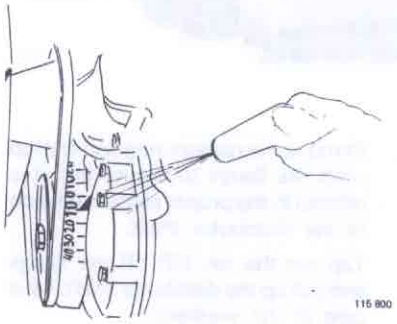
Start the engine and run it at approx. 13.3 r/s (800 r/min). Aim the Stroboscope at the timing mark on the vibration damper. Slacken the distributor retaining screw and turn it until the firing position is 10°. Tighten up the distributor and check that the firing position and speed have not altered.



Remove the Stroboscope and connect the hose to the vacuum governor.

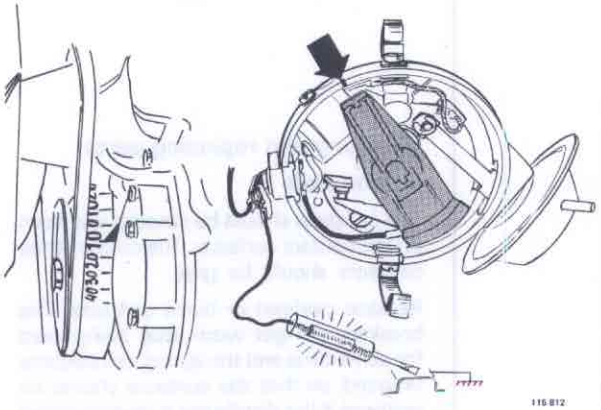
e firing setting can be adjusted as fol-vs with the engine switched off:

Clean the vibration damper in order to see the firing mark. Remove the cap and condensate trap.

Connect a 24 V lamp between the engine body and the low-voltage terminal on the distributor. Do not disconnect the cable.

Turn the ignition key to the firing position.

Slowly rotate the crankshaft (by hand) **in the rotational direction of the engine** until the 10° timing mark on the vibration damper is opposite the firing mark. The distributor rotor should then point to the line-up mark on the edge of the distributor housing. The test lamp should light.



5. If the lamp does not light, slacken the distributor and turn it slowly **opposite to its direction of rotation** until the lamp does light. When the lamp lights, tighten up the distributor.
6. If the lamp lights earlier than according to point 4, slacken the distributor and turn it slowly **in its direction of rotation** until the lamp goes out. Then tighten up the distributor.

34202-2

Breaker contacts

Replacing

Replace as follows:

1. Lift off the distributor arm and condensate trap.
2. Disconnect the cable from the low-voltage terminal.
3. Remove the old contacts.
4. Fit the new contacts and re-connect the cable to the low-voltage terminal.
5. Check to make sure that vertically the breaker contacts are situated correctly and that they are flat. This adjustment can be done with a special tool, e.g., Bosch EFAW 57 A. But only the fixed contact may be bent.

   Cover the breaker cam and fibre tab with a light layer of grease.
6. Clean the breaker contacts with trichloroethylene or chemically pure petrol.
7. Run the distributor on a test bench and adjust according to the distributor data. See under: "Test-running a distributor on a test bench".
8. Fit the condensate trap and the distributor rotor.

Group 35 Lighting

Construction and Function

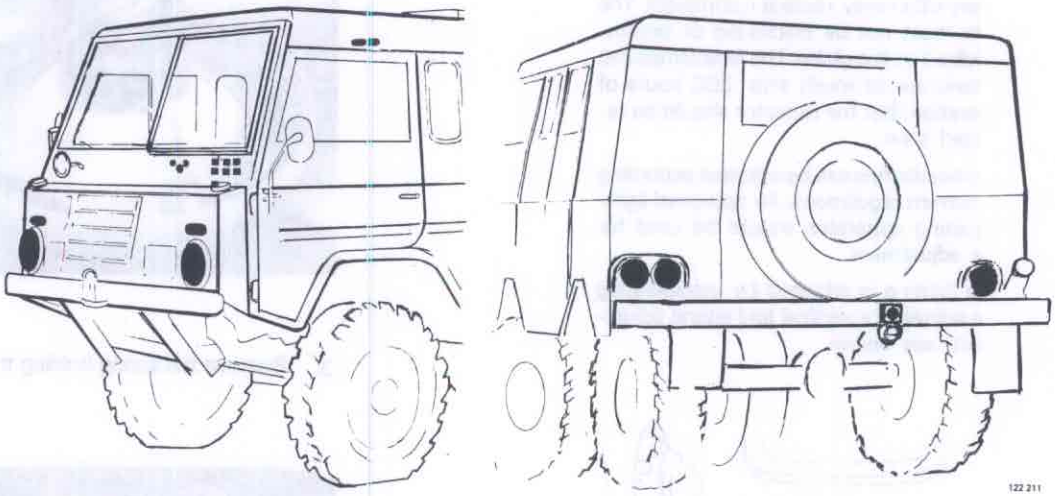


Fig. 35–1. Vehicle lighting

The lighting system comprises the following:

Headlamps, parking and direction indicator lights, instrument panel lighting, switch lighting, interior lighting, tail lights, reversing lights and a 7-pole output for trailer lighting.

Switching between fullbeams and dipped beams is done by moving the direction indicator lever towards the steering wheel. This causes the step relay, see Fig. 36–1, to switch on the beams.

The tail lights are provided with separate bulbs for the tail light, stop lights and direction indicators.

eadlamps

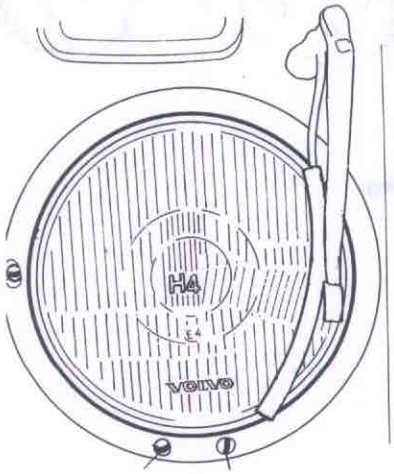
hecking and adjusting

ıeck the headlamp glass, reflector and lb. If the glass has been damaged by ıvel, or cracked or defective in any other ıy, replace the insert. The lighting from ıeadlamp with cracked glass will have teriorated and give rise to irritating split ams.

he reflector is mat, buckled or damaged any other way, replace it complete. The lb must not be blackened or brown-idized on the globe. The headlamps can teriorate so much after 200 hours of ıeration that the reflector should be re-ıced then.

ıe headlamps can be adjusted according current regulations. An approved light-ljusting apparatus should be used for e adjustment.

ıe lighting is adjusted by manipulating e screws for vertical and lateral adjust-ent, see below.



1 Lateral adjustment
2 Retaining screw
3 Vertical adjustment

eplacing the headlamp in-ert

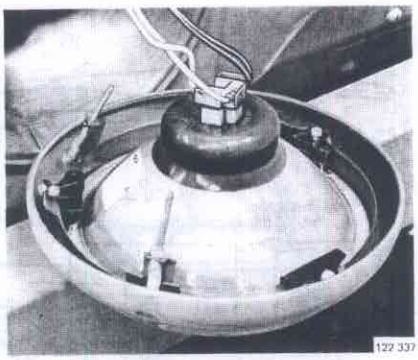
› replace the bulb carry out points 1–3 ıd 6–9 below.

Remove the retaining screw in the headlamp rim, see above.

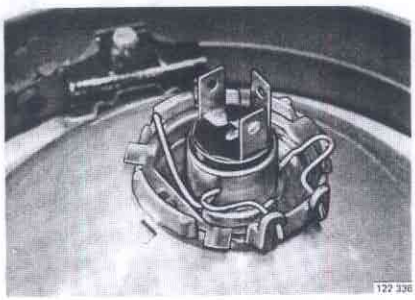
2. Lift forwards the rim and insert.

   Disconnect the connector from the bulb.

   Remove the rubber dust cover from the bulb base.



3. Remove the spring holding the bulb.



4. Remove the three screws securing the insert.
5. Fit the new insert and secure it with the three screws.
6. Fit the new bulb in the insert.

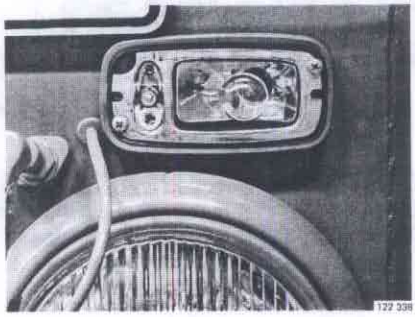
   NOTE! Do not touch the globe with your fingers. Grease, etc., on the globe causes a vapour to be emitted when the globe is heated and this can damage the reflector.
7. Fit the rubber dust cover over the bulb base, etc., and connect the connector to the bulb.
8. Restore the rim and insert.
9. Adjust the lighting.

Parking and direction indicator lights

36130-2

Replacing the bulbs

1. Remove the screws securing the lens.
2. Remove the faulty bulb by pressing it inwards and then turning it (bayonet fitting).



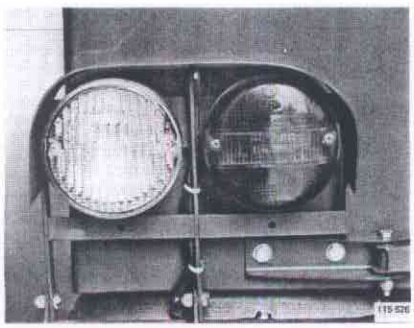
3. Fit the new bulb. (Do not touch the bulb globe with your fingers.)
4. Wipe the lens with a moist cloth and re-fit it and tighten up with the two screws.

Tail and reversing lights

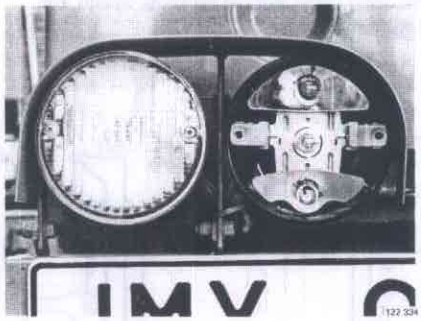
36132-2

Replacing the bulbs

1. Remove the screws securing the lens over the bulb to be replaced.



2. Remove the faulty bulb by pressing it in and turning it.



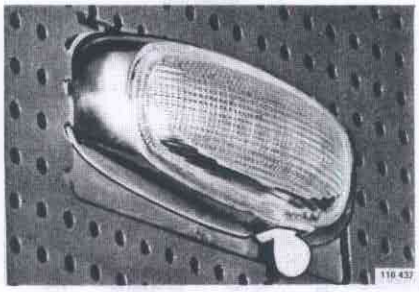
3. Fit the new bulb but do not touch the globe with your fingers. Wipe the lens with a moist cloth and re-fit it.

Interior light

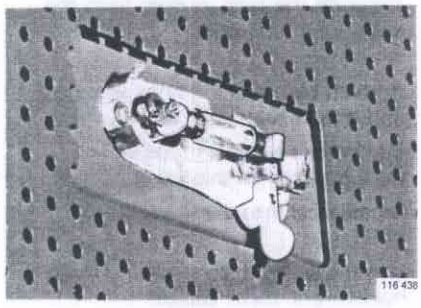
35303-3

Replacing the bulb

1. Remove the glass by pulling it rearwards.



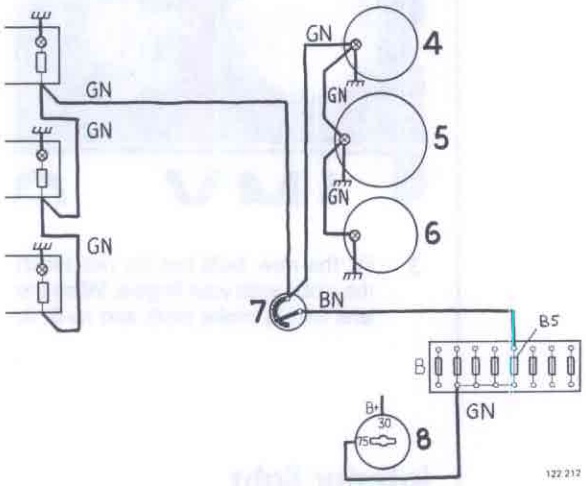
2. Remove the bulb and fit a new one.



3. Place the glass in position and push it straight in.

ıstrument panel and ʌvitch lighting

e illustration below shows the instru-ɛnt panel and switch lighting circuit via ɛ rheostat.



Wiring diagram

1	Switch, windscreen washer
2	Switch, windscreen wiper
3	Switch, windscreen wiper
4	Fuel gauge
5	Speedometer
6	Temperature gauge
7	Rheostat
8	Ignition
B	Fuse holder (B)

ɛplacing the bulbs in ʌvitches and instruments

Remove the cover from the batteries and disconnect the negative cable from the battery.

Separate the bulb retainer from the switch and instrument by pulling it straight out.

Remove the faulty bulb by pressing it in and turning it. Fit the new bulb.

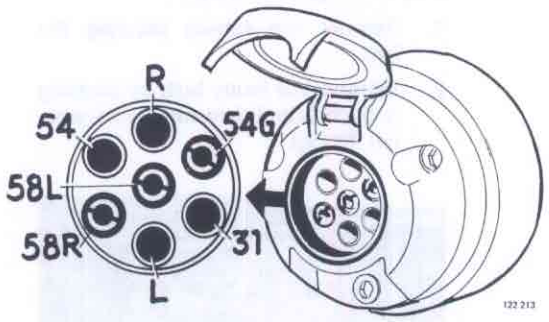
Fit the bulb retainer in the switch or instrument by pushing it straight in.

Re-connect the negative cable to the battery.

Note! The cables to the switch bulb holders are earth cables.
The cables to the instrument bulb holders are feed cables, which go directly from the rheostat.

Trailer socket output

The vehicle is equipped with a 7-pole trailer socket output.



54G	Not used	L	Direction indicator, left
58L	Tail light	54	Stop light
58R	Tail light	31	Chassis
R	Direction indicator, right		

Group 36 Direction indicators and hazard warning flashers, horn, windscreen wipers and washers, switches and relays

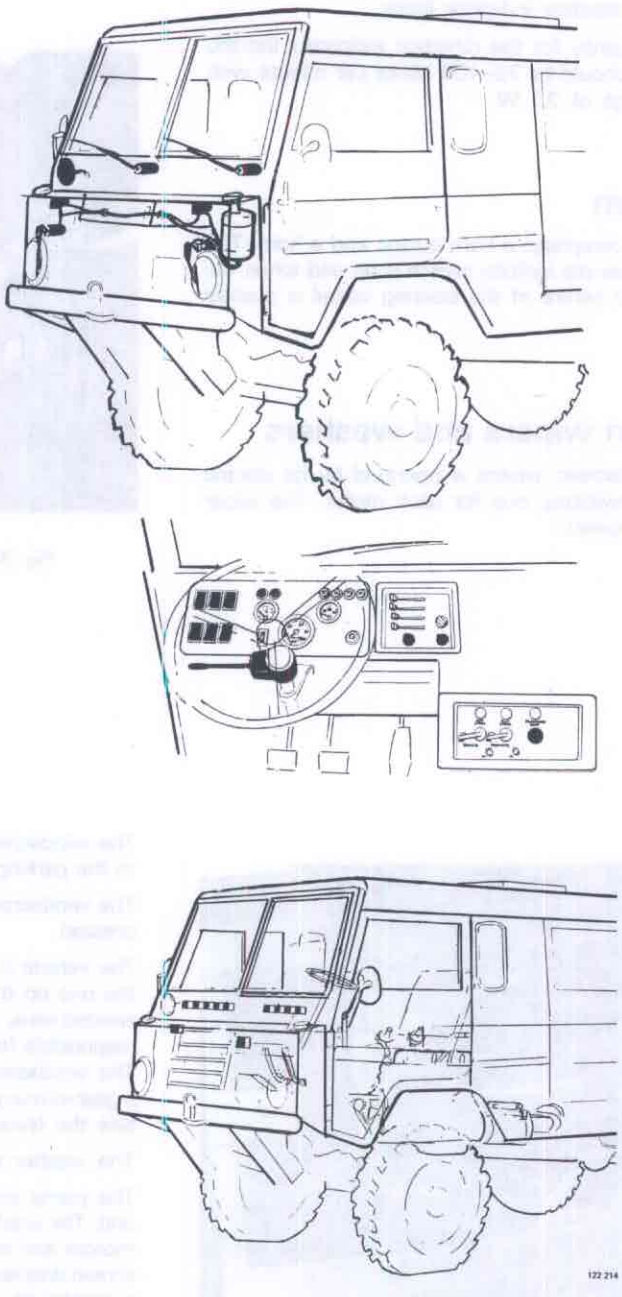


Fig. 36–1. Wipers, direction indicators, switches and relays

)irection indicators and hazard /arning flashers

ıe direction indicator system includes an electronically ope-ted flasher device, switches, indicator lights (for vehicle ıd trailer) as well as indicator lights front and rear.

ıe hazard warning flasher system includes a switch with ıilt-in blinker, flasher device and lights (front and rear) which ɜo function as direction indicator lights.

ıe blinking frequency for the direction indicators (hazard arning flashers) should be 75–105 blinks per minute with ılbs with wattage of 21 W.

lorn system

ıe horn system comprises a horn button and a horn. The ɔrn operates when the ignition switch is on and when the ɔrn button in the centre of the steering wheel is pushed

Windscreen wipers and washers

ach of the windscreen wipers is operated by its electric ıotor and two switches, one for each motor. The wiper ıotors are two-speed.

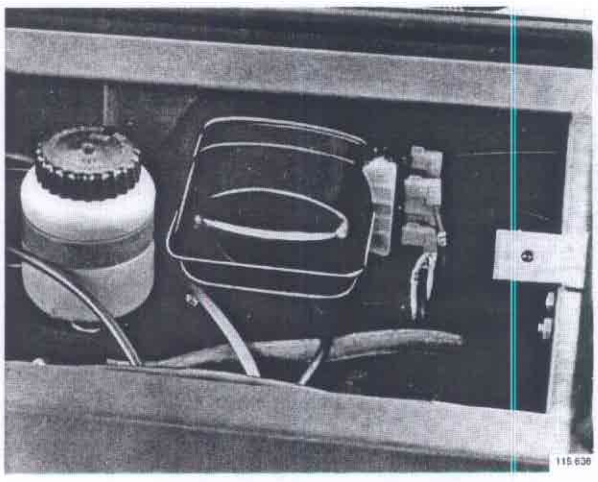


Fig. 36–2. Windscreen wiper motor, R/H side

Each of the headlamp wipers is operated by its electric motor and a switch, which automatically returns to the shut-off position.

The headlamp wiper motors can be engaged when the parking lights at least are on.

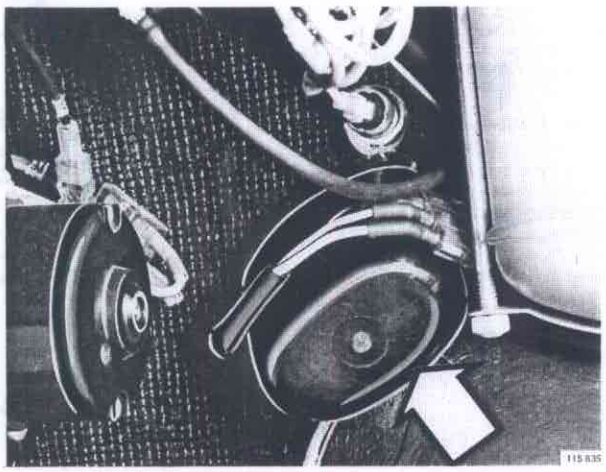


Fig. 36–3. Headlamp wiper motor, R/H side

The windscreen and headlamp wipers automatically return to the parking position as long as the ignition switch is on.

The windscreen and headlamp wiper motors are radio-suppressed.

The vehicle is equipped with two different washer motors, the one on the left-hand side which is responsible for the windscreens, and the one on the right-hand side which is responsible for the right-hand headlamps and washer fluid. The windscreen and headlamp washer system consists of a gear-driven pump, electric motor, hoses, valves and nozzles. See the layout diagram on Fig. 36–4.

The washer motors are radio-suppressed.

The pump and the electric motor are integrally built as a unit. The washer fluid container is the same for both washer motors and holds about 3 dm^3 (3 litres/3 qts.). The windscreen washer motor is operated by means of a switch, which automatically returns to the shut-off position.

The headlamp washer motor functions only when the headlamp wipers are engaged.

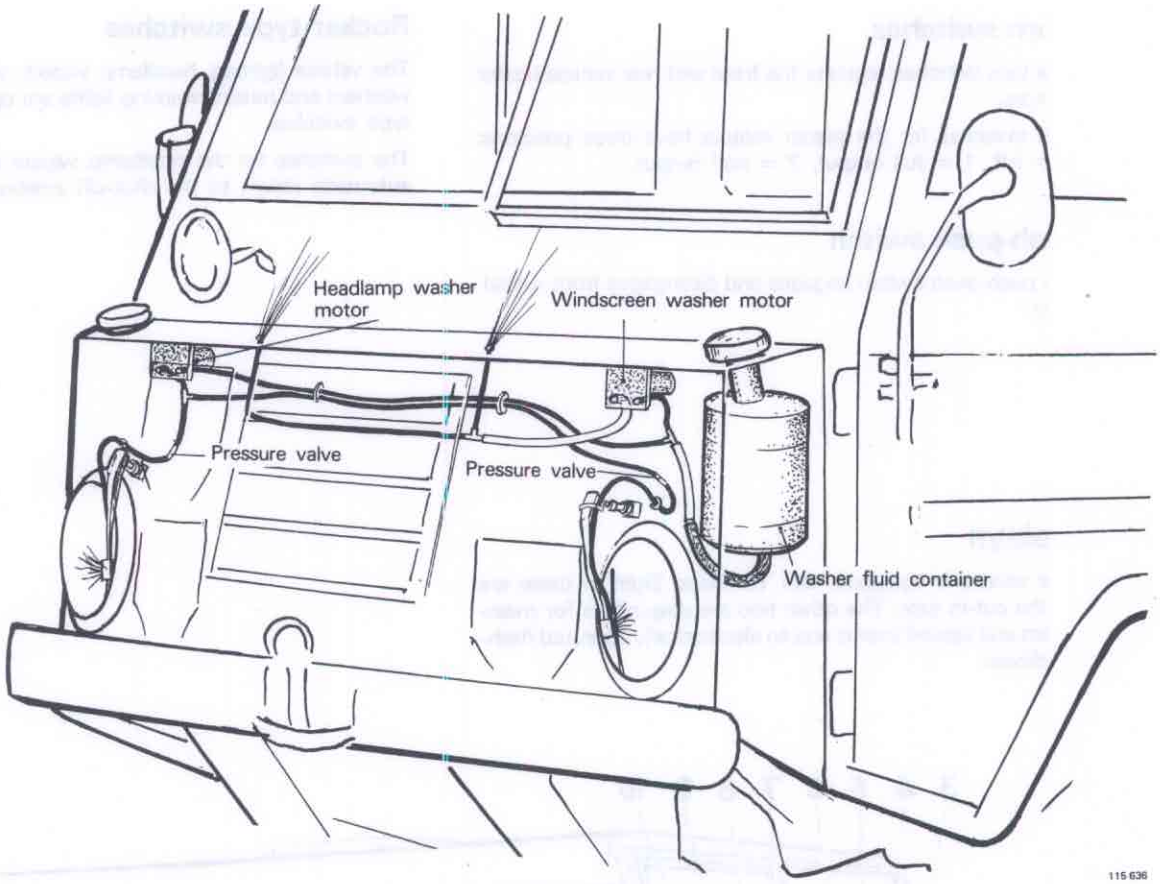


Fig. 36–4. Layout diagram, washers

Switches

The vehicle is equipped with three types of switches: rocker, turn and push-push switches.

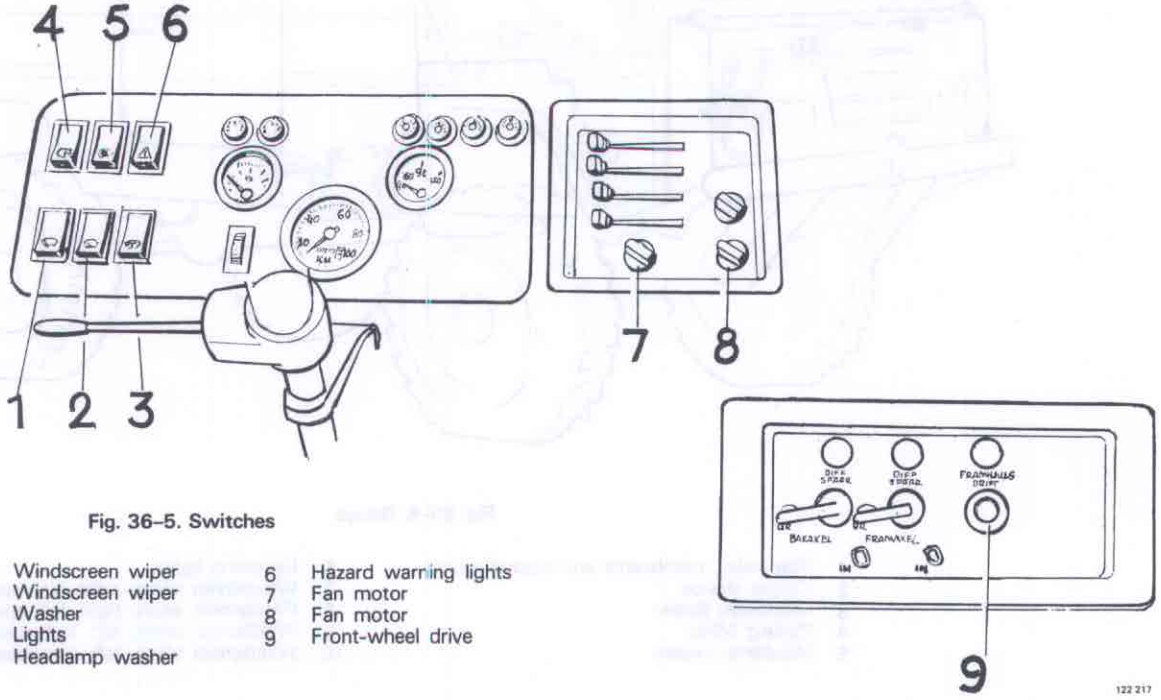


Fig. 36–5. Switches

1	Windscreen wiper	6	Hazard warning lights
2	Windscreen wiper	7	Fan motor
3	Washer	8	Fan motor
4	Lights	9	Front-wheel drive
5	Headlamp washer		

ırn switches

e turn switches regulate the front and rear vehicle heater ›tors.

e switches for the heater motors have three positions: = off, 1 = full output, 2 = half output.

ısh-push switch

› push-push switch engages and disengages front-wheel ›e.

elays

e vehicle is equipped with 10 relays. Eight of these are the cut-in type. The other two are step-relays for main-ım and dipped beams and an electronically operated flash-device.

Rocker-type switches

The vehicle lighting, headlamp wipers, windscreen wipers, washers and hazard warning lights are operated by rocker-type switches.

The switches for the headlamp wipers and washers have automatic return to the shut-off position.

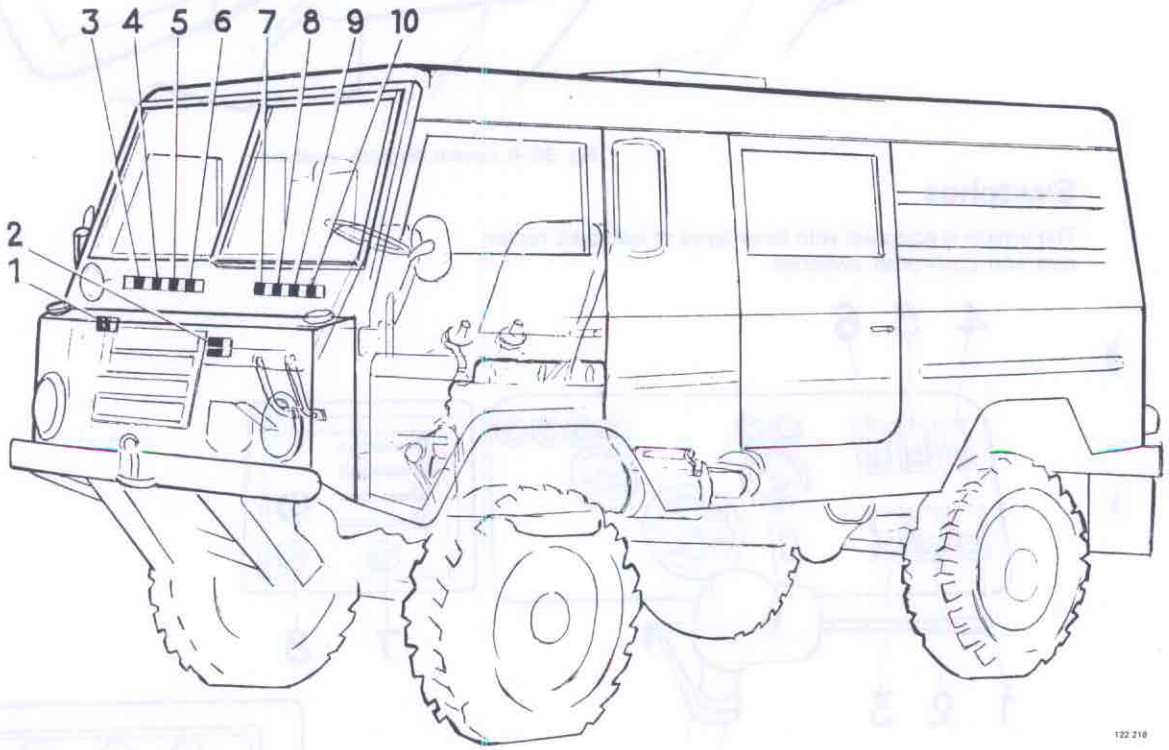
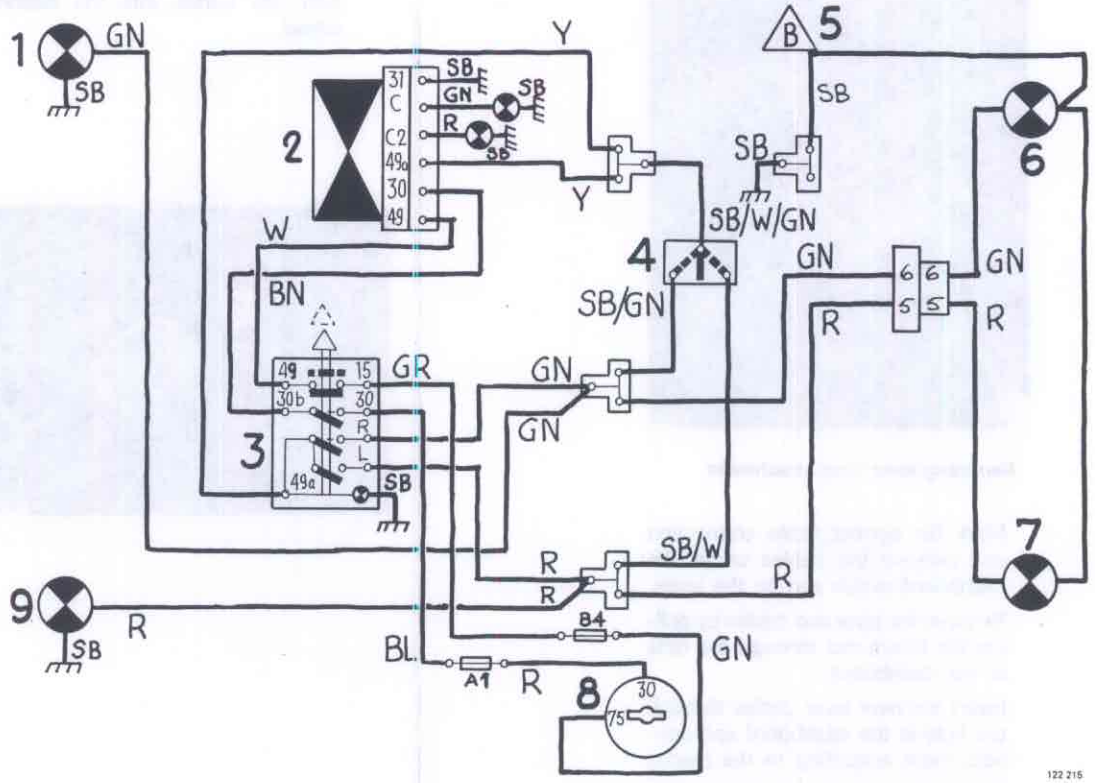


Fig. 36–6. Relays

1 Step relay, mainbeams and dipped beams
2 Flasher device
3 Mainbeam flasher
4 Parking lights
5 Headlamp wipers
6 Reversing lights
7 Windscreen wiper, right, high-speed
8 Windscreen wiper, right, low-speed
9 Windscreen wiper, left, high-speed
10 Windscreen wiper, left, low-speed

Direction indicators and hazard warning flashers



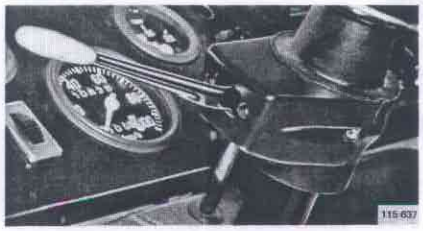
Wiring diagram for direction indicators and hazard warning flashers

1 Bulb, dir. indicator, front
2 Flasher device
3 Switch, hazard warning lights
4 Dir. indicator lever
5 Fuel gauge sender
6 Bulb, dir. indicator, left-rear
7 Bulb, dir. indicator, right-rear
8 Ignition
9 Bulb, dir. indicator, left-front

36108-2

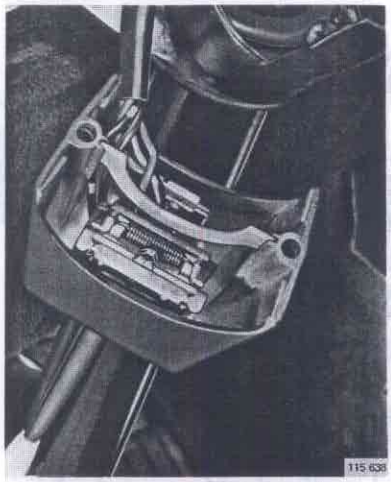
Replacing the direction indicator lever

1. Remove the screws securing the switch to the steering column.



Removing the screws securing dir. ind. lever

Remove the U-shaped washer and the two screws securing the lever to the attachment.



Removing lever from attachment

Mark for correct cable connection and remove the cables under the dashboard which run to the lever.

Remove the lever and cables by pulling the levers out through the hole in the dashboard.

Insert the new lever cables through the hole in the dashboard and connect them according to the marks.

Fix the lever to the attachment and fit the U-shaped washer.

Secure the lever and attachment to the steering column.

lorn

6202-2

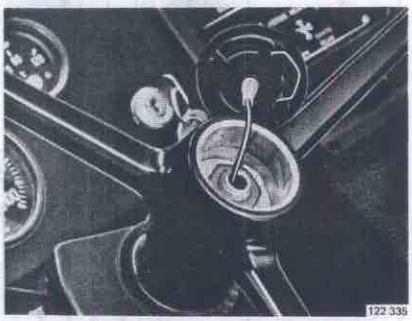
eplacing

Disconnect the cables and the nut which secures the horn.

Fit the new horn and connect up the cables.

Replacing the horn button

1. Remove the horn button by levering it up with a small screwdriver or similar tool.
2. Disconnect the cable from the button.
3. Fit the cable to the new button and push the button into the steering wheel.



Windscreen wipers and washers

Windscreen wiper

Checking

If the windscreen wipers do not function (ignition switched on) either at high or low speed, check to make sure fuse B5 is in good condition. If it is not, probably the reason is a short-circuit to the vehicle chassis at the wiper motors, switches, relays, rheostat or on the cables to these components. Use the wiring diagram overleaf as an aid when fault-tracing and connecting up replaced parts.