

Wiring Diagrams 1981

Section
3

Group
39

Wiring Diagrams

1981 Models

VOLVO

Contents

NOTE:

Diesel circuitry is generally = GLE

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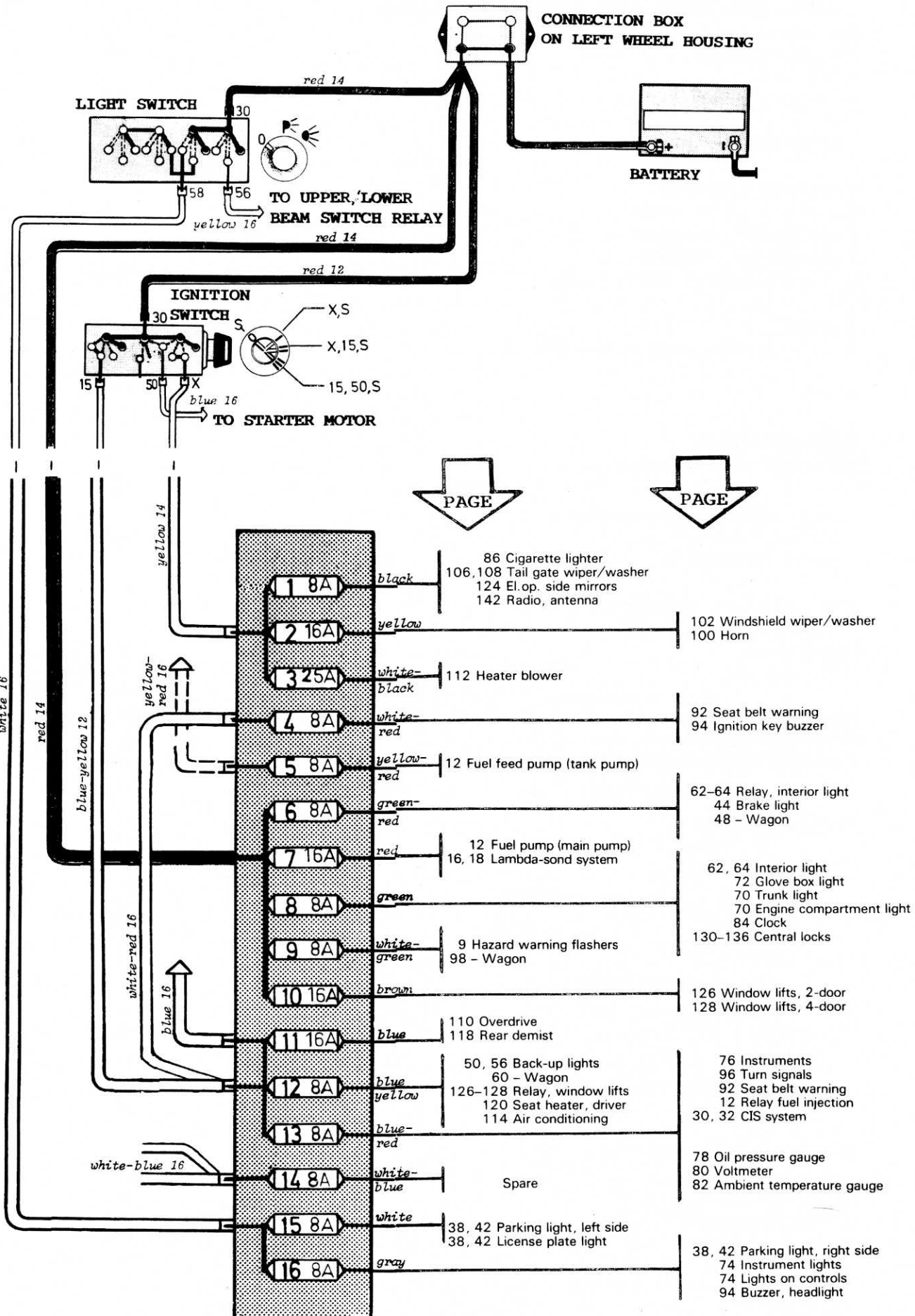
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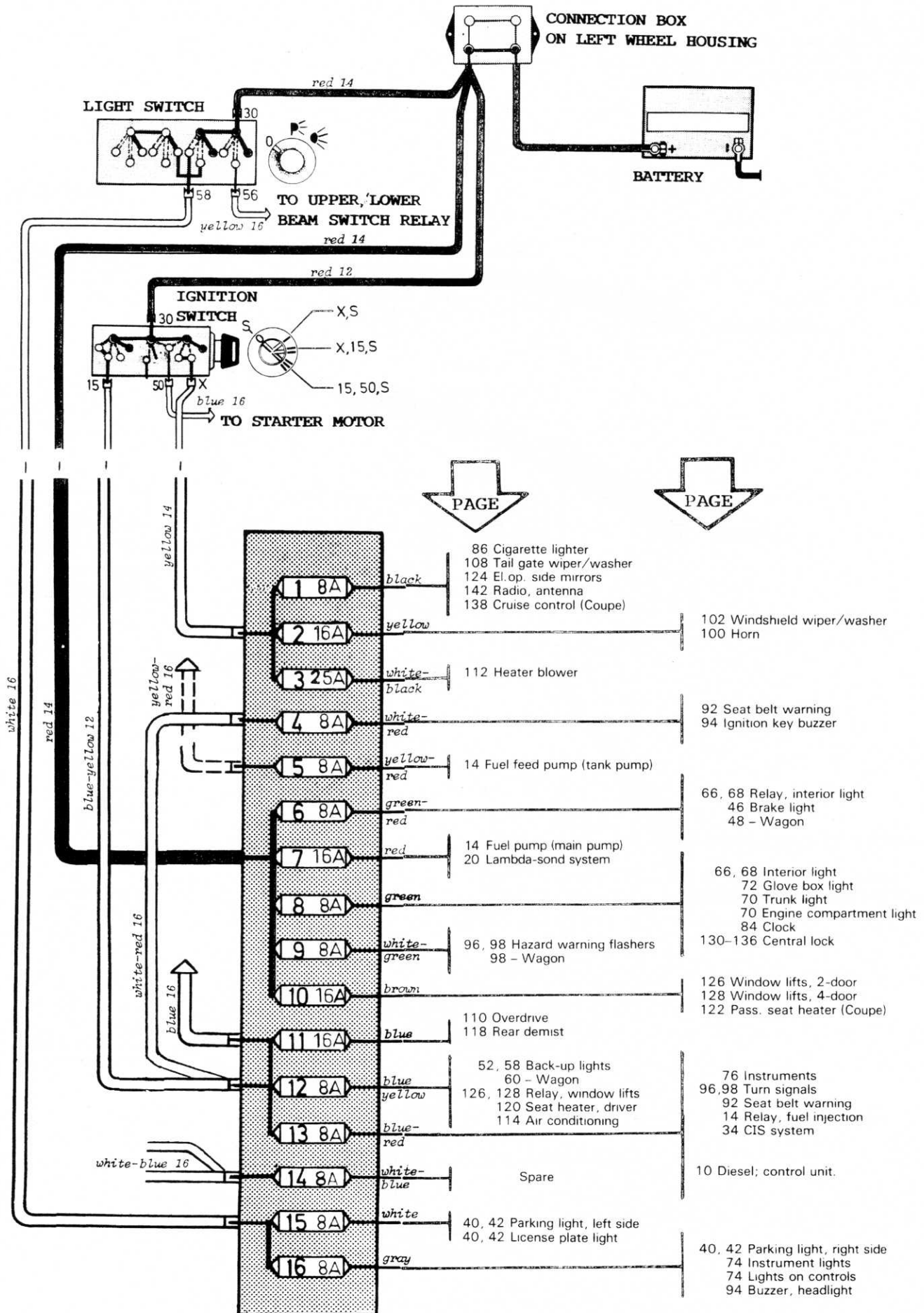
Master wiring diagram

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Master wiring diagram, fold-out sheet	End of manual

Fuses and related circuits DL, GL (GLT except rear lights)



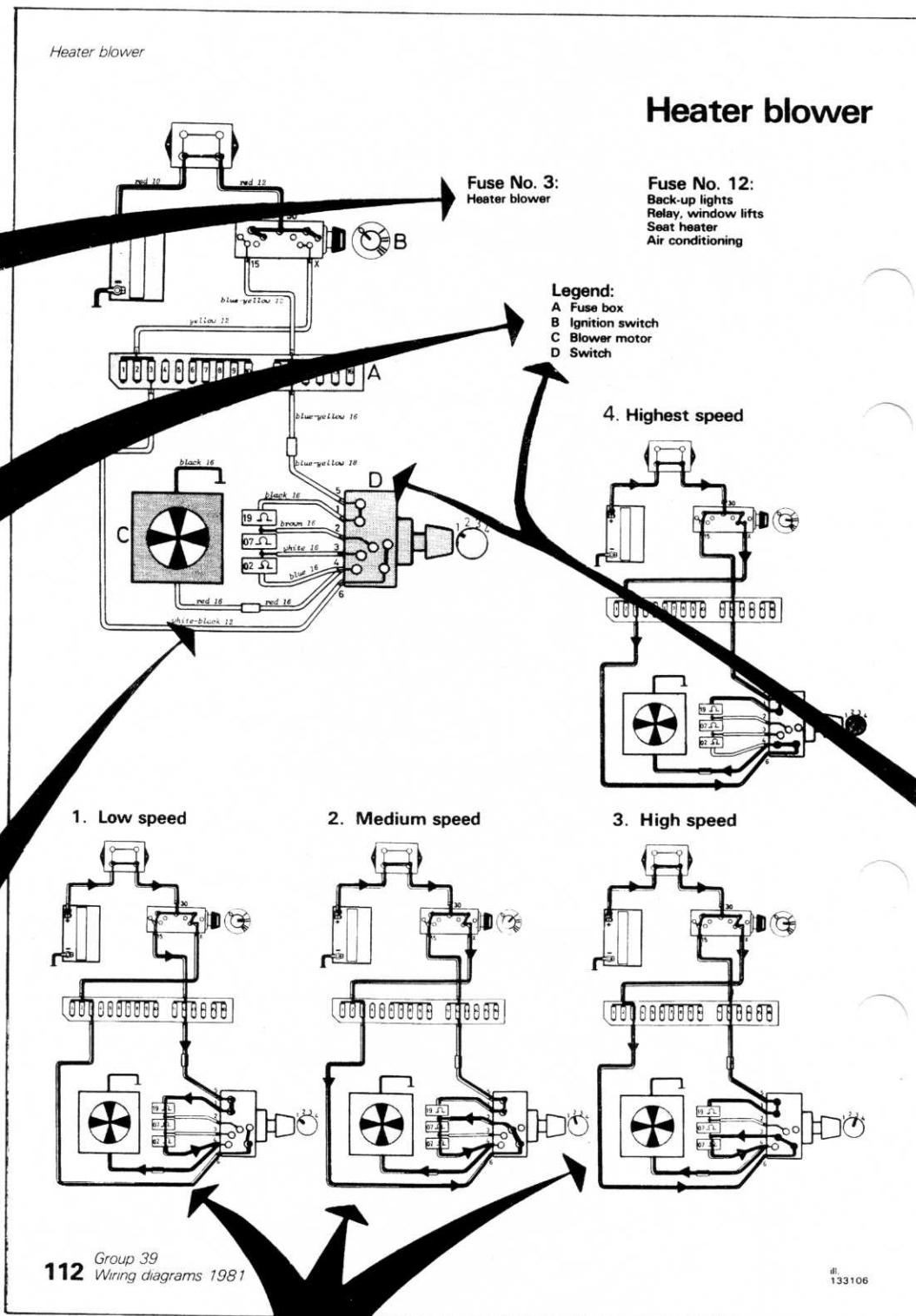
Fuses and related circuits GLE, Coupe (GLT: rear lights)



How to use the diagrams

Left page

Illustrates the **electrical circuit**.
De-energized condition is shown at top of page. Energized condition(s) at bottom of page.

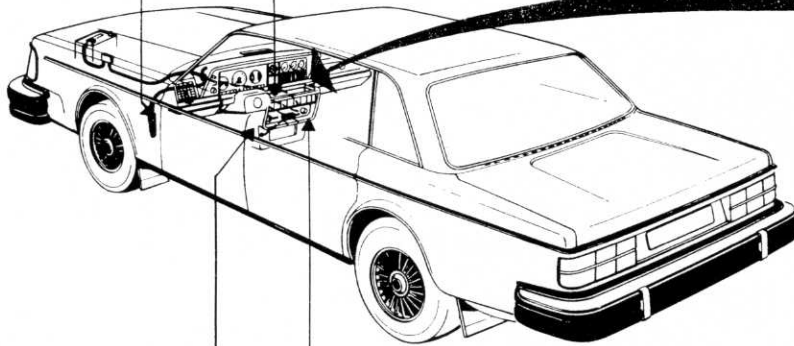
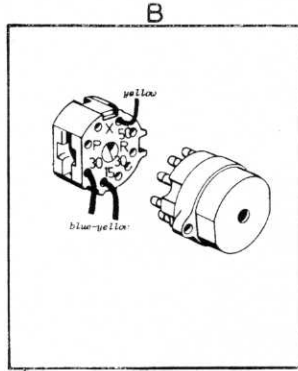
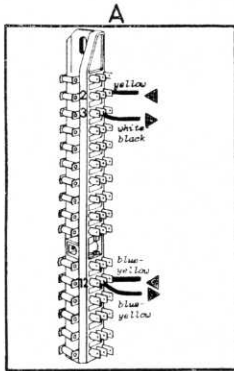


How to use the diagrams

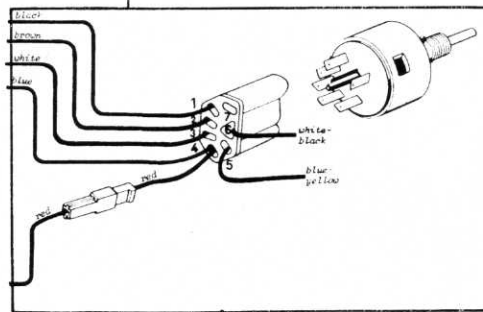
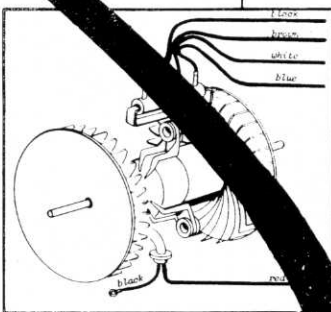
Right page

Illustrates the physical location of the components in the vehicle and the exact routing of the wiring harness. Each component is shown with terminals and connections.

Heater blower



Component location and routing of wiring harness



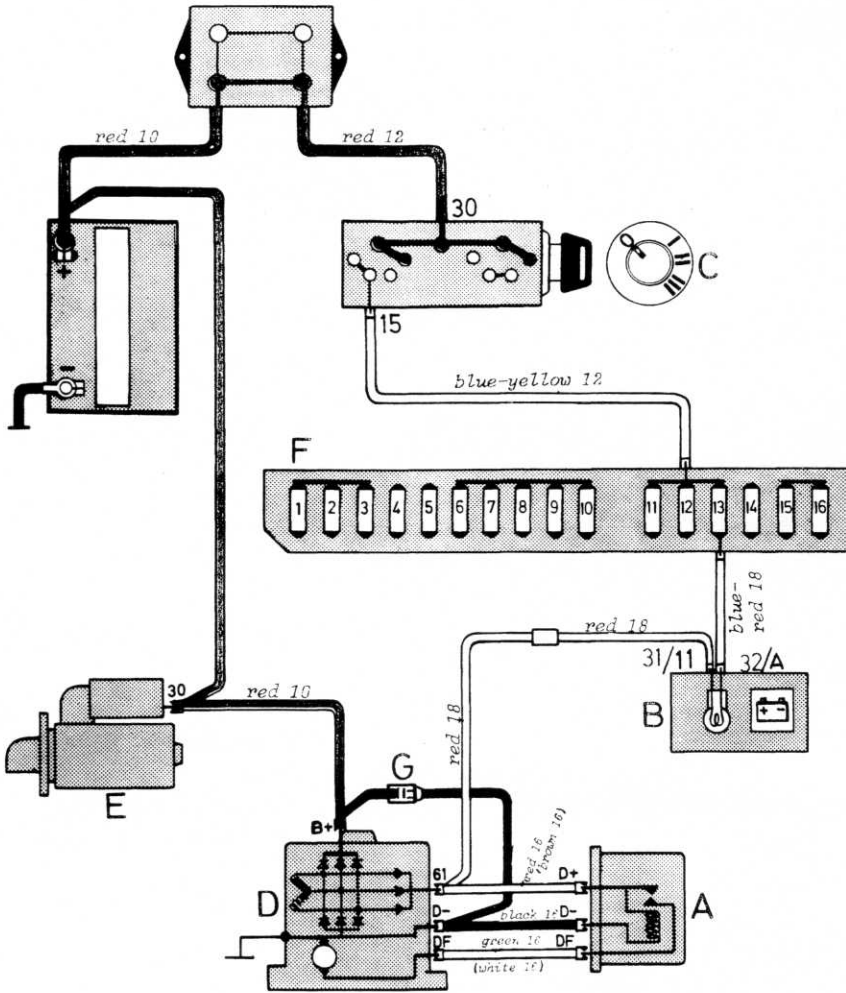
Component terminals and wire connections

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Letters facilitate referencing components on either page

Alternator circuits

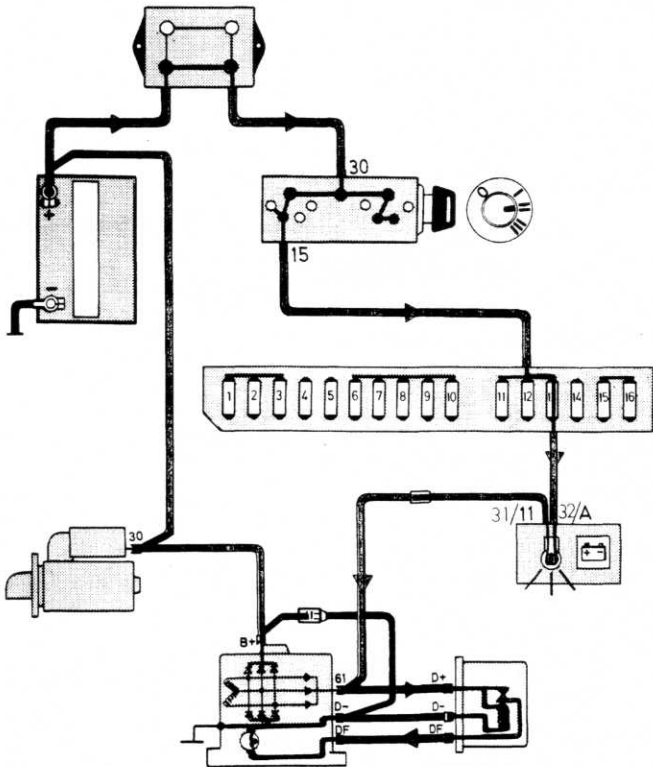


Fuse No. 13:
 Instruments
 Turn signals
 Seat belt warning
 Relay, fuel injection
 Solenoid valve (carburetor)

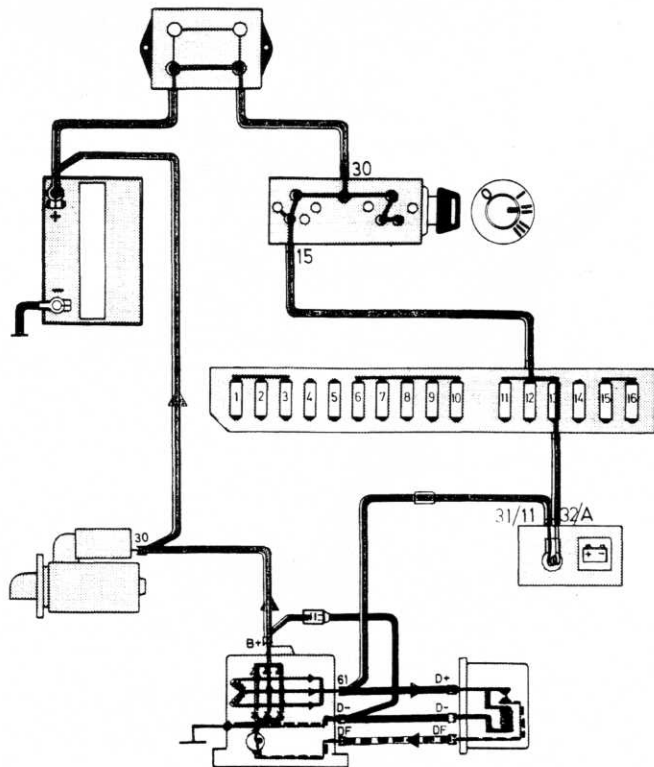
Legend:
 A Voltage regulator
 B Instrument cluster
 C Ignition switch
 D Alternator
 E Starter motor
 F Fuse box
 G Capacitor

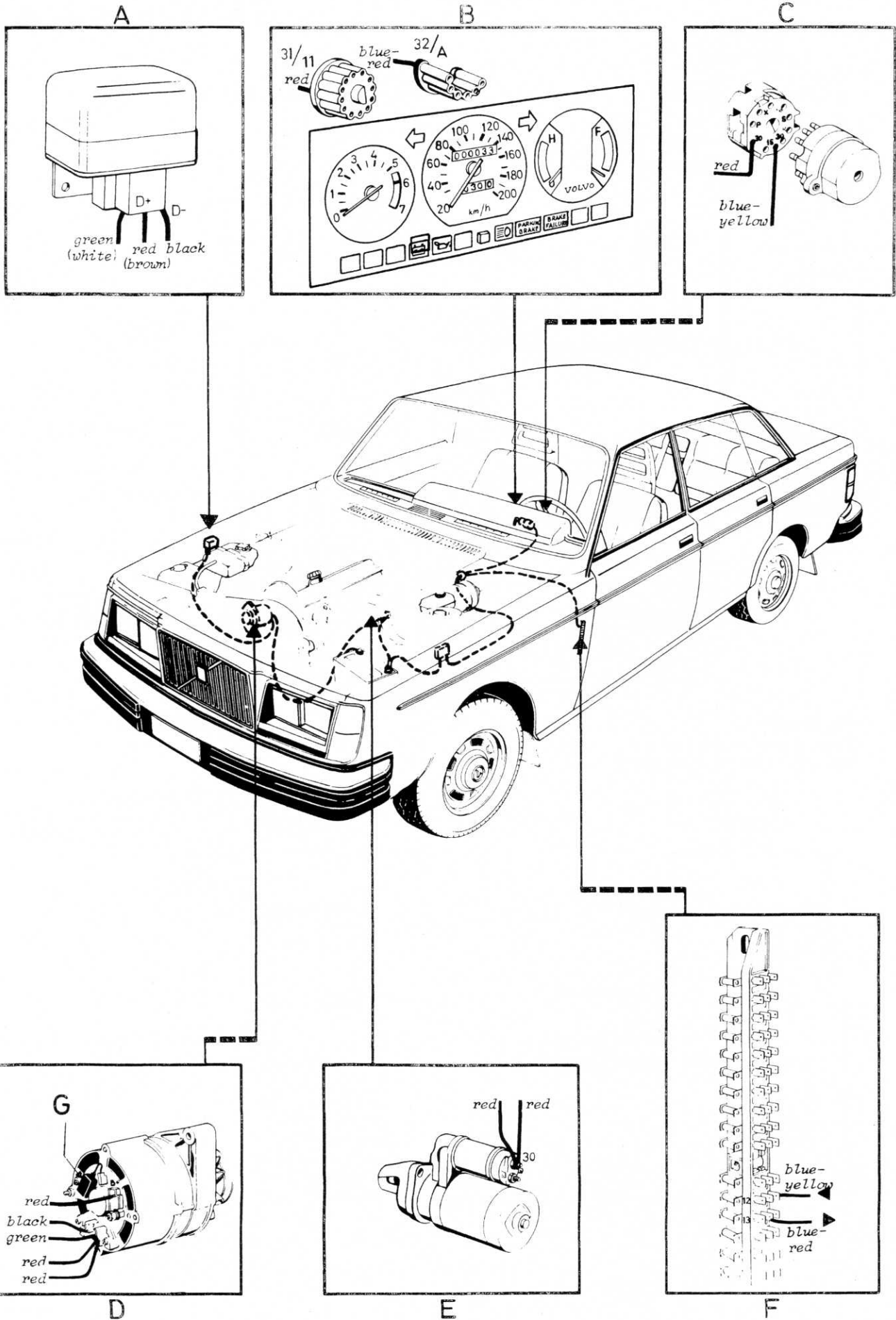
NOTE: Voltage regulator shown in schematic is symbolic of and not actual regulator. A solid state regulator is presently used.

Ignition ON
 (engine not running)



Alternator charging

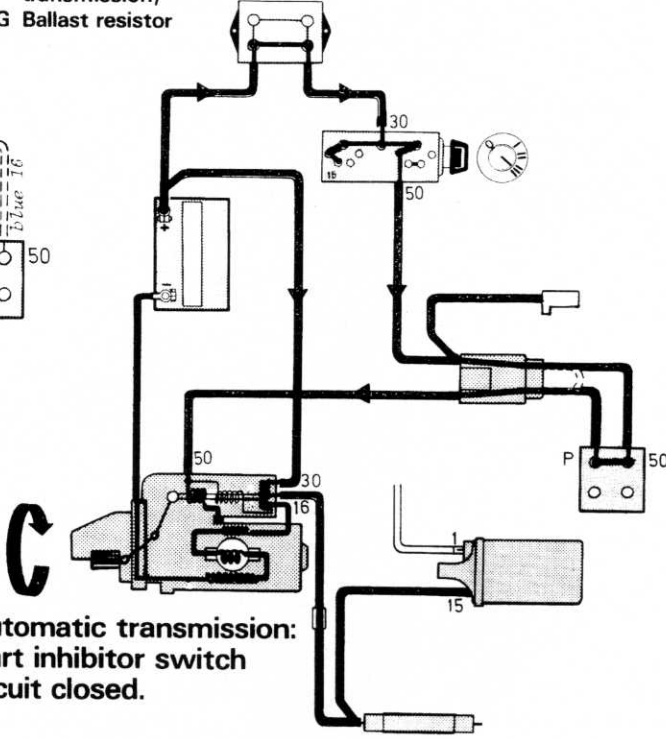
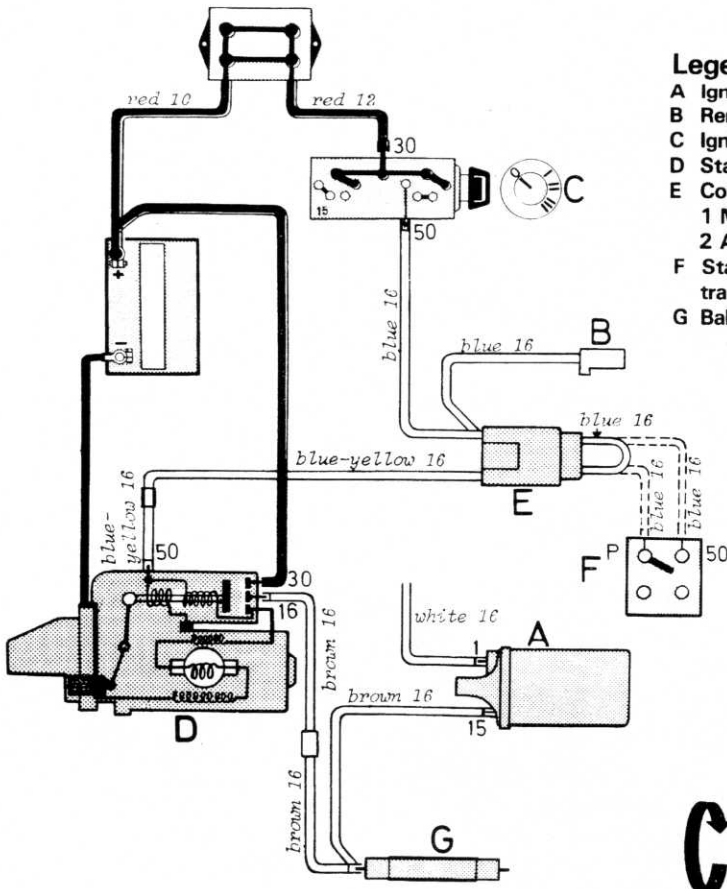




Starting circuits

Legend:

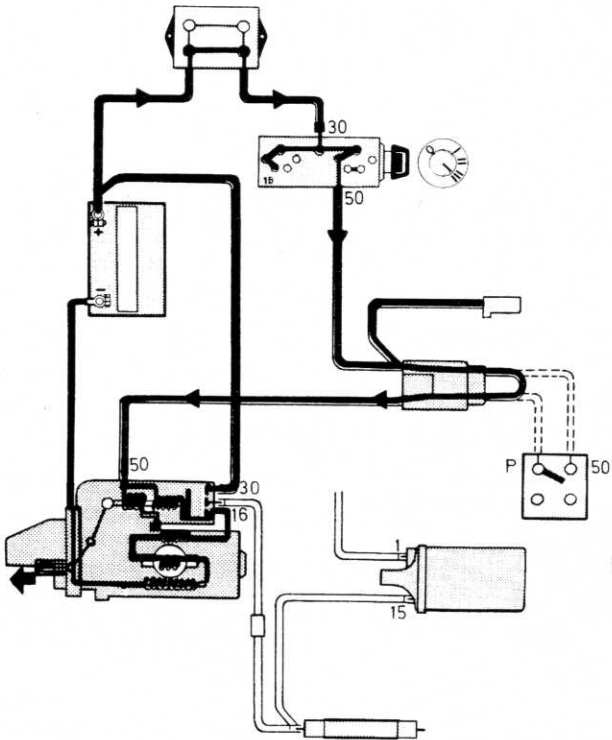
- A Ignition coil
- B Remote starter pick-up point
- C Ignition switch
- D Starter motor
- E Connector
- 1 Manual transmission
- 2 Automatic transmission
- F Start inhibitor switch (automatic transmission)
- G Ballast resistor



**Automatic transmission:
start inhibitor switch
circuit closed.**

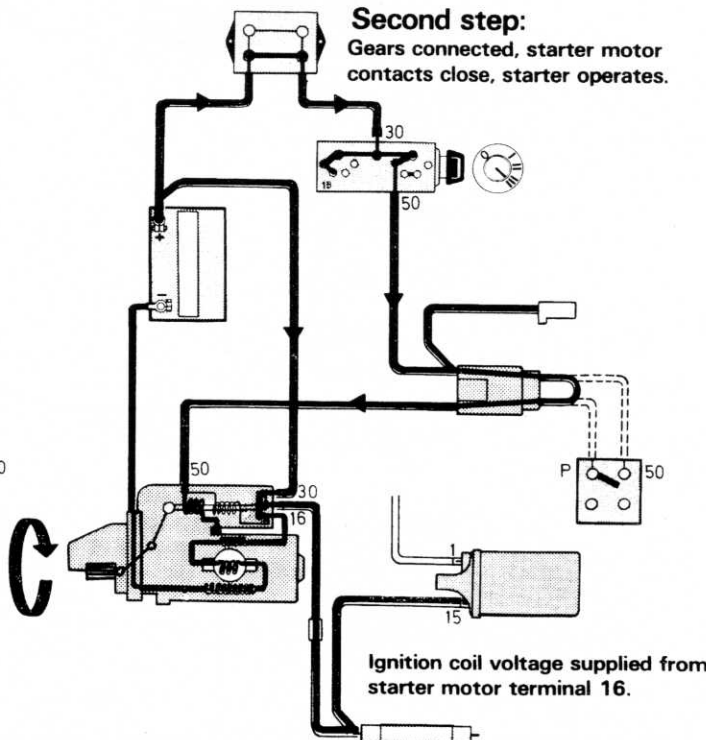
First step:

Solenoid pushes starter motor gear into contact with ring gear.

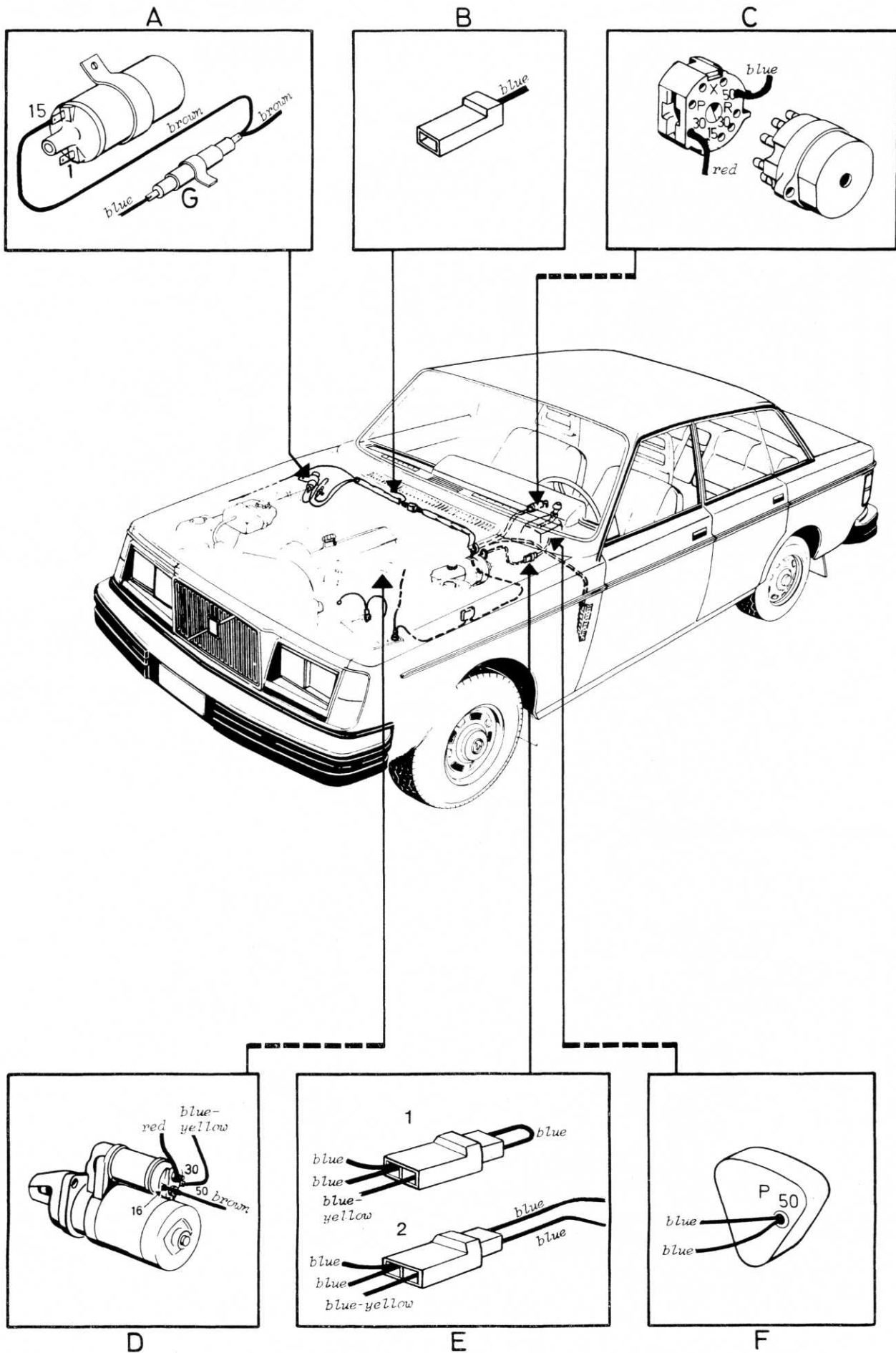


Second step:

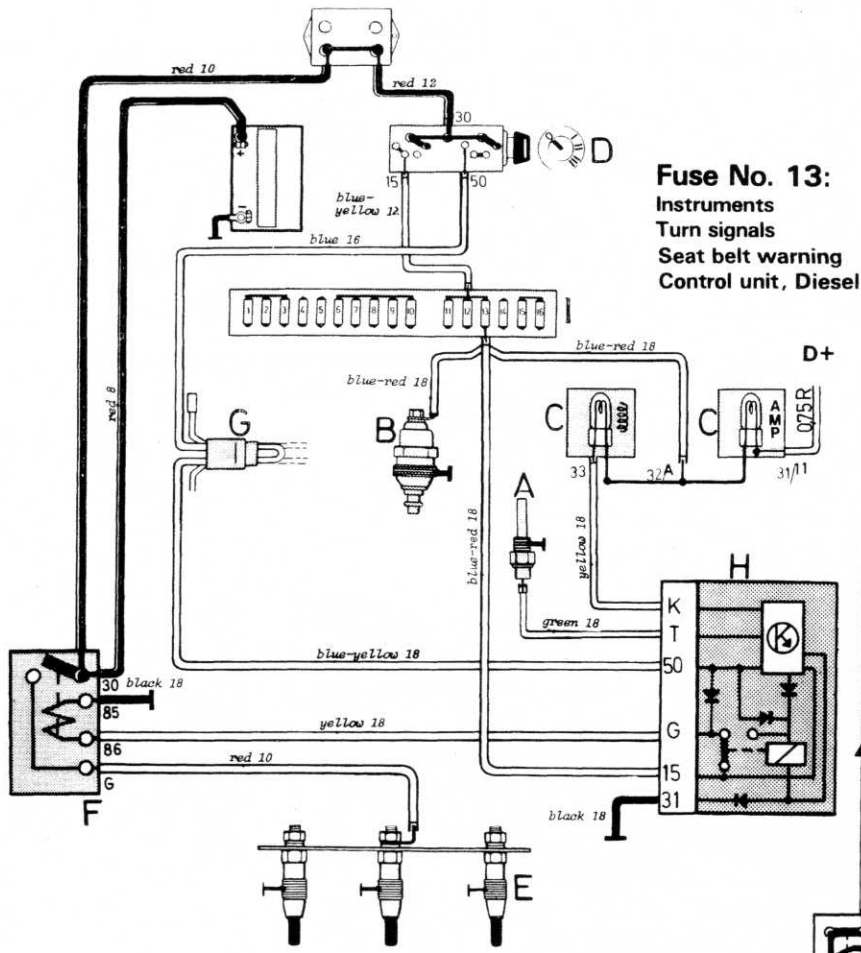
Gears connected, starter motor contacts close, starter operates.



Ignition coil voltage supplied from starter motor terminal 16.



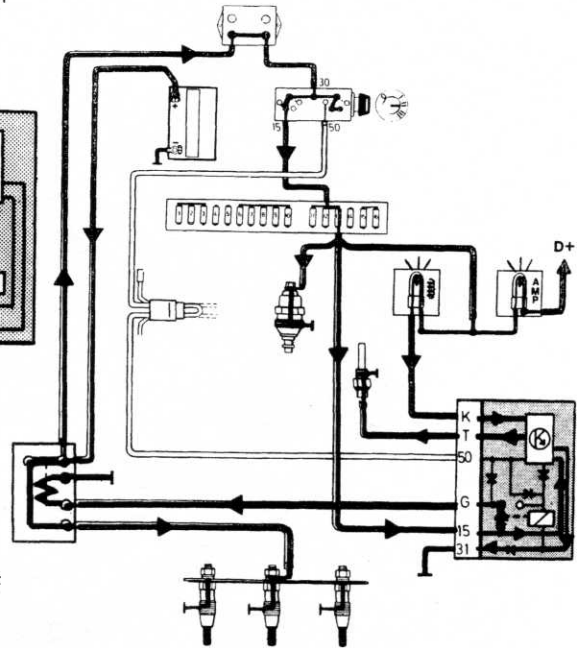
Glow plug system Diesel



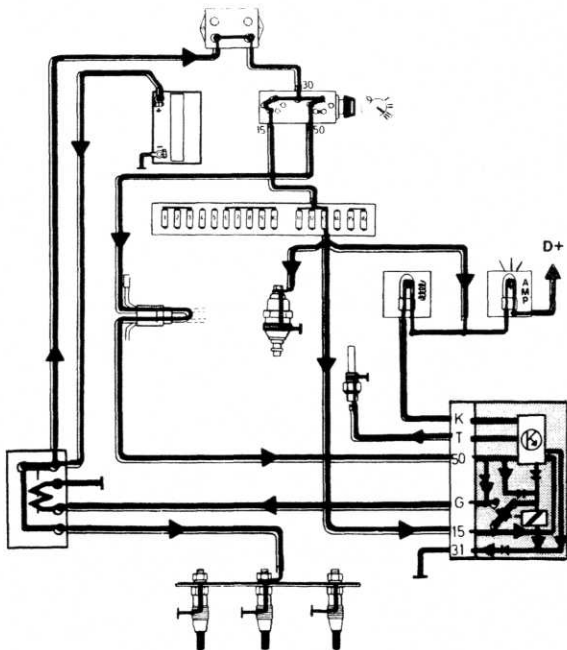
Fuse No. 13:
Instruments
Turn signals
Seat belt warning
Control unit, Diesel

Legend:
A Temperature sensor
B Stop valve
C Indicator light
D Start switch
E Glow plug
F Glow plug relay
G Remote starter pick-up point
H Control unit
I Fuse box

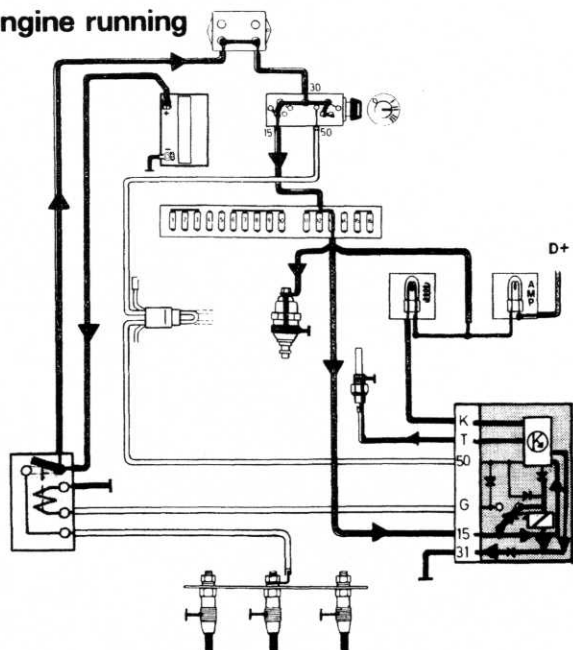
Start key ON
Coolant temperature
below +50°C = 122°F

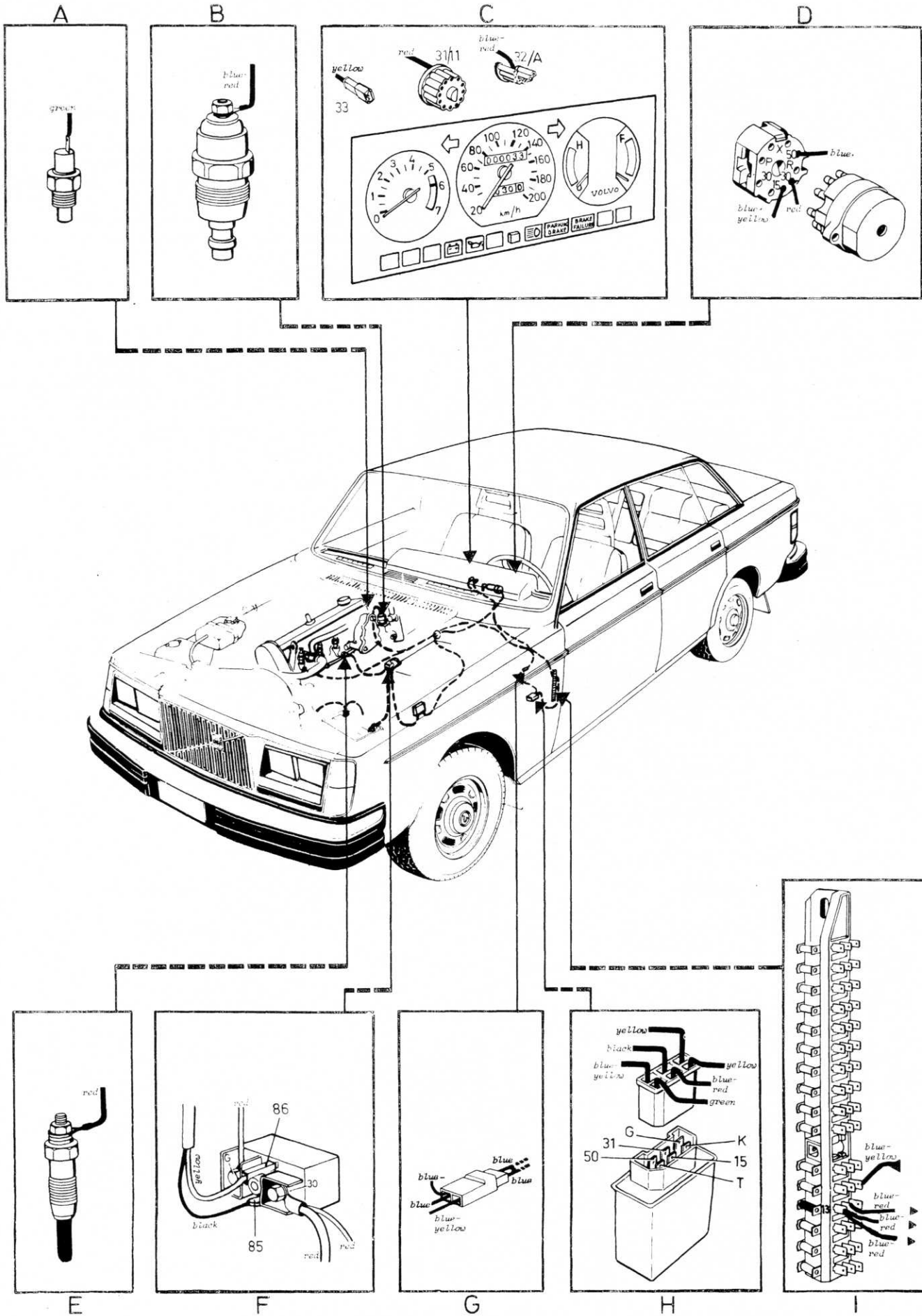


Starter motor operating



Engine running



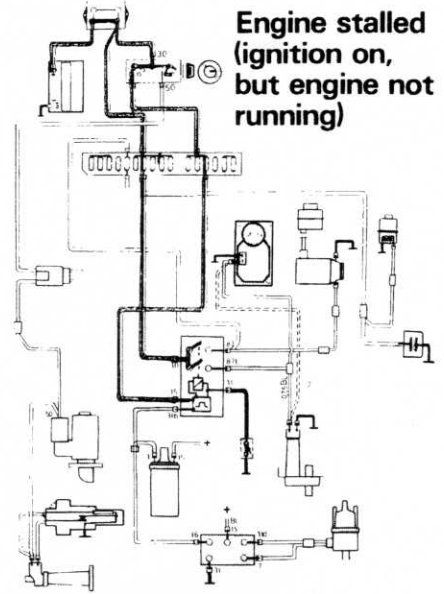
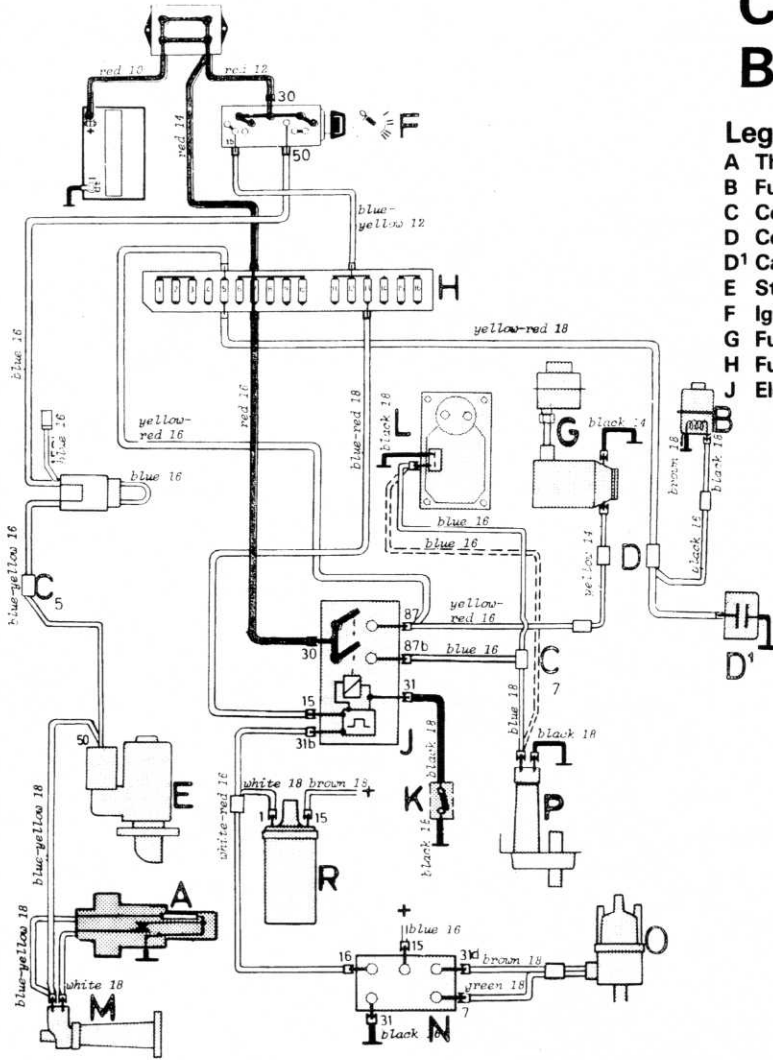


Adam's Car

CI fuel injection system B21F, B23E

Legend:

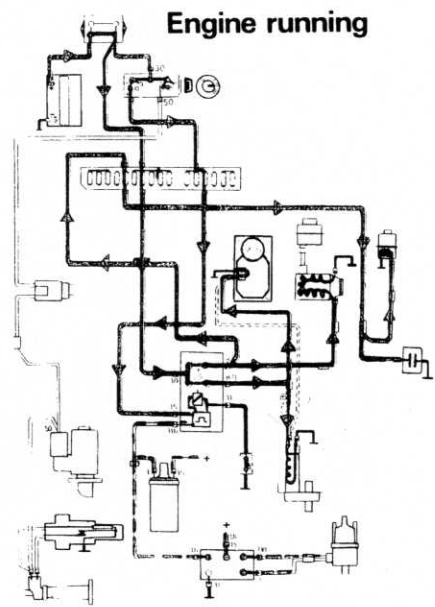
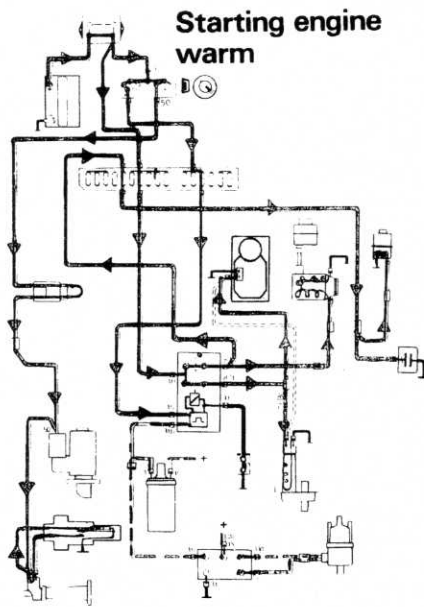
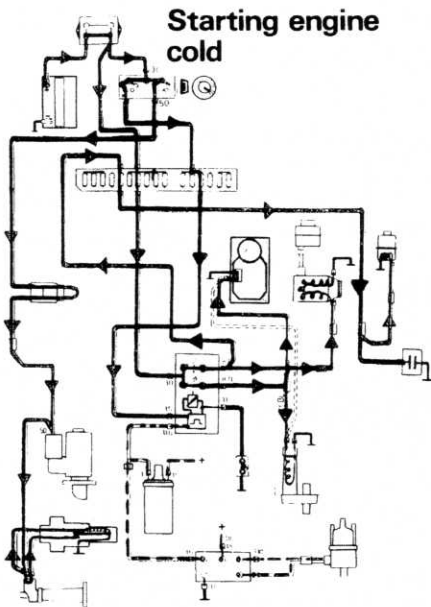
- | | |
|------------------------------|---|
| A Thermal time switch | K Overload protection switch (Turbo only) |
| B Fuel feed pump (tank pump) | L Control pressure regulator |
| C Connector | M Cold start injector |
| D Connector | N Ignition electronic module |
| D ¹ Capacitor | O Distributor |
| E Starter motor | P Auxiliary air valve |
| F Ignition switch | R Ignition coil |
| G Fuel pump (main pump) | |
| H Fuse box | |
| J Electronic pump relay | |

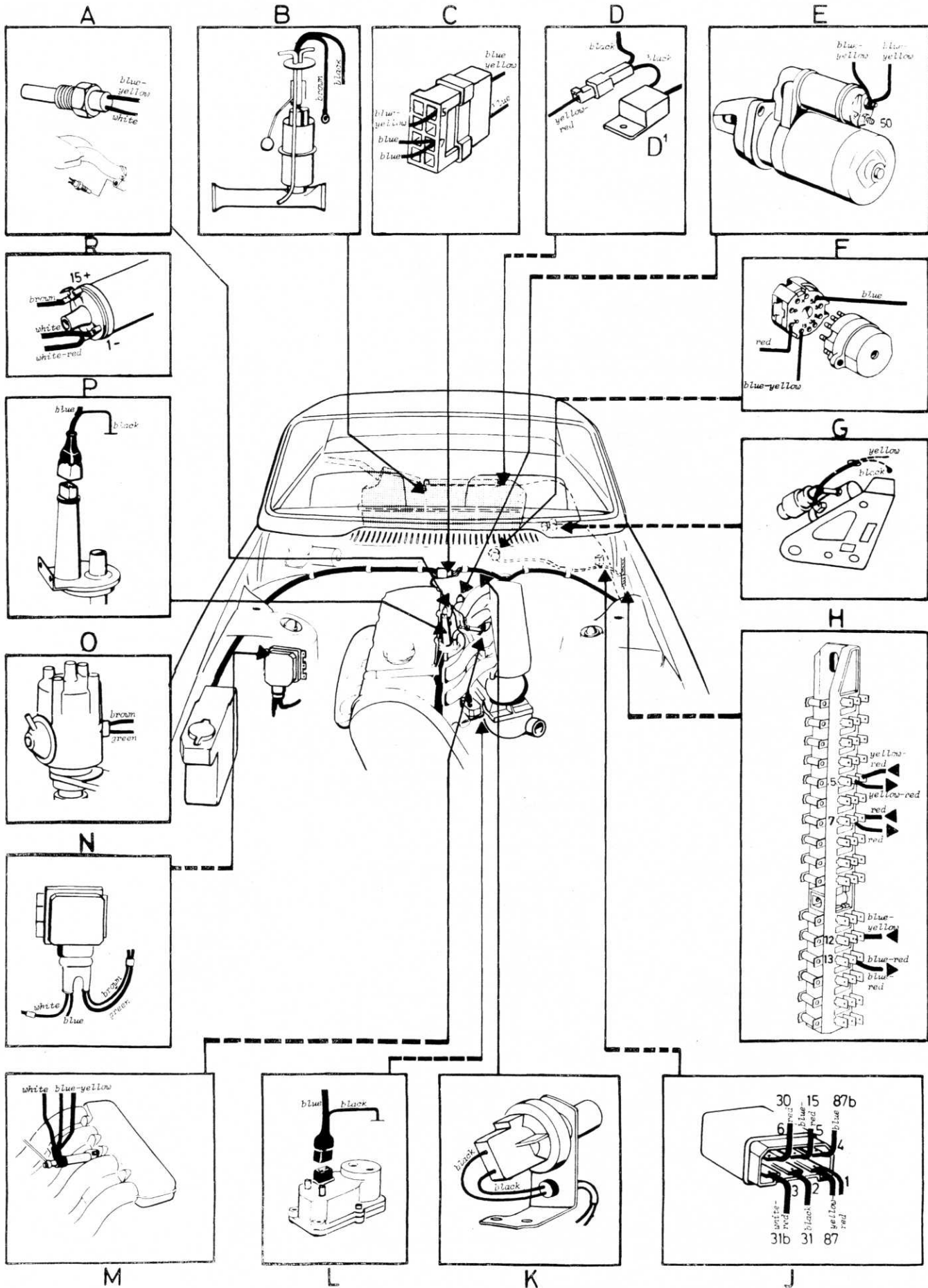


Fuse No. 5:
Fuel feed pump
(tank pump)

Fuse No. 7:
Fuel pump
(main pump)

Fuse No. 13:
Instruments
Turn signals
Seat belt warning
Relay, fuel injection

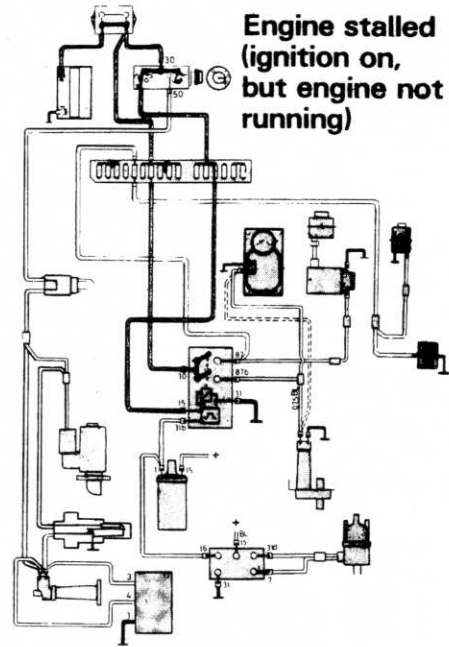
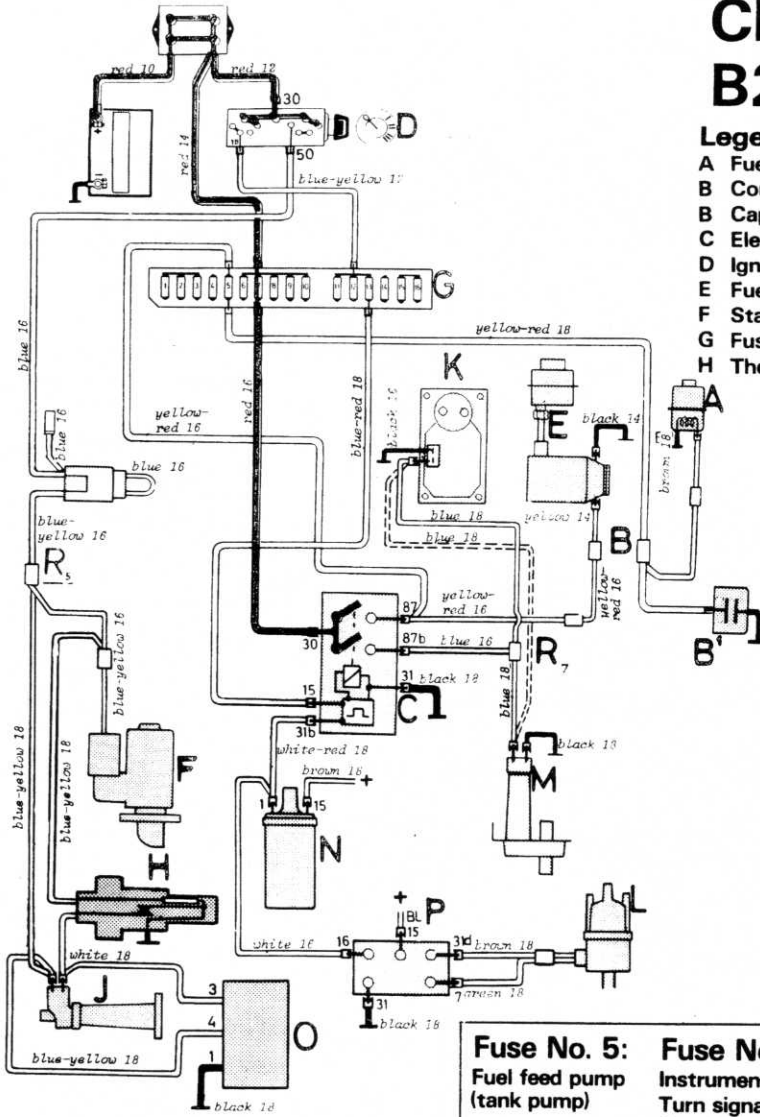




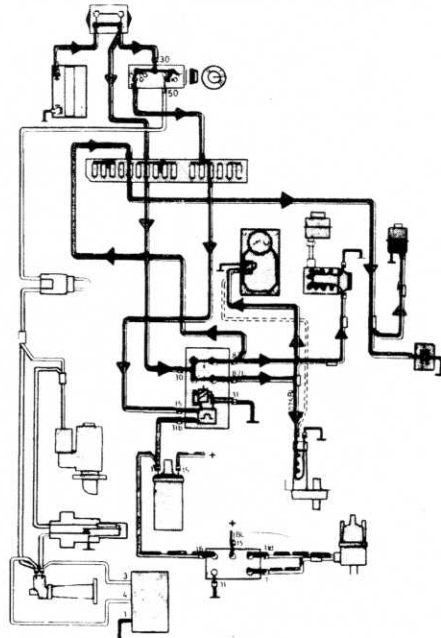
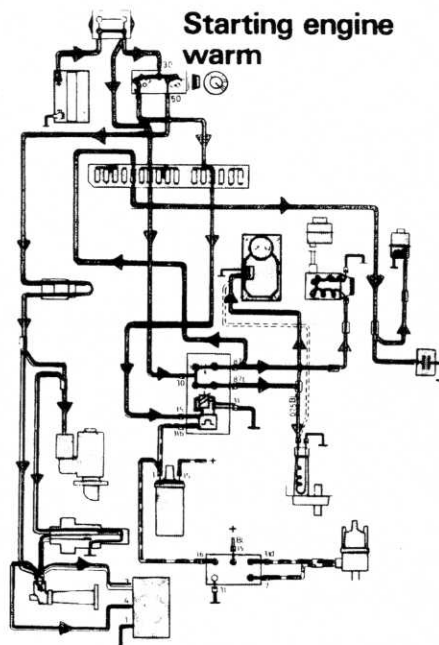
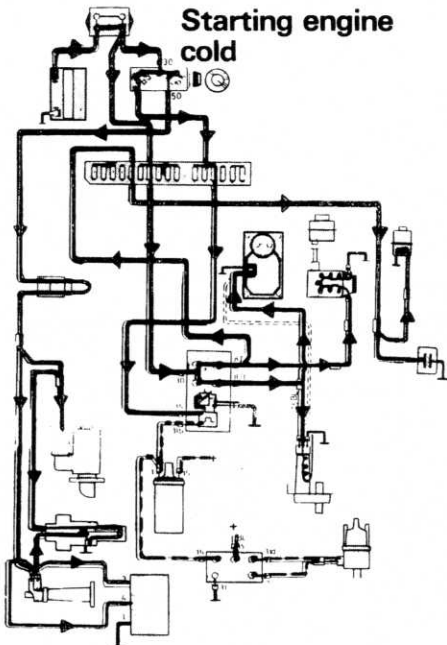
CI fuel injection system B28F

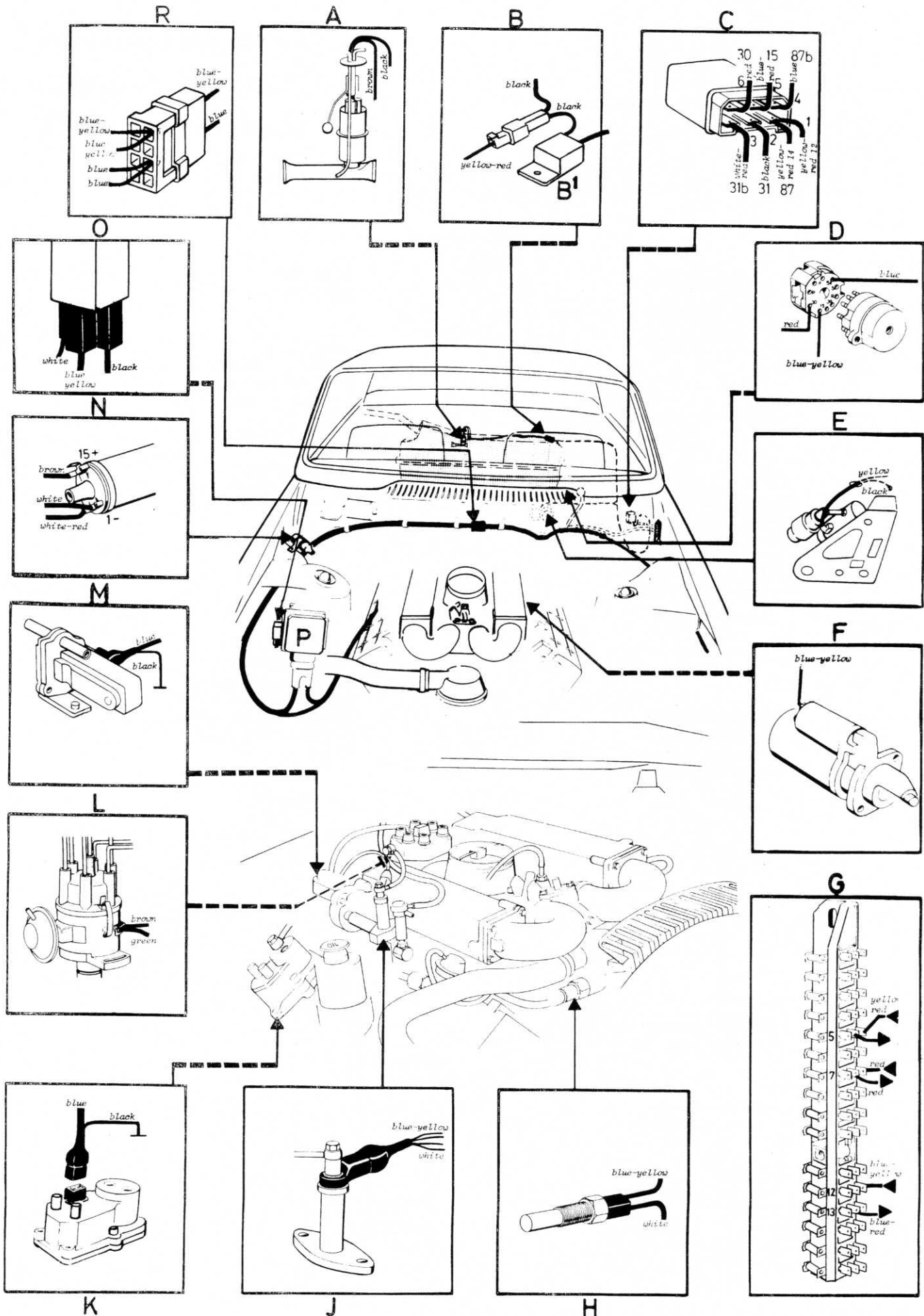
Legend:

- | | |
|------------------------------|------------------------------|
| A Fuel feed pump (tank pump) | J Cold start injector |
| B Connector | K Control pressure regulator |
| C Capacitor | L Distributor |
| C Electronic pump relay | M Auxiliary air valve |
| D Ignition switch | N Ignition coil |
| E Fuel pump (main pump) | O Impulse relay |
| F Starter motor | P Ignition electronic module |
| G Fuse box | R Connector |
| H Thermal time switch | |

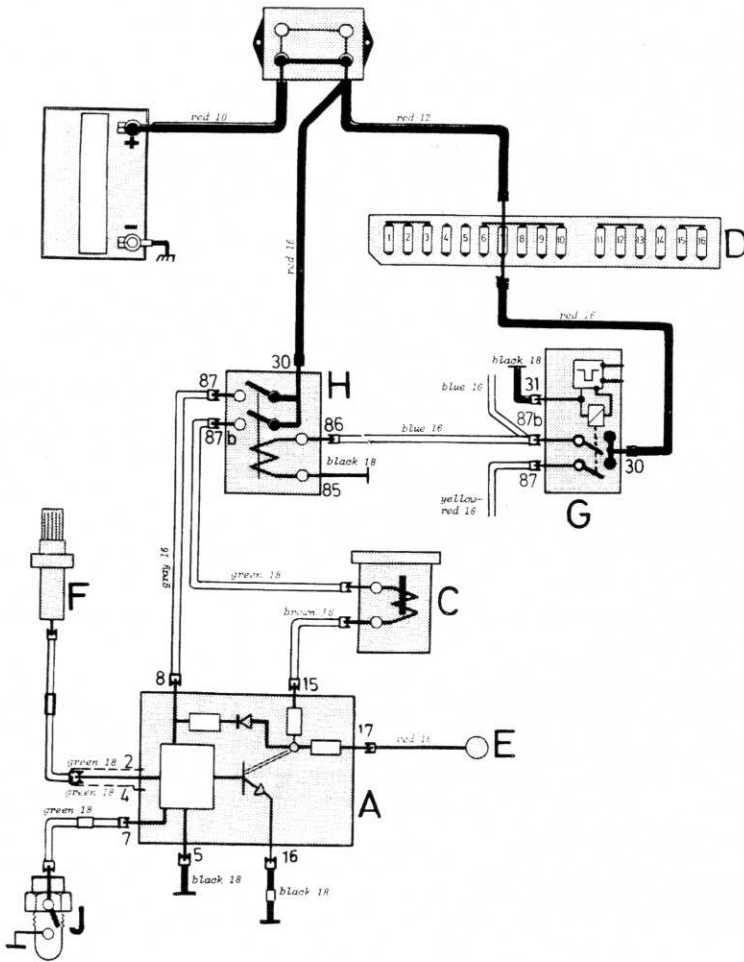


Fuse No. 5: Fuel feed pump (tank pump)
Fuse No. 7: Fuel pump (main pump)
Fuse No. 13: Instruments, Turn signals, Seat belt warning, Relay, fuel injection





Oxygen sensor feedback system (Lambda-sond) B21F

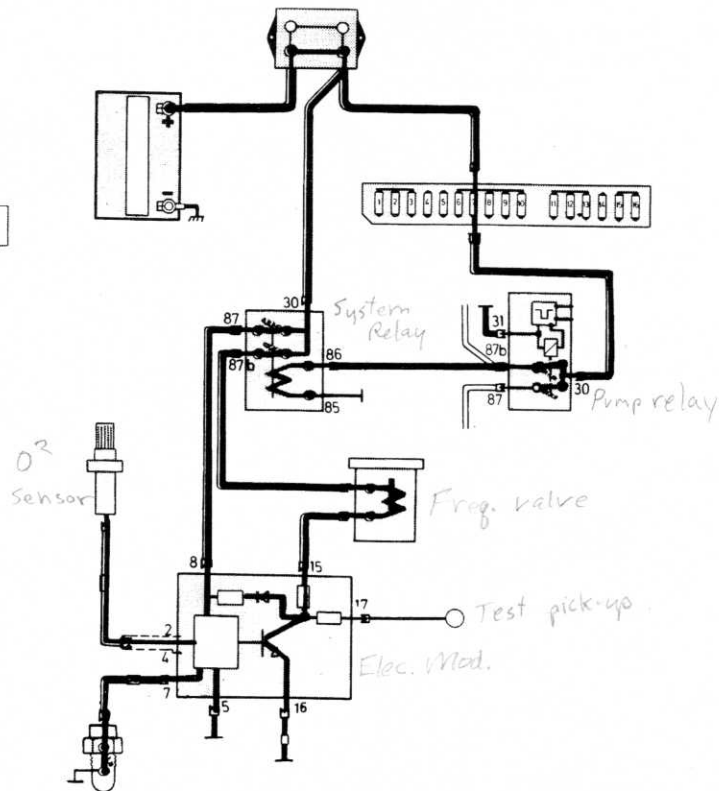
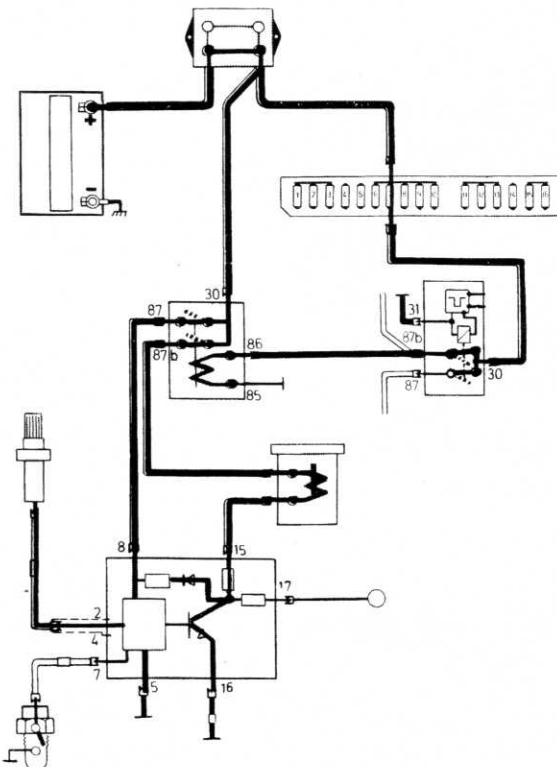


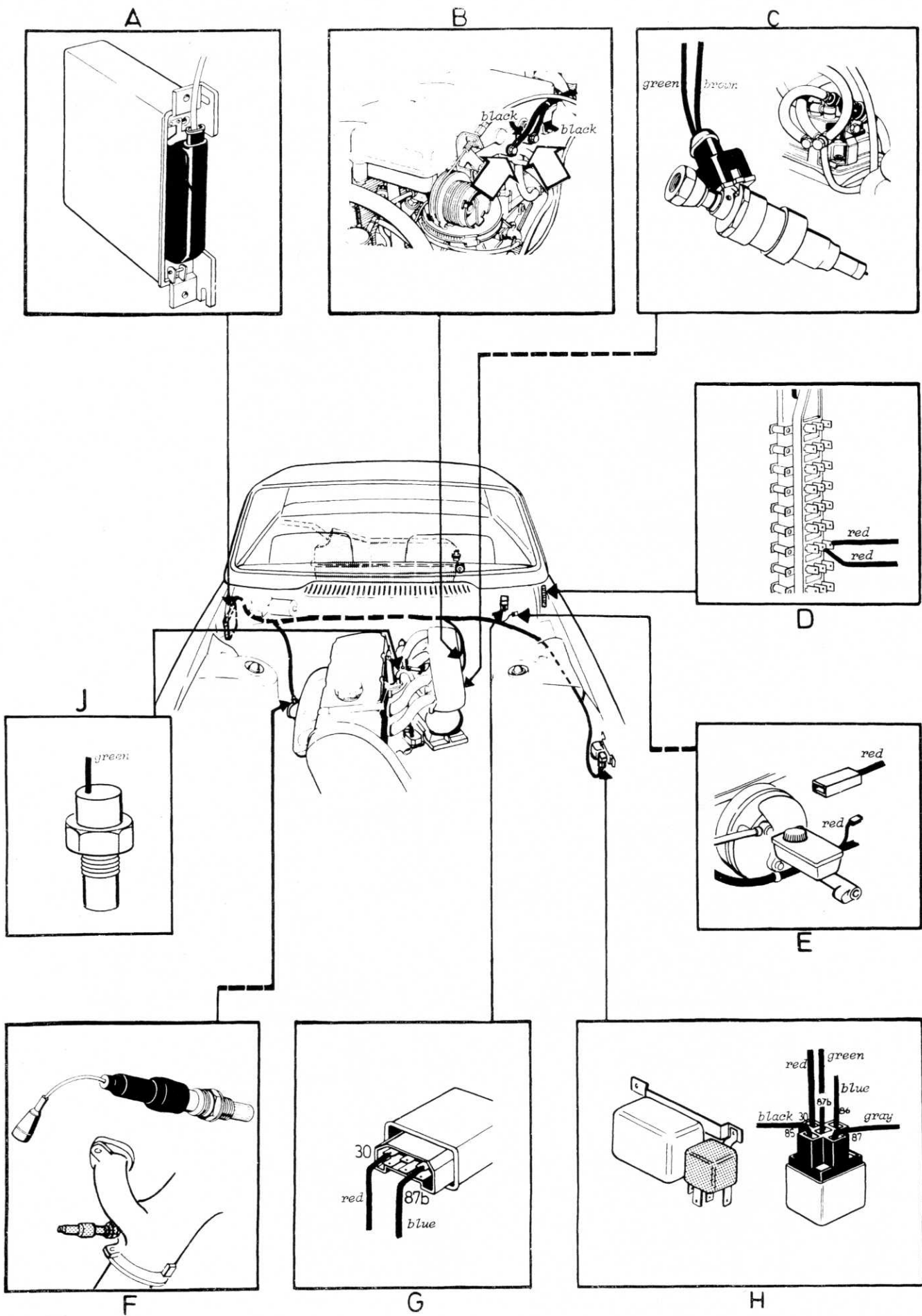
Fuse No. 7:
Fuel pump (main pump)

- Legend:**
- A Electronic module
 - B Ground points
 - C Frequency valve
 - D Fuse box
 - E Test instrument pick-up point
 - F Oxygen sensor
 - G Electronic pump relay
 - H System relay

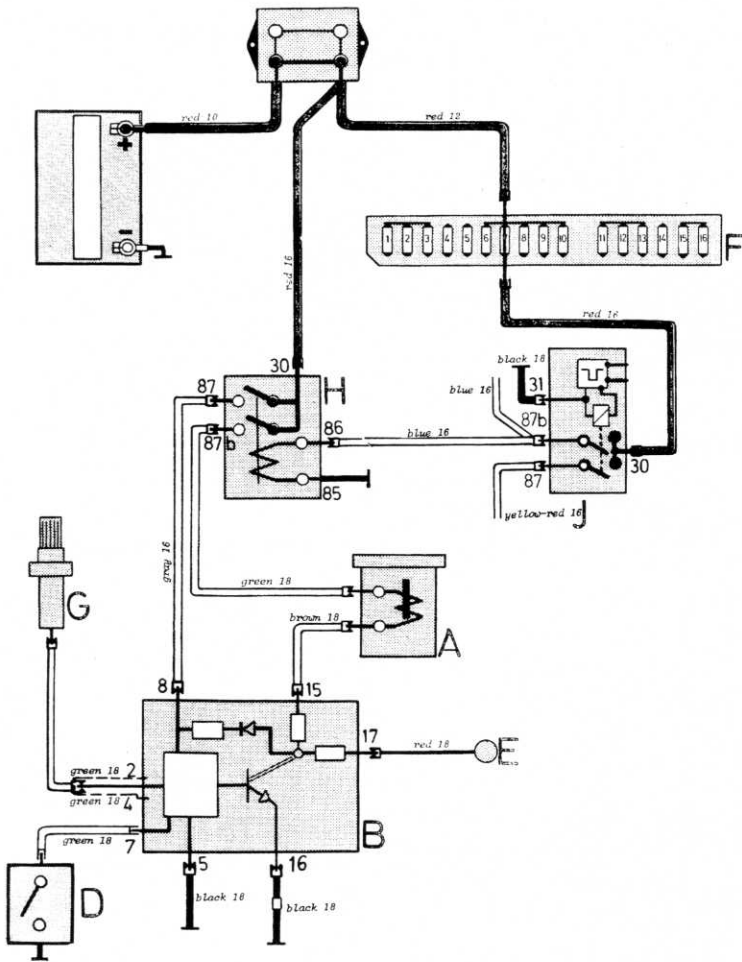
Warm engine.
System operates on duty cycle, regulating air/fuel mixture.

Cold engine.
Circuit through thermal switch is closed = system operates on fixed cycle and provides richer air/fuel mixture.





Oxygen sensor feedback system (Lambda-sond) B21F-Turbo



Fuse No. 7:
Fuel pump (main pump)

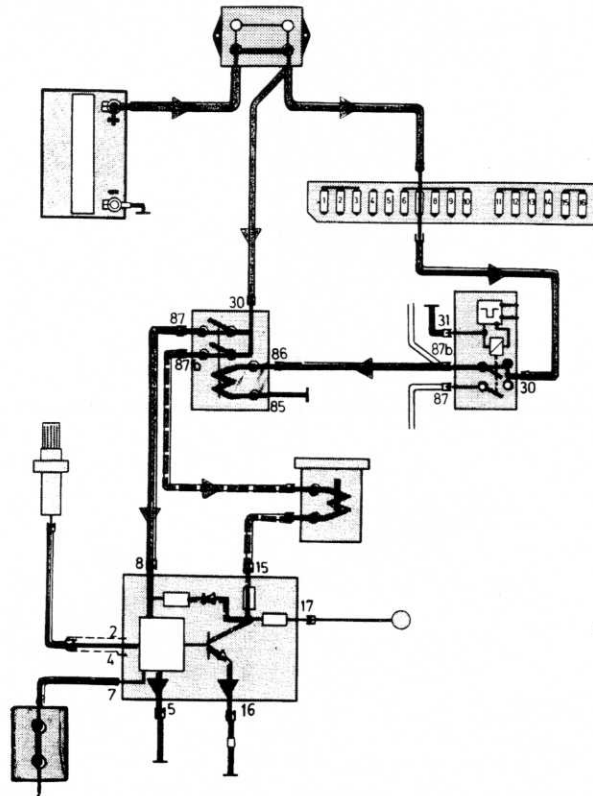
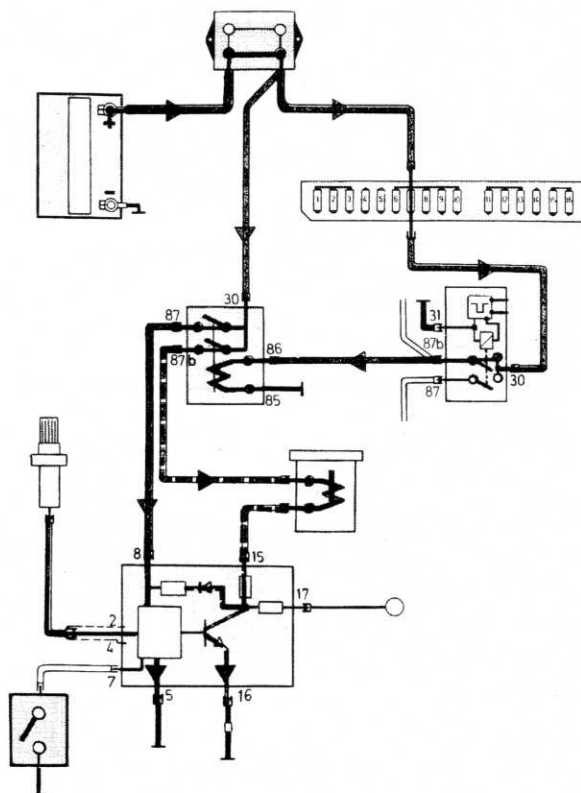
Legend:

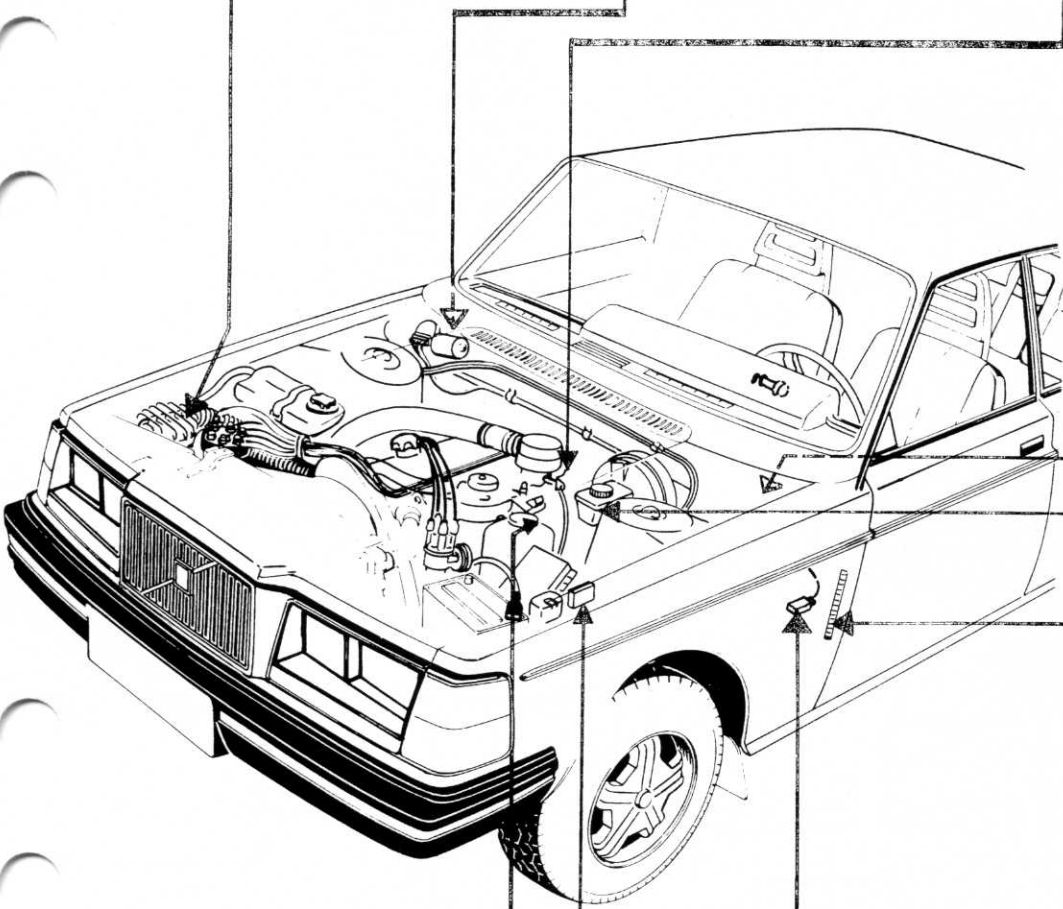
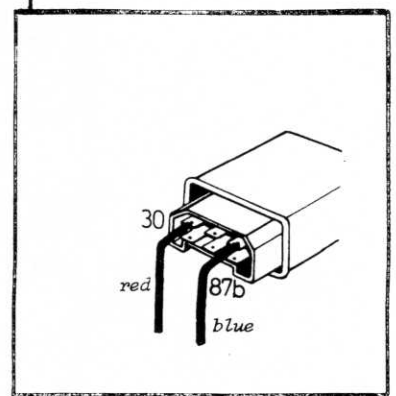
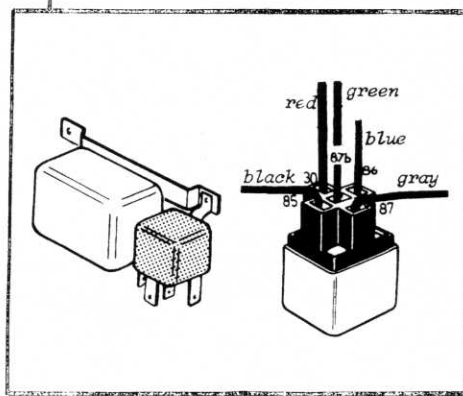
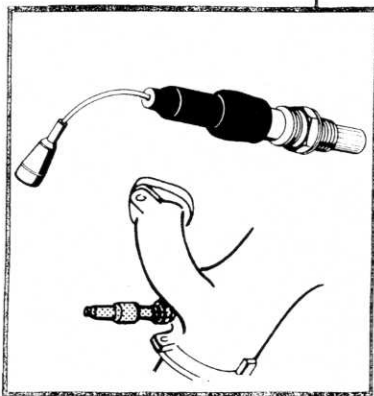
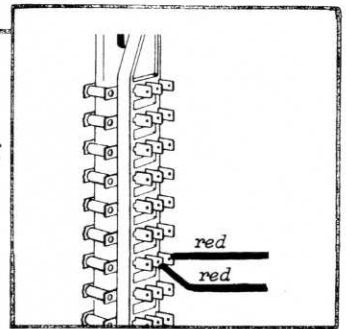
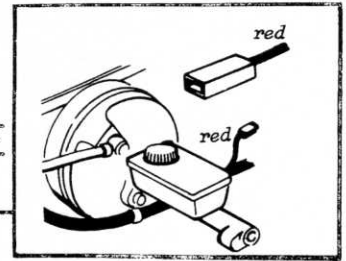
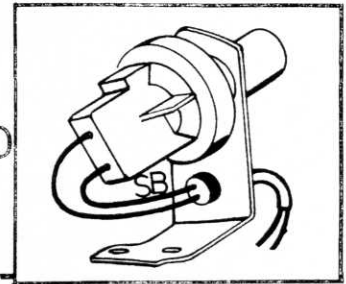
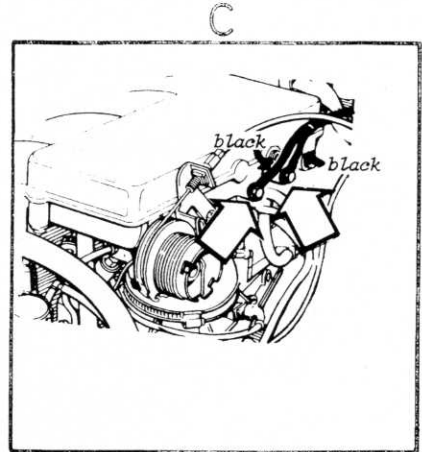
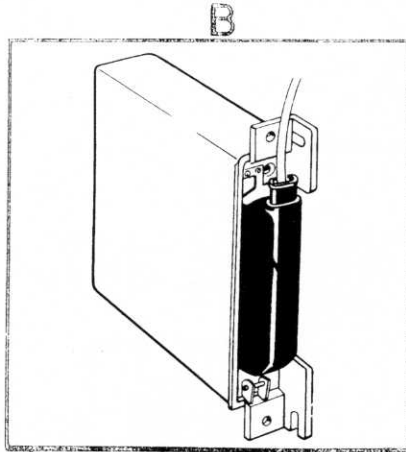
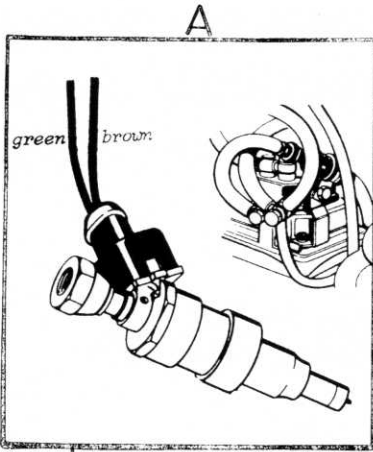
- A Frequency valve
- B Electronic module
- C Ground points
- D Pressure switch
- E Test instrument pick-up point
- F Fuse box
- G Oxygen sensor
- H System relay
- J Electronic pump relay

Acceleration.

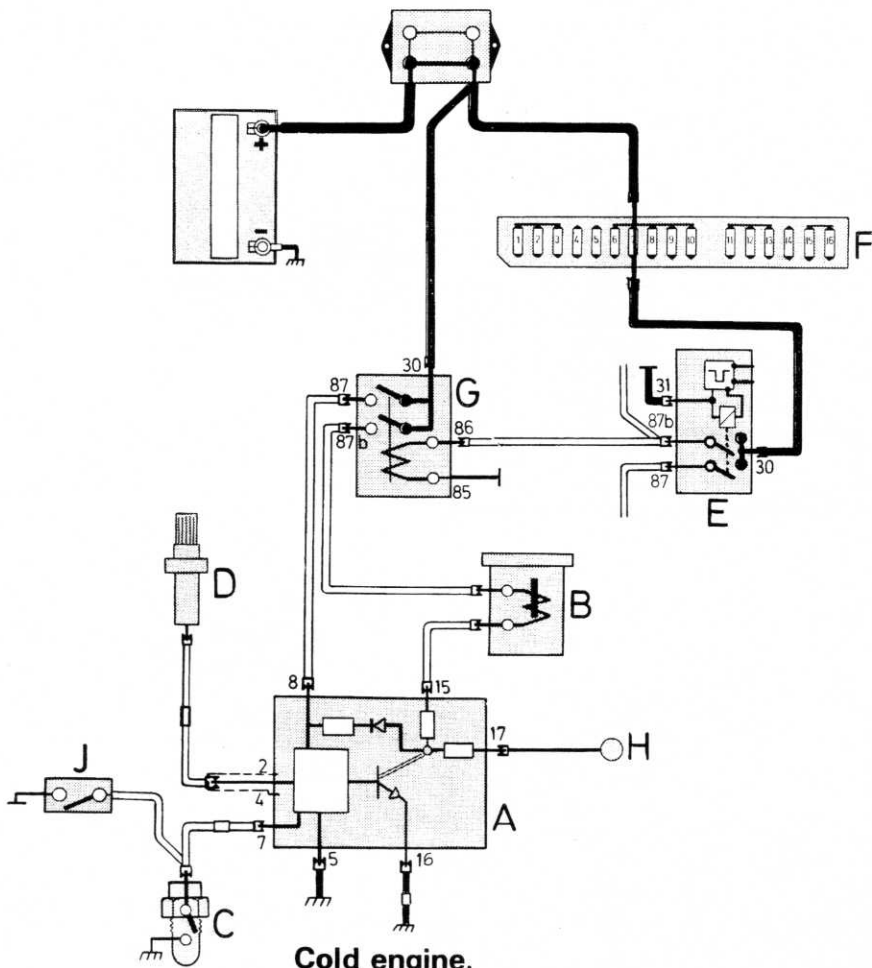
Increasing compressor discharge pressure causes pressure switch to ground terminal 7 of Electronic module. This will cause Lambda system to operate on special fixed cycle and provide enrichment.

Normal driving.





Oxygen sensor feedback system (Lambda-sond) B28F

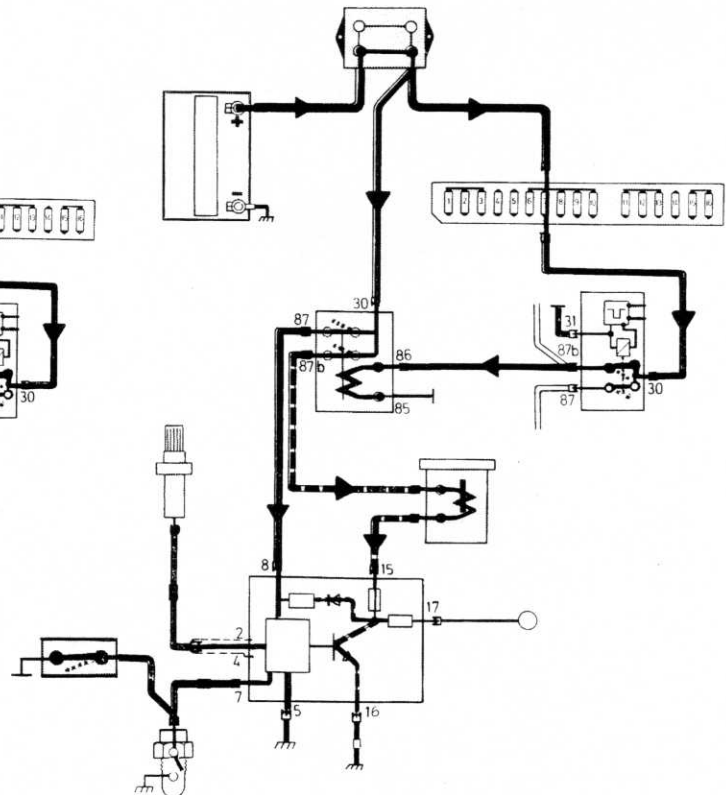
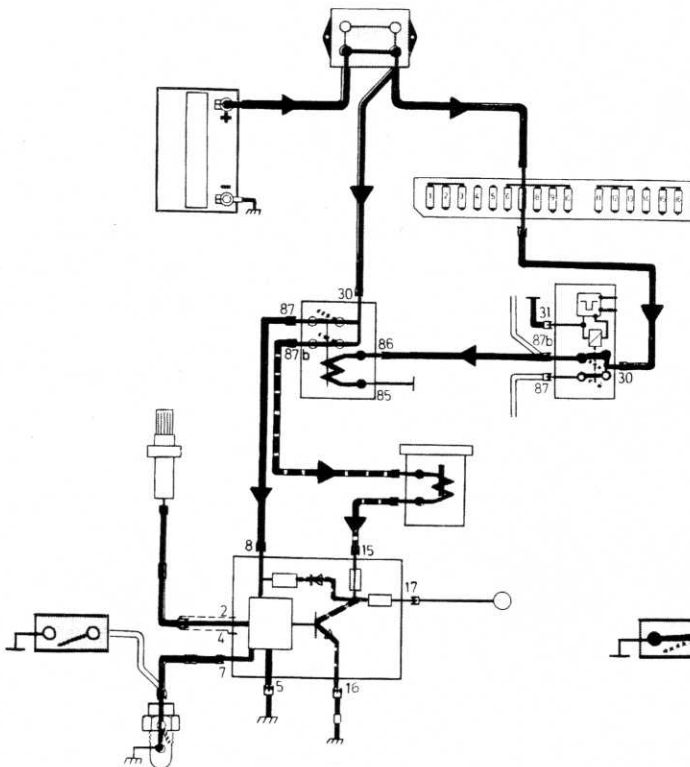


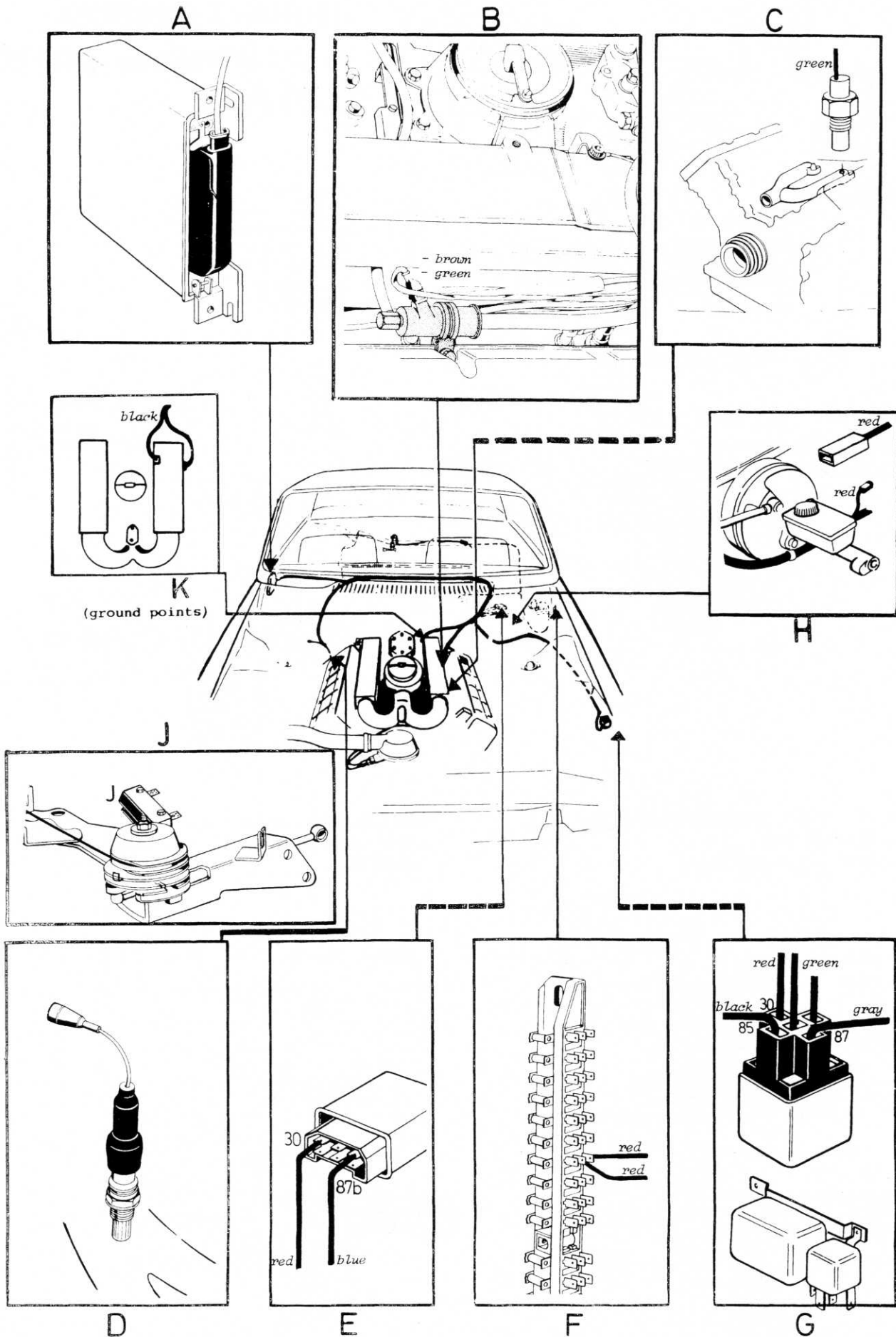
Fuse No. 7:
Fuel pump (main pump)

- Legend:**
- A Electronic module
 - B Frequency valve
 - C Thermal switch
 - D Oxygen sensor
 - E Electronic pump relay
 - F Fuse box
 - G System relay
 - H Test instrument pick-up point
 - J Micro switch (for enrichment at maximum acceleration)
 - K Ground points

Cold engine.
Circuit through thermal switch is closed = system operates on fixed cycle and provides richer air/fuel mixture.

Maximum acceleration.
Circuit through micro switch is closed = system operates on fixed cycle and provides richer air/fuel mixture.

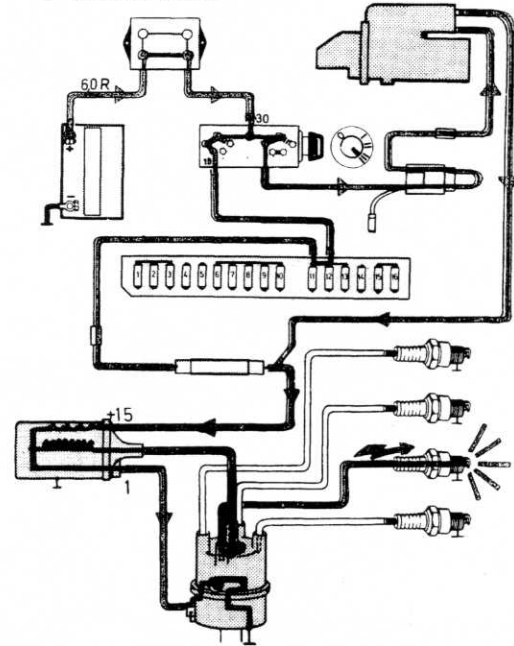
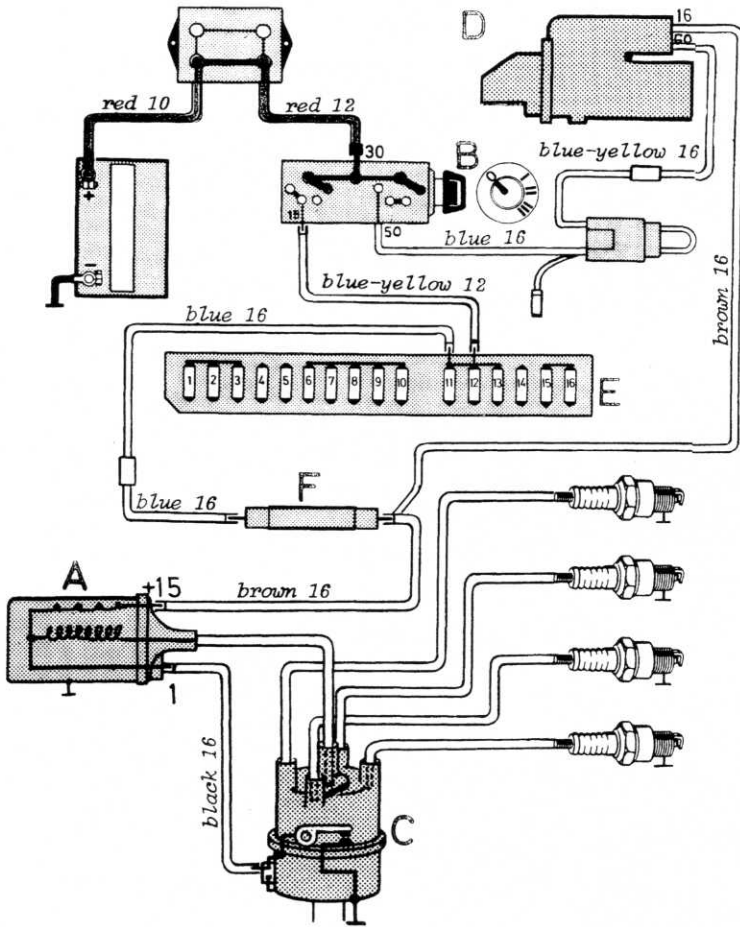




Ignition system with breaker points, B21A

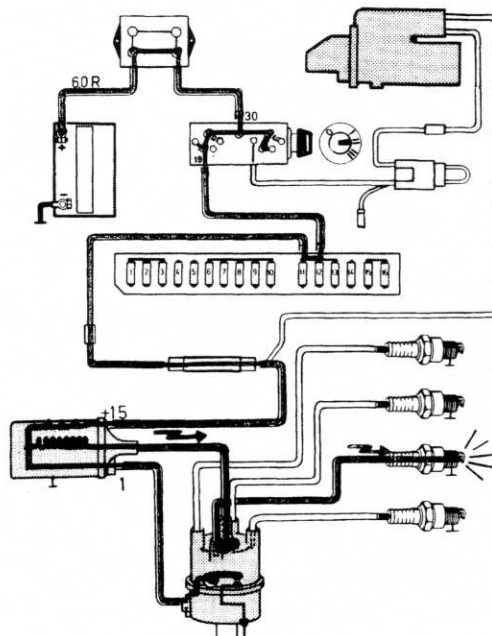
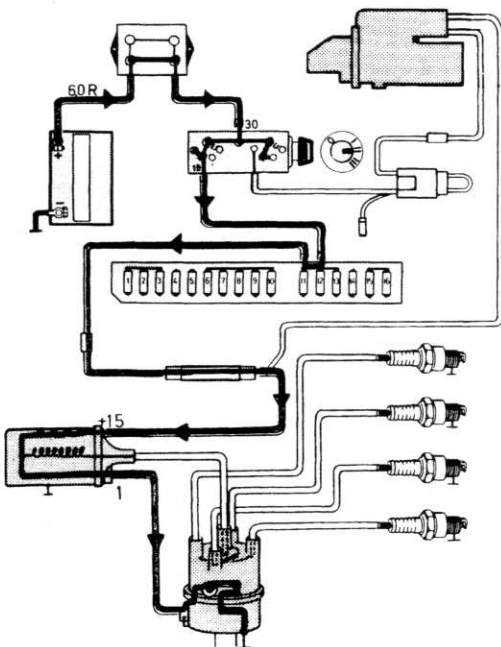
Legend:

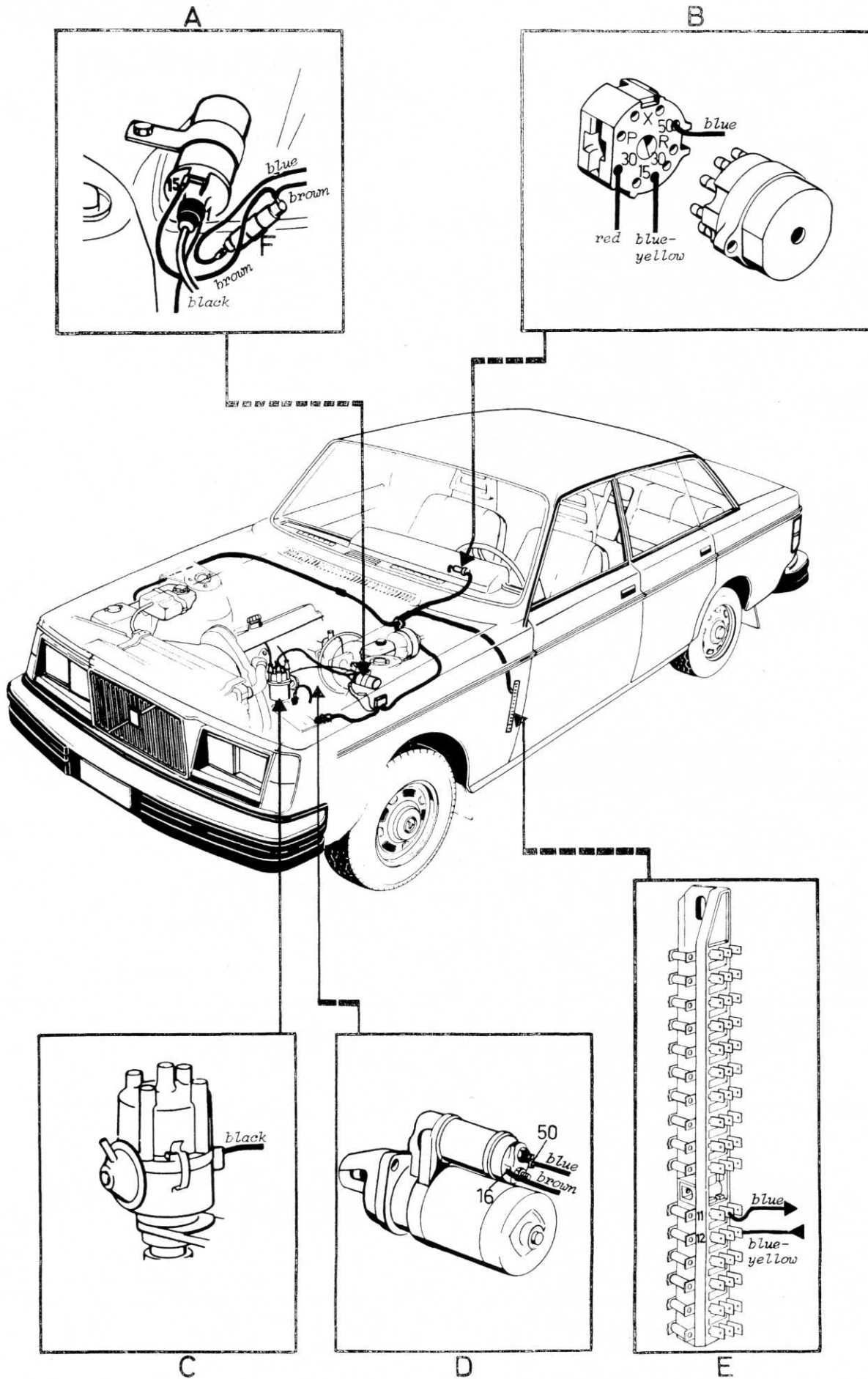
- A Ignition coil
- B Ignition switch
- C Distributor
- D Starter motor
- E Fuse box
- F Ballast resistor



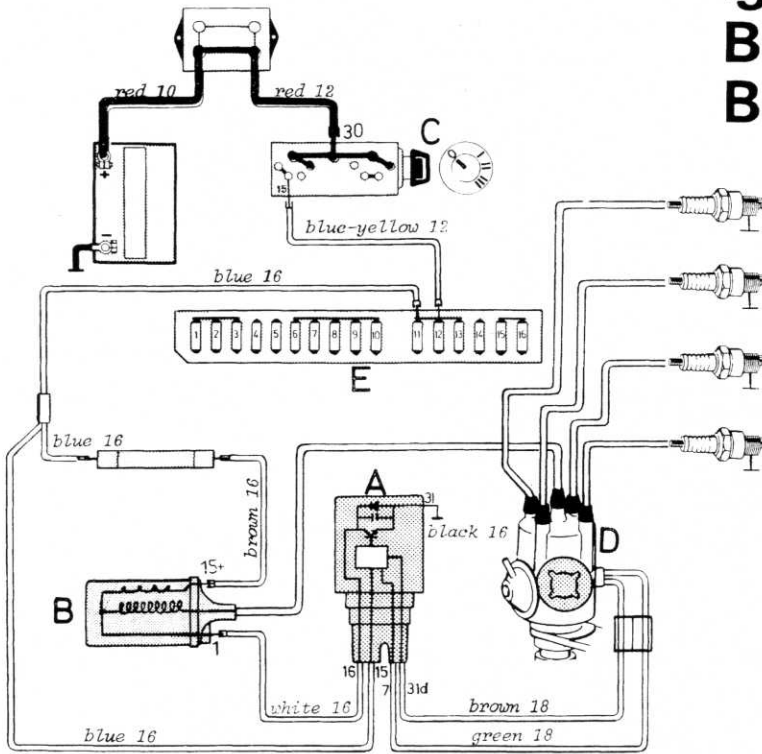
Current flows through breaker points
and ignition coil.
Ignition coil is energized.

Breaker points open, ignition coil
discharges (sparks) through secondary
winding.





Breakerless electronic ignition system B21F and B21F-Turbo B23E/Canada

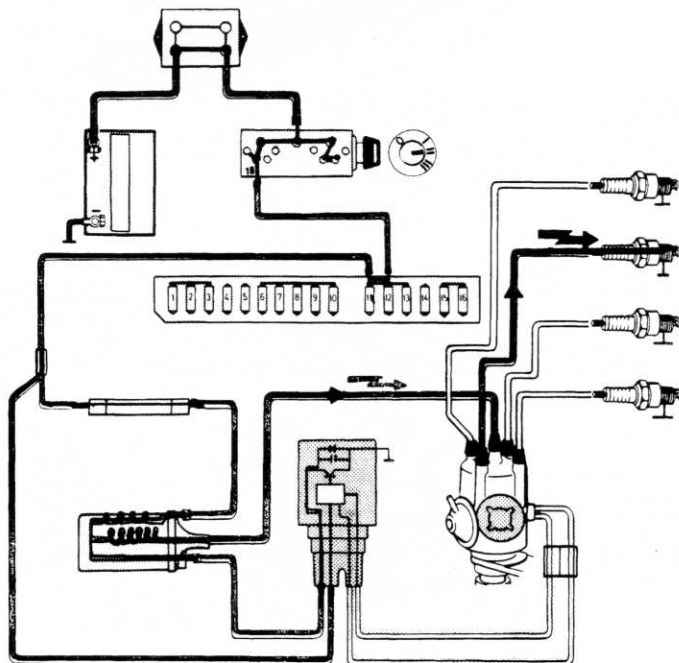
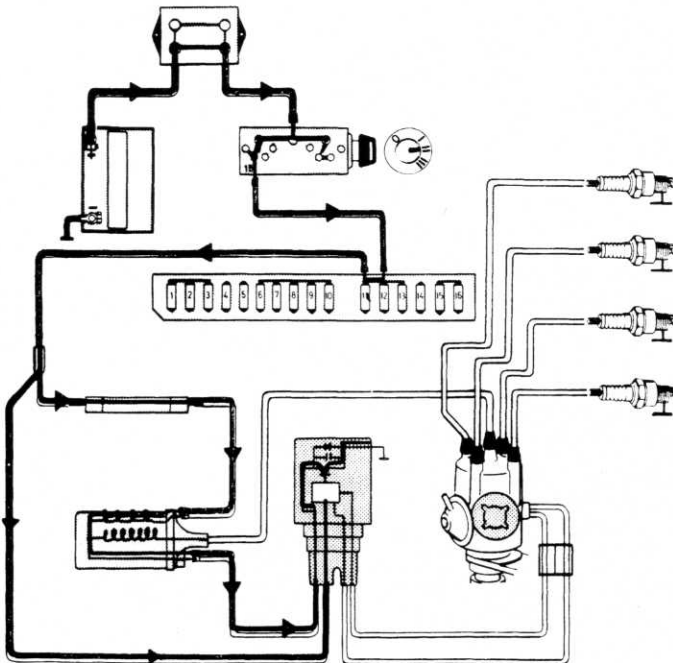


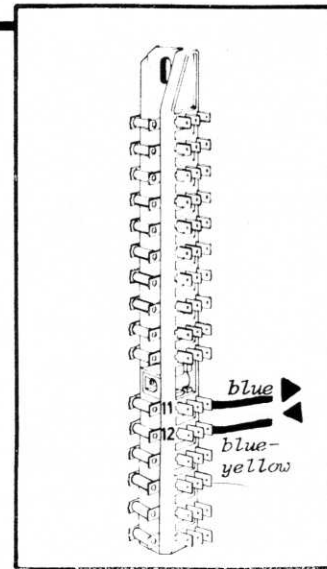
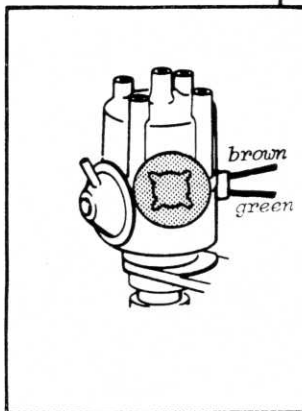
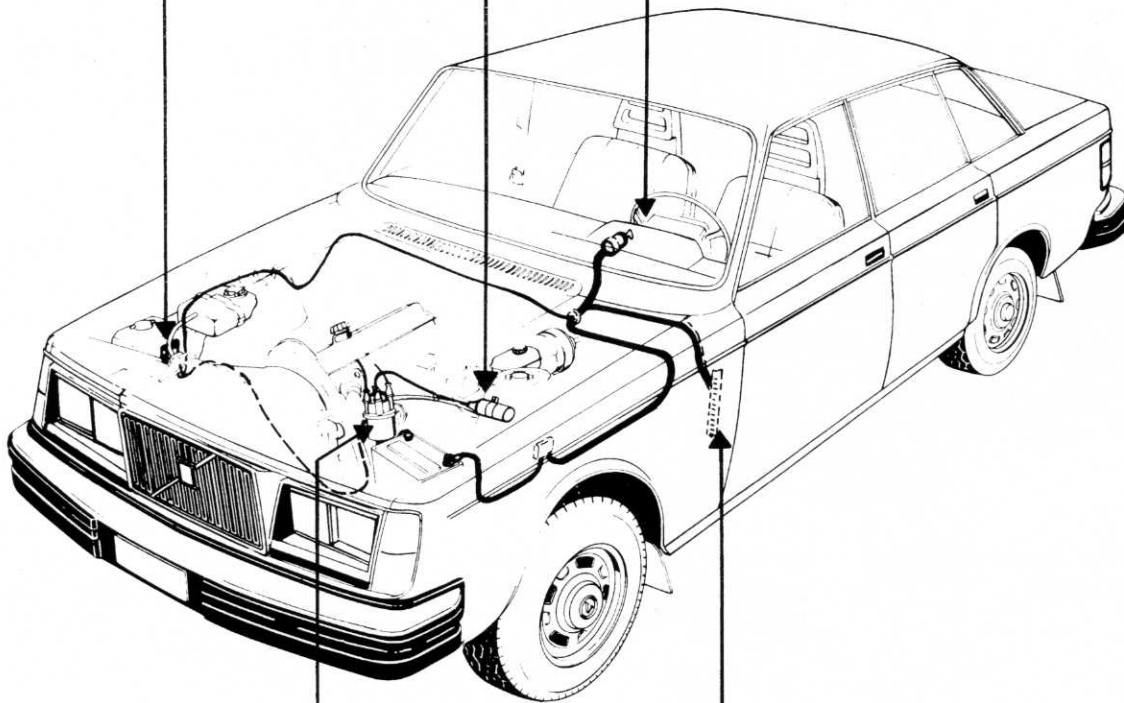
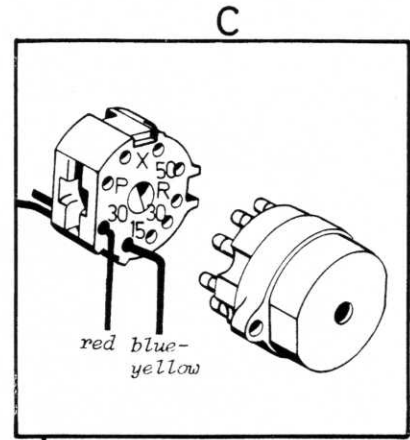
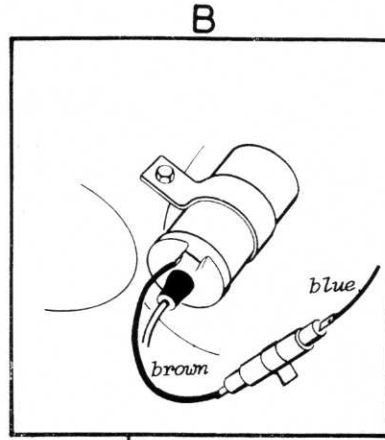
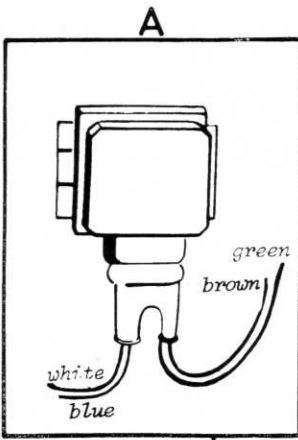
Legend:

- A Ignition electronic module
- B Ignition coil with ballast resistor
- C Ignition switch
- D Distributor w. impulse sender
- E Fuse box

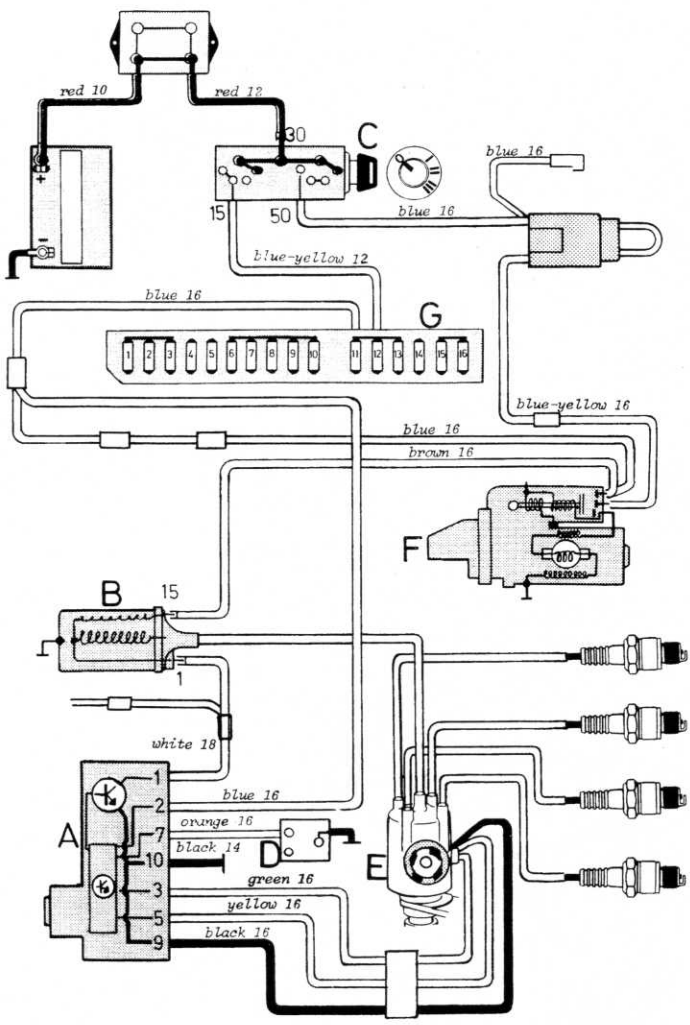
Current flows through electronic module, ignition coil primary winding is energized.

Electronic module interrupts current flow, ignition coil discharges (sparks) through secondary winding.





Computer controlled ignition system B21F-MPG

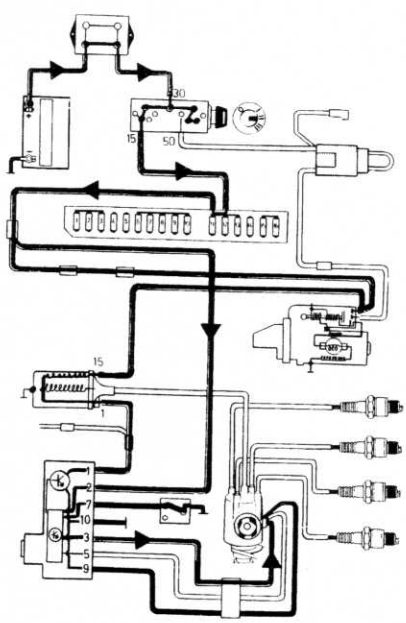
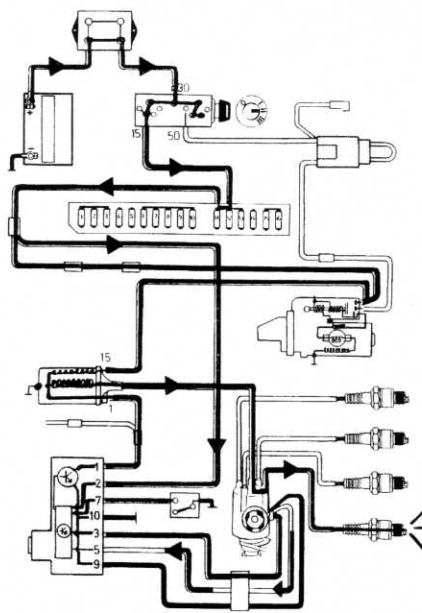
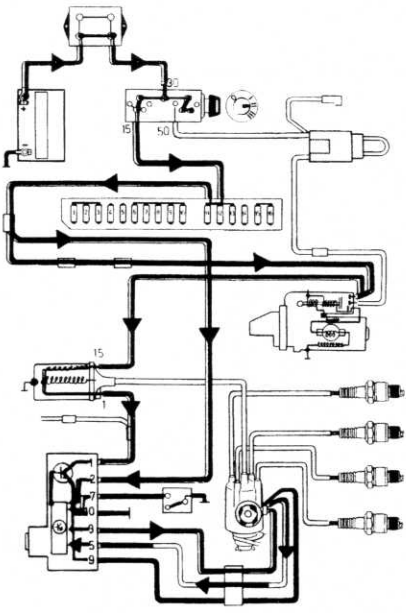


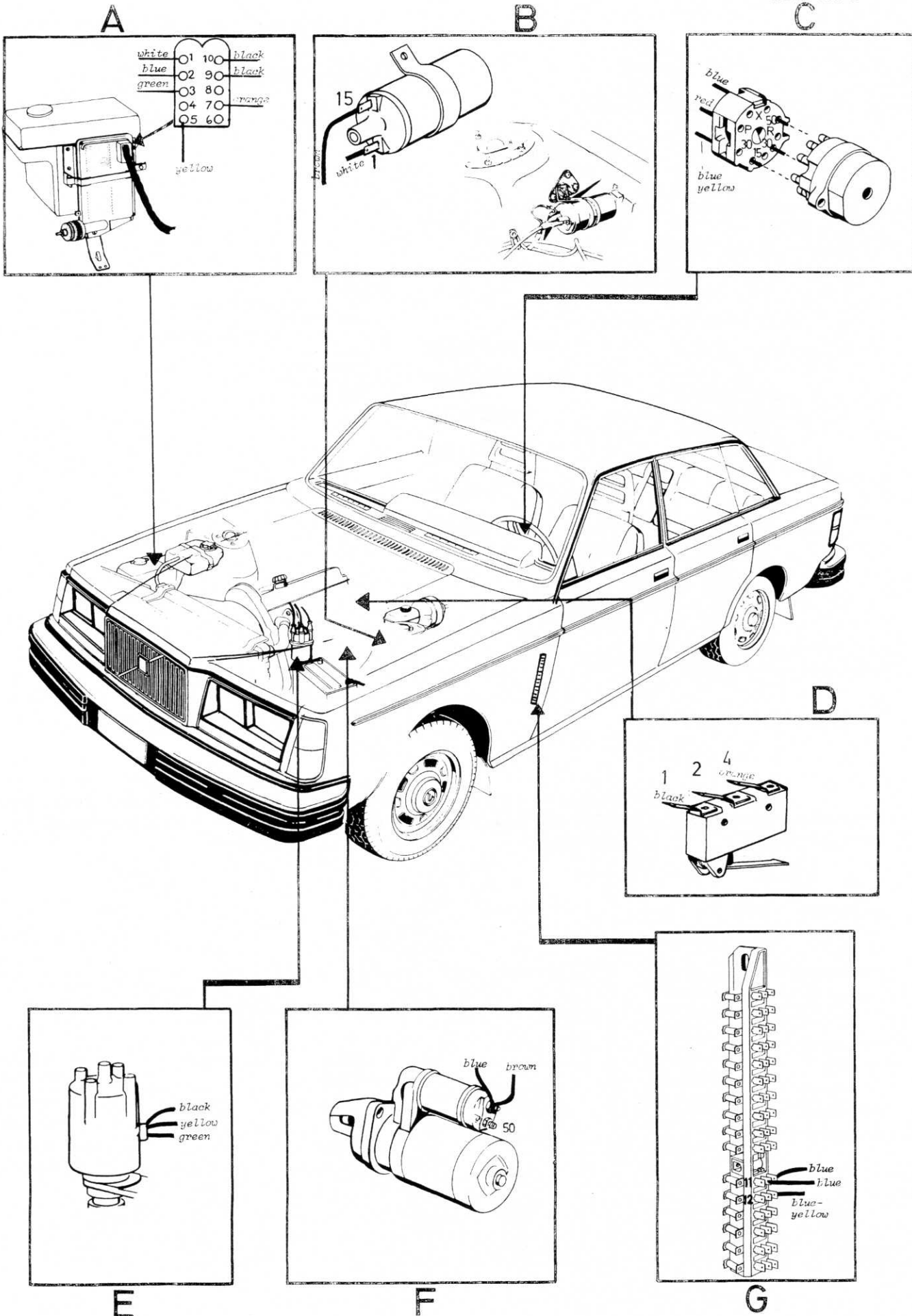
- Legend:**
- A Electronic Control Unit
 - B Ignition coil
 - C Ignition switch
 - D Micro switch
 - E Distributor
 - F Starter motor
 - G Fuse box

**Ignition ON , engine running,
ignition coil being
energized.**

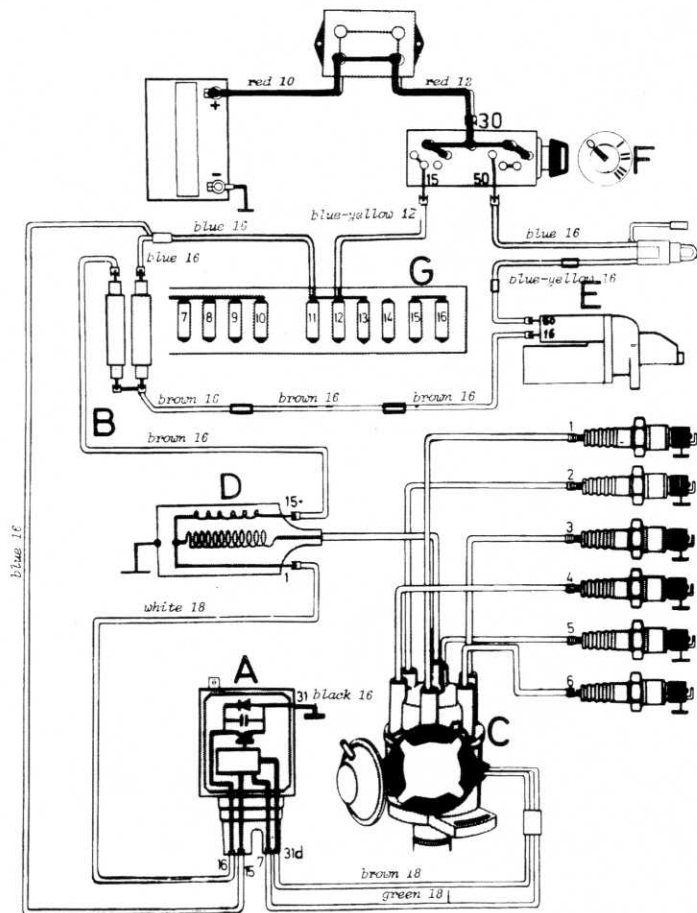
**Ignition ON , engine running,
ignition coil discharges
(sparks).**

**Ignition ON , engine stalled.
Micro switch grounds
circuit through Electronic
Control Unit.**



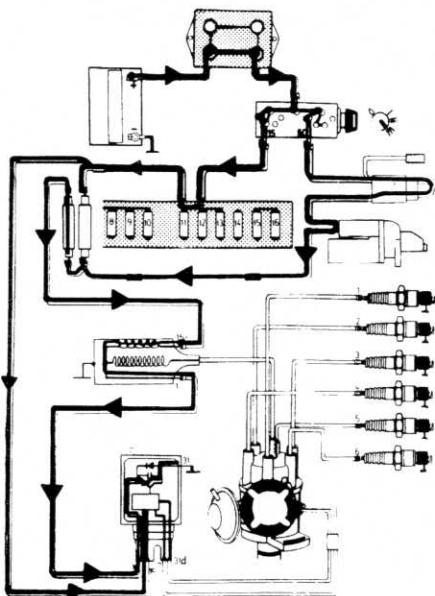


Breakerless electronic ignition system B28F

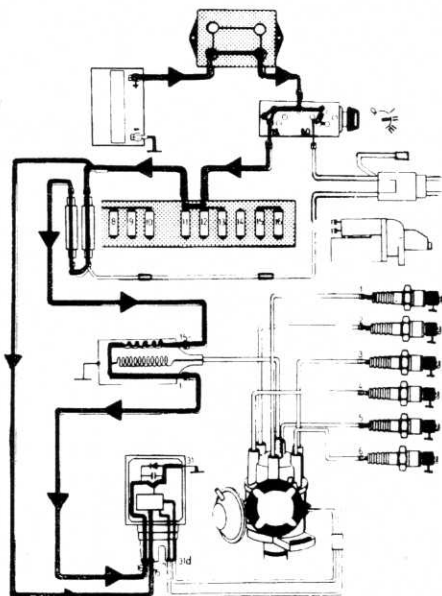


- Legend:**
- A Ignition electronic module
 - B Ballast resistor
 - C Distributor w. impulse sender
 - D Ignition coil
 - E Starter motor
 - F Ignition switch
 - G Fuse box

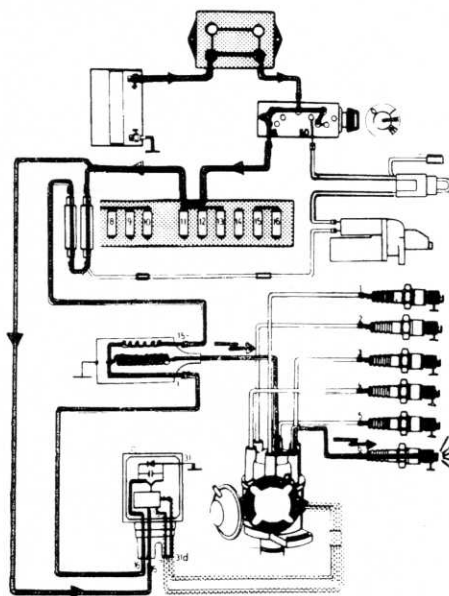
Current flow while starter motor is engaged.

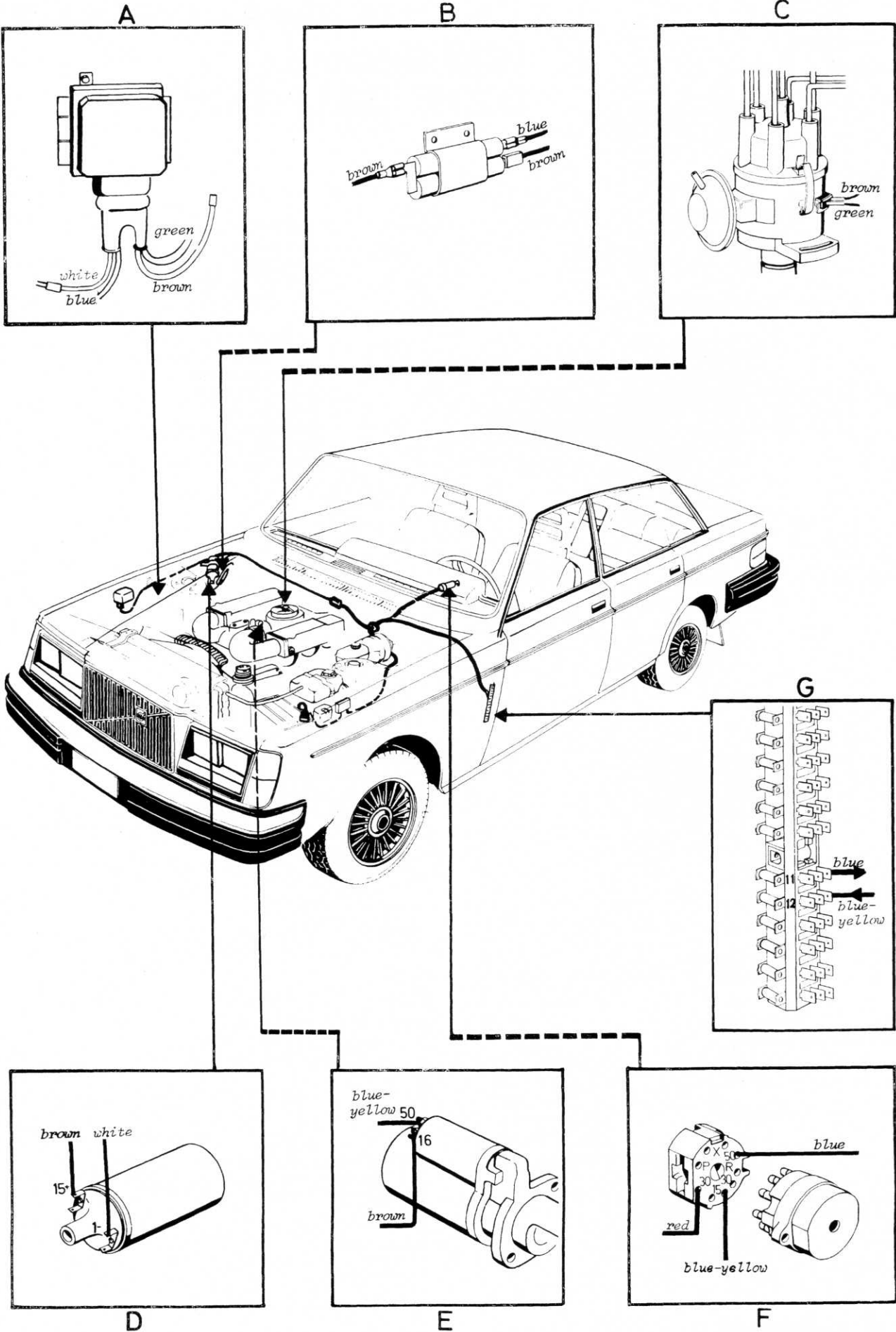


Current flows through electronic module, ignition coil primary winding is energized.



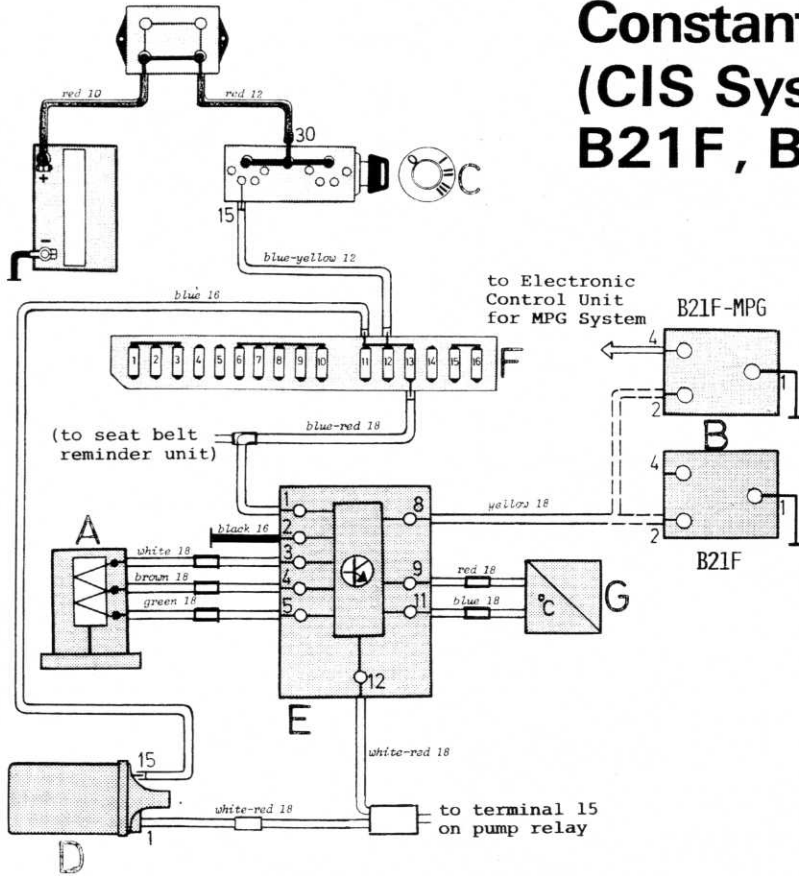
Electronic module interrupts current flow, ignition discharges (sparks) through secondary winding.





Dad's Car

Constant Idle Speed System (CIS System) B21F, B21F-MPG



Fuse No. 13:
Instruments
Turn signals
Seat belt warning
CIS System

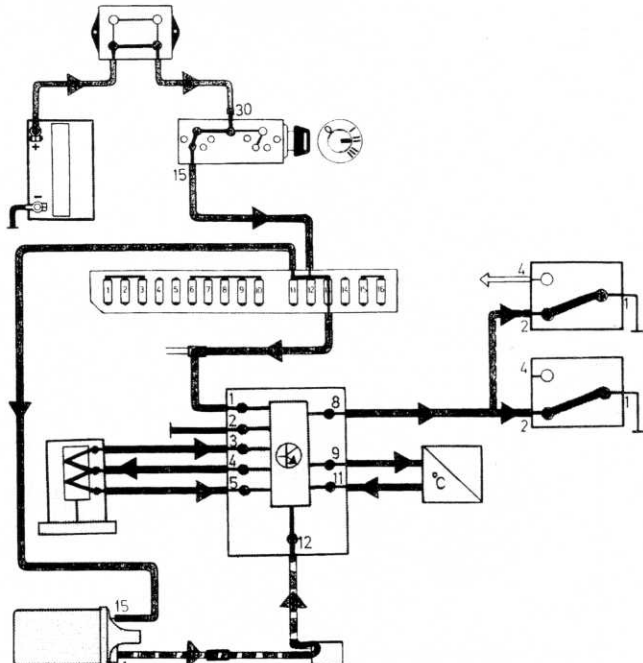
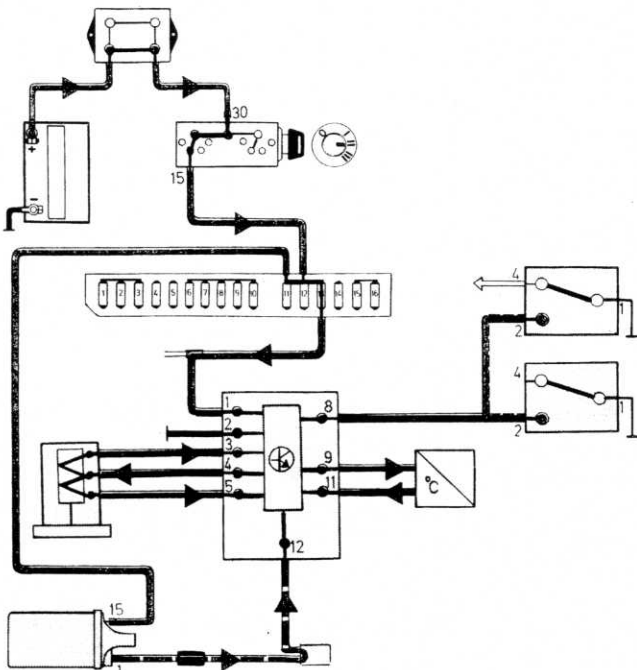
Legend:
A Air control valve
B Throttle switch
C Ignition switch
D Ignition coil
E Electronic control unit
F Fuse box
G Coolant temperature sensor

Idle speed.

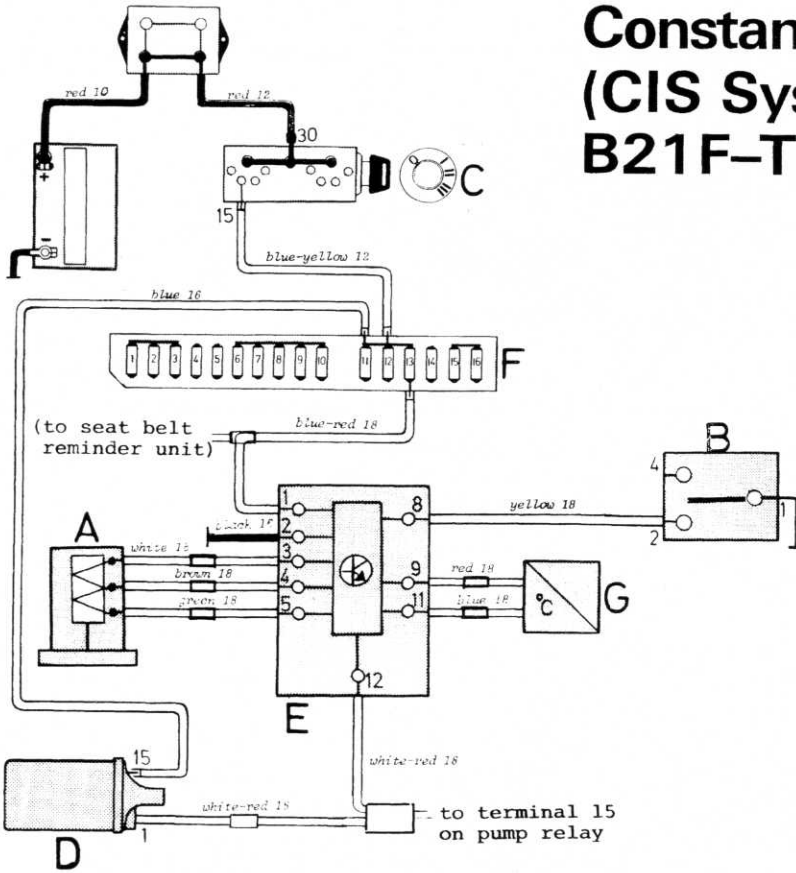
Ground circuit through throttle switch is interrupted. Electronic Control unit controls Air Control Valve to set correct idle speed.

Above idle speed.

Ground circuit through throttle switch is closed. Electronic Control Unit controls Air Control Valve to set high air flow (and avoid engine stalls).



Constant Idle Speed System (CIS System) B21F-Turbo



Fuse No. 13:
Instruments
Turn signals
Seat belt warning
CIS System

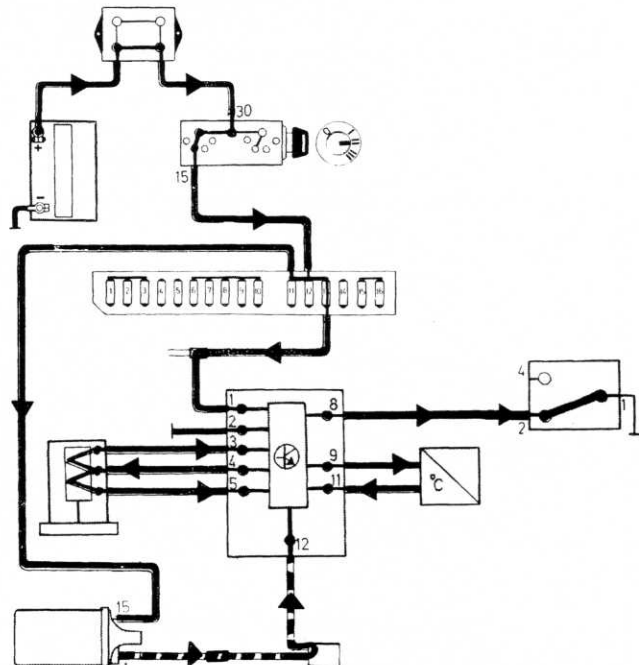
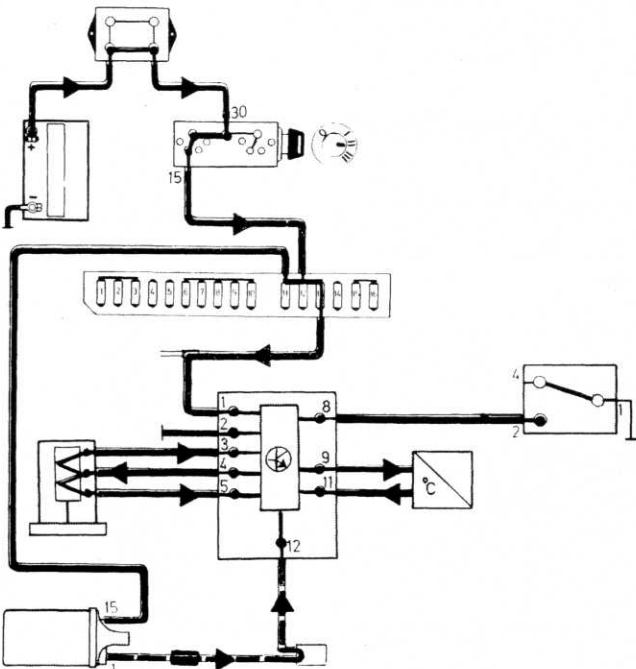
Legend:
A Air control valve
B Throttle switch
C Ignition switch
D Ignition coil
E Electronic control unit
F Fuse box
G Coolant temperature sensor

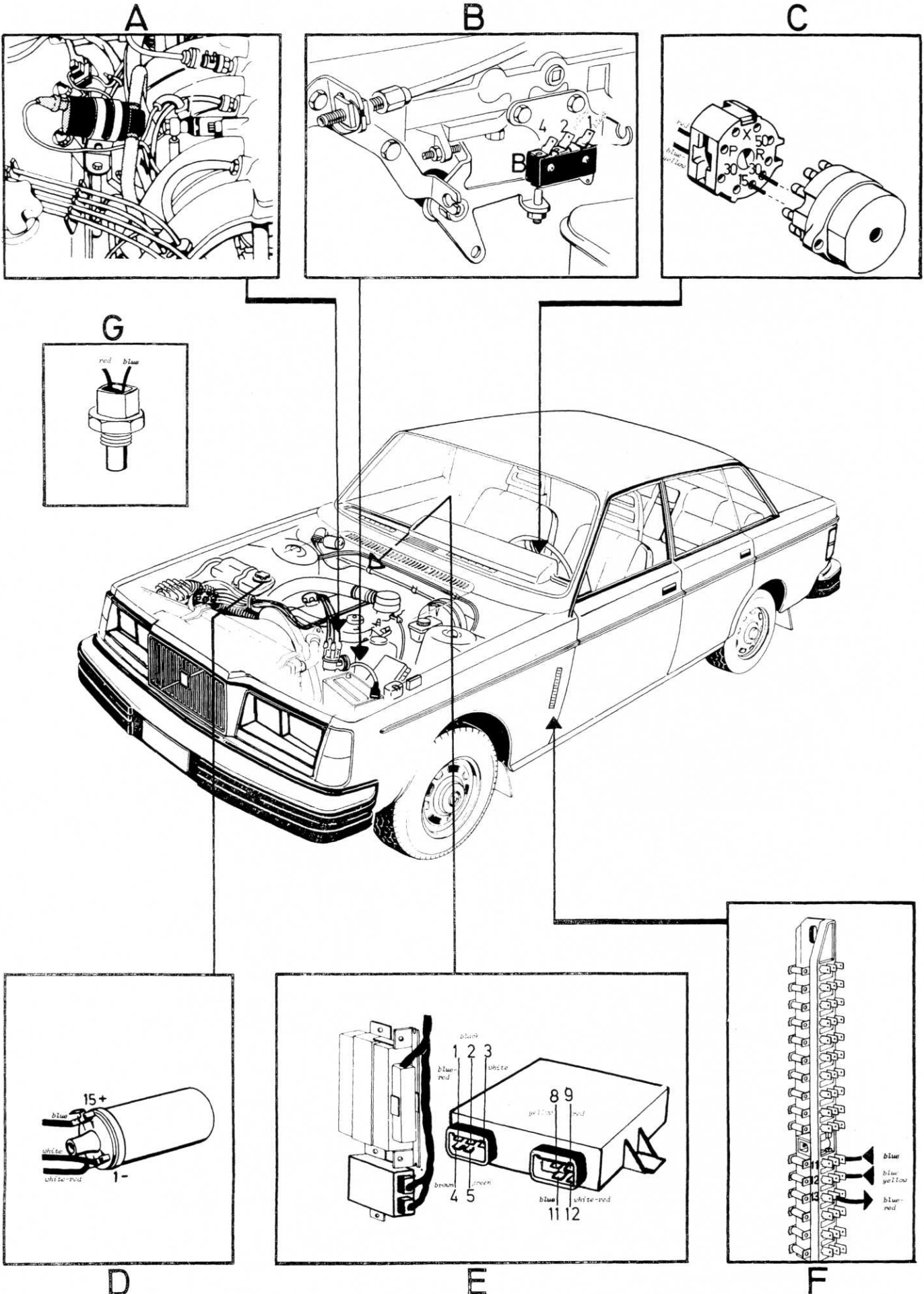
Idle speed.

Ground circuit through throttle switch is interrupted. Electronic Control unit controls Air Control Valve to set correct idle speed.

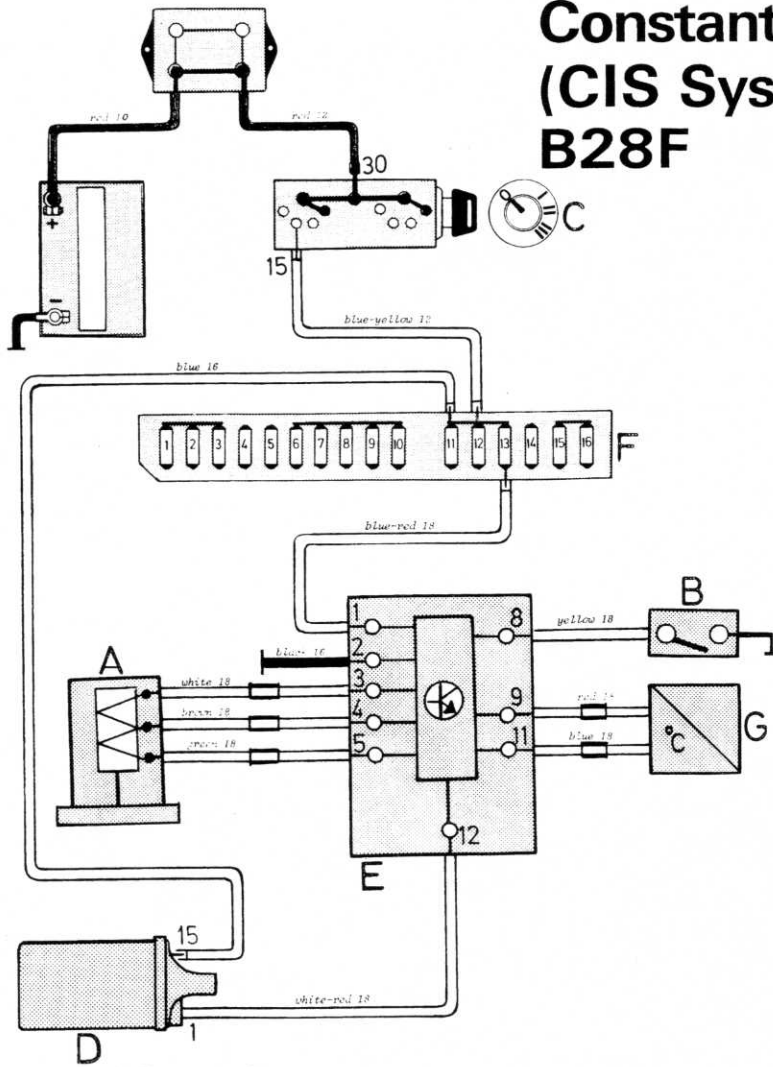
Above idle speed.

Ground circuit through throttle switch is closed. Electronic Control Unit controls Air Control Valve to set high air flow (and avoid engine stalls).





Constant Idle Speed System (CIS System) B28F



Fuse No. 13:

- Instruments
- Turn signals
- Seat belt warning
- CIS System

Legend:

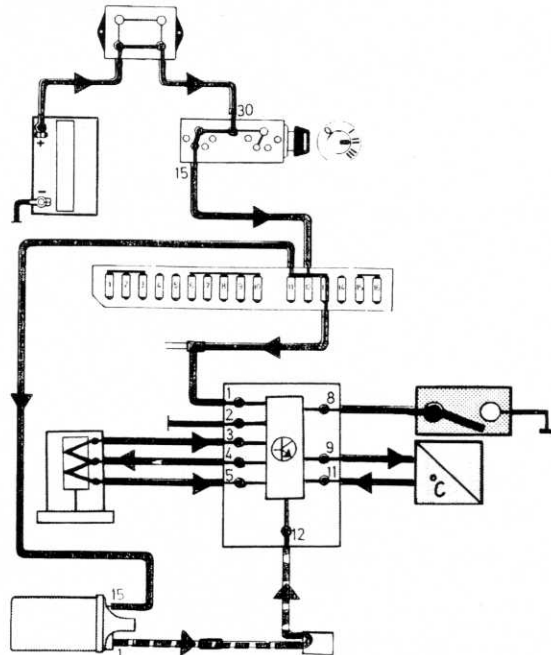
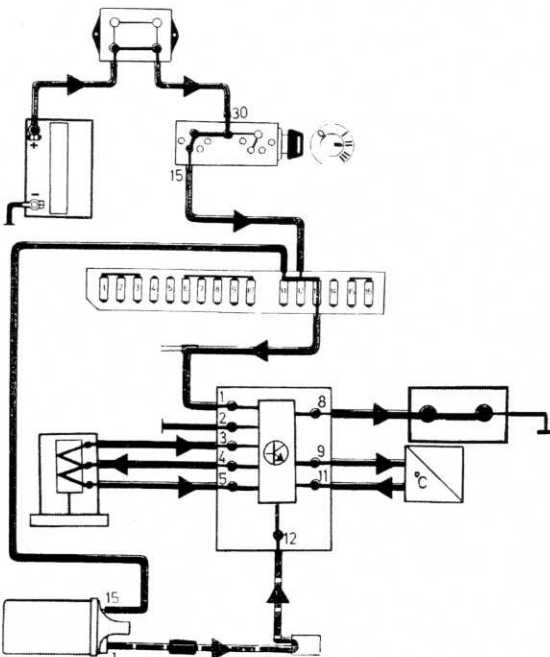
- A Air control valve
- B Throttle switch
- C Ignition switch
- D Ignition coil
- E Electronic control unit
- F Fuse box
- G Coolant temperature sensor

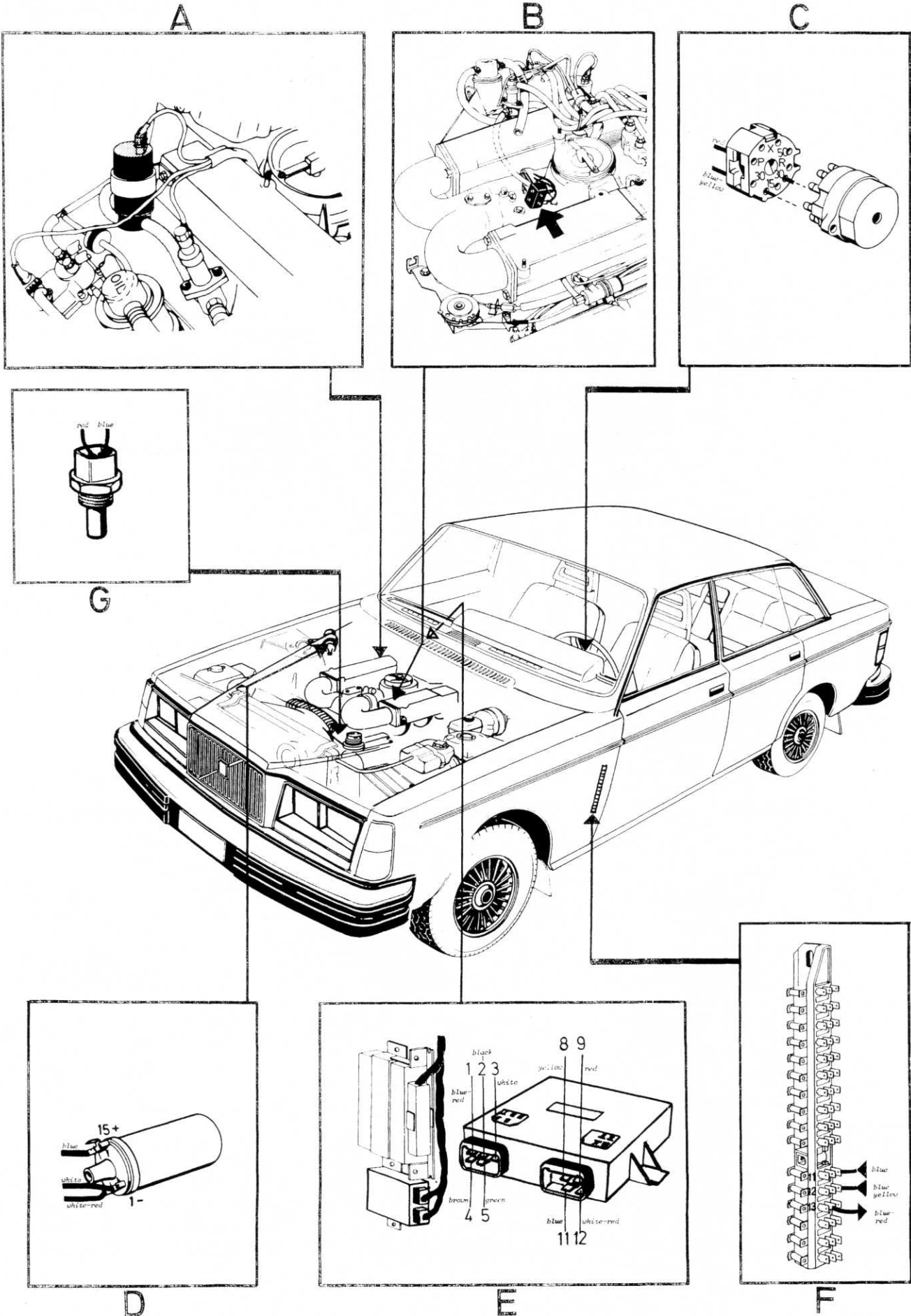
Idle speed.

Ground circuit through throttle switch is closed. Electronic Control unit controls Air Control Valve to set correct idle speed.

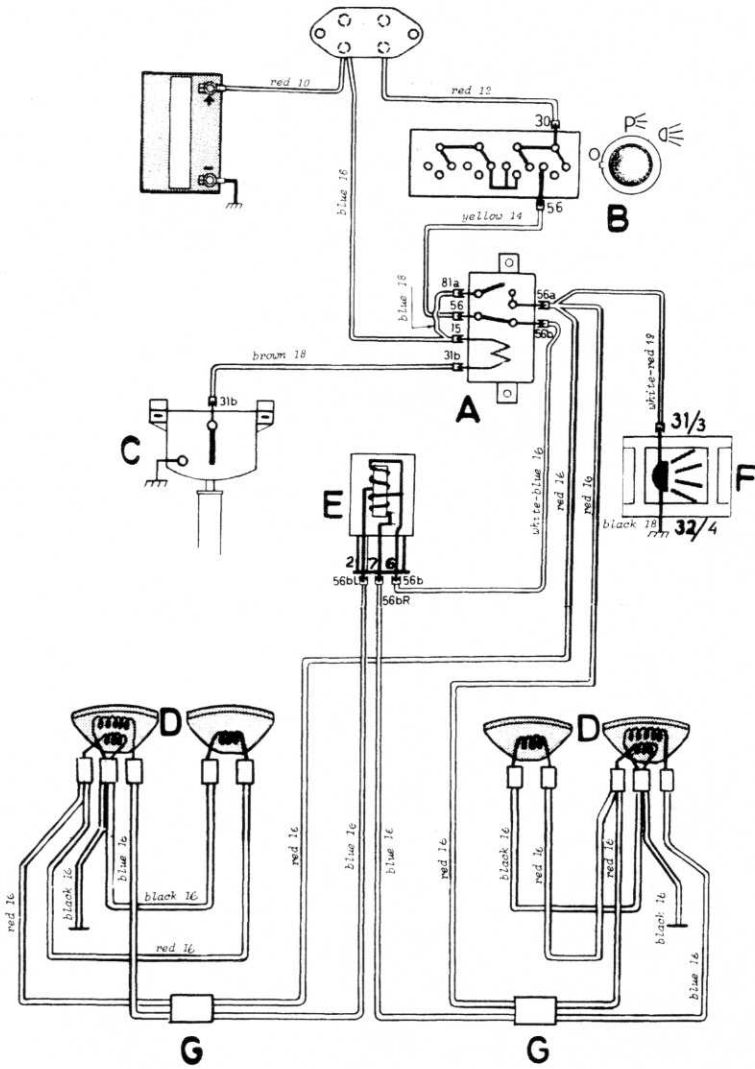
Above idle speed.

Ground circuit through throttle switch is interrupted. Electronic Control Unit controls Air Control Valve to set high air flow (and avoid engine stalls).





Headlights



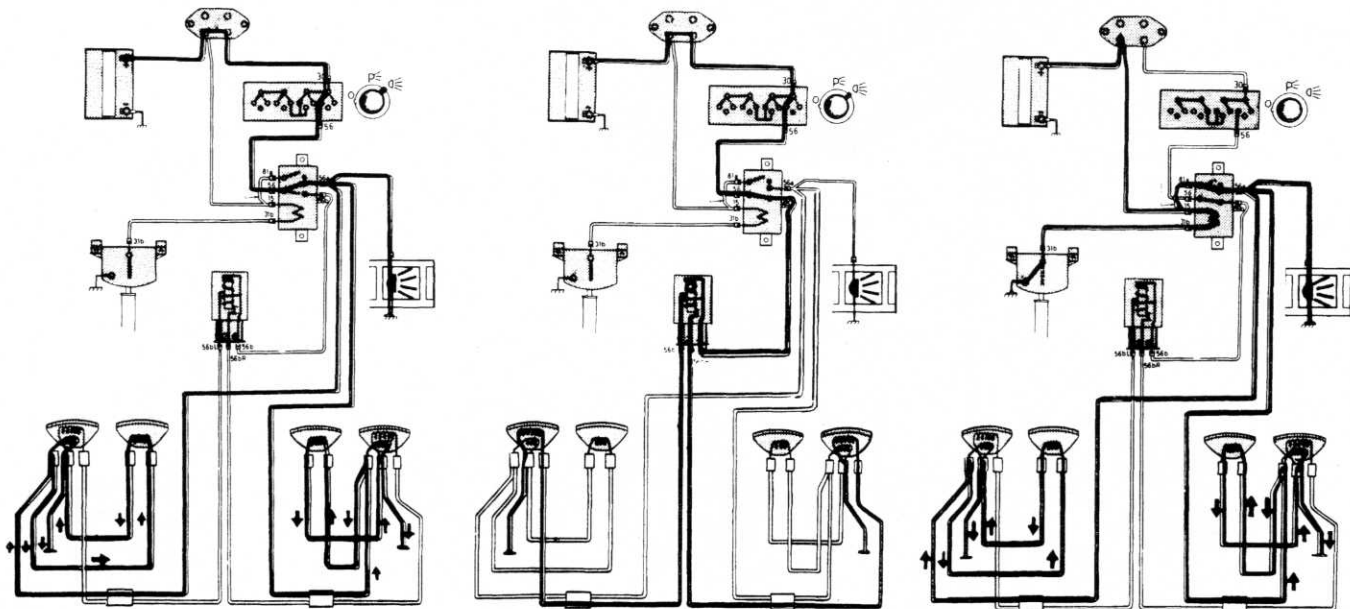
Legend:

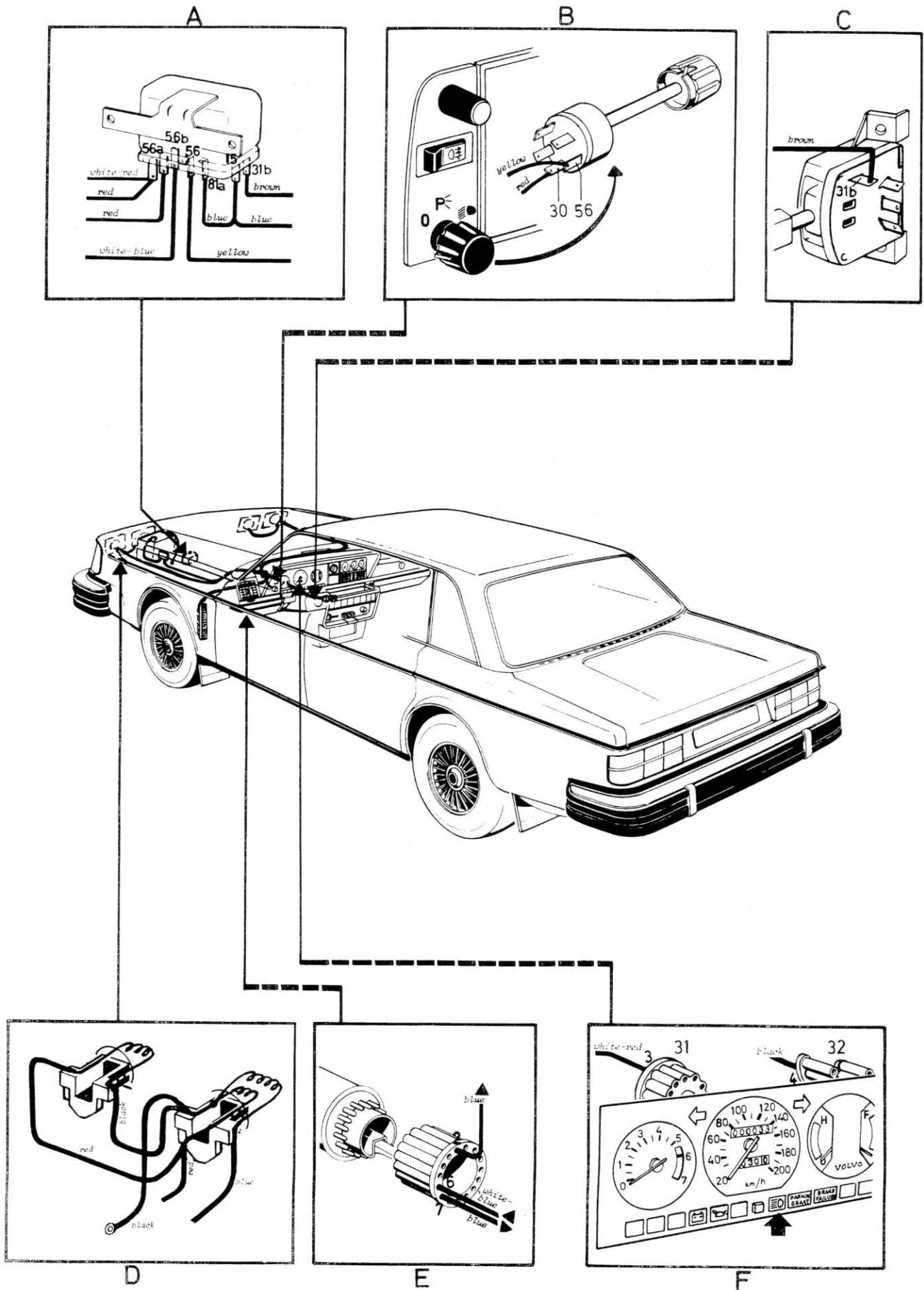
- A Upper/lower beam switch relay
- B Light switch
- C Turn signal switch / headlight flasher
- D Headlamps
- F Upper beam indicator light
- G Connectors

Upper beam

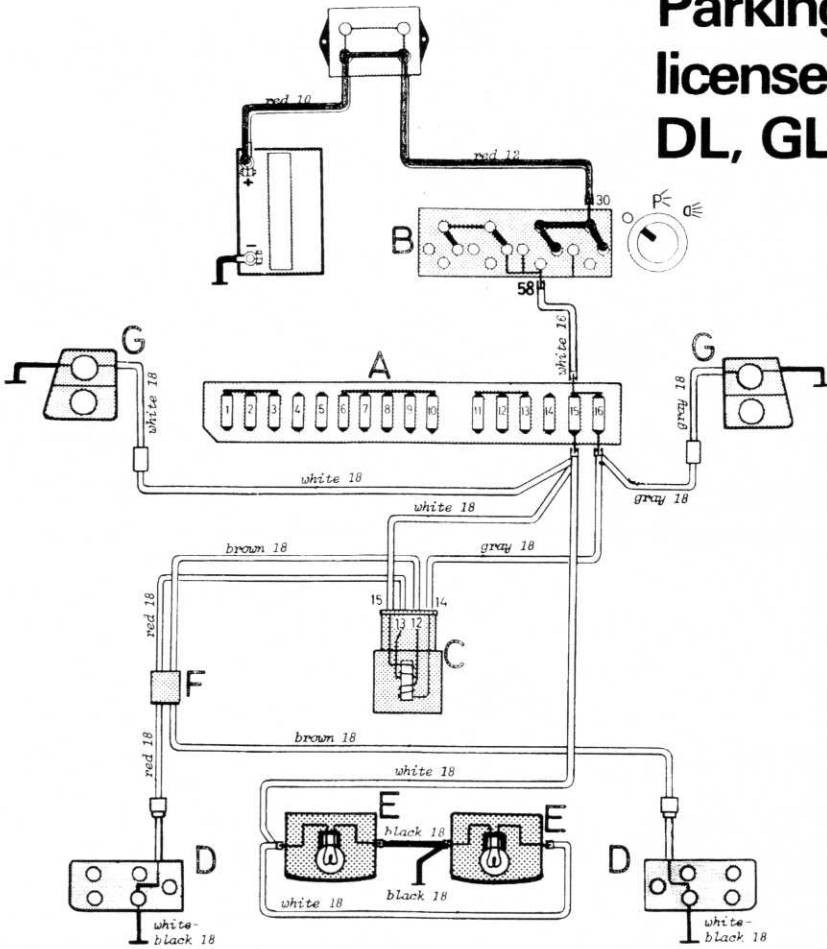
Lower beam

Headlight flasher





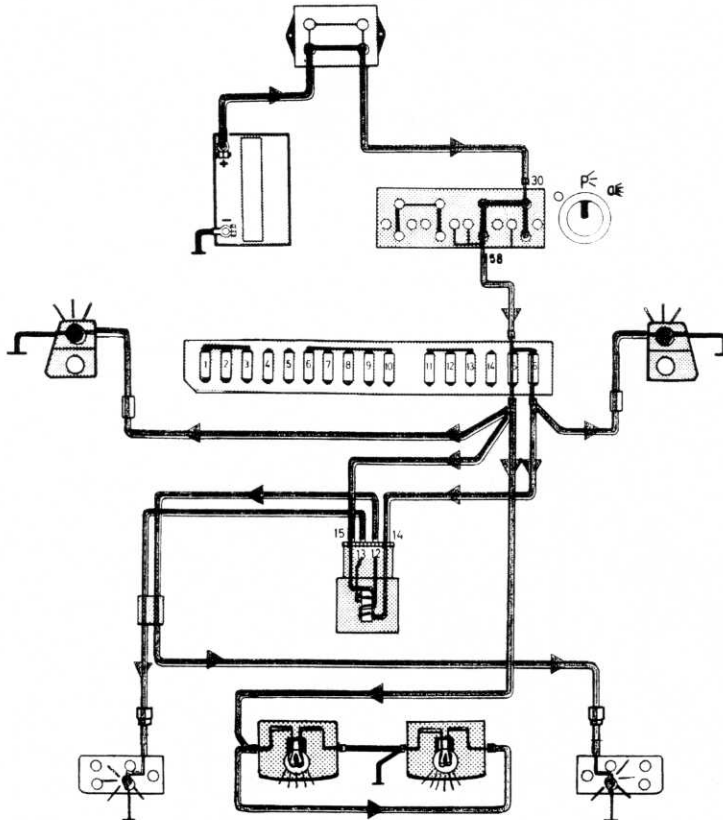
Parking lights, tail lights, license plate lights DL, GL,

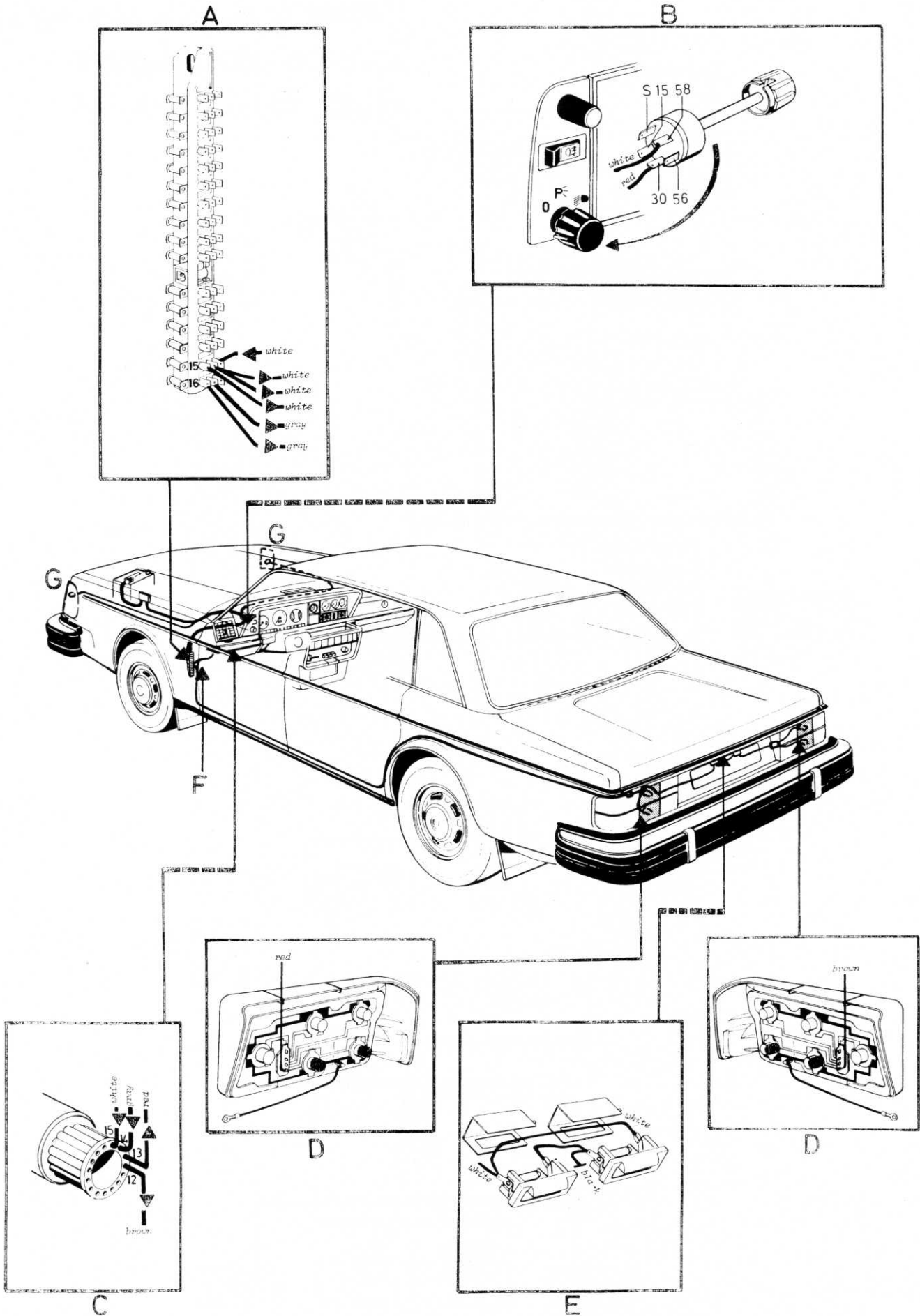


Fuse No. 15:
Parking light, left side
License plate light

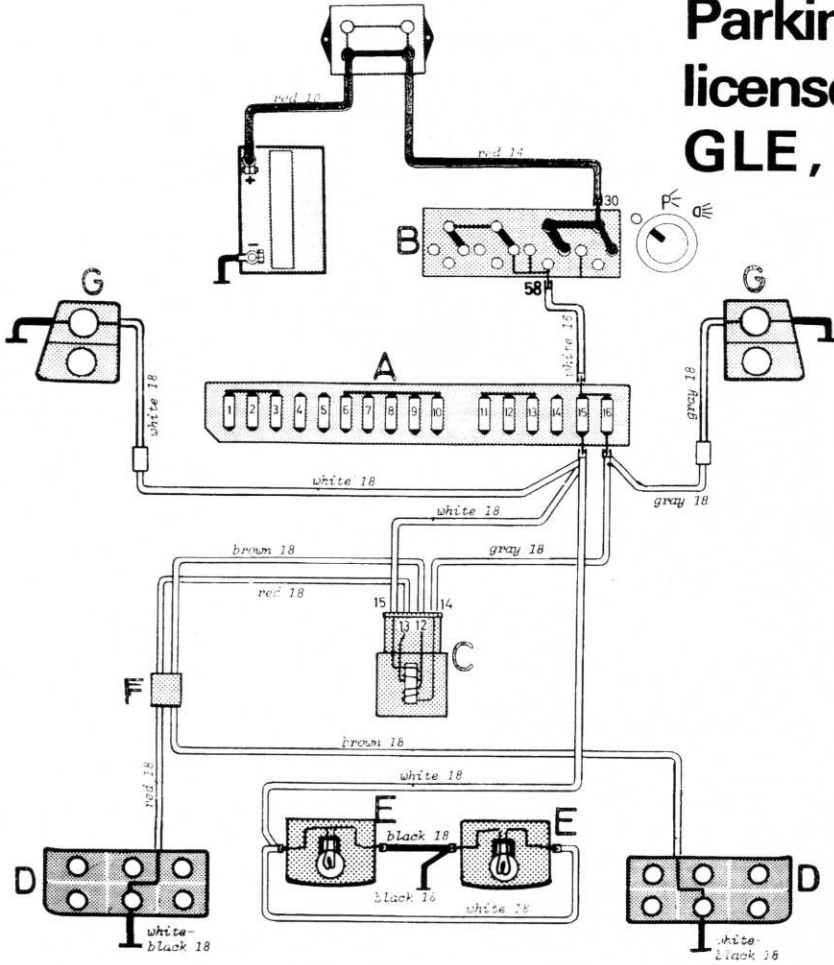
Fuse No. 16:
Parking light, right side
Instrument lights
Lights on controls
Buzzer, headlight

Legend:
A Fuse box
B Light switch
C Bulb failure sensor
D Tail lamp
E License plate lamps
F Connector
G Parking lamps





Parking lights, tail lights, license plate lights GLE, GLT, Coupe

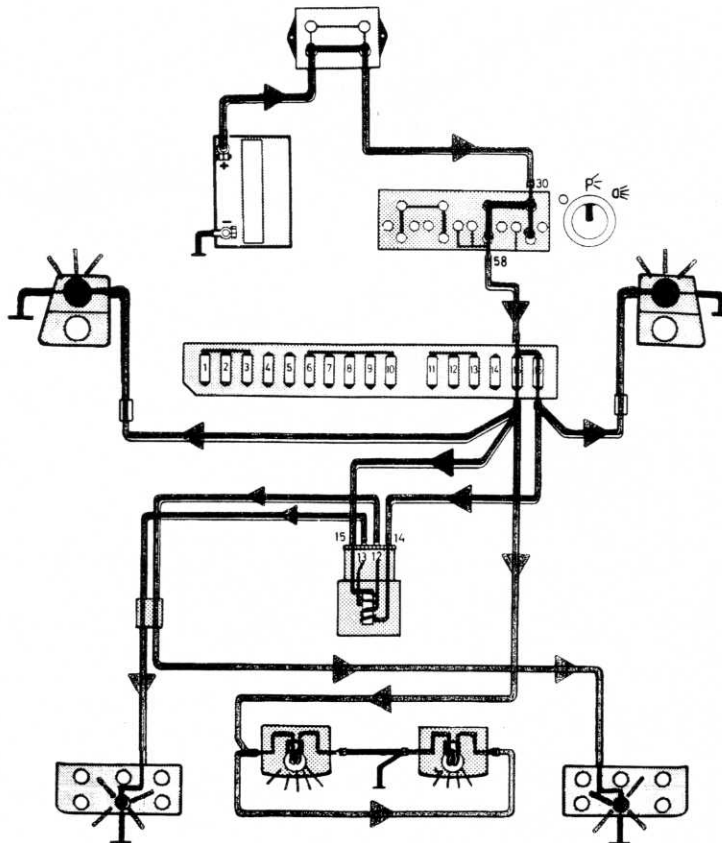


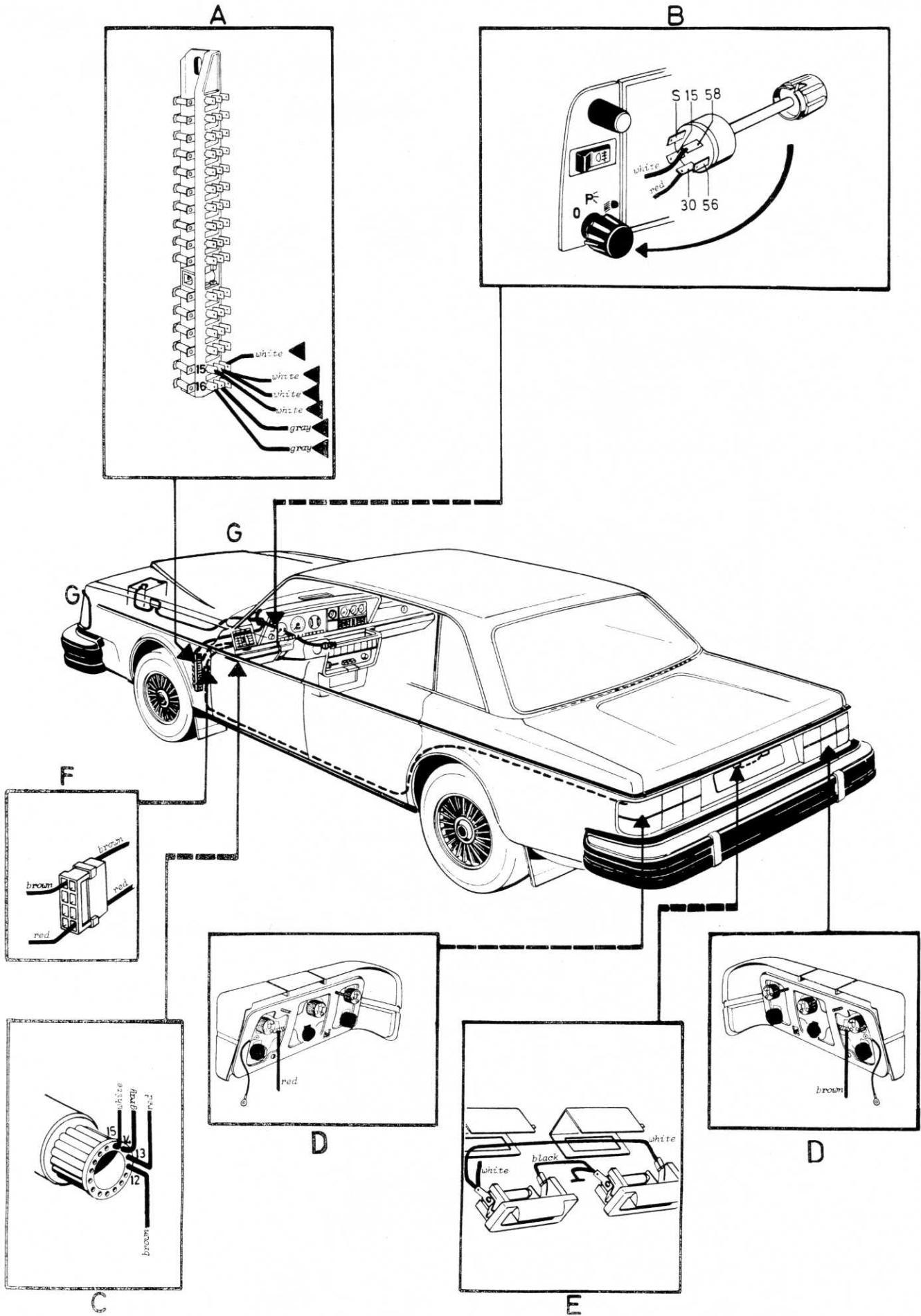
Fuse No. 15:
Parking light, left side
License plate light

Fuse No. 16:
Parking light, right side
Instrument lights
Lights on controls
Buzzer, headlight

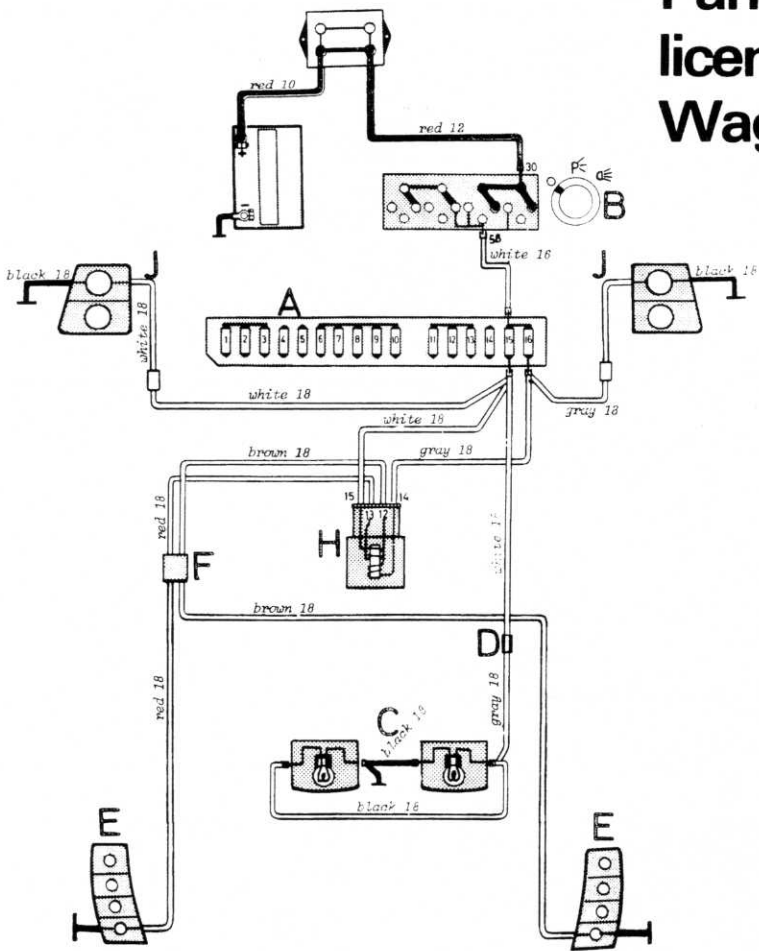
Legend:

- A Fuse box
- B Light switch
- C Bulb failure sensor
- D Tail lamp
- E License plate lamp
- F Connector
- G Parking lamp





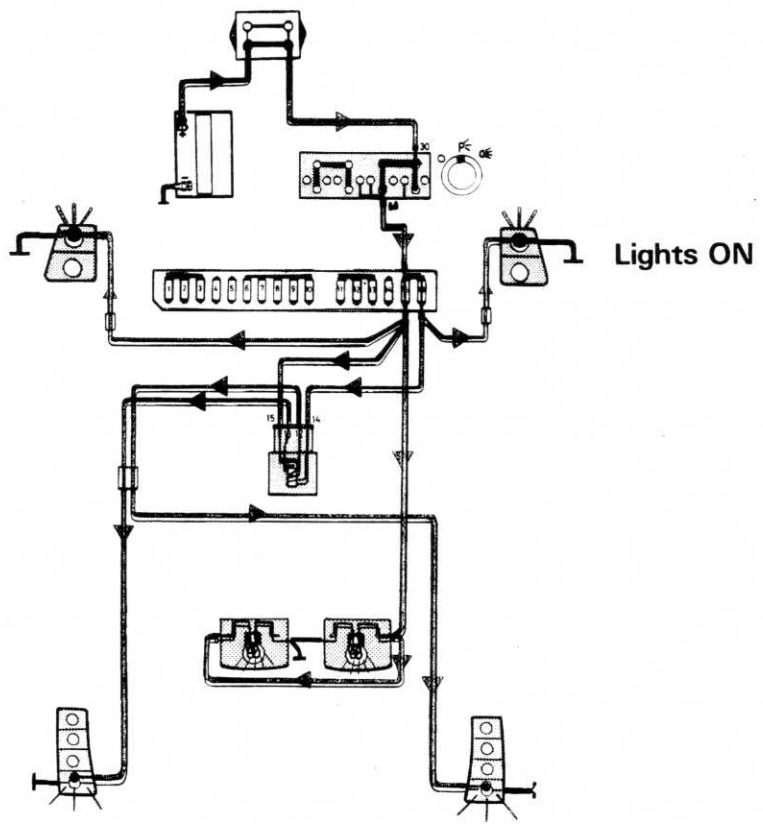
Parking lights, tail lights license plate lights, Wagon

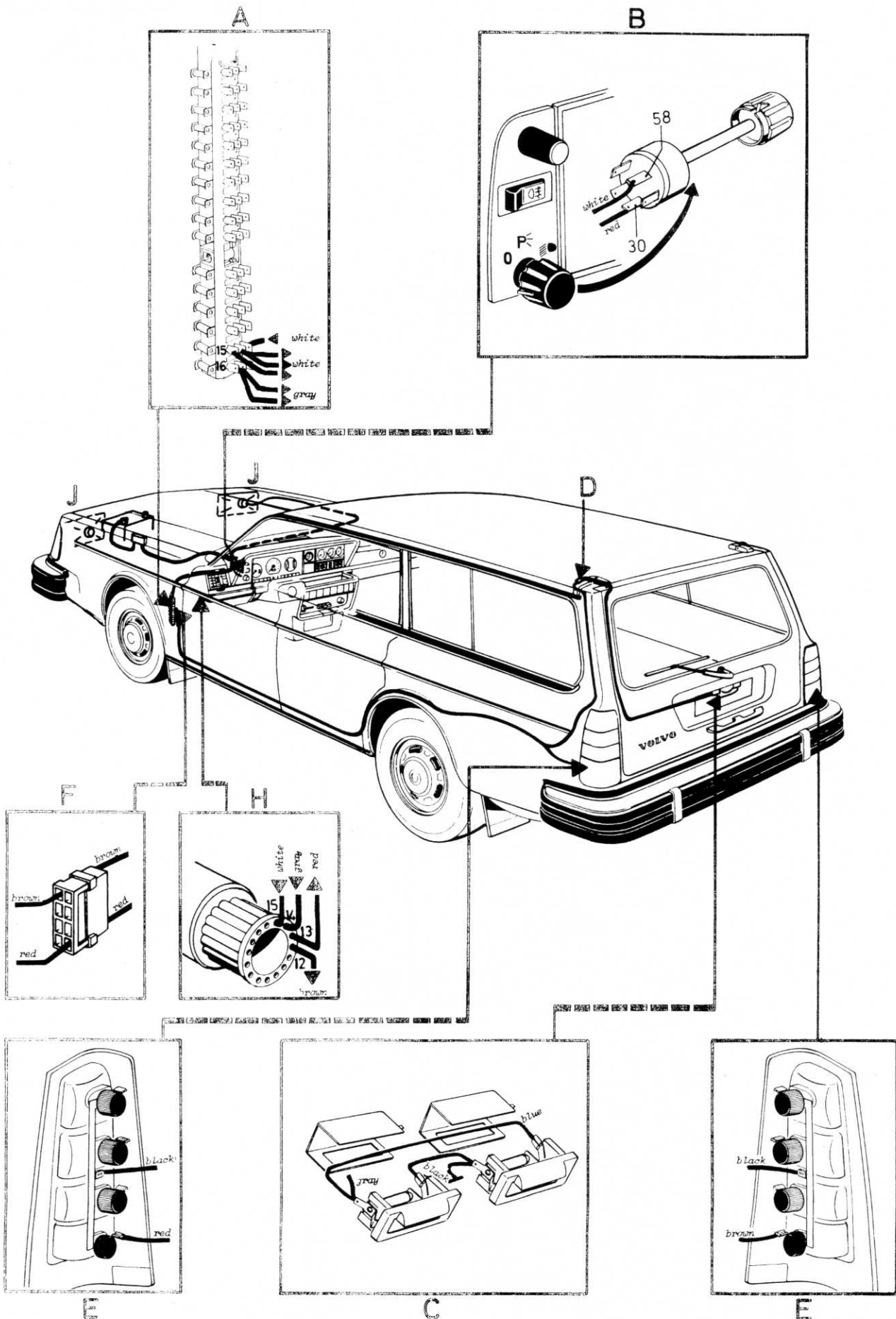


Fuse No. 15:
 Parking light, left side
 License plate light
 Side marker light (wagon)

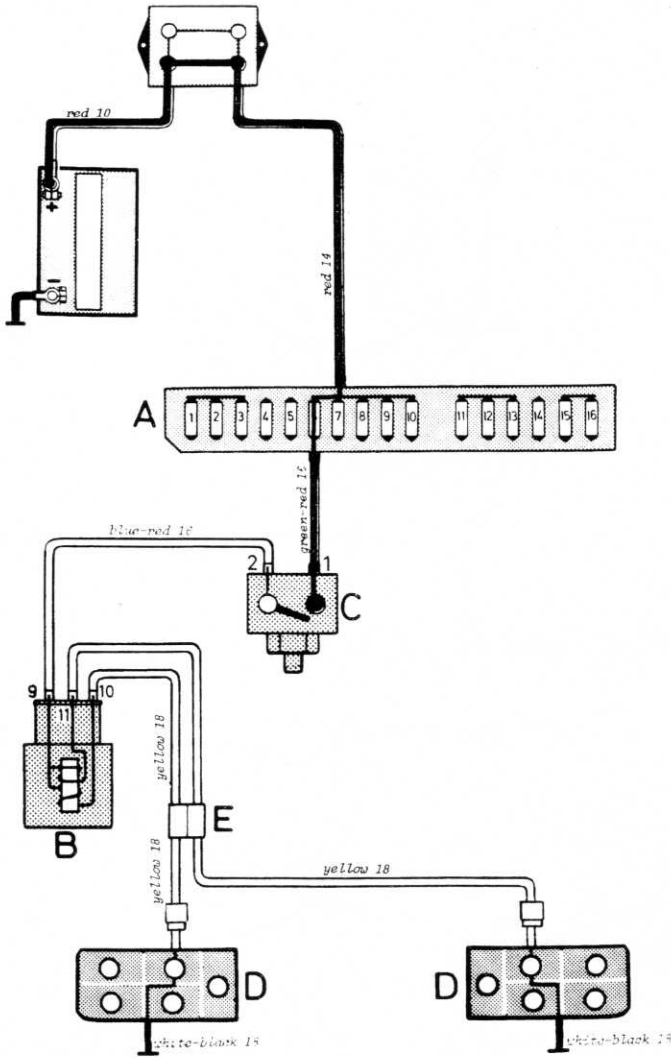
Fuse No. 16:
 Parking light, right side
 Instrument lights
 Lights on controls
 Buzzer, headlight

- Legend:**
- A Fuse box
 - B Light switch
 - C License plate lamps
 - D Connector
 - E Tail lamps
 - F Connector
 - H Bulb failure sensor
 - J Parking lamps





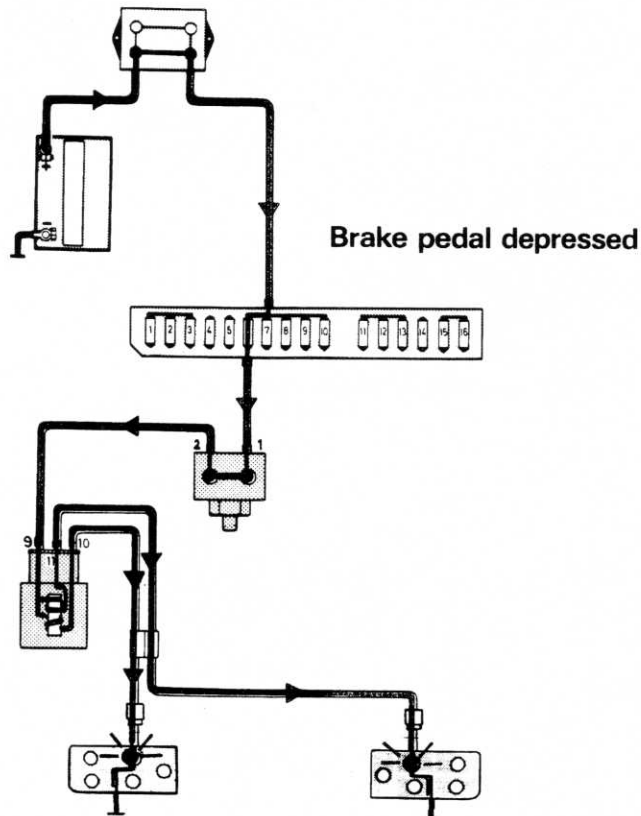
Brake lights DL, GL

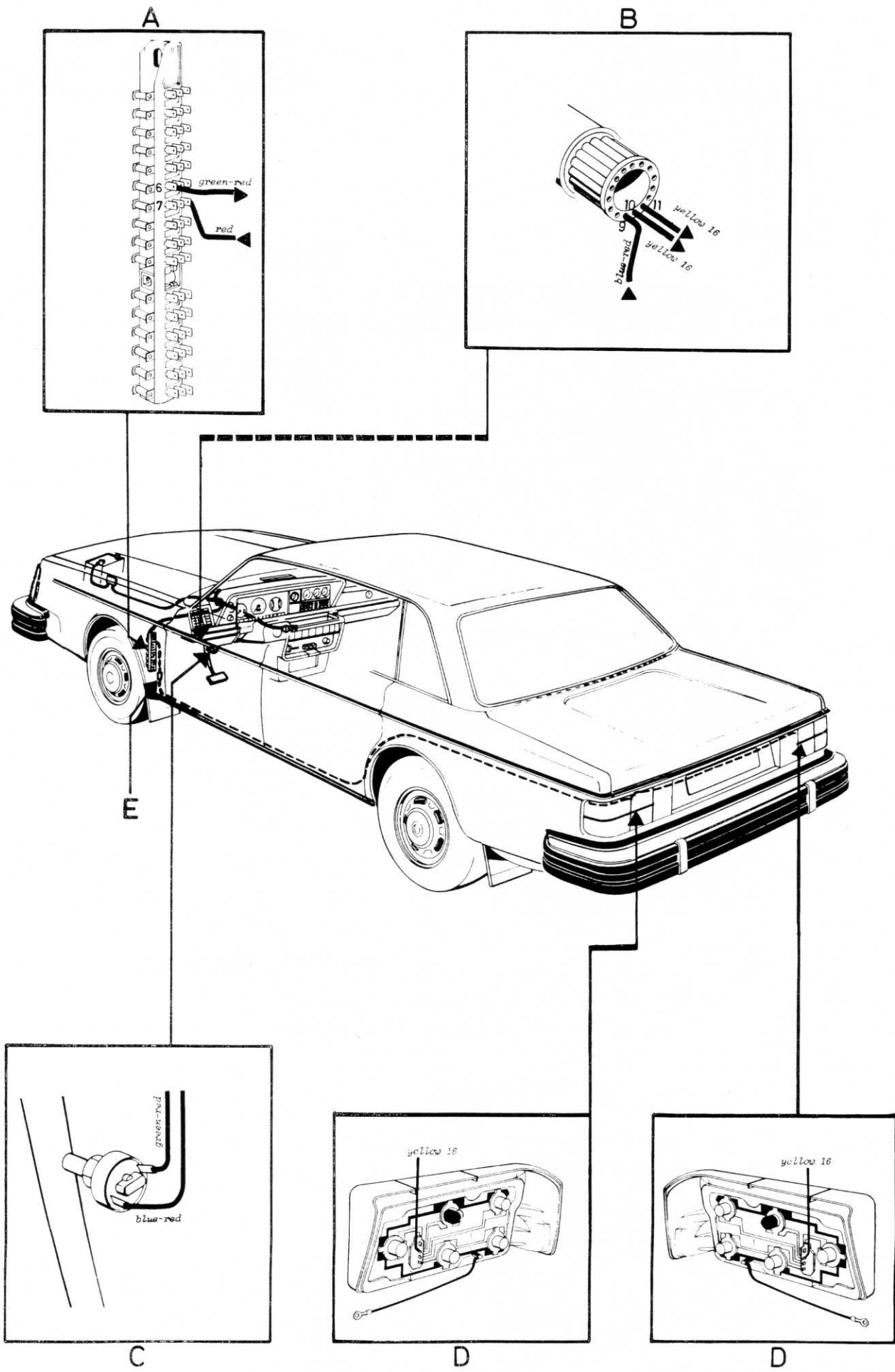


Fuse No. 6:
Brake light

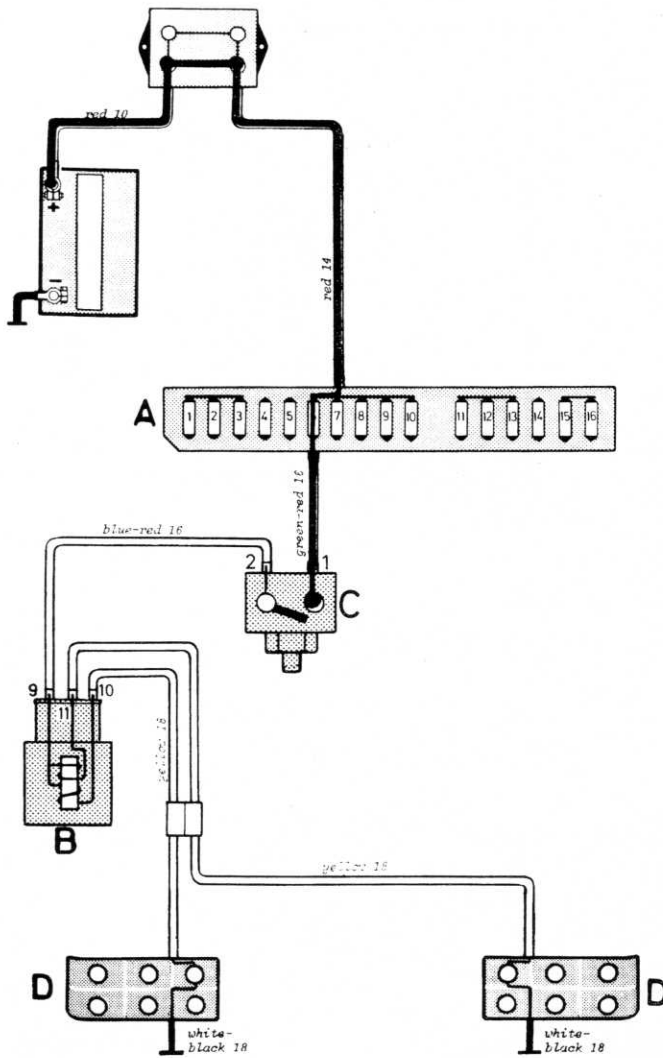
Legend:

- A Fuse box
- B Bulb failure sensor
- C Brake light switch
- D Brake lights
- E Connector



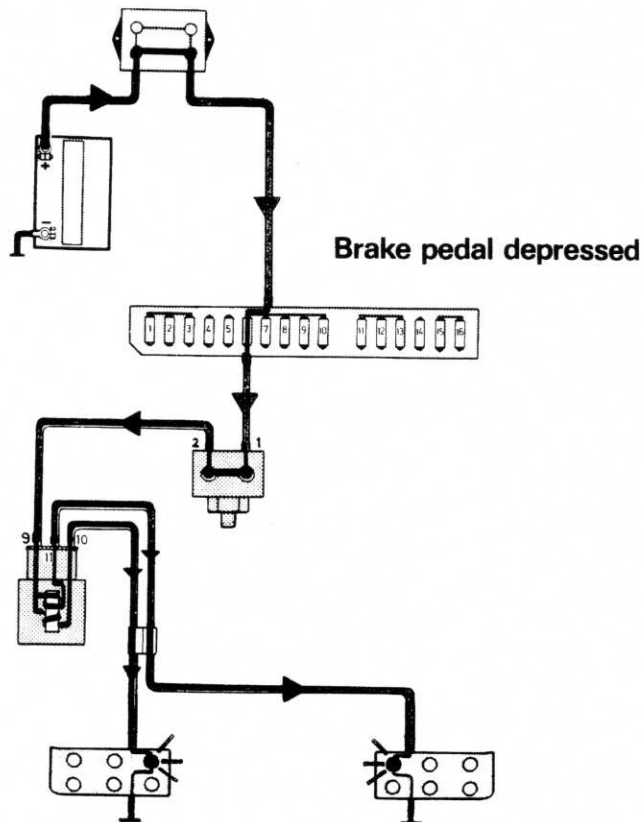


Brake lights GLE, GLT, Coupe

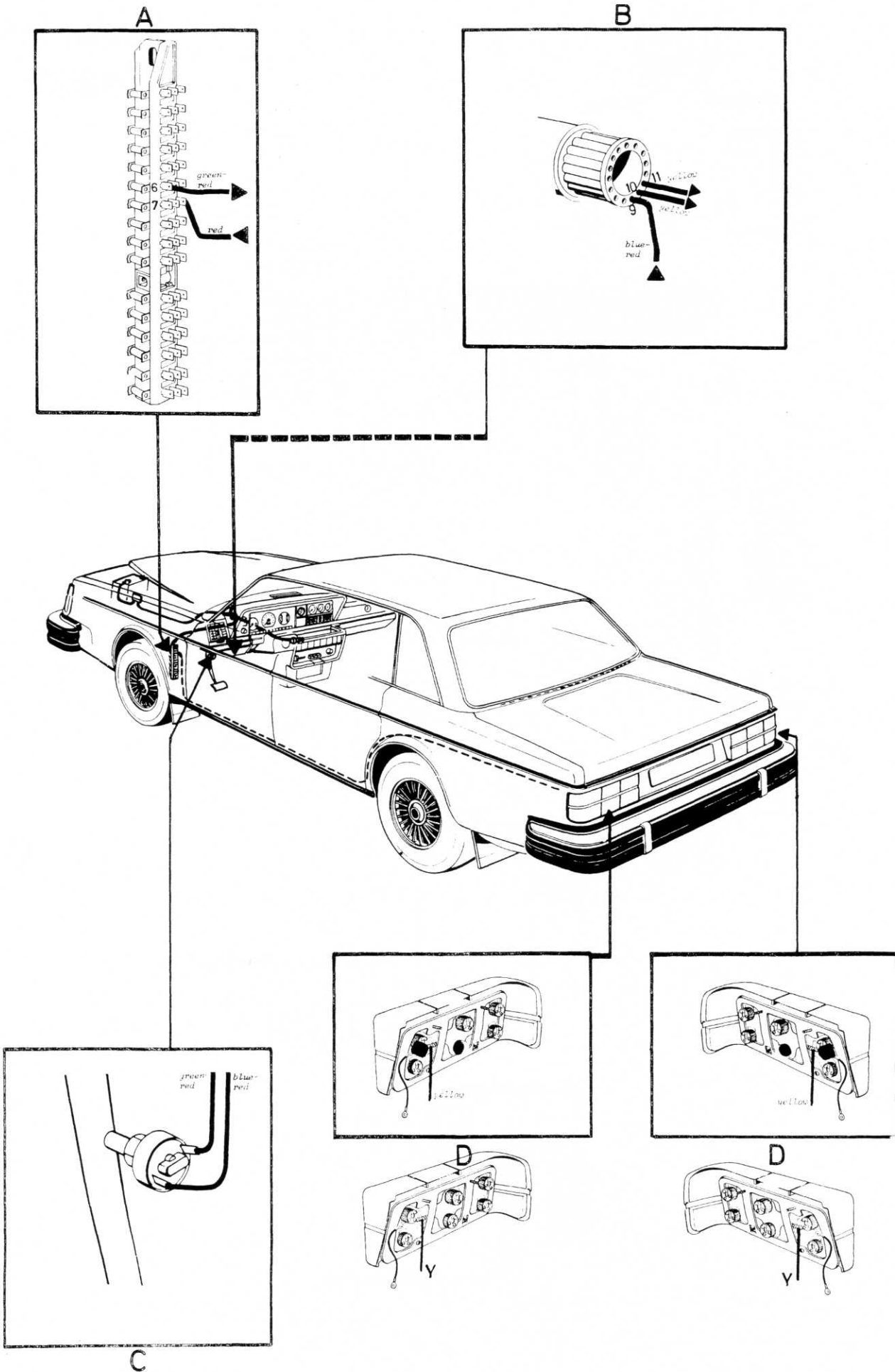


Fuse No. 6:
Brake light

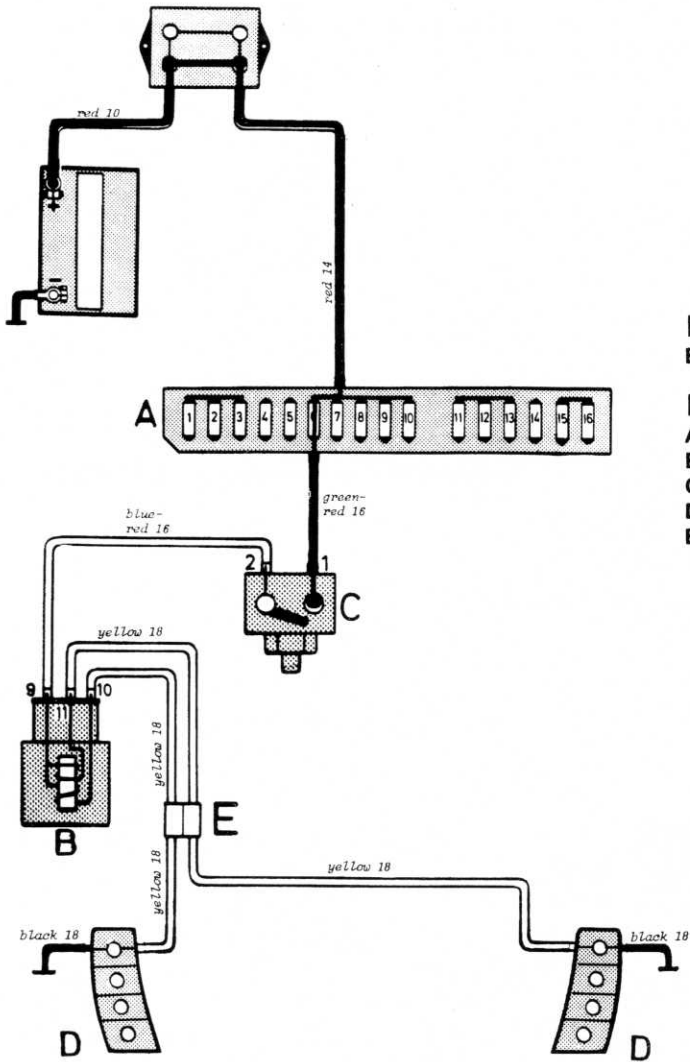
Legend:
A Fuse box
B Bulb failure sensor
C Brake light switch
D Brake lights



Brake pedal depressed

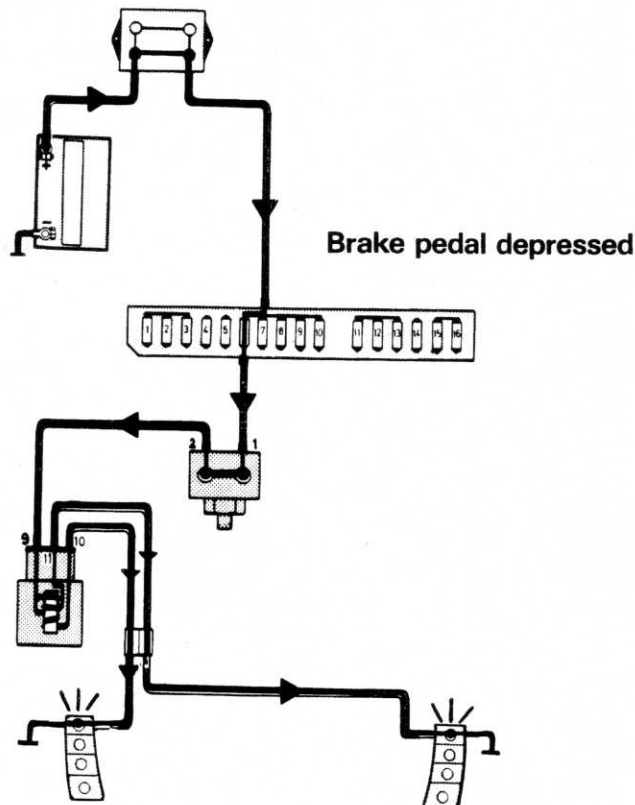


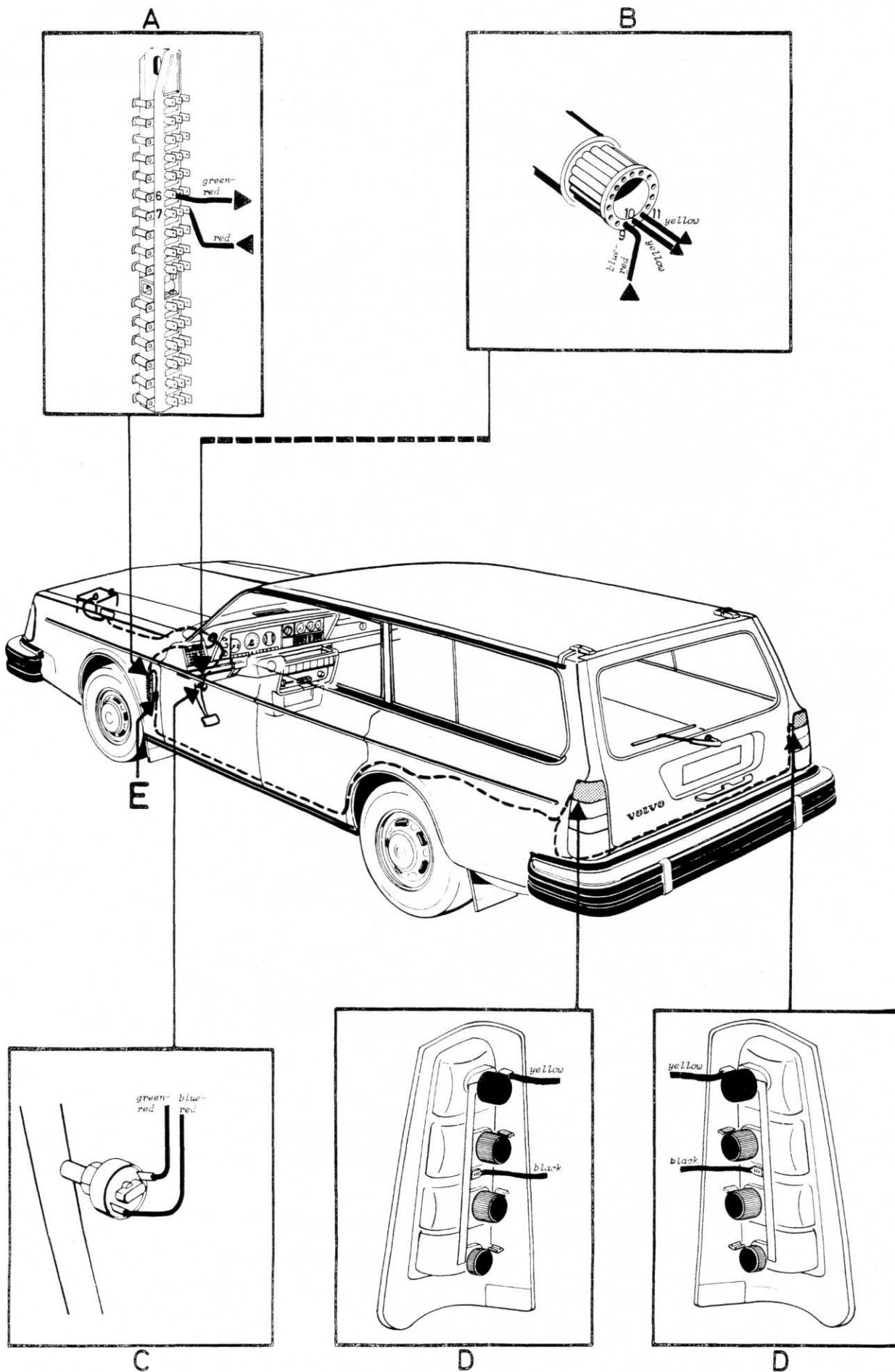
Brake lights Wagon



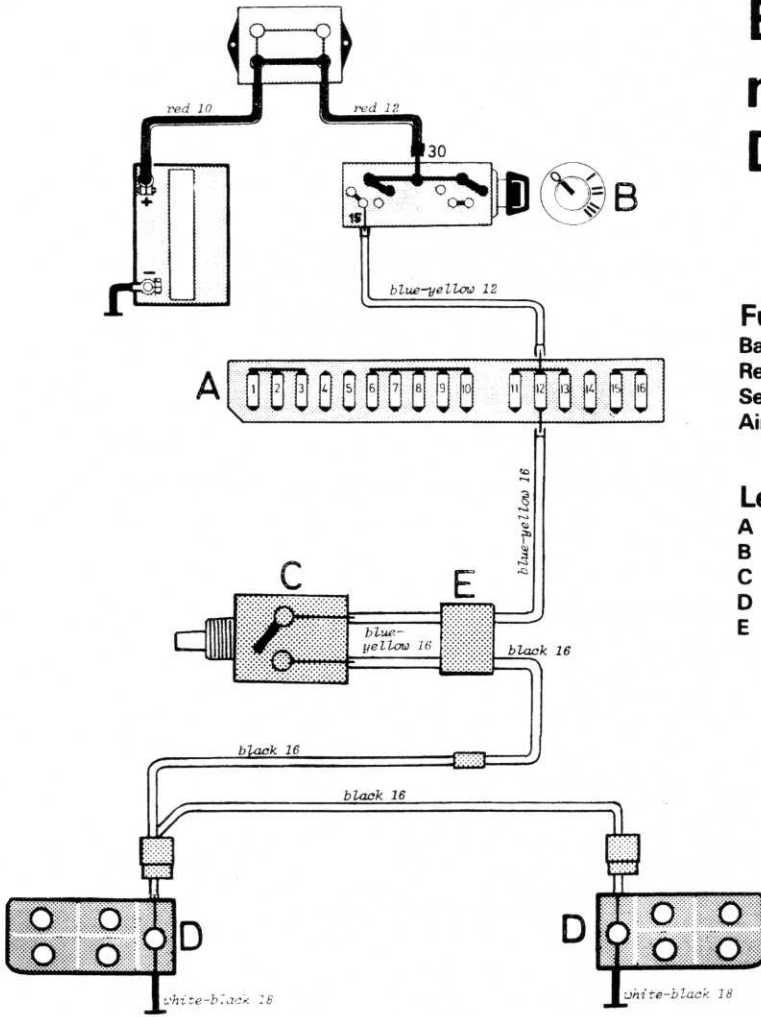
Fuse No. 6:
Brake light

Legend:
A Fuse box
B Bulb failure sensor
C Brake light switch
D Brake lights
E Connector



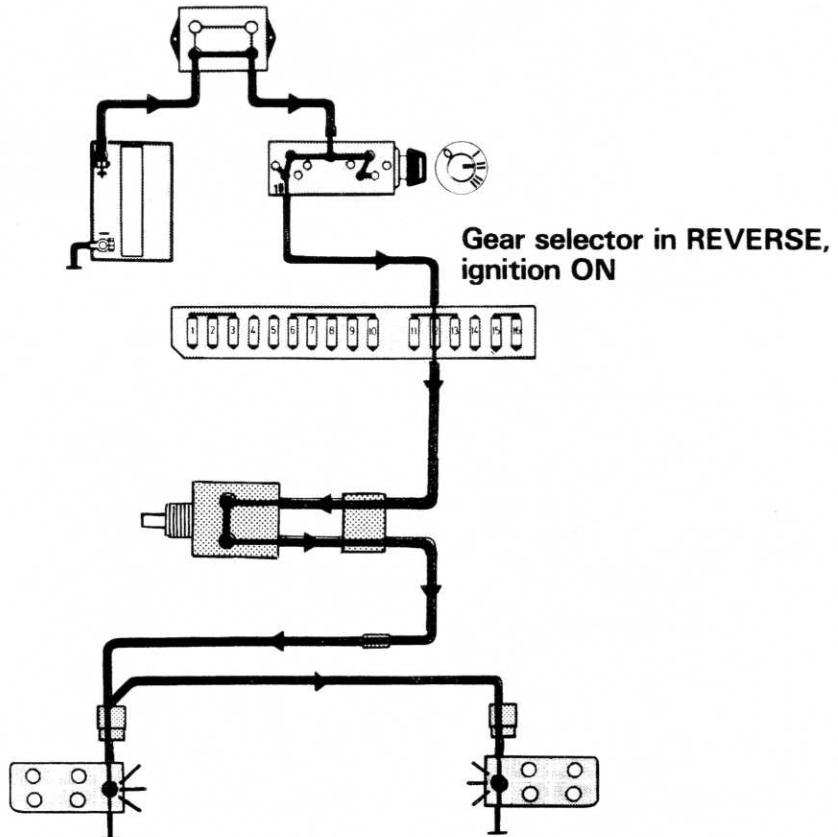


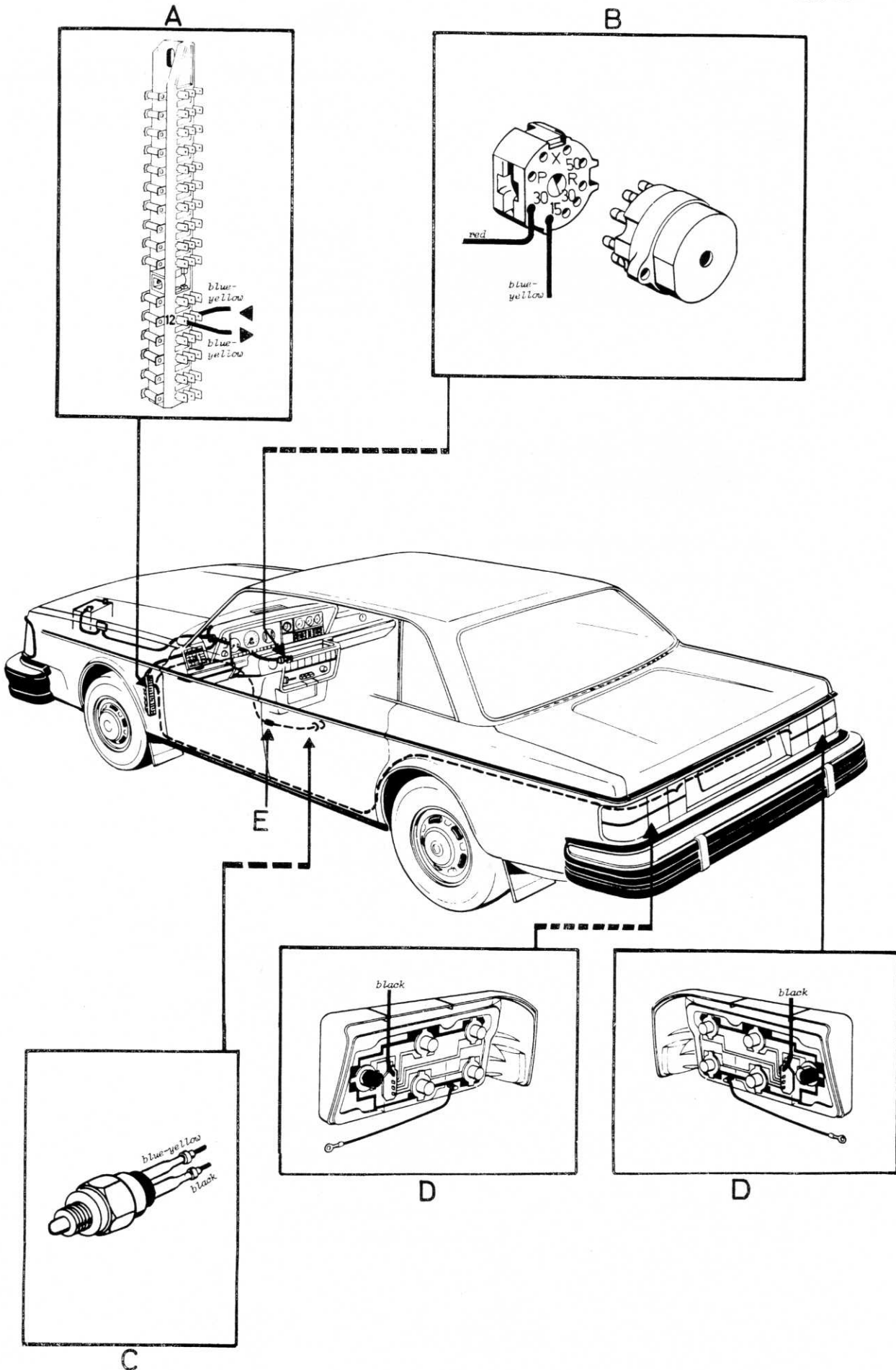
Back-up lights, manual transmission DL, GL



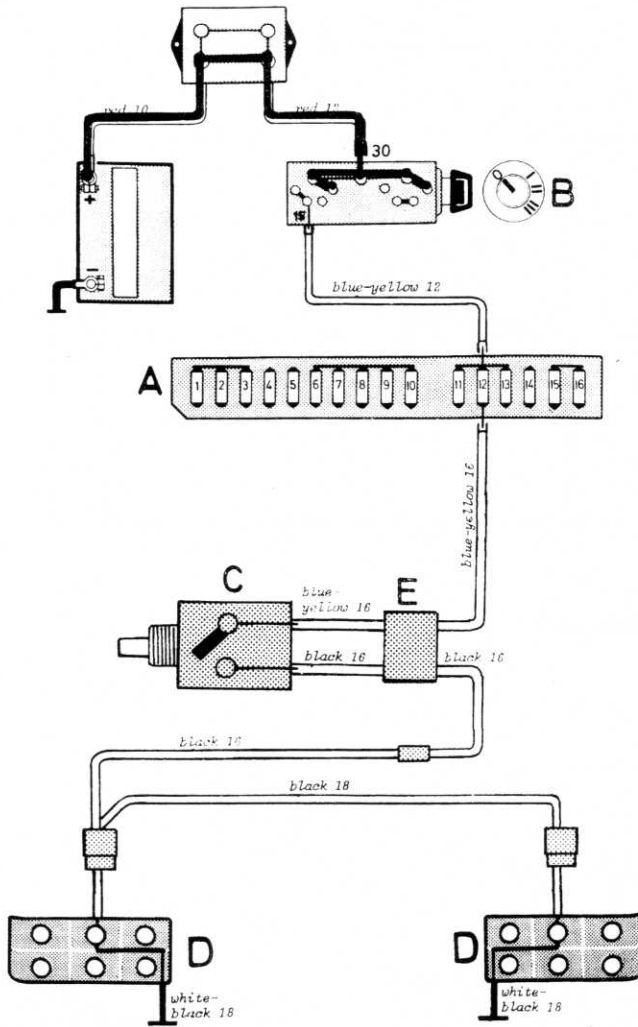
Fuse No. 12:
Back-up lights
Relay, window lifts
Seat heater
Air conditioning

Legend:
A Fuse box
B Ignition switch
C Back-up light switch
D Back-up lights
E Connector



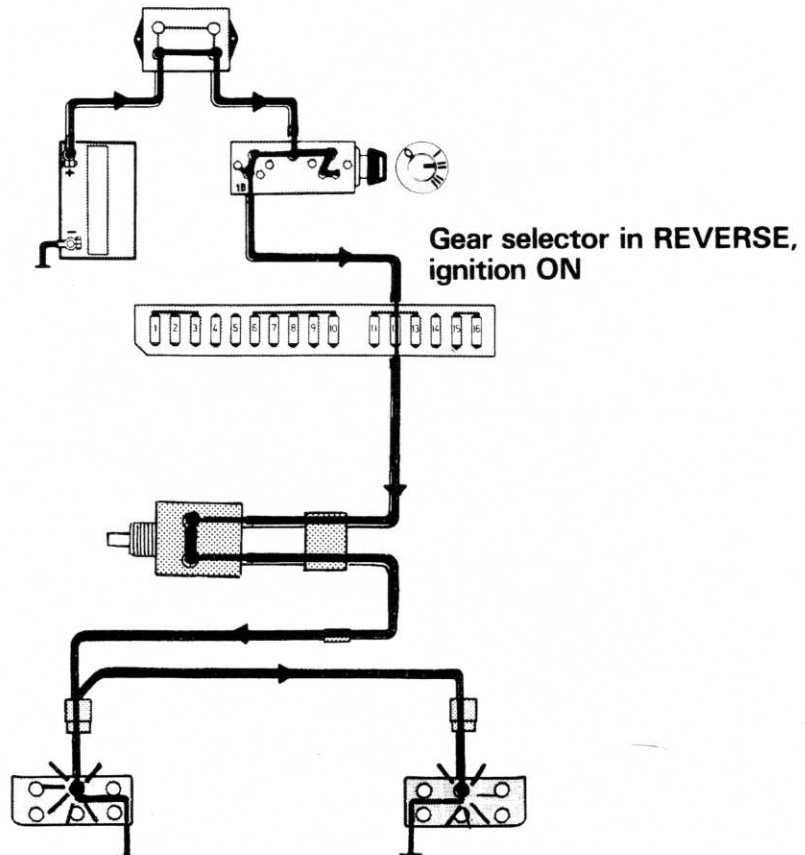


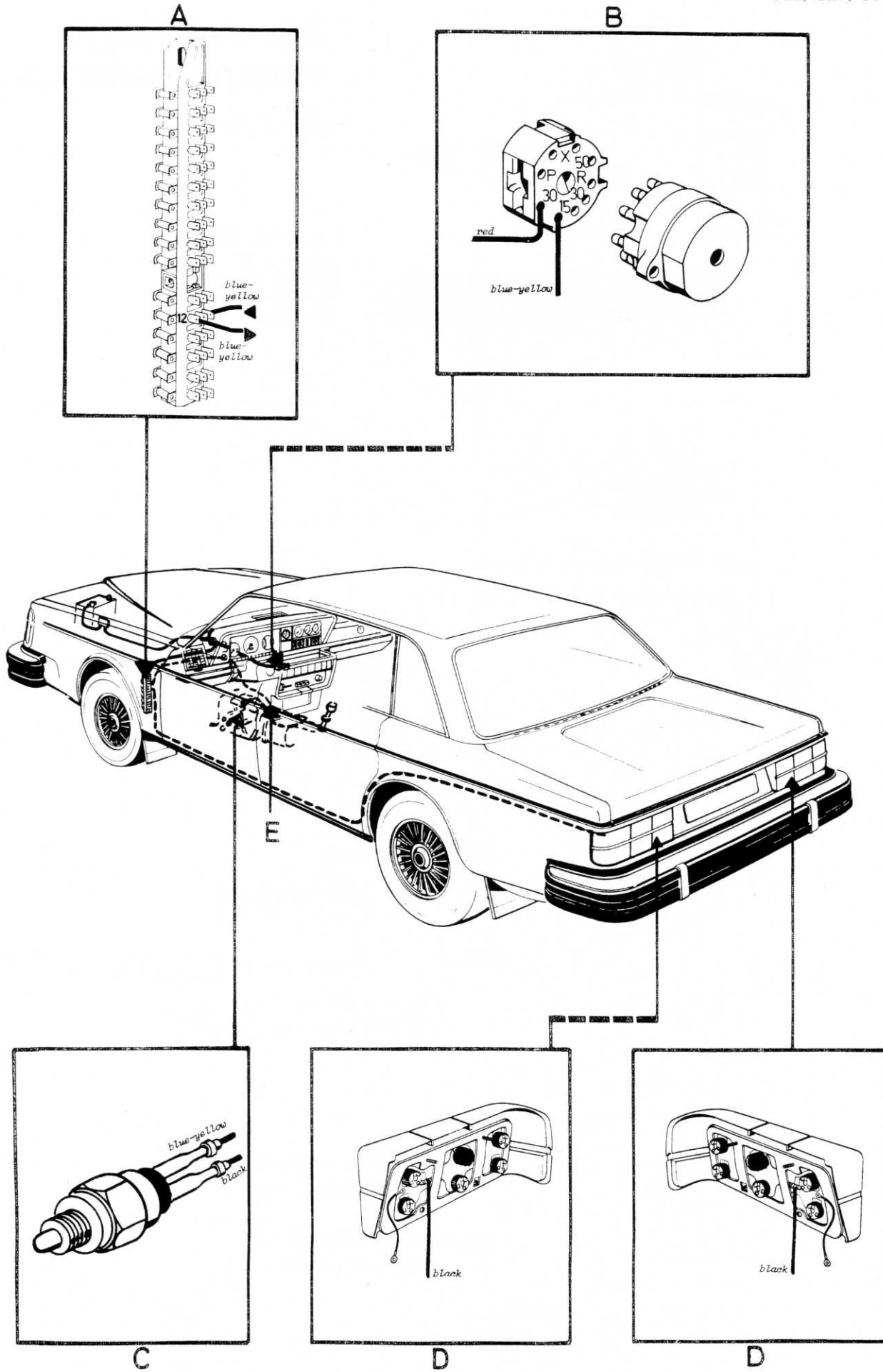
Back-up lights, manual transmission GLE, GLT, Coupe



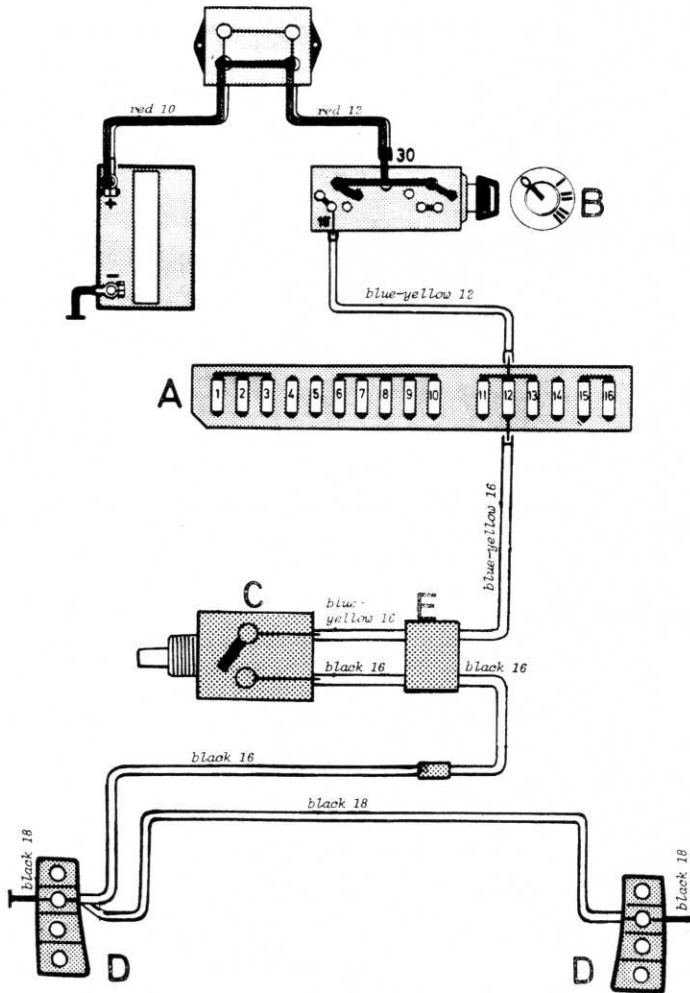
Fuse No. 12:
Back-up lights
Relay, window lifts
Seat heater
Air conditioning

Legend:
A Fuse box
B Ignition switch
C Back-up light switch
D Back-up light
E Connector



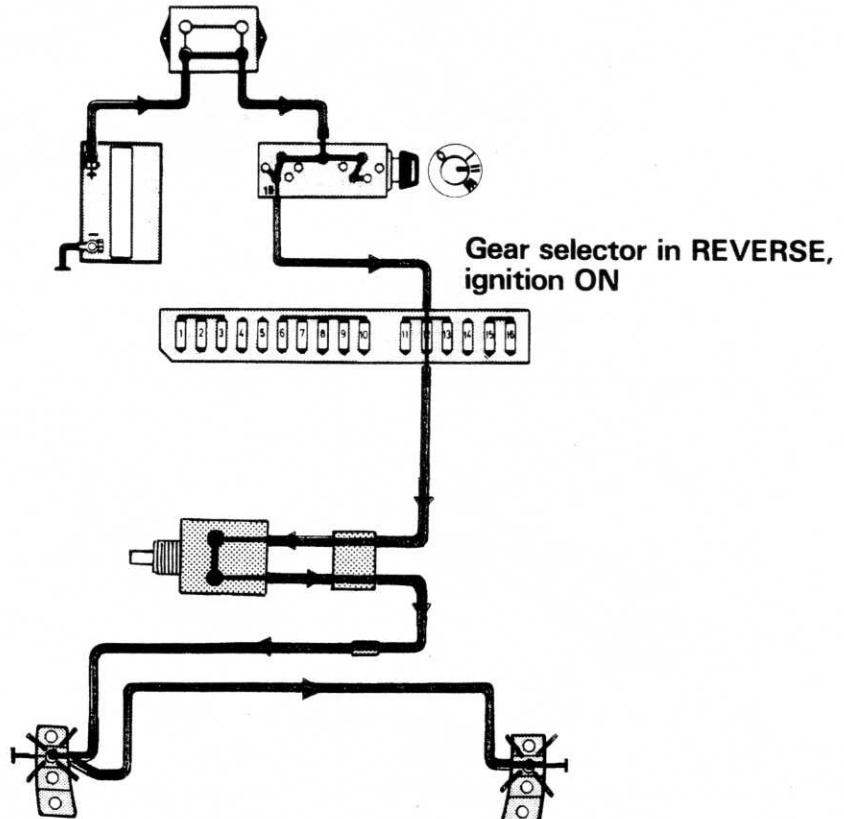


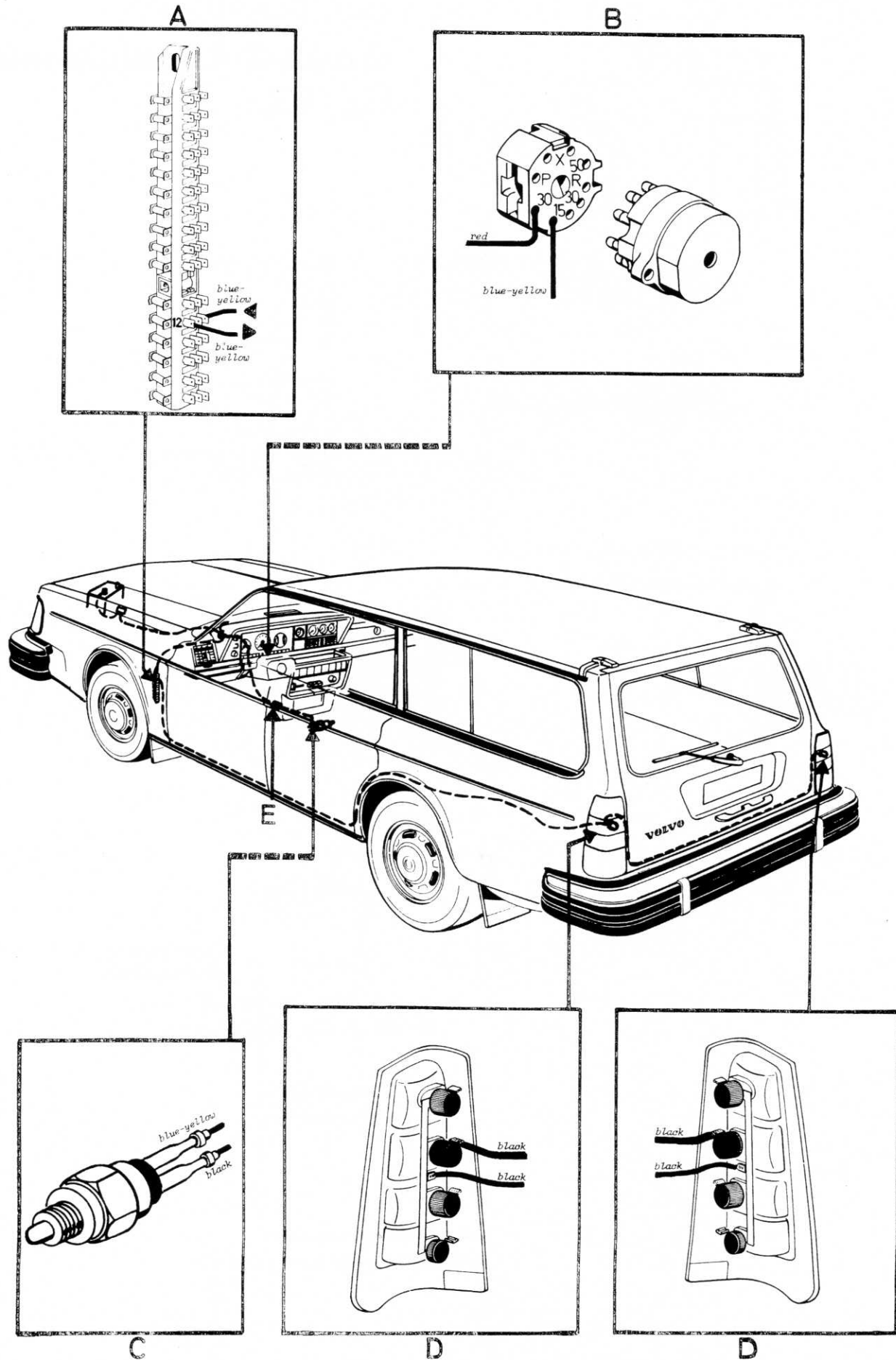
Back-up lights, manual transmission Wagon



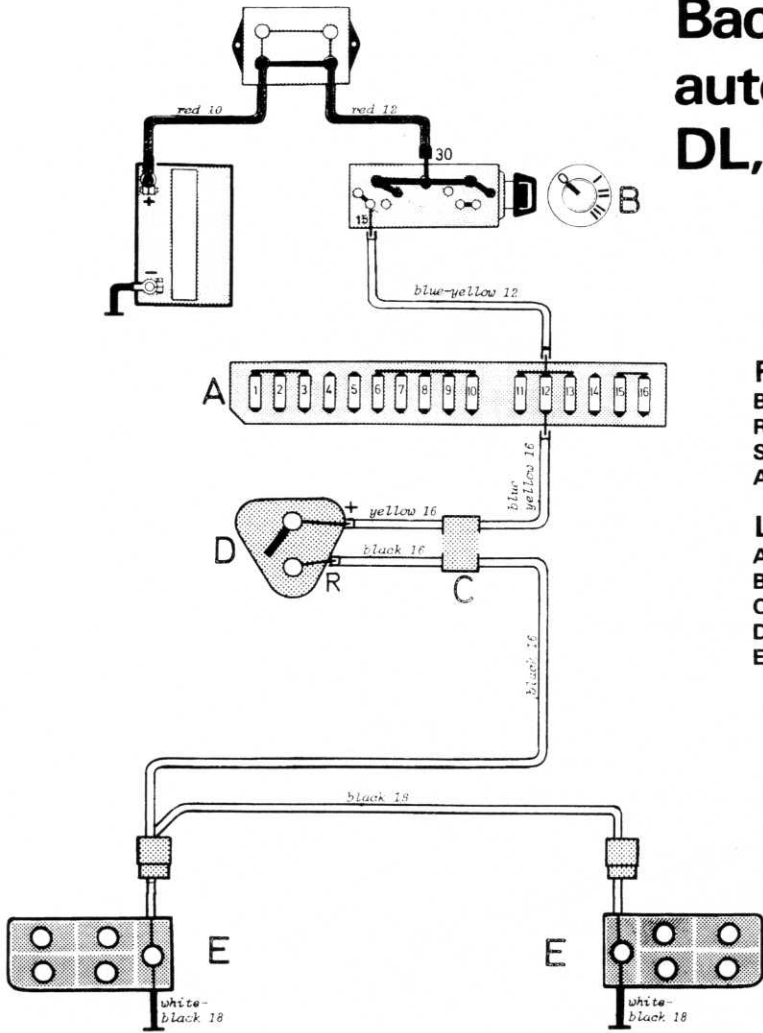
Fuse No. 12:
Back-up lights
Relay, window lifts
Seat heater
Air conditioning

Legend:
A Fuse box
B Ignition switch
C Back-up light switch
D Back-up lights
E Connector



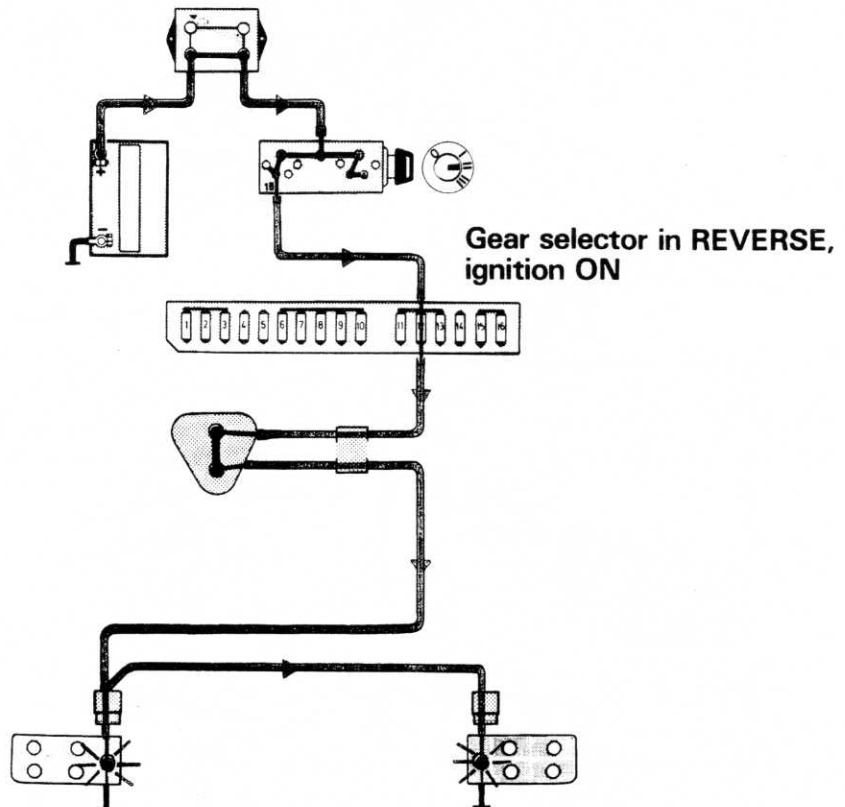


Back-up lights, automatic transmission DL, GL

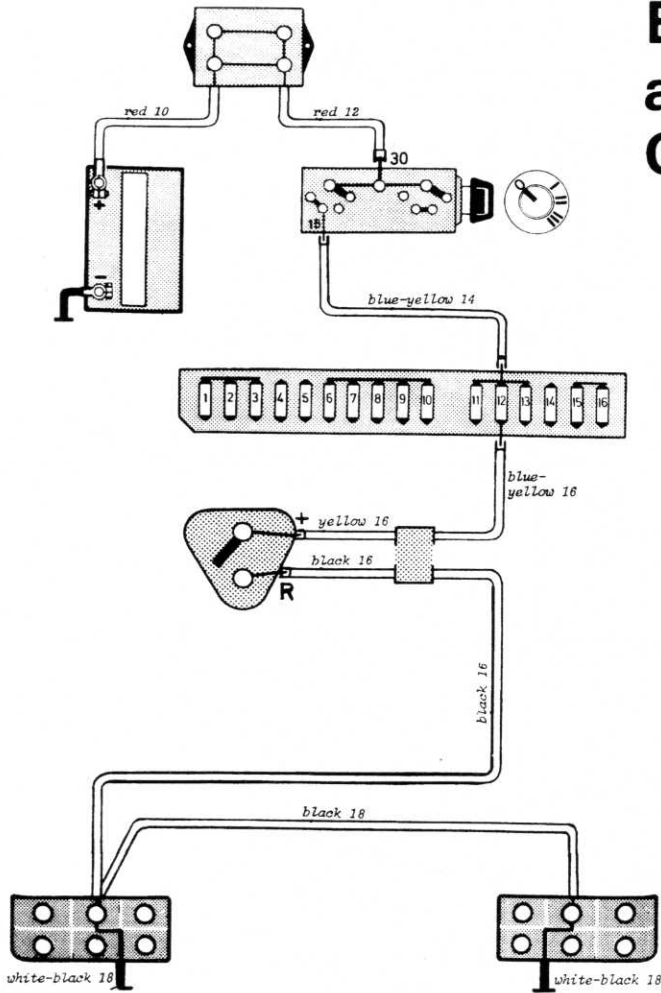


Fuse No. 12:
Back-up lights
Relay, window lifts
Seat heater
Air conditioning

Legend:
A Fuse box
B Ignition switch
C Connector
D Back-up light switch
E Back-up lights

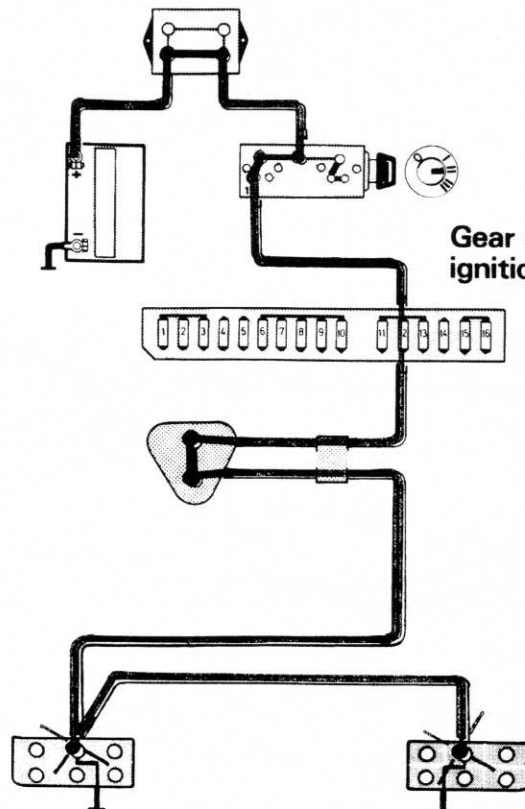


Back-up lights, automatic transmission GLE, Coupe

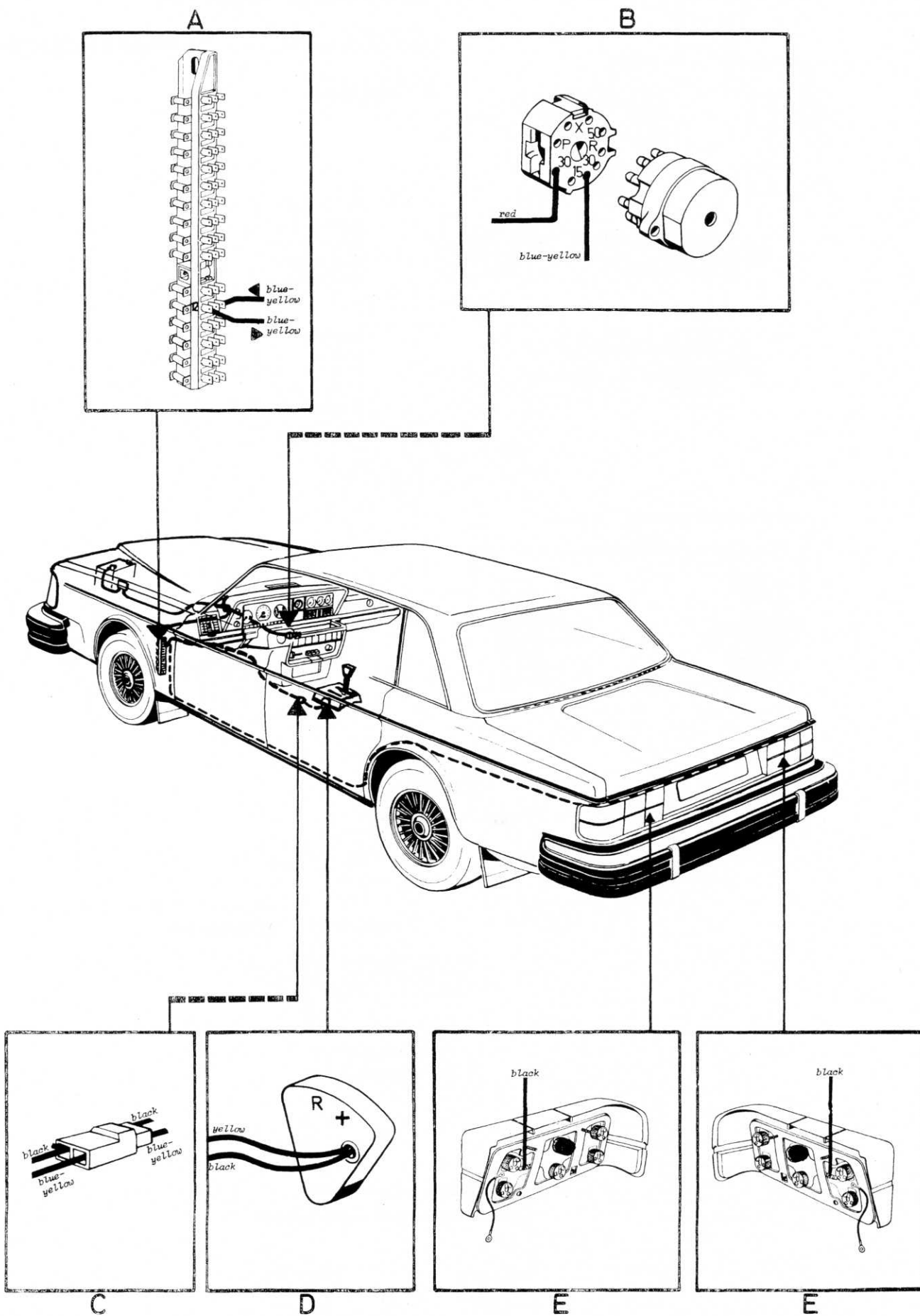


Fuse No. 12:
Back-up lights
Relay, window lifts
Seat heater
Air conditioning

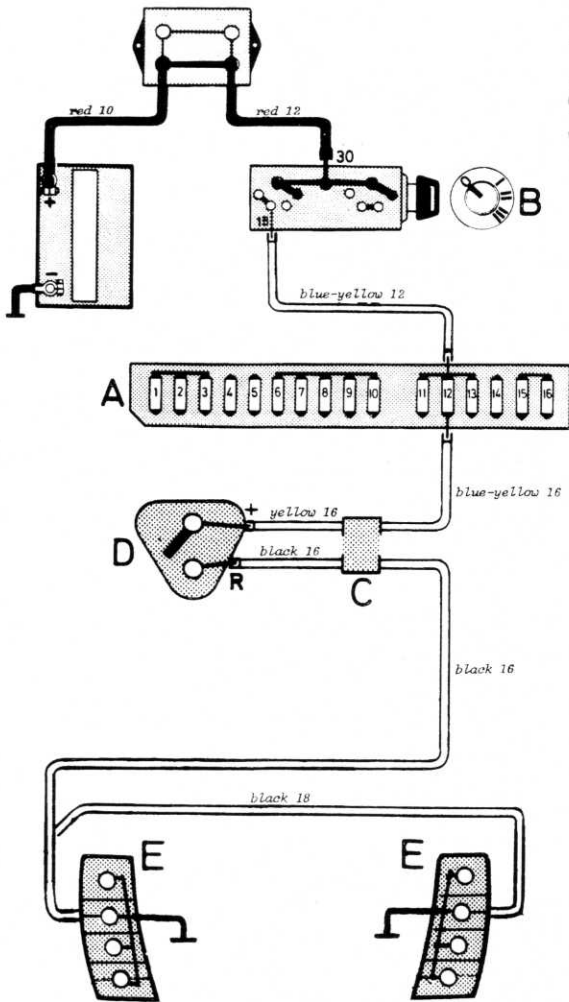
Legend:
A Fuse box
B Ignition switch
C Connector
D Back-up light switch
E Back-up lights



**Gear selector in REVERSE,
ignition ON**

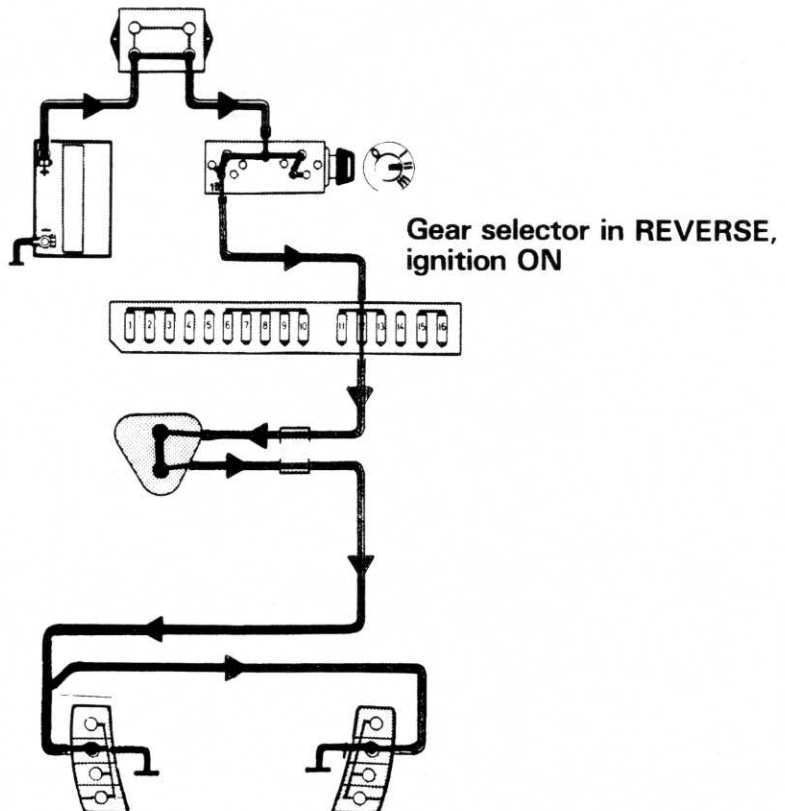


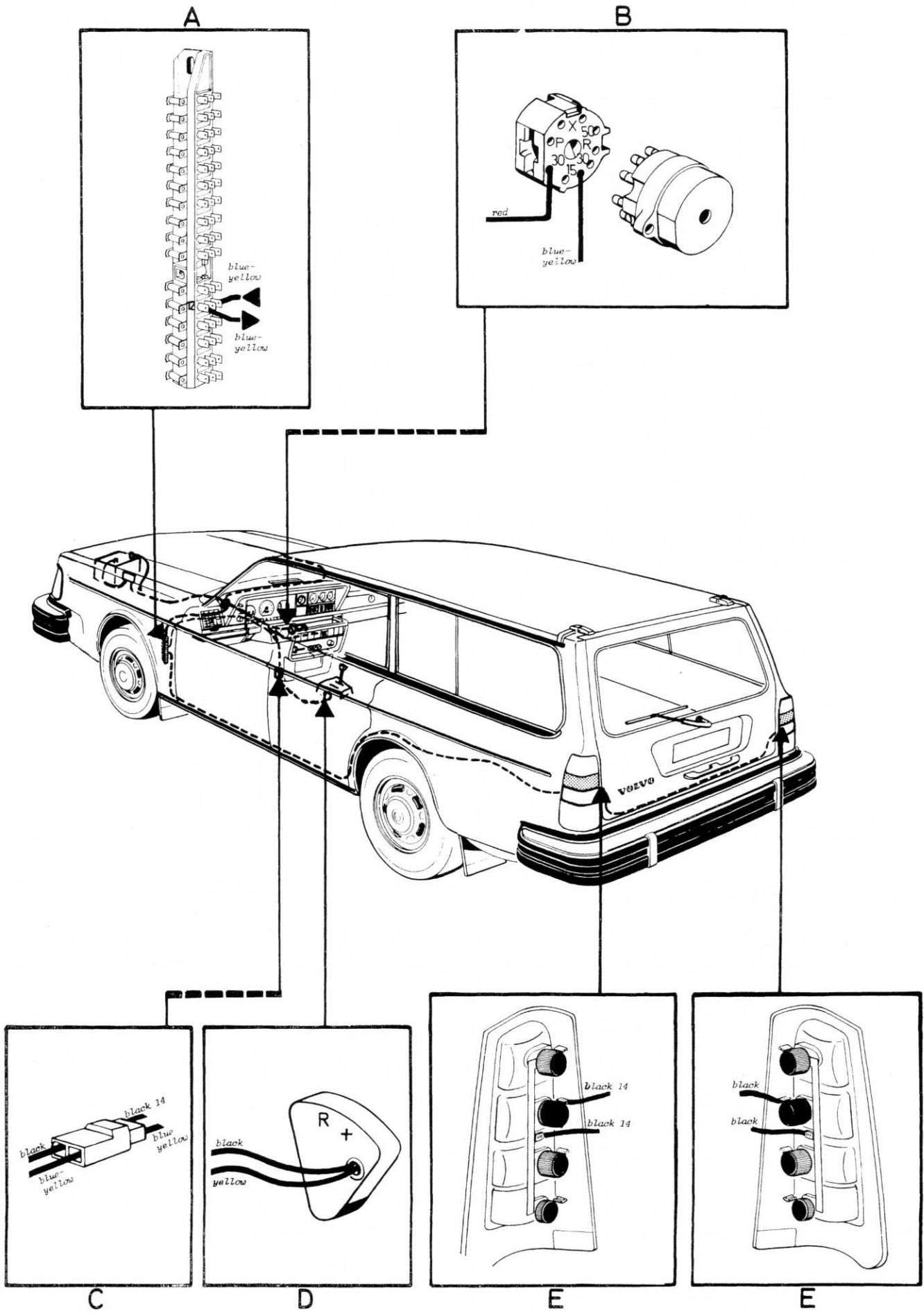
Back-up lights, automatic transmission Wagon



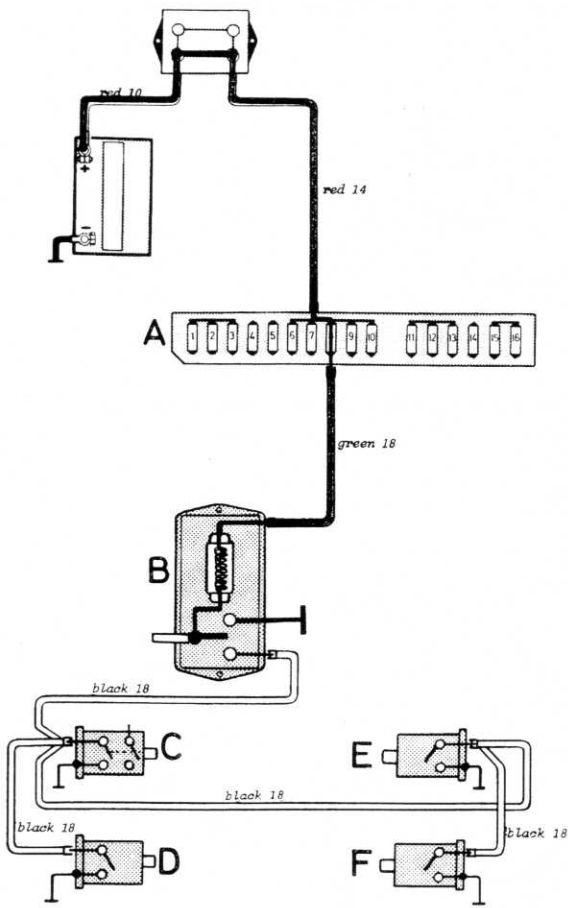
Fuse No. 12:
Back-up lights
Relay, window lifts
Seat heater
Air conditioning

Legend:
A Fuse box
B Ignition switch
C Connector
D Back-up light switch
E Back-up light



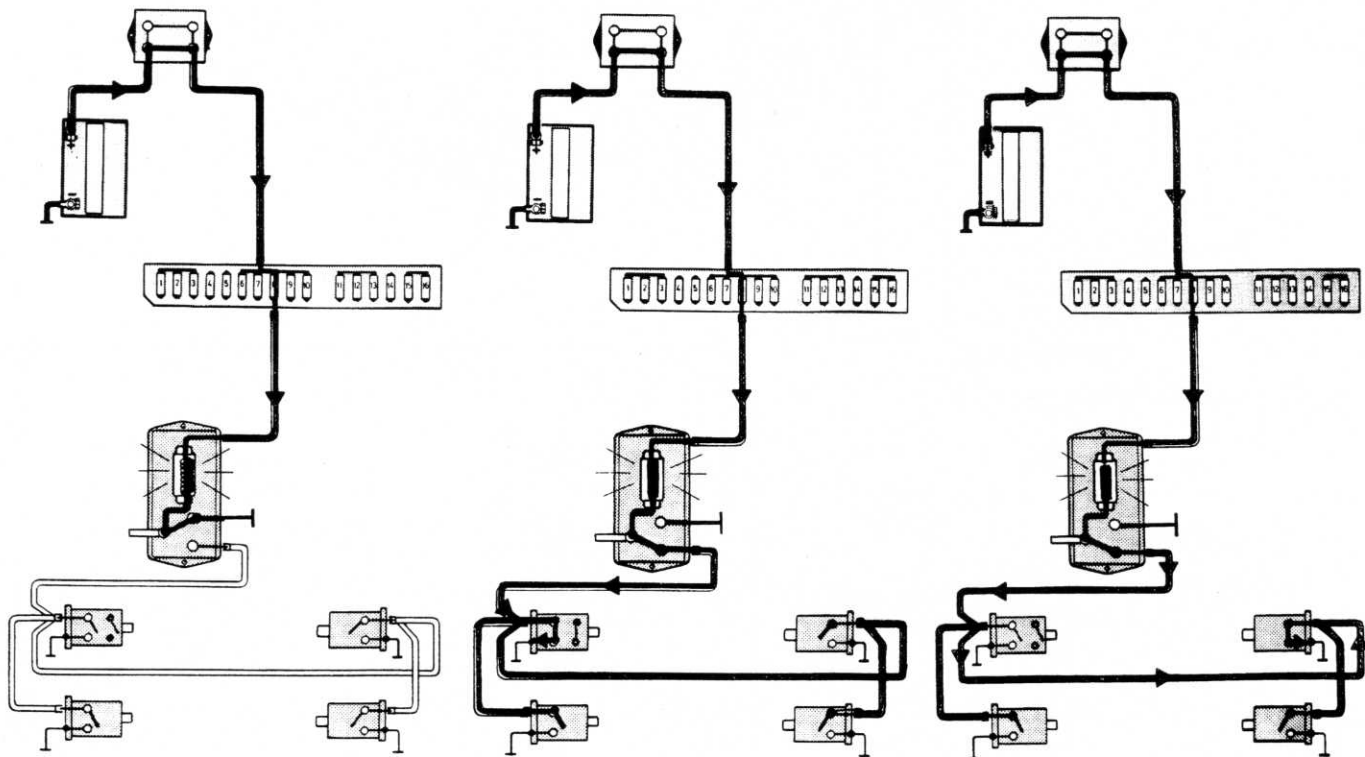


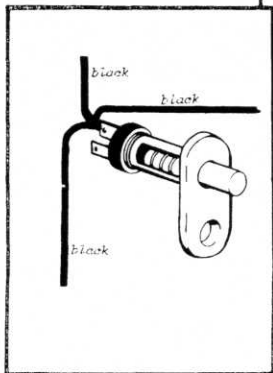
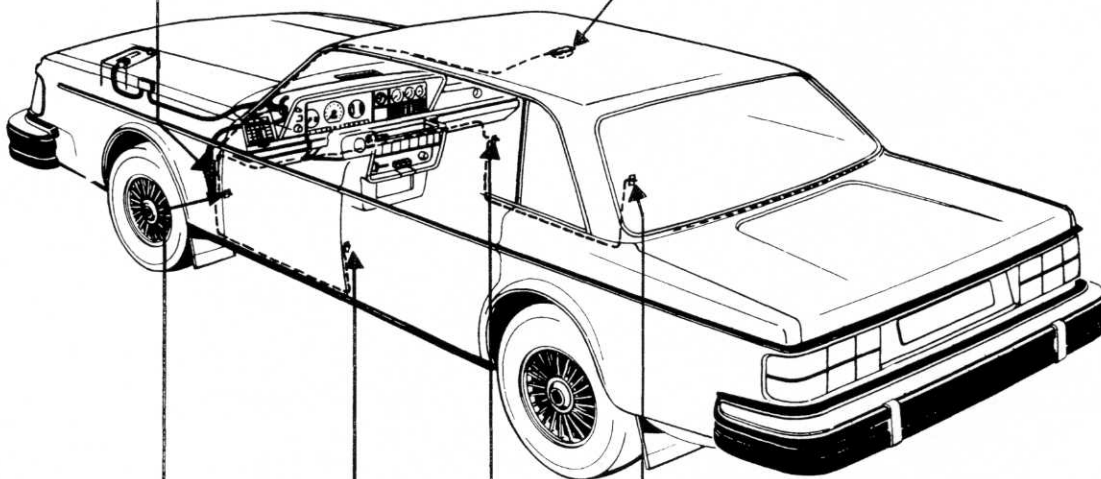
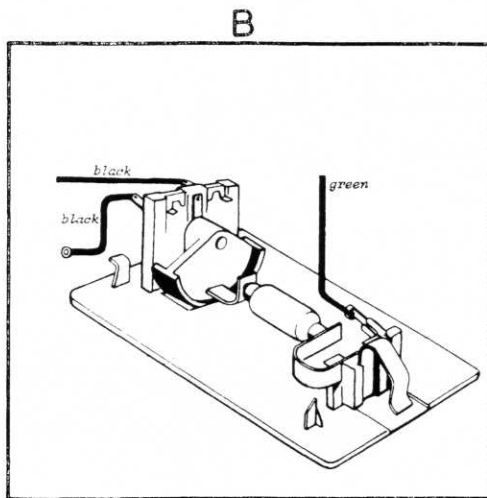
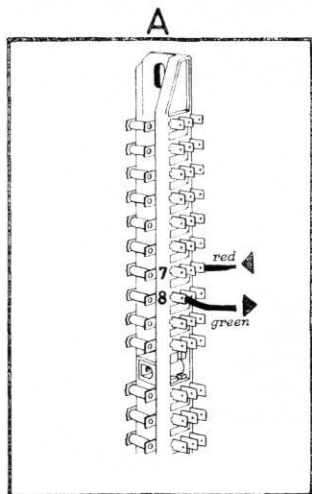
Interior light DL, GL, GLT



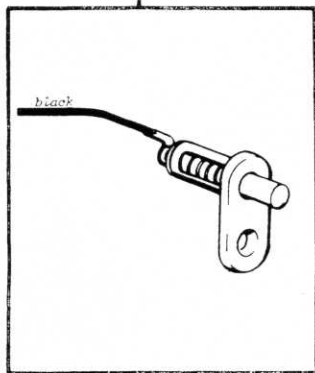
Fuse No. 8:
Interior light
Glove box light
Trunk light
Engine compartment light
Clock

Legend:
A Fuse box
B Interior light
Door switches:
C Front left
D Rear left
E Front right
F Rear right

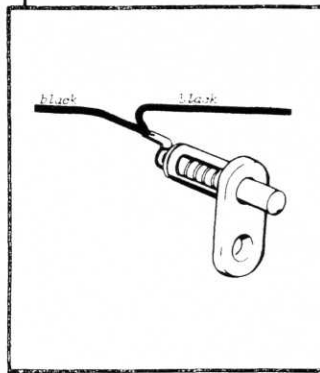




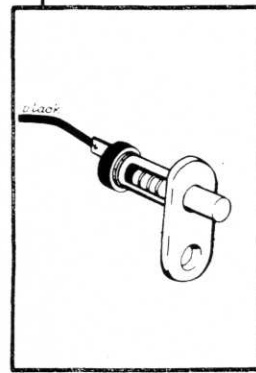
C



D

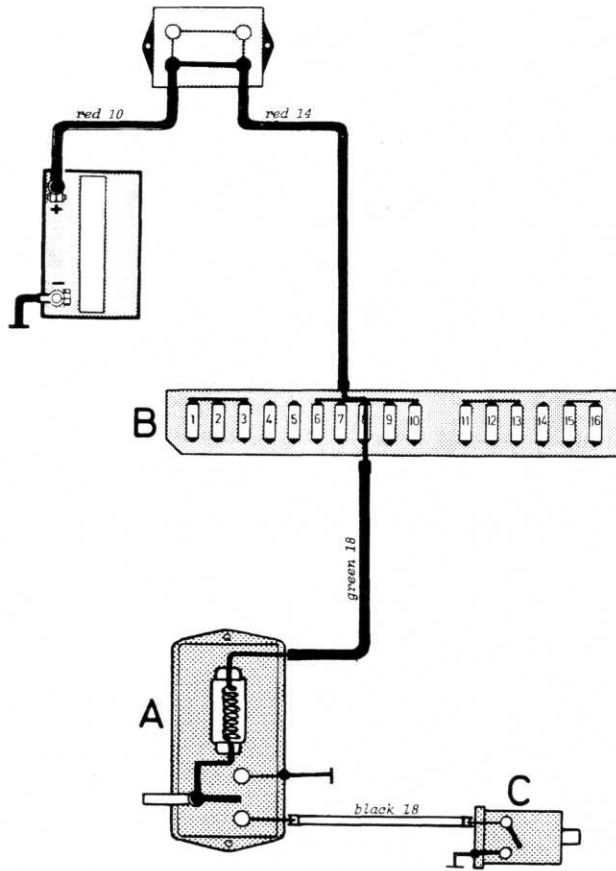


E



F

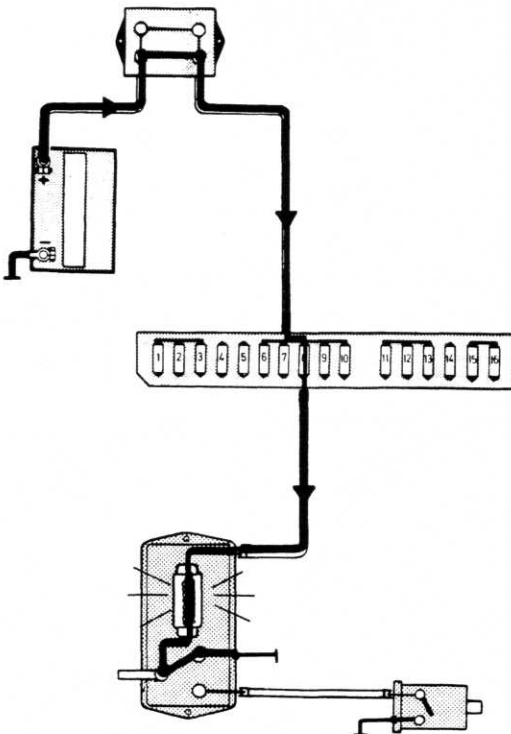
Rear interior light Wagon



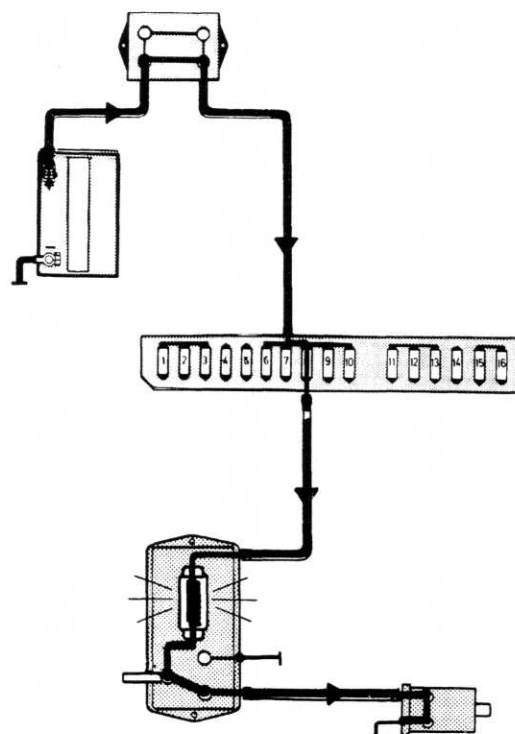
Fuse No. 8:
Interior light
Glove box light
Trunk light
Engine compartment light
Clock

Legend:
A Rear interior light
B Fuse box
C Tail gate switch

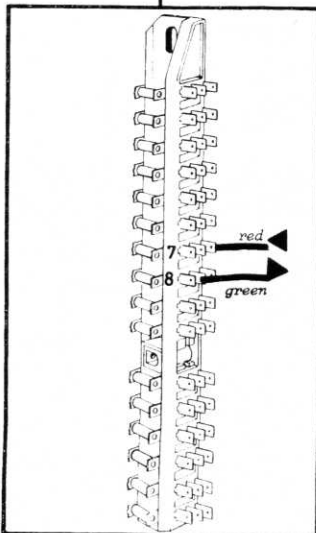
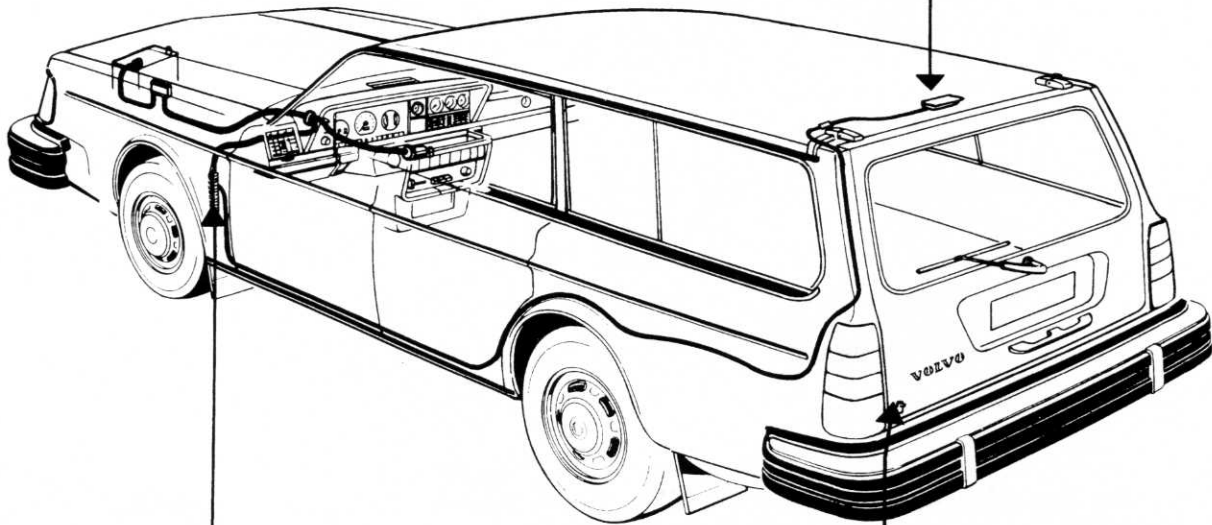
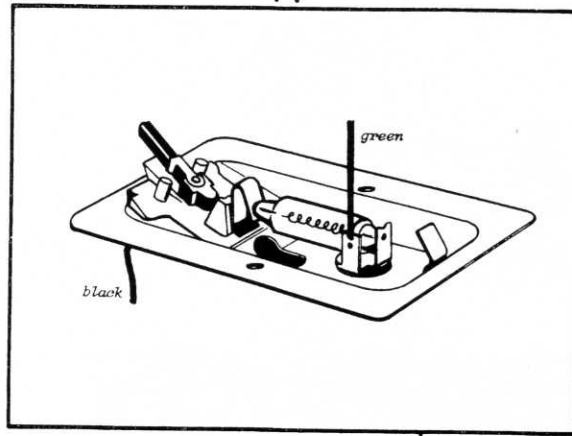
**Tail gate closed,
rear interior light ON**



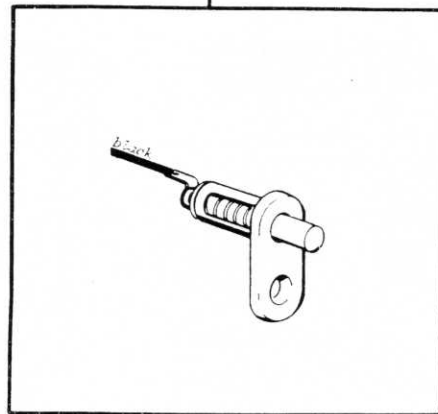
Tail gate opened



A

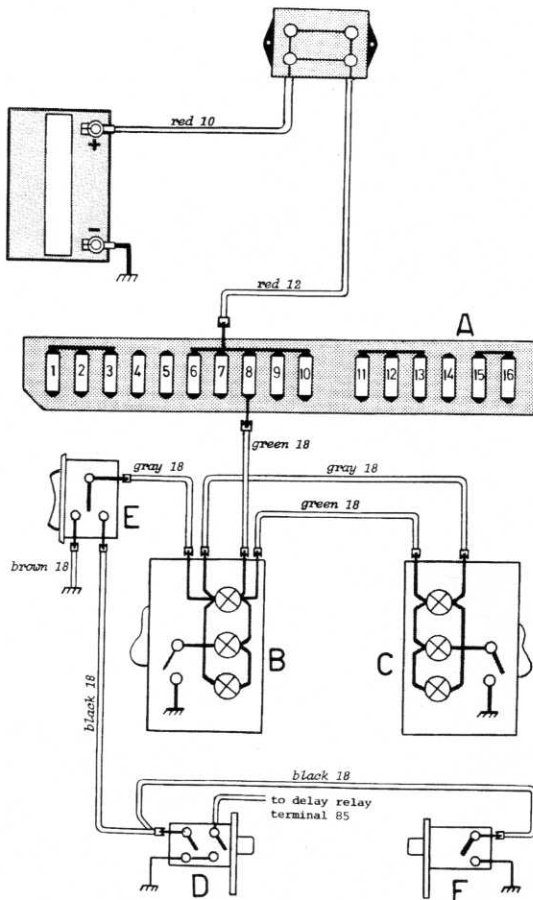


B



C

Interior light Coupe



Fuse No. 8

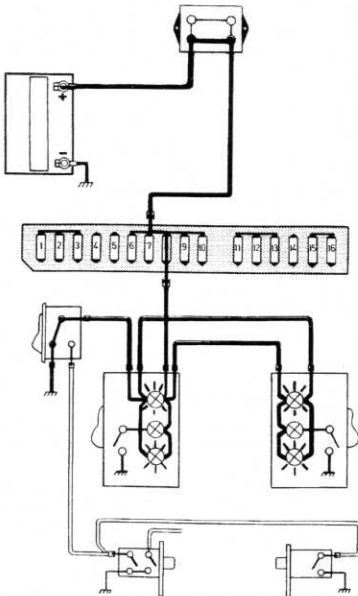
- Clock
- Glove box light
- Interior light
- Hazard warning flasher

Legend:

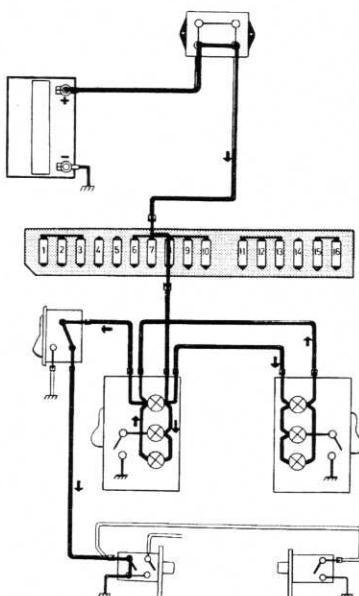
- A Fuse box
- B Interior light, left side
- C Interior light, right side
- D Door switch, left door
- E Interior light switch
- F Door switch, right door

For connections at left side door switch also see "Delayed Interior Light".

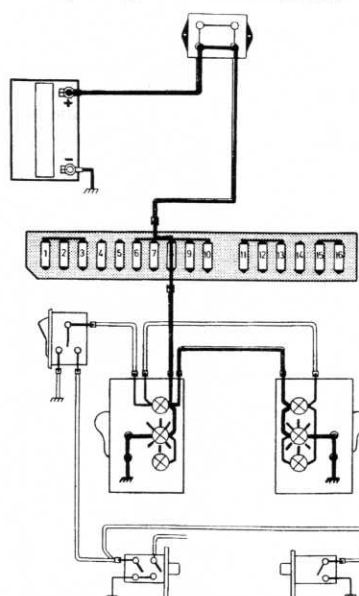
Switch on steering column in POS 1. Light ON

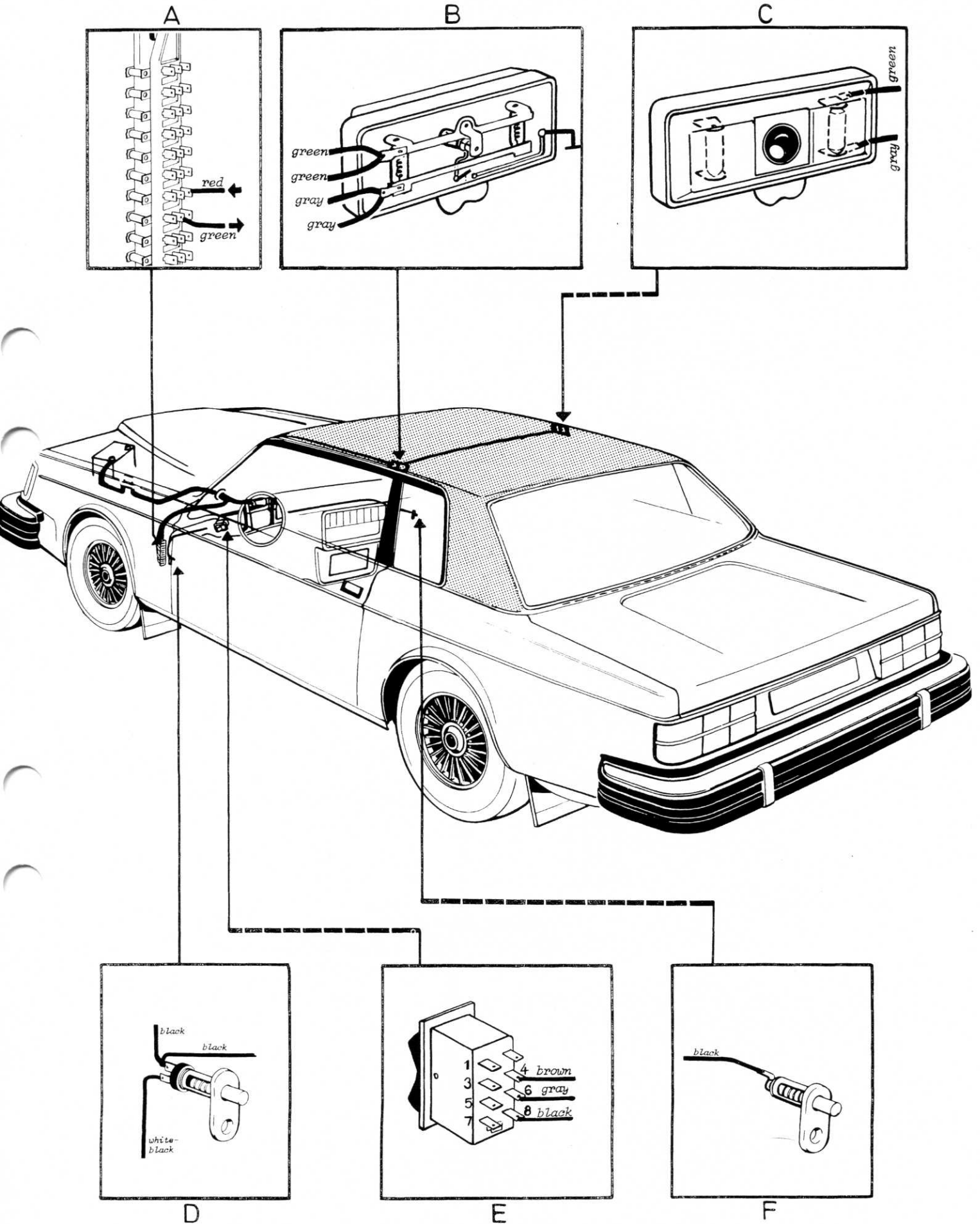


Switch on steering column in POS 2. Light ON with any door open.

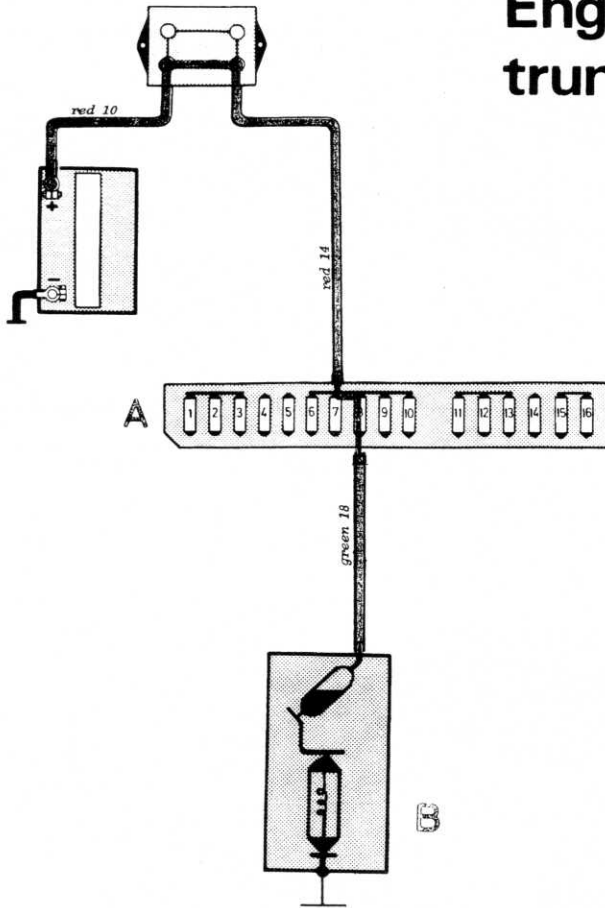


Lamp switch ON. Spotlights illuminated.



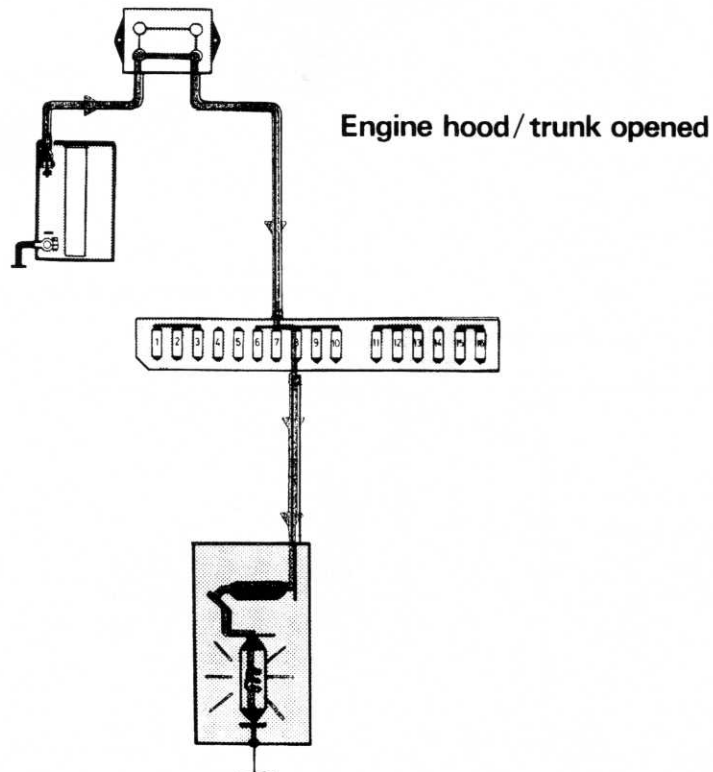


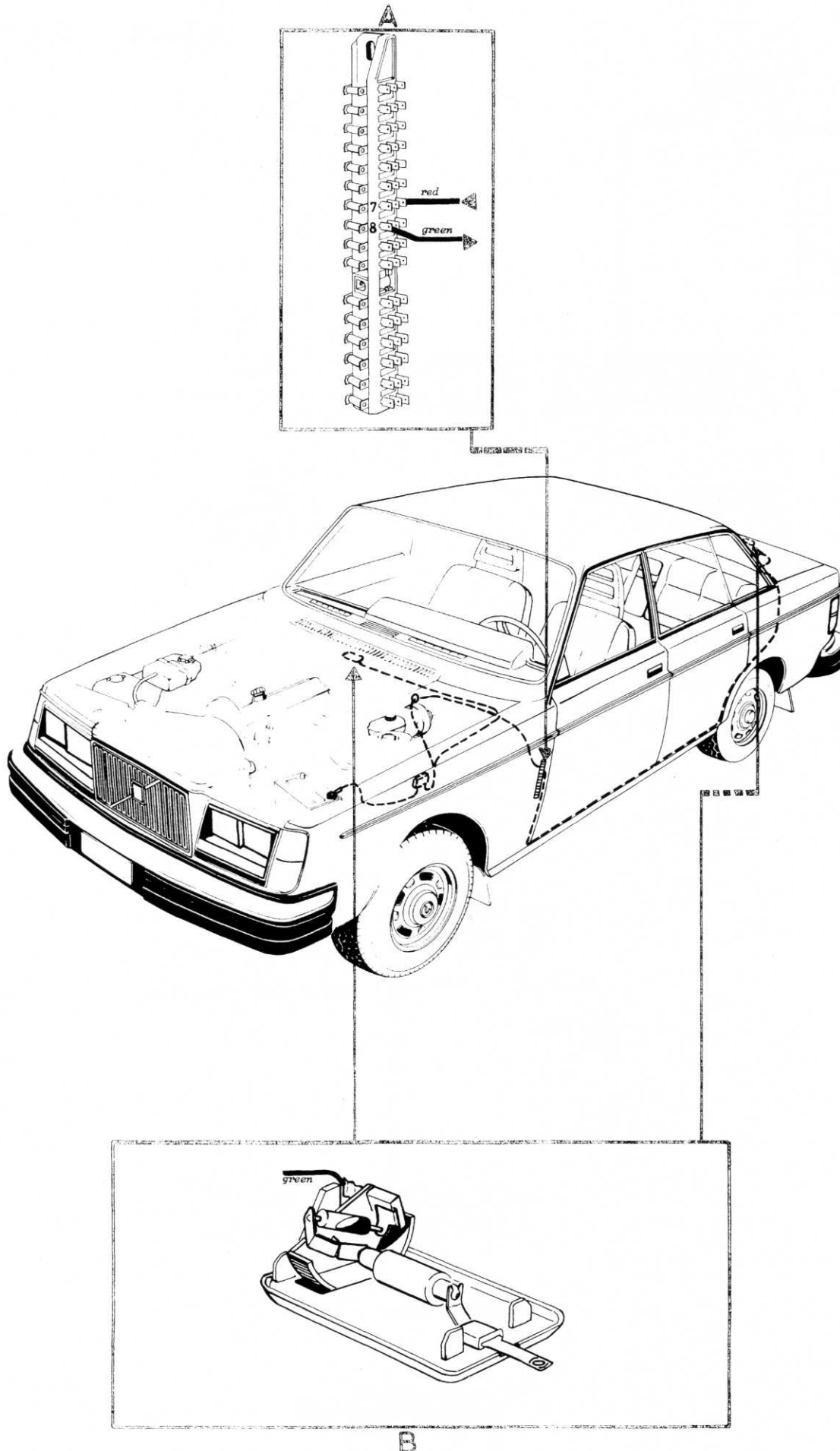
Engine compartment light, trunk light



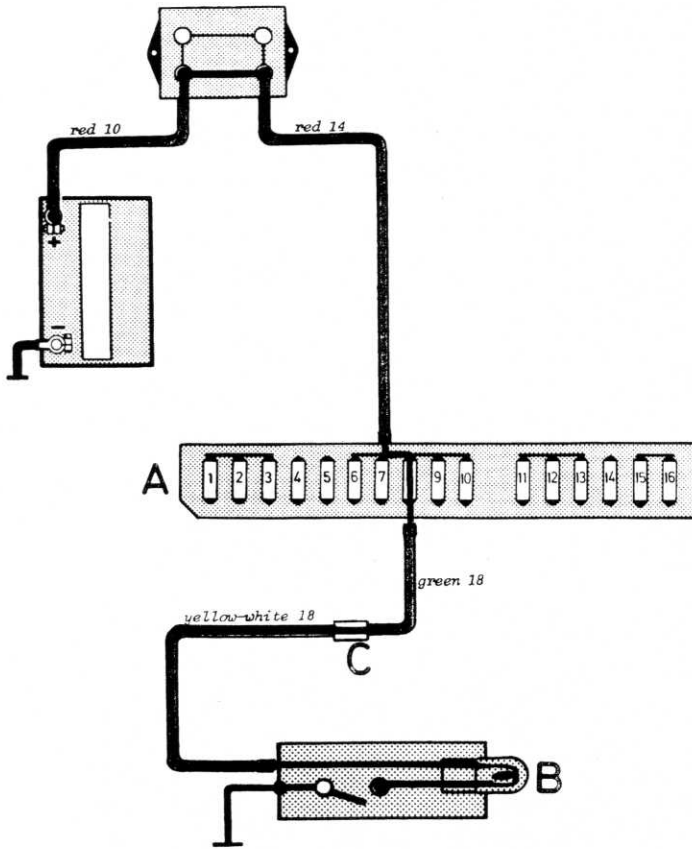
Fuse No. 8:
Interior light
Glove box light
Trunk light
Engine compartment light
Clock

Legend:
A Fuse box
B Engine compartment
light and/or trunk light



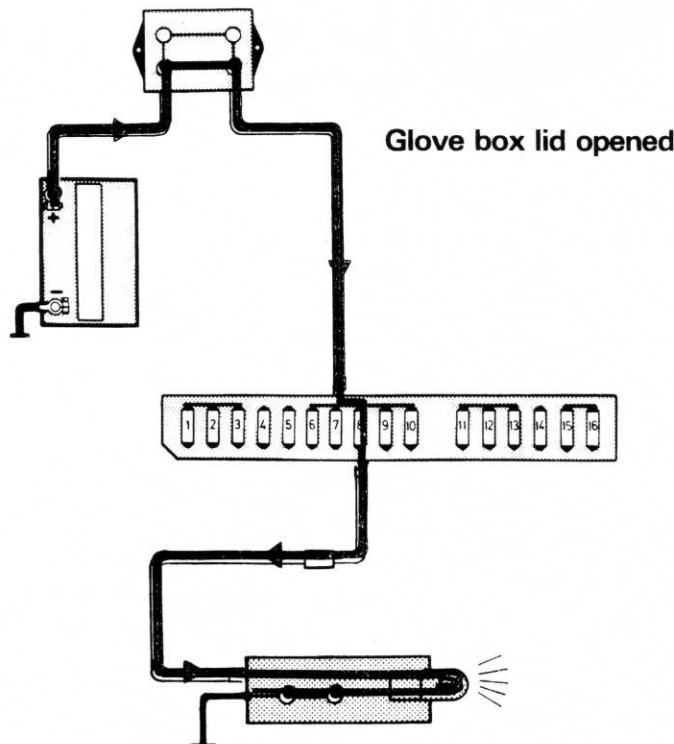


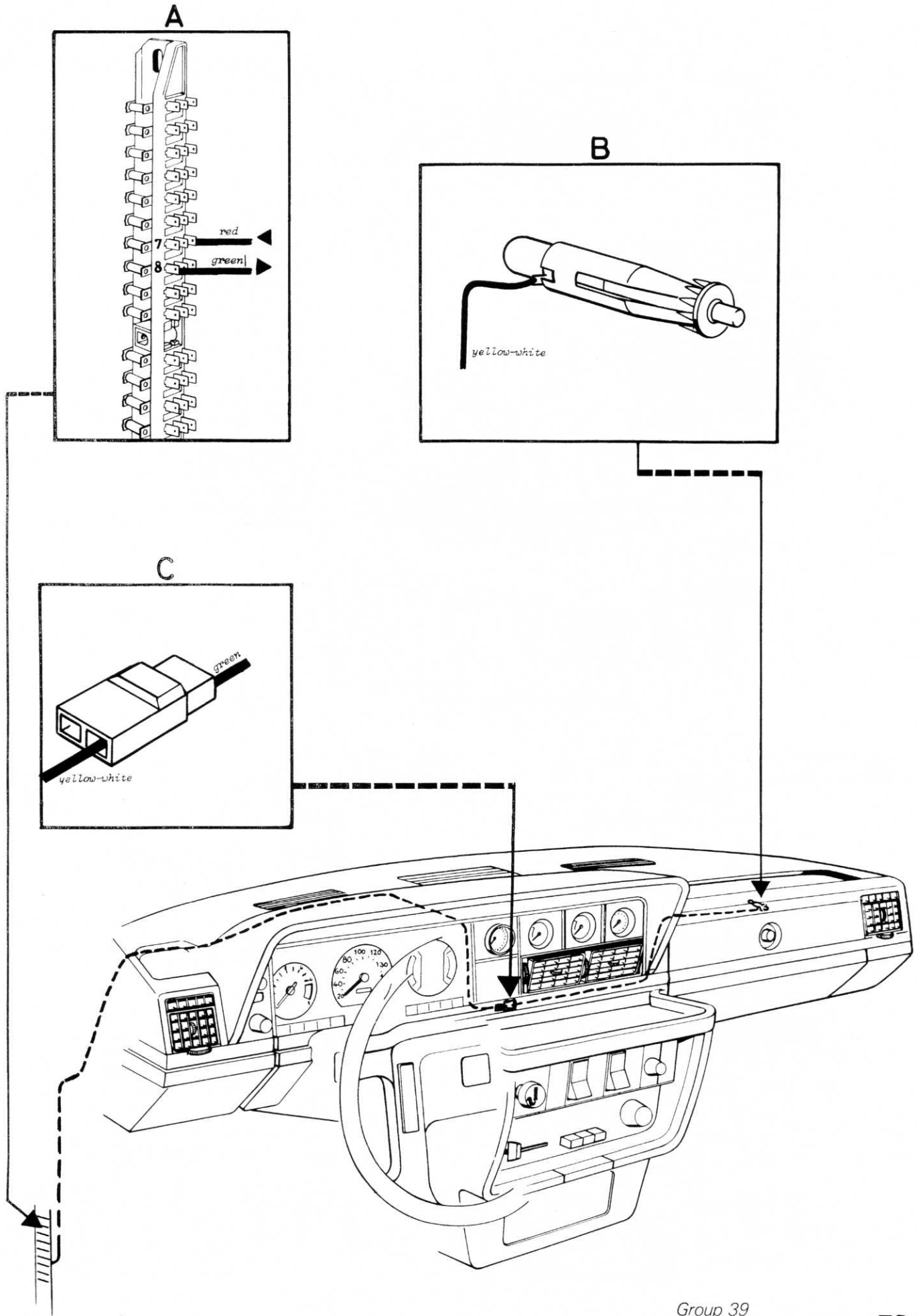
Glove box light



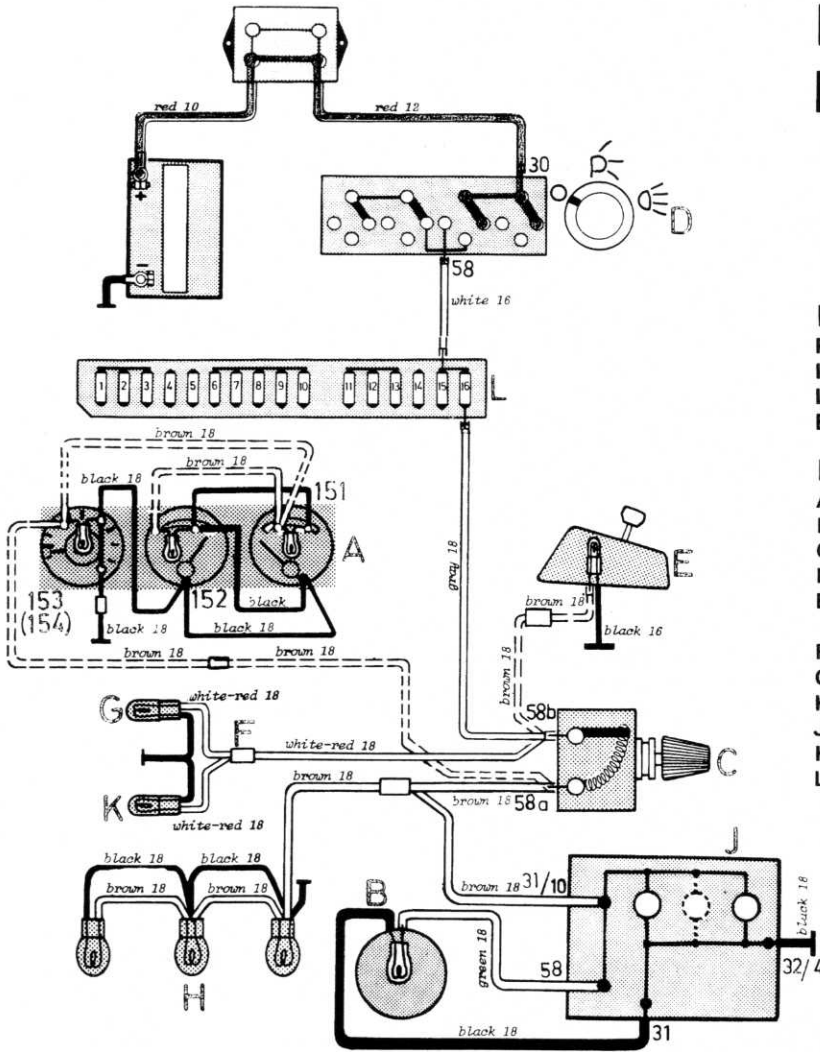
Fuse No. 8:
Interior light
Glove box light
Trunk light
Engine compartment light
Clock

Legend:
A Fuse box
B Glove box light
C Connector





Instrument lights, lights on controls



Fuse No. 16:
 Parking light, right side
 Instrument lights
 Lights on controls
 Buzzer, headlight

- Legend:**
- A Instrument lights
 - B Clock
 - C Rheostat
 - D Light switch
 - E Gear selector light
(automatic transmission)
 - F Connector
 - G Seat belt lock light
 - H Lights on controls
 - J Instrument lights
 - K Ash tray light
 - L Fuse box

Light switch ON.
Dimmed light.

Light switch ON.
Full light.

