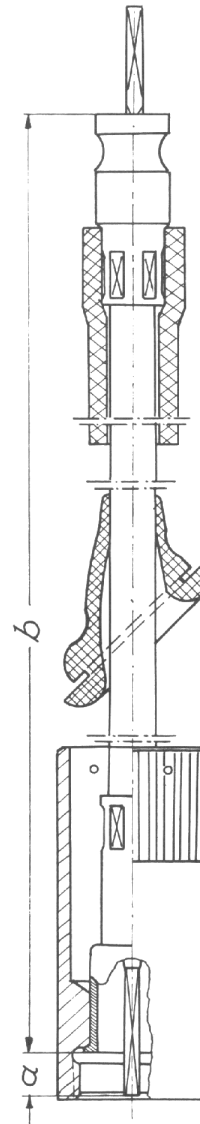


62 Instruments

Specifications	Page 62-0/3
62 11 000 Removing and fitting combined instrument	11/1
090 Removing and fitting coolant thermometer	11/1
130 Removing and fitting fuel gauge	11/2
62 12 000 Removing and fitting speedometer	12/1
020 Removing and fitting speedometer drive shaft	12/1
62 13 000 Removing and fitting revolution counter	13/1
050 Removing and fitting clock	16/1
62 16 000 Removing and fitting immersed-tube sensor for fuel gauge	16/1
005 Removing and fitting sensor for remote coolant	
thermometer	16/2
62 21 000 Removing and fitting complete instrument panel	21/1

Specifications

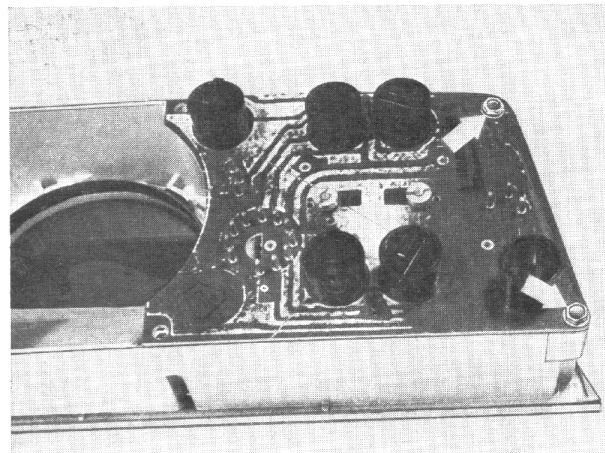
Instruments	Model	1502	1602	1802	2002	2002 A	2002 T1	2002 tii
Kilometer counter								
Speed/distance ratio (dynamic)			— ¹⁾			— ³⁾		—
Speed distance ratio			0.91 ¹⁾			0.807 ²⁾	0.807 ³⁾	0.807 ¹⁰⁾
Counter gear ratio			0.9			0.8		0.8 ¹⁰⁾
Scale range			20 ... 180			20 ... 200		20 ... 220 ⁹⁾
Mileage counter ⁶⁾								
Speed/distance ratio (dynamic)		— ⁴⁾	—	—		— ⁵⁾	—	—
Speed distance ratio		1.46 ⁴⁾		1.46		1.297 ⁵⁾	—	1.297 ¹¹⁾
Counter gear ratio		1.45		1.45		1.28	—	1.28 ¹¹⁾
Scale range		10 ... 120		10 ... 120		10 ... 120	—	10 ... 120 ⁷⁾
Speedometer drive gear ratio					2.5 : 1			
Speedometer drive shaft								
Length a	mm (in)				6.4 (0.24 + 0.16)			
Length b	mm (in)		1170 (46.07)			1300 ⁸⁾ (51.2)	1170 (46.07)	



- 1) BMW 1600-2: ratio (dynamic) 0.9, (static) 0.9
 2) BMW 2002/2002 A and touring 2002/2002 A static ratio
 3) Previously dynamic ratio 0.776, static ratio 0.8
 4) BMW 1600-2: dynamic ratio 1.4, static ratio 1.44
 5) Previously dynamic ratio 1.24, static ratio 1.28
 6) Not applicable to LHD models (except 2002 USA, 2002 A USA and 2002 tii USA)
 7) Previously read from 10 ... 140
 8) 1480 mm (58.17 in) on RHD vehicles (including touring 2002 A RHD)
 9) Previously 20 ... 200
 10) Previously ratio 0.765 and counter gear ratio 0.76
 11) Previously ratio 1.224 and counter gear ratio 1.21

62 11 000 Combined instrument – removing and installing

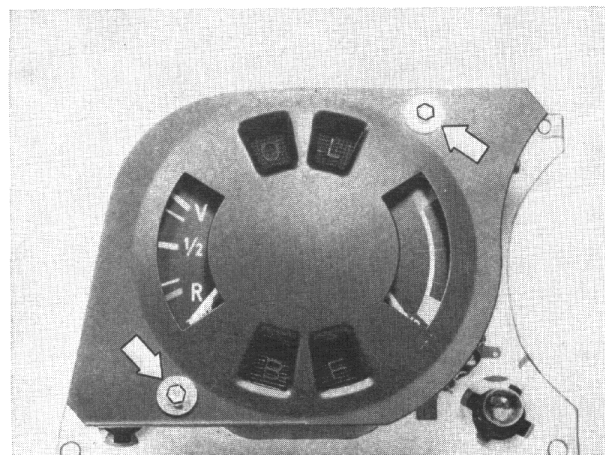
Remove and install the speedometer – 62 12 000.
Remove screws and take off the combined instrument.



62 11 090 Coolant thermometer – removing and installing

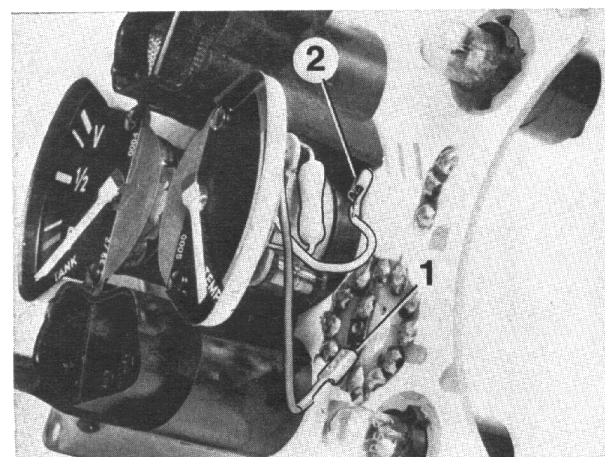
Remove and install combined instrument – 62 11 000.
Remove screws and take off cover.

When installing: Angled side faces down.

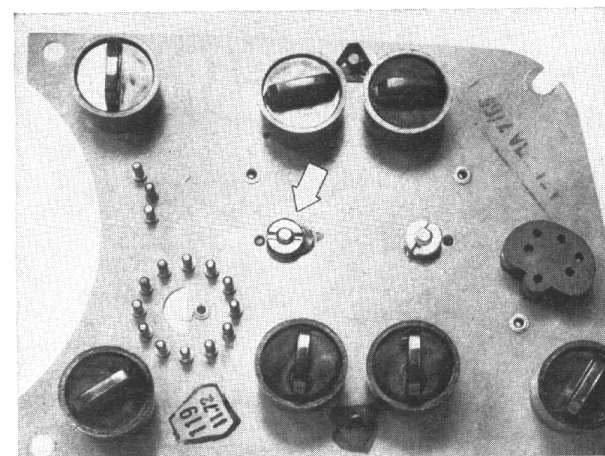


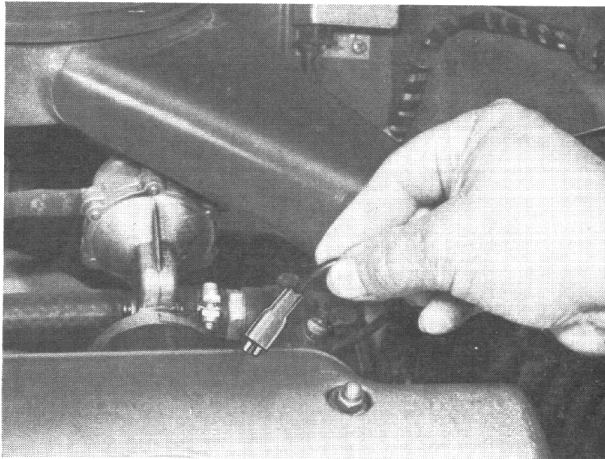
Detach leads (1 and 2).

When installing: Brown lead (1) at bottom is earth (ground).



Detach the coolant thermometer from the carrier plate.





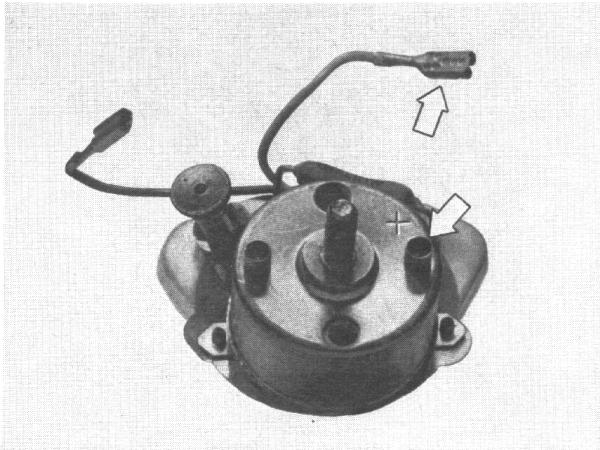
Testing the coolant thermometer:

a) Without removing:

Detach the lead from the coolant thermometer and connect to earth (ground).

Switch on the ignition **for a few moments only**.

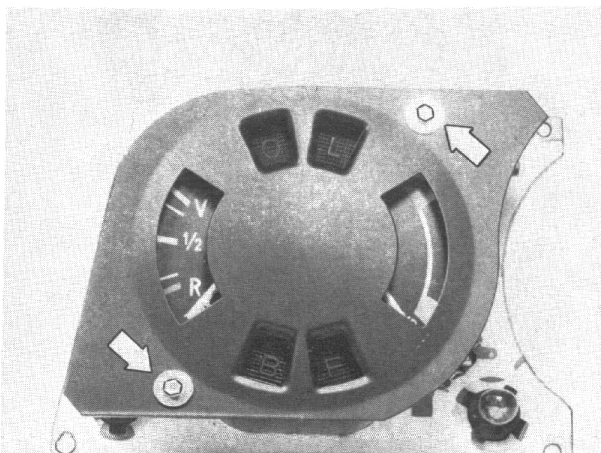
If the thermometer needle moves right over into the red zone, its sensor in the cooling system is defective.



b) After removal:

Connect a lead from a 12 Volt battery + to the + terminal, and the white lead from battery - to its terminal on the thermometer.

If the needle does not move right over into the red zone, the thermometer is faulty. If this reading is obtained, the fault should be looked for in the supply lead.

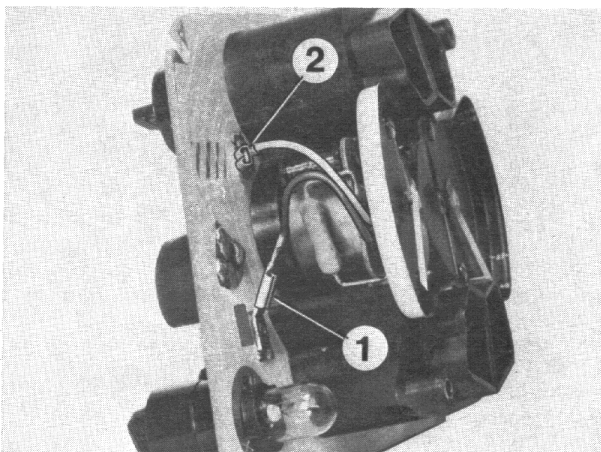


62 11 130 Fuel gauge – removing and installing

Remove and install the combined instrument – 62 11 000.

Remove screws and take off cover.

When installing: Angled side faces down.



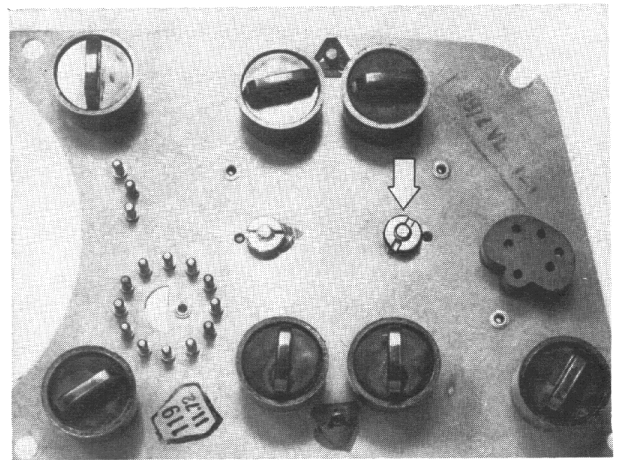
Detach leads (1 and 2).

When installing: Brown lead (1) at bottom is earth (ground).



Detach the fuel gauge from the carrier plate.

When installing: Note spacing sleeve between carrier plate and fuel gauge.



Testing the fuel gauge:

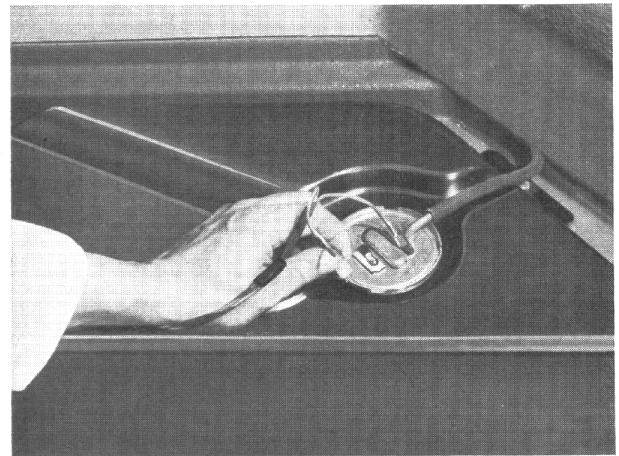
a) Without removing:

Remove the cover over the fuel tank.

Detach lead from terminal "G" on level sensor, and connect to earth (ground).

Switch on the ignition for a **brief period only**.

If the fuel gauge needle moves right over to full, the sensor in the fuel tank has failed.

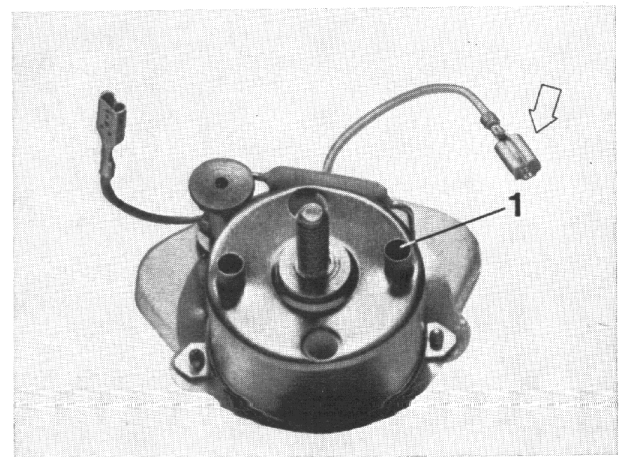


b) After removal:

Connect leads from a 12 Volt battery (+) to terminal (1) and from battery (-) to the terminal for the white lead on the fuel gauge.

If the fuel gauge needle fails to move fully over, it is defective.

If the needle moves fully over, the fault must be sought in the supply lead.



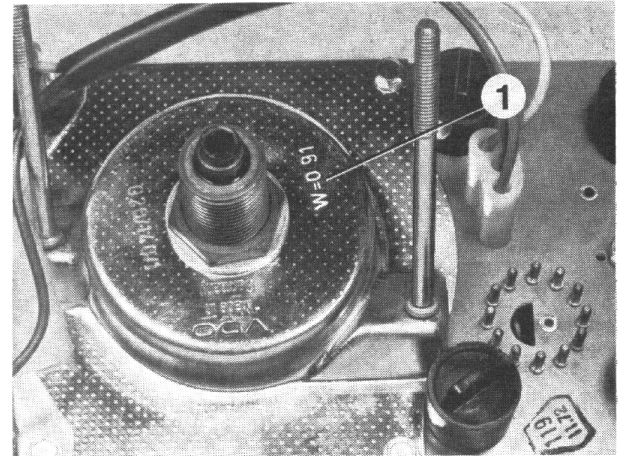
62 12 000 Removal and fitting of speedometer

Removal and fitting of clock cf. 62 13 050.

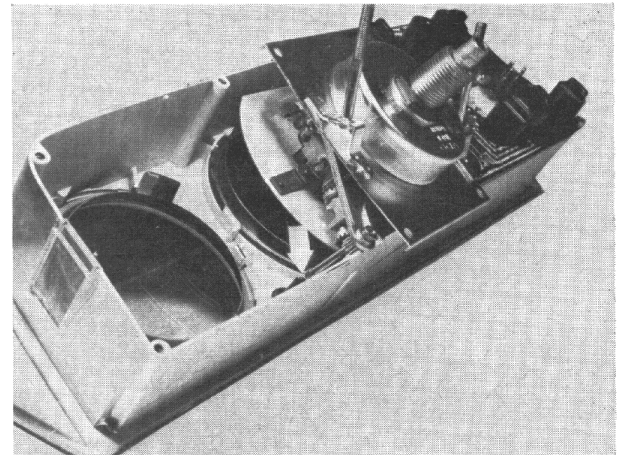
Alternatively: Removal and fitting of rev counter cf. 62 13 000.

Unscrew sheet metal bolts and take out speedometer. Speed/distance ratio (1) shown on back of speedometer.

Note when fitting: When replacing speedometer, note correct speed/distance ratio ¹⁾.

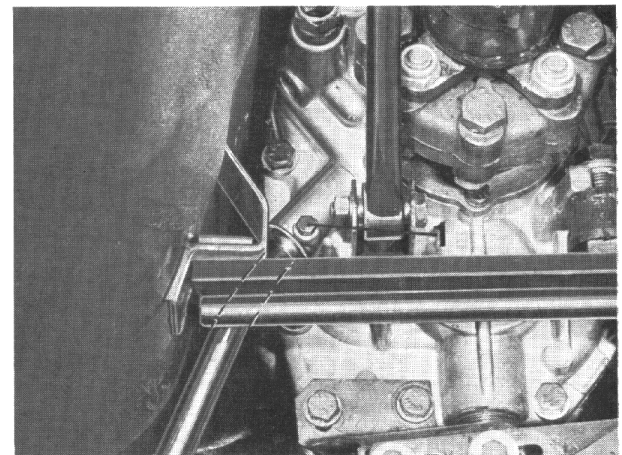


Note when fitting: Insert ends of trip counter reset knob shaft into recesses.

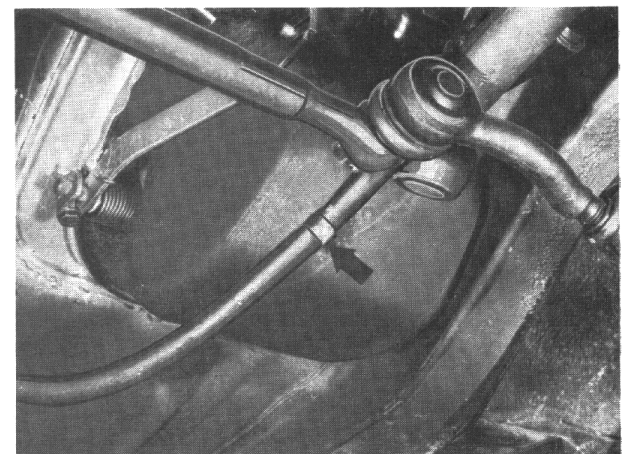


62 12 020 Removal and fitting of speedometer shaft

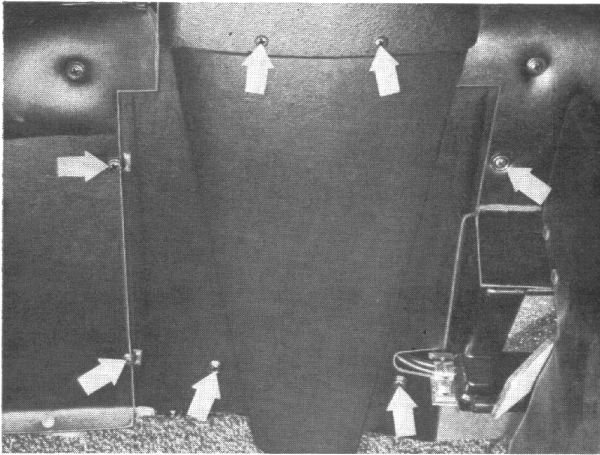
Unscrew speedometer shaft fastening bolt (1) on gearing and pull out speedometer shaft.



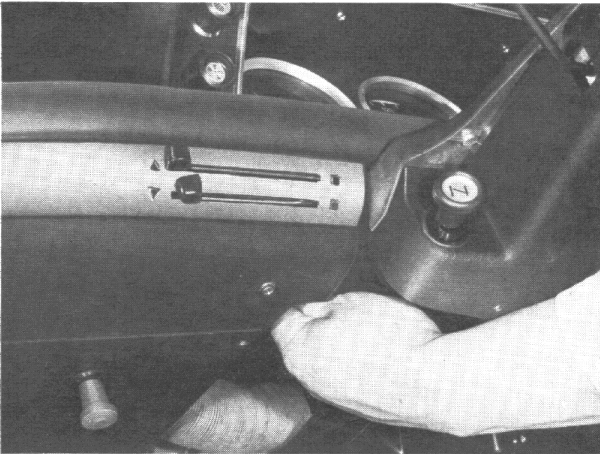
Remove speedometer shaft from support clamp.



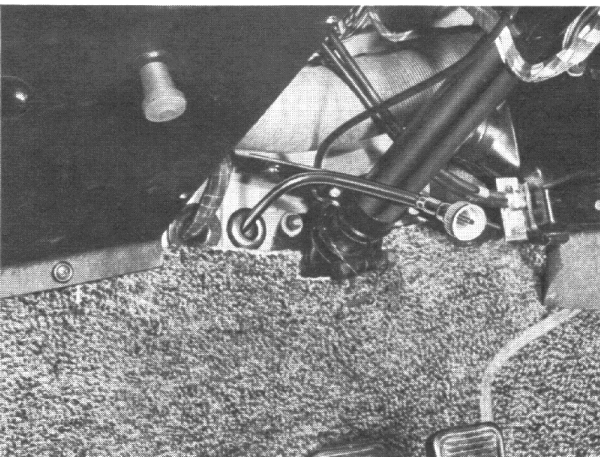
¹⁾ see Specifications



Remove sleeve tube cover.



Unscrew speedometer shaft from speedometer.



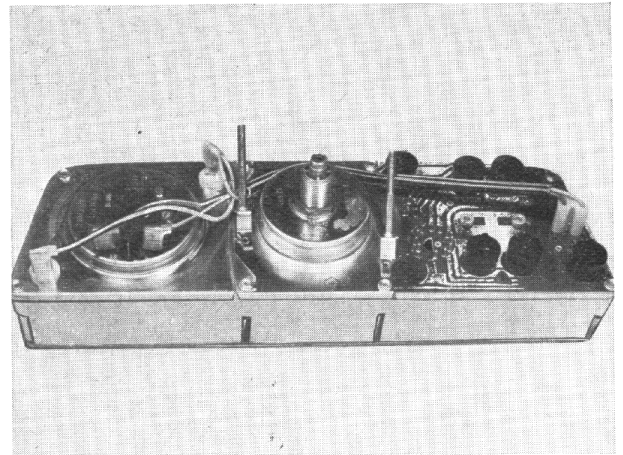
Pull out speedometer shaft together with rubber sleeve.

Note when fitting: Note correct length of speedometer shaft ¹⁾.

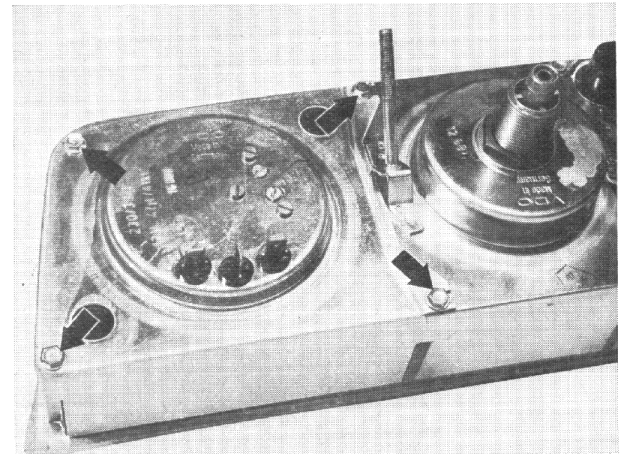


62 13 000 Removing and fitting revolution counter

Remove and fit complete instrument panel – 62 21 000.
Pull off cable for revolution counter.

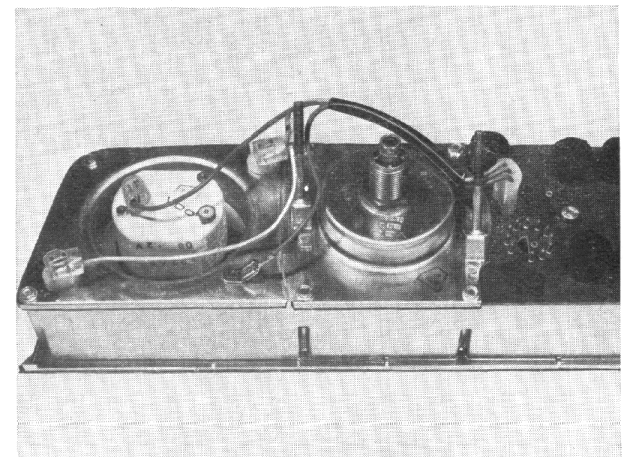


Loosen retaining screws and remove revolution counter.

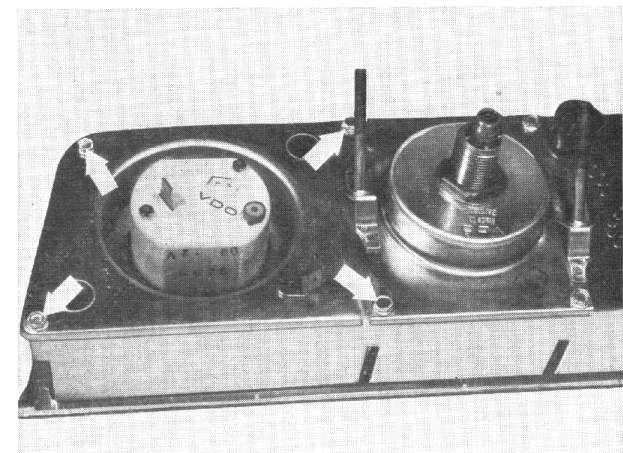


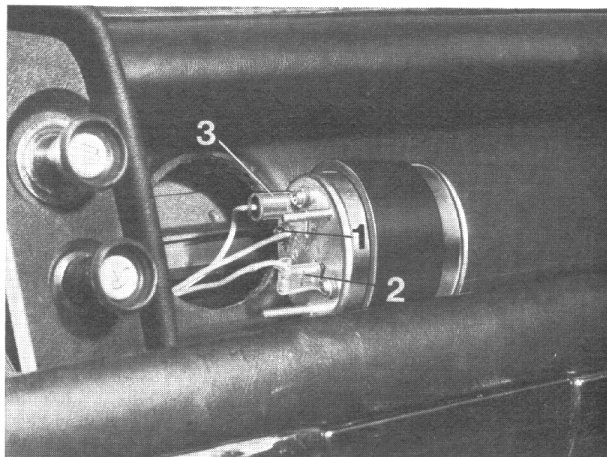
62 13 050 Removing and fitting clock

A) BMW 1502/1602/1802/2002/2002 Automatic
Remove and fit complete instrument panel – 62 21 000.
Pull off cable for clock.



Loosen retaining screws for clock and remove clock.





B) BMW 2002 TI/2002 tii

Disconnect negative lead at battery.

Remove lower centre facia trim – 51 45 200.

Unscrew knurled nuts at rear.

Pull out clock and detach leads (1 and 2) with bulb holder (3).



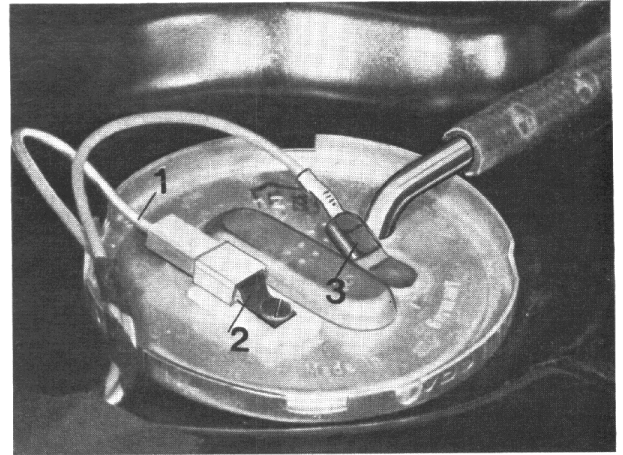
62 16 000 Removal and fitting of immersion tube sensor for fuel gauge

Disconnect minus cable from battery.

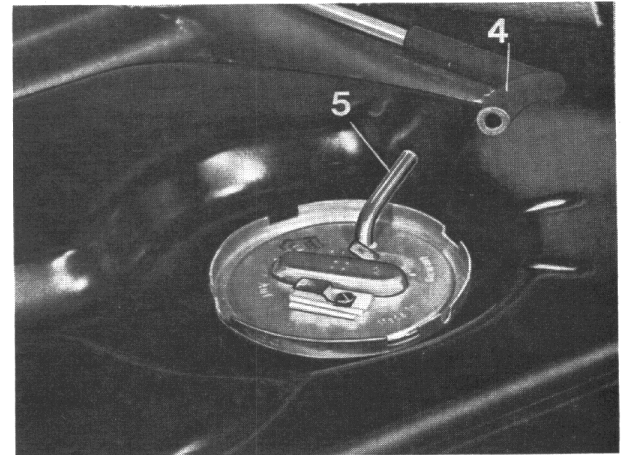
Remove base plate.

Pull brown and yellow cable (1) on the immersion tube sensor off plug connection (2).

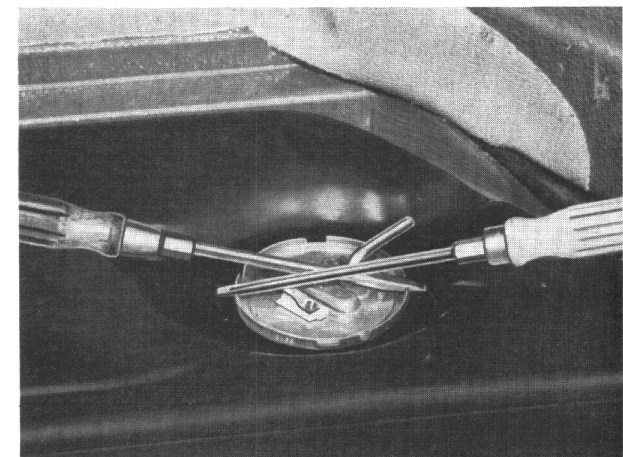
Disconnect earth cable (3).



Disconnect fuel house (4) from immersion tube sensor (5).



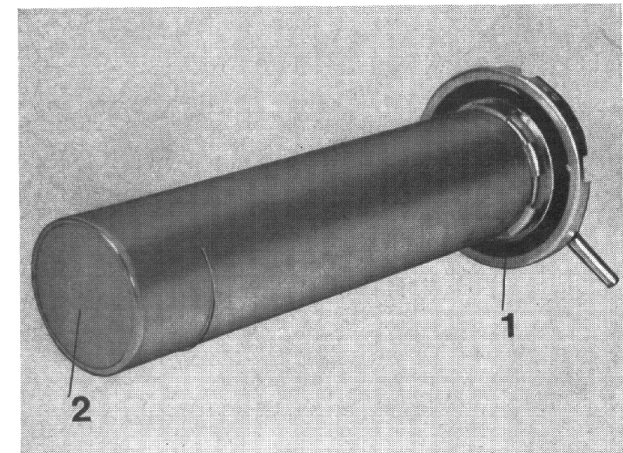
Holding two screwdrivers in crosswise position, unscrew immersion tube sensor, working to the left.

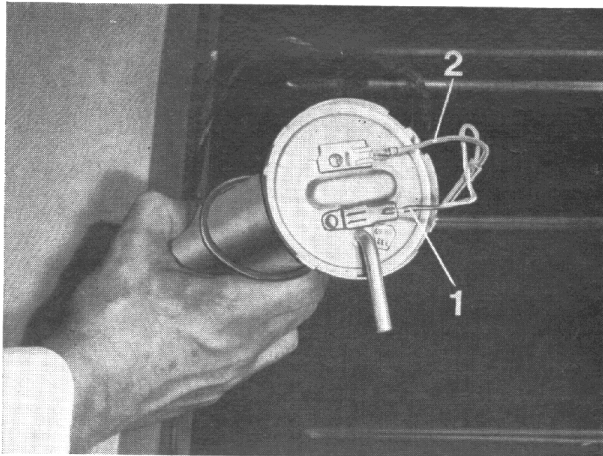


Important: When it comes into contact with fuel, string ring (1) will expand and thus provides a perfect sealing effect.

If a string ring has already been used before, it will take approximately 48 hours to return to its original shape.

When fitting string ring (1) always apply vaseline. Clean fine-mesh filter (2).





Checking of immersion tube sensor:

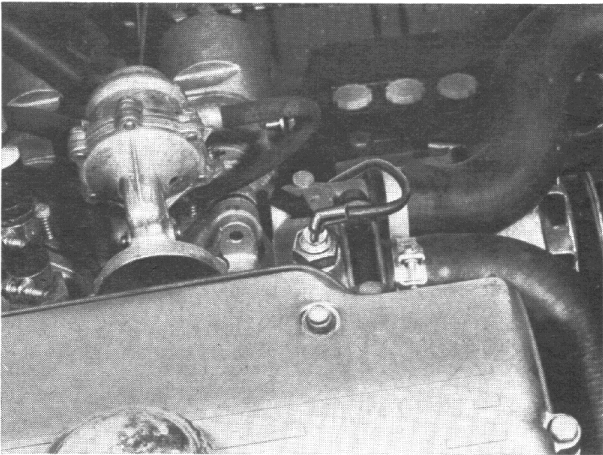
Connect brown and yellow cable (1) and earth cable (2) to the immersion tube sensor once it has been removed from the car.

Switch on ignition **briefly**.

Tilt immersion tube sensor from the horizontal position so that the float reaches the upper and lower stops.

When this is done, the fuel gauge indicator should move between „V“ and „R“.

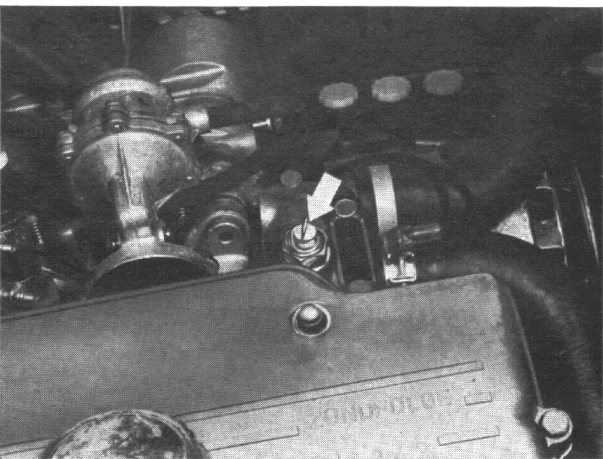
Important: Do not take immersion tube sensor to pieces.



62 16 050 Removal and fitting of remote thermometer sensor

Drain some coolant.

Pull off cable.



Unscrew remote thermometer sensor.

Note when fitting: Check seal and replace if necessary. For bleeding of coolant system, see „note when fitting“ under 11 17 000.

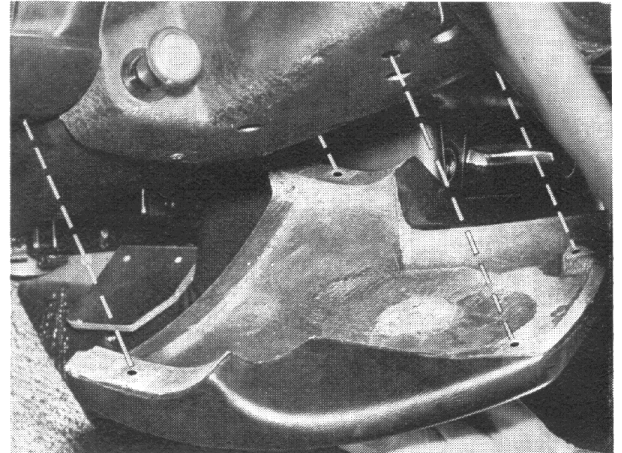


62 21 000 Removing and fitting complete instrument panel

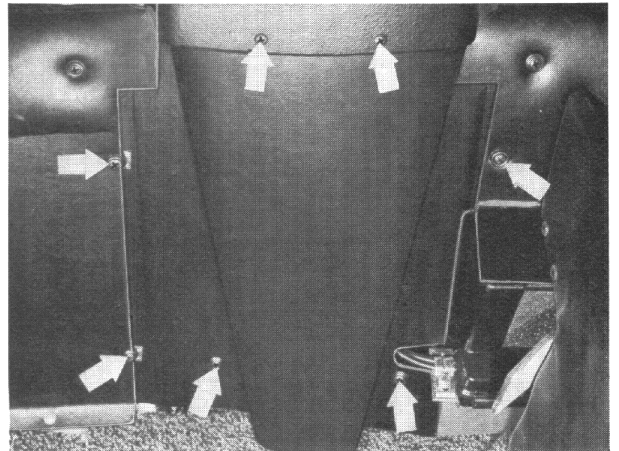
On touring and 71 models:

Disconnect negative lead at battery.

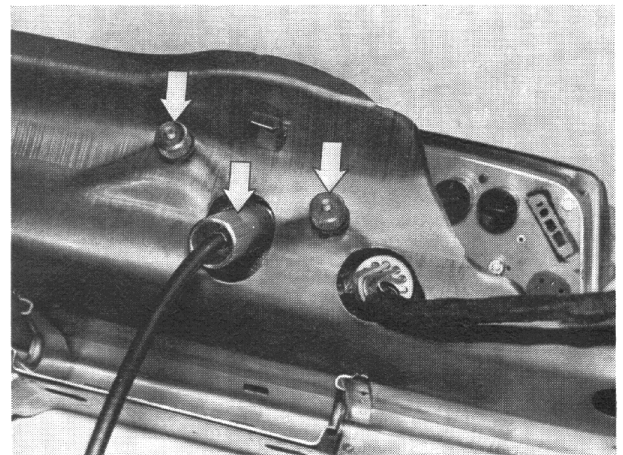
Remove lower section of steering column surround.



Remove lower center instrument panel trim.



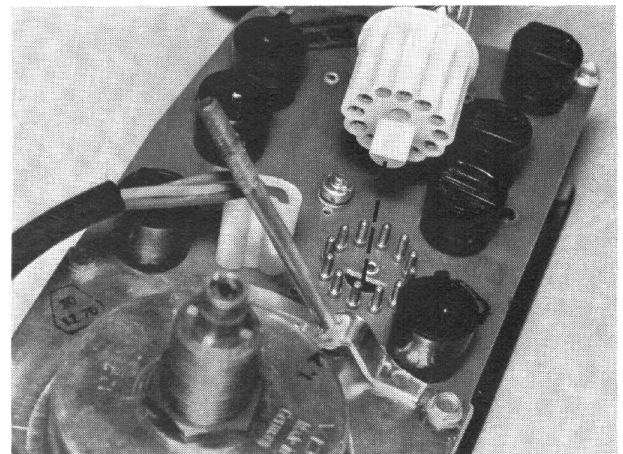
Unscrew knurled nuts and speedometer drive shaft.



Unscrew hood retaining screws (not touring or 71 models).

Press instrument board out forwards and pull off central plug.

Warning: note correct installed position of plug.



63 Lights

Specifications	Page 63-0/3
63 12 000 Removal and fitting of headlight	12/1
031 Replacement of headlight lens	12/1
061 Replacement of headlight reflector	12/1
63 13 001 Replacement of front turn indicator lens	13/1
63 21 000 Removal and fitting of rear light lens	21/1
030 Removal and fitting of rear light bulb holder housing	21/1
63 26 000 Removal and fitting of number plate light	26/1
63 31 000 Removal and fitting of entire interior light	31/1
63 99 101 Replacement of headlight bulb	99/1
131 Replacement of parking light bulb	99/2
271 Replacement of front turn indicator bulb	99/2
301 Replacement of reversing light bulb	99/3
321 Replacement of rear turn indicator bulb	99/3
341 Replacement of rear light bulb	99/3
361 Replacement of stop light bulb	99/3
401 Replacement of number plate light bulb	99/3
431 Replacement of interior light bulb	99/4
Trouble-shooting – electrical system	64-21/3

Specifications

Lights

Model	1502	1602	1802	2002	2002 A	2002 T1	2002 tii
High and low beam headlights	W		45/40				
Side lights/ parking lights	W		4				
Front turn indicators	W		21				
Stop lights	W		21				
Reversing lights	W		21 (previously 15)				
Rear turn indicators	W		21				
Rear parking lights/ side lights	W		10 (previously 5)				
Number plate light	W		5				
Interior light	W		10 (on touring 5)				
Instrument panel bulbs	W		3				
Battery charge telltale bulb	W		3				
High beam telltale bulb	W		3				
Turn indicator telltale bulb	W		3				
Oil pressure telltale bulb	W		3				
Selector lever indicator light (Automatic)	W		—		2	—	—
Rev counter bulb	W		—			3	
Clock bulb	W		3			2	
Hazard warning flashers switch knob	W		1.2				
Luggage compartment light (touring only)	W		10			—	10
Starter, handbrake and fuel level telltale bulb	W		3		—		3
Handbrake and fuel level telltale bulb	W		—		3	—	

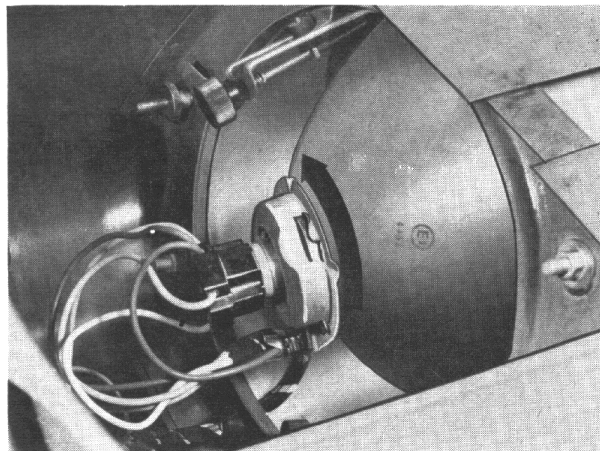
Tightening torques in Nm (mkp) (ft.lb)

Number plate fastening bolts

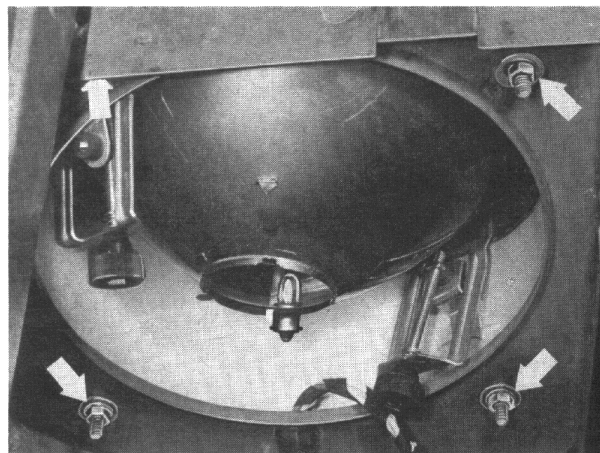
1.0 ... 1.2 (0.1 ... 0.12) (0.7 ... 0.9)

63 12 000 Removing and fitting headlight

Remove and fit front side radiator grille. 51 13 040.
Remove bulb holder by turning slightly to the left.



Unscrew headlight housing and remove.
Fitting instruction: Adjust headlight.



63 12 031 Renewing headlight lens

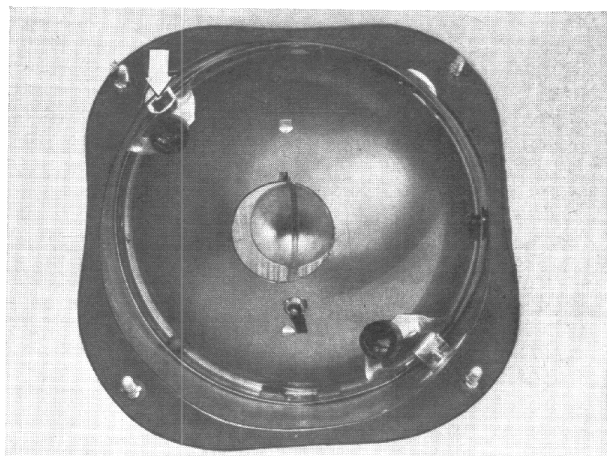
Remove and fit front side radiator grille. 51 13 040.
Press lens out forwards with a small screwdriver.
Fitting instruction: Coat seal with Poliglycol or glycerin.
Note: Fitted position of lens.
Adjust headlight.



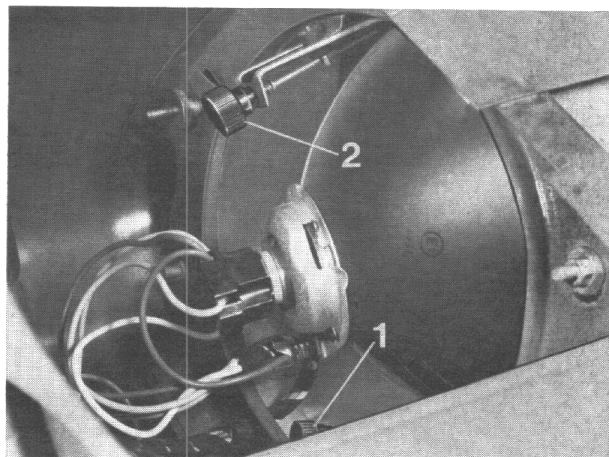
63 12 061 Renewing headlight reflector

Remove and fit headlight. 63 12 000.
Unscrew bracket.





Press threaded plate out of rubber mounting.
Lift reflector out of housing.



Fitting instruction:

Reflector adjustment is carried out in the normal load position¹⁾.

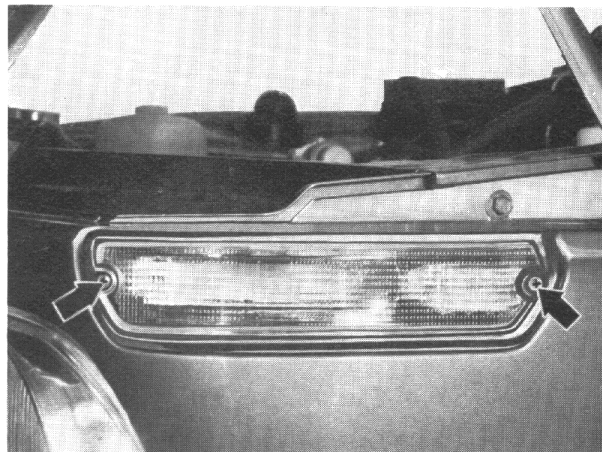
Adjustment screw: 1 = lateral adjustment
2 = vertical adjustment

Adjust headlight.

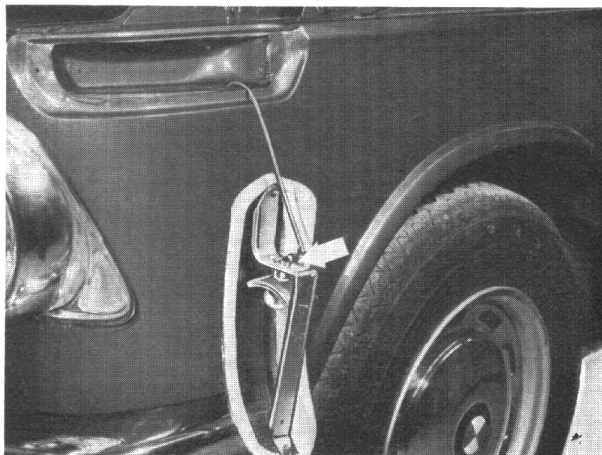


63 13 001 Renewing front turn indicator lens

Loosen retaining screws.

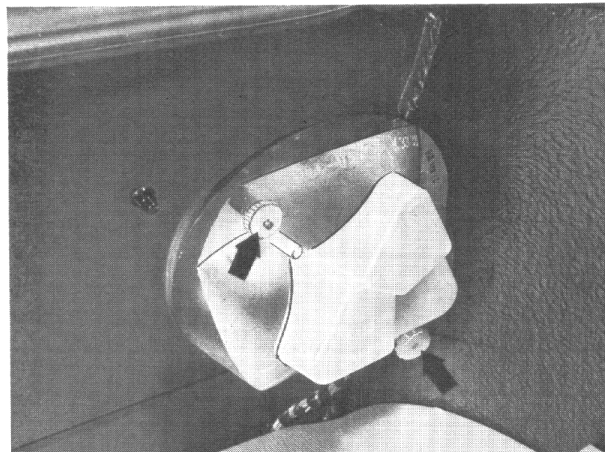


Disconnect cable and remove bulb holder with lens.

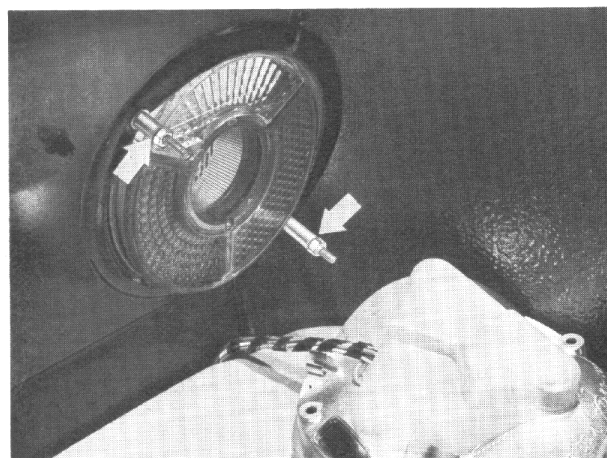


63 21 000 Rear light glass – detaching and attaching

Unscrew the threaded knobs and take off the light housing.



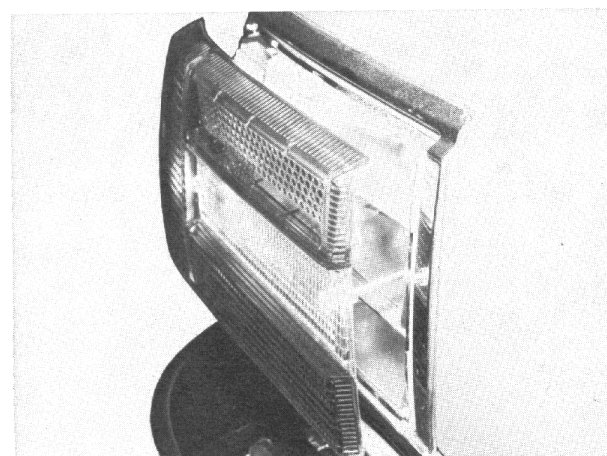
Unscrew the locating nuts and remove the rear light glass.



73 models:

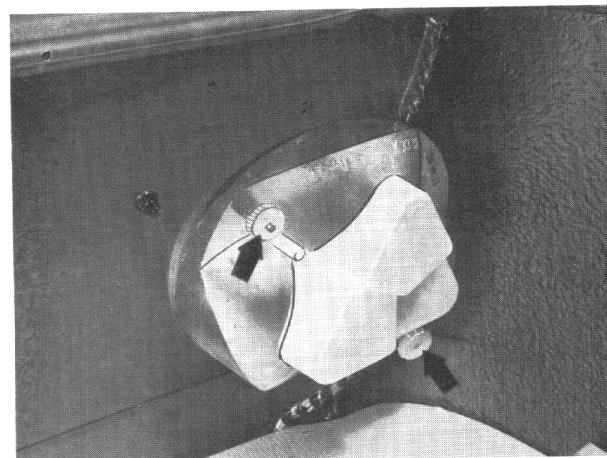
Unscrew the threaded knobs in the luggage compartment and take off the rear light glass.

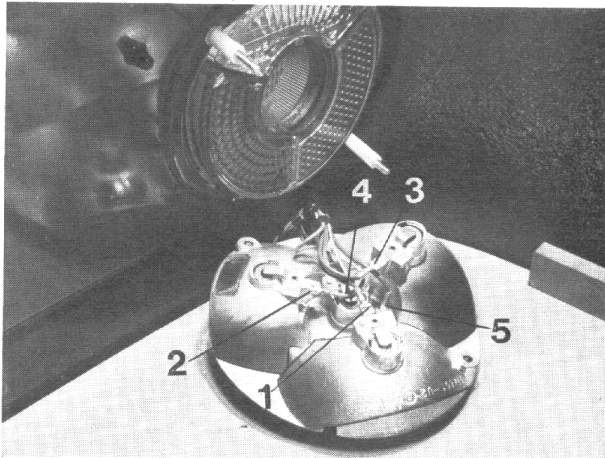
When installing: Check condition of rubber seal and renew if necessary.



63 21 030 Rear light housing – detaching and attaching

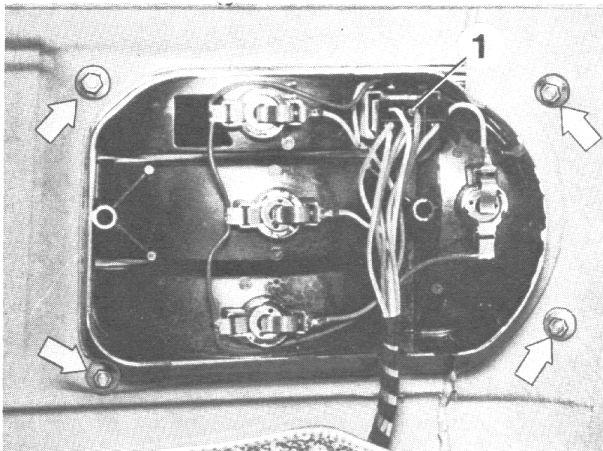
Unscrew the threaded knobs and take off the housing.





Take off the protective cap and pull off the leads (1 to 5).

When installing: Connect leads as shown in circuit diagram.



73 models:

Unscrew the threaded knobs and take off the cover. Pull off plug (1).

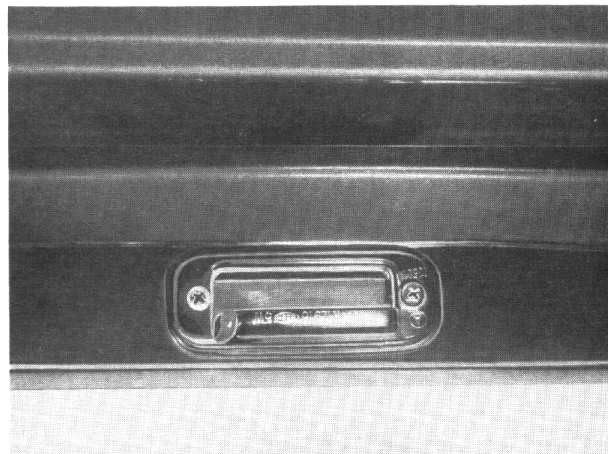
Unscrew the nuts and detach the housing.



**63 26 000 Removing and fitting number
plate light**

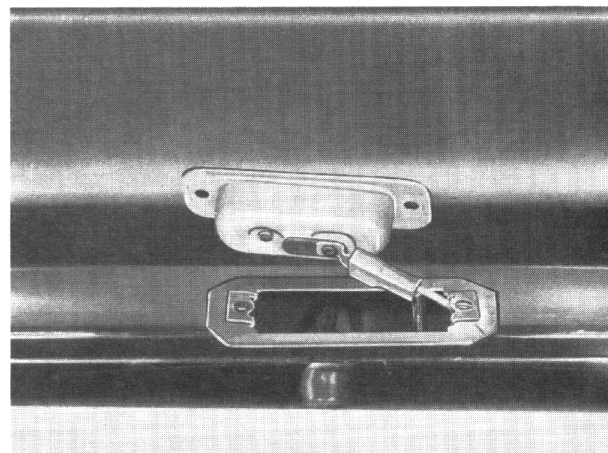
Loosen Philips head screws.

Take off frame with glass and rubber seal.



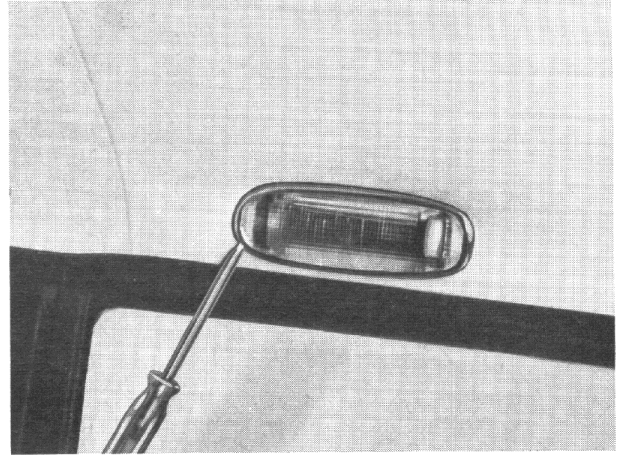
Pull off cable from bulb carrier.

Fitting instruction: Drain hole must be free.



63 31 000 Removing and fitting complete interior light

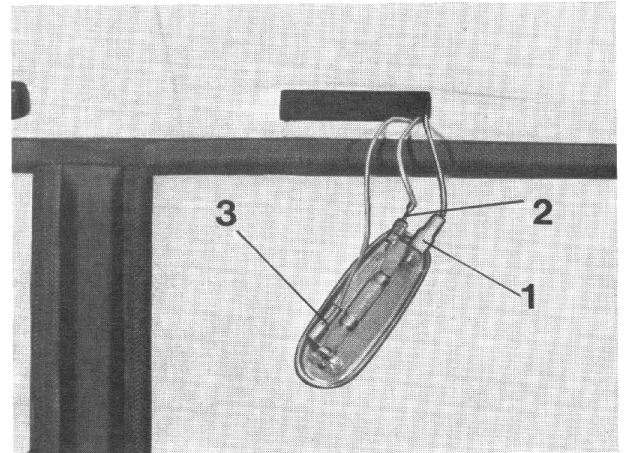
Disconnect negative lead from battery.
Press interior light out of holder with a small screwdriver.



Pull off cable and remove interior light.

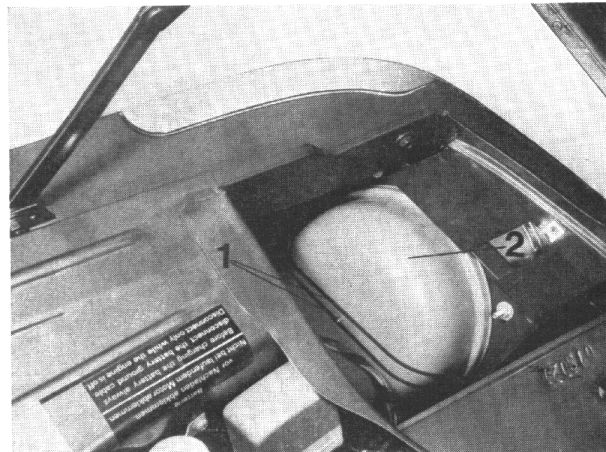
Fitting instruction: Cable sequence:

- 1 = brown/black
- 2 = brown
- 3 = red

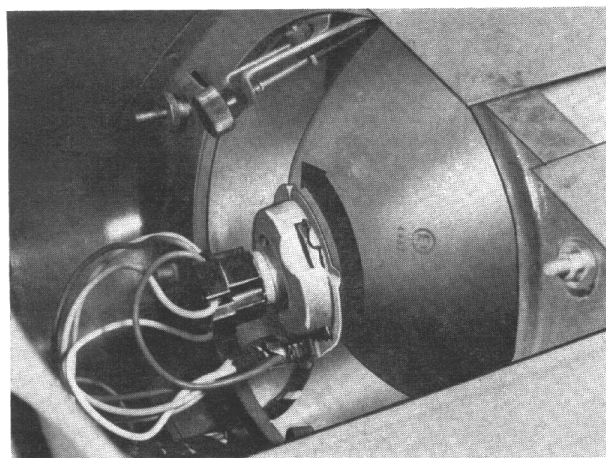


63 99 101 Renewing bulb for headlight

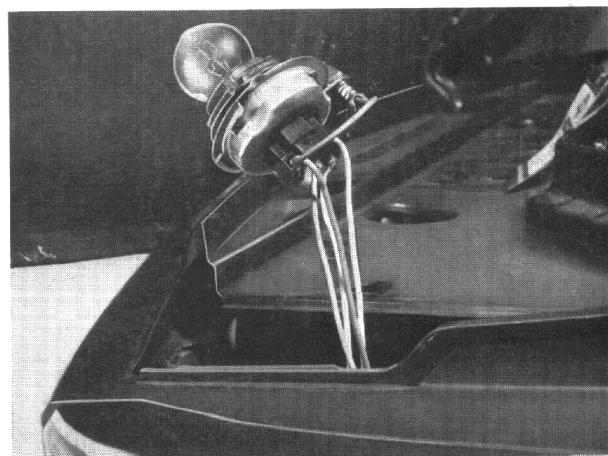
Remove clamping band (1) and protective cap (2).



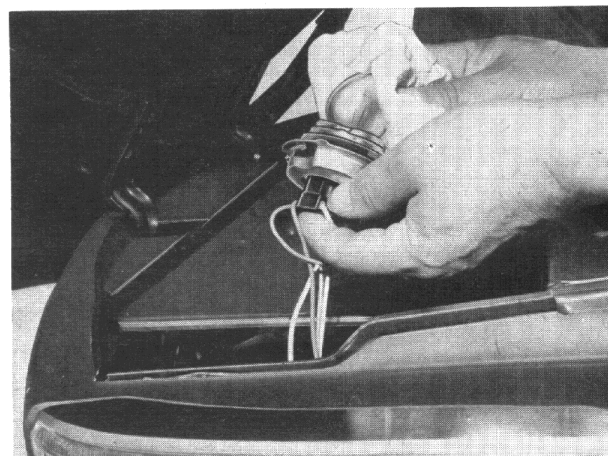
Remove bulb holder by turning slightly to the left.

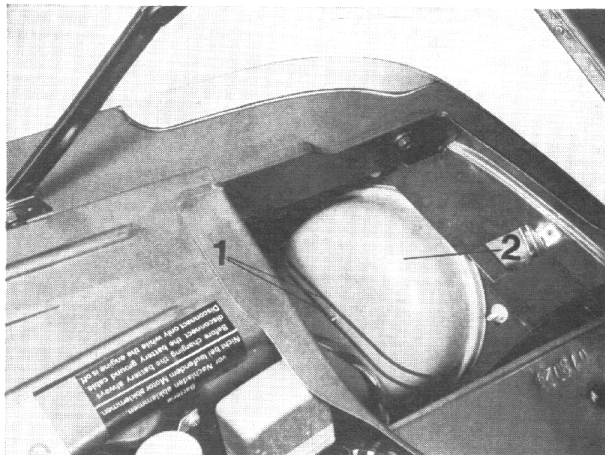


Pull off plug and remove bulb.



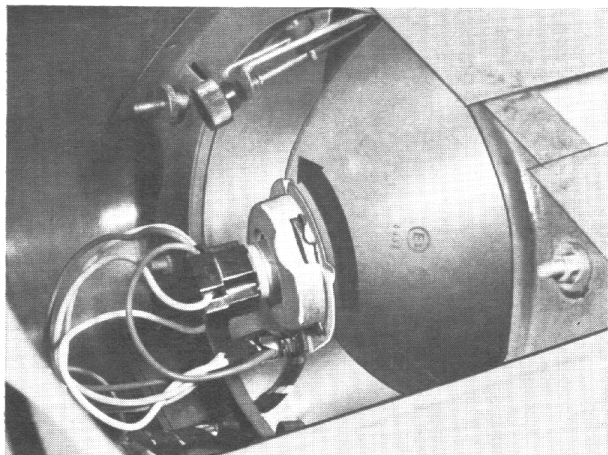
Fitting instruction: Do not touch bulb with fingers.
Use a clean when inserting.
Adjust headlight beams.



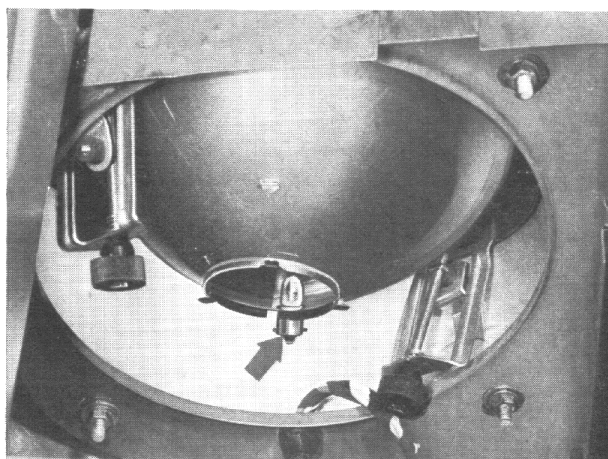


63 99 131 Renewing bulb for parking light

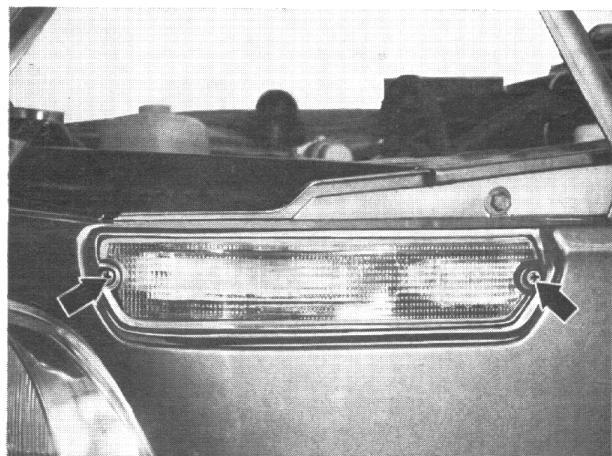
Remove clamping band (1) and protective cap (2).



Remove bulb holder by turning slightly to the left.



Press out bulb for parking light towards the rear and remove.

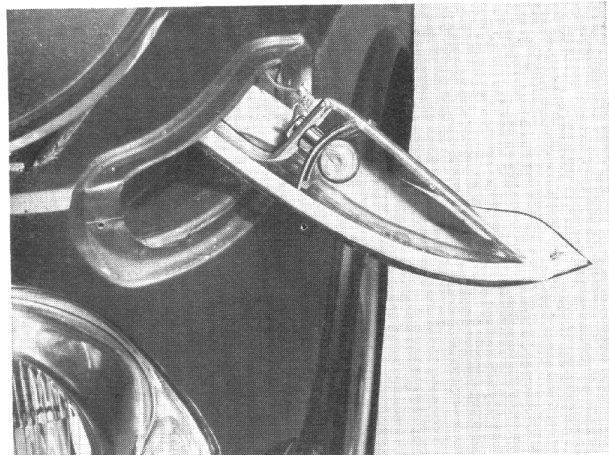


63 99 271 Renewing bulb for front turn indicator

Loosen retaining screws.



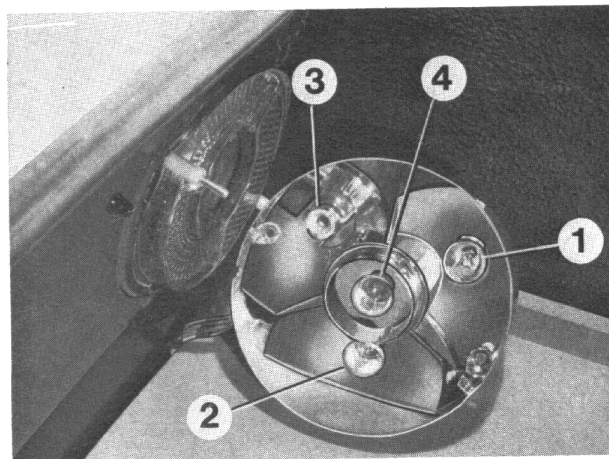
Turn bulb slightly and remove.



63 99 301/321/341/361 Renewing bulb(s) in rear light cluster

Detach and attach rear light housing – 63 21 030.
Remove bulb(s).

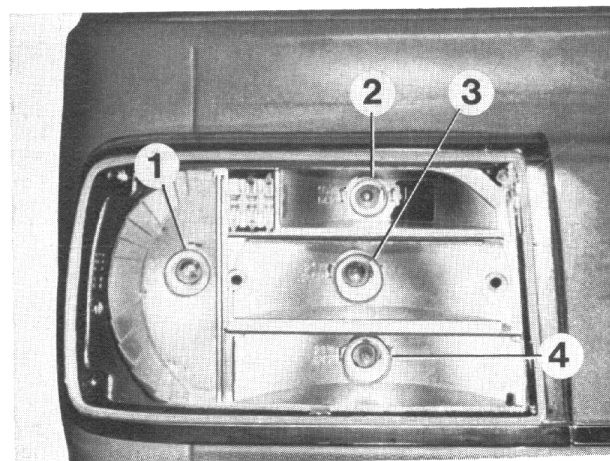
- 1 = Reversing light bulb
- 2 = Brake light bulb
- 3 = Rear light bulb
- 4 = Turn indicator bulb



73 models:

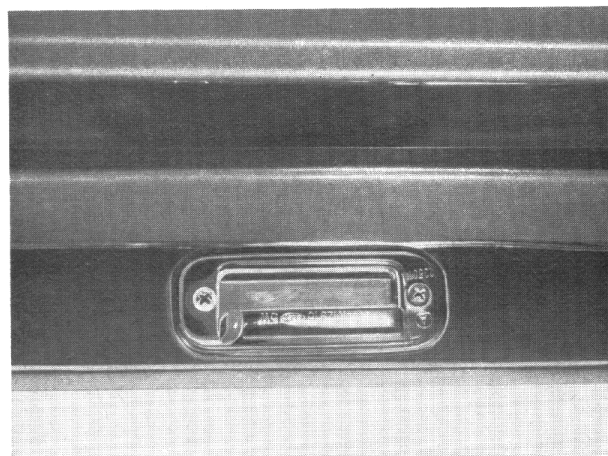
Detach and attach rear light glass – 63 21 000.
Remove bulb(s).

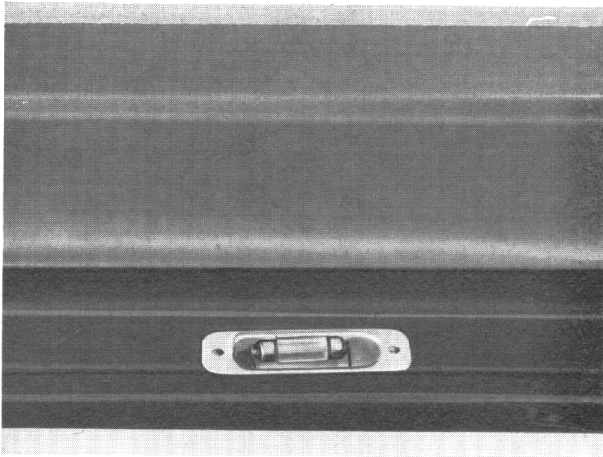
- 1 = Turn indicator bulb
- 2 = Rear light bulb
- 3 = Reversing light bulb
- 4 = Brake light bulb



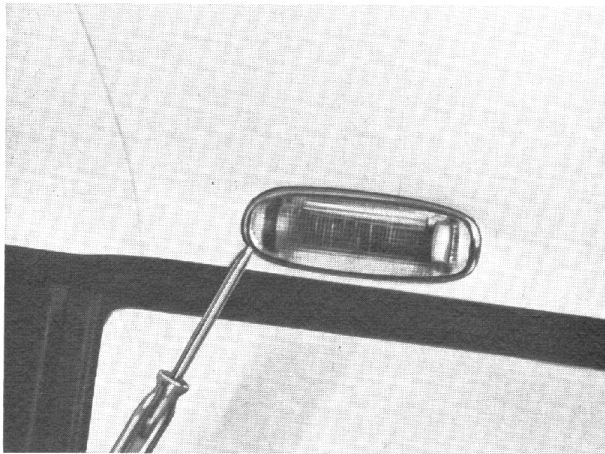
63 99 401 Renewing bulb for license plate light

Remove Phillips head screws and take off frame with glass and rubber seal.





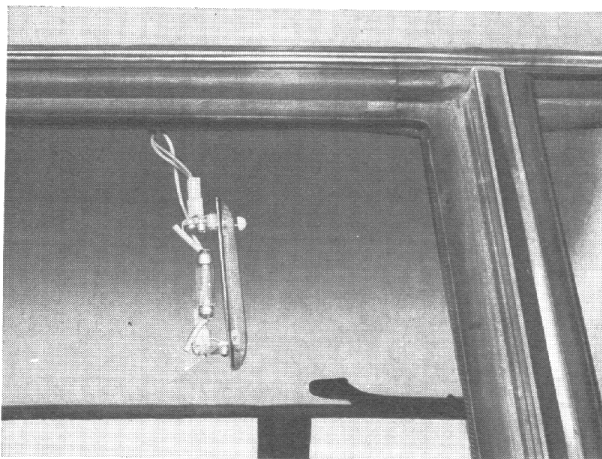
Press bulb out of holder and remove.



63 99 431 Renewing bulb for roof light

Detach negative lead at battery.

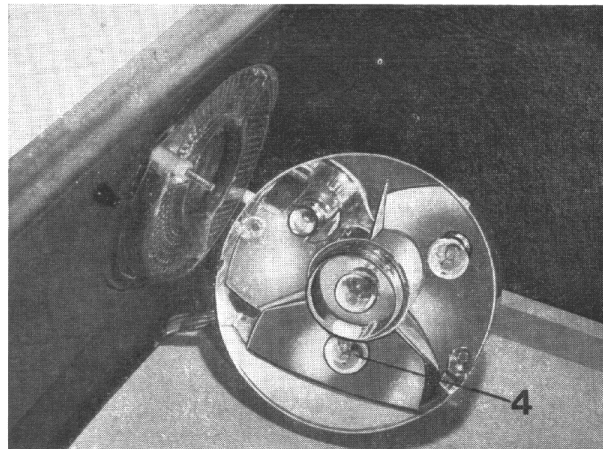
Press roof light out of holder with a small screwdriver.



Press bulb out of holder and remove.

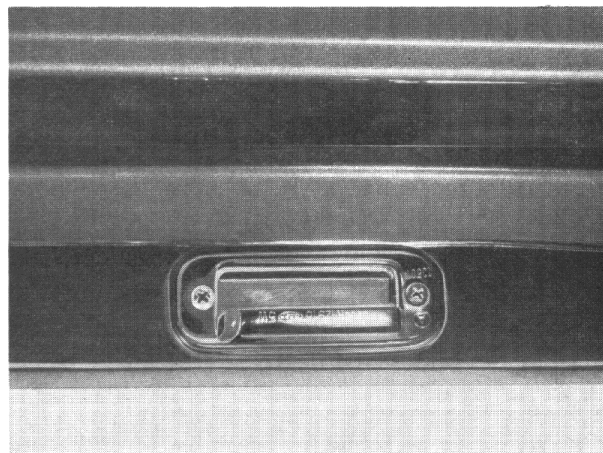


Push in bulb (4) slightly, turn to left and remove.

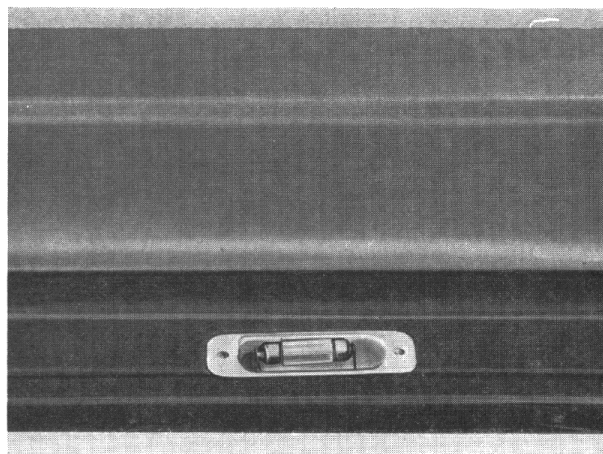


63 99 401 Renewing bulb for number plate light

Loosen Philips head screws.
Remove frame with glass and rubber seal.

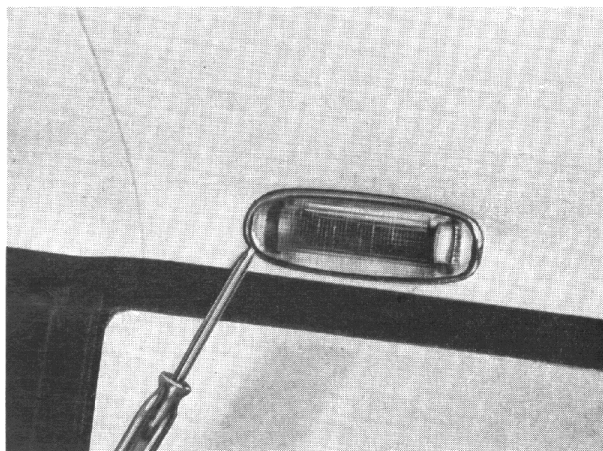


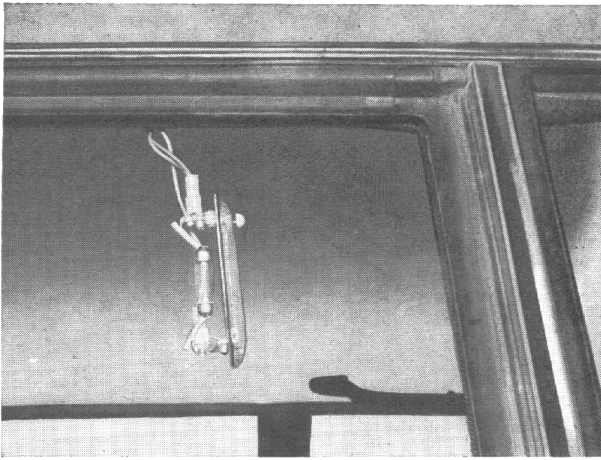
Press bulb out of holder and remove.
Fitting instruction: Drain hole must be free.



63 99 431 Renewing bulb for interior light

Disconnect negativ lead from battery.
Press interior light out of holder with
a small screwdriver.





Press bulb out of holder and remove.

