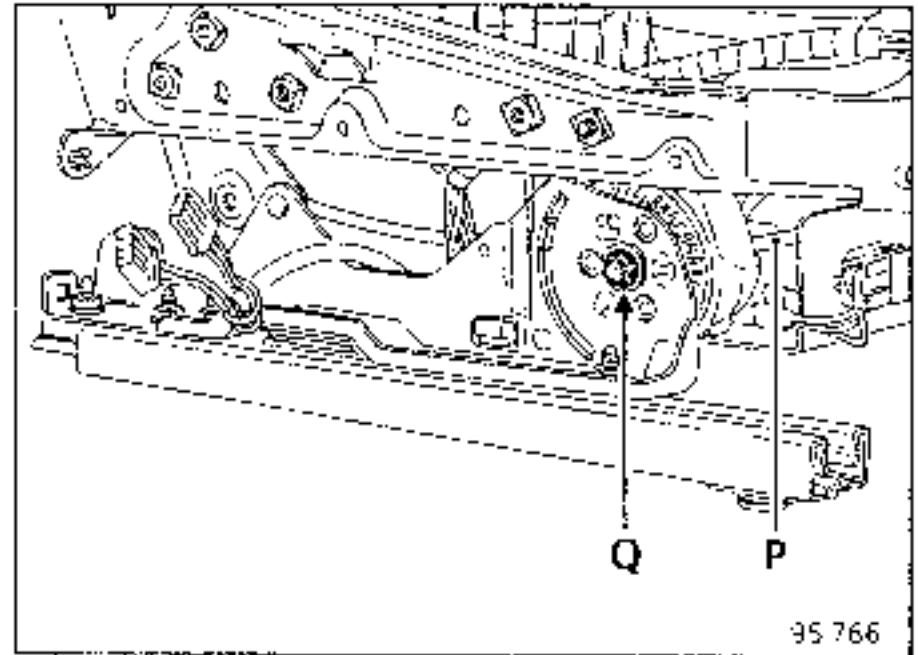


The front cushion reducer (G), is mounted by nuts (H) and is connected to the motor by cable (I).

Passenger seat

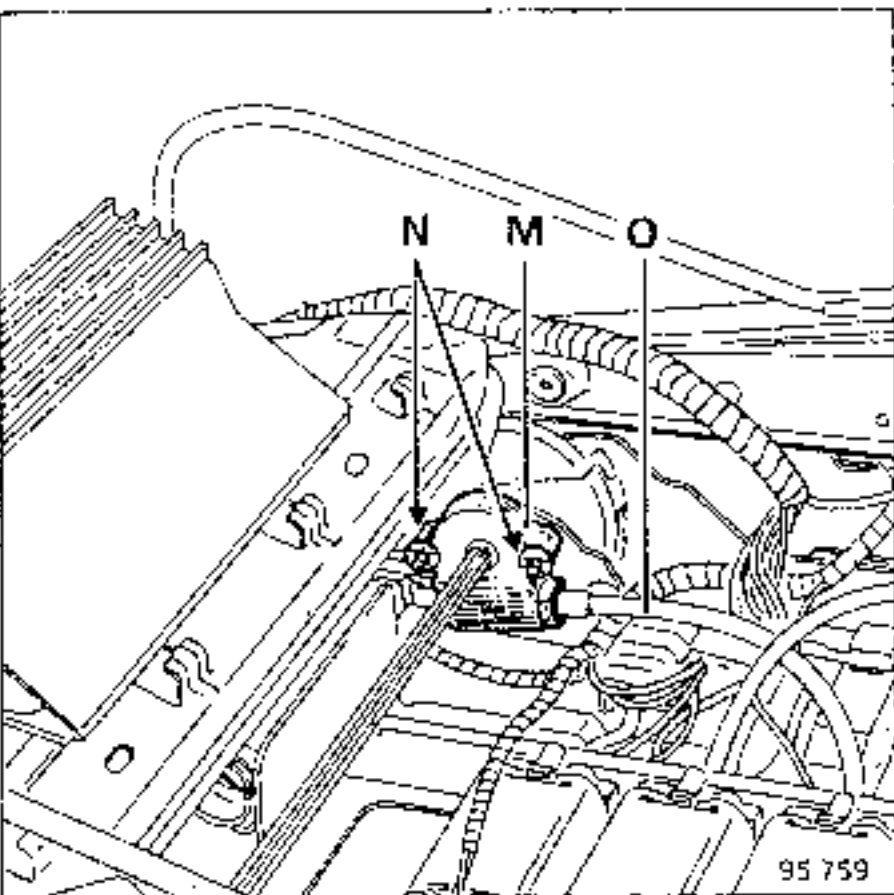


Seatback reducer (J) is mounted by clips (K) and connected to the motor by cable (L).



If the front cushion reducer is to be partially removed bar (P) must be removed by removing clips (Q) (driver's and passenger seat).

**IMPORTANT :** whenever a part of complete frame is replaced, replace the clips and adjust the potentiometers (driver's seat)

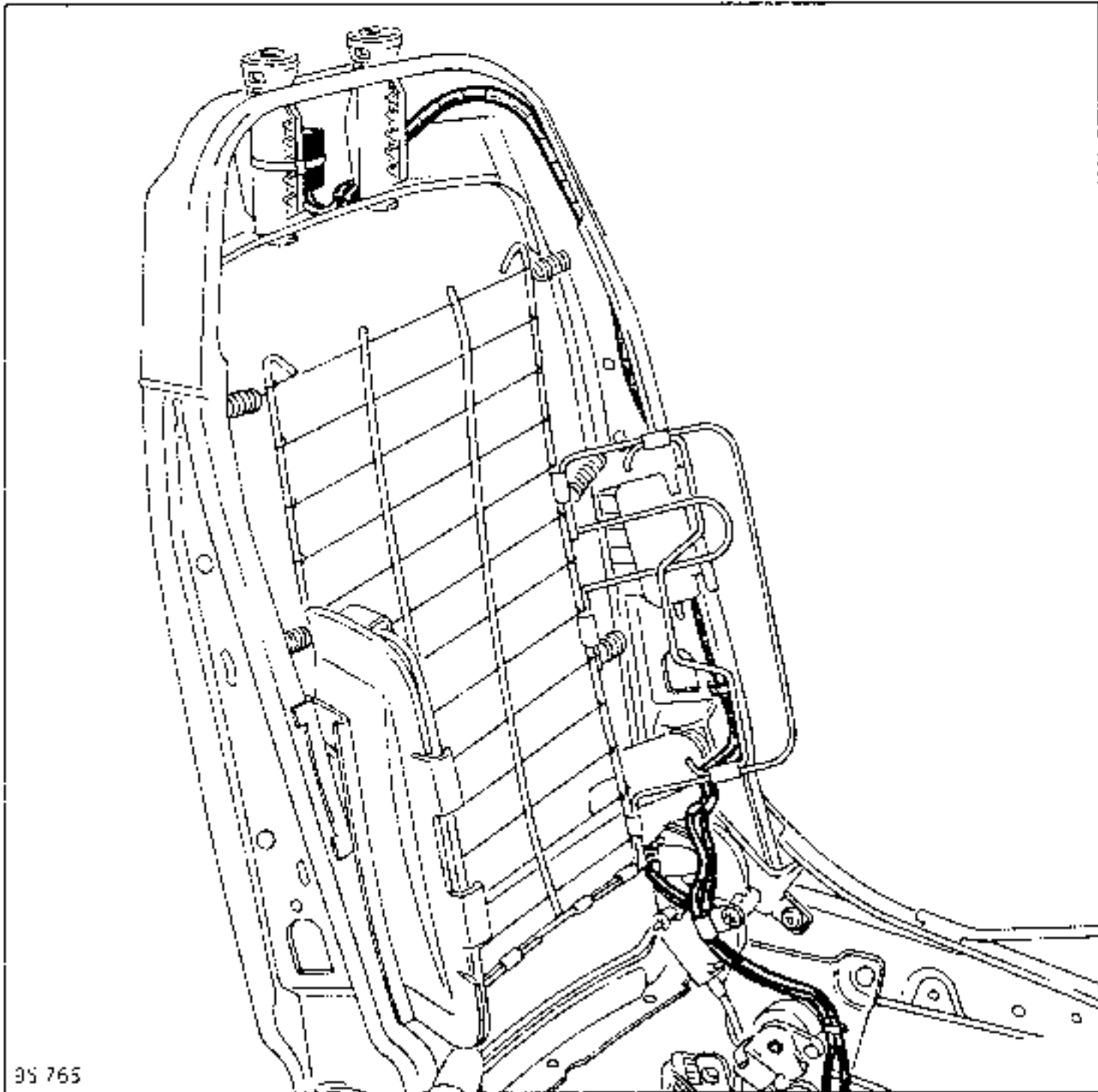


The seat position reducer (M), is mounted by nuts (N) and is connected to the motor by cable (O).

WIRING

1) Location

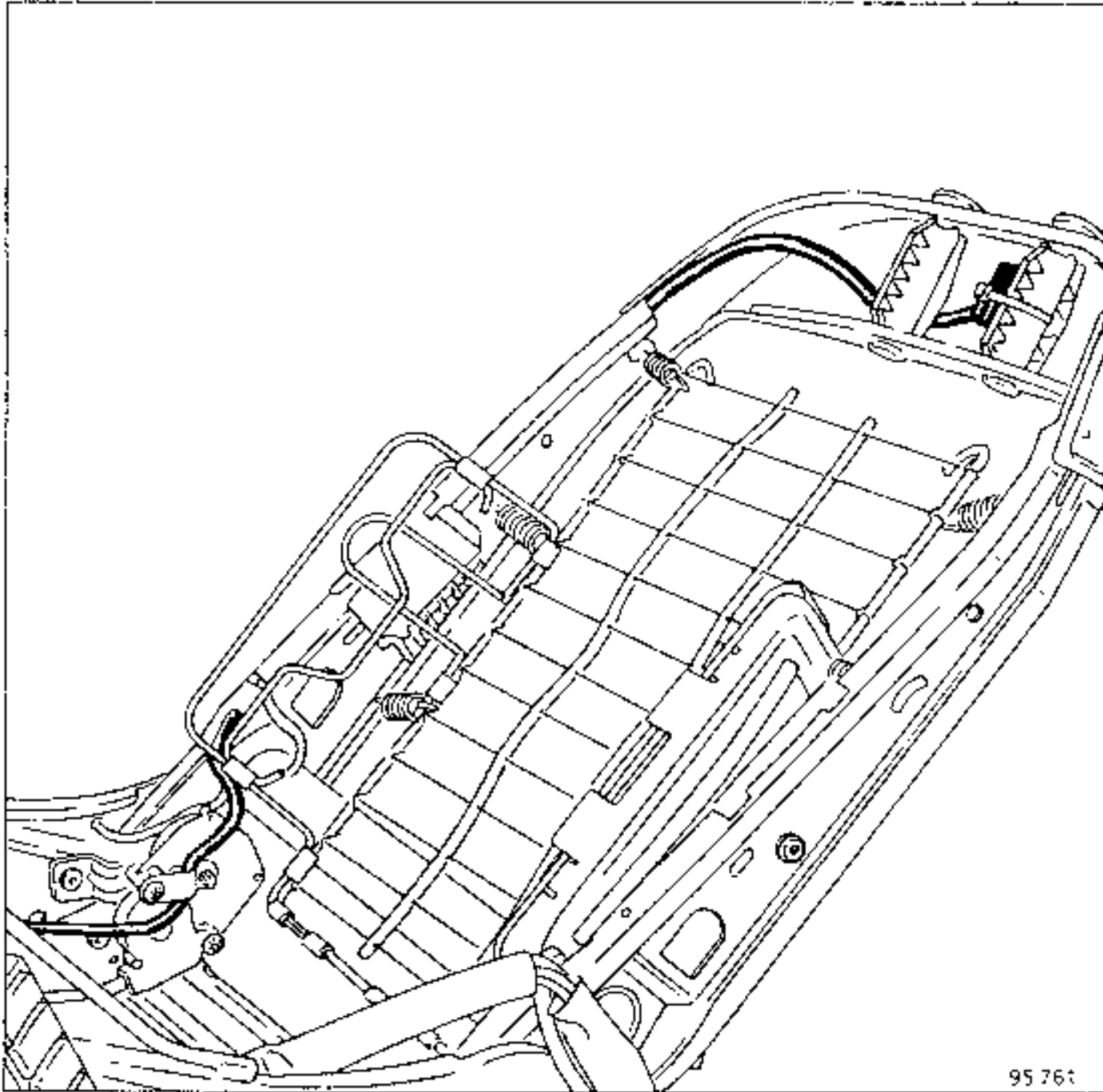
Driver's seatback



WIRING

1) Location (cont)

Passenger seatback

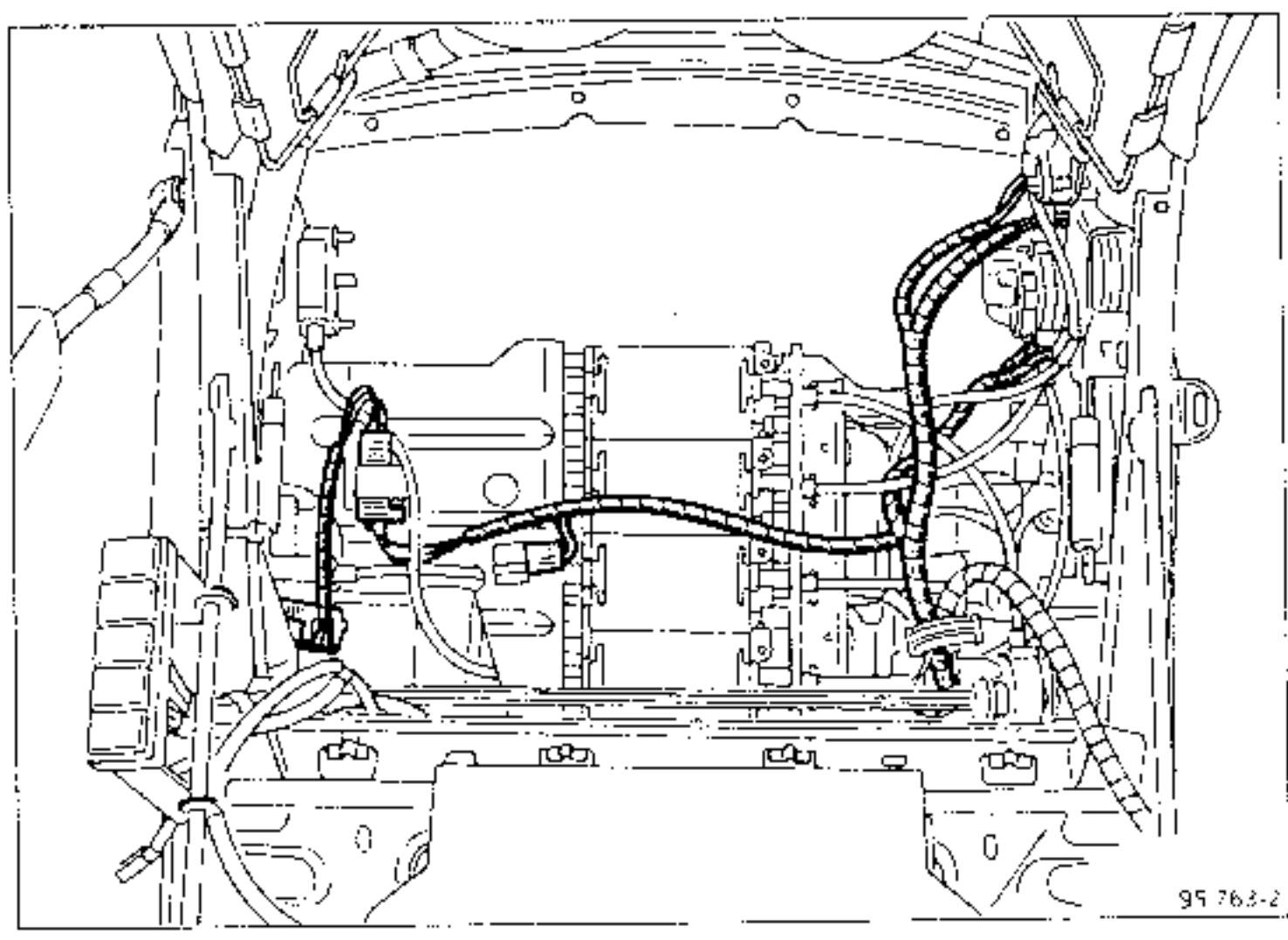


95 761

WIRING

1) Location (cont)

Driver's seat squab

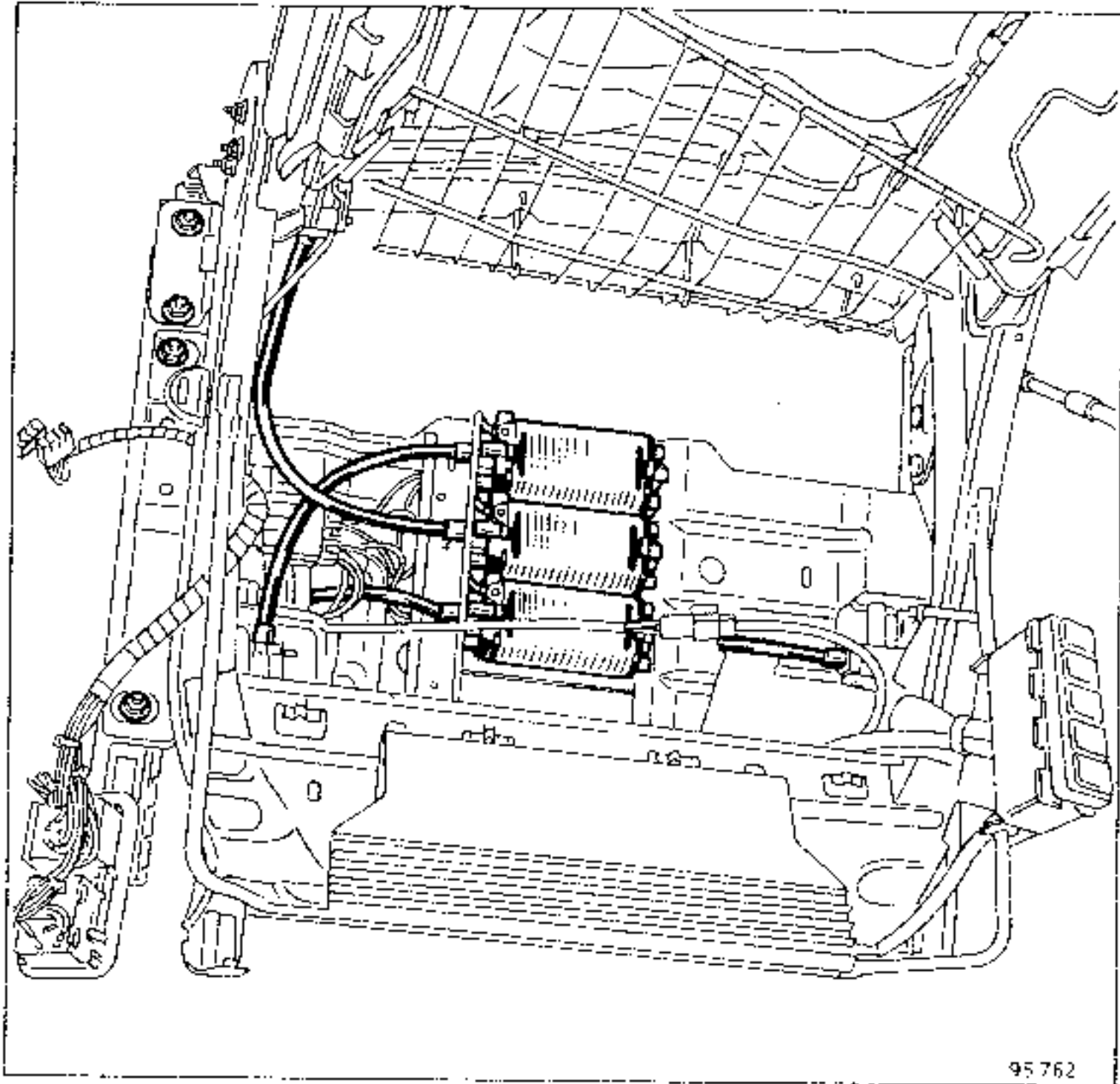


95 763-2

WIRING

1) Location (cont)

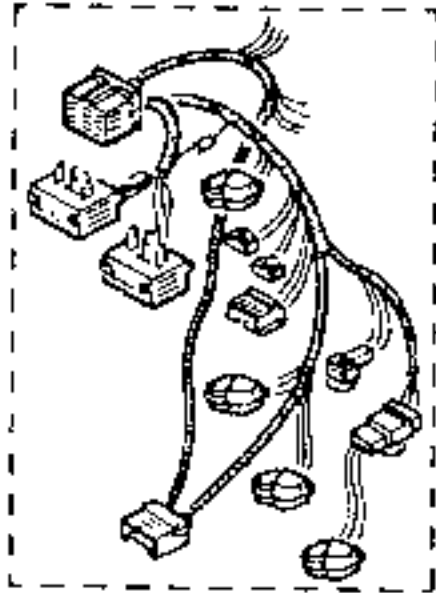
Passenger seat squab





**WIRING (cont)**

**2) Replacement (driver's seat)**



**IMPORTANT :** for safety and quality reasons :

- ensure the wires are correctly located,
- replace and correctly position all collars and clips
- reposition mastic in original locations.

Potentiometers are only fitted to the driver's seat and are an integral part of the electrical connection system.

**SPECIAL NOTES FOR REFITTING**

Seat wiring has developed from a 33 to a 36 track passenger compartment / seat connector.

The white modules (passenger compartment side and seat side) have changed from 6 to 9 tracks, and are now fitted with clips and tabs of 1,5 x 0,8 instead of 2,8 x 0,8.

When replacing old seat wiring types with new types, replace the white passenger compartment module with a 9 track module and the old tabs with 1,5 x 0,8 tabs (see P.R. 830 for the parts and N.T. 8074 for the method).

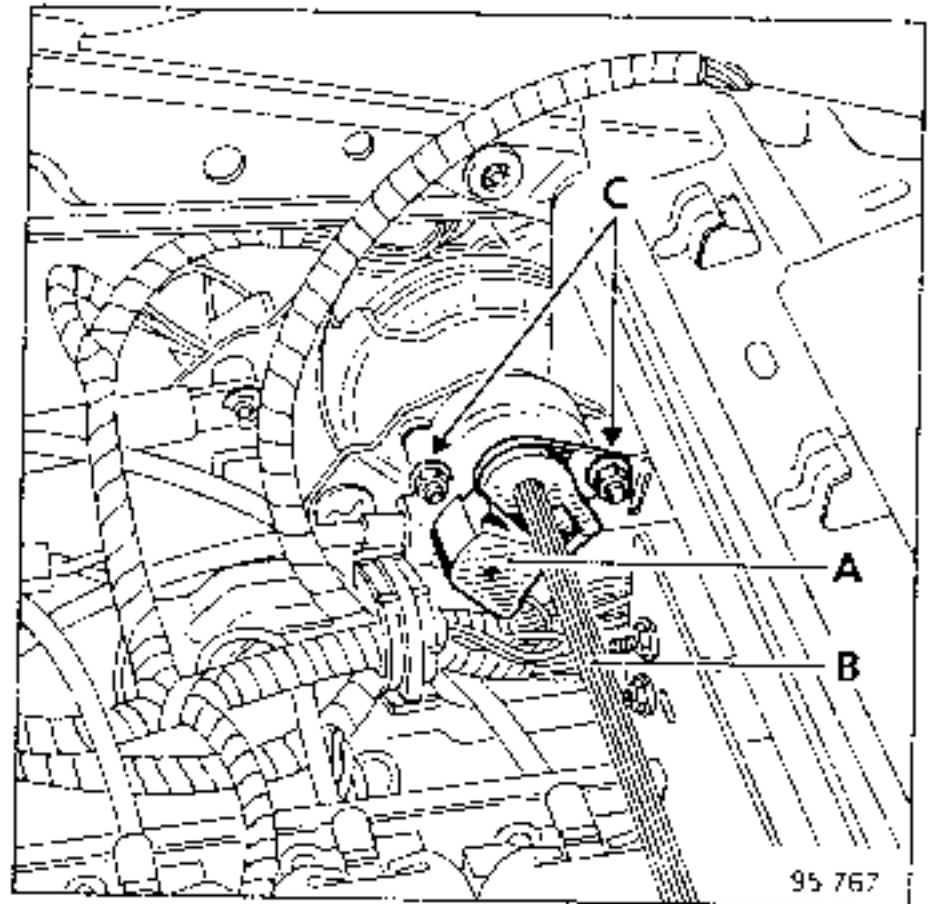
**REMOVAL**

Remove the seat and remove the head restraint (if fitted) .

Remove the seat cover (see M R 303).

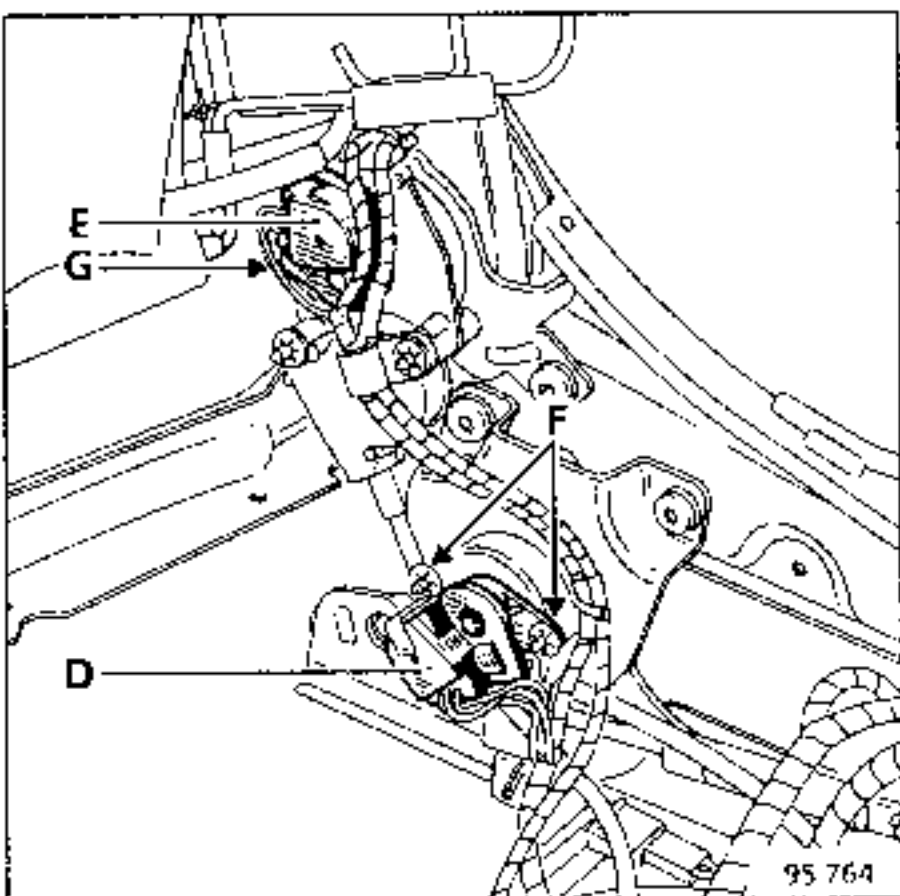
Remove the seat modular connector from its mounting and remove the 4 modules from the connector (for method see N.T. 8074).

Remove the potentiometers

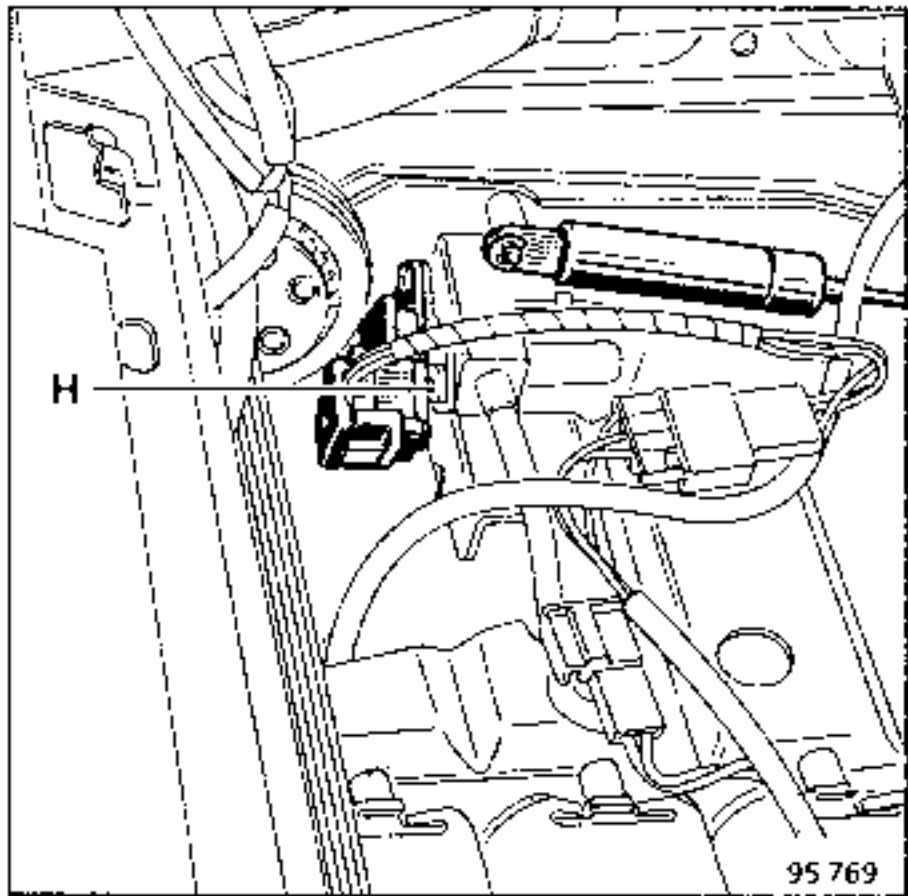


When removing the potentiometer from the front cushion (A), unclip bar (B) and push it back slightly.

Then remove nuts (C).



For the rear cushion potentiometers (D) and the seatback incline potentiometer (E), remove nuts (F) and clip (G).



To remove the potentiometer for seat position, remove bolt (H).

Unclip from the frame

- the heating mat connector,
- the ergonomic system connector,
- the longitudinal potentiometer connector.

Remove the white plastic hook from the seat wiring.

Remove the switch wiring after unclipping the clip of the 5 track grey module and disconnecting the earth wire under the rubber protector

Cut the motor feed wire insulation to separate the feed wires.

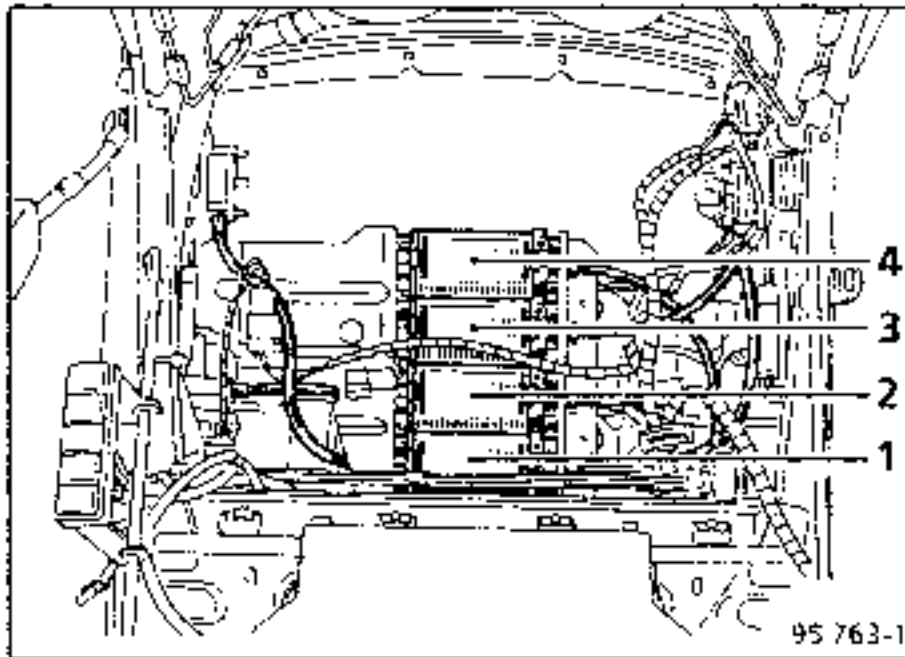
**NOTE :** For the seatback incline motors (3) and front cushion motors (4) mark the respective feed wires and tie them together (so they are not confused when they are refitted, especially the two black wires).

Cut the motor feed wires :

- close to the wire joint for the common wires,
- 4 cm from the motor support plate for the control wires,

to facilitate refitting the new wires.

Remove the motor feed wires and potentiometer wires having cut their retaining collars.



- Motors:
- 1 rear cushion
  - 2 longitudinal
  - 3 seatback incline
  - 4 front cushion

### SPECIAL NOTES FOR REFITTING

Replace the motor feed wires and potentiometer wires, ensuring they are correctly positioned.

Refit the potentiometers (replace the clips).

Re-secure the wiring using the appropriate collars and refit them into the white hook.

**ATTENTION** : the wiring should not be in contact with the drive bar for the front cushion when the seat moves.

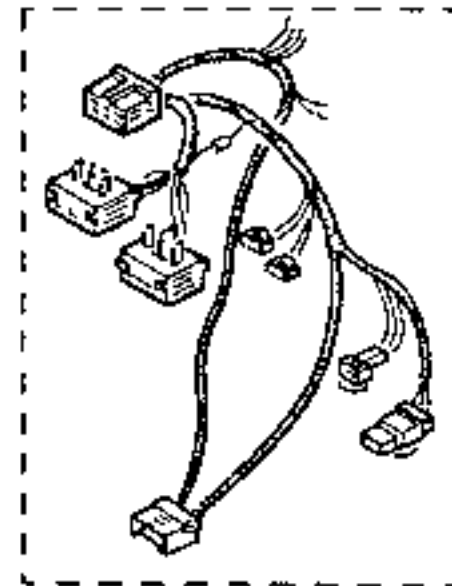
Adjust the new wire lengths to suit the remaining motor wires.

Connect the two motor feed wires to the connector using two heat shrink sleeves with metal cores (see P.R. 830 and method in Technical Note 8075) carefully noting the wire colours.

**NOTE** : the two black wires for the seat position motor (2) and the rear cushion motor (1) may be interchanged.

Place any surplus wire under the connectors and secure with plastic collars to void them being snagged when the seat moves.

### Replacement (passenger seat)



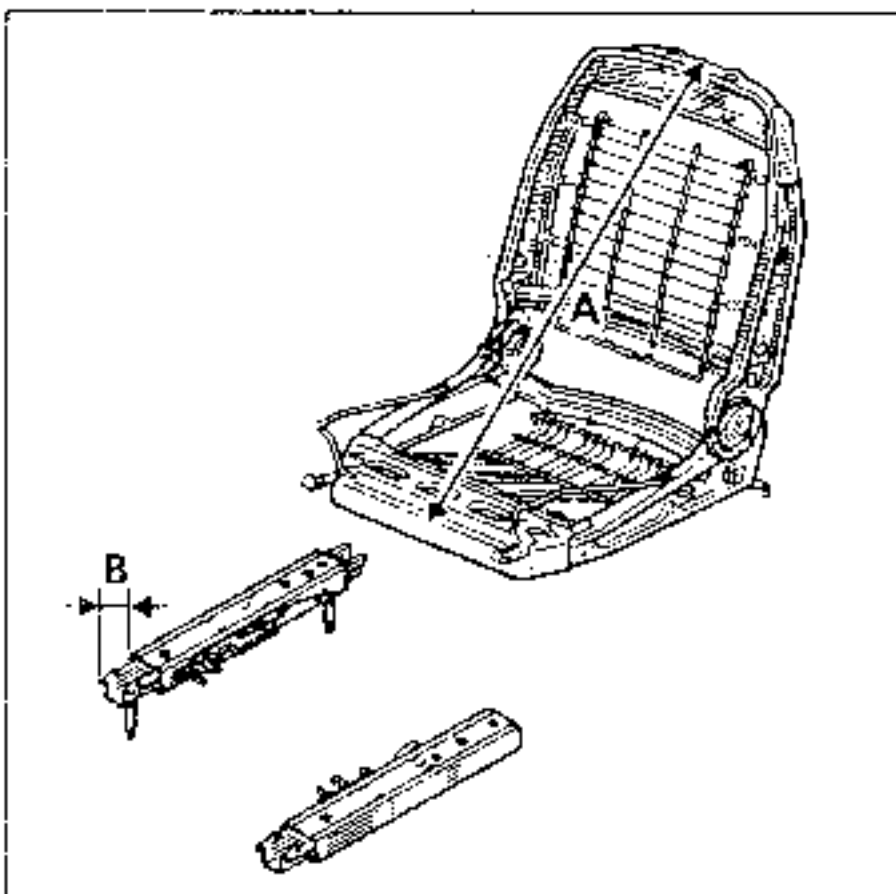
The same method for replacing wiring on the driver's seat should be used for the passenger seat.

The operation is made easier by the lack of potentiometers and the presence of a motor feed connector.

## WIRING (cont)

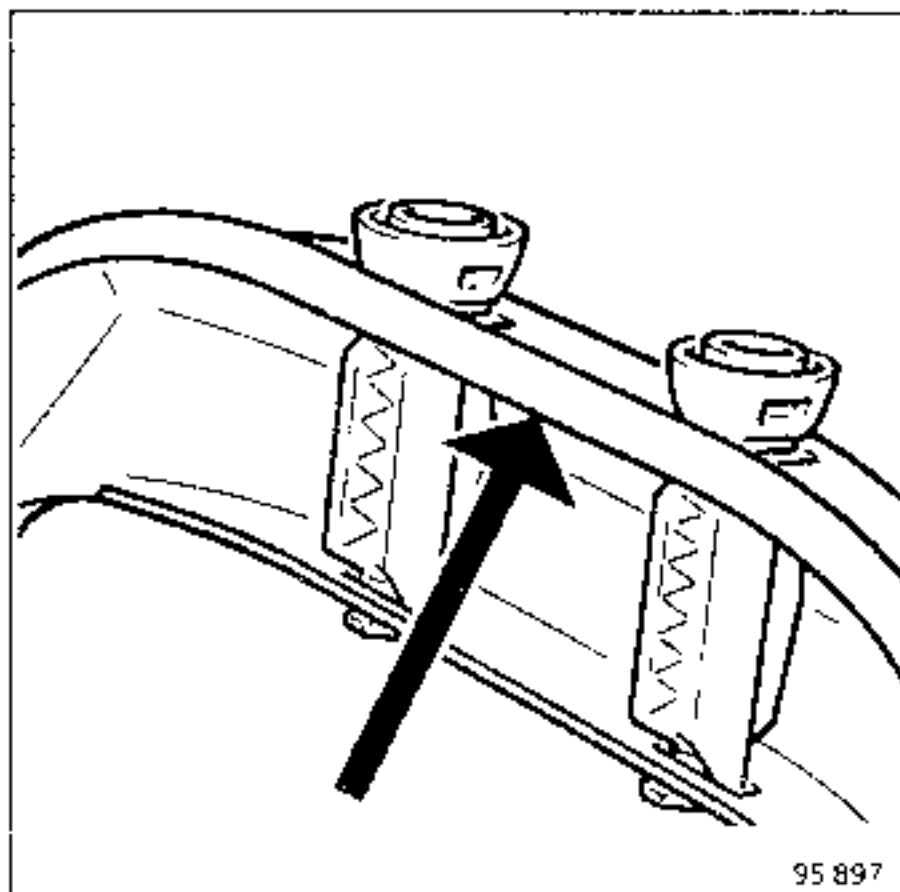
## 3) Adjusting the potentiometers

**IMPORTANT** : when adjusting one or more potentiometers, the seat must be without its cover and in the vehicle (passenger compartment / seat connector connected) in the standard position described below.

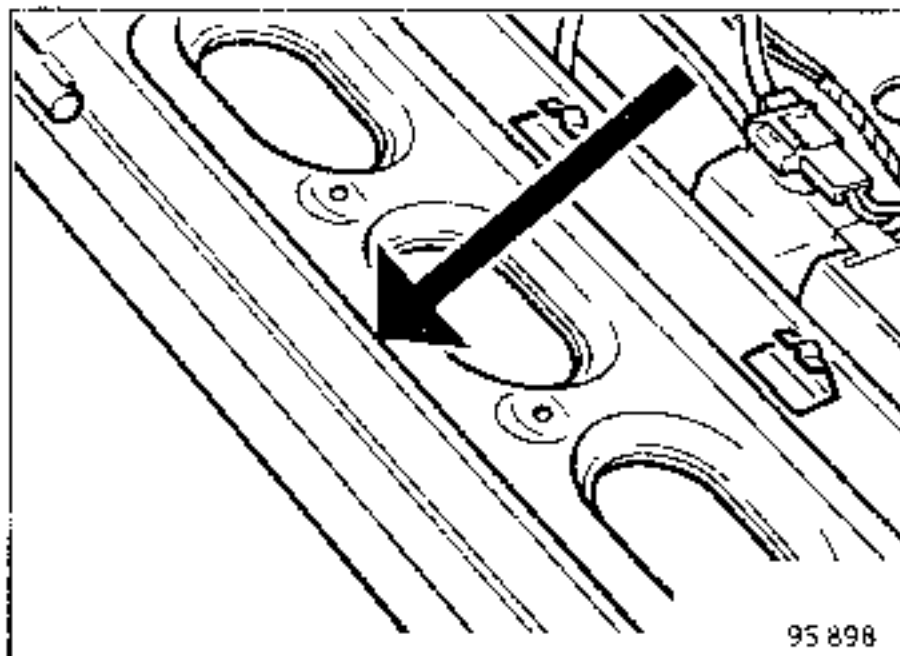


Rear and front cushions in high position.

Seatback incline dimension (A)	76 cm
Runner dimension (B)	5 cm



95 897



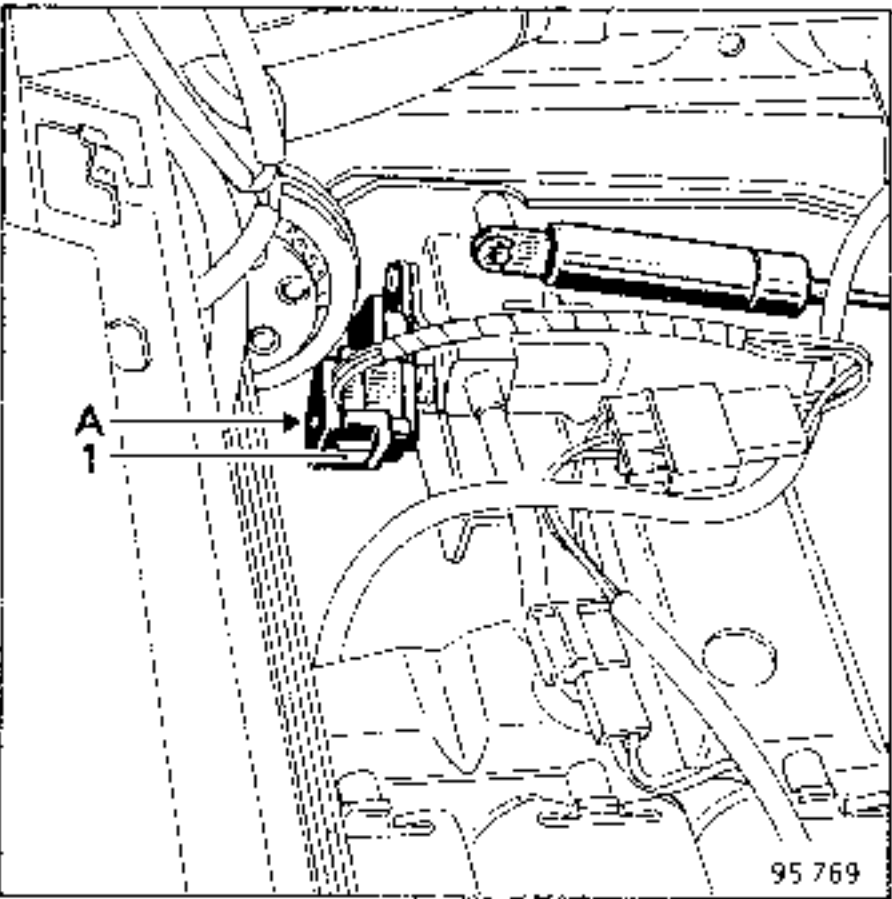
95 898

Vehicle stationary, ignition on, on/off switch depressed, use the manual control keys to put the seat in the standard position (see operating chapter page 88-26).

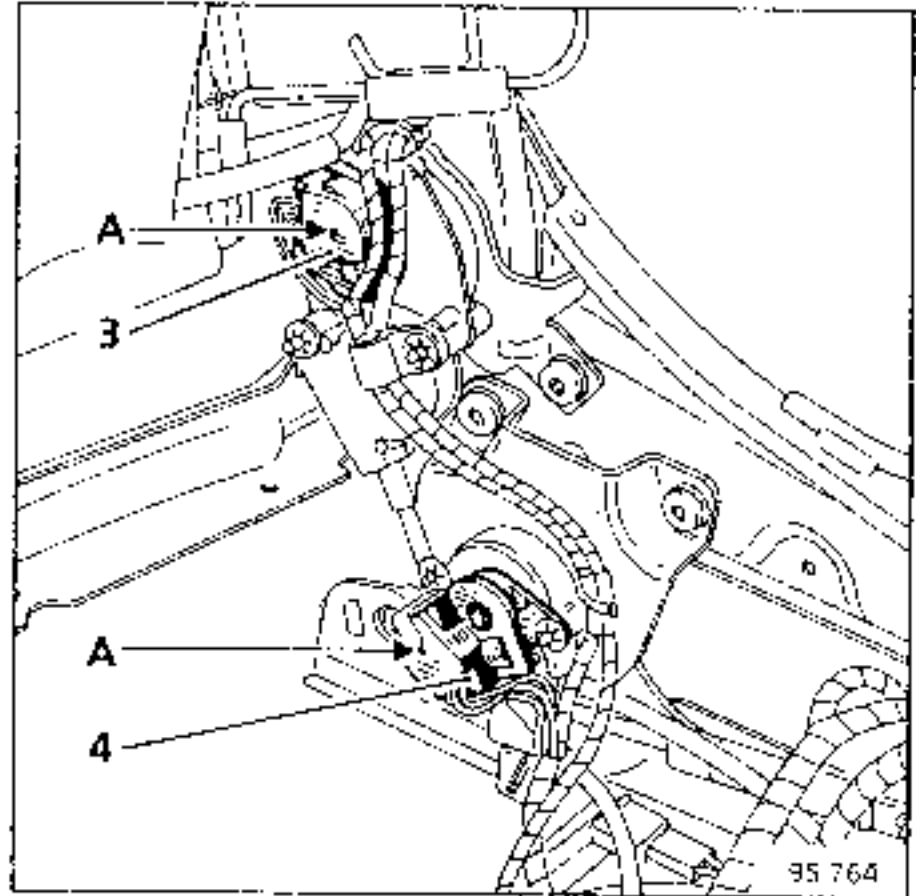
Connect the XR 25 to the diagnostic socket using cassette n° 10 and put the selector switch on S8.

Enter to access TEST 2.

**G 0 2 \***



Enter **# 0 1**  
and adjust the longitudinal potentiometer (1) to  $41\% \pm 2\%$

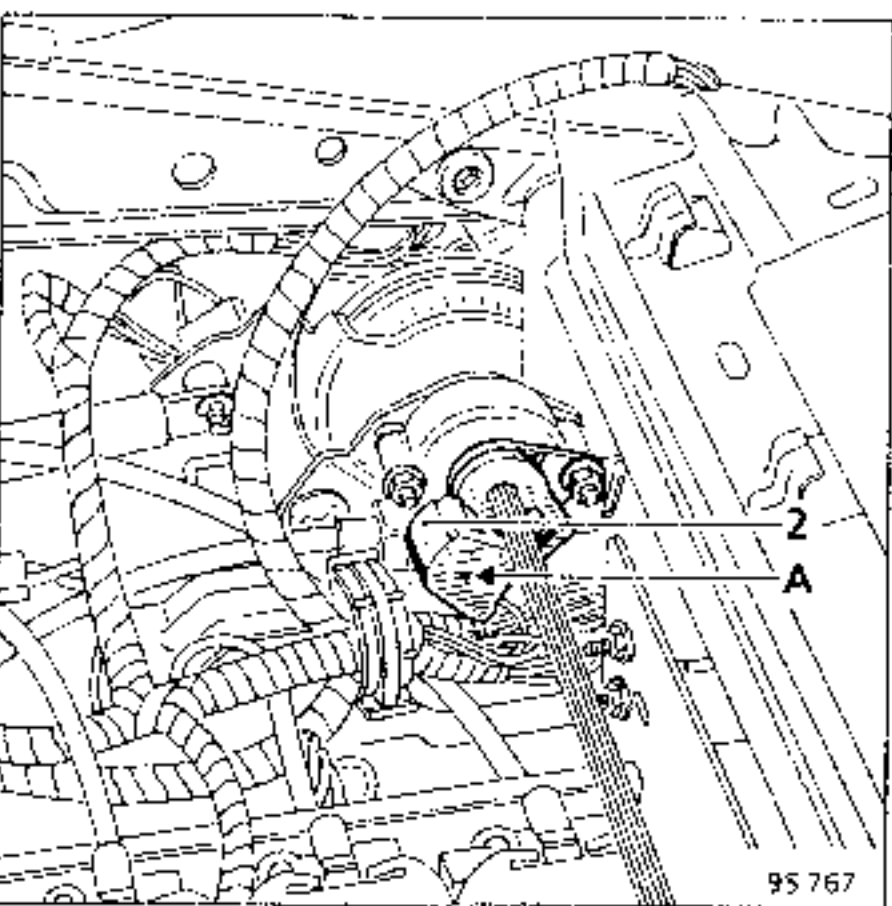


Enter **# 0 4**  
and adjust the seatback potentiometer (3) to  $57\% \pm 2\%$

Enter **# 0 5**  
and adjust the rear cushion potentiometer (4) to  $76\% \pm 2\%$

The adjustment is made by moving the potentiometer in relation to reference marks (A) using a small screwdriver FACOM AEF 2 x 35 or a similar tool 2 x 35 which must be in good condition.

If this tool condition and dimension is not observed the potentiometers may be damaged and be impossible to adjust.



Enter **# 0 2**  
and adjust the front cushion potentiometer (2) to  $70\% \pm 2\%$