



Rolls-Royce Phantom V1

From car serial number PGH 101

Electrical system Torque tightening figures

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**Rolls-Royce Motors Limited
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Introduction

This information has been compiled to assist Service Personnel responsible for the maintenance and overhaul of Rolls-Royce Phantom VI motor cars built from car serial number PGH 101.

Information relating to any subsequent modifications will be circulated by the issue of either amended pages or service bulletins.

An issue record sheet is enclosed showing the issue of sections and amended pages. When a section or amended page is issued it will be recorded together with the date of issue. This will provide an up-to-date record of sections and pages.

Service Personnel at Rolls-Royce Motors Limited are always prepared to answer queries or give advice on individual servicing problems. When making an enquiry it is essential that the full car serial number is quoted.

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Electrical system

Section

- Introduction
- 1 Fuseboard layout
- 2 Power distribution
- 3 Charging system
- 4 Starting system
- 5 Ignition system
- 6 Exterior lighting
- 7 Interior lighting
- 8 Wipers and washers
- 9 Division lift
- 10 Electrically operated windows
- 11 Horns
- 12 Centralised door locking
- 13 Electric gearchange
- 14 Instruments and warning lamps
- 15 Theoretical wiring diagram

Electrical System

Issue record sheet 1

September 1979

The dates quoted below refer to the issue date of individual pages within this chapter.

Section	1	2	3	4	5	6	7	8	9	10	11	12
Page No.												
1	Sept 79	Sept 79	Sept 79	Sept 79	Sept 79	Sept 79	Sept 79	Sept 79	Sept 79	Sept 79	Sept 79	Sept 79
2												
3			Sept 79	Sept 79	Sept 79	Sept 79	Sept 79	Sept 79	Sept 79	Sept 79		Sept 79
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5					Sept 79	Sept 79		Sept 79				
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Issue record sheet 2

The dates quoted below refer to the issue date of individual pages within this chapter.

Section	13	14	15
Page No.			
1	Sept 79	Sept 79	Sept 79
2			
3	Sept 79	Sept 79	
4			
5		Sept 79	
6			
7		Sept 79	
8			
9			
10			
11			
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Electrical System

Introduction

The electrical system is negative earth. Separate system wiring diagrams and component location charts together with a theoretical wiring diagram are provided to aid fault finding.

Precautions

Whenever possible, the gear selector lever should be placed in the 'Park' position. Also the ignition key and gearbox isolator removed from the car.

The battery must not be connected or disconnected when the engine is running.

General information

When fault finding, to prevent the occurrence of misleading faults ensure that the battery is in a fully charged condition.

Cable colour code

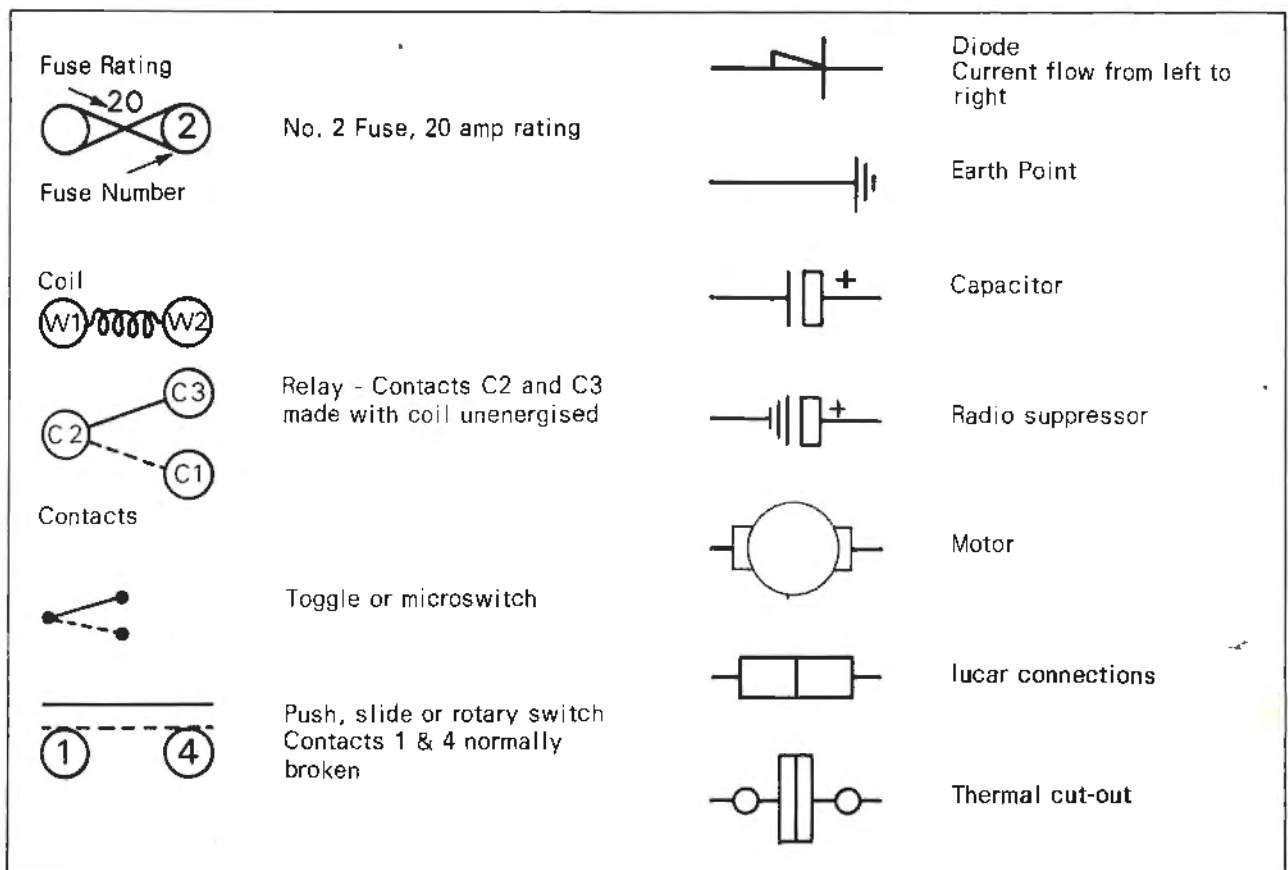
The cables are plastic-covered and are colour coded as follows:-

B Black	LG Light green
N Brown	V Blue
R Red	S Slate
O Orange	P Purple
Y Yellow	W White
G Green	K Pink

Connector code

Each diagram contains a code to identify and locate plug and socket connections.

As a further aid to identification of components, the following information is provided.

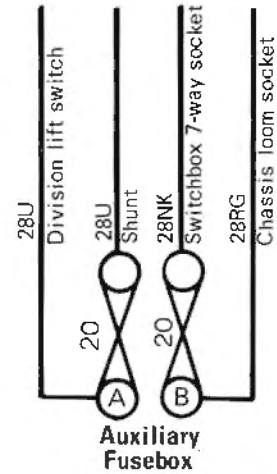


Section 1

Fuseboard layout

Schematic wiring diagram

Fig. 1 - 1

**Auxiliary fuses**

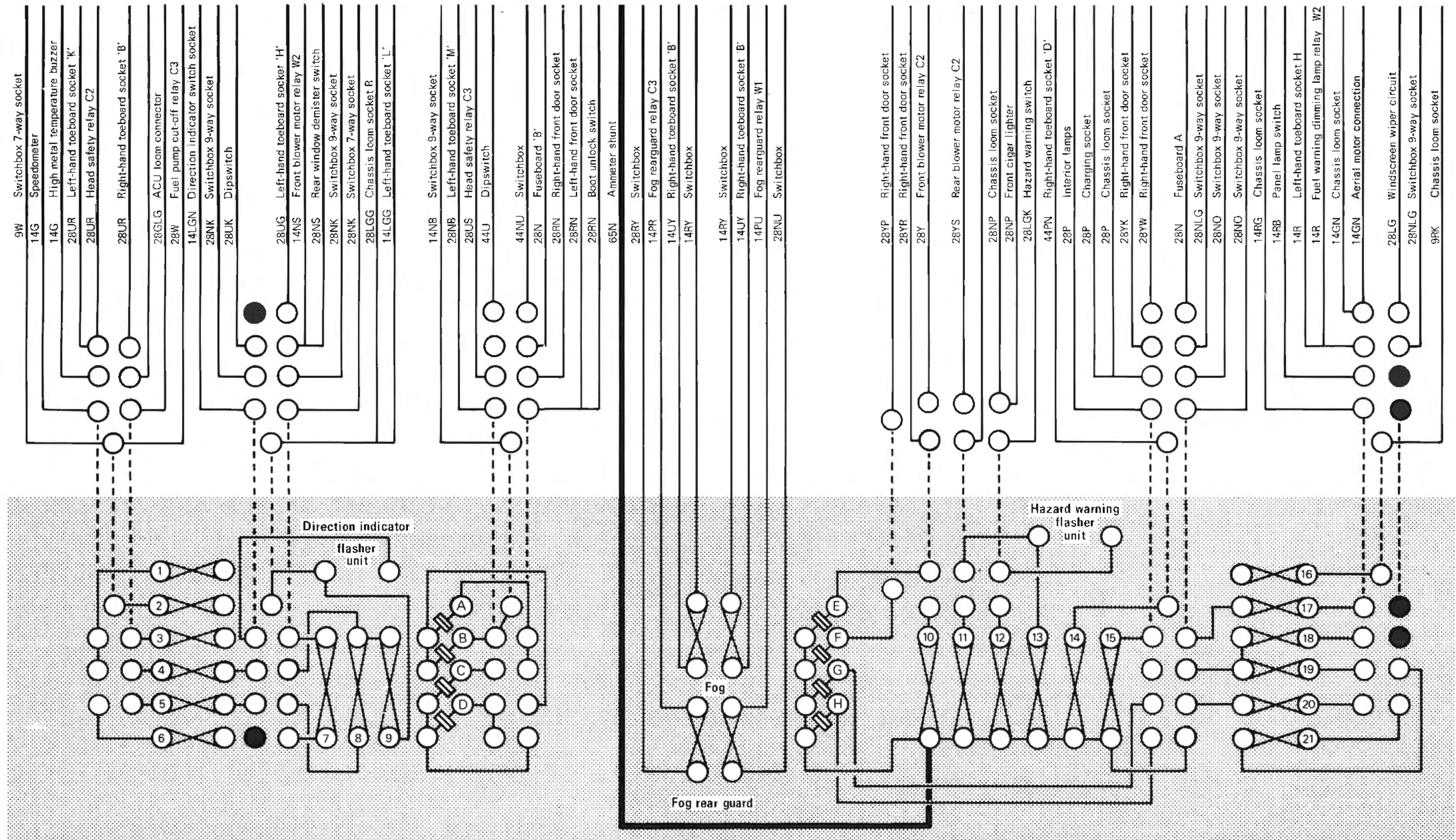
- A Division motor
B Rear compartment air conditioner

Thermal cut-outs

- A Door locking
B Gearchange
C Headlamp safety
D Headlamp feed
E Right-hand front window lift
F Left-hand front window lift
G Left-hand rear window lift
H Right-hand rear window lift

Fuses

- | | |
|---|---|
| 1 Gauges and Warning lights | 12 Cigar lighters and clock |
| 2 Ignition, Fuel pumps, Kickdown | 13 Hazard warning |
| 3 Air conditioner | 14 Horns |
| 4 Spare | 15 Interior lights, Boot and Bonnet lights |
| 5 Head safety dip beam | 16 Left-hand tail lamp |
| 6 Head safety | 17 Right-hand tail lamp |
| 7 Head flash | 18 Panel lights |
| 8 Rear window demister | 19 Parking lights |
| 9 Direction indicator, Stop and Reverse lamps | 20 Radio and aerial (radio also fused separately) |
| 10 Front blowers | 21 Windscreen |
| 11 Rear refrigeration | |



Section 2

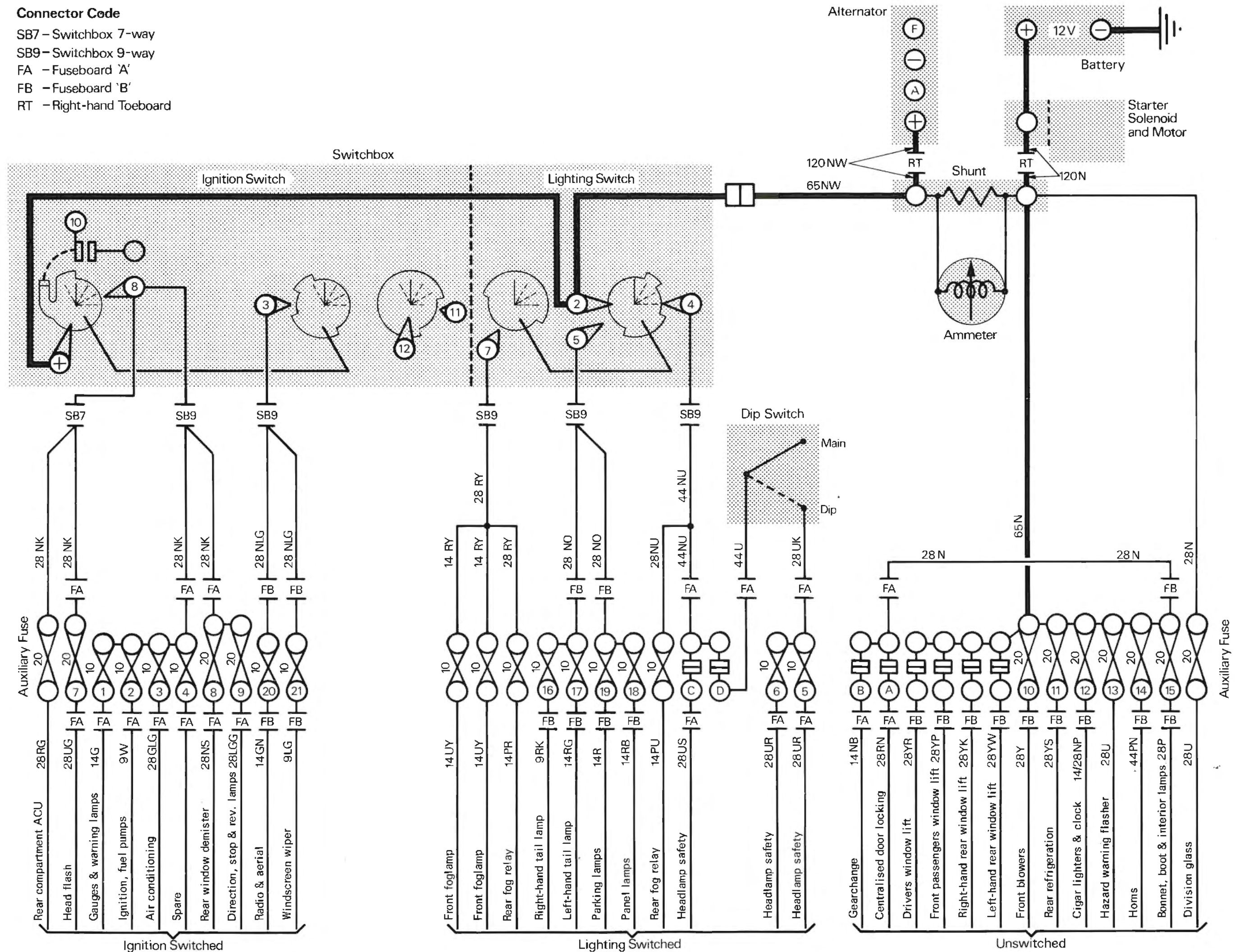
Power distribution

Schematic wiring diagram

Fig. 2 - 1

Connector Code

SB7 – Switchbox 7-way
SB9 – Switchbox 9-way
FA – Fuseboard 'A'
FB – Fuseboard 'B'
RT – Right-hand Toeboard

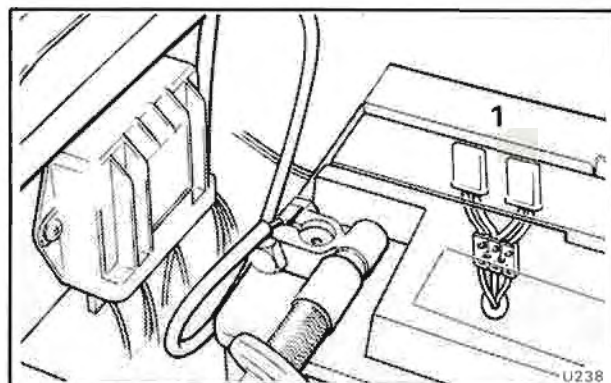


Section 3

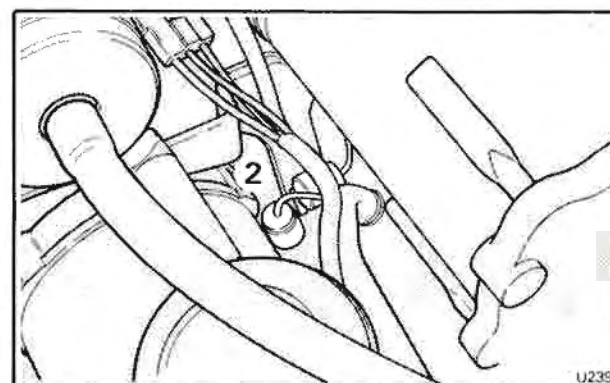
Charging system

Component location

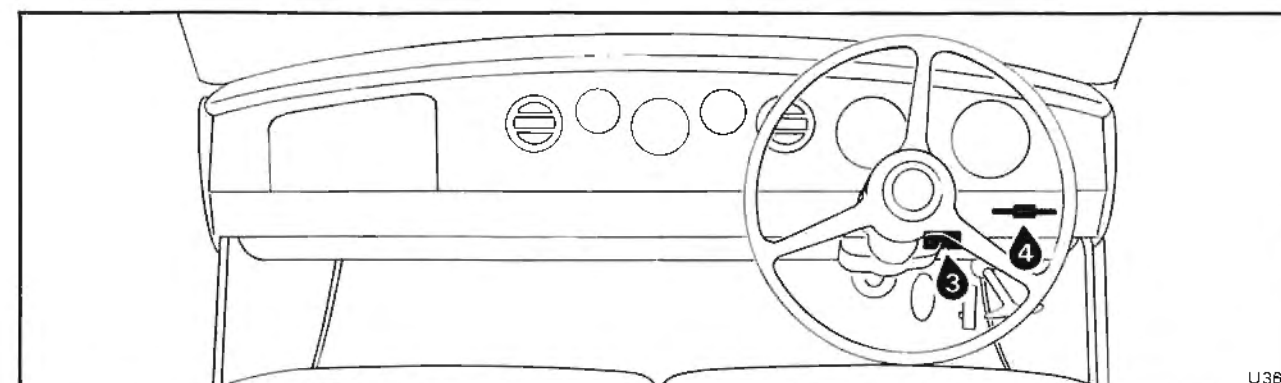
Fig. 3 - 1



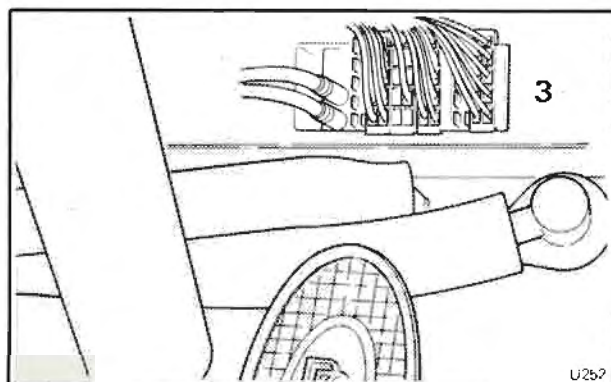
1 Battery temperature sensors



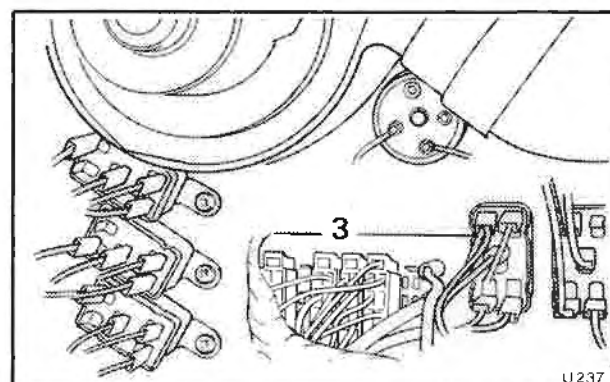
2 Radio suppressors



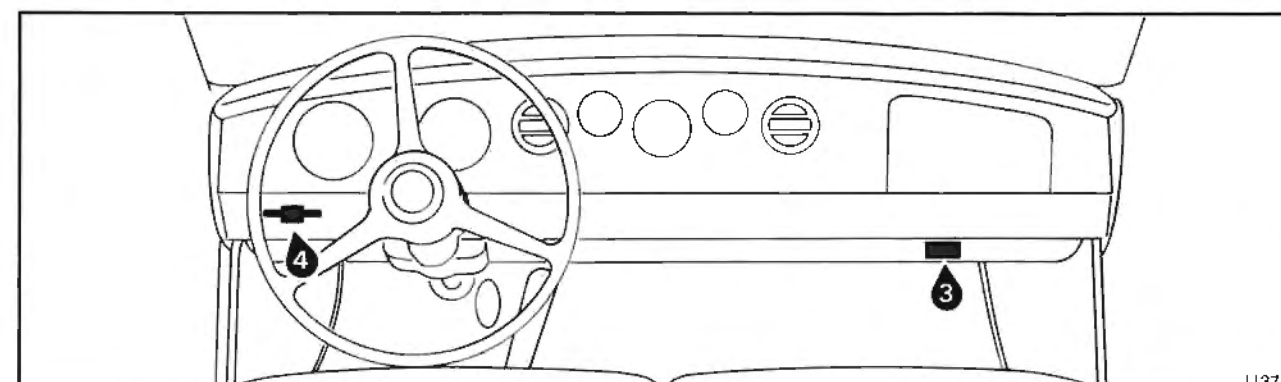
Right-hand drive location of 3 and 4



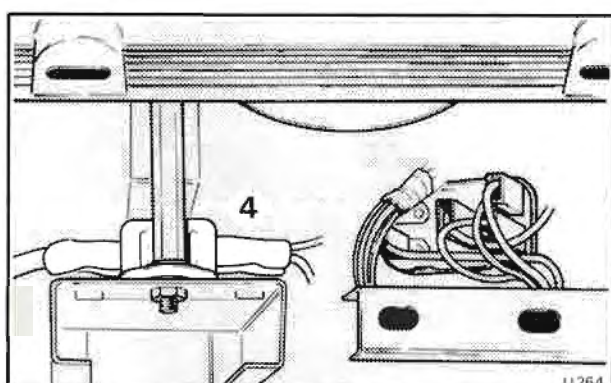
3 Right-hand toeboard sockets
(passenger compartment)



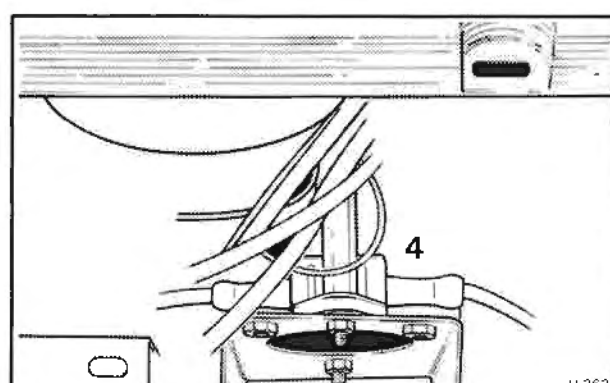
3 Right-hand toeboard sockets
(engine compartment)



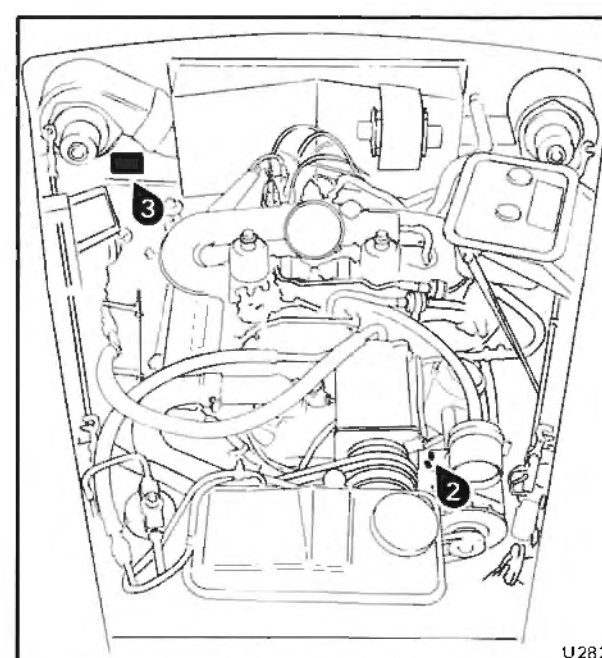
Left-hand drive location of 3 and 4



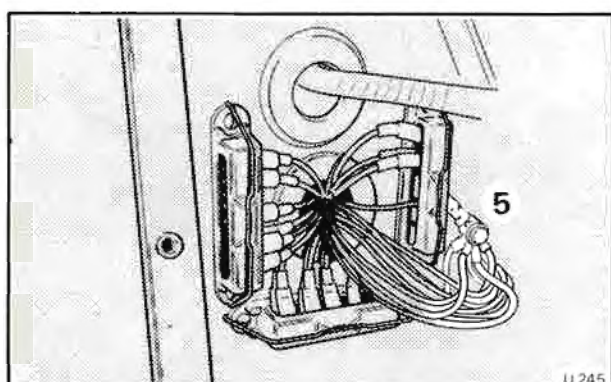
4 Ammeter shunt left-hand drive cars



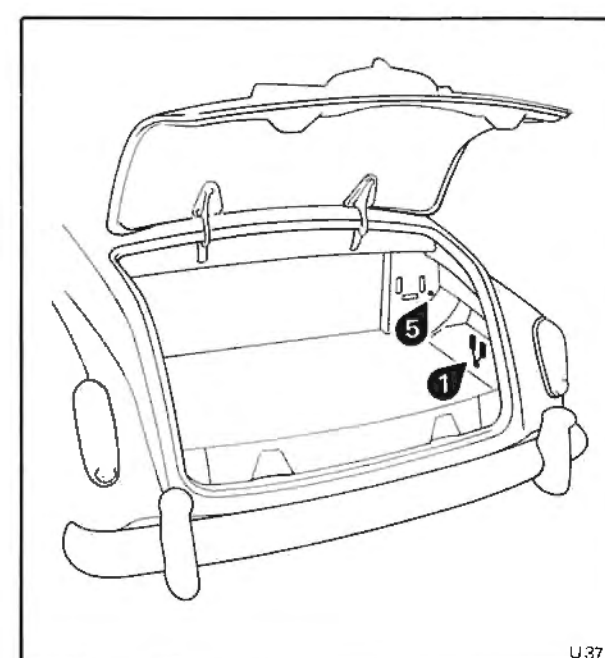
4 Ammeter shunt right-hand drive cars



Engine compartment location of 2 and 3



5 Right-hand boot earth



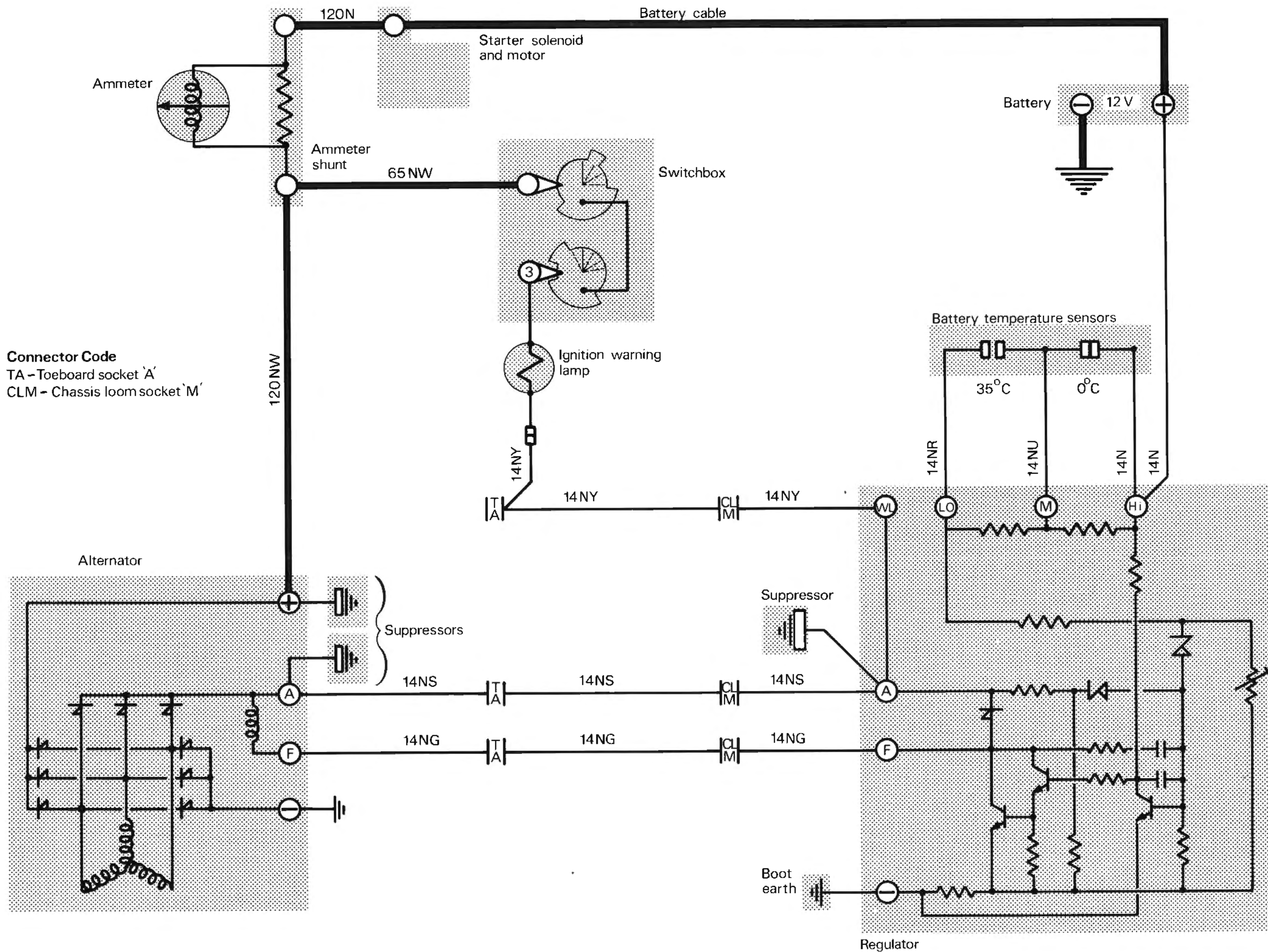
Boot location of 1 and 5

Section 3

Charging system

Schematic wiring diagram

Fig. 3 - 2

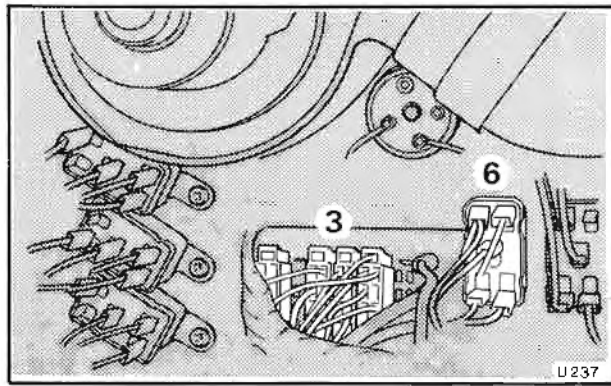


Section 4

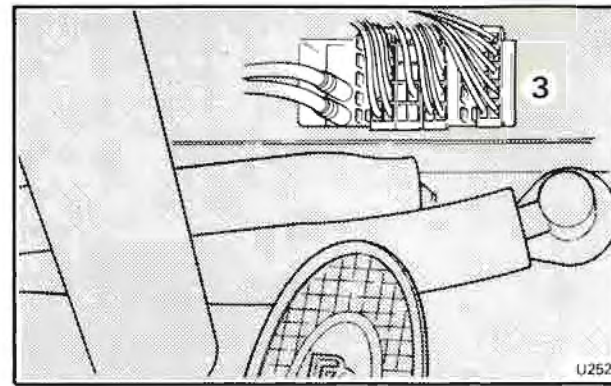
Starting system

Component location

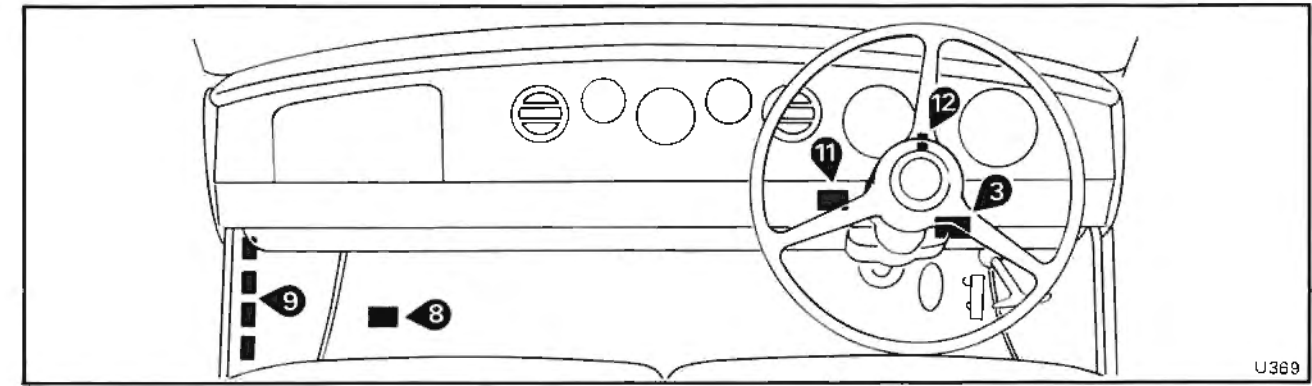
Fig. 4 - 1



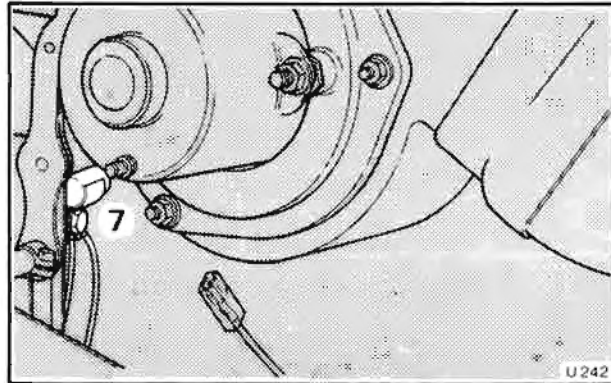
3 Right-hand toeboard sockets
(engine compartment)
6 Starter relay



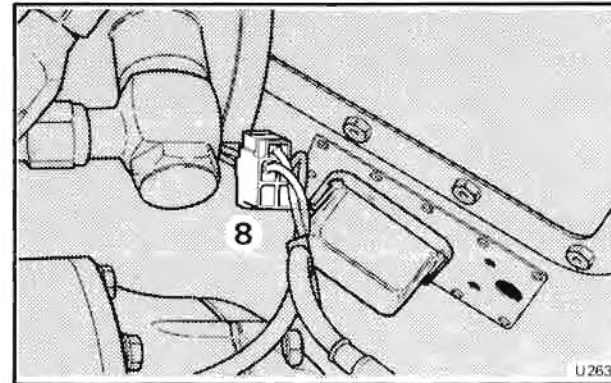
3 Right-hand toeboard sockets
(passenger compartment)



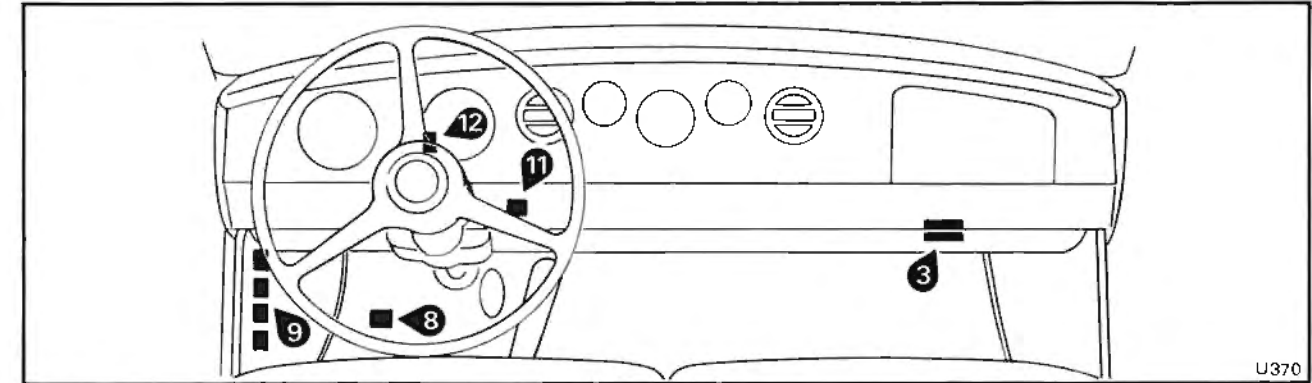
Right-hand drive location of 3, 8, 9, 11 and 12



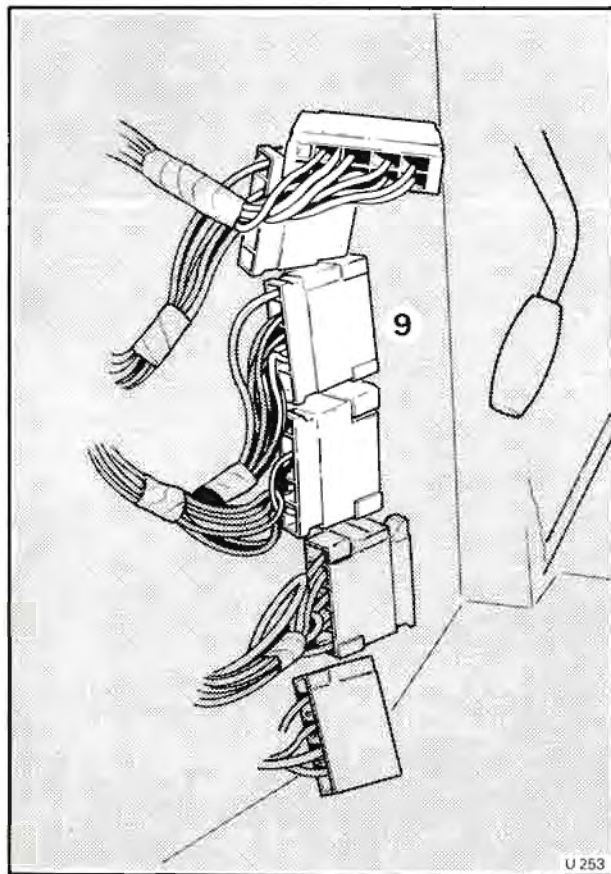
7 Right-hand valve earth



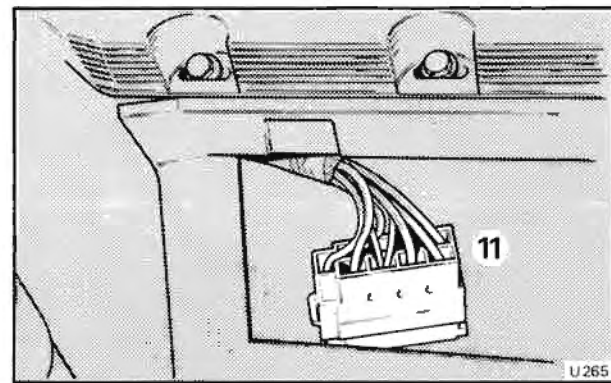
8 Engine loom socket



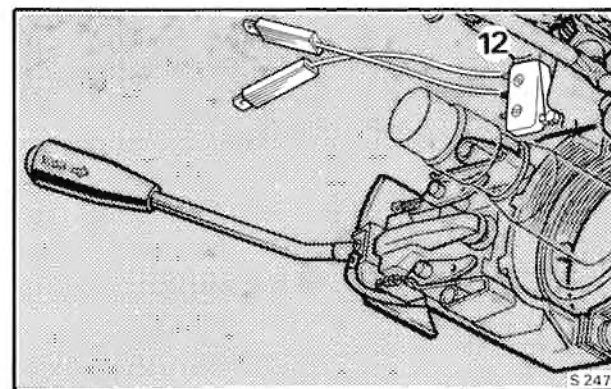
Left-hand drive location of 3, 8, 9, 11 and 12



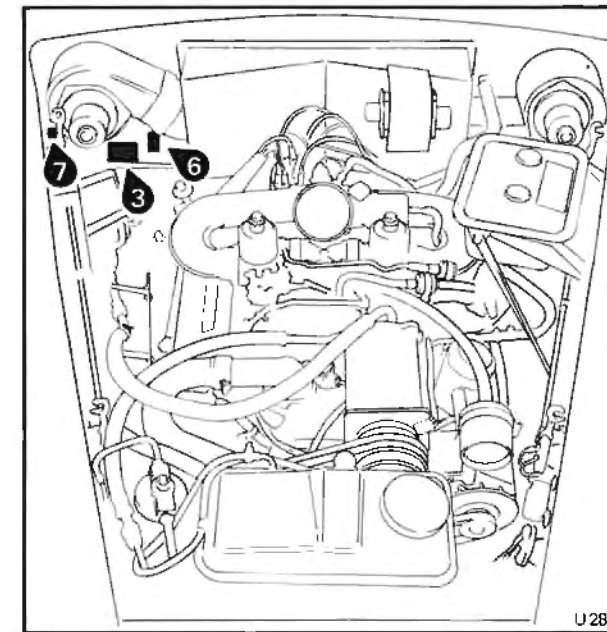
9 Left-hand toeboard sockets



11 Gear selector socket (on the steering column)



12 Column Neutral start switch



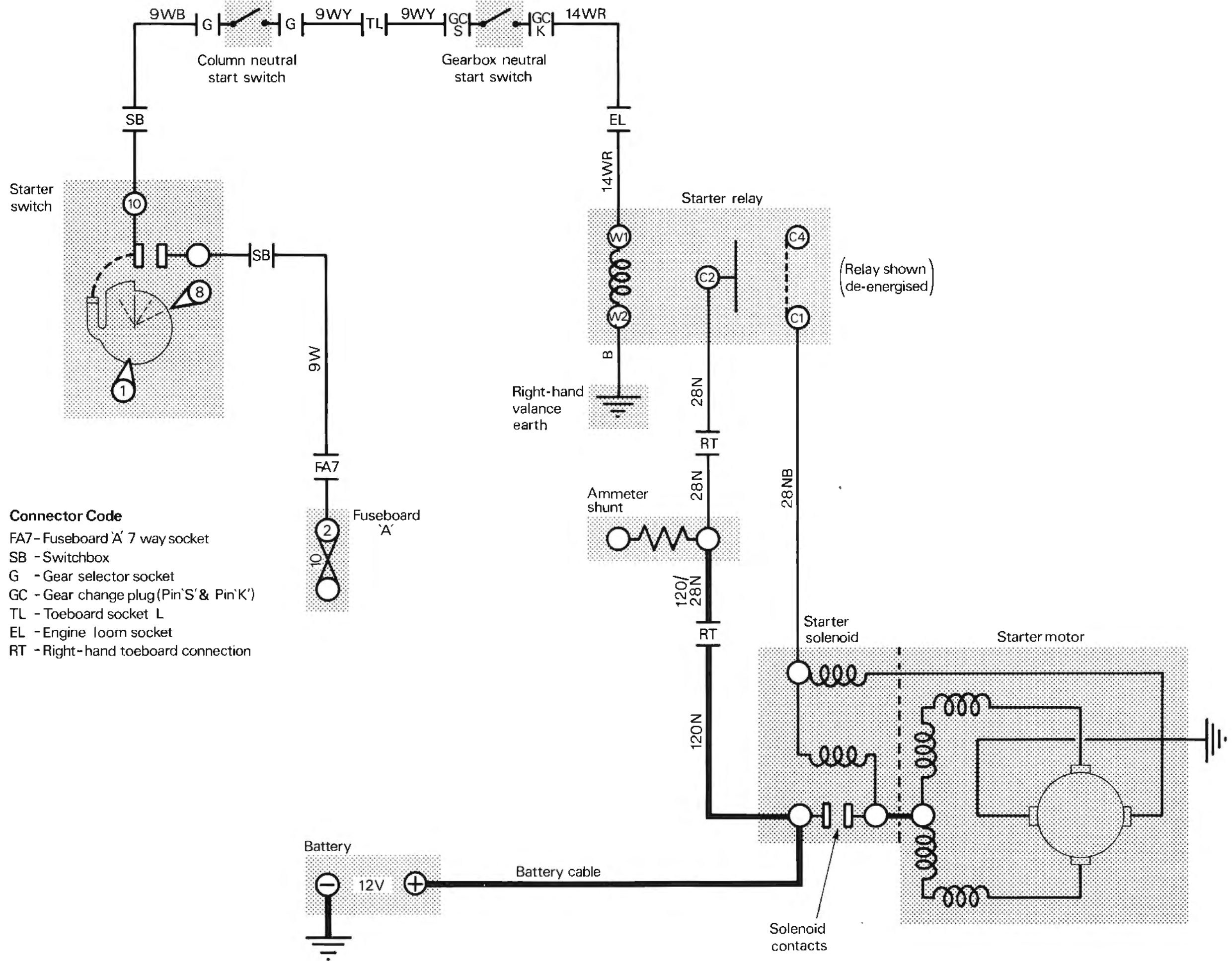
Engine compartment location of 3, 6, and 7

Section 4

Starting system

Schematic wiring diagram

Fig. 4 - 2

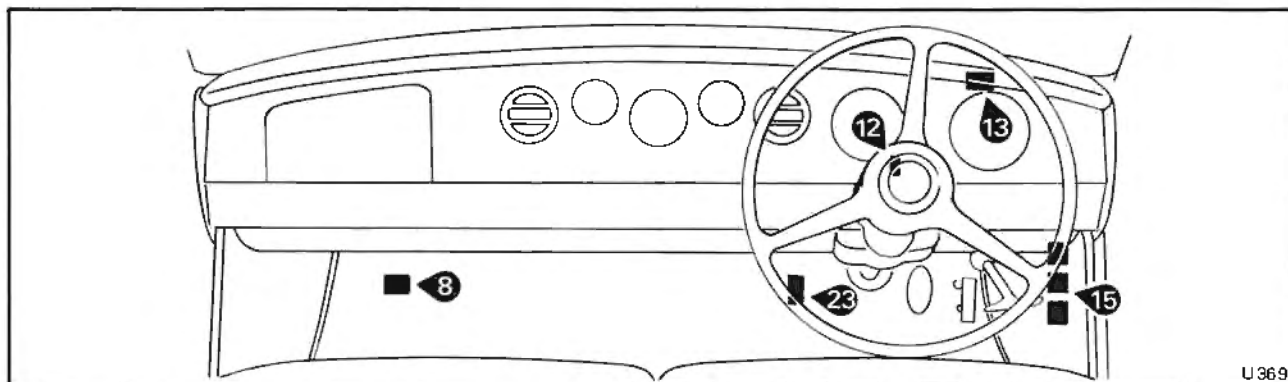


Section 5

Ignition system

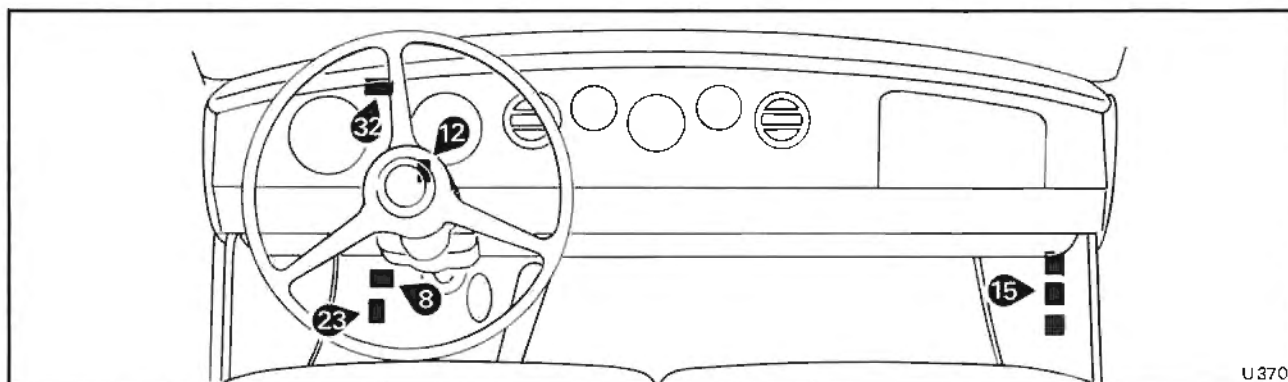
Component location

Fig. 5 - 1



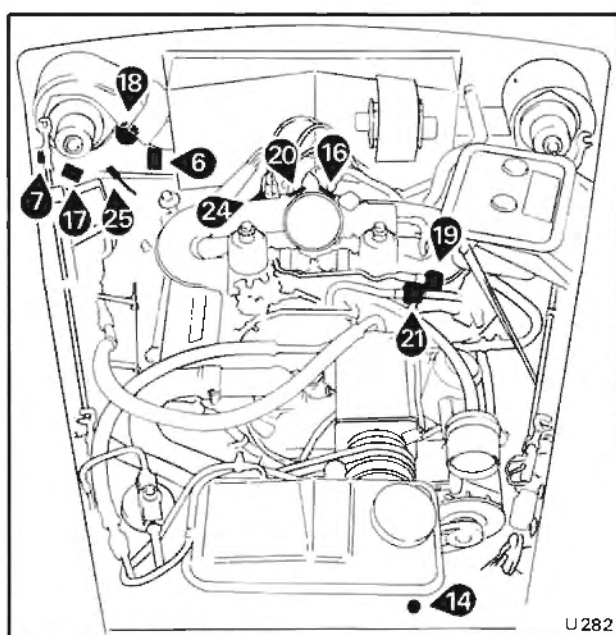
U 369

Right-hand drive location of 8, 12, 13, 15 and 23



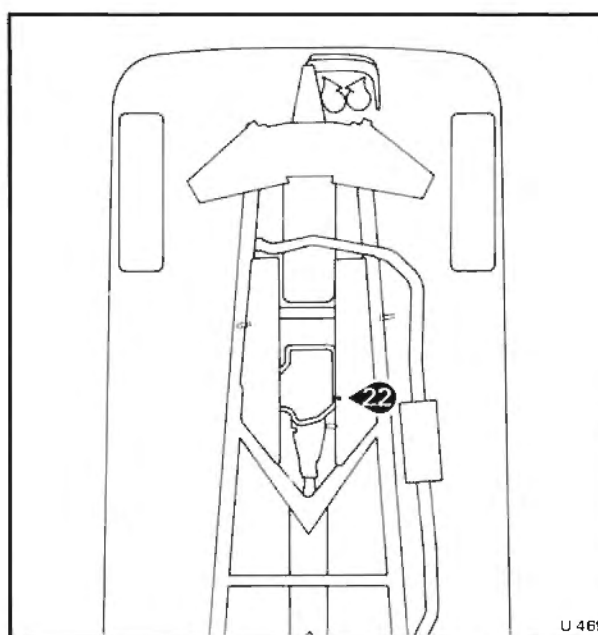
U 370

Left-hand drive location of 8, 12, 15, 23 and 32



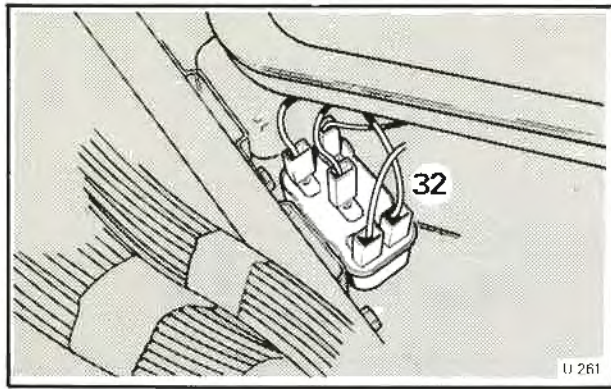
U 282

Engine compartment location of 6, 7, 14, 16 to 20, 21, 24 and 25

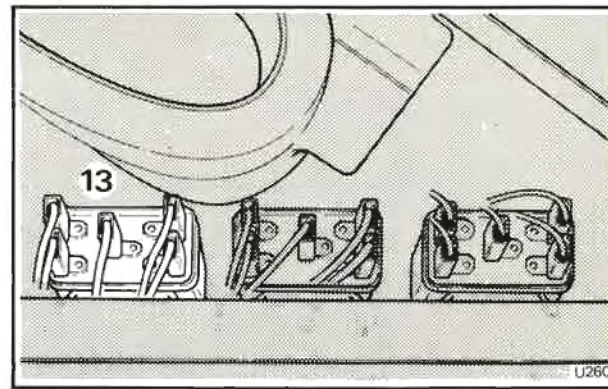


U 469

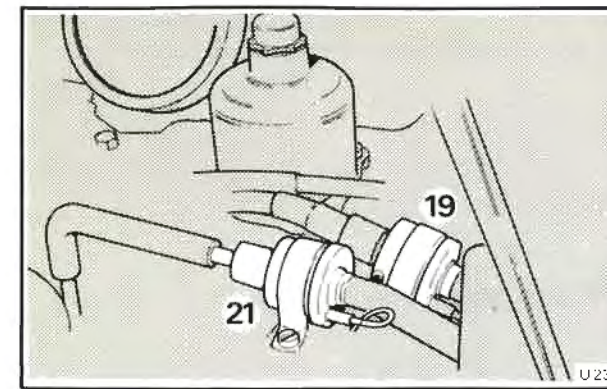
Front underside location of 22



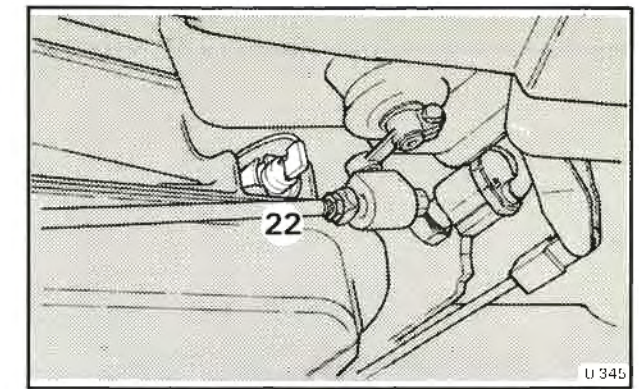
32 Left-hand drive fuel pump cut-off relay



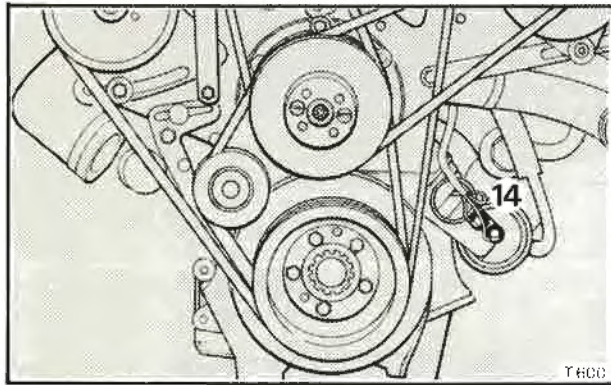
13 Right-hand drive fuel pump cut-off relay



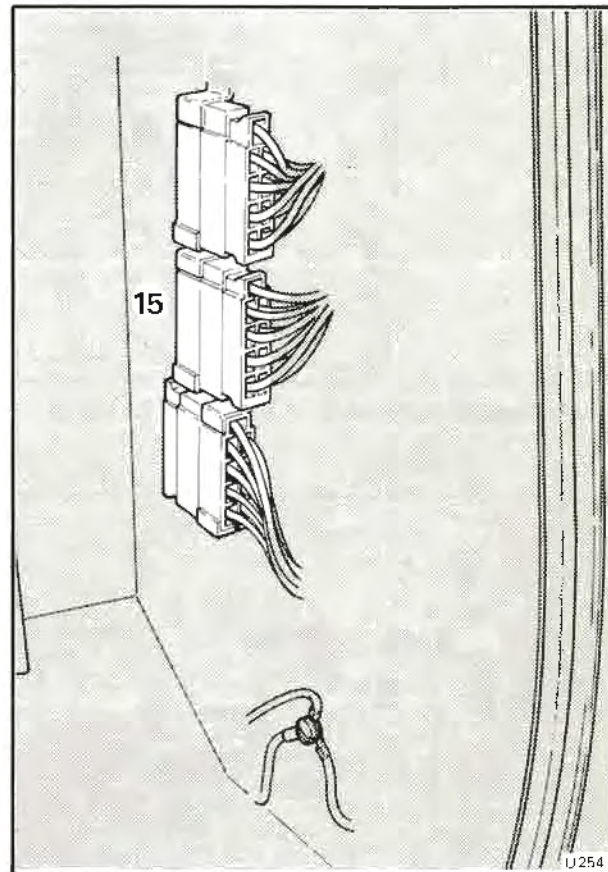
19 Throttle weakener cut-off valve
21 Anti-diesel solenoid valve



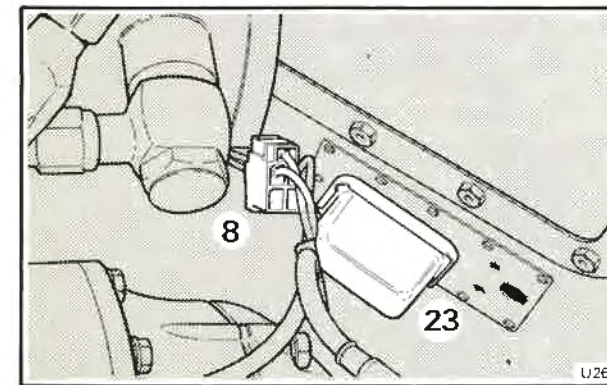
22 Kickdown solenoid



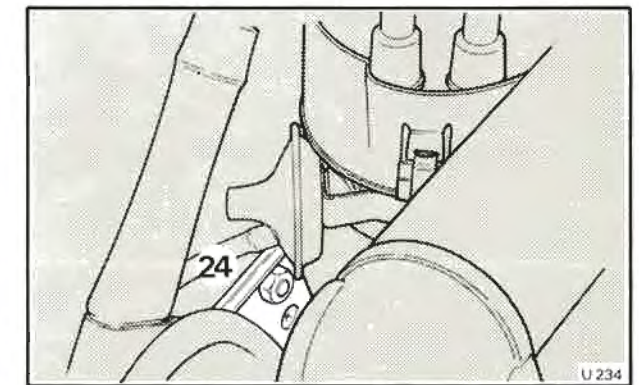
14 Oil pressure switch



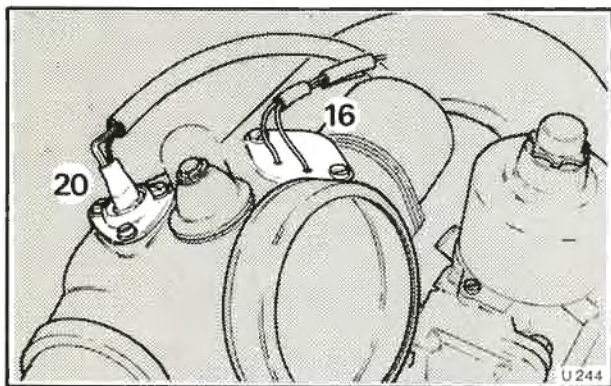
15 Chassis loom sockets



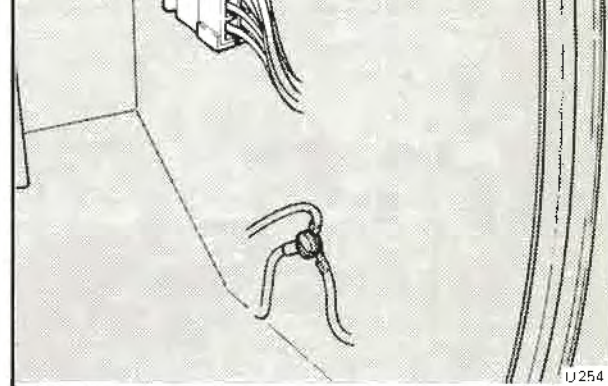
8 Engine loom socket
23 Kickdown switch



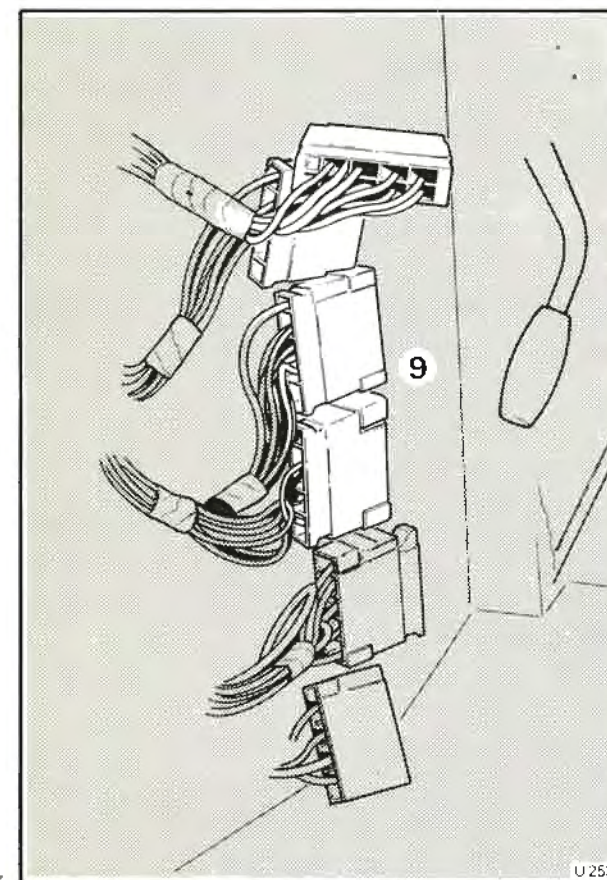
24 Ballast resistor



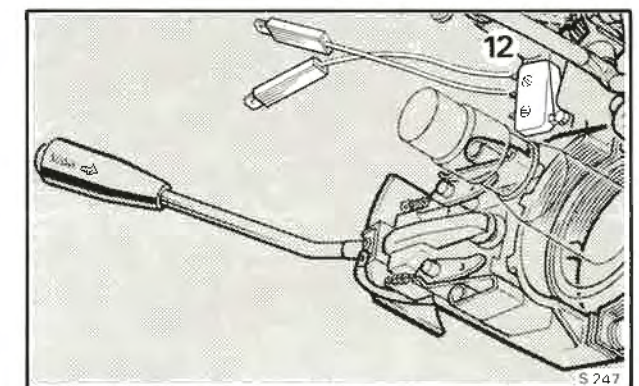
16 Choke solenoid
20 Throttle weakener switch



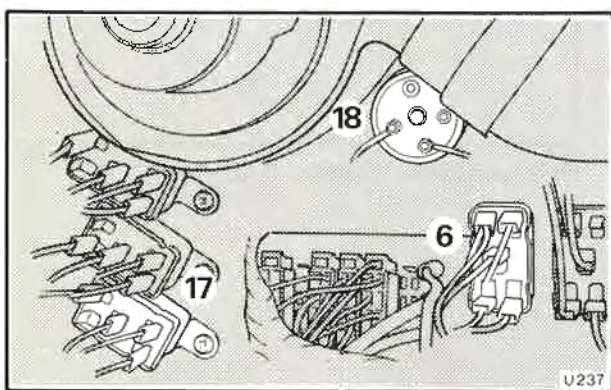
7 Right-hand valve earth
25 Tachometer test connection



9 Left-hand toeboard sockets



12 Column Neutral start switch



6 Starter relay
17 Choke thermal delay unit
18 'Choke on' start relay

Section 5

Ignition system

Schematic wiring diagram
Right-hand drive cars

Fig. 5 - 2

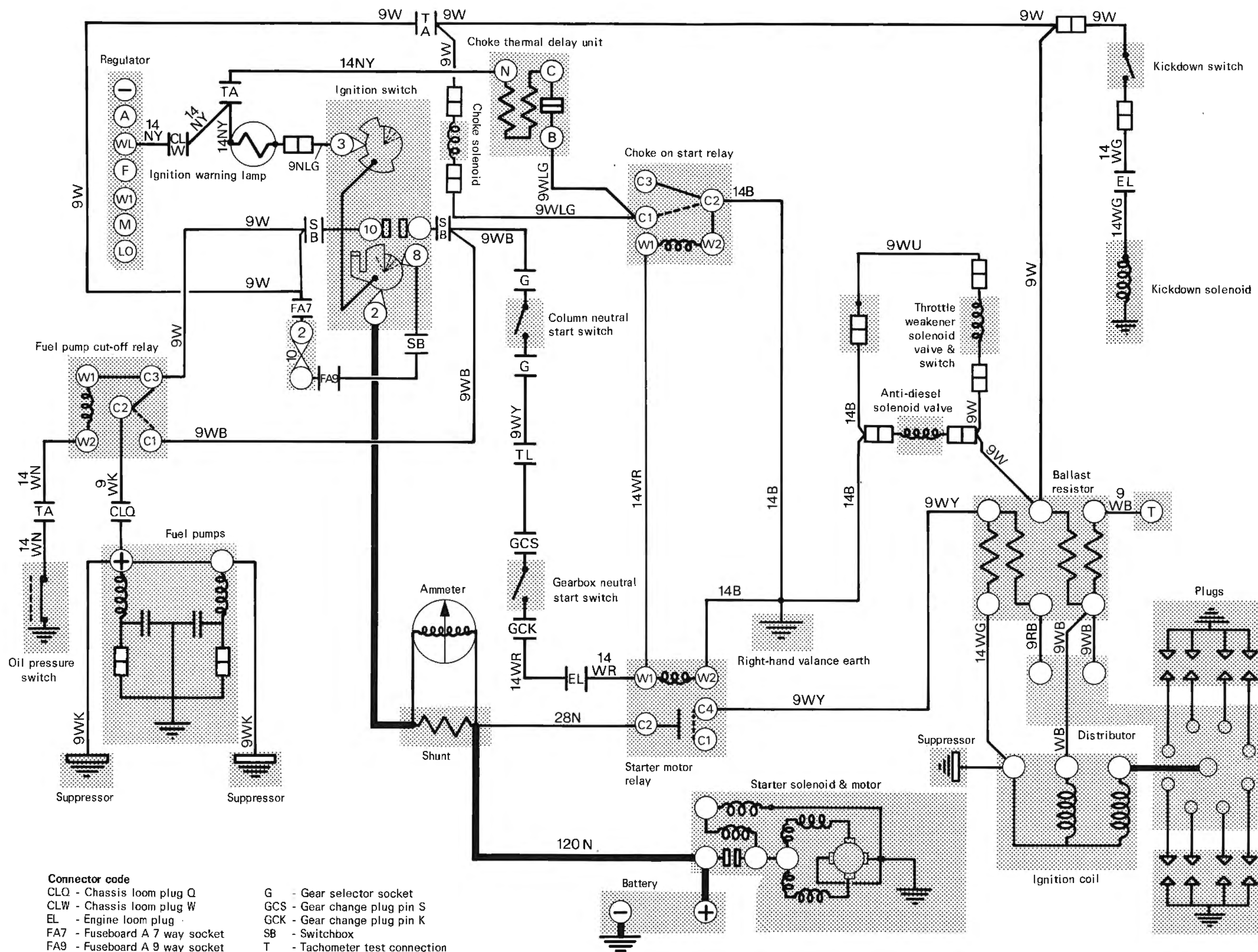
Section 5

Ignition system

Schematic wiring diagram

Left-hand drive cars

Fig. 5 - 3

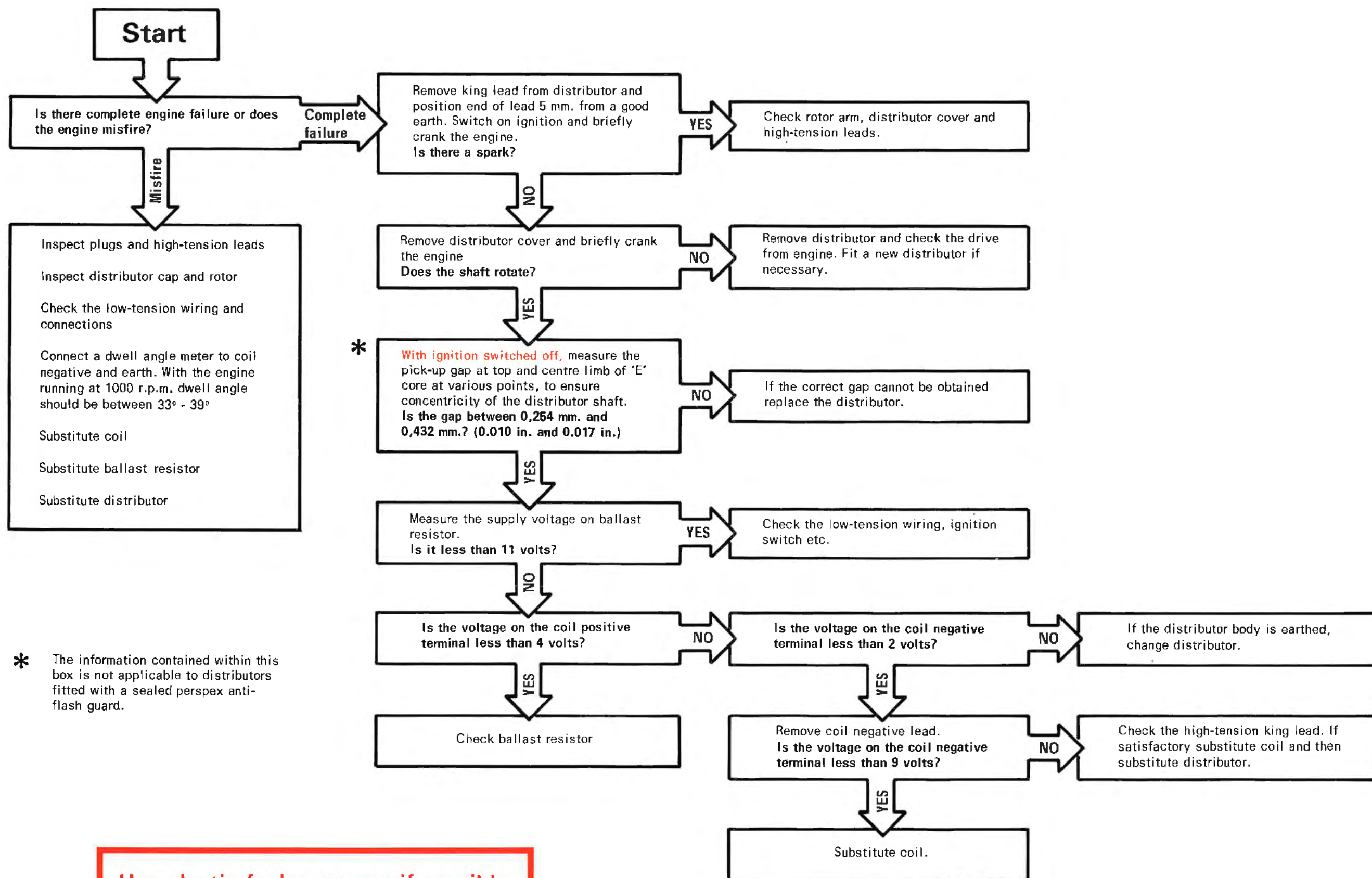


Section 5

Ignition system

Fault diagnosis

Fig. 5 - 4



**Use plastic feeler gauges if possible
and do not force them into the gap**

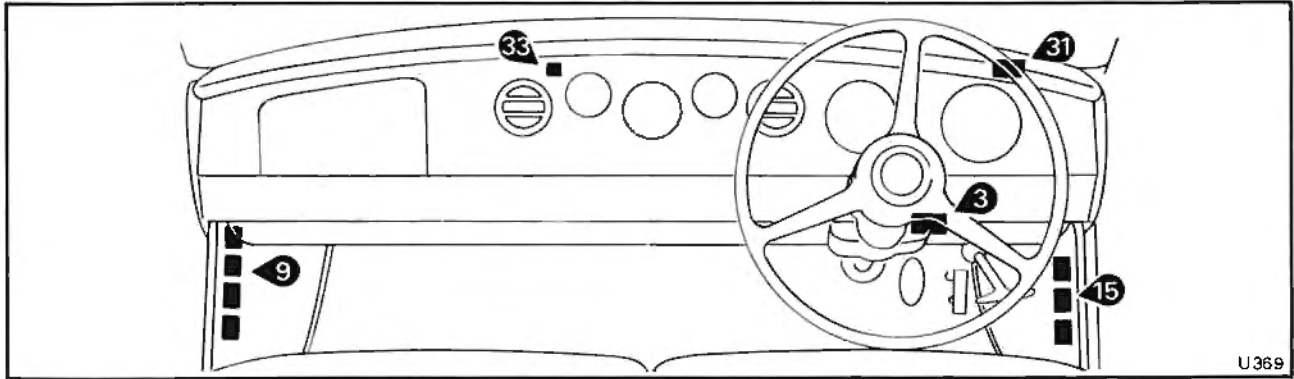
Section 6

Exterior lighting

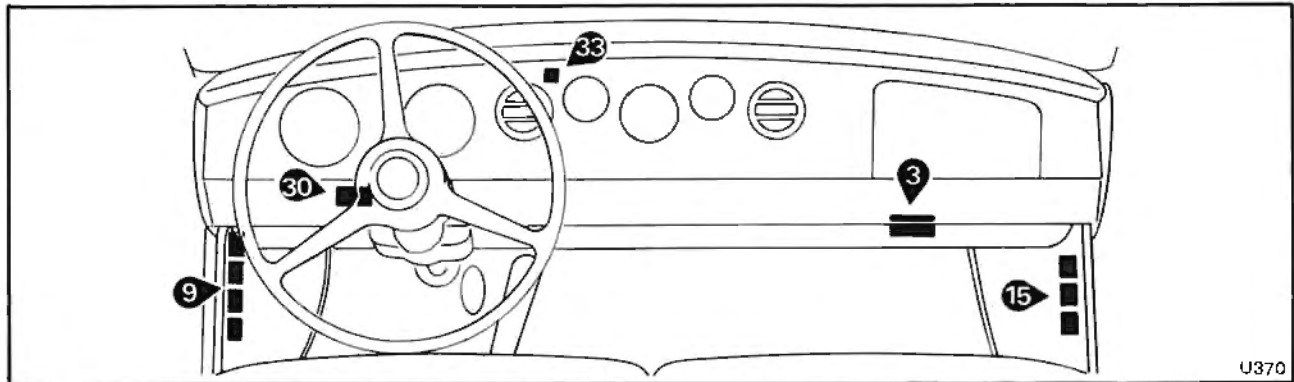
Component location

Head, tail, side and number
plate lamps

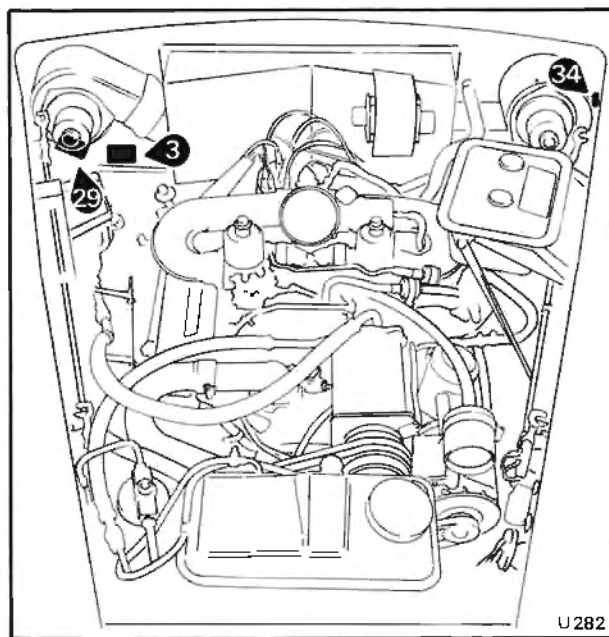
Fig. 6 - 1



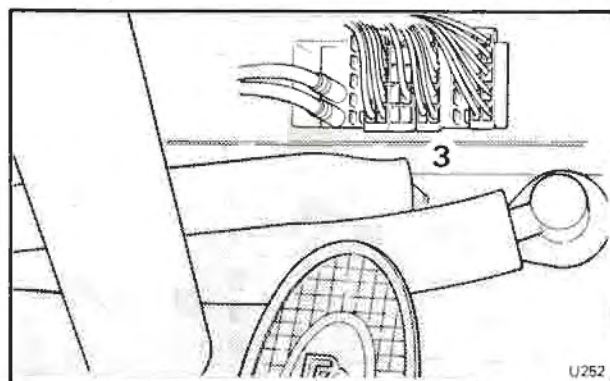
Right-hand drive location of 3, 9, 15, 31 and 33



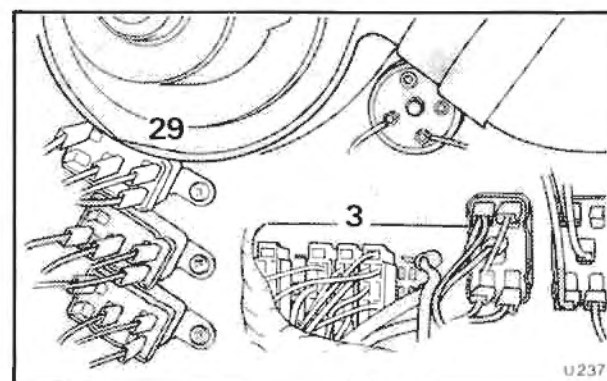
Left-hand drive location of 3, 9, 15, 30 and 33



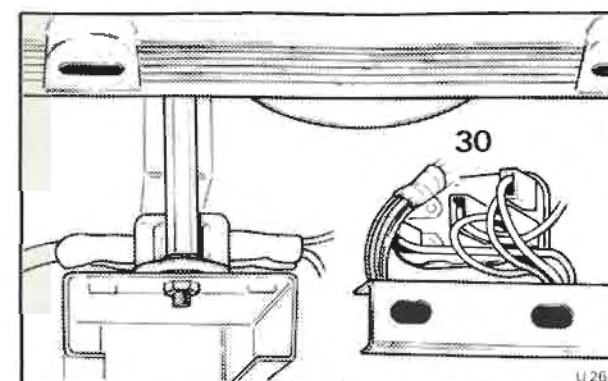
Engine compartment location of 3, 24 and 34



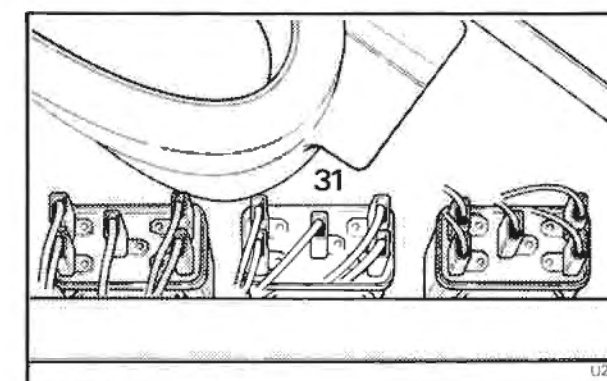
3 Right-hand toeboard sockets
(passenger compartment)



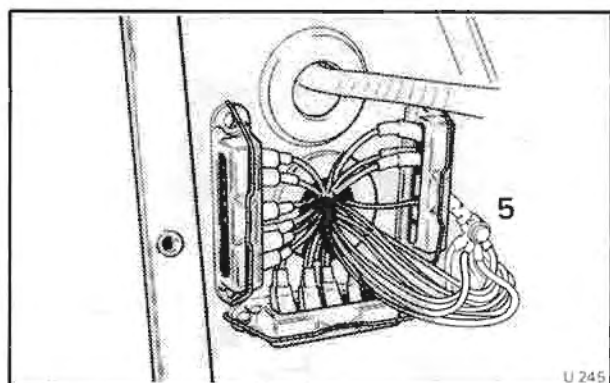
3 Right-hand toeboard sockets
(engine compartment)
29 Headlamp flash relay



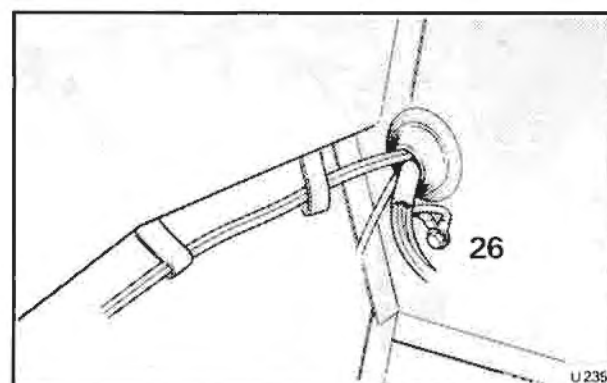
30 Left-hand drive headlamp safety relay



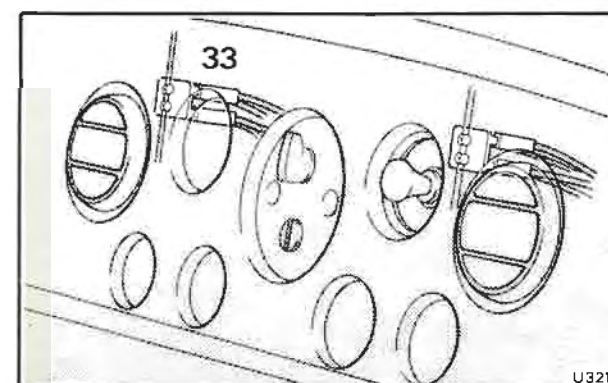
31 Right-hand drive headlamp safety relay



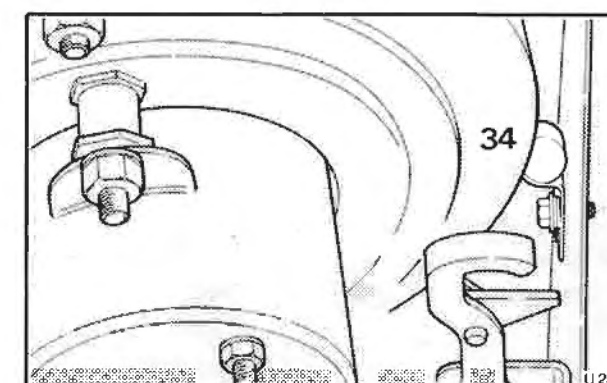
5 Right-hand boot earth



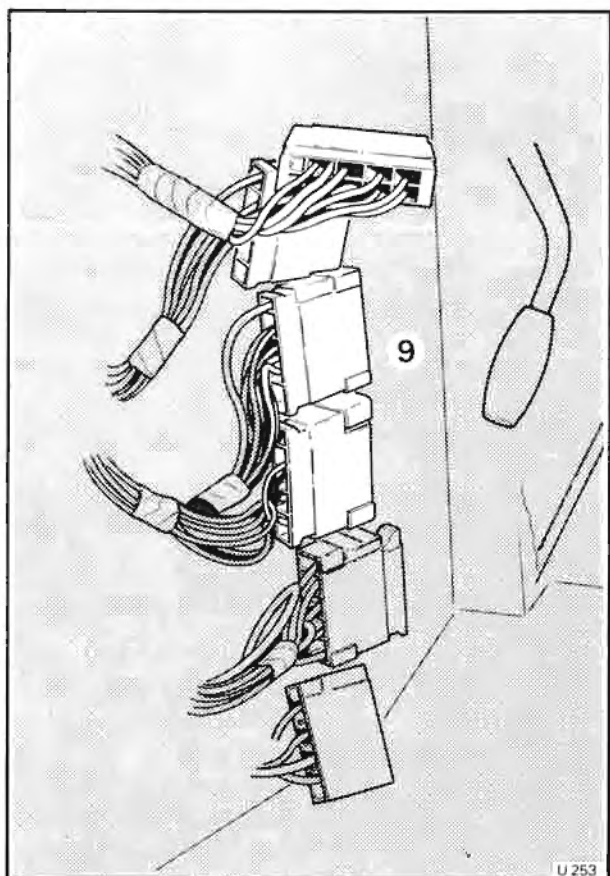
26 Left-hand boot earth



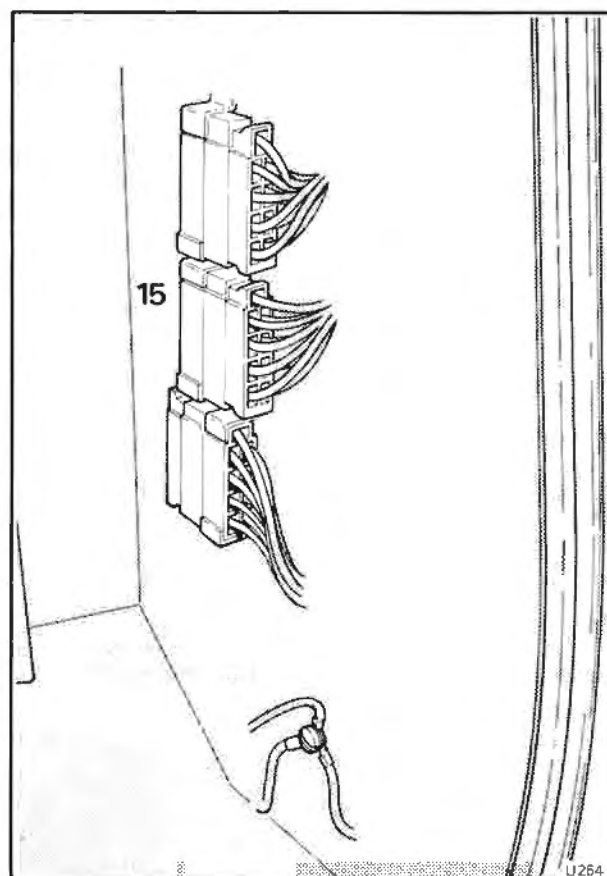
33 Instrument panel earth



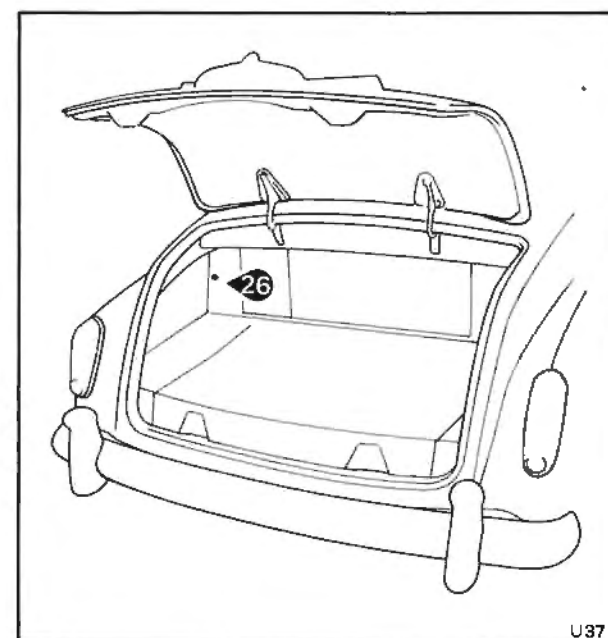
34 Left-hand valance earth



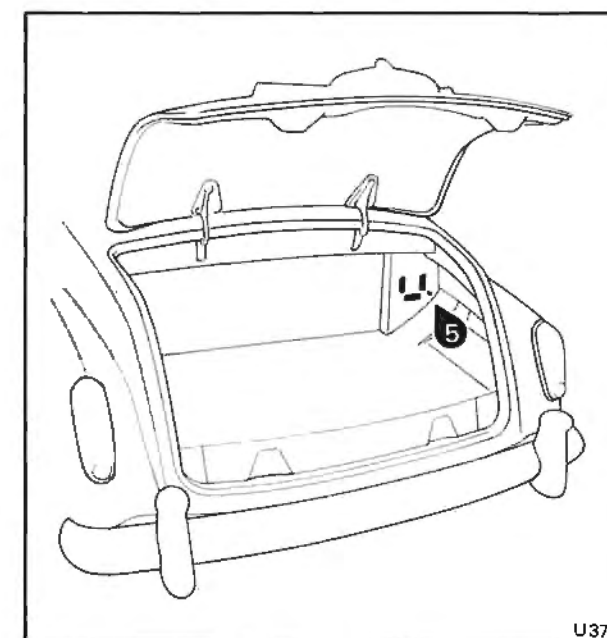
9 Left-hand toeboard sockets



15 Chassis loom sockets



Boot location of 26



Boot location of 5

Section 6

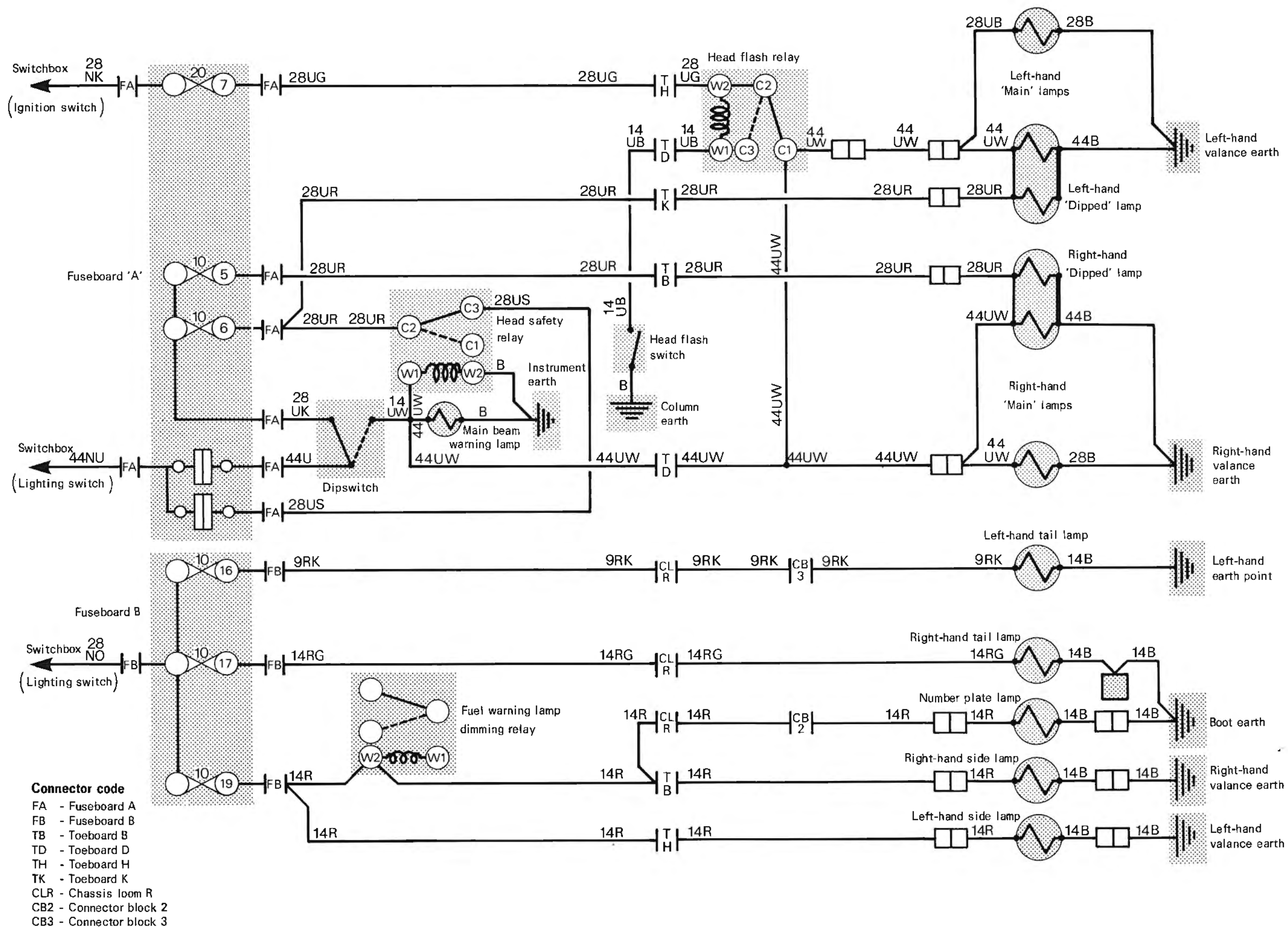
Exterior lighting

Schematic wiring diagram

Head, tail, side and number plate lamps

Right-hand drive cars

Fig. 6 - 2



Section 6

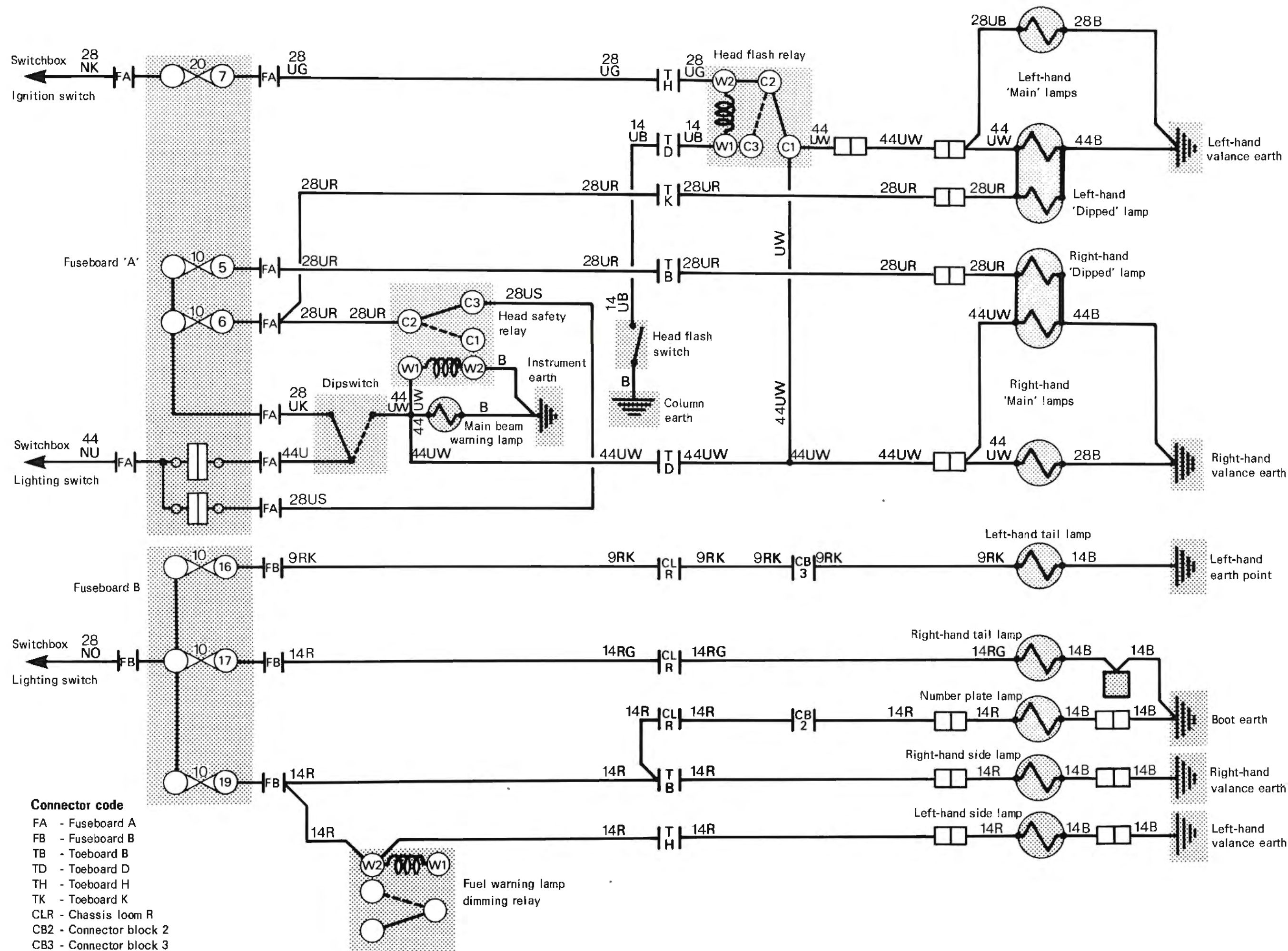
Exterior lighting

Schematic wiring diagram

Head, tail, side and number plate lamps

Left-hand drive cars

Fig. 6 - 3



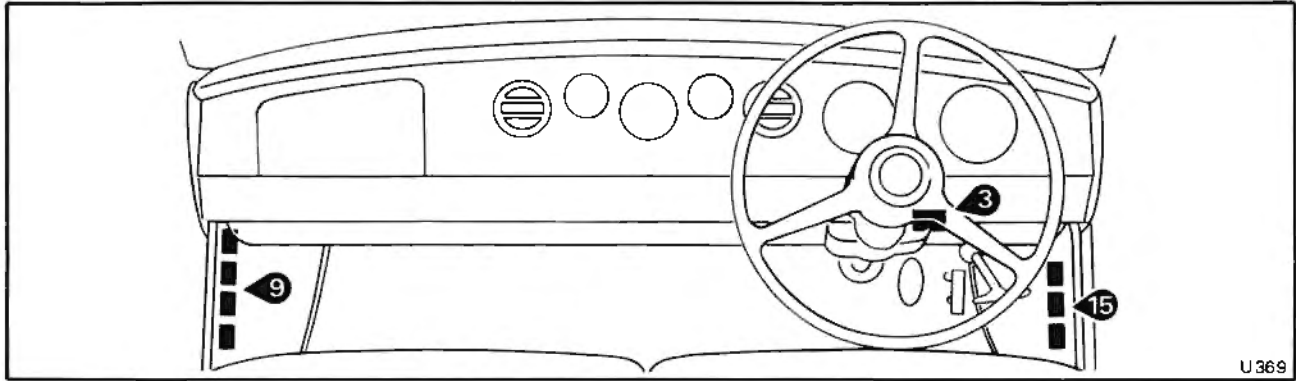
Section 6

Exterior lighting

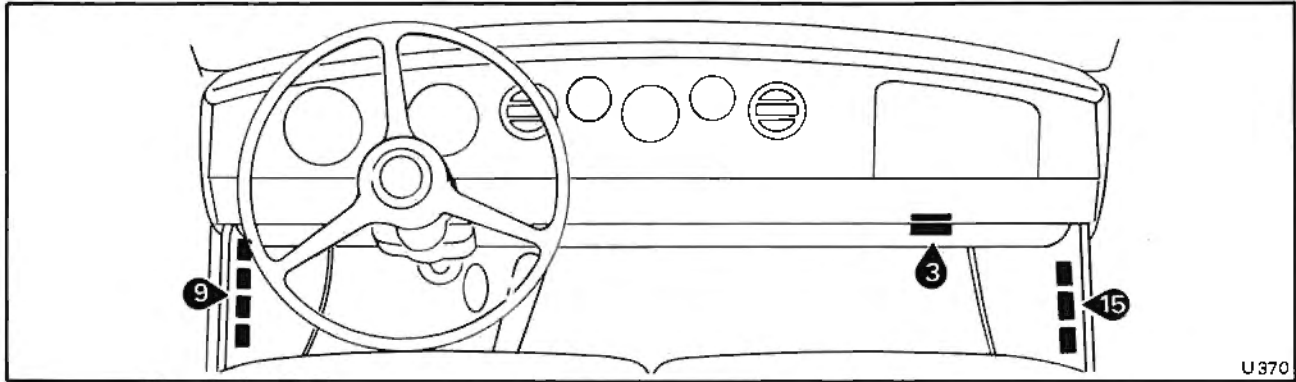
Component location

Hazard, direction, stop
and reversing lamps

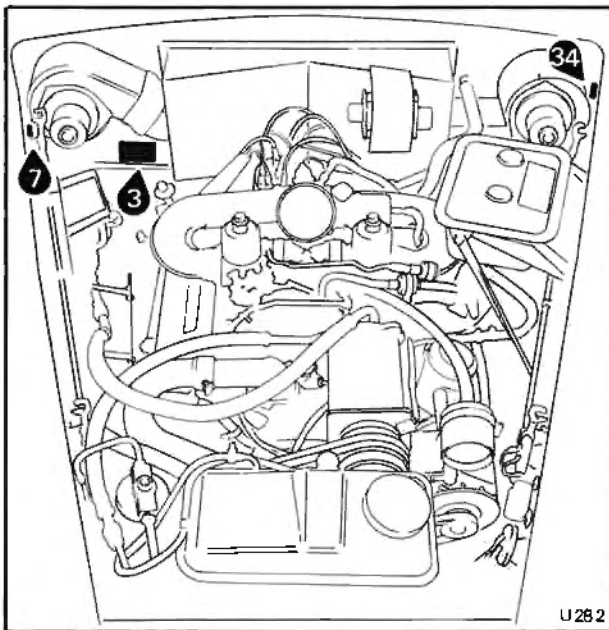
Fig. 6 - 4



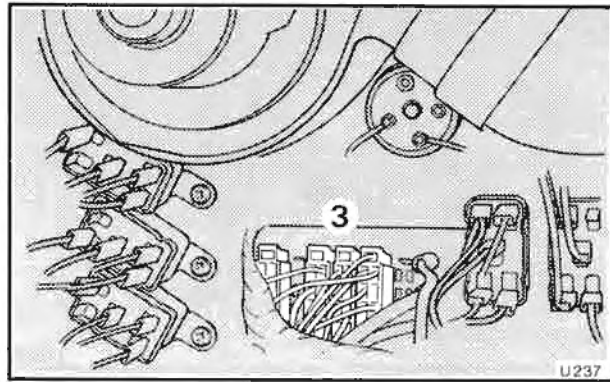
Right-hand drive location of 3, 9 and 15



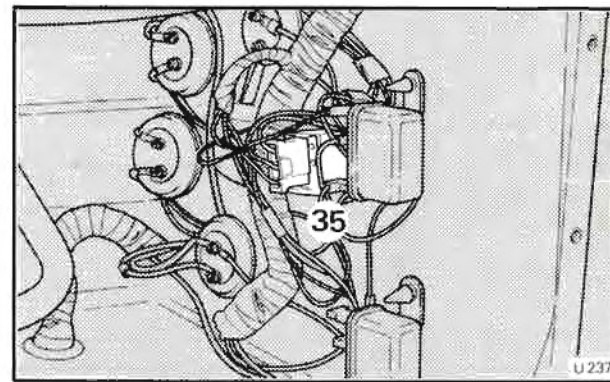
Left-hand drive location of 3, 9 and 15



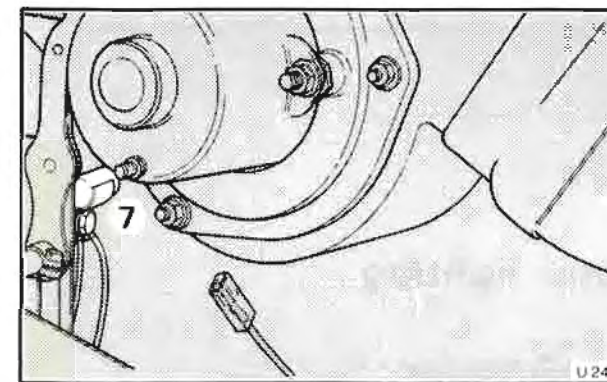
Engine compartment location of 3, 7 and 34



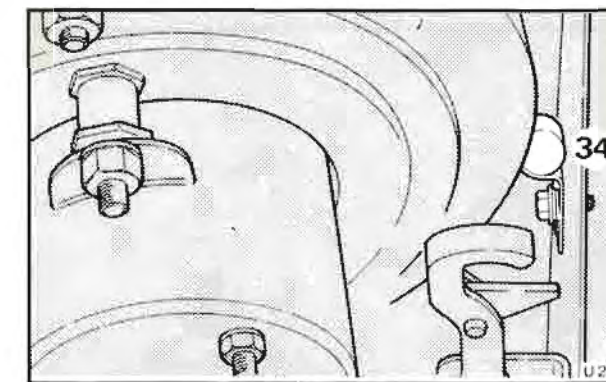
**3 Right-hand toeboard sockets
(engine compartment)**



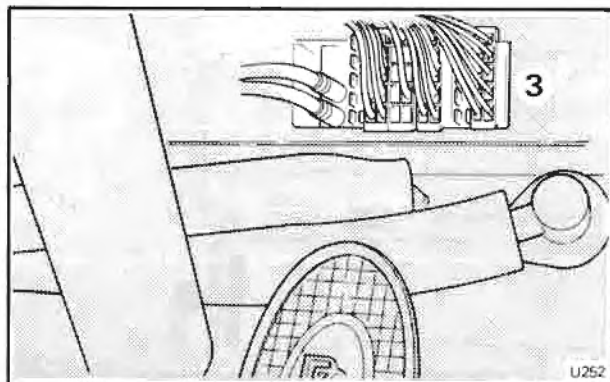
35 Stoplamp failure relay



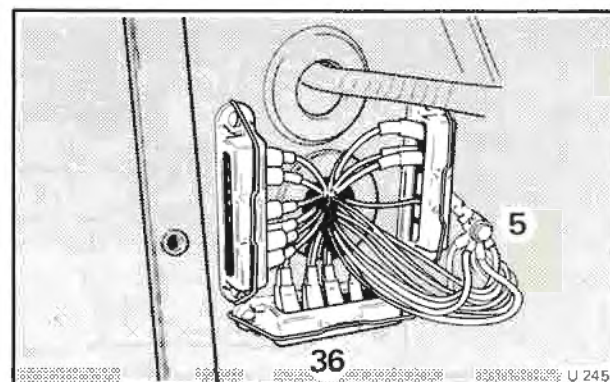
7 Right-hand valance earth



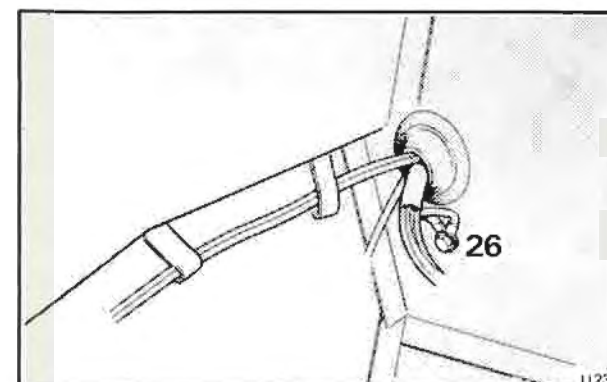
34 Left-hand valance earth



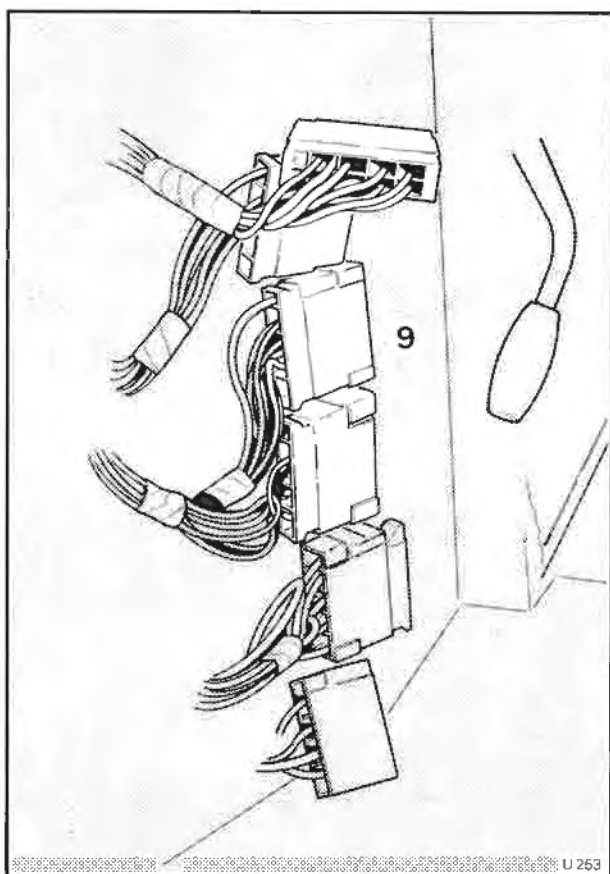
**3 Right-hand toeboard sockets
(passenger compartment)**



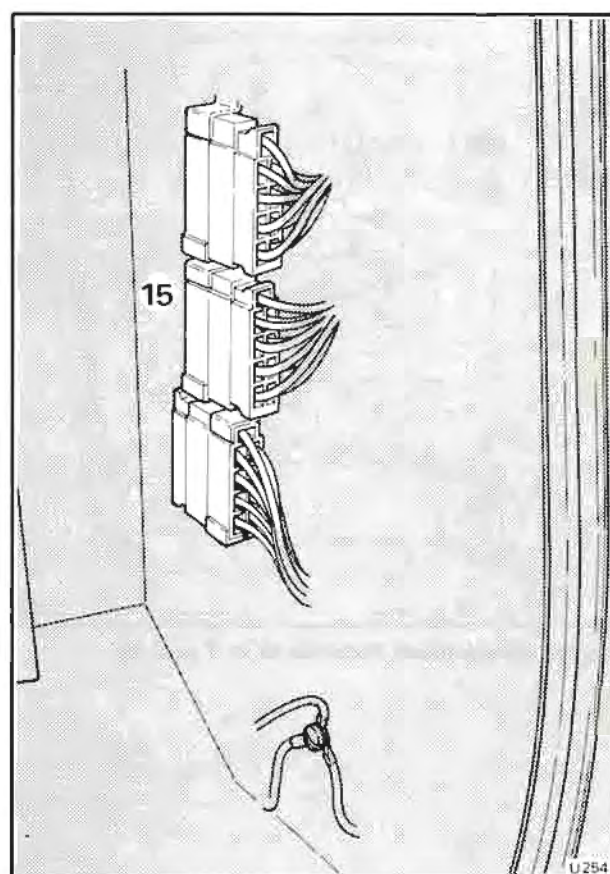
**5 Right-hand boot earth
36 Connecting blocks**



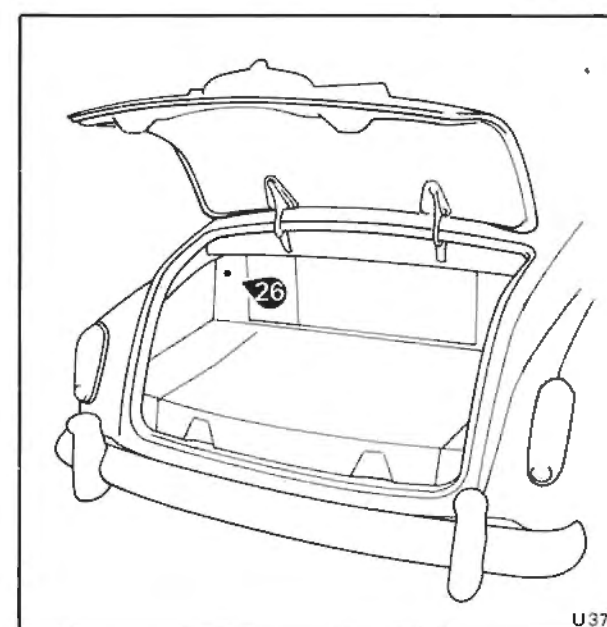
26 Left-hand boot earth



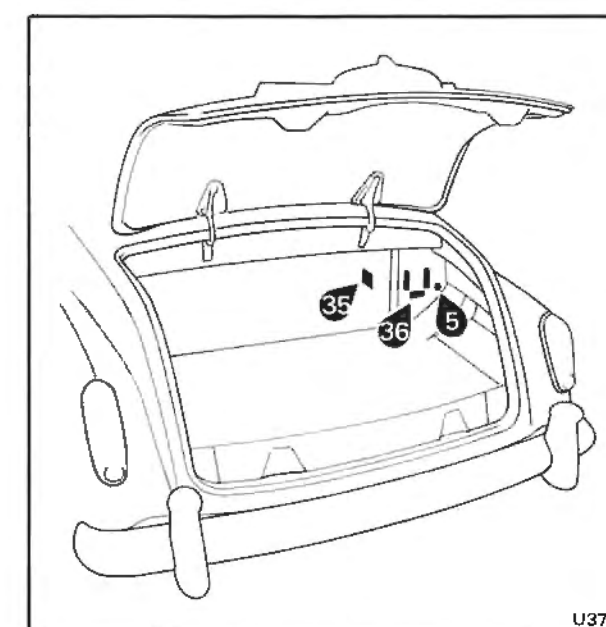
9 Left-hand toeboard sockets



15 Chassis loom sockets



Boot location of 26



Boot location of 5, 35 and 36

Section 6

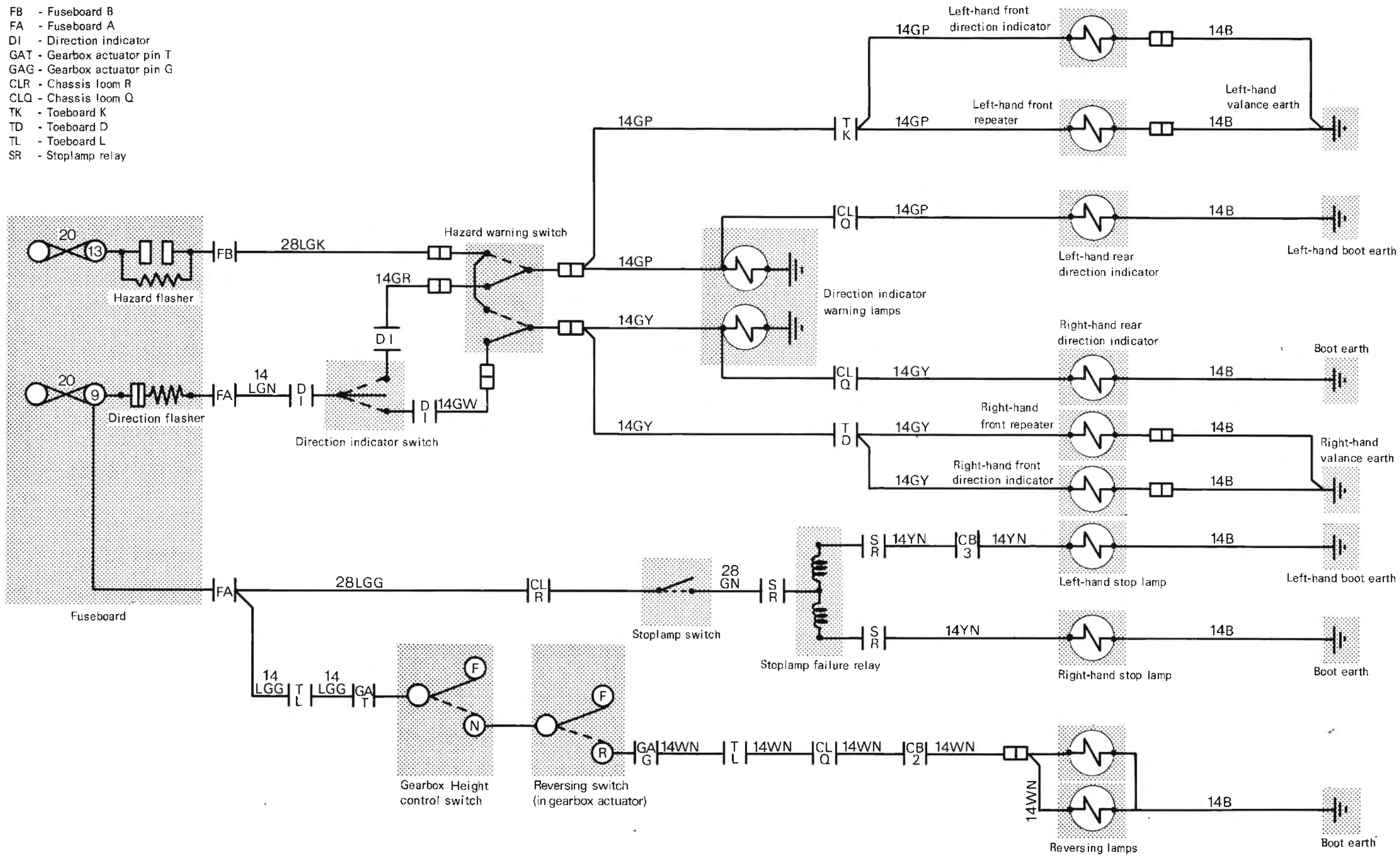
Exterior lighting

Schematic wiring diagram
Hazard, direction, stop
and reversing lamps

Fig. 6 - 5

Connector code

FB - Fuseboard B
 FA - Fuseboard A
 DI - Direction indicator
 GAT - Gearbox actuator pin T
 GAG - Gearbox actuator pin G
 CLR - Chassis loom R
 CLQ - Chassis loom Q
 TK - Toeboard K
 TD - Toeboard D
 TL - Toeboard L
 SR - Stoplamp relay



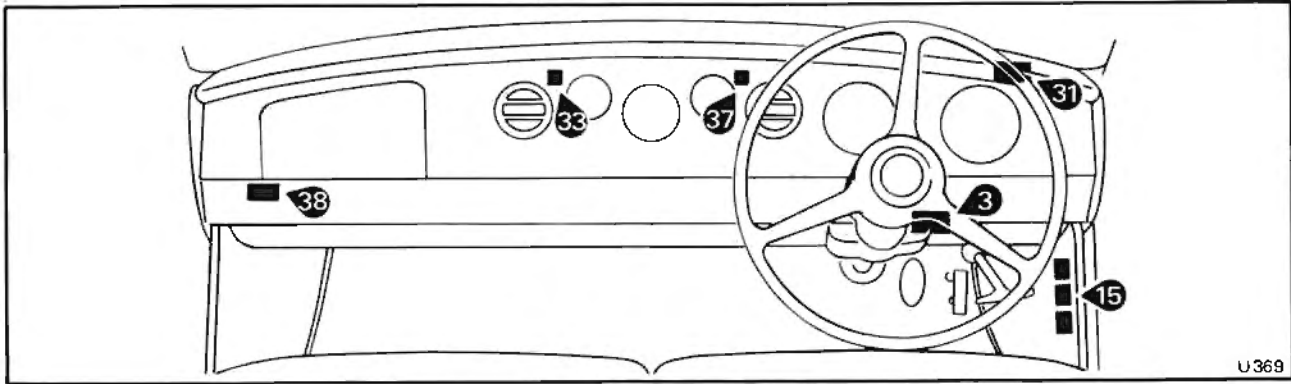
Section 6

Exterior lighting

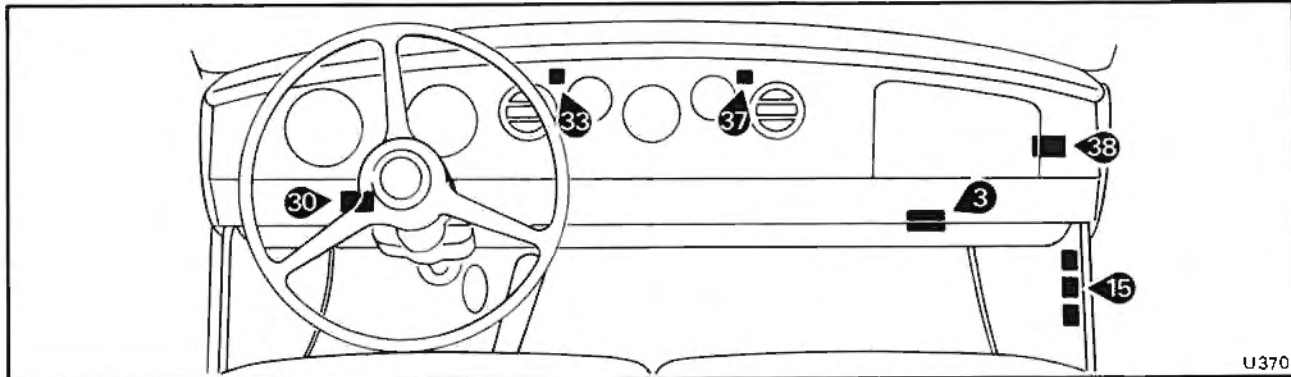
Component location

Foglamps

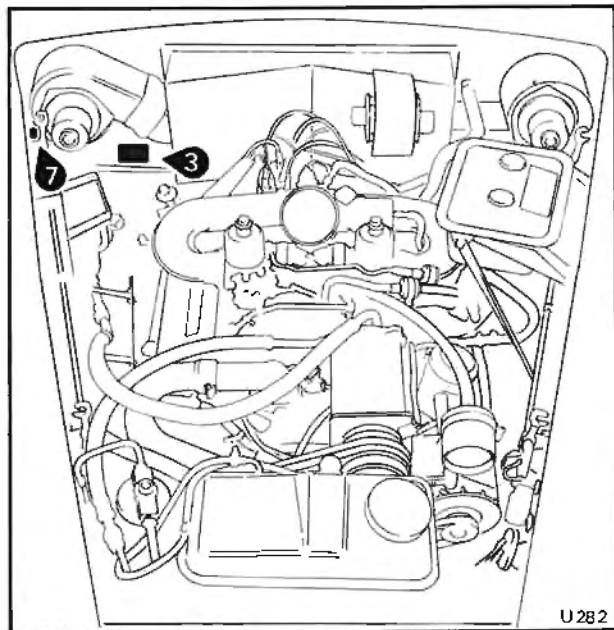
Fig 6 - 6



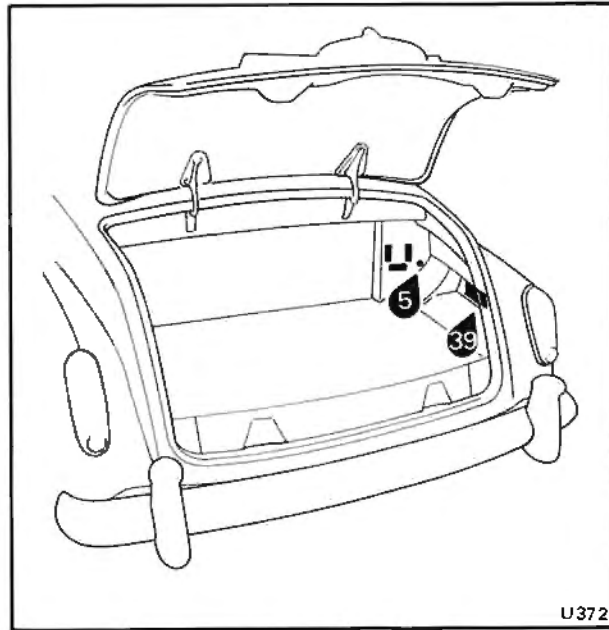
Right-hand drive location of 3, 15, 31, 33, 37 and 38



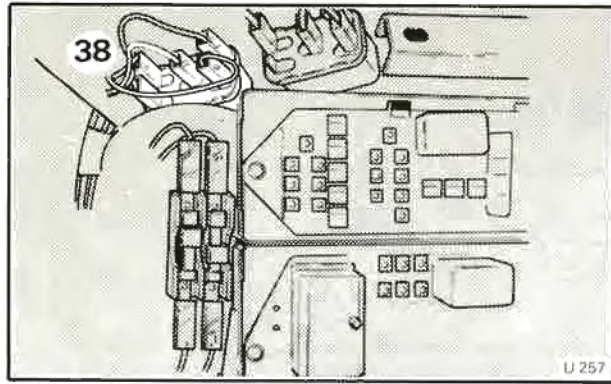
Left-hand drive location of 3, 15, 30, 33, 37 and 38



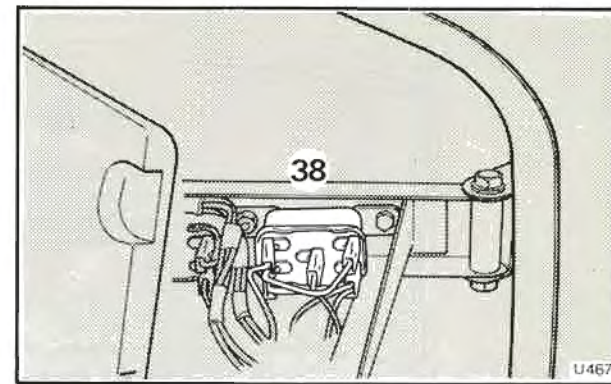
Engine compartment location of 3 and 7



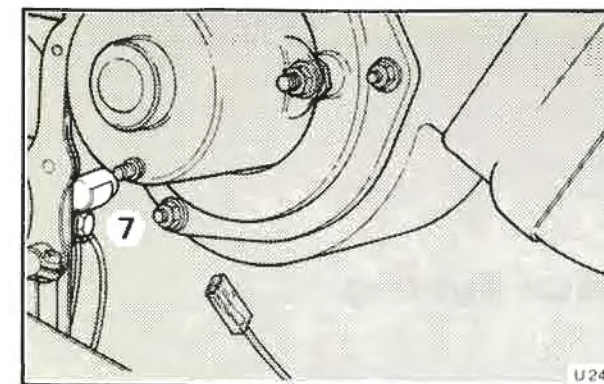
Boot location of 5 and 39



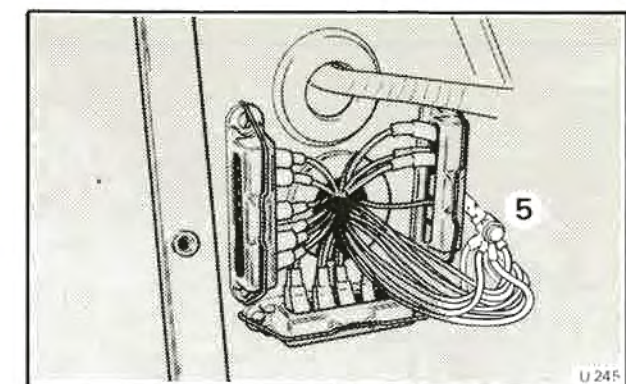
38 Right-hand drive rear foglamp relay



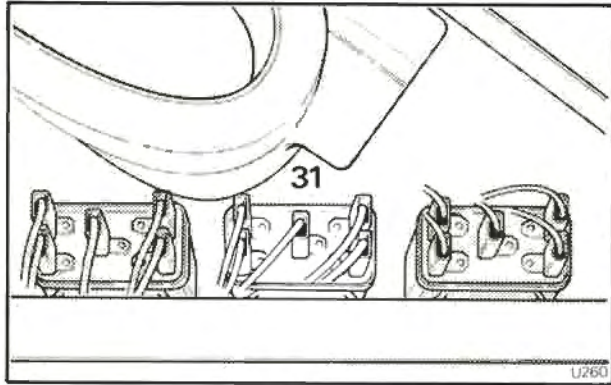
38 Left-hand drive rear foglamp relay



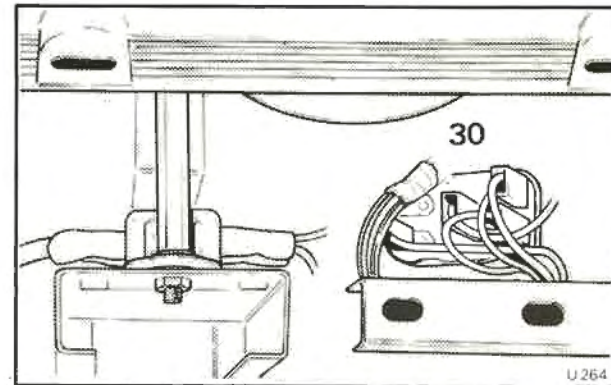
7 Right-hand valance earth



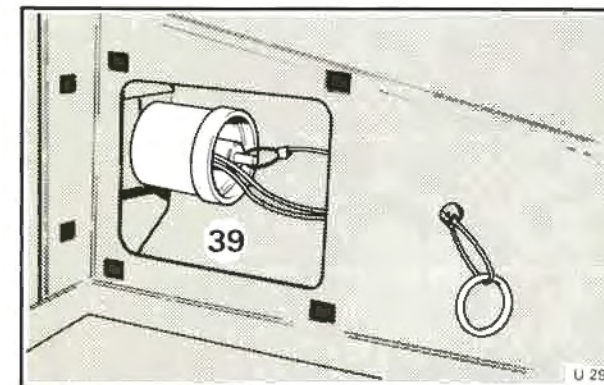
5 Right-hand boot earth



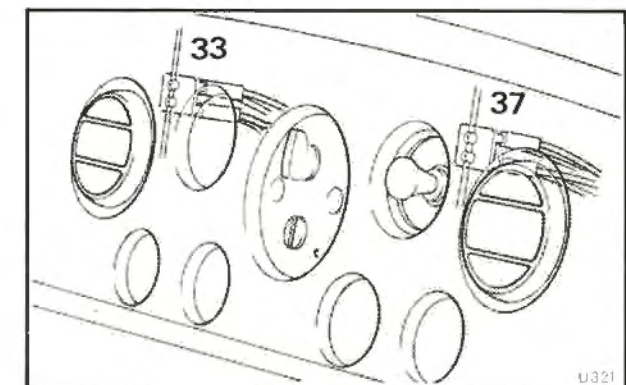
31 Right-hand drive headlamp safety relay



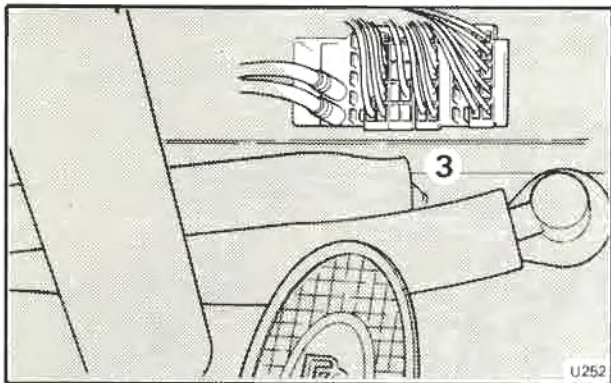
30 Left-hand drive headlamp safety relay



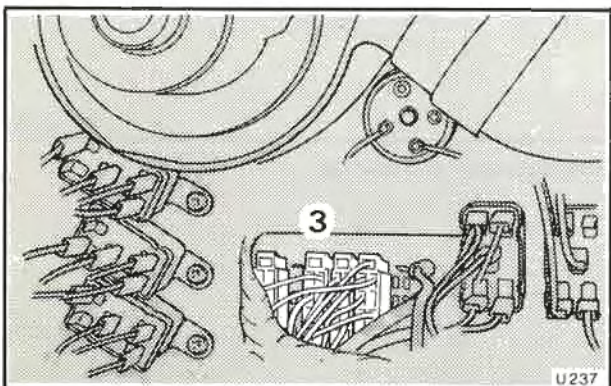
39 Petrol filler door solenoid



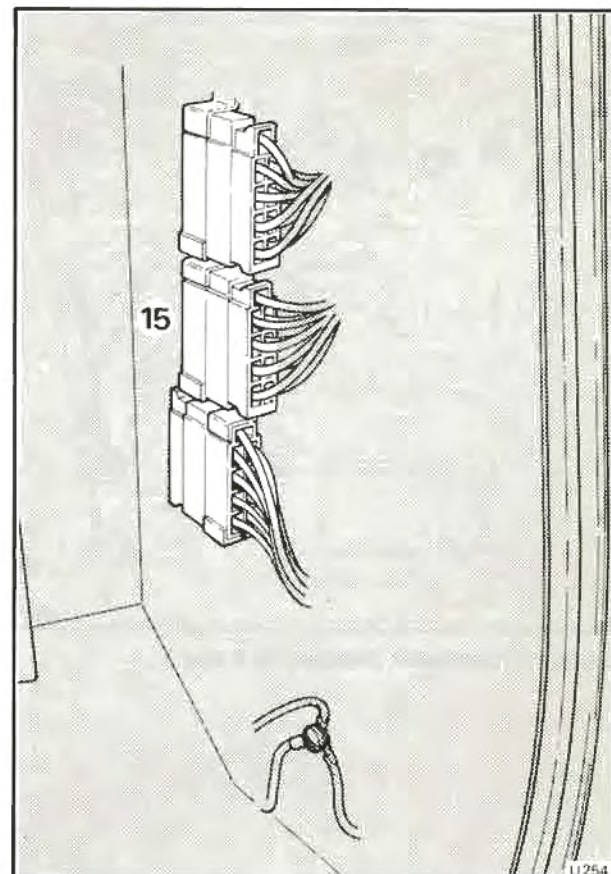
33 Left-hand instrument panel earth
37 Right-hand instrument panel earth



3 Right-hand toeboard sockets
(passenger compartment)



3 Right-hand toeboard sockets
(engine compartment)



15 Chassis loom sockets

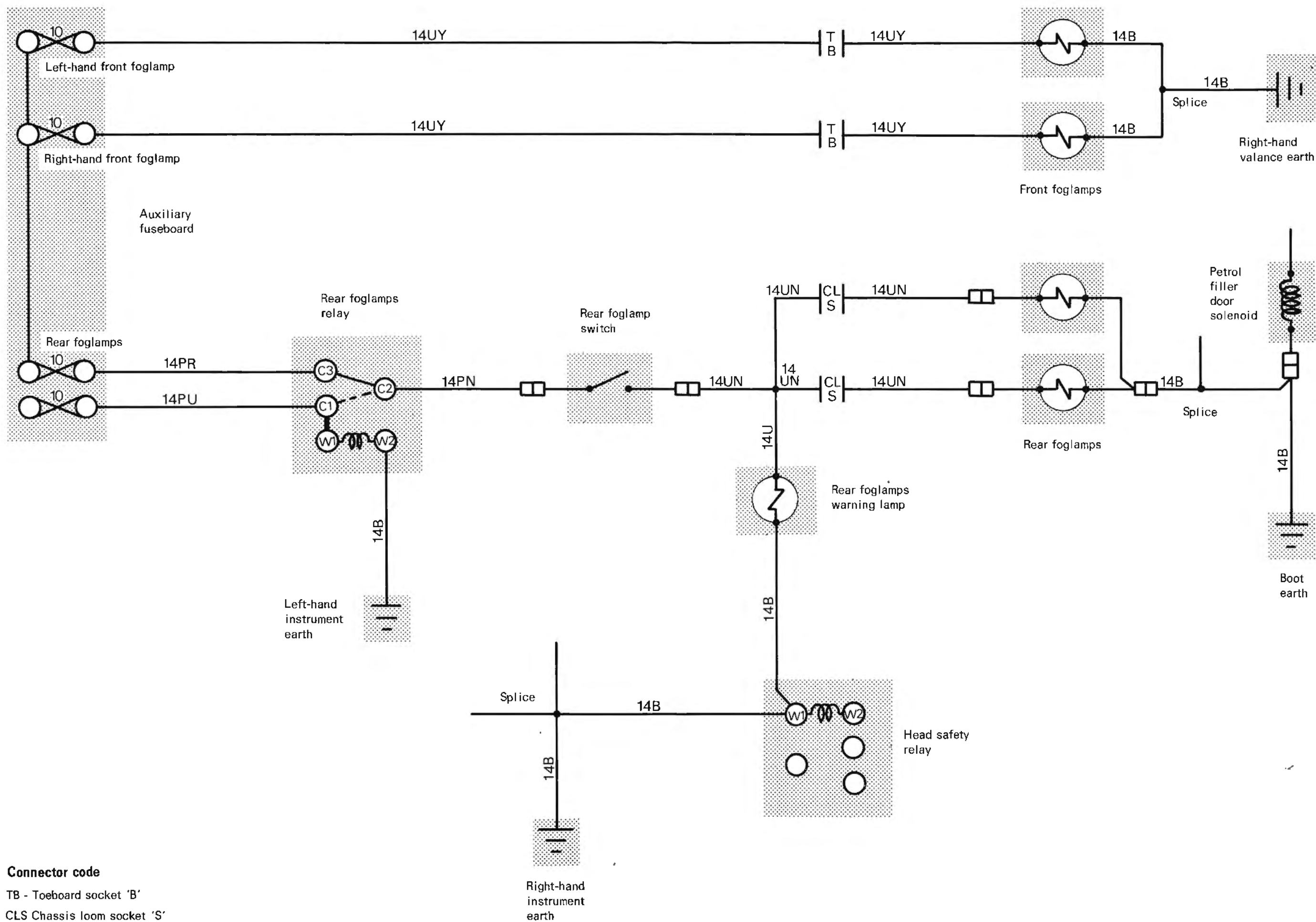
Section 6

Exterior lighting

Schematic wiring diagram

Foglamps

Fig. 6 - 7

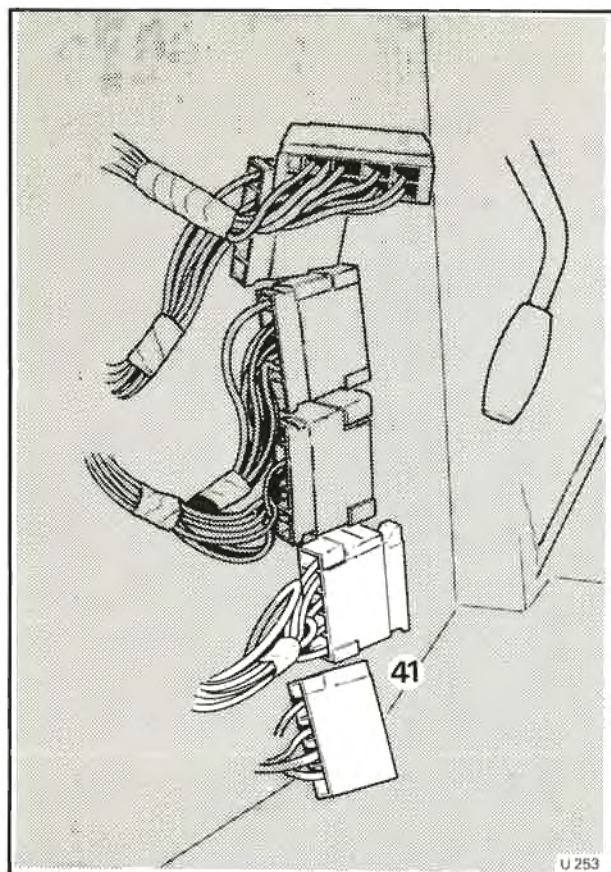


Section 7

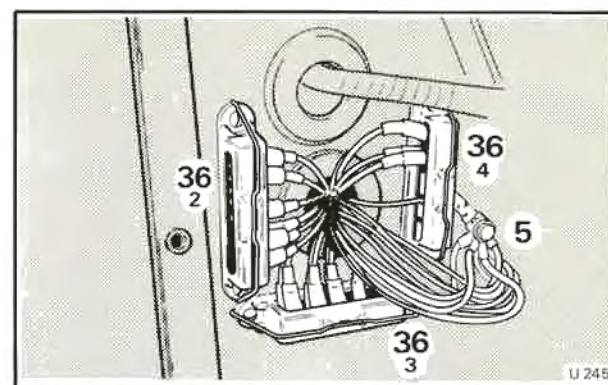
Interior lighting

Component location

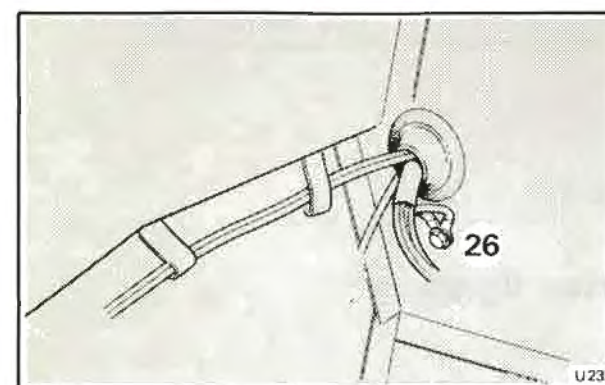
Fig. 7 - 1



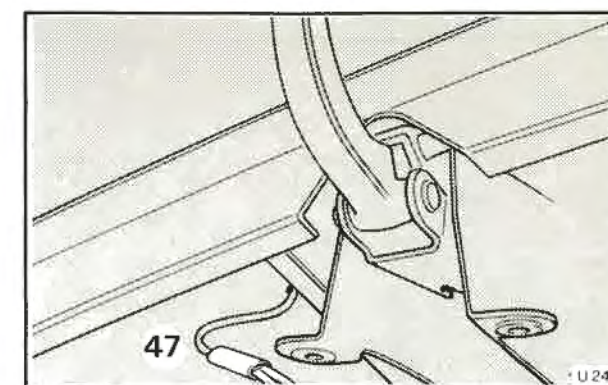
41 Left-hand front door sockets



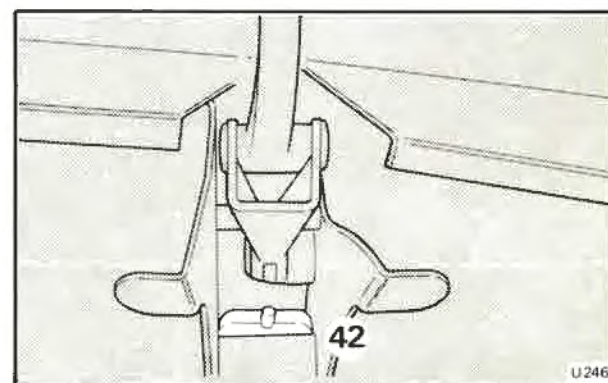
5 Right-hand boot earth
36 Connection blocks



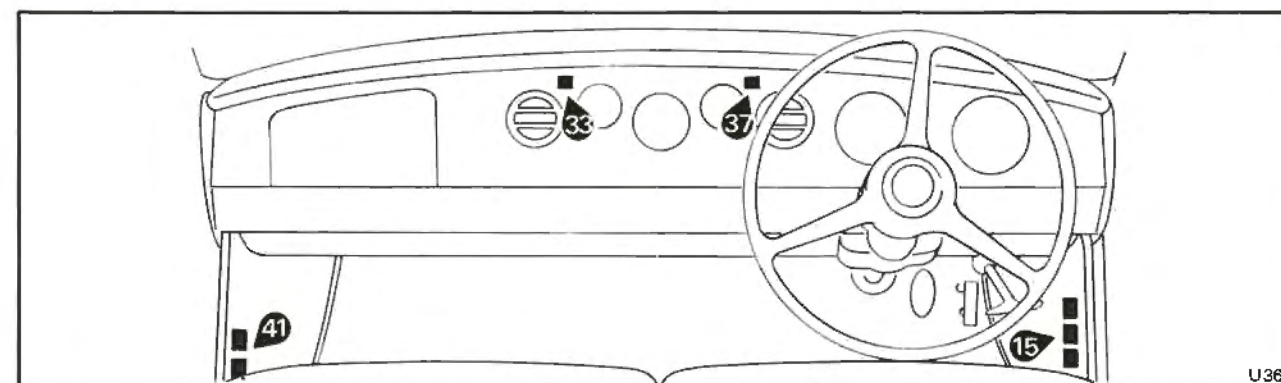
26 Left-hand boot earth



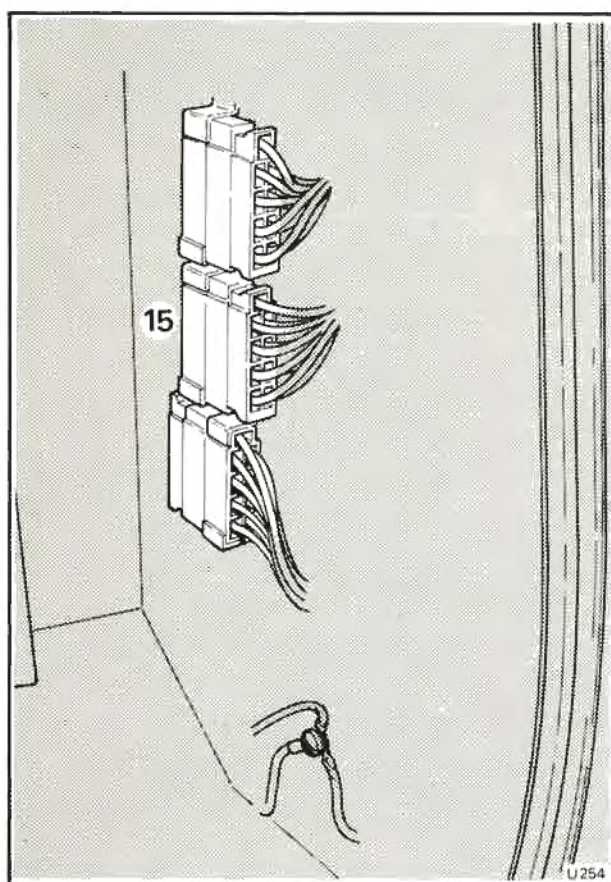
47 Rear window demister earth connection



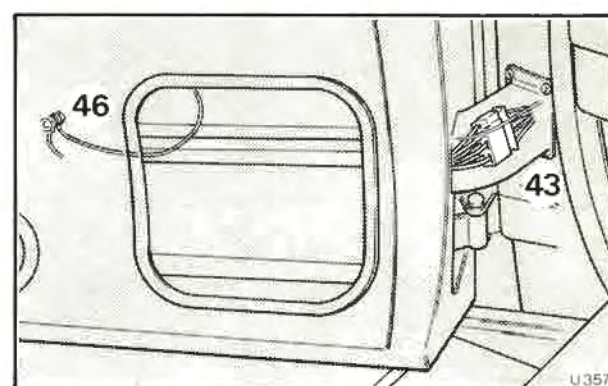
42 Boot lamp switch



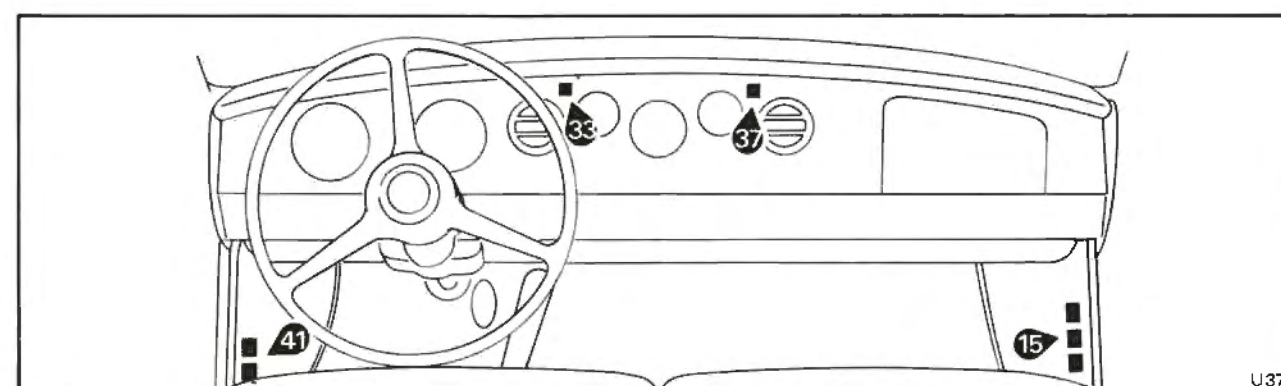
Right-hand drive location of 15, 33, 37 and 41



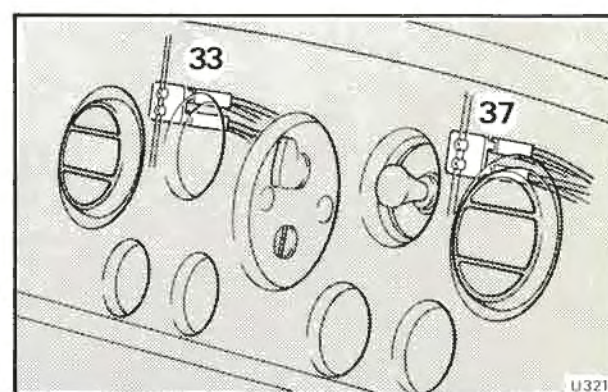
15 Chassis loom sockets



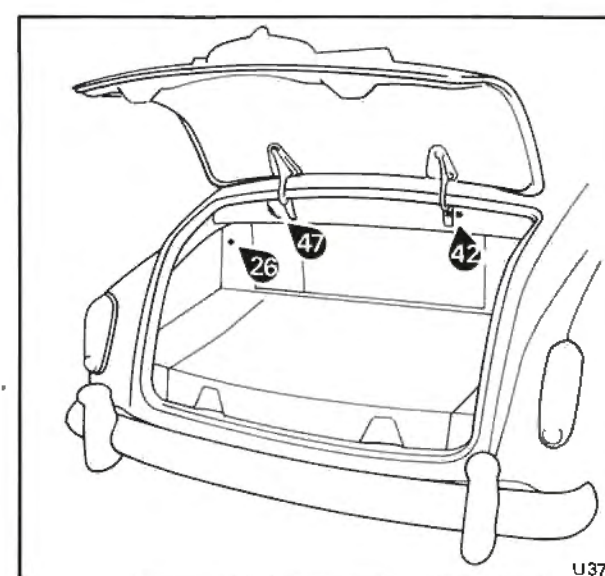
43 Left-hand rear door plug
46 Left-hand rear door earth



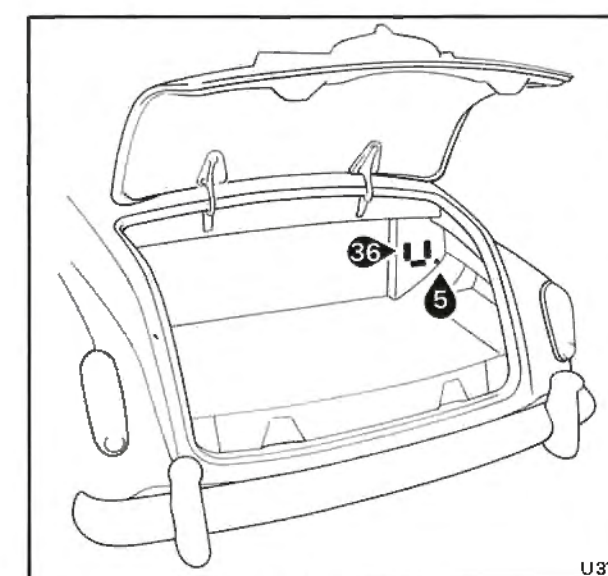
Left-hand drive location of 15, 33, 37 and 41



33 Left-hand instrument panel earth
37 Right-hand instrument panel earth



Boot location of 26, 42 and 47



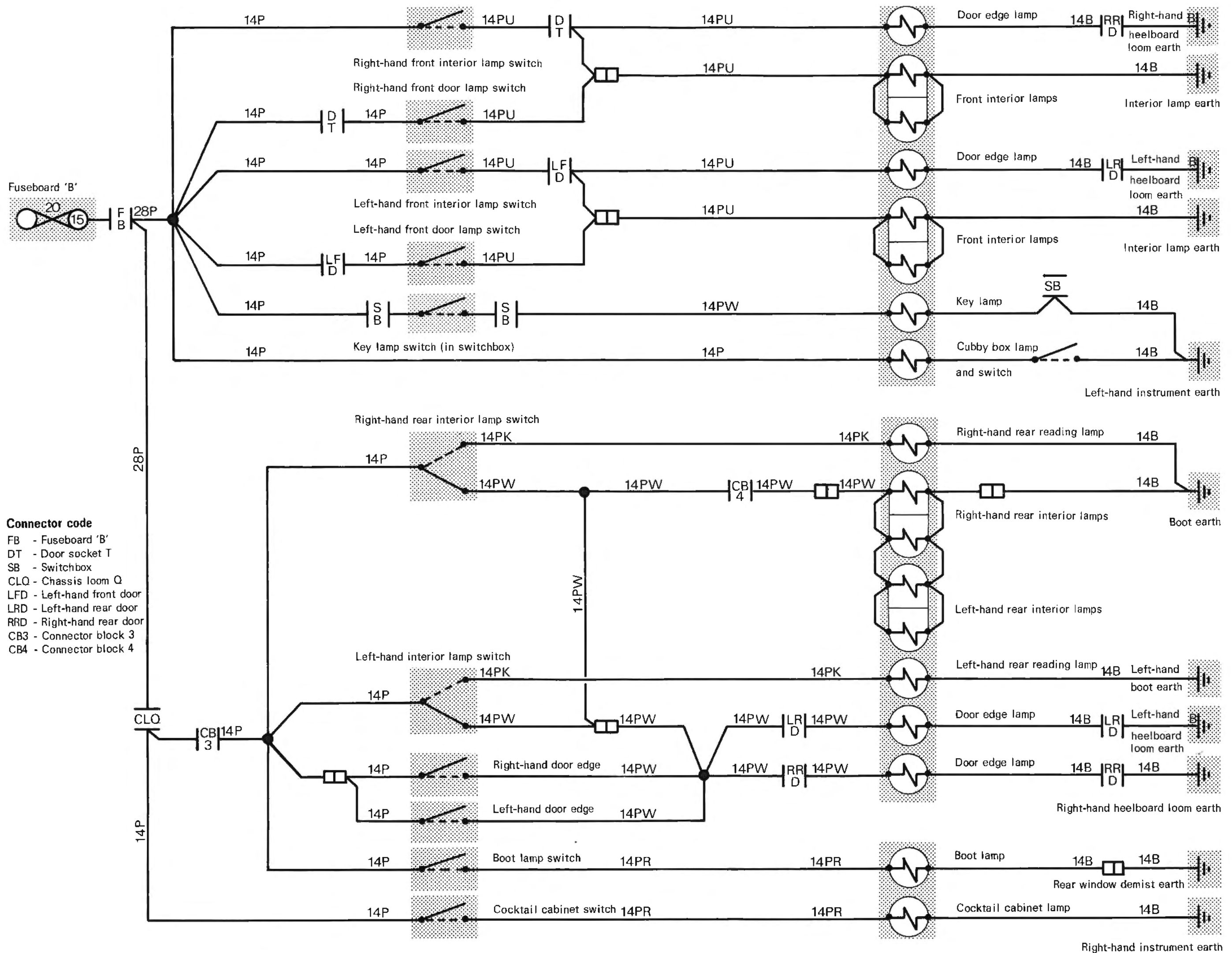
Boot location of 5 and 36

Section 7

Interior lighting

Schematic wiring diagram

Fig. 7 - 2

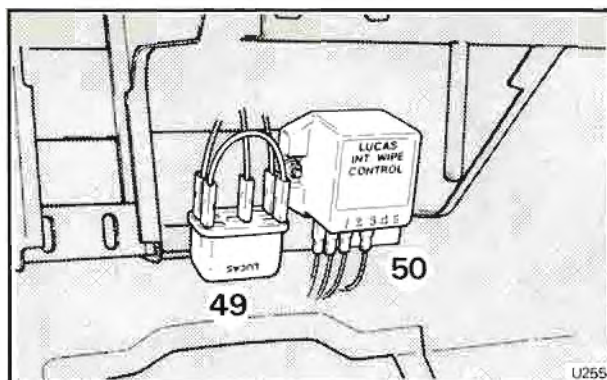


Section 8

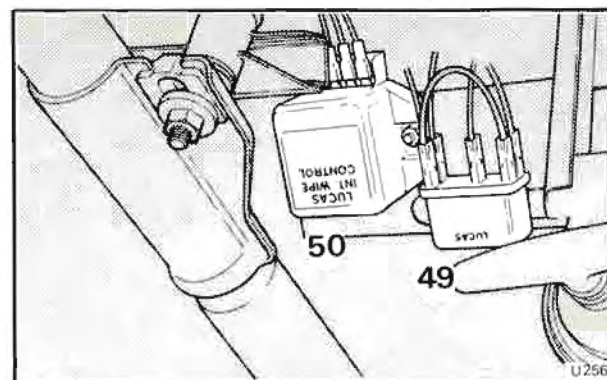
**Windscreen wipers
and washers**

Component location

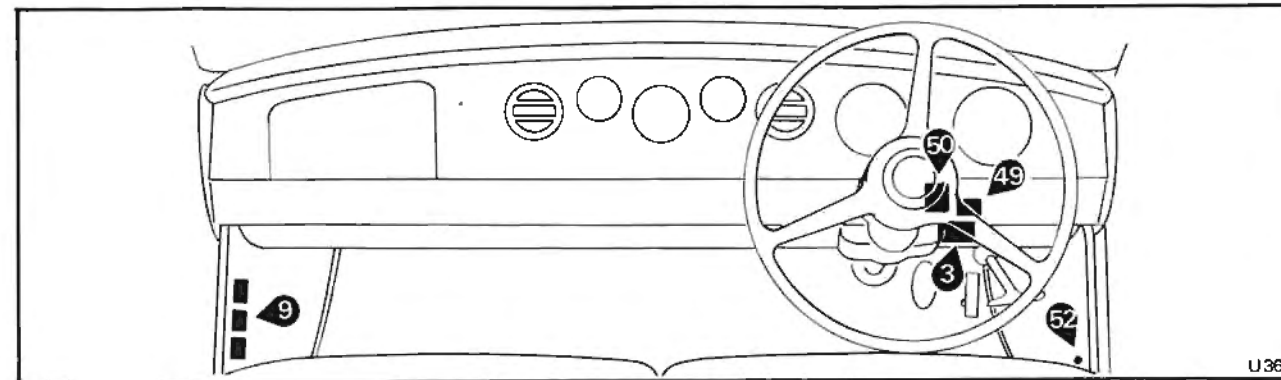
Fig. 8 - 1



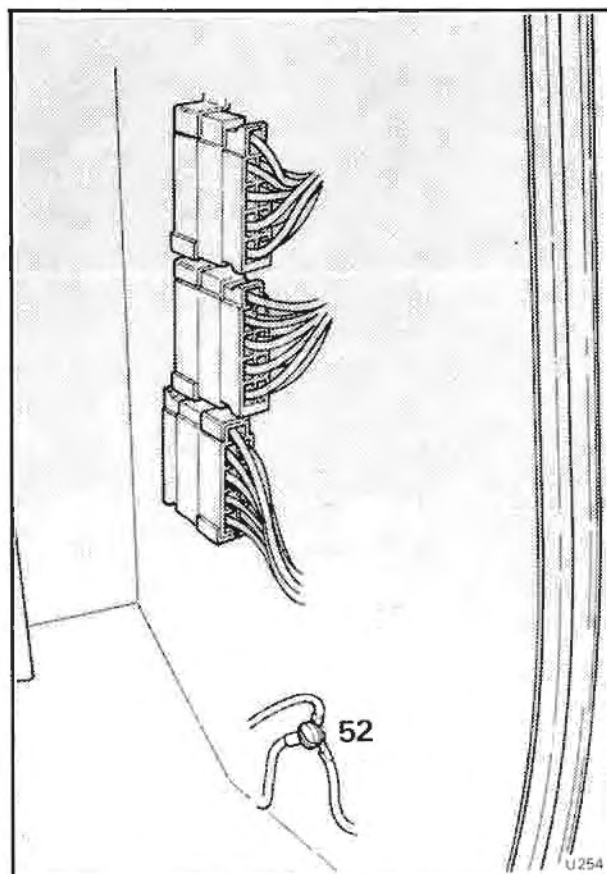
49 Left-hand drive wiper relay
50 Left-hand drive wash/wipe control box



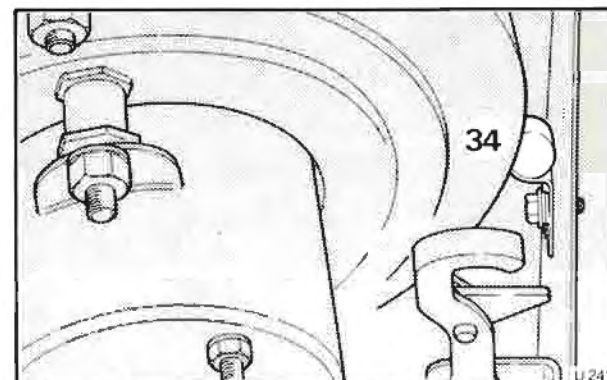
49 Right-hand drive wiper relay
50 Right-hand drive wash/wipe control box



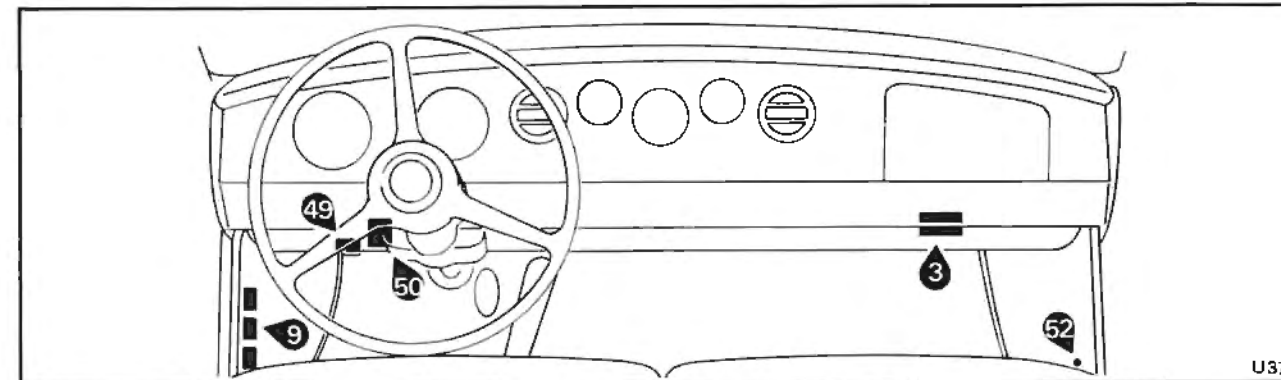
Right-hand drive location of 3, 9, 49, 50 and 52



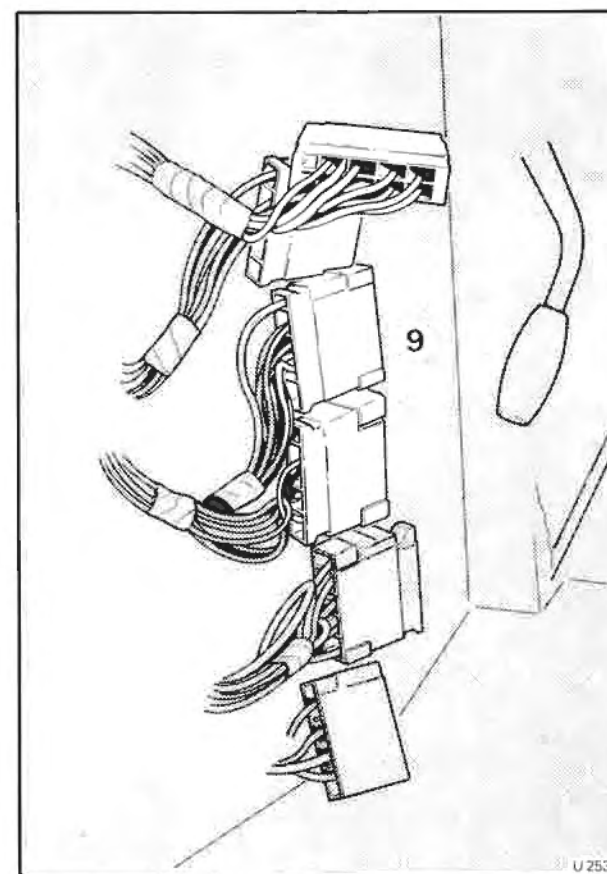
52 Right-hand 'A' post earth



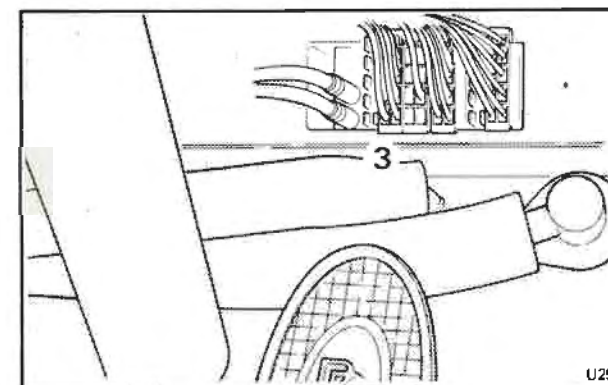
34 Left-hand valance earth



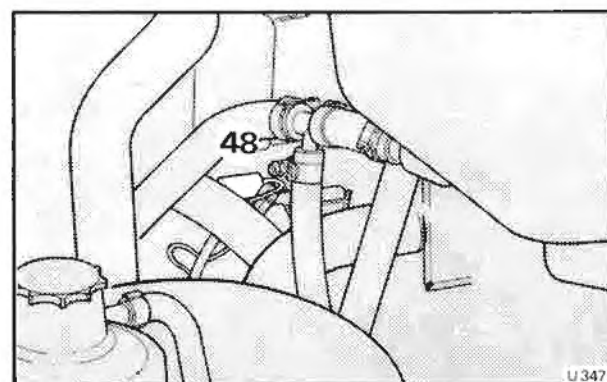
Left-hand drive location of 3, 9, 49, 50 and 52



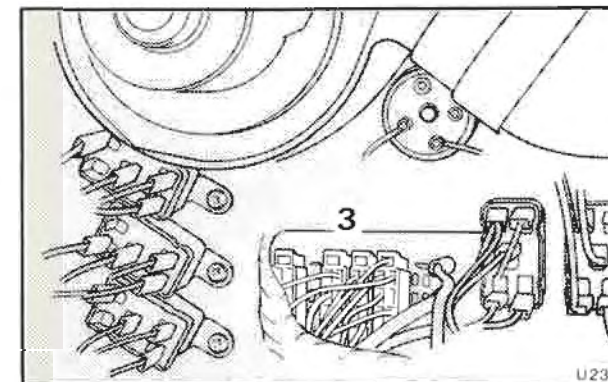
9 Left-hand toeboard sockets



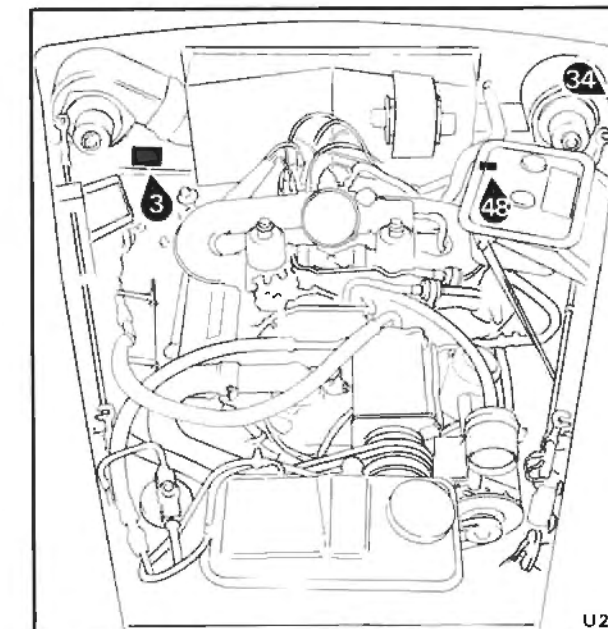
3 Right-hand toeboard sockets
(passenger compartment)



48 Wiper motor suppressors



3 Right-hand toeboard sockets
(engine compartment)



Engine compartment location of 3, 34, and 48

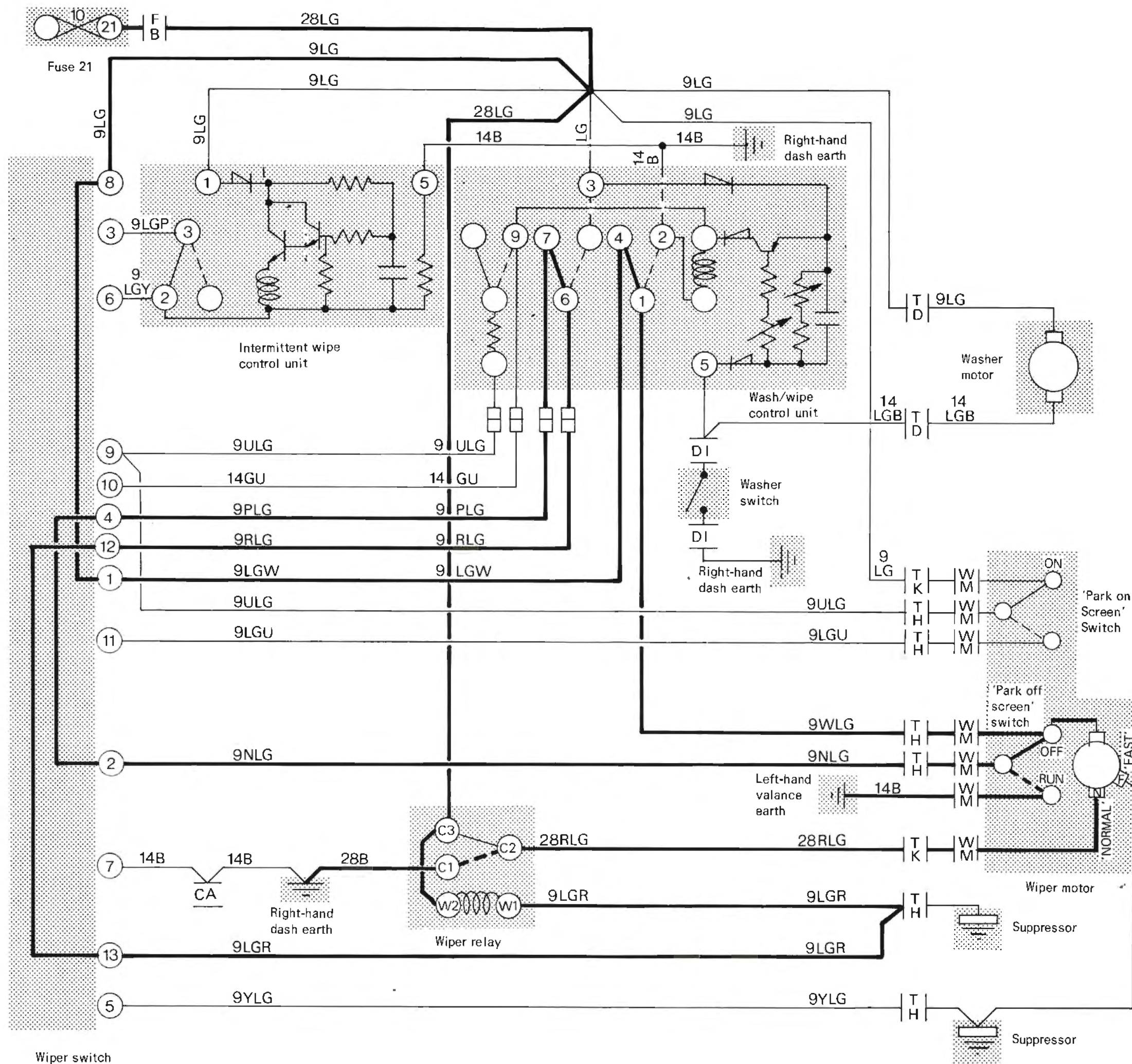
Section 8

**Windscreen wipers
and washers**

Schematic wiring diagram

Wiper switch in OFF position

Fig. 8 - 2

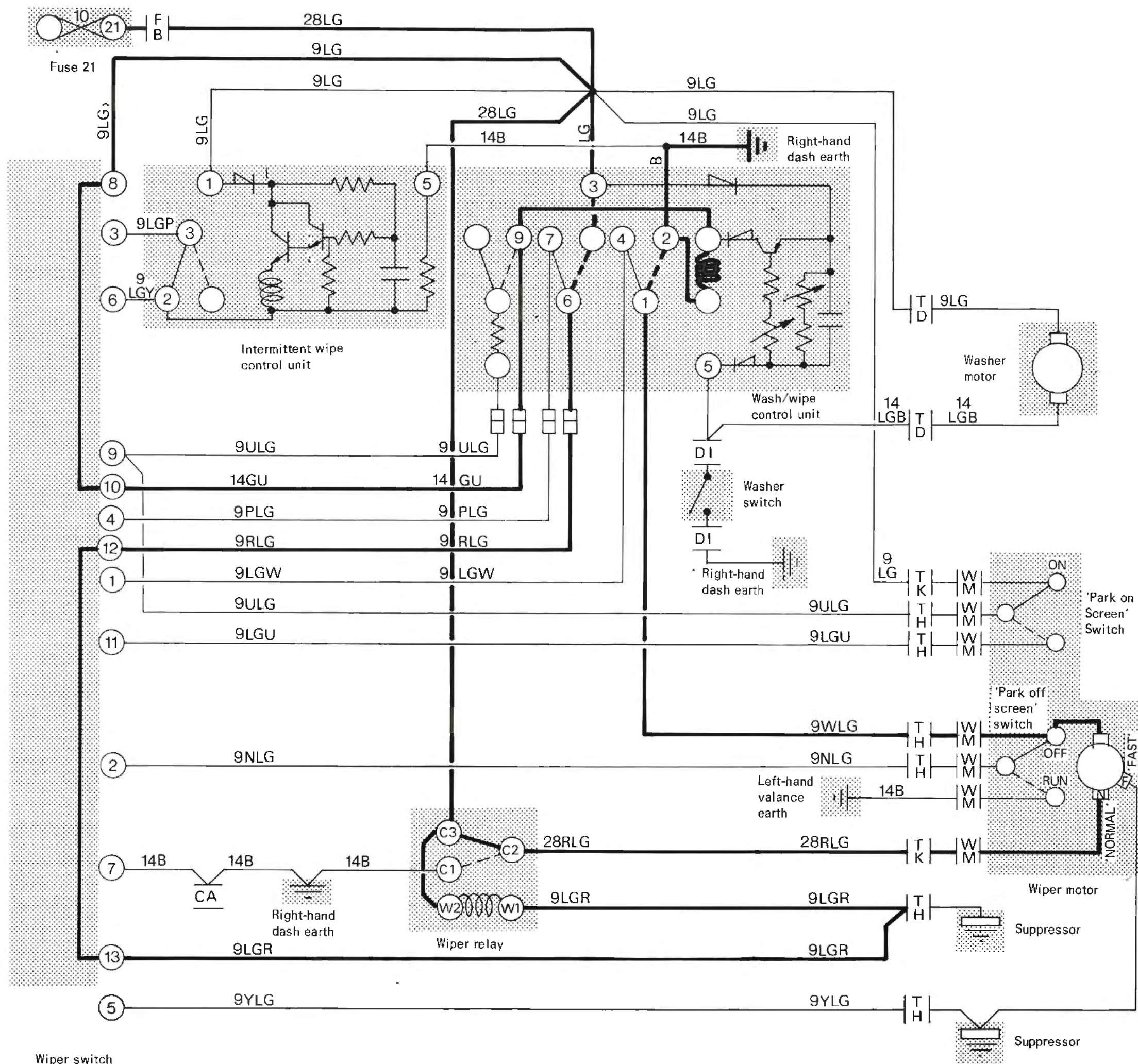


Section 8

**Windscreen wipers
and washers**

Schematic wiring diagram
Wiper switch in NORMAL position

Fig. 8 - 3

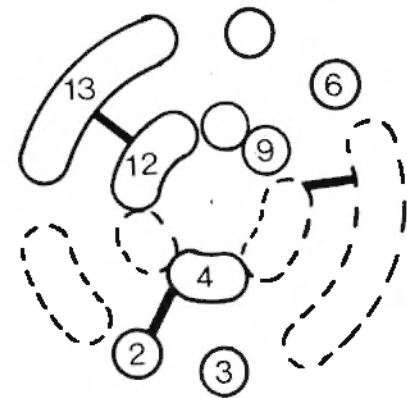
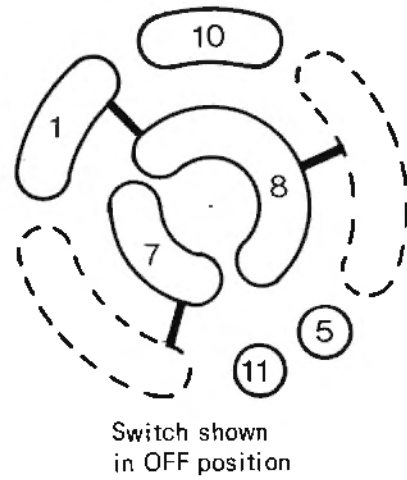
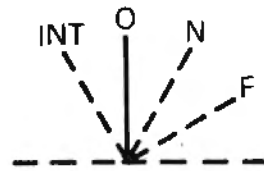


Section 8

**Windscreen wipers
and washers**

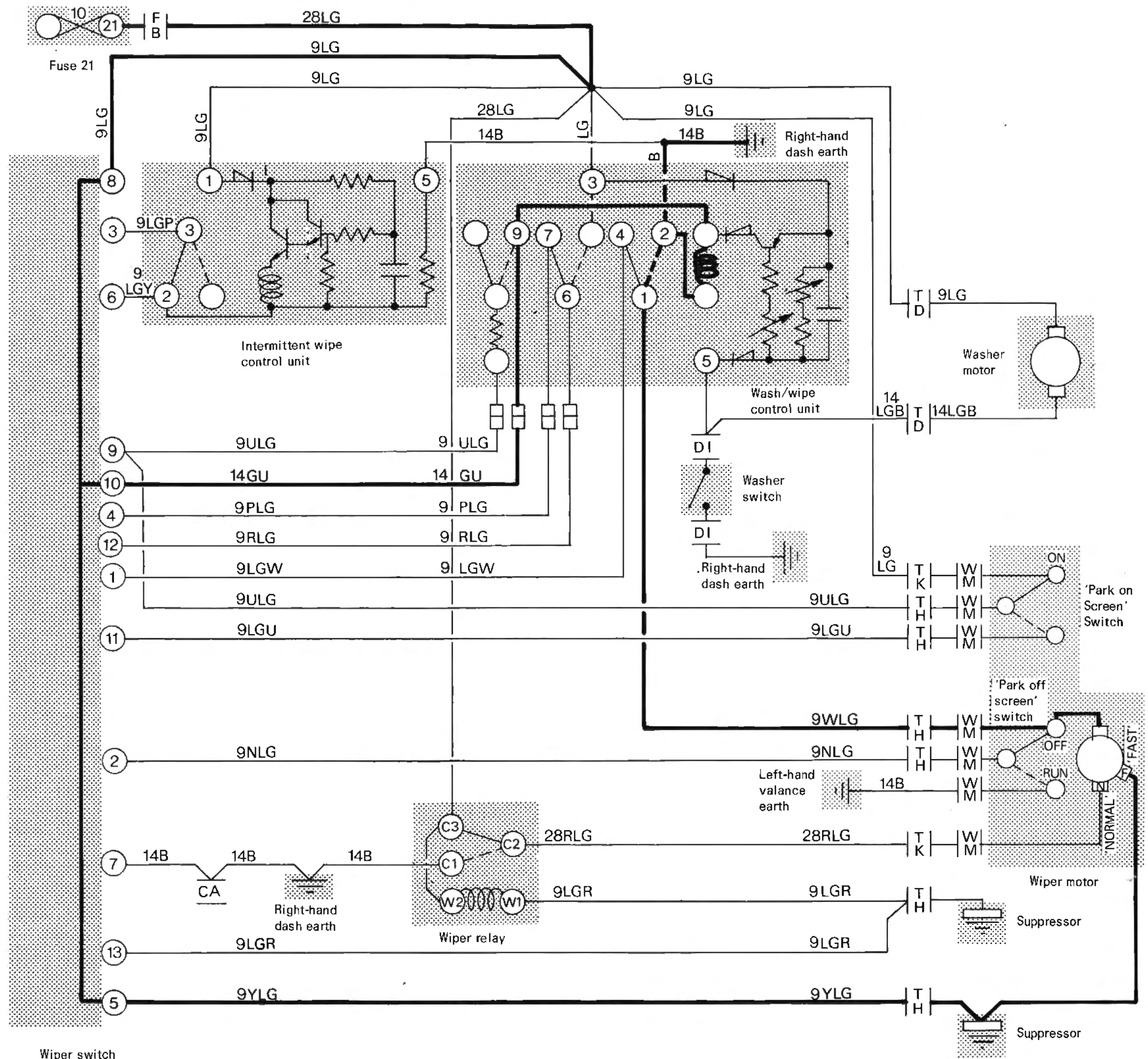
Schematic wiring diagram
Wiper switch in FAST position

Fig. 8 - 4



INT. 1-7-11,3-4,6-9,12-13
 OFF 1-8,2-4,12-13
 NORMAL 8-10,12-13
 FAST 5-8-10

Connector code
 CA Coolant level amplifier
 TH Toeboard socket 'H'
 TD Toeboard socket 'D'
 TK Toeboard socket 'K'
 WM Wiper motor
 DI Direction indicator
 FB Fuseboard 'B'



Wiper switch

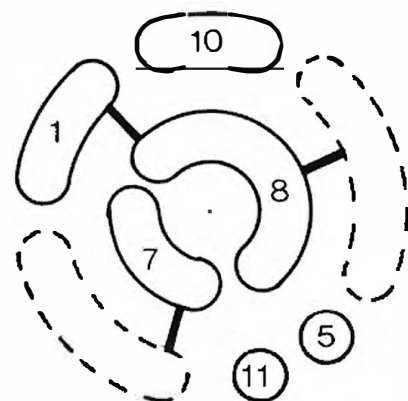
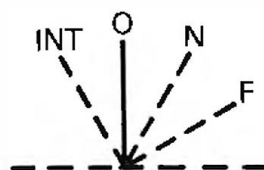
Section 8

**Windscreen wipers
and washers**

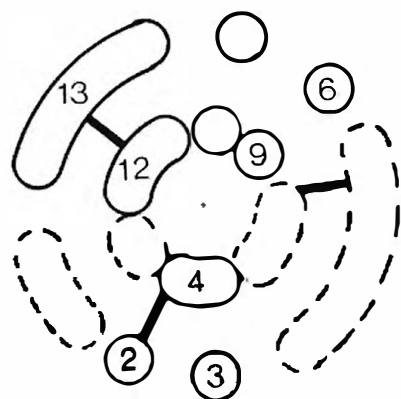
Schematic wiring diagram

Wiper switch in INTERMITTENT position

Fig. 8 - 5



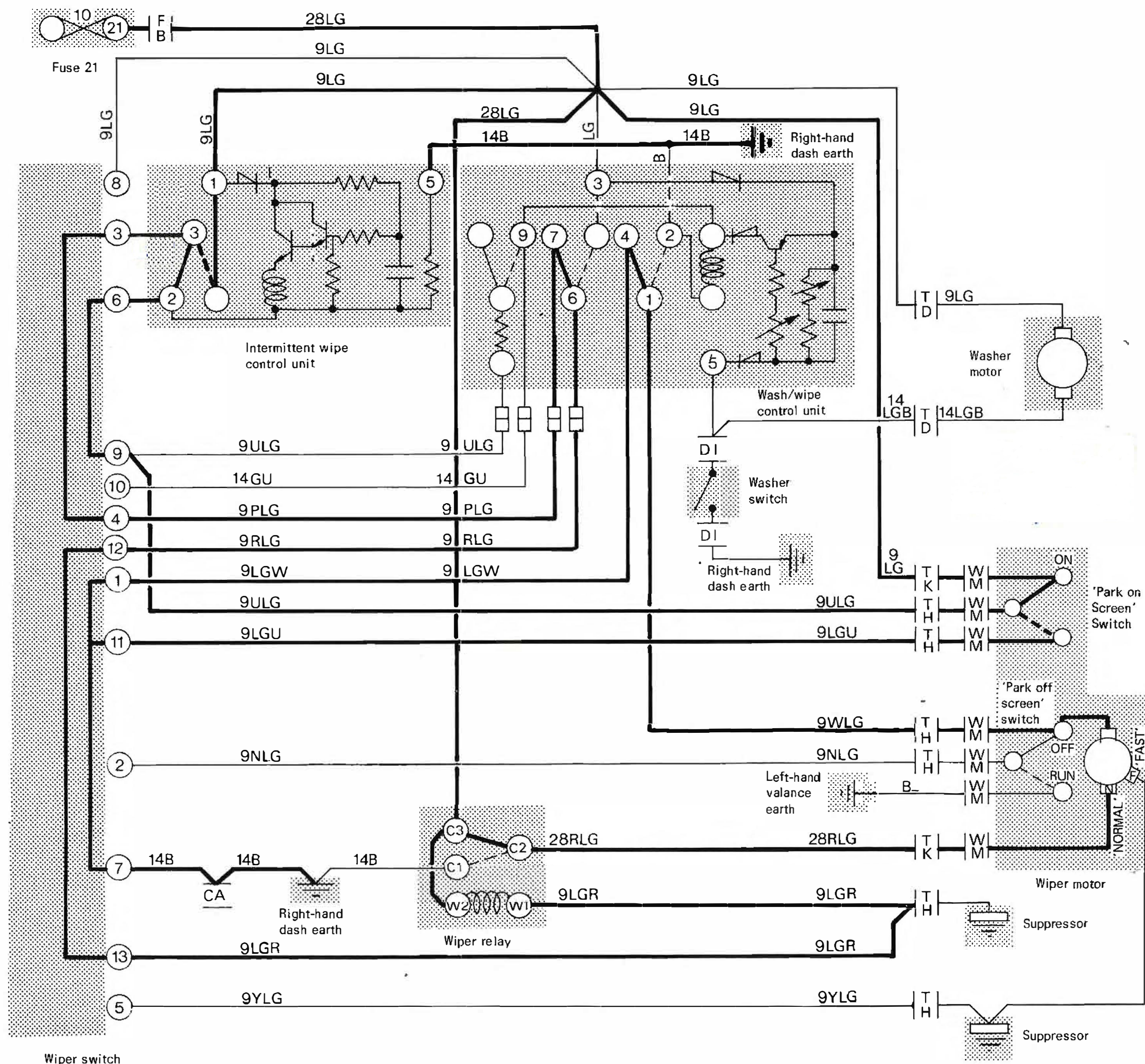
Switch shown in OFF position



INT. 1-7-11,3-4,6-9,12-13
OFF 1-8,2-4,12-13
NORMAL 8-10,12-13
FAST 5-8-10

Connector code

CA Coolant level amplifier
TH Toeboard socket 'H'
TD Toeboard socket 'D'
TK Toeboard socket 'K'
WM Wiper motor
DI Direction indicator
FB Fuseboard 'B'



Wiper switch

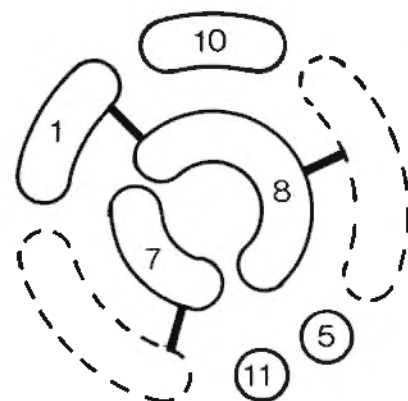
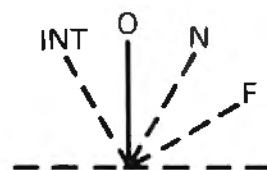
Section 8

**Windscreen wipers
and washers**

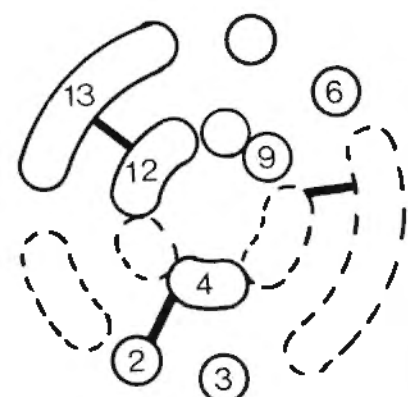
Schematic wiring diagram

Wash/wipe control

Fig. 8 - 6

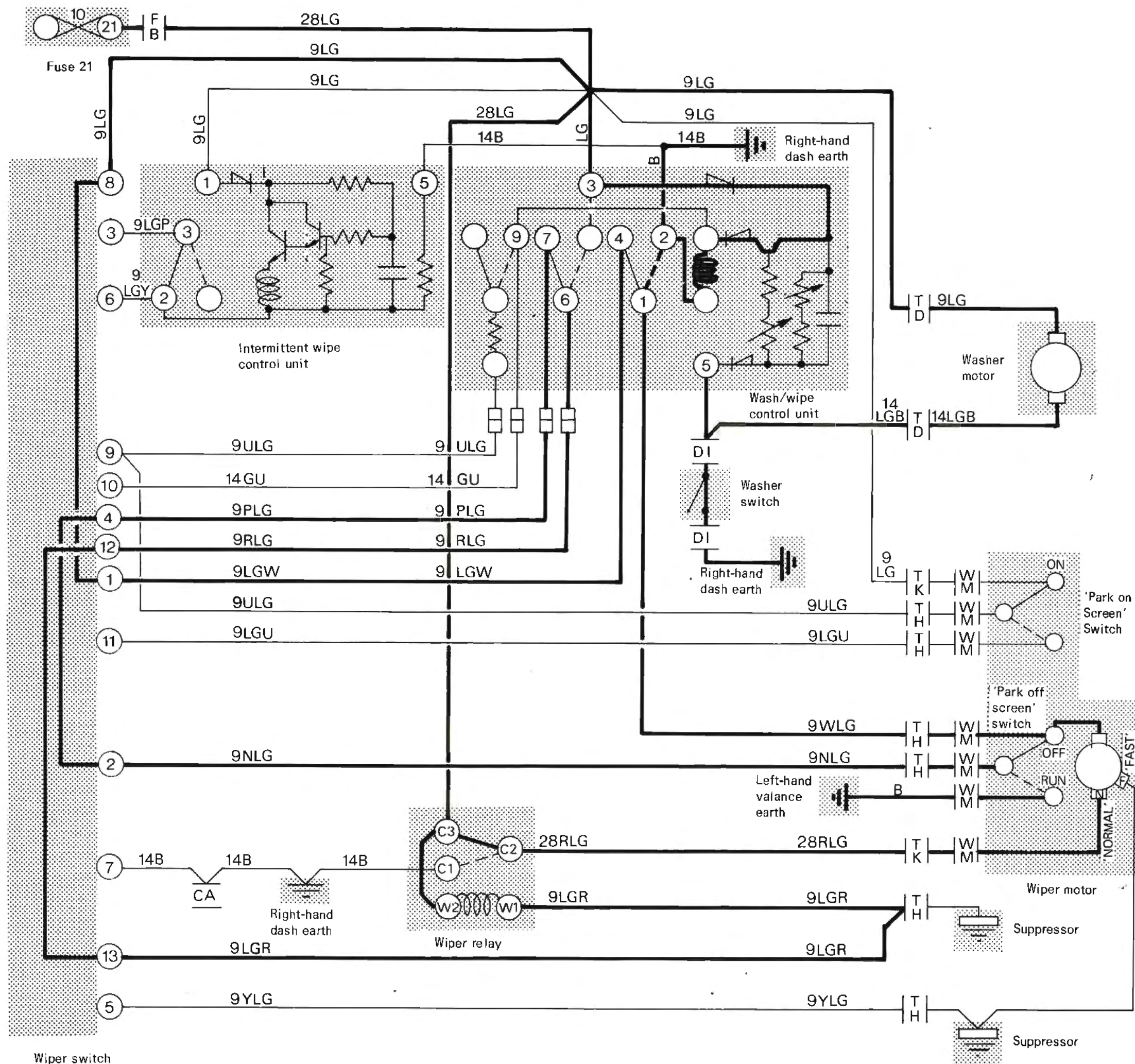


Switch shown in OFF position



INT. 1-7-11,3-4,6-9,12-13
OFF 1-8,2-4,12-13
NORMAL 8-10,12-13
FAST 5-8-10

Connector code
CA Coolant level amplifier
TH Toeboard socket 'H'
TD Toeboard socket 'D'
TK Toeboard socket 'K'
WM Wiper motor
DI Direction indicator
FB Fuseboard 'B'



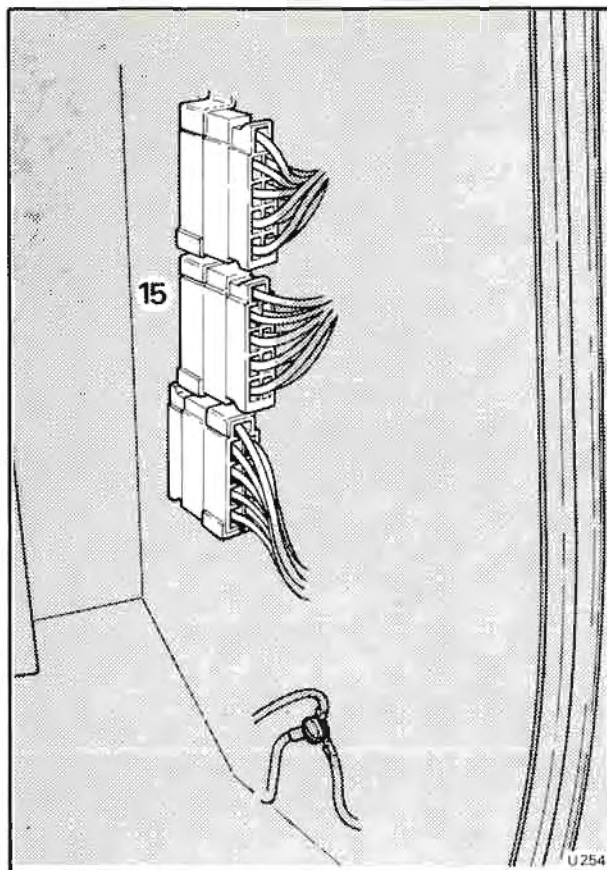
Wiper switch

Section 9

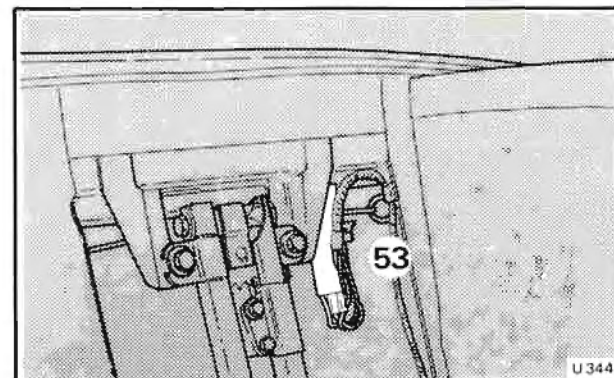
Division lift

Component location

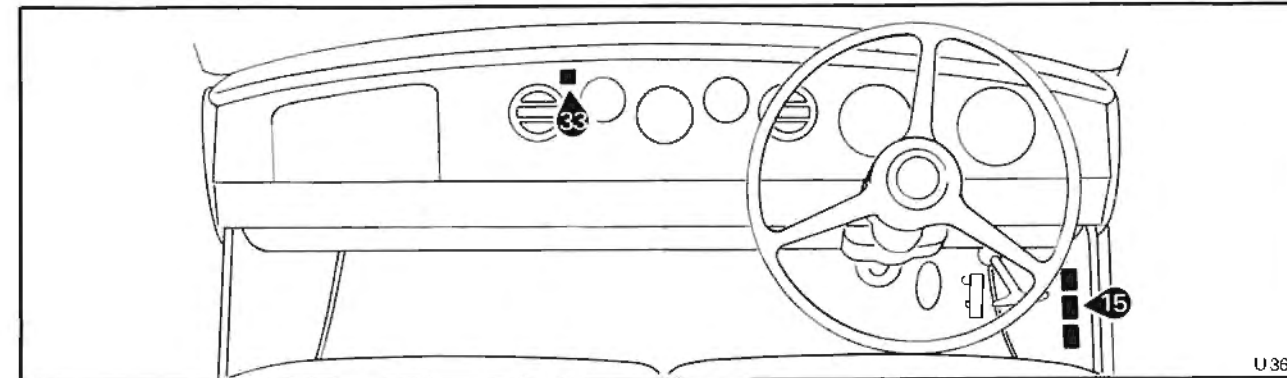
Fig. 9 - 1



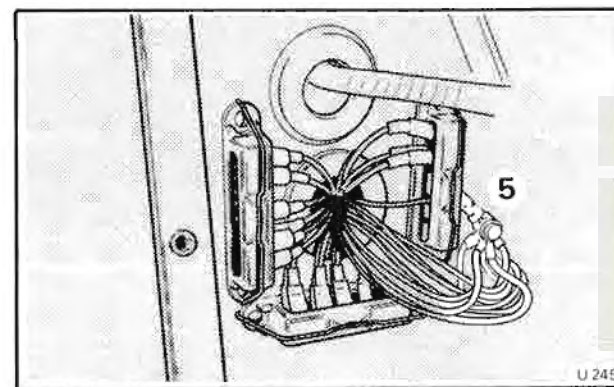
15 Chassis loom sockets



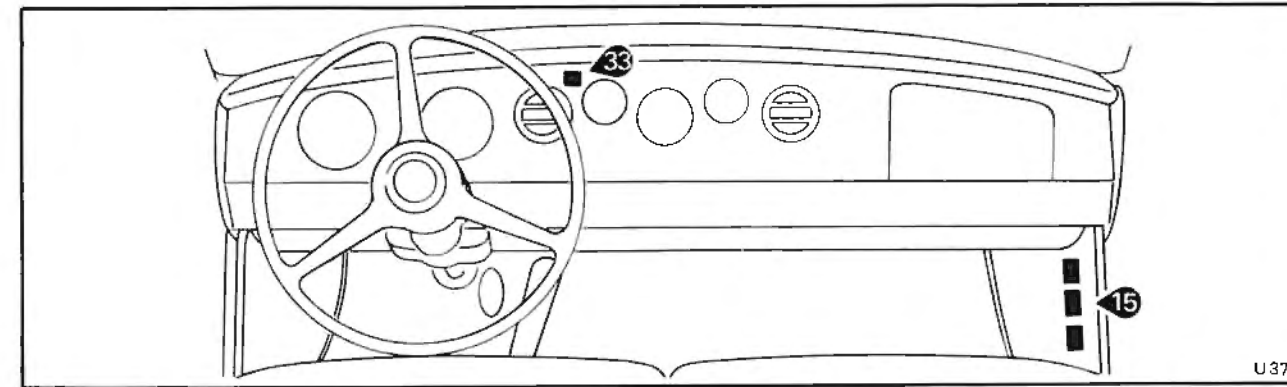
53 Division lift limit switch



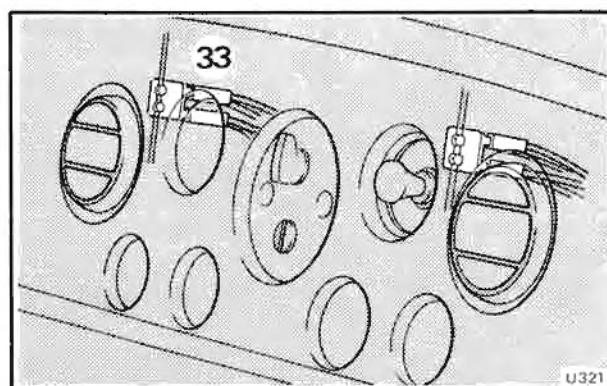
Right-hand drive location of 15 and 33



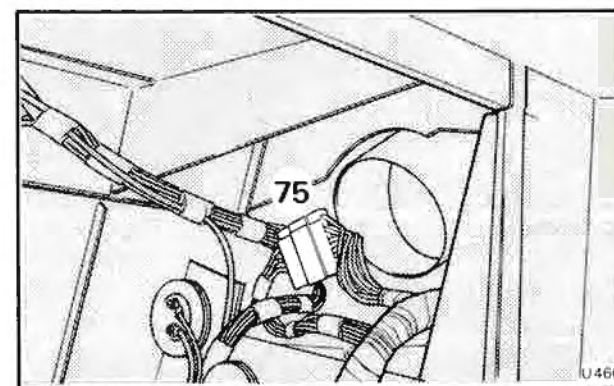
5 Right-hand boot earth



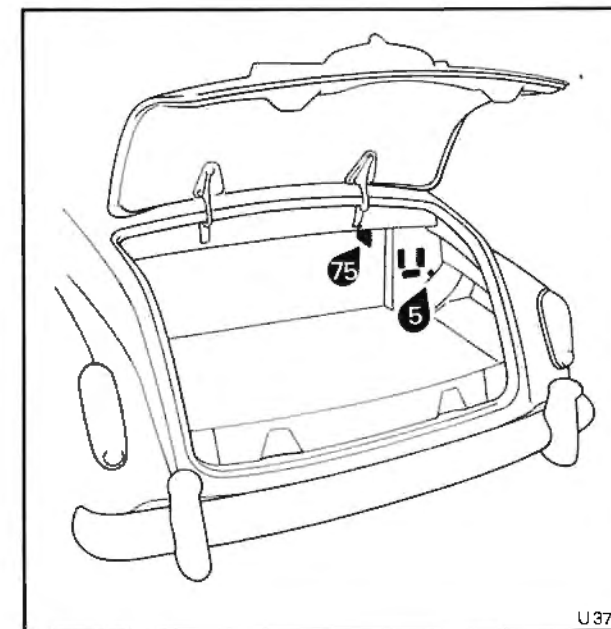
Left-hand drive location of 15 and 33



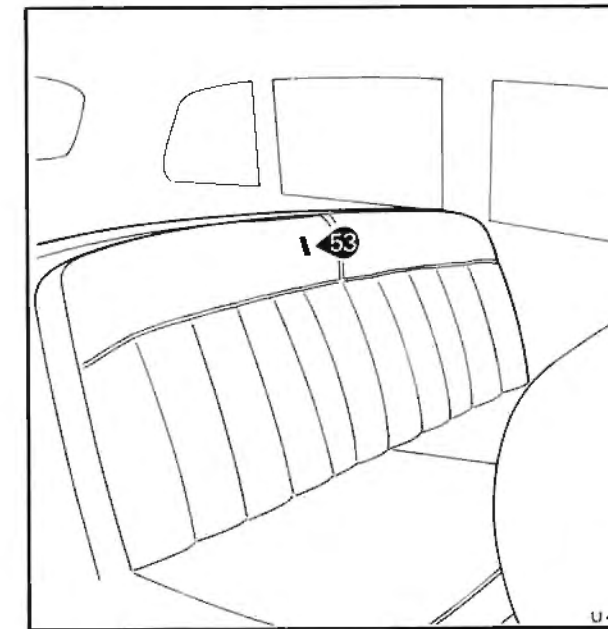
33 Left-hand instrument panel earth



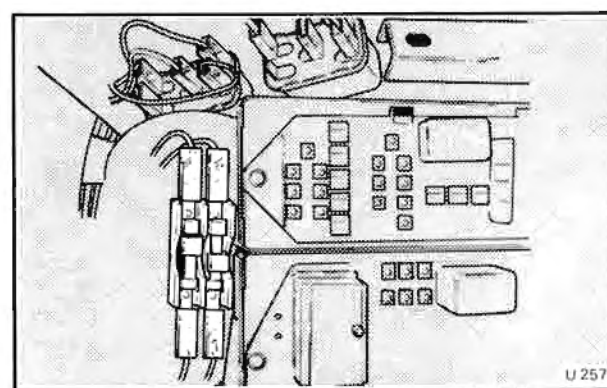
75 Body loom socket



Boot location of 5 and 75



Interior location of 53



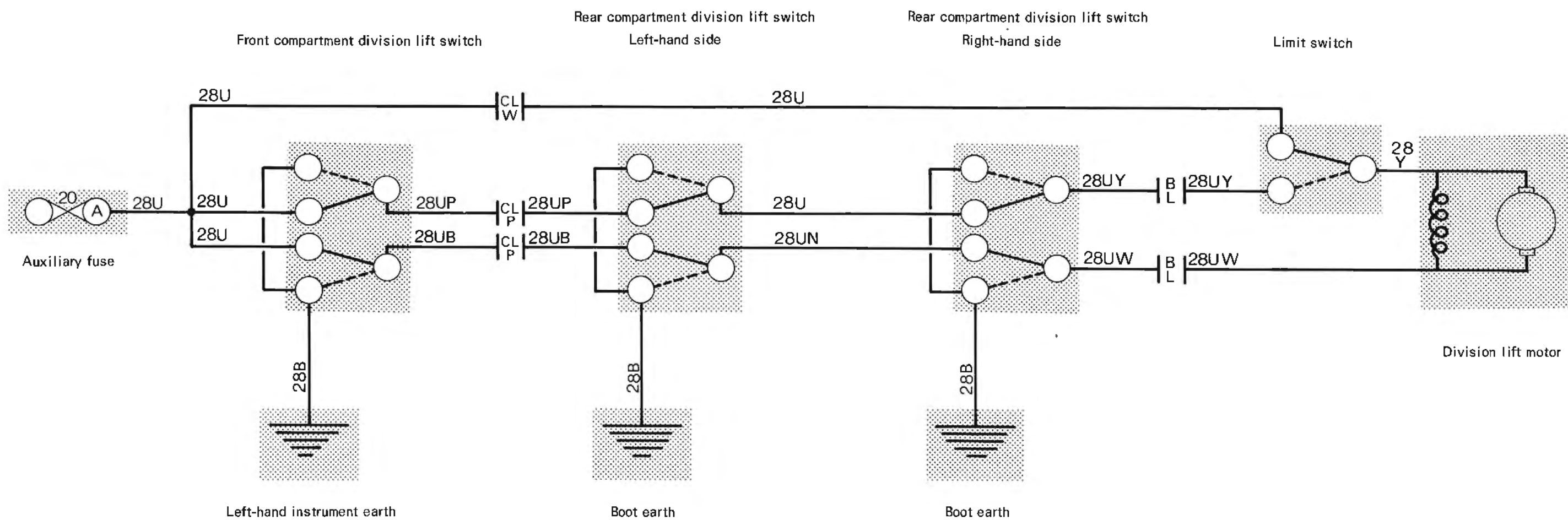
40 Auxiliary fuse board

Section 9

Division lift

Schematic wiring diagram

Fig. 9 - 2

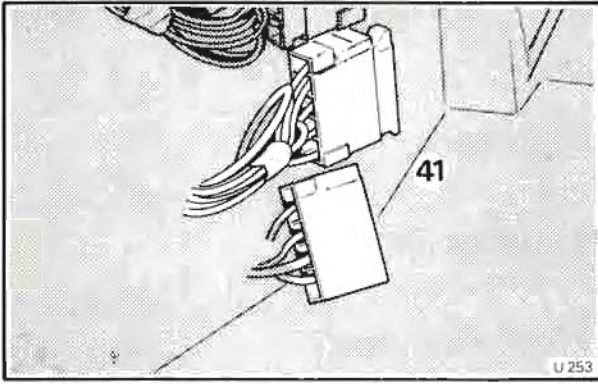


Section 10

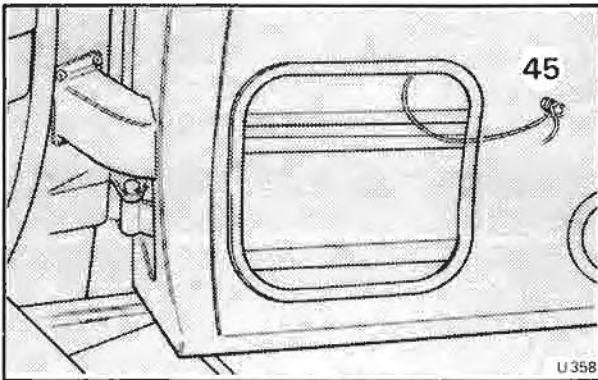
Window lifts

Component location

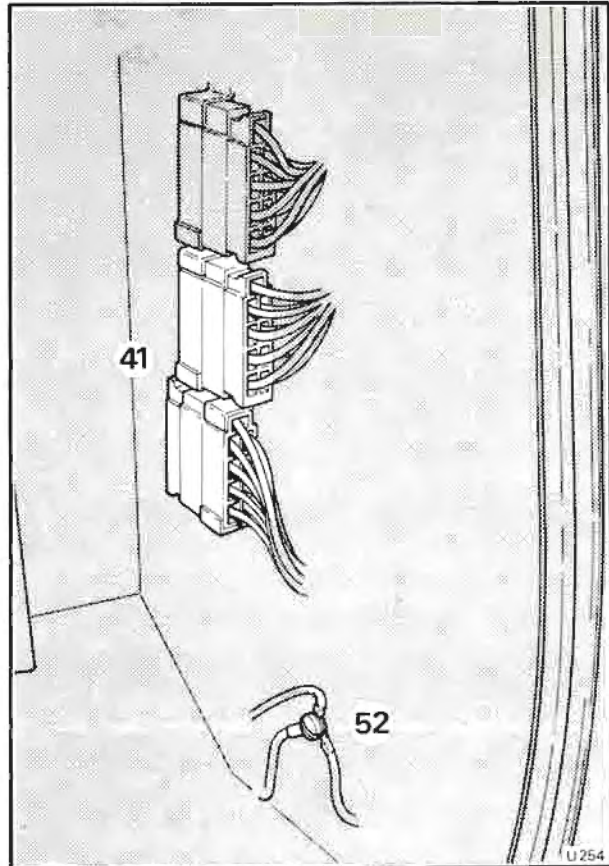
Fig. 10 - 1



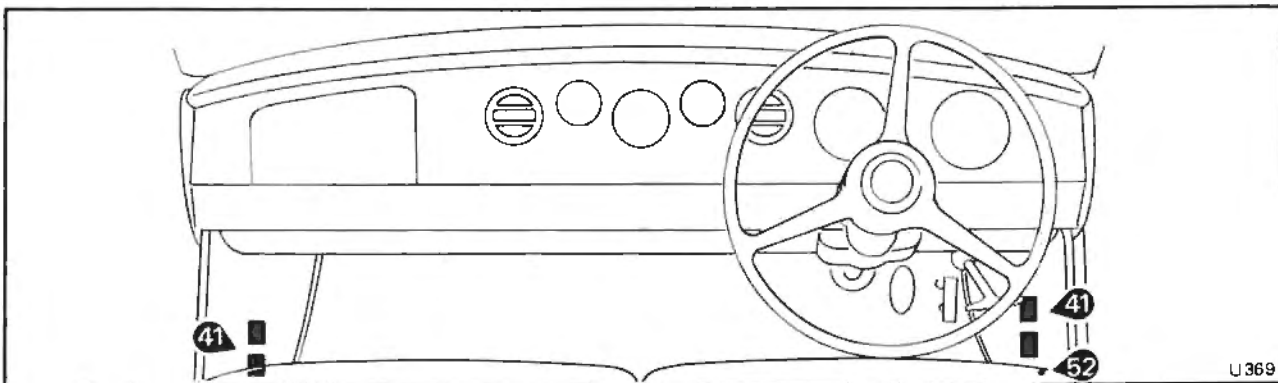
41 Left-hand door sockets



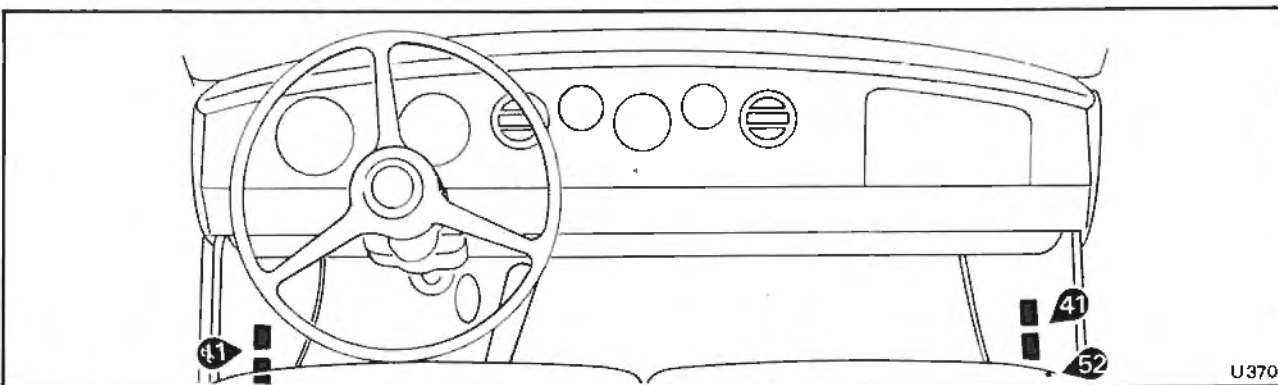
45 Rear door earth



41 Right-hand door sockets
52 'A' post earth



Right-hand drive location of 41 and 52



Left-hand drive location of 41 and 52

Section 10

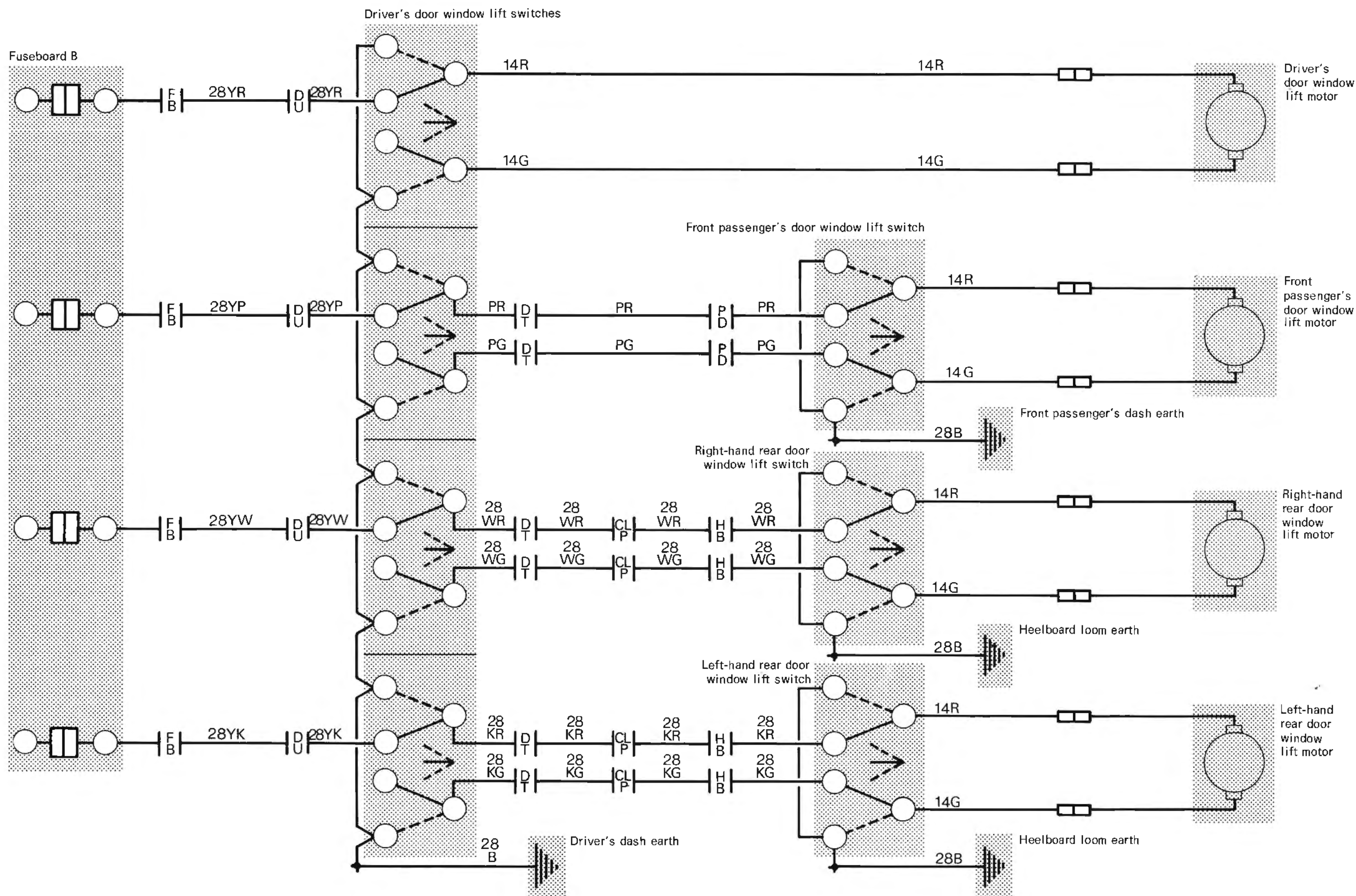
Window lifts

Schematic wiring diagram

Fig. 10 - 2

Connector code

FB - Fuseboard 'B'
DU - Door socket 'U'
DT - Door socket 'T'
PD - Passenger's door socket
HB - Heelboard loom socket
CLP - Chassis loom socket 'P'

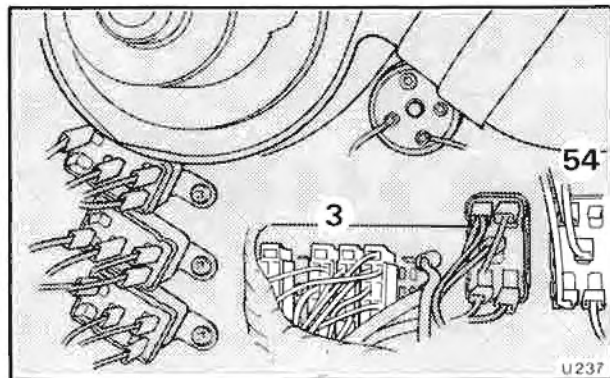


Section 11

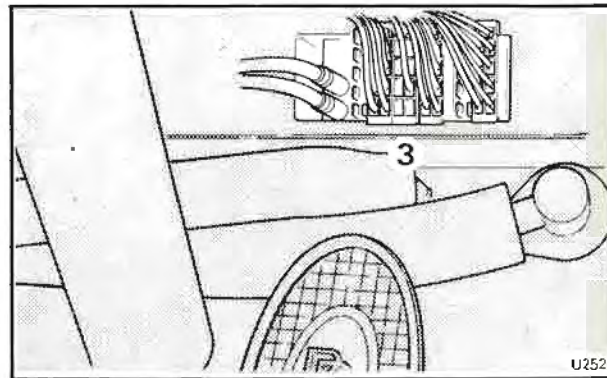
Horns

Schematic wiring diagram
and component location

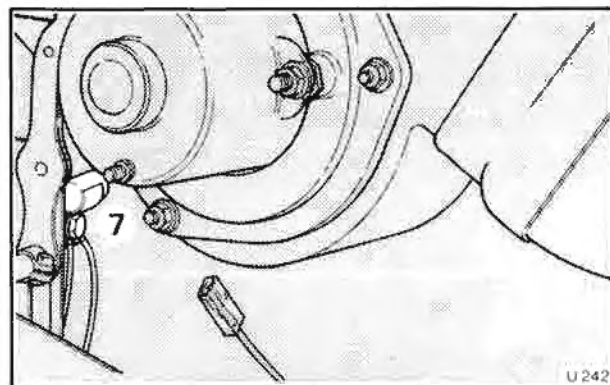
Fig. 11 - 1



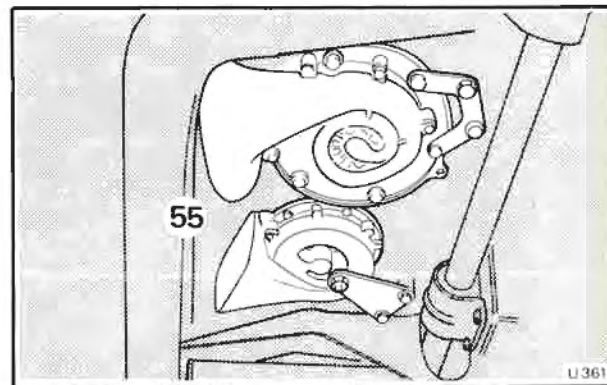
3 Right-hand toeboard sockets
(engine compartment)
54 Horn relay



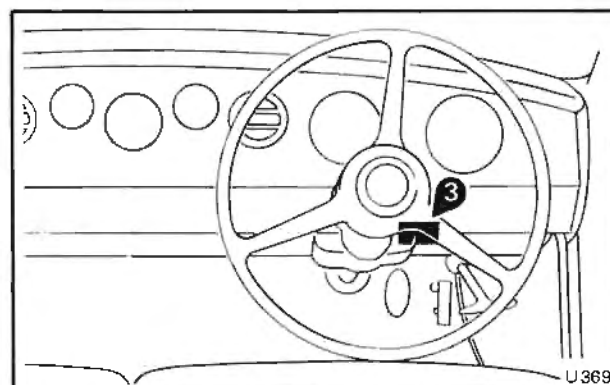
3 Right-hand toeboard sockets
(passenger compartment)



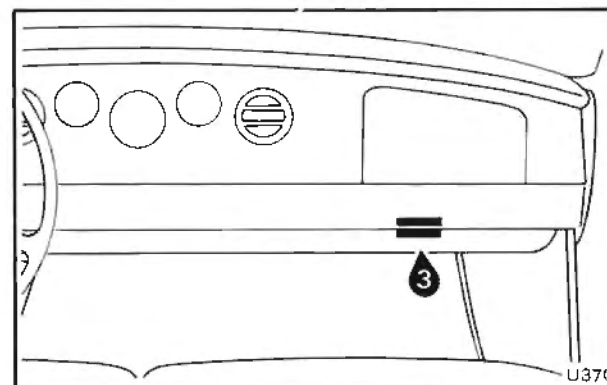
7 Right-hand valance earth



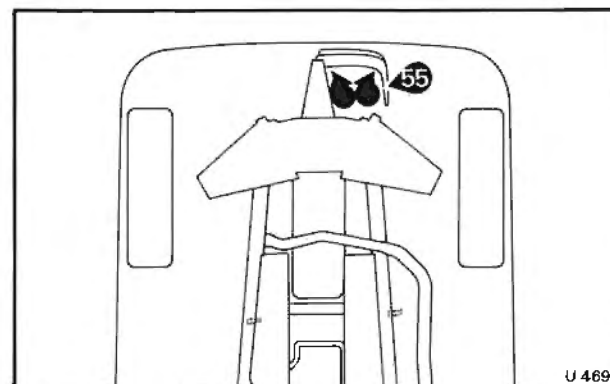
55 Horns



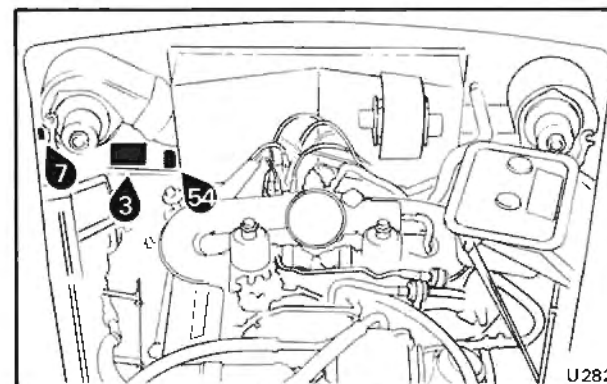
Right-hand drive location of 3



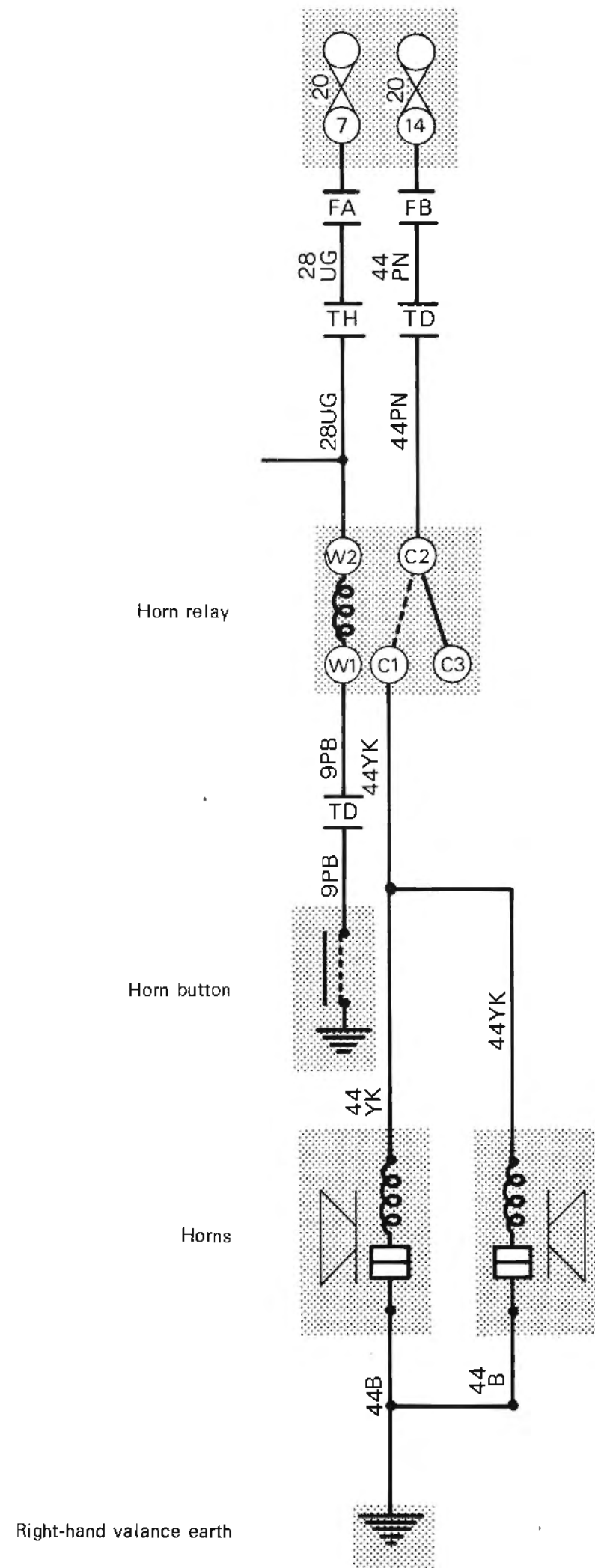
Left-hand drive location of 3



Front underside location of 55



Engine compartment location of 3, 7 and 54

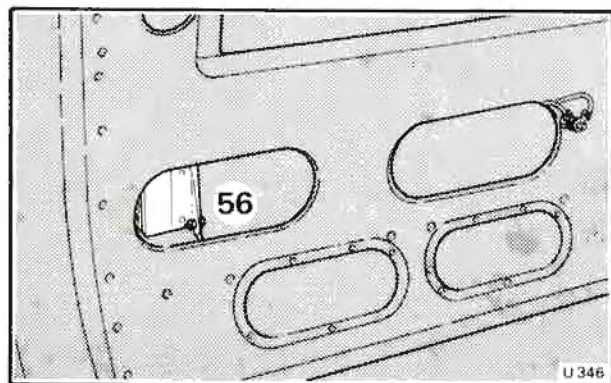


Section 12

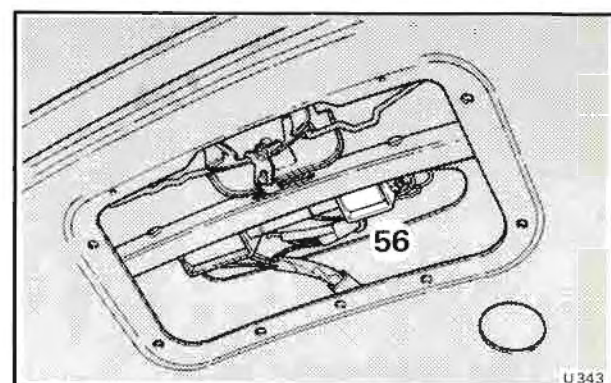
Centralised door locking

Component location

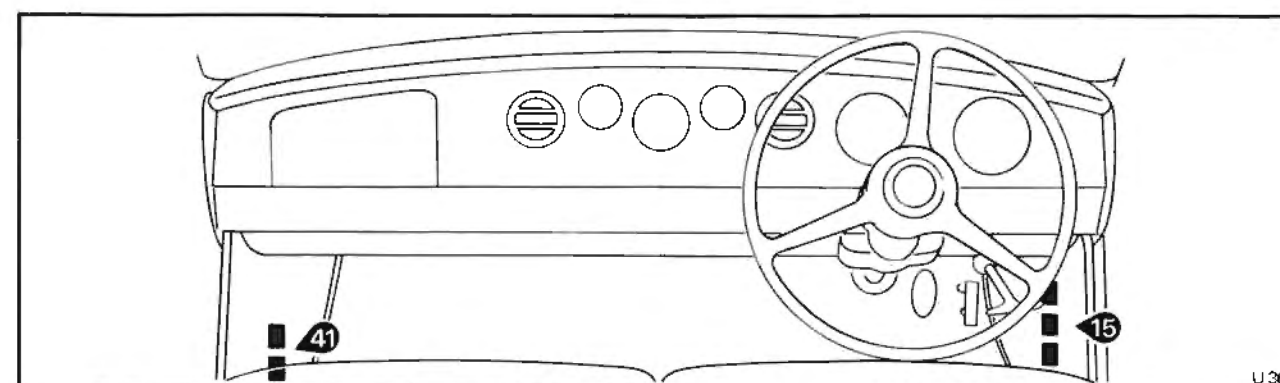
Fig. 12 - 1



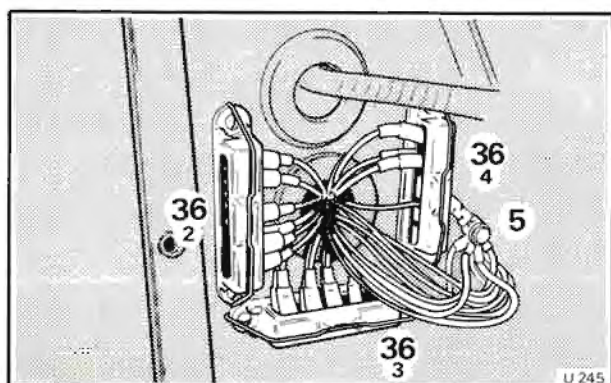
56 Door locking solenoid



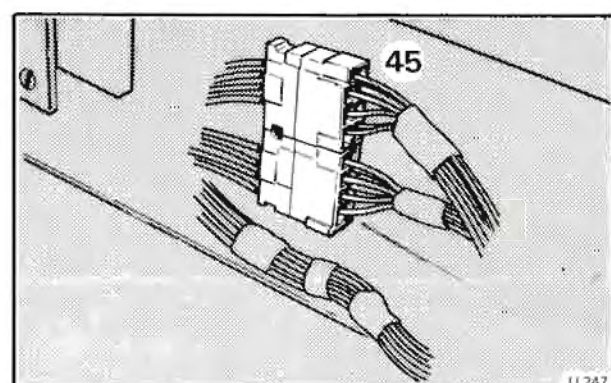
56 Boot locking solenoid



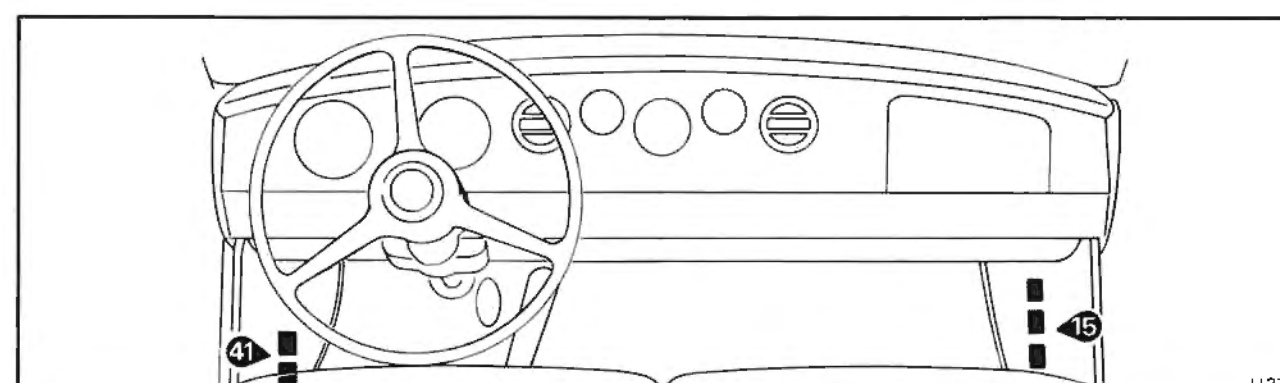
Right-hand drive location of 15 and 41



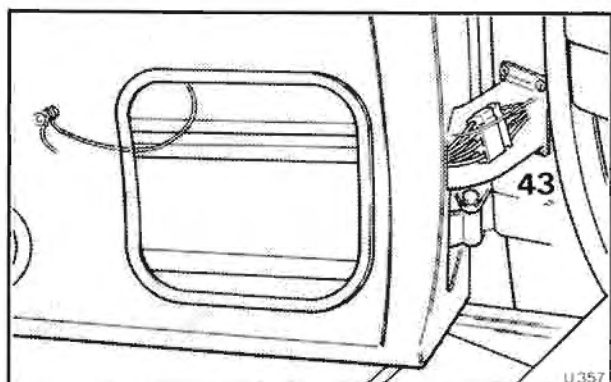
5 Right-hand boot earth
36 Connecting blocks



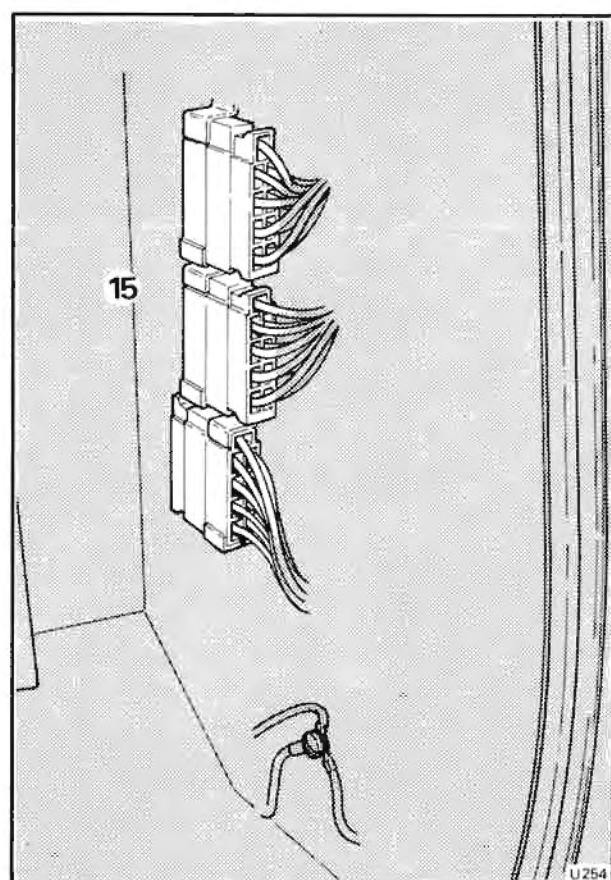
45 Heelboard loom sockets



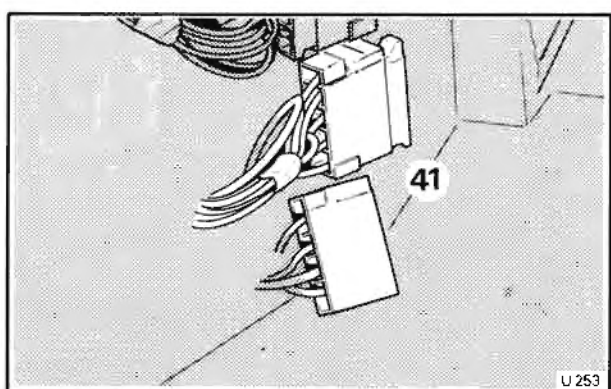
Left-hand drive location of 15 and 41



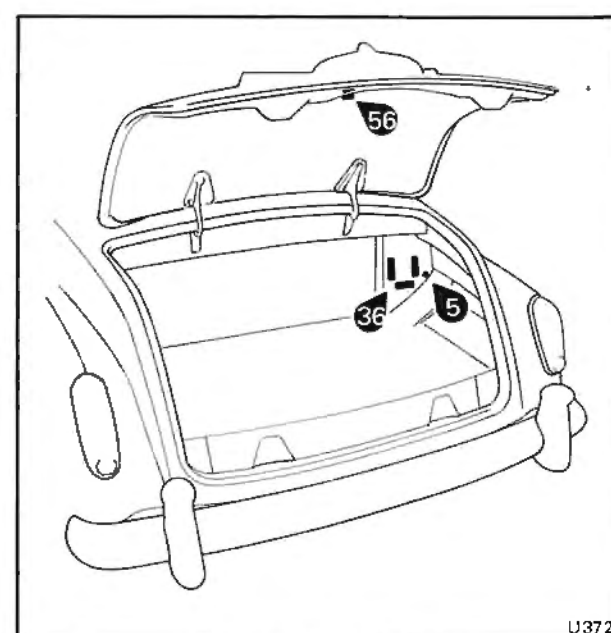
43 Left-hand rear door socket



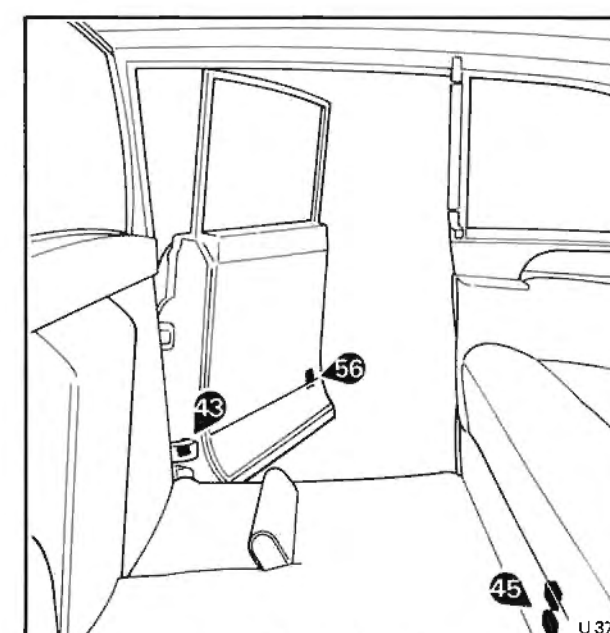
15 Chassis loom sockets



41 Left-hand front door sockets



Boot location of 5, 36 and 56



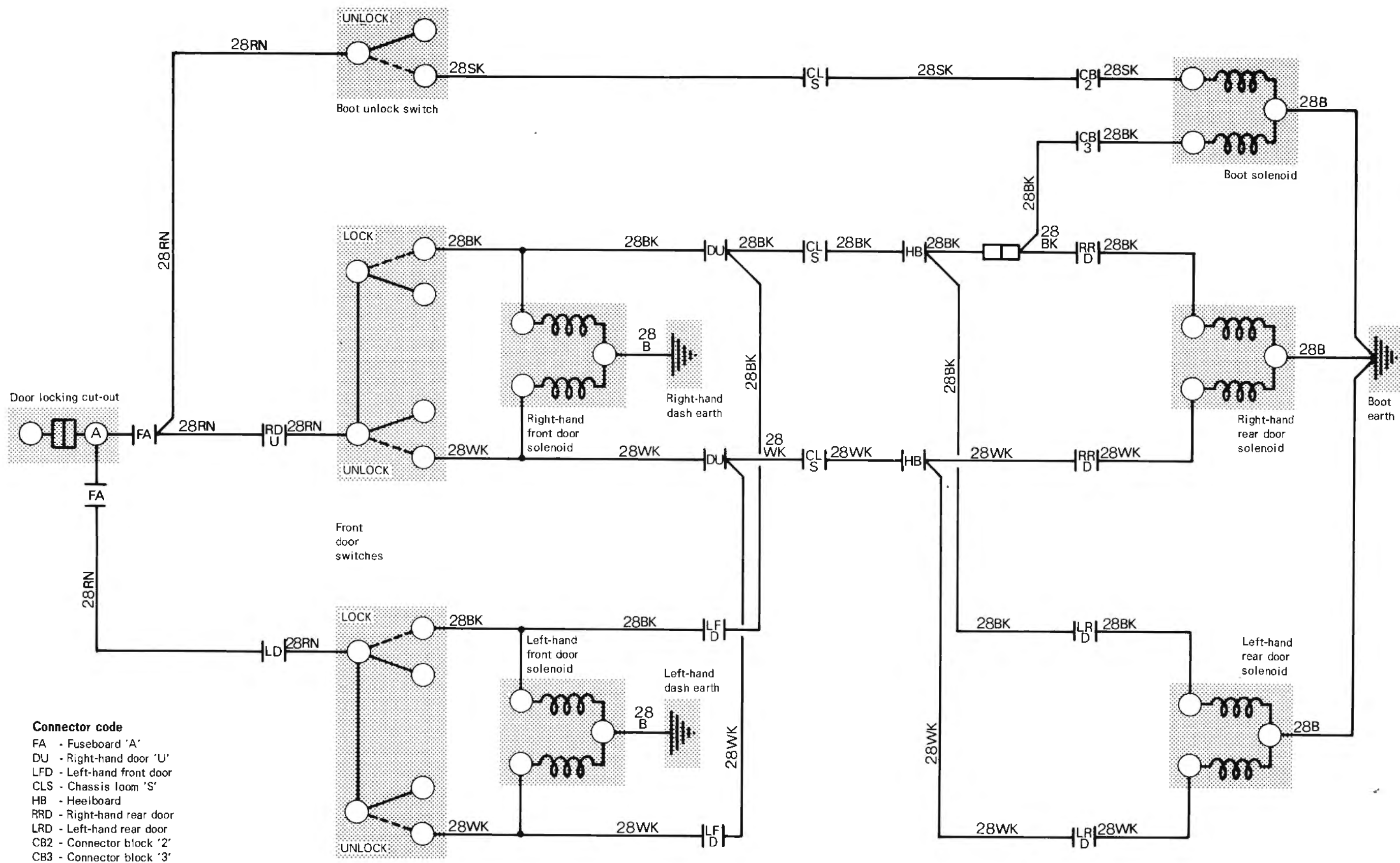
Rear compartment location of 43, 45 and 56

Section 12

Centralised door locking

Schematic wiring diagram

Fig. 12 - 2

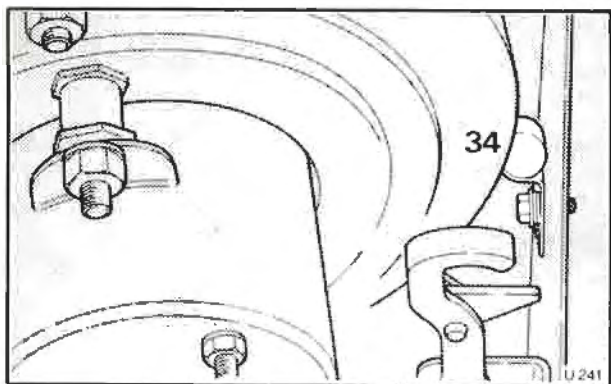


Section 13

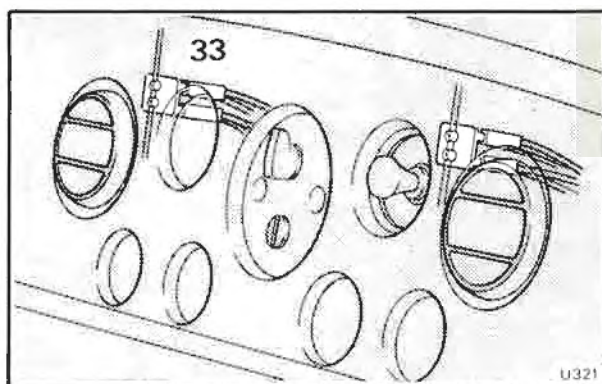
Gearchange actuator

Component location

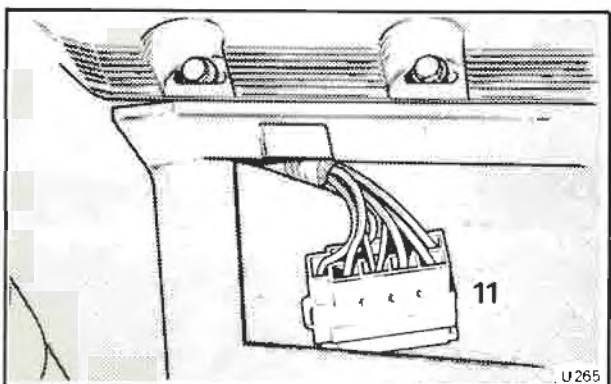
Fig. 13 - 1



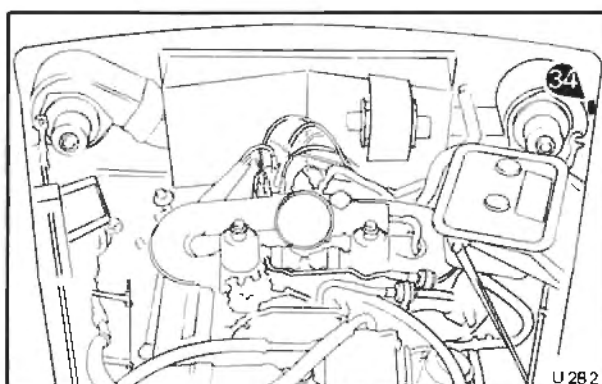
34 Left-hand valve earth



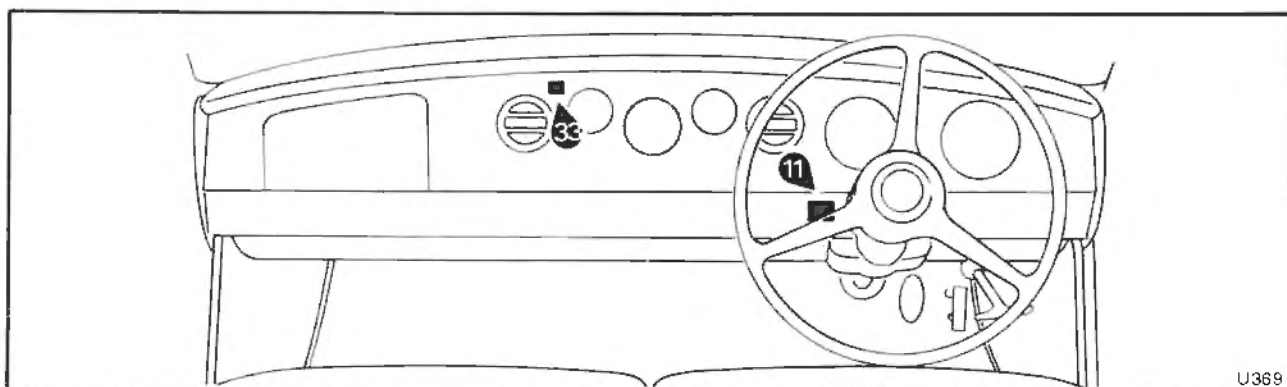
33 Left-hand instrument panel earth



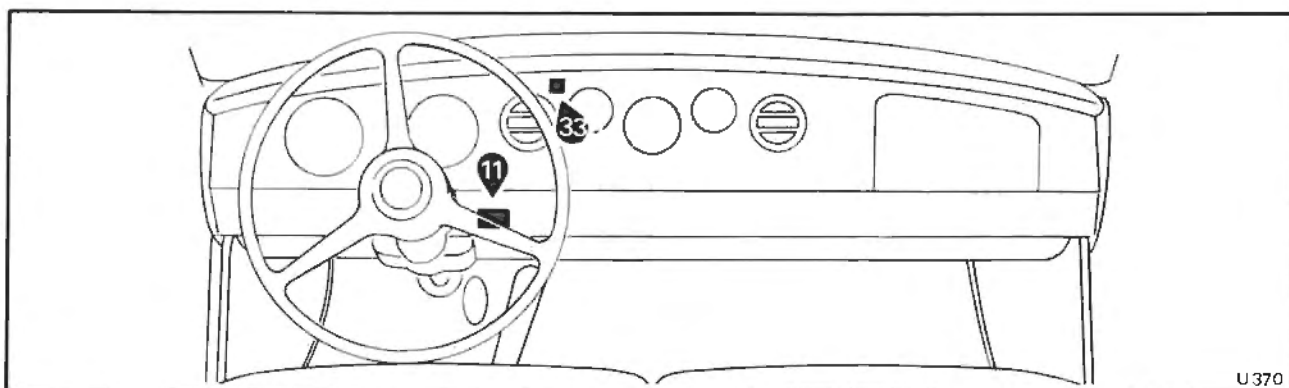
11 Left-hand drive gear selector socket



Engine compartment location of 34



Right-hand drive location of 11 and 33



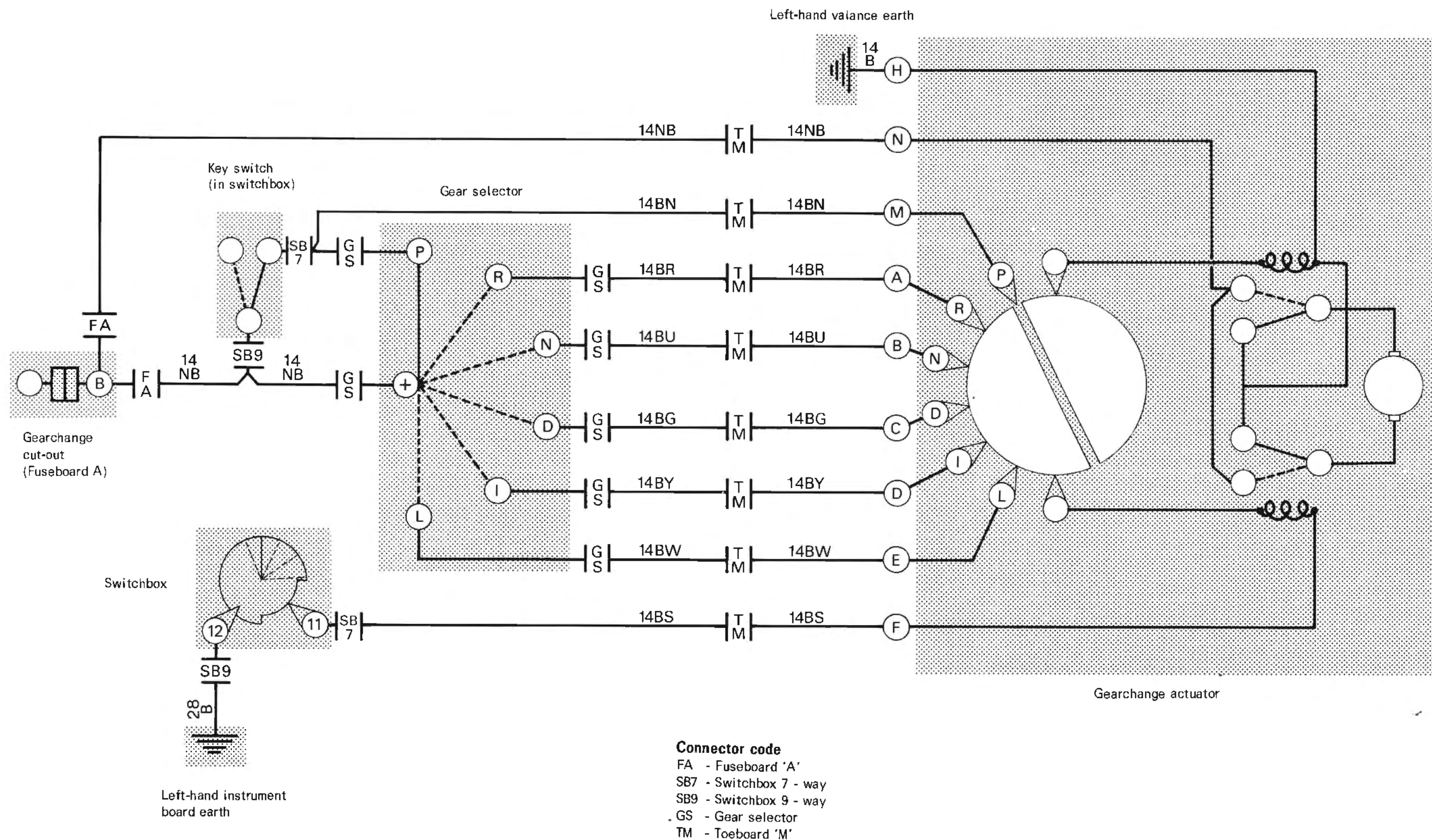
Left-hand drive location of 11 and 33

Section 13

Gearchange actuator

Schematic wiring diagram

Fig. 13 - 2

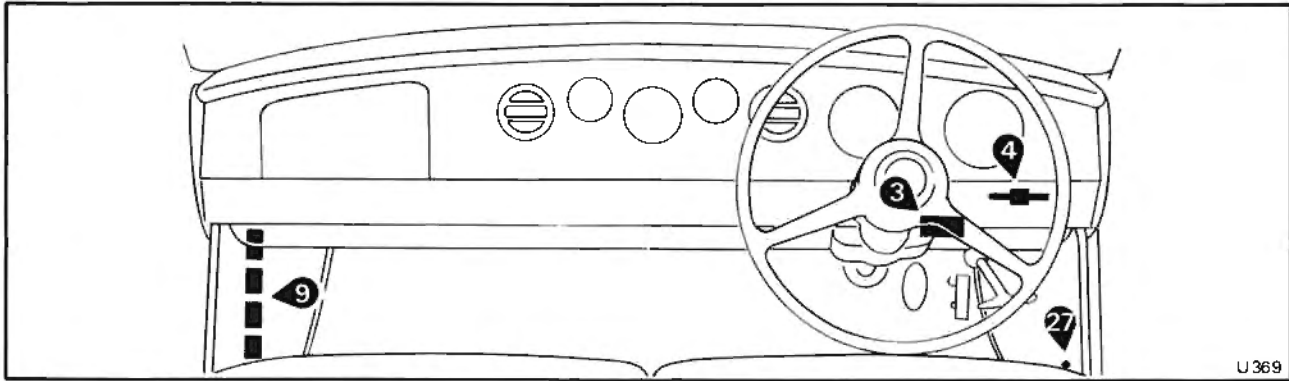


Section 14

**Instruments and
warning lamps**

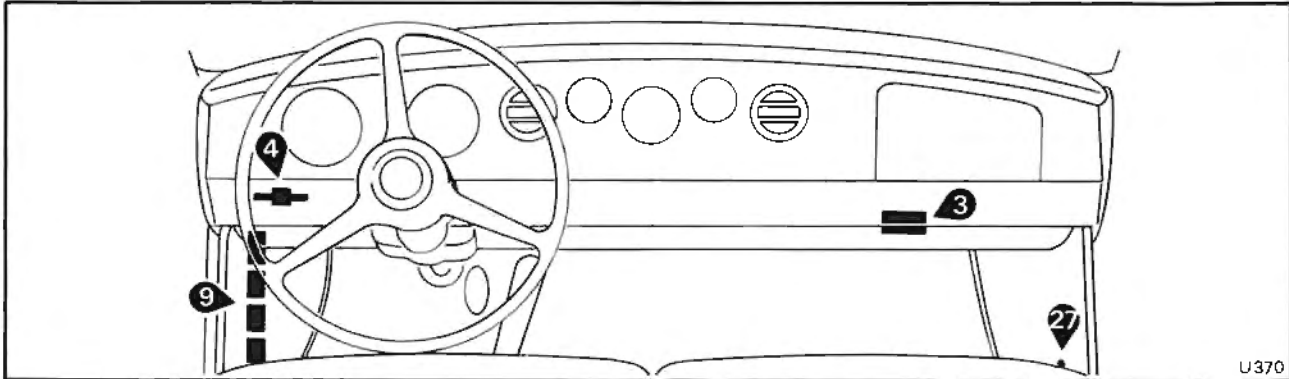
Component location
(instruments)

Fig. 14 - 1



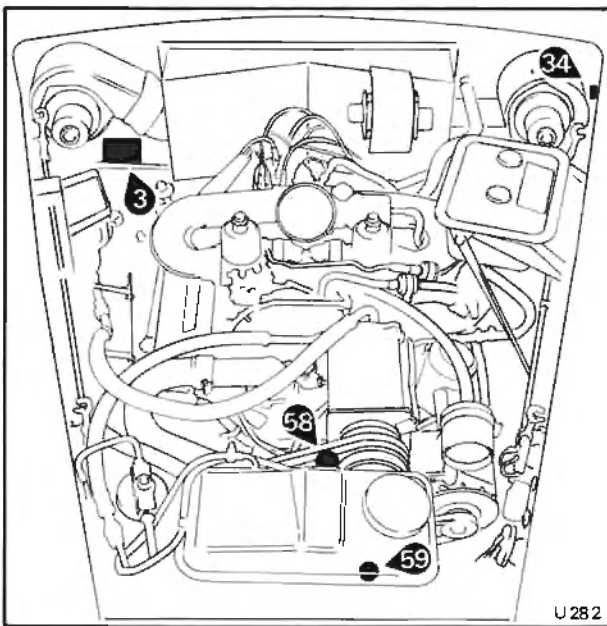
U 369

Right-hand drive location of 3, 4, 9 and 27



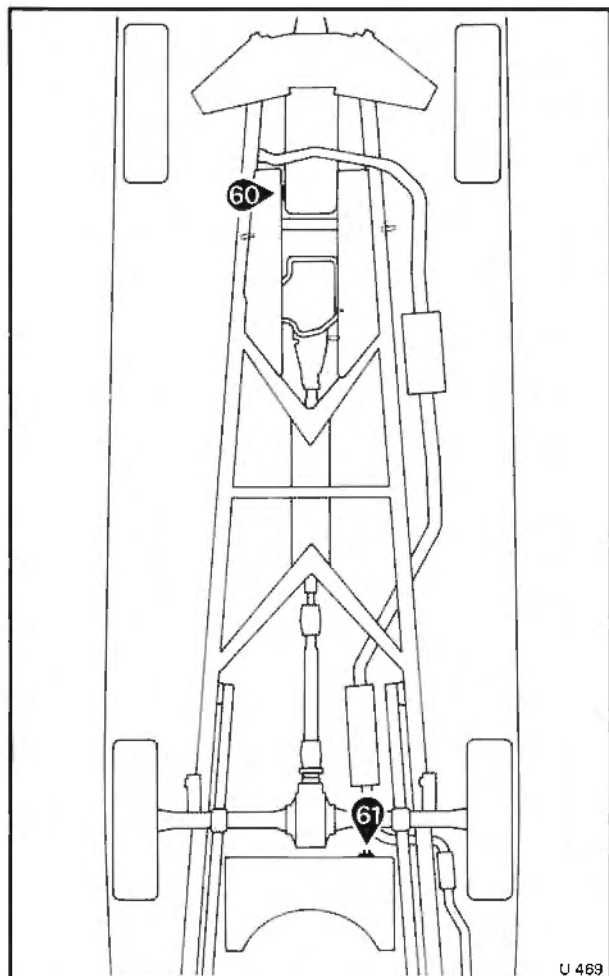
U 370

Left-hand drive location of 3, 4, 9 and 27



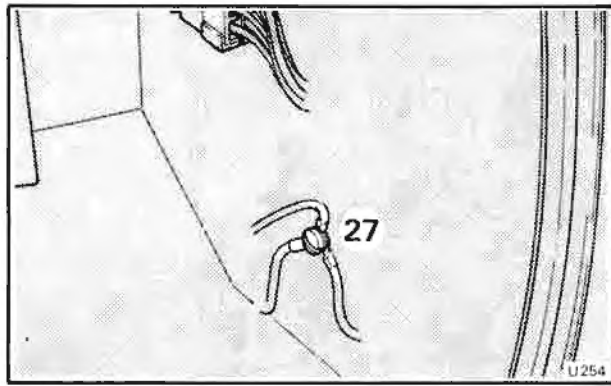
U 282

Engine compartment location of 3, 34, 58 and 59

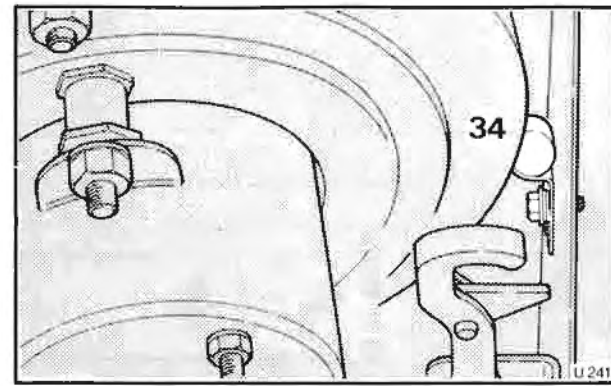


U 469

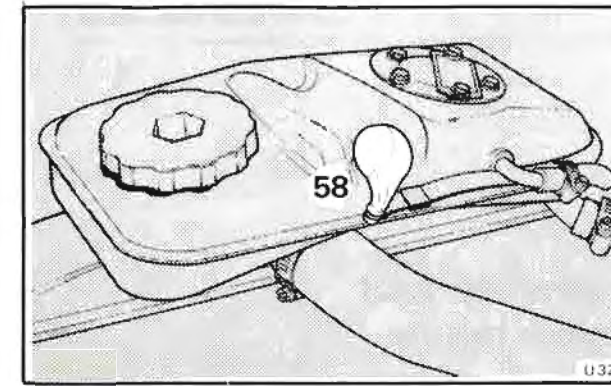
Underside location of 60 and 61



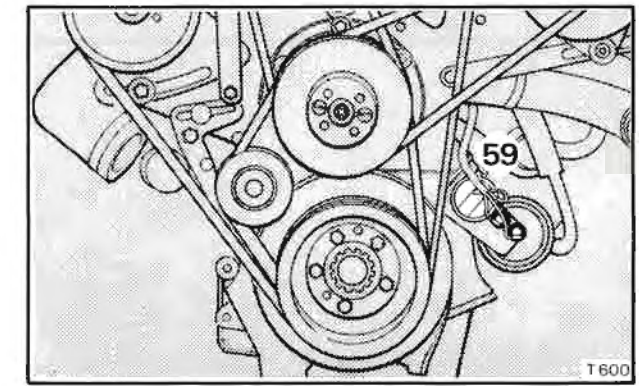
27 Right-hand 'A' post earth



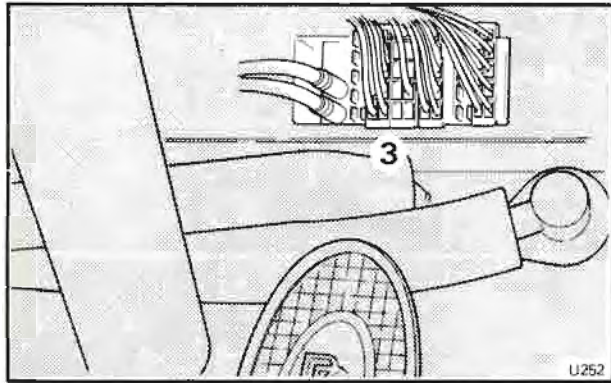
34 Left-hand valance earth



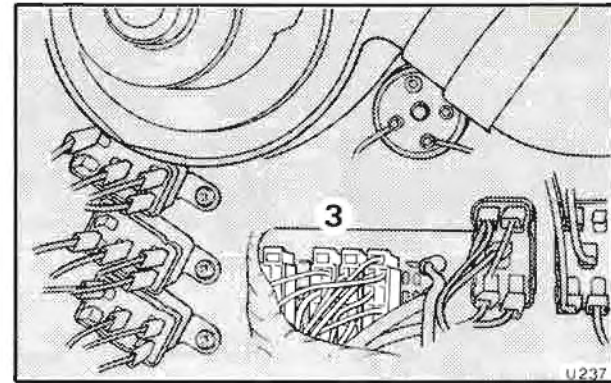
58 Coolant temperature transmitter



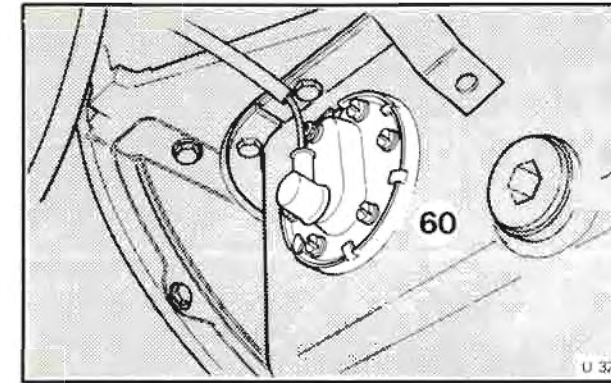
59 Oil pressure transmitter



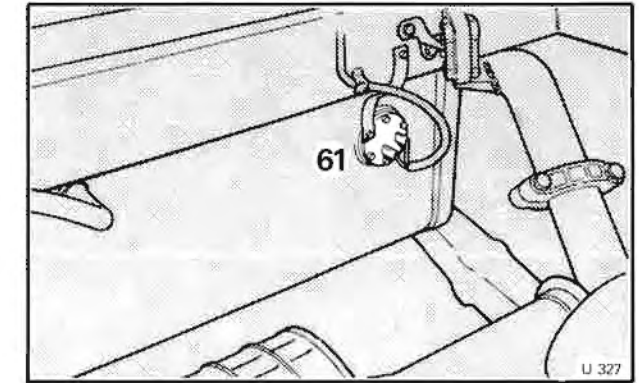
3 Right-hand toeboard sockets
(passenger compartment)



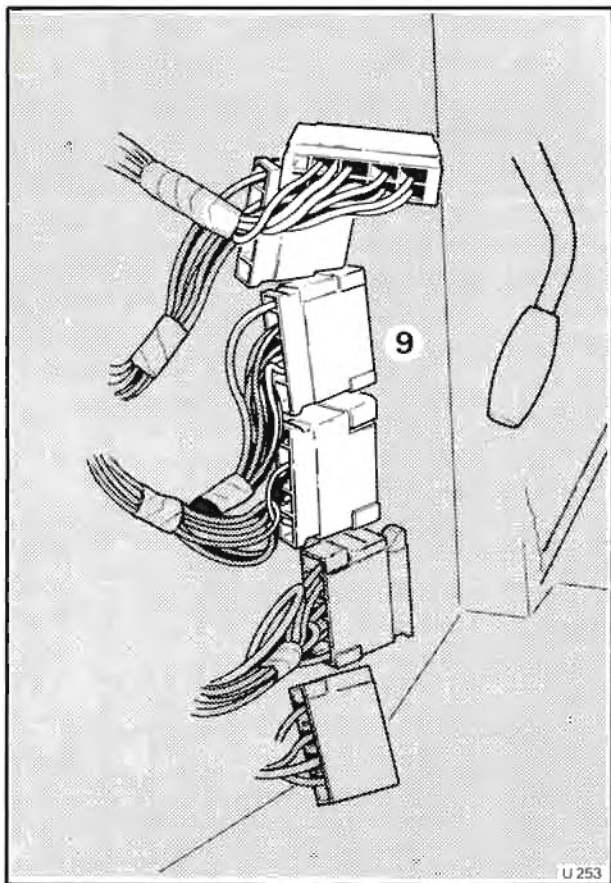
3 Right-hand toeboard sockets
(engine compartment)



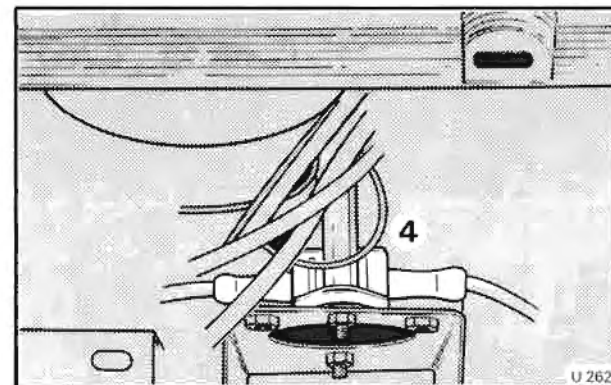
60 Oil sump unit



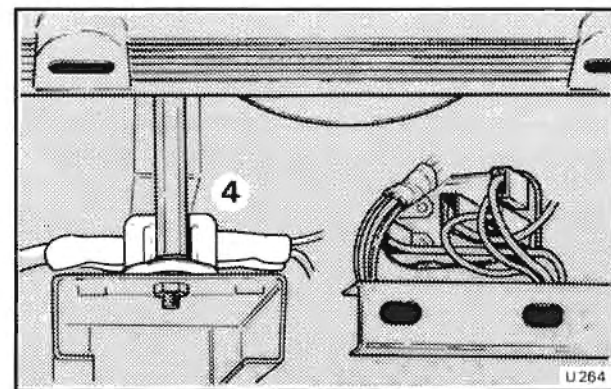
61 Fuel tank unit



9 Left-hand toeboard sockets



4 Right-hand drive ammeter shunt



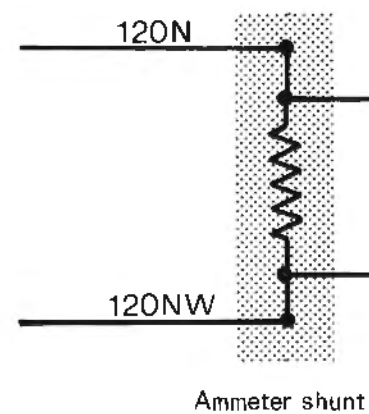
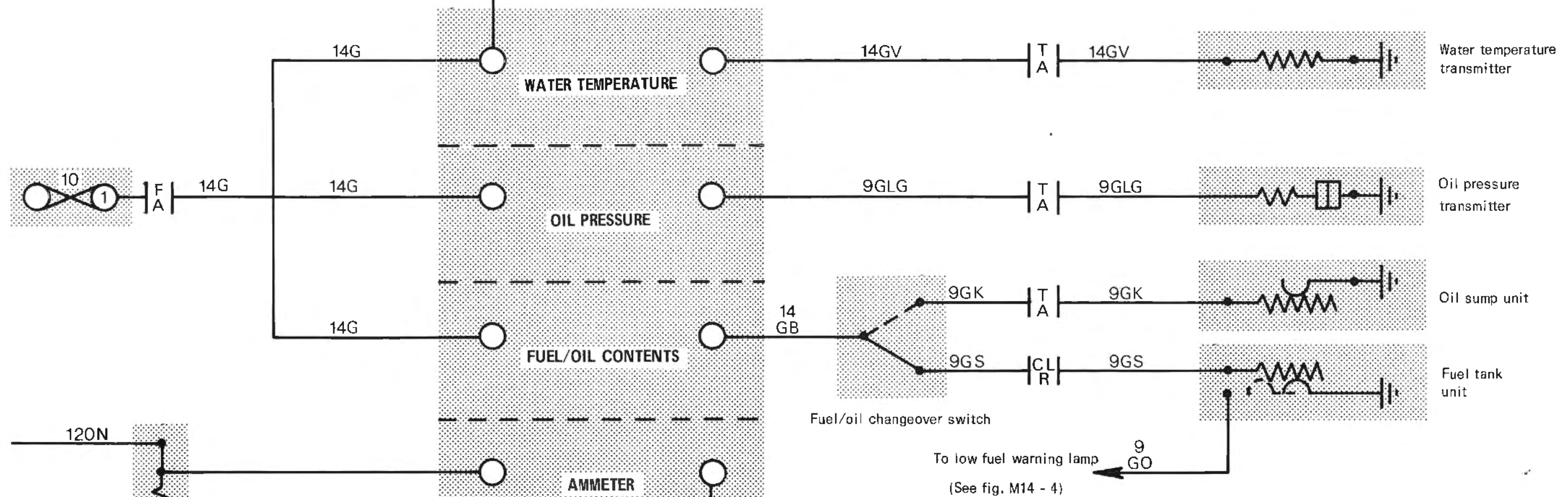
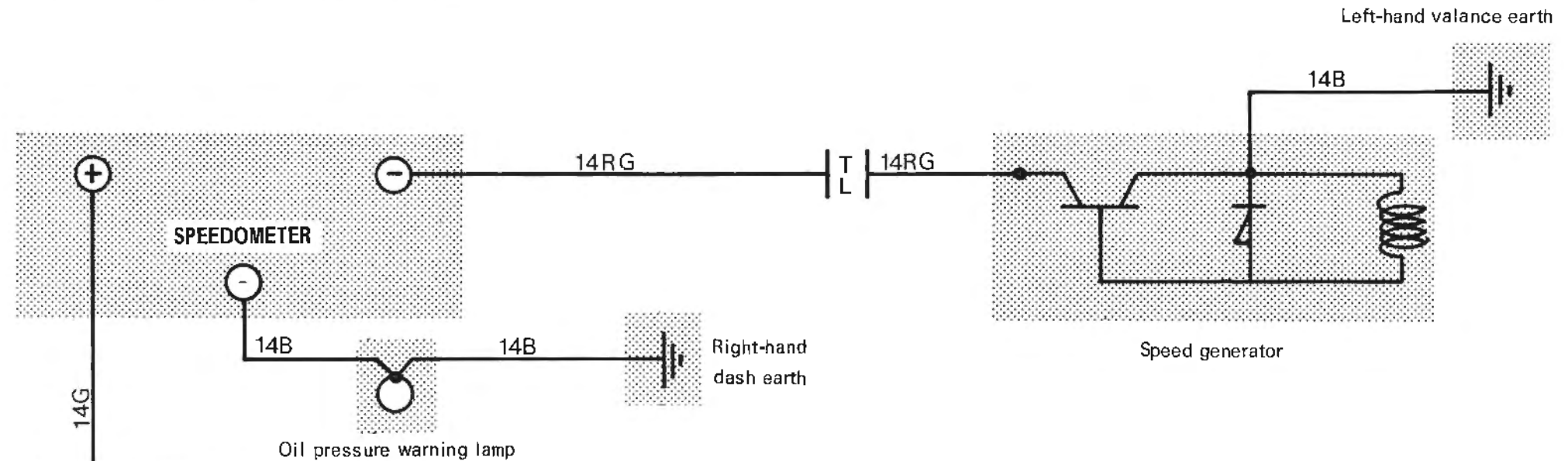
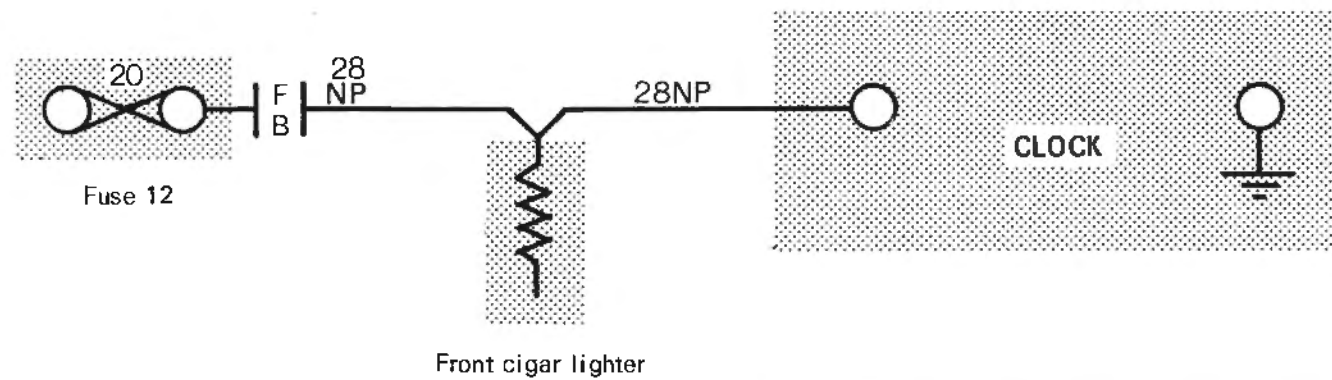
4 Left-hand drive ammeter shunt

Section 14

**Instruments and
warning lamps**

Schematic wiring diagram
(instruments)

Fig. 14 - 2



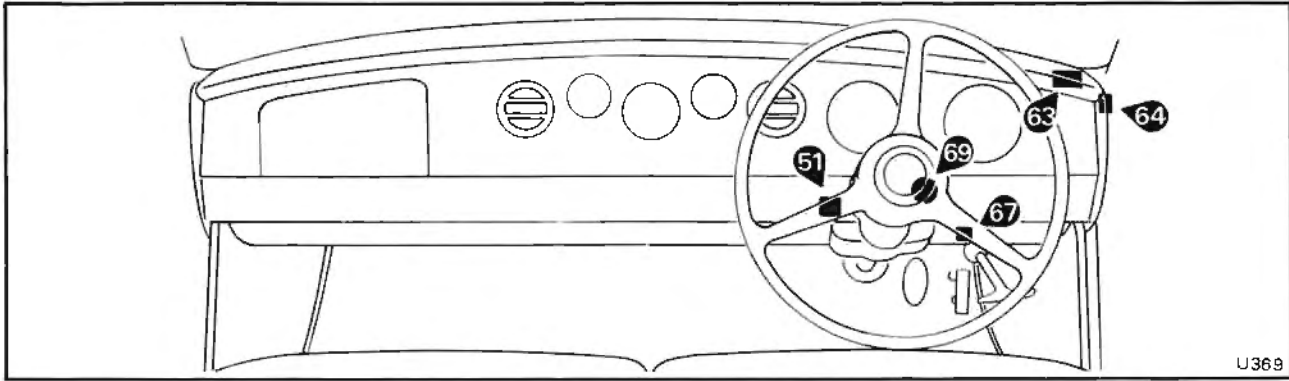
Connector code
 FA - Fuseboard 'A'
 FB - Fuseboard 'B'
 TA - Toeboard 'A'
 TL - Toeboard 'L'
 CLR - Chassis loom 'R'

Section 14

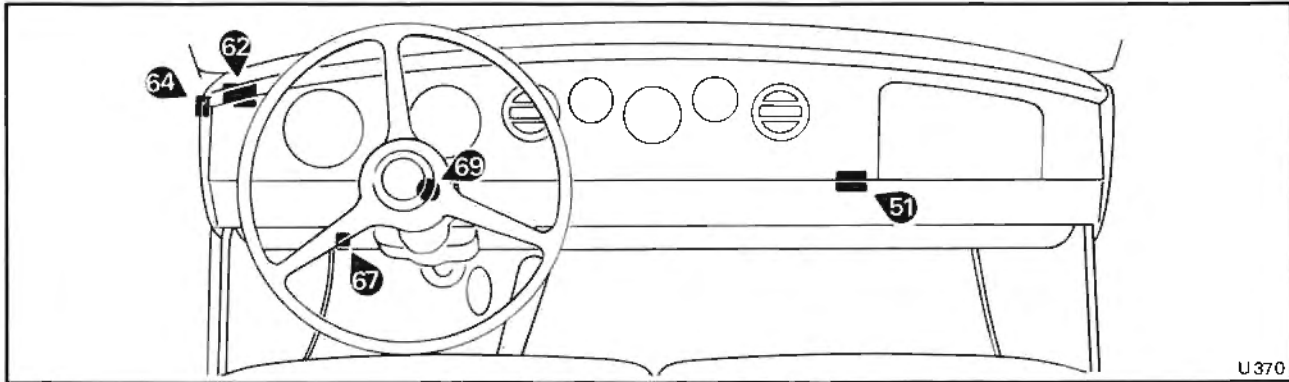
**Instruments and
warning lamps**

Component location
(warning lamps)

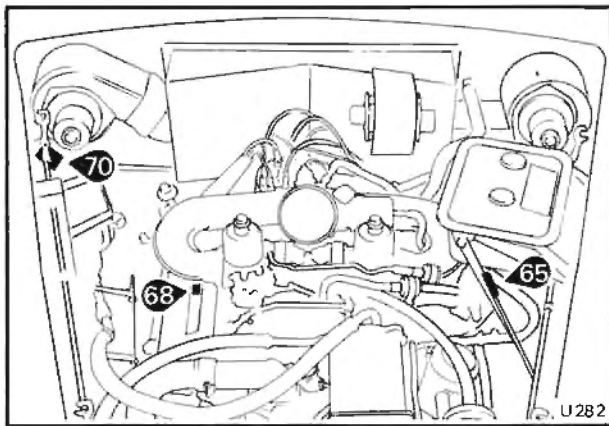
Fig. 14 - 3



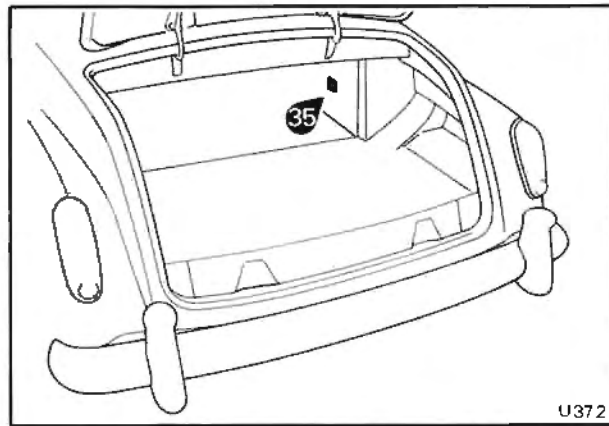
Right-hand drive location of 51, 63, 64, 67 and 69



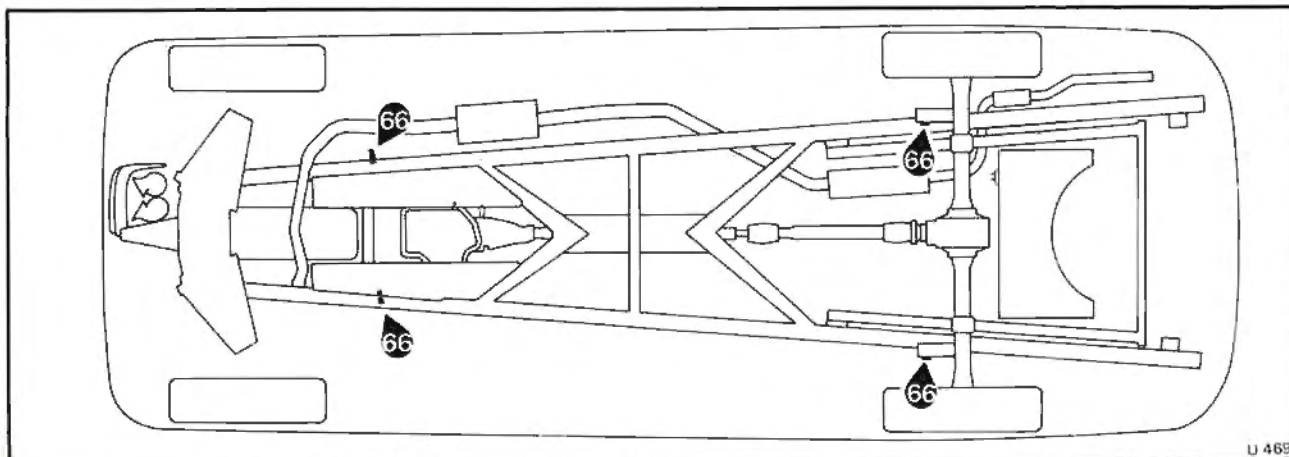
Left-hand drive location of 51, 62, 64, 67 and 69



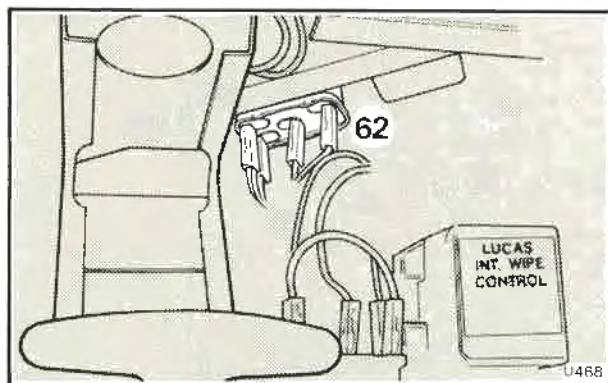
Engine compartment location of 65, 68 and 70



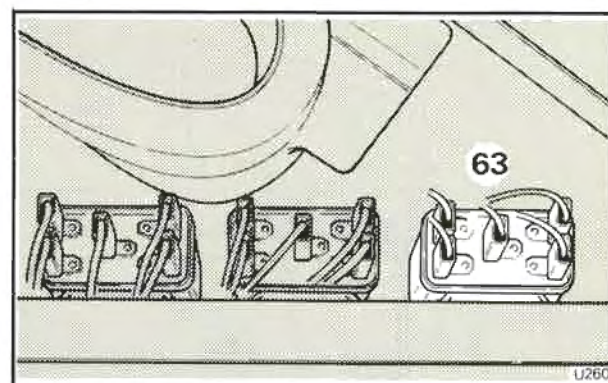
Boot location of 35



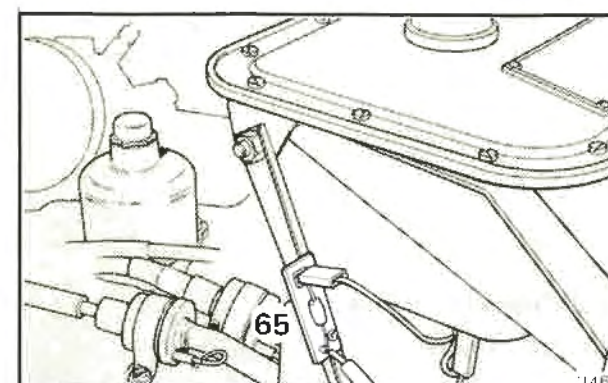
Underside location of 66



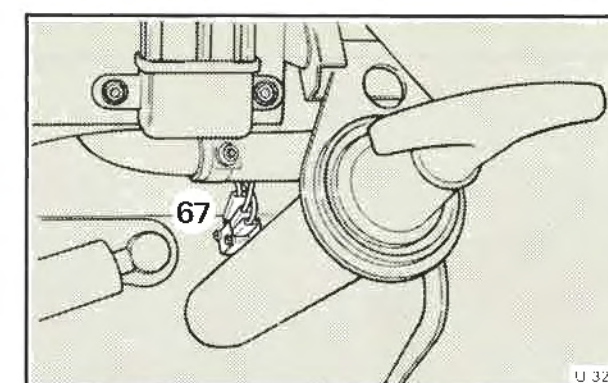
62 Left-hand drive fuel warning lamp dimming relay



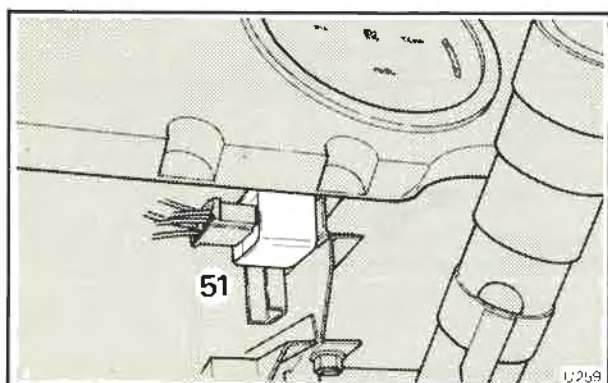
63 Right-hand drive fuel warning lamp dimming relay



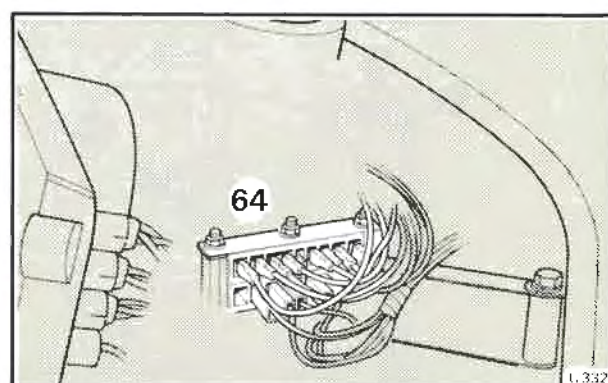
65 Brake fluid level warning lamp resistor



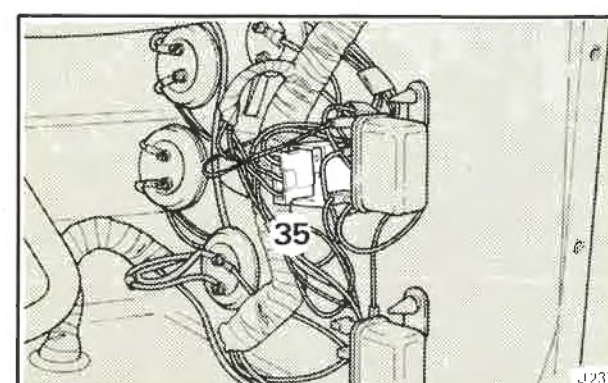
67 Park brake warning lamp switch



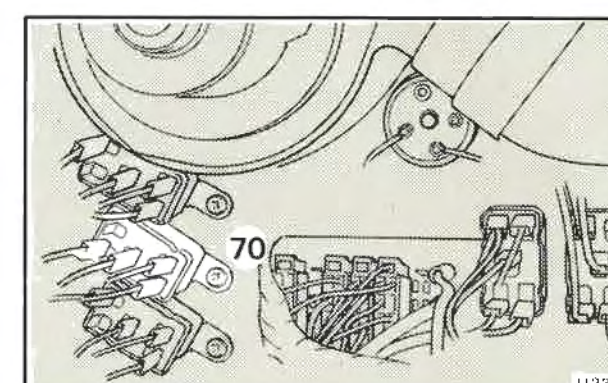
51 Coolant level amplifier



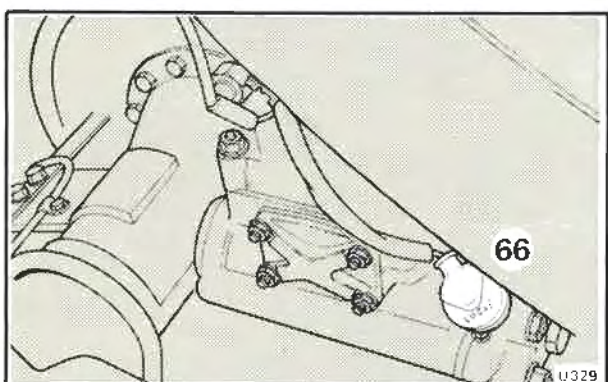
64 Diode block



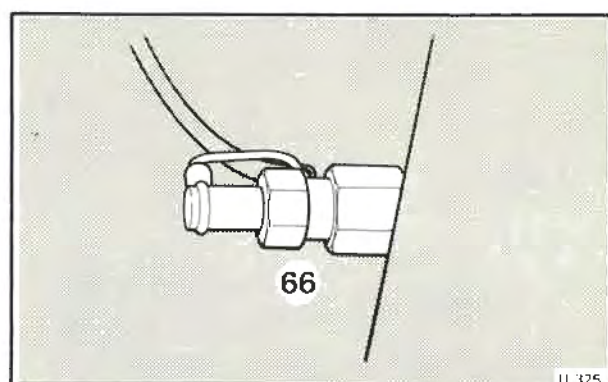
35 Stoplamp failure relay



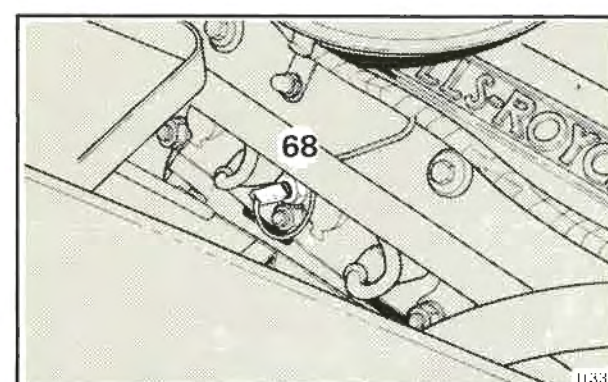
70 Coolant warning lamp test relay



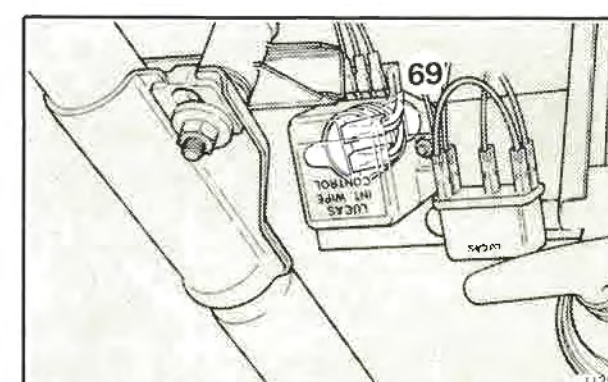
66 Left-hand rear brake pressure switch



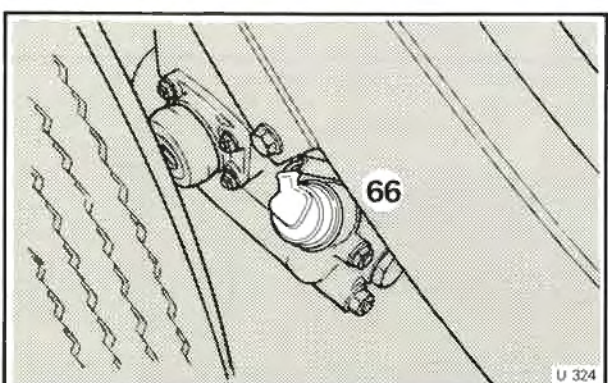
66 Left-hand front brake pressure switch



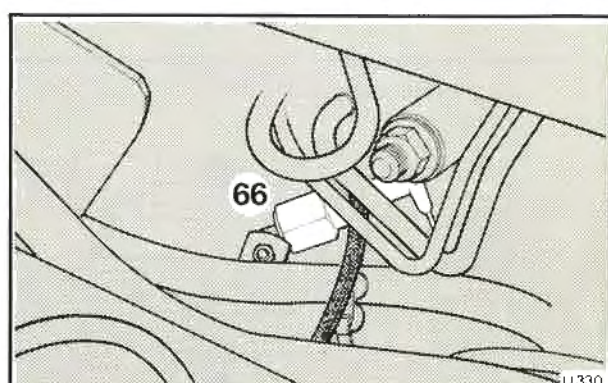
68 High metal temperature sensor



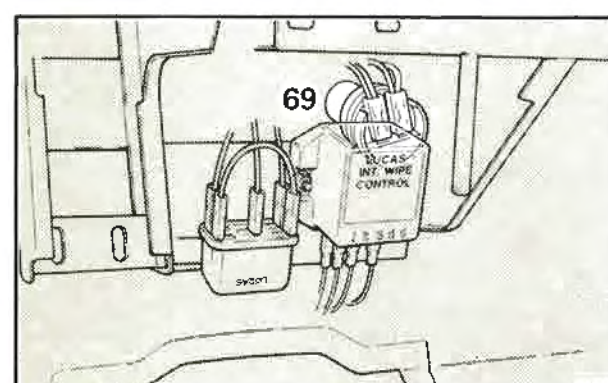
69 Right-hand drive high metal temperature buzzer



66 Right-hand rear brake pressure switch



66 Right-hand front brake pressure switch (viewed from above)



69 Left-hand drive high metal temperature buzzer

Section 14

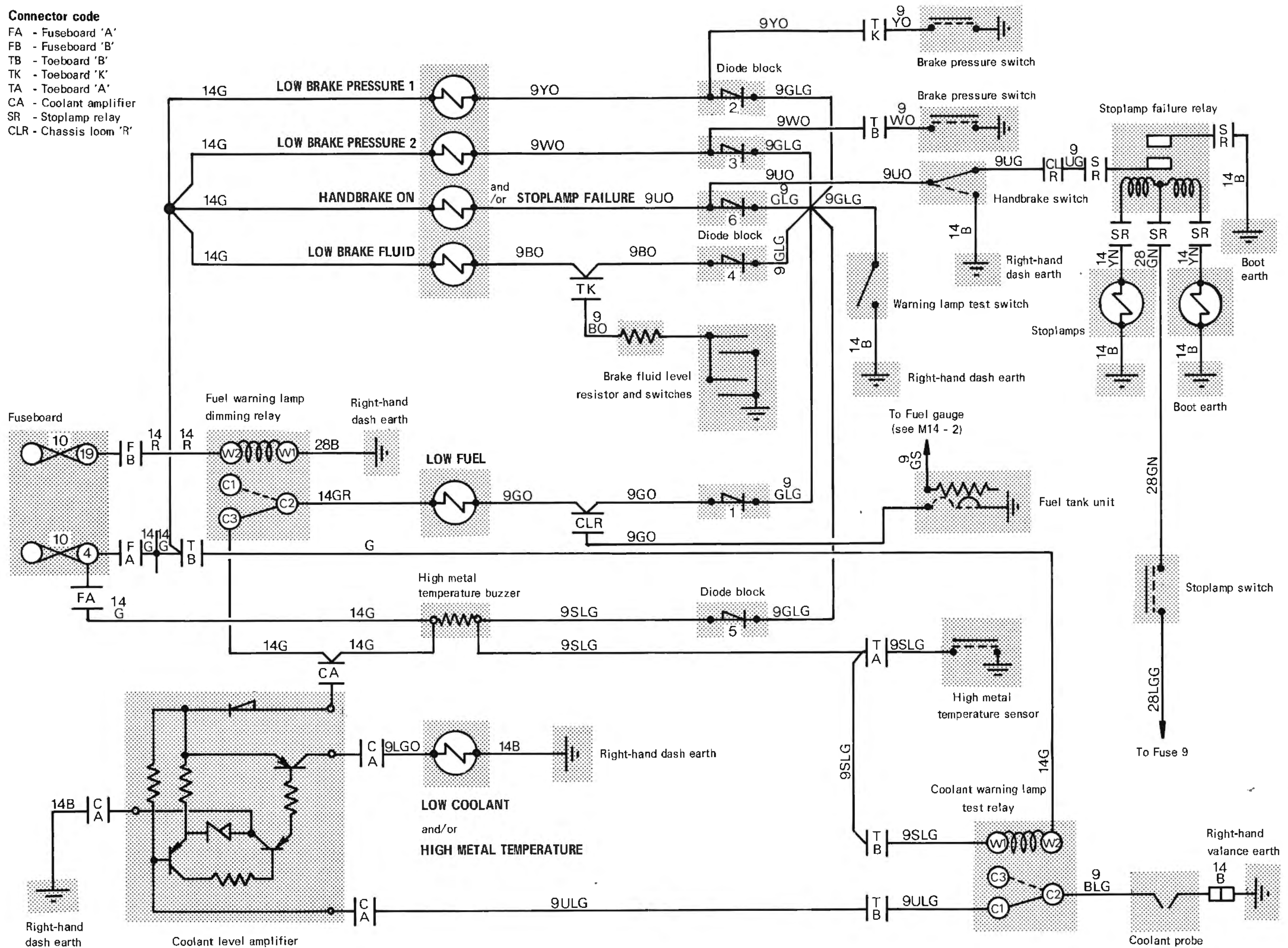
Instruments and warning lamps

Schematic wiring diagram
(warning lamps)

Fig. 14 - 4

Connector code

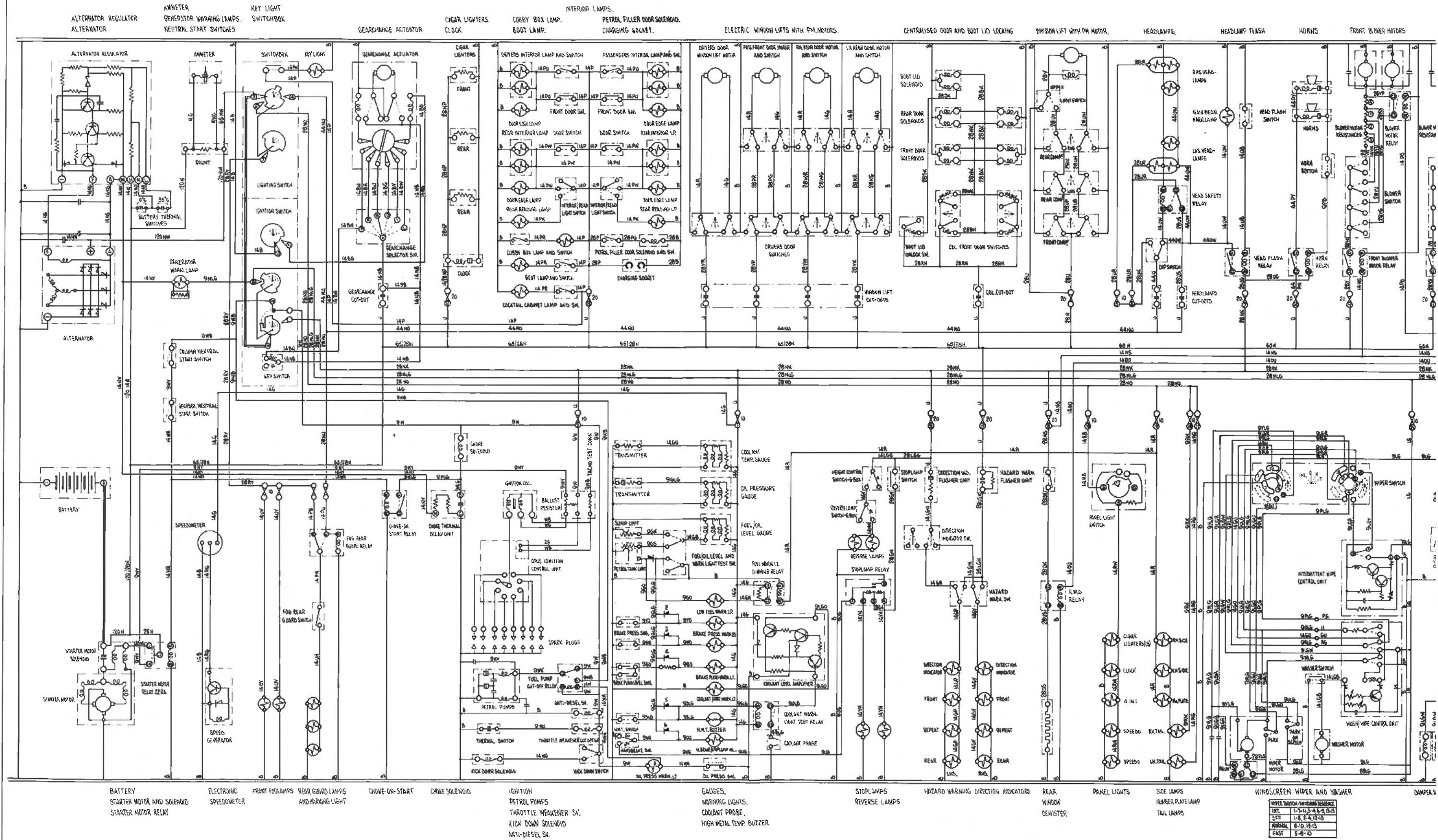
FA - Fuseboard 'A'
 FB - Fuseboard 'B'
 TB - Toeboard 'B'
 TK - Toeboard 'K'
 TA - Toeboard 'A'
 CA - Coolant amplifier
 SR - Stoplamp relay
 CLR - Chassis loom 'R'

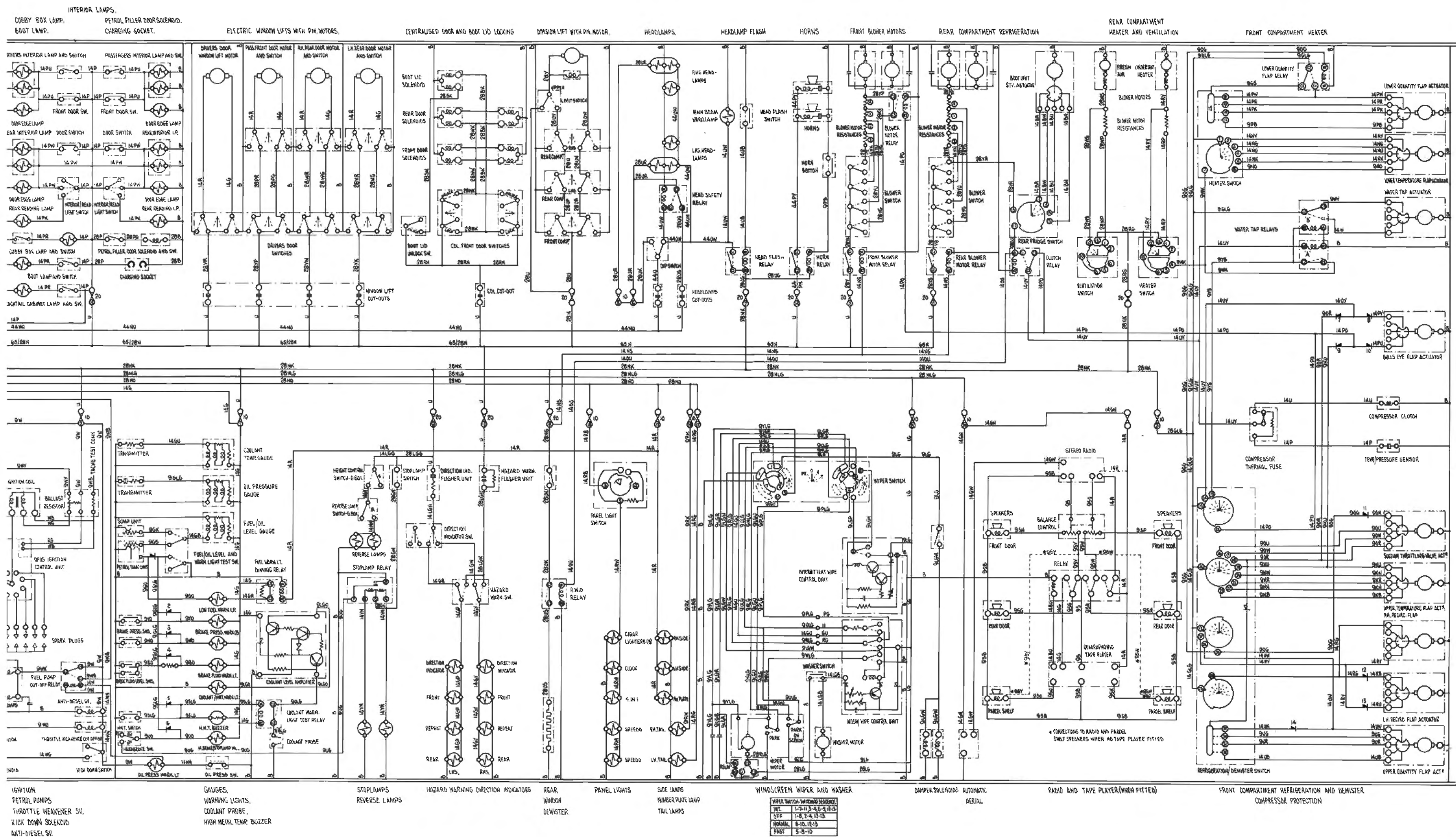


Section 15

Theoretical wiring diagram

Fig. 15 - 1





Torque tightening figures

Section

- 1 Introduction
- 2 Standard parts
- 3 Special parts

Issue record sheet 1

The dates quoted below refer to the issue date of individual pages within this chapter.

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Section 1

Introduction

Tighten all setscrews, full nuts and half nuts to the figures quoted in the '**Standard Parts**' tables **except** those components listed in the '**Special Parts**' tables. On these occasions, the special torque tightening figure is listed adjacent to the relevant component and description.

Setscrews should be tightened to the figures quoted for full or castellated nuts.

Plated parts should have all burrs and foreign matter (e.g. grit, grease and paint) removed from the abutment faces of the nuts, setscrews, washers, and components to ensure that the correct torque tightening figures are obtained.

The threads and abutment faces of **Non-Plated parts** should be smeared with engine oil before being fitted.

All unified nuts having an identification groove on one end, are to be fitted with the groove end away from the mating face.

Certain items should not be torque tightened and these are as follows.

Items not to be torque tightened

1. Nuts which are locked by riveting
2. Wood screws
3. Hub assembly retaining nuts (front and rear)
4. All threads less than 2 B.A. (except items listed in this Chapter)
5. Front door private lock nuts.

Section 2

Torque tightening figures for Standard Parts

Full nut

Size	kgf.m.	lbf.ft.
2 B.A.	0,5 - 0,7	48 - 60 lbf.in.
$\frac{1}{4}$ in. dia. U.N.F.	1,1 - 1,4	8 - 10
$\frac{7}{16}$ in. A/F		
$\frac{5}{16}$ in. dia. U.N.F.	2,2 - 2,5	16 - 18
$\frac{1}{2}$ in. A/F		
$\frac{3}{8}$ in. dia. U.N.F.	4,0 - 4,4	29 - 32
$\frac{9}{16}$ in. A/F		
$\frac{7}{8}$ in. dia. U.N.F.	5,8 - 6,2	42 - 45
$\frac{5}{8}$ in. and $1\frac{1}{8}$ in. A/F		
$\frac{1}{2}$ in. dia. U.N.F.	8,3 - 9,0	60 - 65
$\frac{3}{4}$ in. A/F		
$\frac{5}{8}$ in. dia. U.N.F.	11,7 - 12,4	85 - 90
$\frac{3}{8}$ in. A/F		

Half nut

Size	kgf.m.	lbf.ft.
2 B.A.	0,3 - 0,4	30 - 36 lbf.in.
$\frac{1}{4}$ in. dia. U.N.F.	0,7 - 1,0	5 - 7
$\frac{7}{16}$ in. A/F		
$\frac{5}{16}$ in. dia. U.N.F.	1,8 - 2,0	13 - 15
$\frac{1}{2}$ in. A/F		
$\frac{3}{8}$ in. dia. U.N.F.	3,0 - 3,4	22 - 25
$\frac{9}{16}$ in. A/F		
$\frac{7}{8}$ in. dia. U.N.F.	4,5 - 5,0	33 - 36
$\frac{5}{8}$ in. and $1\frac{1}{8}$ in. A/F		
$\frac{1}{2}$ in. dia. U.N.F.	6,6 - 7,2	48 - 52
$\frac{3}{4}$ in. A/F		
$\frac{5}{8}$ in. dia. U.N.F.	10,0 - 10,8	73 - 78
$\frac{3}{8}$ in. A/F		

Section 3

Torque tightening figures
for Special Parts

Engine

Component	Size	kgf.m.	lbf.ft.
Main bearing cap - nut	$\frac{1}{2}$ in. dia U.N.F. $\frac{3}{4}$ in. dia. A/F	6,2-6,9	45-50
Big-end-nut	$\frac{3}{8}$ in. dia. U.N.F. $\frac{7}{16}$ in. A/F	5,5-6,2	40-45
Oil pump intake strainer - castellated nut	$\frac{1}{4}$ in. dia. U.N.F. $\frac{7}{16}$ in. A/F	0,3	[24-30 lbf.in.]
Crankshaft balance weight - setscrew	$\frac{3}{8}$ in. dia. U.N.F. $\frac{7}{16}$ in. A/F	4,1-4,8	30-35
Crankshaft balance weight - setscrew	$\frac{7}{16}$ in. dia. U.N.F. $1\frac{1}{16}$ in. A/F	6,6-7,1	48-52
Oil pump drive gear - nut	$\frac{3}{8}$ in. dia. U.N.F. $\frac{7}{16}$ in. A/F	3,2-3,7	23-27
Camshaft gear - setscrew	$\frac{1}{4}$ in. dia. U.N.F. $\frac{7}{16}$ in. A/F	1,1-1,4	8-10
Crankshaft pinion - slotted nut (L.H.)	1.75 in. dia U.N.S.	38,7-44,2	280-320
Tappet block - setscrew	$\frac{1}{4}$ in. dia. U.N.F. $\frac{7}{16}$ in. A/F	1,1-1,4	8-10
Drive plate to crankshaft - setscrew	$\frac{3}{8}$ in. dia. U.N.F. $\frac{7}{16}$ in. A/F	4,0-4,4	29-32
Distributor clamp plate -bolt	* $\frac{1}{4}$ in. dia. U.N.F. $\frac{7}{16}$ in. A/F * $\frac{1}{4}$ in. dia. B.S.F. $\frac{3}{16}$ in. Whit.	0,6	[48-52 lbf.in.]

* Alternatives

Crankshaft damper drive flange - slotted nut	$1\frac{1}{4}$ in. dia U.N.	13,1-20,7	95-150
Slotted nut to be initially tightened to 13,1 kgf.m. (95 lbf.ft.), further tightening of the nut to align the castellations with the lock-washer is permissible. However, the final torque figure must not exceed 20,7 kgf.m. (150 lbf.ft.).			
Viscous drive - socket head cap screw (Allen screw)	$\frac{3}{8}$ in. dia. U.N.F.	4,0-4,4	29-32
Alternator pulley - lock nut	$\frac{5}{16}$ in. dia. U.N.F. $1\frac{5}{16}$ in. A/F	5,5-5,8	40-42
Rocker cover - cap nut	$\frac{1}{4}$ in. dia. U.N.F. $\frac{7}{16}$ in. A/F	0,1	[10-12 lbf.in.]
Sparking plug	M14 $1\frac{3}{4}$ in. A/F	1,8-2,3	13-17
Rocker shaft pedestal	$\frac{1}{4}$ in. dia. U.N.F. $\frac{7}{16}$ in. A/F	1,1-1,4	8-10
Cylinder head - nut	$\frac{7}{16}$ in. dia. U.N.F. $1\frac{1}{16}$ in. A/F		
Stage 1			
Initial tightening		2,8-3,5	20-25
Stage 2			
Final tightening		6,9-7,6	50-55
Exhaust manifold	$\frac{5}{16}$ in. dia. U.N.F. $\frac{1}{2}$ in. A/F	3,2-3,4	23-25
Oil level indicator -cheeshead screw	3.B.A.	0,25	[20-22 lbf.in.]

Propeller shaft

Propeller shaft flange - nut	$\frac{7}{16}$ in. dia. U.N.F. $\frac{1}{2}$ in. A/F	6,2-6,9	45-50
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Component	Size	kgf.m.	lbf.ft.
Hydraulic systems			
Bobbin retainer - plug	1½ in. dia. U.N.S.	7,6-8,3	55-60
Inlet hose - adapter	¾ in. dia. U.N.F. ¾ in. A/F	1,7-2,1	12-15
Clamp - ring	4 13/16 in. dia. Buttress	36,6-38,0	265-275
Charging valve - sealing cap	¾ in. dia. U.N.F. ¾ in. A/F	3,0-3,5	22-25
Sphere to valve body - sub-assembly	1¾ in. dia. U.N.F. 1 11/16 in. A/F	7,6-8,3	55-60
Bleed screw	¾ in. dia. U.N.F. 7/16 in. A/F	1,1-1,4	8-10
Brake pump to accumulator (accumulator end) - pipe nut	¾ in. dia. U.N.F. ¾ in. A/F	2,8-3,4	20-25
Brake pump to engine - castellated nut	1¾ in. dia. U.N.F.	4,4-4,8	32-35
High pressure outlet - adapter	¾ in. dia. U.N. 1 5/16 in. A/F	6,9-7,6	50-55
Brake pump to accumulator (brake pump end) - pipe nut	¾ in. dia. U.N.F. ¾ in. A/F	1,1-1,4	8-10
Brake pump inlet pipe - pipe nut	¾ in. dia. B.S. Whit. 0.601 in. A/F = 5/16 in. B.S. Whit	1,7-2,1	12-15
All brake pipe nuts		1,4-1,7	10-12
Distribution valve - end plug	¾ in. dia. U.N. 1 in A/F	8,3-9,0	60-65
Distribution valve mounting - castellated nut	¾ in. dia. U.N.F. 7/16 in. A/F	1,1-1,4	8-10
Brake line - restrictors	¾ in. dia. U.N.F. ¾ in. A/F	1,7-2,1	12-15
Brake fluid filter - nut	½ in. dia. U.N.F. ¾ in. A/F	2,8-3,4	20-25
Pressure switch	¾ in. dia. U.N.F. 1 in. A/F	1,7-2,1	12-15
Front hubs			
Drum - retaining screw	¾ in. dia. U.N.F.	0,35-0,4	[30-35 lbf.in.]
Sub-frames and suspension			
Fulcrum pin - upper	0.860 in. dia. U.N.C. 1 in. A/F	20,7	150
Threaded bushes - lower triangle levers	1¼ in. dia. U.N.F. 1.390 in. A/F	34,6	250
Rear spring front anchorage - nut	¾ in. dia. U.N.S. 1 5/16 in. A/F	20,7-24,9	150-180
Front dampers			
Piston actuating lever - nut	7/16 in. dia. U.N.F. 1 1/16 in. A/F	8,3-9,7	60-70
Filler plug	7/16 in. dia. U.N.F. ¾ in. A/F	1,6-2,1	12-15
Solenoid control plug	5/16 in. dia. U.N.F. ½ in. A/F	1,4-1,6	10-12
Rear plug	¾ in. dia. U.N.F. 1 in. A/F	4,1-6,2	30-45
Rear dampers			
Piston actuating lever - nut	7/16 in. dia. U.N.F. 1 1/16 in. A/F	8,3-9,7	60-70
Filler plug	7/16 in. dia. U.N.F. ¾ in. A/F	1,6-2,1	12-15
Solenoid control plug	5/16 in. dia. U.N.F. ½ in. A/F	1,4-1,6	10-12
Rear plug	¾ in. dia. U.N.F. 1 in. A/F	4,1-6,2	30-45
Damper links - nut	½ in dia. U.N.F. 1 1/16 in. A/F	6,2-6,9	45-50
Final drive			
Rear axle			
Ventilator plug	1 in. dia. U.N.S.	4,1-4,8	30-35
Filler and drain plug	1 in. dia. U.N.S.	6,2-6,9	45-50
Pinion flange - nut	1 in. dia. U.N.S. 1.478 in. A/F	26,9-29,7	195-215

Component	Size	kgf.m.	lbf.ft.
Pinion bearing - nut	1½ in. dia. U.N.F.	20,7 - 24,9	150 - 180
Axle tube to end plate - setscrew	¾ in. dia. U.N.F. ½ in. A/F	3,0 - 3,3	22 - 24
Axle tube to wheel bearing housing - setscrew	¾ in. dia. U.N.F. ½ in. A/F	5,2 - 5,5	38 - 40
End plate to centre case - nut	¾ in. dia. U.N.F. ½ in. A/F	3,0 - 3,3	22 - 24
Crown wheel to differential casing - nut	¾ in. dia. U.N.F. ¾ in. A/F	6,2 - 6,9	45 - 50
Fuel system			
Petrol tank			
Drain plug	1 in. dia. U.N.F.	4,8 - 5,5	35 - 40
Steering system			
Yoke and cross steering pivots			
Reducing union	¾ in. U.N.F. to ½ in. B.S.P. 1.390 in. A/F	4,8 - 5,5	35 - 40
Steering column and box			
Steering wheel - nut	1¼ in. dia. U.N.S. 1½ in. A/F	6,2 - 6,9	25 - 28
Rocking shaft to cam roller - splined nut	½ in. dia. U.N.F.	8,3 - 9,7	60 - 70
Rocking shaft - nut	¾ in. dia. U.N.F. 1¼ in. A/F	11,0 - 12,4	80 - 90
Drag link and track rods			
Ball pins - securing nut	¾ in. dia. U.N.F. 1¼ in. A/F	4,8 - 5,5	35 - 40
Ball pin socket plug	1¼ in. dia. U.N.S. 1.390 in. A/F	6,2 - 6,9	45 - 50
Wheels and Tyres			
Road wheel - nut	½ in. dia. U.N.F. 0.82 in. A/F	6,2 - 6,9	45 - 50
Body			
Front and rear bumpers			
Override - nut	¾ in. dia. U.N.F. ¾ in. A/F	1,4 - 1,6	10 - 12
Transmission			
Solenoid to case - setscrew	¼ in. dia. U.N.C. ¾ in. A/F	1,4	10
Control valve unit to case - setscrew	¼ in. dia. U.N.C. ¾ in. A/F	1,1	8
Control valve unit to case - setscrew	¾ in. dia. U.N.C. ½ in. A/F	1,1	8
Rear servo cover to case - setscrew	¾ in. dia. U.N.C. ½ in. A/F	2,5	18
Parking pawl cover to case - setscrew	¾ in. dia. U.N.C. ½ in. A/F	2,5	18
Speedometer drive to case retainer - setscrew	¾ in. dia. U.N.C. 1 in. A/F	2,5	18
	† M6 10 mm. A/F	2,5	18
Rear extension to case - setscrew	¾ in. dia. U.N.C. ¾ in. A/F	3,2	23
Engine flex plate to torque converter - setscrew	¾ in. dia. U.N.C. ¾ in. A/F	4,1	30
	† M10 ¾ in. A/F	4,1	30

Component	Size	kgf.m.	lbf.ft.
Line pressure plug 3,2 mm. ($\frac{1}{8}$ in.) dia.	$\frac{1}{8}$ in. dia N.P.T.F. $\frac{7}{16}$ in. A/F	1,4	10
Sump to case-setscrew	$\frac{5}{16}$ in. dia. U.N.C. $\frac{1}{2}$ in. A/F	1,7	12
Pump body to cover - setscrew	$\frac{5}{16}$ in. dia. U.N.C. $\frac{1}{2}$ in. A/F	2,5	18
Governor cover to case - setscrew	$\frac{5}{16}$ in. dia. U.N.C. $\frac{1}{2}$ in. A/F	2,5	18
†Fitted to 1979 and onwards Torque converter transmissions. These parts have metric threads and are not interchangeable with the equivalent parts fitted to pre - 1979 transmissions. To determine the model year of a transmission, refer to the first two numbers of the 'Transmission serial number' (e.g. 78-1978, 79-1979).			
Pump to case - setscrew	$\frac{5}{16}$ in. dia. U.N.C. $\frac{1}{2}$ in. A/F	2,5	18
Vacuum modulator retainer to case - setscrew	$\frac{5}{16}$ in. dia. U.N.C. $\frac{1}{2}$ in. A/F	2,5	18
Manual shaft to detent lever - nut	$\frac{3}{8}$ in. dia. U.N.F. $\frac{9}{16}$ in. A/F	2,5	18
Gear change lever to manual shaft - nut	$\frac{3}{8}$ in. dia. U.N.C. $\frac{9}{16}$ in. A/F	2,5	18
Case to centre support - setscrew	$\frac{3}{8}$ in. dia. U.N.C. $\frac{3}{8}$ in. Thin wall socket	3,2	23
Actuator mounting bracket to rear extension - setscrew	$\frac{7}{16}$ in. dia. U.N.C. $\frac{9}{16}$ in. A/F	5,3	38