

Survey of engines

- The order in which the individual operations are given has been tested and represents the optimum working sequence. The sequence should therefore be followed to avoid unnecessary work interruptions.
- The sequence of operations given is based on that specified for the Inspection Service, which is the type of service most frequently required.
- Always inform the customer if faults or defects which need repairing are identified during the Inspection Service.

Code letters		AEH, AKL APF, AVU	AGN, APG	AGU	AQA, ARX	ARZ, AUM	AJQ
Exhaust emission classification		AEH- EU II, AKL- EU II + D3 APF- EU II + D4 AVU- EU IV	AGN- EU II + D3 APG- EU III	EU II + D3	AQA- EU II + D3 ARX- EU III	ARZ- EU II + D4 AUM- EU IV	EU II + D3
No of cylinders / Valves per cylinder		4 / 2	4 / 5	4 / 5	4 / 5	4 / 5	4 / 5
Capacity	l	1.6	1.8	1.8	1.8	1.8	1.8
Output	kW at rpm	74/5600 AVU 75/5600	92/6000	110/ 5000...6000	110/ 5000...5700	110/ 5000...5700	132 5500...6000
Torque	Nm at rpm	145/3800 AVU148/3800	173/4100	210/ 2000...4500	210 1750...4600	210 1750...4600	235 1950...5000
Bore	ø in mm	81.0	81.0	81.0	81.0	81.0	81.0
Stroke	mm	77.4	86.4	86.4	86.4	86.4	86.4
Compression		10.2	10.3	9.5	9.5	9.5	9.5

— 1 —

Code letters		AEH, AKL APF, AVU	AGN, APG	AGU	AQA, ARX	ARZ, AUM	AJQ
Injection / ignition		Simos Multi Point Injection	Bosch Motronic	Bosch Motronic	Bosch Motronic	Bosch Motronic	Bosch Motronic
RON	at least	95 ¹⁾ (unleaded)	95 ¹⁾ (unleaded)	95 ¹⁾ (unleaded)	95 ¹⁾ (unleaded)	95 ¹⁾ (unleaded)	98 ²⁾ Super plus unleaded
Hydraulic valve lifters		X	X	X	X	X	X
Self-diagnosis		X	X	X	X	X	X
Catalytic converter		X	X	X	X	X	X
Electronic throttle (Electronic throttle)		APF, AVU	-	-	X	X	X
Lambda control		X	X	X	X	X	X
Inlet manifold change-over system		APF, AVU	X	-	-	-	-
Secondary air inlet		-	-	-	ARX	X	-
Exhaust gas recirculation system		APF, AVU	-	-	-	-	-
Turbocharging		-	-	X	X	X	X
Exhaust emission test after 3,5,7,9... years		X	X	X	X	X	X

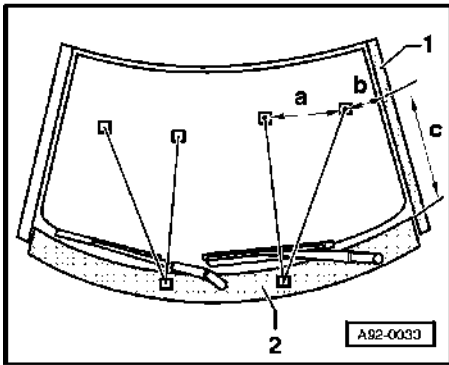
¹⁾ Regular unleaded petrol RON 91 can be used but will cause a slight loss of power.

²⁾ Premium unleaded petrol RON 95 can be used but will cause a slight loss of power.

— 2 —

Windscreen washer jet settings

- Mark the four points on the windscreen with water-soluble ink.
- Use the special tool 3125 A fitted with the needle 3125 / 5 to aim each individual jet at the marked points.



Setting dimensions:

- ◆ Dimension a = 240 mm (\pm 50)
- ◆ Dimension b = 190 mm (\pm 50)
- ◆ Dimension c = 320 mm (\pm 50)

Notes:

The setting dimensions for the windscreen are calculated laterally from the weather strip -1- and vertically from the additional cover for the plenum chamber -2-.

- ◆ The setting dimensions give the values for the vehicle when moving. The spray from the jets will be slightly offset when stationary.

Note:

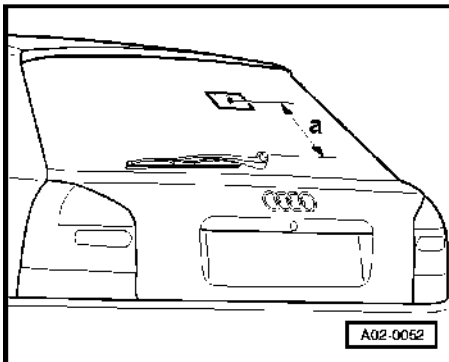
If the jet of water is irregular or cannot be adjusted to the specified setting, replace the jet (repair measure).

Rear window washer jet setting

- ◆ Adjust the washer jet using special tool 3125 A so that the water jet is directed onto the rear window within the dimension a = 280 mm above the wiper arm pivot mounting.

Headlight washer system: check washer jet settings

The headlight washer jets are set by the manufacturer and therefore do not require adjustment.



Adaption value	Type of service cancelled
00000	Delivery Inspection
00000	serviceOIL and serviceINSP
00010	serviceOIL
00001	serviceINSP

Example:

– Enter adaption value "00000".

Channel 4 Adaption 2 Q ◀
Enter adaption value 00000

If adjacent display appears (example):

– Confirm entry with Q key.

Channel 4 Adaption 2 Q ◀
- - - 0 -

Indicated on display:

– Confirm entry with Q key.

Channel 4 Adaption 2 Q ◀
Store changed value?

Indicated on display

– Confirm entry with Q key.

Channel 2 Adaption 0 → ◀
Changed value is stored

Indicated on display

– Terminate resetting procedure for SID by pressing →.

Rapid data transfer HELP ◀
Select function XX

Indicated on display:

Resetting SID with adjustment buttons for mileage and clock

– Switch ignition off.

◀ – Press the reset button for the trip recorder -2- on the dash panel insert and at the same time switch on the ignition.

The trip recorder display -3- will read: "serviceOIL".

– Release the button.

– Pull the clock adjuster knob -1- on the dash panel insert and hold for approx. 2 seconds to reset the "serviceOIL" display.

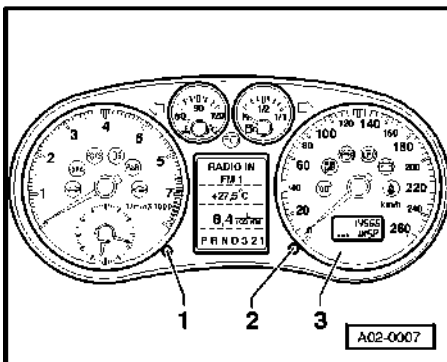
Note:

Depending on the make of the dash panel insert, the display on the trip recorder will either continue to read "serviceOIL" or change to "- - -".

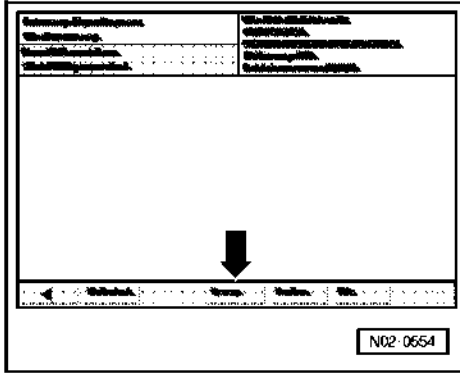
– Press the trip recorder reset button -2- again to call up the next service message.

– Release the button.

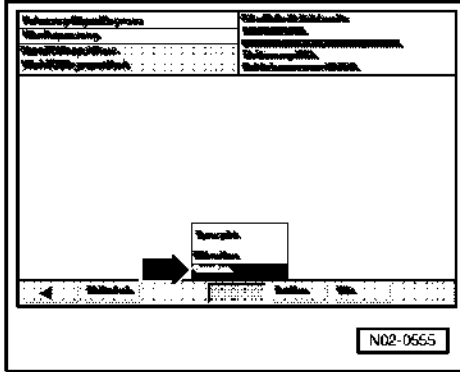
The trip recorder display -3- will read: "serviceINSP".



End of output



- ◀ Indicated on display:
 - On the display press "Skip" -arrow-.



- ◀ Indicated on display:
 - On the display press "Exit" -arrow-.
 - Press "Exit" in the Exit menu.
 - Switch off ignition and detach diagnostic connector.

Service display: resetting Inspection Service (fixed interval) as of 2000 > (Y)

Resetting of service display after service, Audi A3 as of chassis number 8LYA 000 001

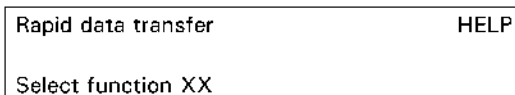
Resetting of service display with

◆ Fault reader V.A.G 1551 => Page 88

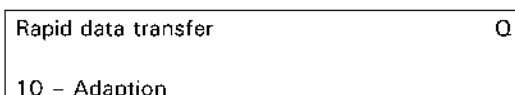
or with

◆ Vehicle diagnostic, testing and information system VAS 5051 => Page 93.

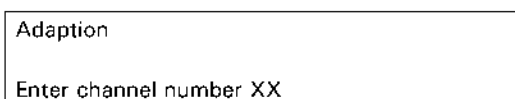
◆ Resetting without V.A.G 1551 or VAS 5051 =>Page 112.



- ◀ Indicated on display:
 - Press keys 1 and 0 and confirm input with Q key.



- ◀ Indicated on display:
 - Confirm entry with Q key.



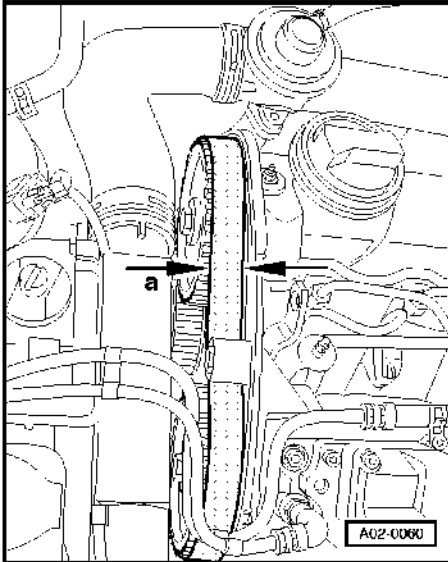
- ◀ Indicated on display:
 - Press keys 0 and 2.
 - Confirm entry with Q key.

Toothed belt for camshaft drive: Check for damage, measure width of toothed belt (TDI engines up to and including model year 1999 (X))

Auxiliary equipment required

◆ Ruler

- Slacken the three tensioning clips at the top of the toothed belt guard.



- Bend the toothed belt guard slightly to one side to expose the toothed belt.

◀ **Note:**

For reasons of clarity, the Fig. shows the toothed belt with the upper part of the toothed belt guard removed.

- Measure width -a- of toothed belt using the ruler.
 - Wear limit = 22 mm

Important

The toothed belt must be replaced if the belt width is less than 22 mm (repair measure).

Toothed belt for camshaft drive: replace (TDI engines)

- Removing and installing toothed belt:

= > 4-cyl. diesel direct injection engine (TDI), Mechanical components; Repair group 13; Dismantling and assembling engine, Removing, installing and tensioning toothed belt.

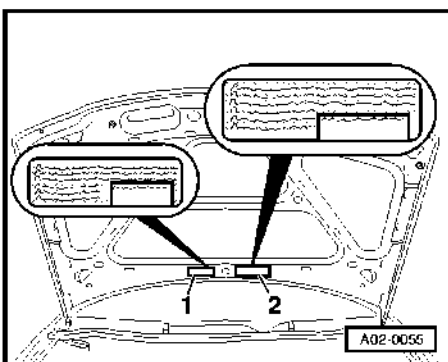
- Dynamically checking and adjusting commencement of injection:

= > Diesel Direct Injection and Glow Plug System (TDI 4-cyl.); Repair group 23; Servicing diesel direct injection system; Dynamically checking and adjusting commencement of injection

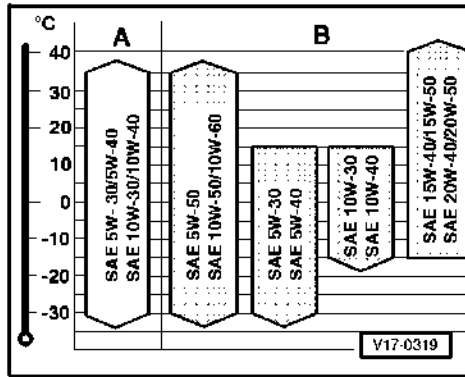
4-cyl. TDI pump jet engines

- Removing and installing toothed belt:

= > 4-cyl. diesel direct injection system (TDI) pump jet; Mechanical components; Repair group 13; Dismantling and assembling engine



- ◀ - Fill in toothed belt replacement sticker -1- on underside of bonnet. Attach a new sticker, if necessary.

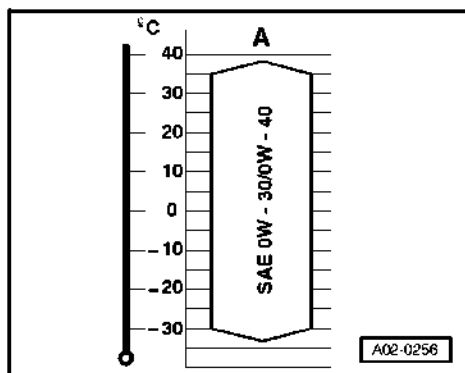


Oil specifications for vehicles with petrol engines:

- A - High lubricity multigrade oils, specification VW 500 00 ¹⁾
High-lubricity multigrade oils, specification VW 502 00 ²⁾
 - B - Multigrade oils, specification VW 501 01 ¹⁾
 - - Multigrade oils, Specification API-SF ³⁾ or API-SG ³⁾
- ¹⁾ The date given after the VW specification must not be earlier than 10.97.
- ²⁾ These oils are particularly suitable for turbocharged petrol engines.
- ³⁾ These oils should only be used if the approved engine oils are not available.

Oil specifications for TDI engines:

- A - High-lubricity multigrade oils, specification VW 500 00 ¹⁾
(only in combination with specification VW 505 00)
 - B - Multigrade oils, specification VW 505 00 ¹⁾
VW 505 01 ¹⁾
 - - Multigrade oils, specification VW 501 01 ¹⁾ (only in conjunction with specification VW 505 00)
 - - Multigrade oils, specification API-CD (should only be used for emergency topping up)
- ¹⁾ The date given after the VW specification must not be earlier than 10.97.



LongLife Oil specifications for vehicles with petrol engines:

- A - Multigrade high lubricity oils, for flexible change intervals

New VW standard (specially developed, resistant to change according to specification:

VW 503 00

Normally aspirated / turbocharged petrol engines

VW 503 01

Turbocharged petrol engines 154 kW Audi S3

LongLife Oil specifications for vehicles with diesel engines:

- A - Multigrade high lubricity oils, for flexible change intervals

New VW standard (specially developed, resistant to change according to specification:

VW 506 00

Diesel engines (not for pump jet)

VW 506 01

Diesel engines pump jet

(as of week 18, model year 01)

If towing over greater distances, the vehicle must be lifted at the front.

- Reason: When the engine is not running, the gearbox oil pump does not work, therefore the gearbox is not sufficiently lubricated for high speeds and long distances.

Using a breakdown vehicle, the vehicle can only be towed with the front wheels raised.

- Reason: If raised at the rear, the input shafts turn backwards. As a result, the planetary gears in the automatic gearbox will then turn at such high speeds that the gearbox will be severely damaged in a short time.

Note:

If it is not possible to tow the vehicle normally, it must be transported by a special transporter or trailer. This also applies to distances greater than 50 kilometres.

Arbeitsabläufe für Benzinmotoren

Intervalle für die Abgasuntersuchung

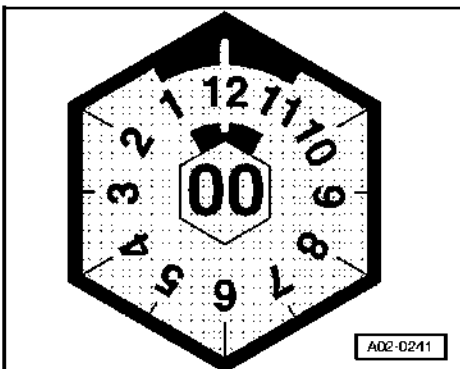
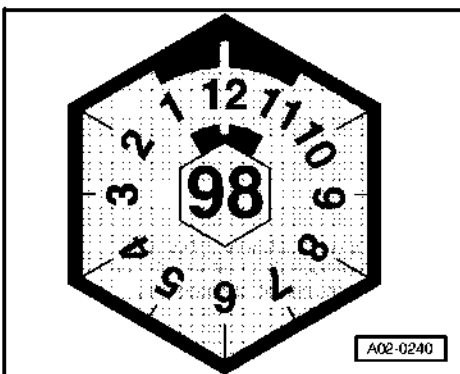
Fahrzeuge mit geregelterm Katalysator bzw. Fahrzeuge mit Dieselmotor:

- ◆ 36 Monate nach der Erstzulassung und dann alle 24 Monate nach der letzten AU.
- ◆ Taxi und Mietwagen: Alle 12 Monate.
- ◀ Der Fälligkeitstermin für die nächste Abgasuntersuchung ist der AU-Plakette zu entnehmen.

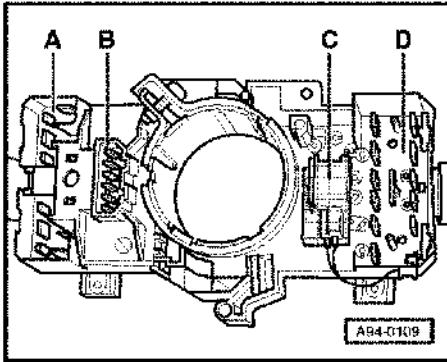
Beispiel

Ein Fahrzeug mit der abgebildeten AU-Plakette auf dem amtlichen Kennzeichen vorn muß im Dezember 1997 zur Abgasuntersuchung.

- ◀ Nach bestandener Abgasuntersuchung erhält das Fahrzeug eine AU-Plakette mit einer Gültigkeitsdauer bis Dezember 1999.
- Arbeitsabläufe für Benzinmotore => Seite 225.
Arbeitsabläufe für Dieselmotore => Seite 255.

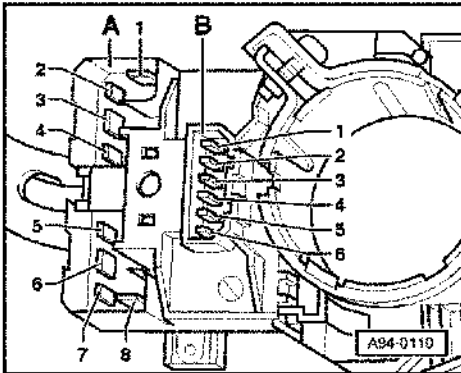


Terminal assignment at steering column switch



Exploded view

- A - Connection for wiper switch
- B - Connection for driver information system and intermittent setting
- C - Connection for cruise control system
- D - Connection for turn-signal indicator switch



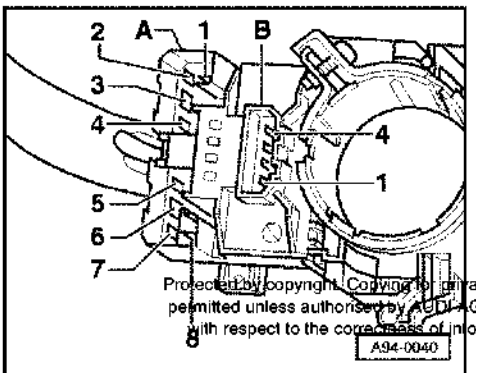
Terminal assignment for wiper switch -A-

- 1 - Terminal 53
- 2 - Terminal 31
- 3 - Terminal 53e
- 4 - Terminal 53c (vehicles up to 07.97 only)
- 5 - Rear wiper
- 6 - Terminal 53b
- 7 - Intermittent wipe
- 8 - Terminal 53a

Note:

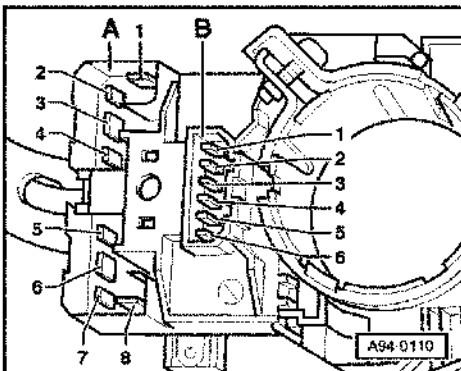
Pin assignment for intermittent wiper control -E38 => Page 94-100

94-99



Terminal assignment for on-board computer -B- – vehicles up to 07.97

- 1 - On-board computer/switch rocker to right
- 2 - On-board computer/switch rocker to left
- 3 - Terminal 31
- 4 - On-board computer/reset

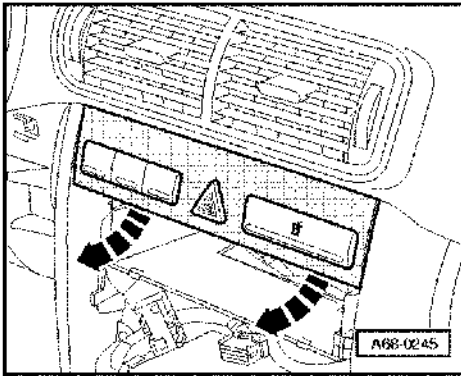


Terminal assignment for on-board computer -B- – vehicles as of 08.97

- 1 - Driver information system/switch rocker to right
- 2 - Driver information system/switch rocker to left
- 3 - Terminal 31
- 4 - Driver information system/reset
- 5 - Automatic intermittent wash/wipe relay -J31
- 6 - Terminal 31

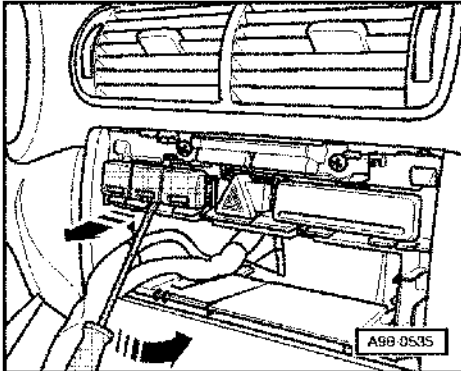
94-100

Removing and installing switches in centre console – as of Model Year 2001



Removing

- Remove radio/monitor navigation system.
= > Radio, Telephone, Navigation; Repair Group 91 = >
- Unclip trim for switch module -arrows-.
- Detach trim for switch module.



- Use flat screwdriver to carefully prise corresponding switch out of mount -arrows-.
- Unplug connector.

———— 96-3 ————

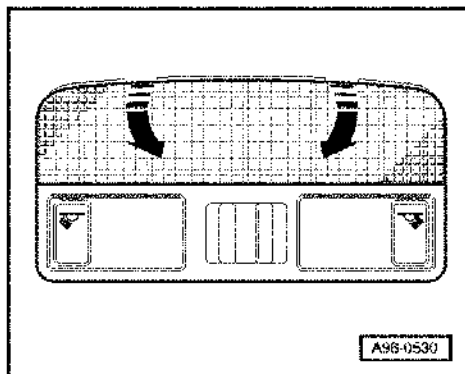
Installing

Install in reverse order, paying attention to the following:

- Plug in connector.
- Press switch into mount in dash panel and engage.

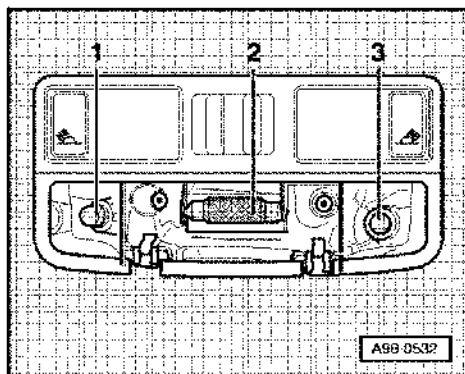
———— 96-4 ————

Replacing bulbs for front interior light/reading light – up to Model Year 1999



Removing

- ◀ – Unclip lens at interior light/reading light -arrows-.



- ◀ – Take bulb -2- (12 V, 10 W) for interior light out of clamp-type holder.
- Twist bulb -1- or -3- (12 V, 5 W) for reading light out of holder.

Installing

Install in reverse order, paying attention to the following:

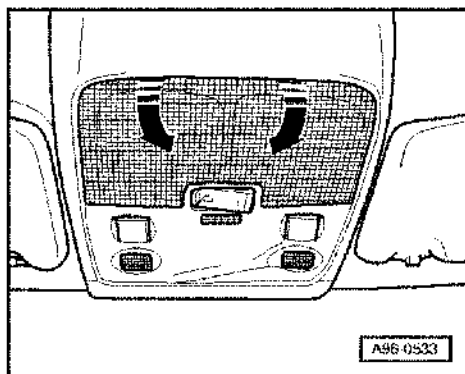
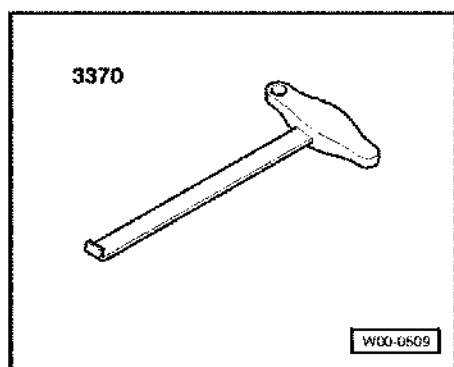
- Press on lens for interior light/reading light until it engages.

———— 96-35 ————

Removing and installing front interior light/reading light – as of Model Year 2000

Special tools and workshop equipment required

- ◆ Hook for front end 3370



Removing

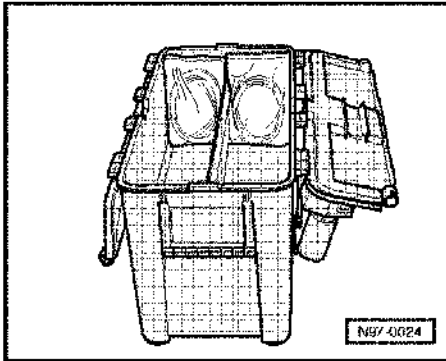
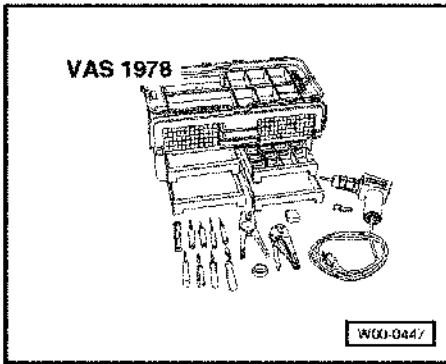
- ◀ – Unclip lens at interior light -arrows-.

———— 96-36 ————

General

Special tools and workshop equipment required

- ◆ Wiring harness repair set VAS 1978



Note:

Exclusive use is to be made for wiring harness and connector repairs of repair set VAS 1978.

VAS 1978 is described in detail in the enclosed operating instructions.

The repairing of open circuits and defective connectors is also explained by way of examples.

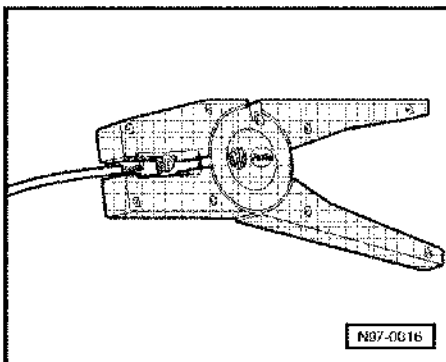
97-13

Repairing 0.22 mm²/ 0.35 mm² wire

Notes:

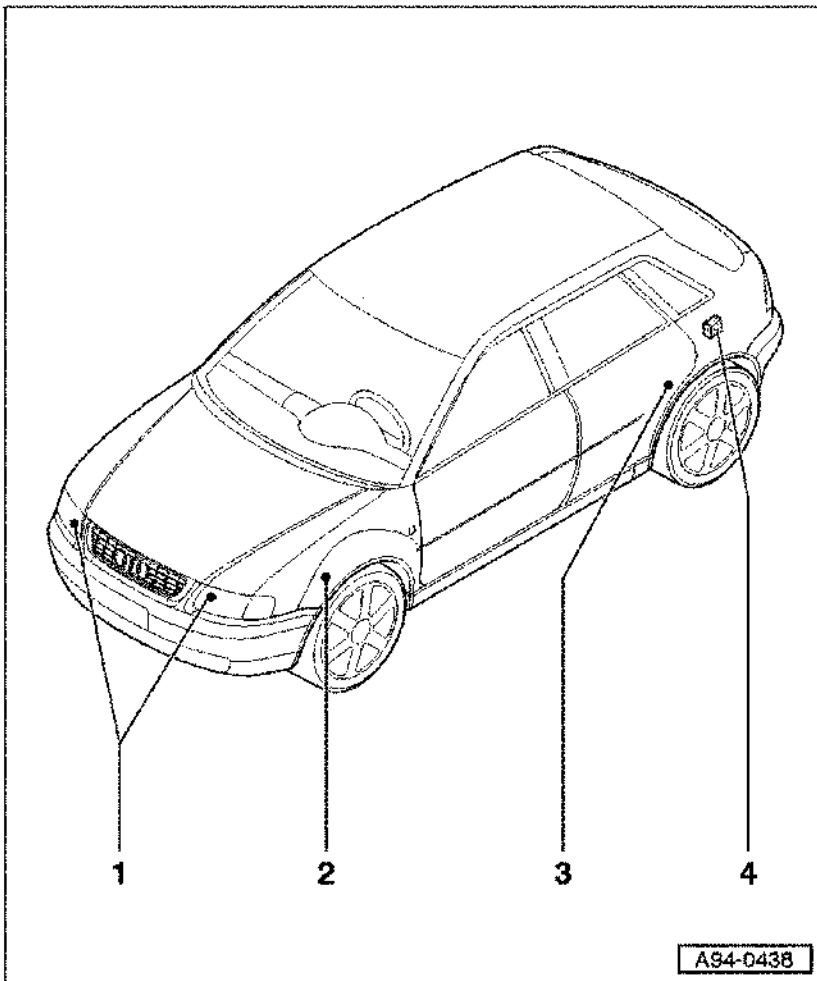
- ◆ The wiring harness repair set VAS 1978 contains three different repair wire cross-sections (0.5 mm², 1.5 mm², 4.0 mm²) and the appropriate crimp connectors.
- ◆ A 0.35 mm² wire has to be repaired using a 0.5 mm² repair wire.
- ◆ The repair procedure is as follows:

- Strip ends of 0.22 mm²/ 0.35 mm² wire with stripping pliers VAS 1978/3 (approx. 12 ... 14 mm).
- Fold back half the stripped wire ends.
- Use stripping pliers to strip the ends of the 0.5 mm² wire (approx. 6 ... 7 mm).



97-14

Exploded view of automatic headlight range control



1 – Left/right headlight range control motor -V48/V49

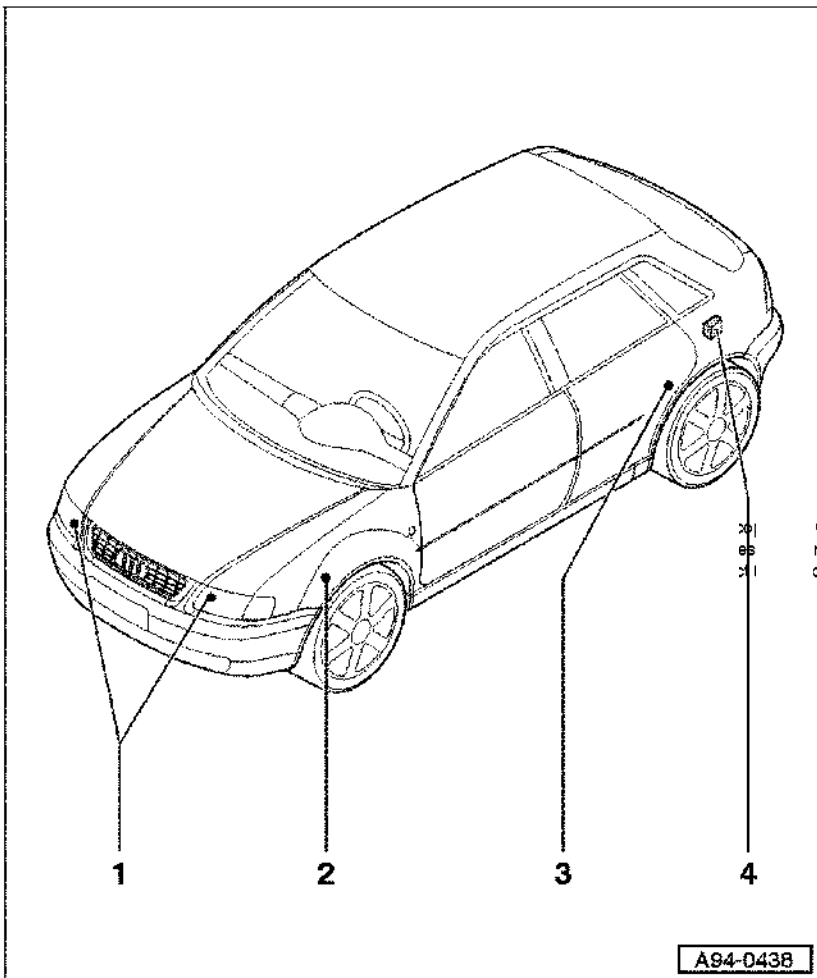
2 – Front left vehicle level sender - G78

◆ At front left link
◆ Removing and installing:
=> Running Gear, Front-wheel Drive and Four-wheel Drive; Repair Group 40=>

3 – Rear left vehicle level sender - G76

◆ FWD: At rear axle beam
◆ 4WD: At rear left link
◆ Removing and installing:
=> Running Gear, Front-wheel Drive and Four-wheel Drive; Repair Group 42=>

———— 94-117 ————

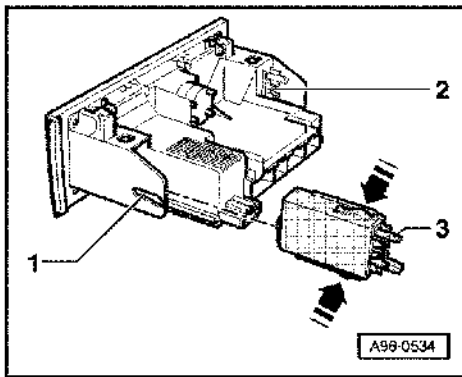


4 – Headlight range control unit - J431

◆ Fitting location on 3-door model: In wheel housing on left beneath side trim at rear – Removing and installing =>Page 94-119

◆ Fitting location on 5-door model: At rear left of luggage compartment beneath side trim – Removing and installing => Page 94-120

———— 94-118 ————



Vehicles with air conditioner:

On vehicles with air conditioner, front seat heating switches are integrated into operating and display unit -E87.

- ◀ – Remove air-conditioner operating element.
= > Air Conditioner; Repair Group 87 = >
- Use small screwdriver to carefully release fasteners -arrows-.
- Take seat heating switches -1- and -2- out of air conditioner operating element -1-.

Installing

Install in reverse order, paying attention to the following:

- Plug in connector.
- Press switch into mount and engage.

96-7

Removing and installing light switch

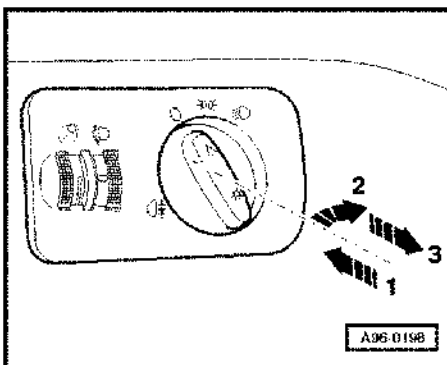
Removing

- ◀ – Press light switch -arrow 1- and at the same time turn it to right -arrow 2-.
- Hold switch in this position and pull it out of housing -arrow 3-.
- Unplug connector.

Installing

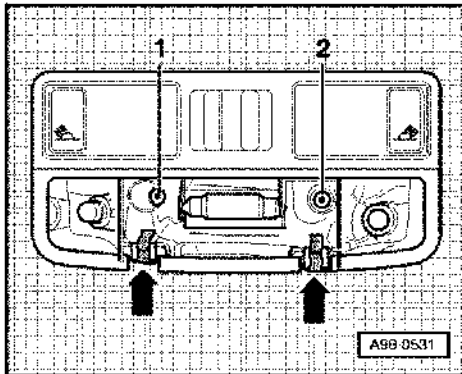
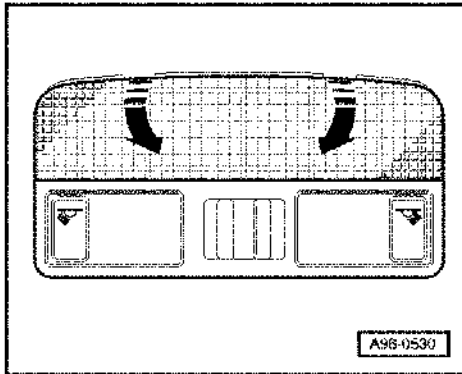
Install in reverse order, paying attention to the following:

- Press switch into switch housing until catch engages.



96-8

Removing and installing front interior light/reading light – up to Model Year 1999



Removing

- ◀ – Unclip lens at interior light/reading light -arrows-.
- ◀ – Screw out bolts -1- and -2-.
- Release retainer tabs -arrows- and take interior light/reading light out of roof opening.
- Unplug connector.

———— 96-33 ————

Installing

Install in reverse order, paying attention to the following:

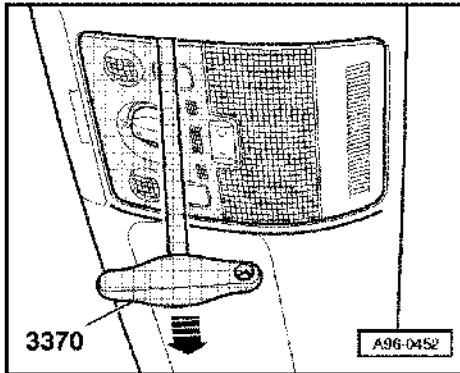
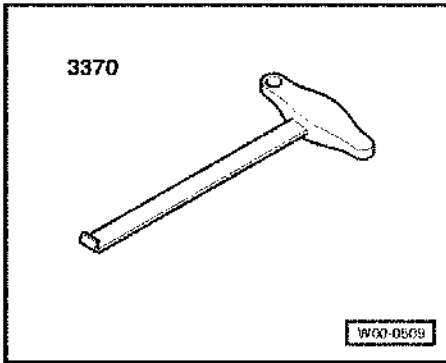
- Engage interior light and tighten to 1 Nm.
- Press on lens for interior light/reading light until it engages.

———— 96-34 ————

Replacing bulbs for front reading light – as of Model Year 2000

Special tools and workshop equipment required

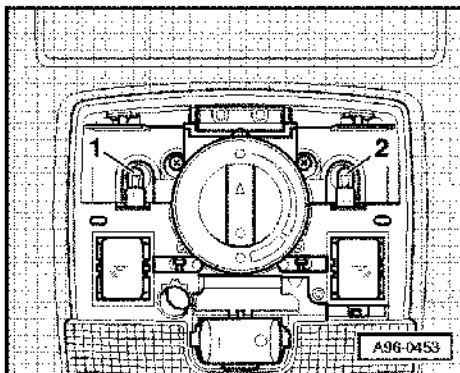
- ◆ Hook for front end 3370



Removing

- Use special tool 3370 to carefully pull off cover for reading light.

96-41



- Twist bulb -1- or -2- (12 V, 5 W) out of holder.

Installing

Install in reverse order, paying attention to the following:

- Press on cover for reading light until it engages.

96-42