

97 WIRING

RELAY AND FUSE PANELS

General information

CAUTION: Before beginning repairs on the electrical system:

- Where applicable, obtain anti-theft radio security code.
- Switch off all electrical consumers.
- Switch the ignition off and remove ignition key.
- Disconnect negative (-) battery terminal.
- On vehicles equipped with Audi Telematics by OnStar ^(R) , switch-off the emergency (back-up) battery for the Telematic/Telephone Control Module prior to disconnecting vehicle battery --> 91 - COMMUNICATION
- After reconnecting vehicle battery, re-code and check operation of anti-theft radio. Also check operation of clock and power windows according to Repair Information and/or Owners Manual.
- After reconnecting vehicle battery on vehicles equipped with Audi Telematics by OnStar ^(R) , switch-on the emergency (back-up) battery for the Telematic/Telephone Control Module --> 91 - COMMUNICATION

Fuse panel, removing and installing

Removing

- Disconnect battery. Audi A4 S4 --> Battery in engine compartment, disconnecting and reconnecting.
Audi RS4 --> Battery in luggage compartment, disconnecting and connecting.
- Where applicable, remove drivers storage compartment --> 68 - INTERIOR EQUIPMENT .

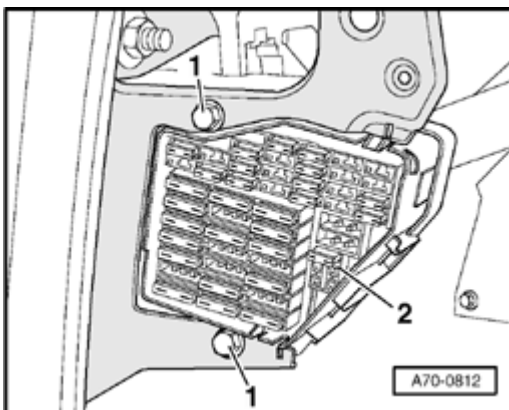


Fig. 575: Identifying Bolts For Fuse Box

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove screws - **1** - for fuse panel - **2** -.
- Release upper and lower retaining clips and detach fuse panel from central tube for instrument panel.
- Disengage wiring harness at central tube for instrument panel and set aside.

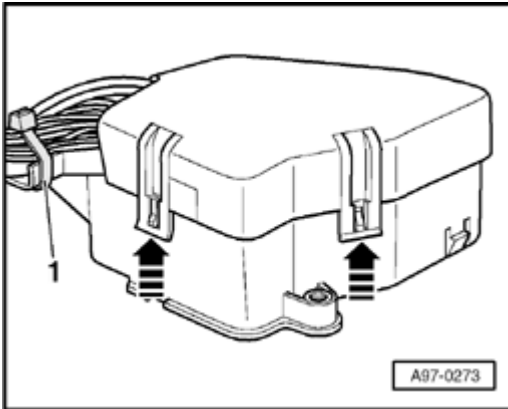


Fig. 576: Fuse Panel Cover And Cable Tie

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Cut open cable tie - **1** -.
- Release cover for fuse panel - **arrows** -.
- Remove fuses at fuse panel.

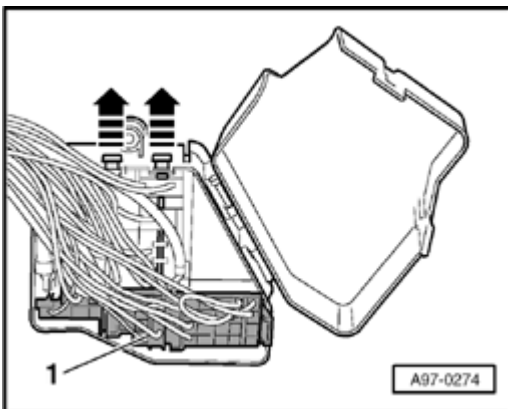


Fig. 577: Removing Retaining Strip For Connectors

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove retaining strip for connectors - **arrows** - and take connectors out of fuse panel.
- Unclip socket - **1** -.

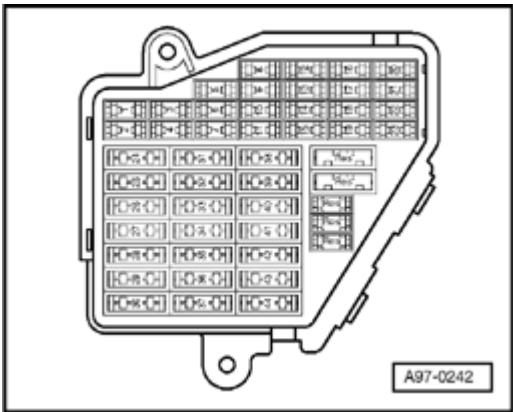


Fig. 578: Identifying Main Fuse Panel
Courtesy of VOLKSWAGEN UNITED STATES, INC.

NOTE:

- Refer to the applicable wiring diagram for exact identification of connections on fuse box Wiring Diagrams.

Installing

Install in reverse order of removal, noting the following:

- Install drivers storage compartment --> **68 - INTERIOR EQUIPMENT** .
- Reconnect battery. Required steps Audi A4 S4 **Reconnecting**. Required steps Audi RS4 **Connecting**.

Tightening torque

Component - fastener	Nm
Fuse carrier to central tube for instrument panel - screw	3

Vehicle Electrical System Control Module J519 , removing and installing

NOTE:

- Should Vehicle Electrical System Control Module J519 require replacement, follow replacement procedures as specified using VAS 5051/5052 in mode "Guided Fault Finding".

Removing

CAUTION:

- Switch off all electrical consumers.
- Switch ignition off and remove ignition key.

- Where applicable, remove drivers storage compartment --> **68 - INTERIOR EQUIPMENT** .

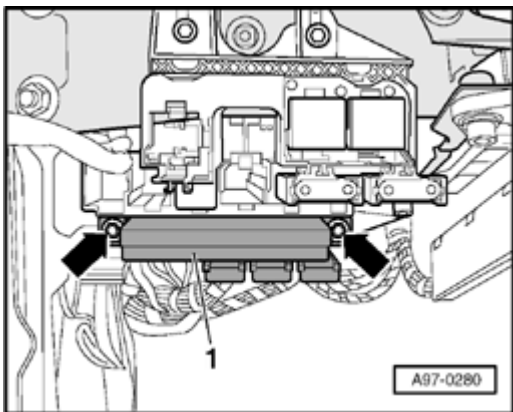


Fig. 579: Identifying Nuts And Vehicle Electrical System Control Module
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove nuts - **arrows** - and remove Vehicle Electrical System Control Module J519 - **1** -.

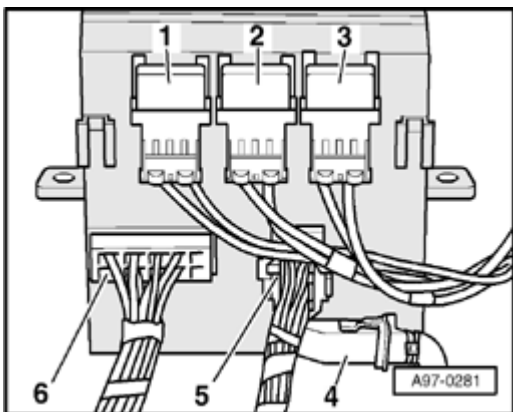


Fig. 580: Identifying Fuse Carrier And Connectors
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Unclip fuse carriers - **1... 3** -.
- Release retaining clip at connector - **4** - and disconnect connector.
- Disconnect electrical connections - **5** - and - **6** -.

Installing

Install in reverse order of removal, noting the following:

- Install drivers storage compartment --> **68 - INTERIOR EQUIPMENT** .

Tightening torque

Component - fastener	Nm
Control module to central tube for instrument panel - nut	2.4

9-position relay carrier, removing and installing

Removing

CAUTION:

- Switch off all electrical consumers.
- Switch ignition off and remove ignition key.

- Where applicable, remove drivers storage compartment --> **68 - INTERIOR EQUIPMENT** .

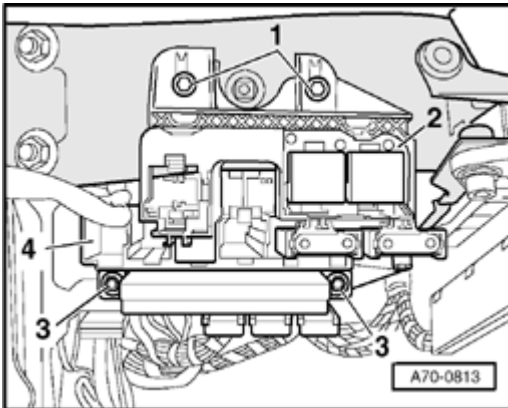


Fig. 581: Identifying Nuts, And Relay Carrier

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove nuts - 3 - remove Vehicle Electrical System Control Module J519 with wires attached.
- Remove 9-position relay carrier - 4 -.

NOTE:

- Disregard - 1 - and - 2 -.
- Unclip the fuse carriers at the 9-position relay carrier.
- Remove relays and control modules and then unclip appropriate relay carrier.

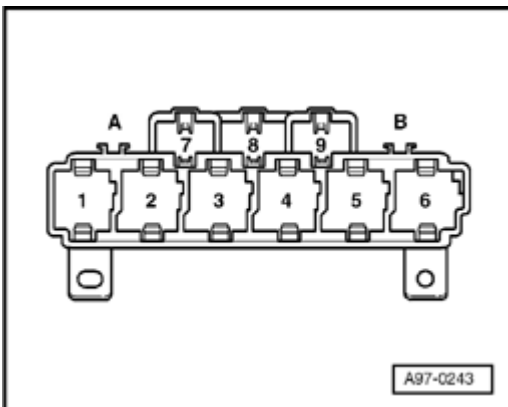


Fig. 582: Identifying 9-Way Relay Carrier

Courtesy of VOLKSWAGEN UNITED STATES, INC.

NOTE:

- Refer to the applicable wiring diagram for exact identification of connections on relay carrier Wiring Diagrams.

Installing

Install in reverse order of removal, noting the following:

- Install drivers storage compartment --> **68 - INTERIOR EQUIPMENT** .

Tightening torque

Component - fastener	Nm
9-position relay carrier to central tube for instrument panel - nut	2.4

3-position relay carrier, removing and installing

Removing

CAUTION:

- Switch off all electrical consumers.
- Switch ignition off and remove ignition key.

- Where applicable, remove drivers storage compartment --> **68 - INTERIOR EQUIPMENT** .

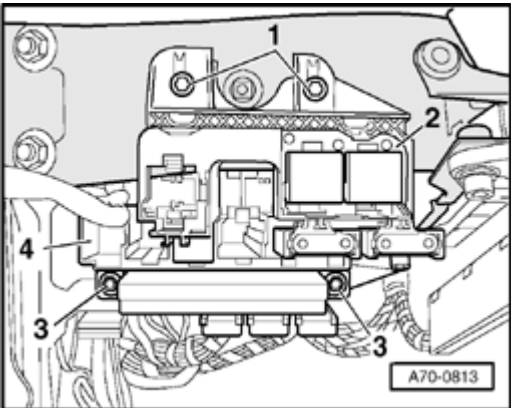


Fig. 583: Identifying Nuts, And Relay Carrier
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove screws - 1 - and detach 3-position relay carrier - 2 -.

NOTE:

- Disregard - 3 - and - 4 -.
- Unclip the fuse carriers at the 3-position relay carrier.
- Remove relays and control modules and then unclip appropriate relay carrier.

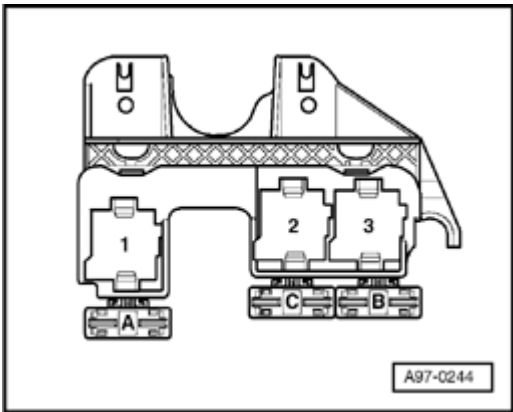


Fig. 584: Identifying 3-Position Relay Carrier
Courtesy of VOLKSWAGEN UNITED STATES, INC.

NOTE:

- Refer to the applicable wiring diagram for exact identification of connections on relay carrier Wiring Diagrams.

Installing

Install in reverse order of removal, noting the following:

- Install drivers storage compartment --> **68 - INTERIOR EQUIPMENT** .

Tightening torque

Component - fastener	Nm
3-position relay carrier to central tube for instrument panel - nut	3

4-position relay carrier, removing and installing

Removing

- Disconnect battery. Audi A4 S4 --> **Battery in engine compartment, disconnecting and reconnecting.**
Audi RS4 --> **Battery in luggage compartment, disconnecting and connecting.**
- Where applicable, remove drivers storage compartment --> **68 - INTERIOR EQUIPMENT** .

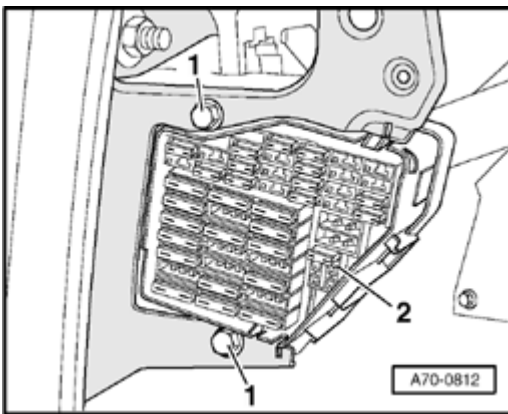


Fig. 585: Identifying Bolts For Fuse Box
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove screws - **1** - for fuse panel - **2** -.
- Remove fuse panel from central tube for instrument panel.
- Disengage wiring harness at central tube for instrument panel and set aside.

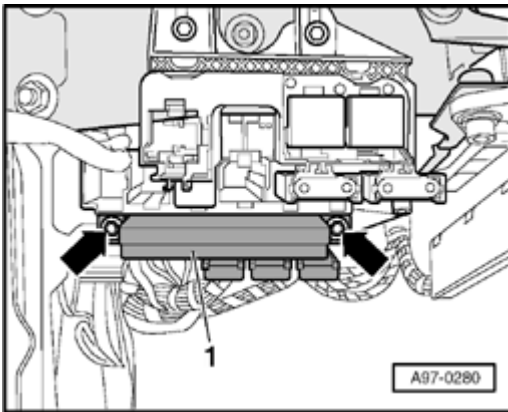


Fig. 586: Identifying Nuts And Vehicle Electrical System Control Module
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove nuts - **arrows** - and detach Vehicle Electrical System Control Module J519 - **1** - with wiring attached.

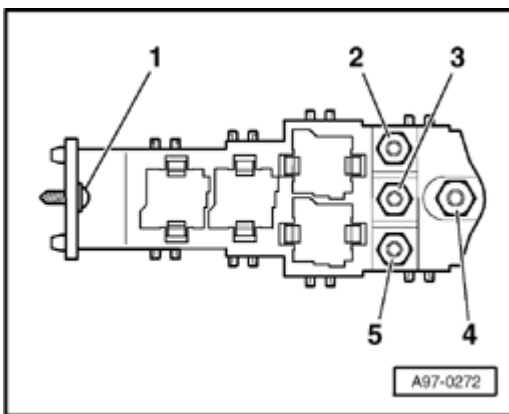


Fig. 587: Identifying Screw Connections, Bolts, And Nuts, For Fuse Carrier
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Pull the relays or control modules out of 4-position relay carrier.
- Mark assignment of wires at threaded connections - 2 - , - 3 - and - 5 -.
- Remove wires at threaded connections.
- Remove bolt - 1 - and nut - 4 -.
- Unclip fuse carriers at 4-position relay carrier.
- Remove relays and control modules and then unclip appropriate relay carrier.

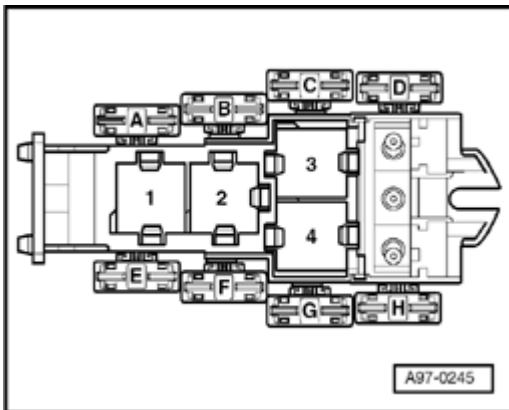


Fig. 588: Identifying 4-Way Relay Carrier
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

NOTE:

- Refer to the applicable wiring diagram for exact identification of connections on relay carrier Wiring Diagrams.

Installing

Install in reverse order of removal, noting the following:

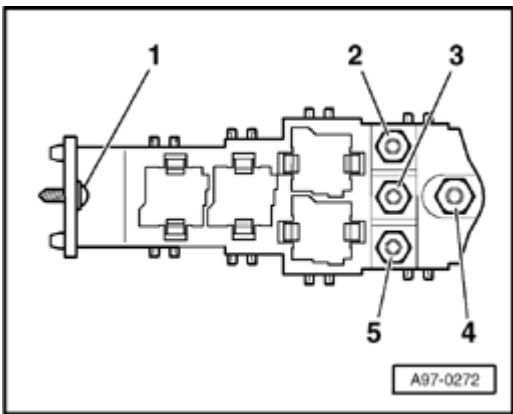


Fig. 589: Identifying Screw Connections, Bolts, And Nuts, For Fuse Carrier
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Install wires at threaded connections - 2 - , - 3 - and - 5 - according to markings.
- Reconnect battery. Required steps Audi A4 S4 **Reconnecting**. Required steps Audi RS4 **Connecting**.
- Install drivers storage compartment --> **68 - INTERIOR EQUIPMENT** .

Tightening torques

Component - fastener		Nm
4-pin relay carrier to chassis	Nut	2.4
Screw	1.7	9
Wiring terminal connections - nut		

Left connector station, removing and installing

Removing

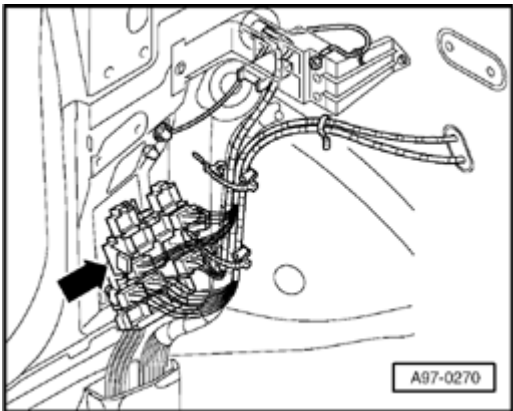


Fig. 590: Locating Left Connection Point
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Location: Left connector station - **arrow** - is located in left footwell beneath A-pillar trim.

- CAUTION:**
- Switch off all electrical consumers.
 - Switch ignition off and remove ignition key.

- Remove A-pillar trim: --> **70 - INTERIOR TRIM** .
- Press retaining clip and detach connector point from A-pillar - **arrow** -.
- Unclip fuse panel at connector point.
- Remove relays or control modules and then unclip appropriate relay carrier.

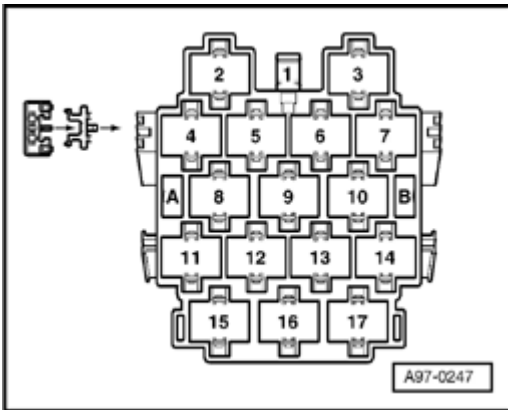


Fig. 591: Identifying Connection Point

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- NOTE:**
- Refer to the applicable wiring diagram for exact identification of connections on connector station Wiring Diagrams.

Installing

Install in reverse order of removal, noting the following:

- Install A-pillar trim: --> **70 - INTERIOR TRIM** .

Comfort System Central Control Module J393 , removing and installing

Removing

- Remove A-pillar trim: --> **70 - INTERIOR TRIM** .
- Remove drivers seat --> **72 - SEAT - FRAMES** .

- NOTE:**
- Safety belts at seat frame do not have to be unfastened.
 - Fold back floor covering.

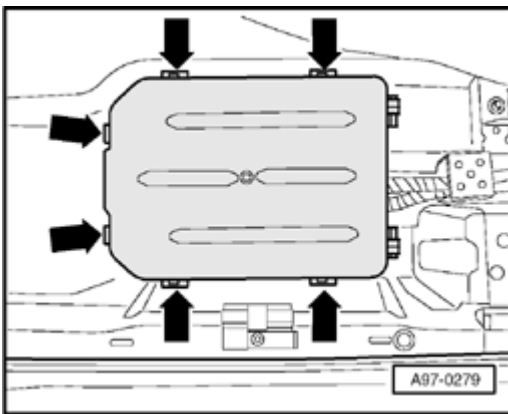


Fig. 592: Identifying Cover For Drivers Side Electronics Box
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Release cover for electronics box (drivers side) - **arrows** - and fold cover towards right.

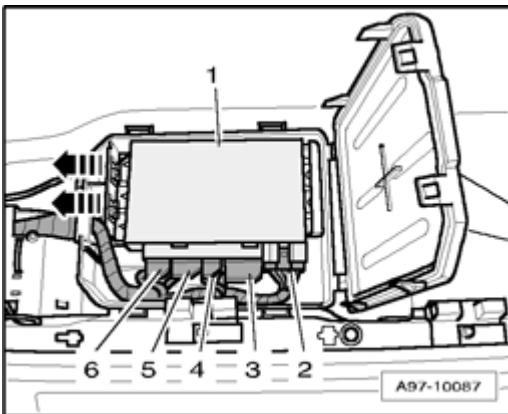


Fig. 593: Identifying Retaining Clips, Comfort System Central Control Module J393, And Electrical Connections
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Release retaining clips - **arrows** - and remove Comfort System Central Control Module J393 - **1** - from electronics box.
- Disconnect electrical connections - **2... 6** -.

NOTE:

- Refer to the applicable wiring diagram for exact identification of connections on electronics box Wiring Diagrams.

Installing

Install in reverse order of removal, noting the following:

- Install A-pillar trim: --> **70 - INTERIOR TRIM** .
- Install drivers seat --> **72 - SEAT - FRAMES** .

Removing

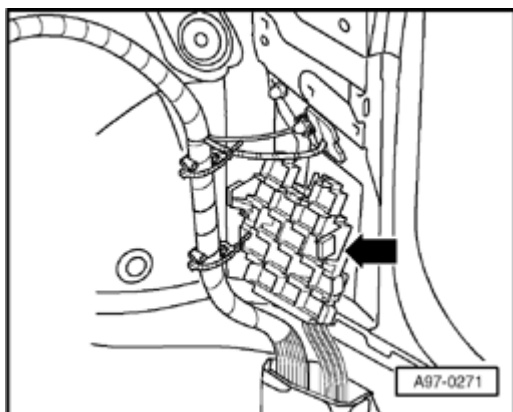


Fig. 594: Locating Right Connection Point

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Location: Right connector station - **arrow** - is located in right footwell beneath A-pillar trim.

CAUTION:

- Switch off all electrical consumers.
 - Switch ignition off and remove ignition key.
- Remove A-pillar trim: --> **70 - INTERIOR TRIM** .
 - Press retaining clip and detach connector point from A-pillar - **arrow** -.
 - Unclip fuse panel at connector point.
 - Remove relays or control modules and then unclip appropriate relay carrier.

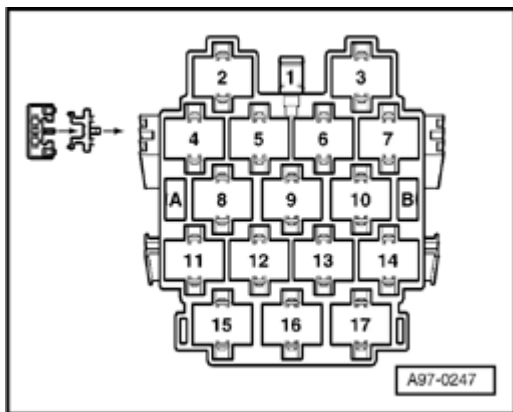


Fig. 595: Identifying Connection Point

Courtesy of VOLKSWAGEN UNITED STATES, INC.

NOTE:

- Refer to the applicable wiring diagram for exact identification of connections on connector station Wiring Diagrams.

Installing

Install in reverse order of removal, noting the following:

- Install A-pillar trim: --> **70 - INTERIOR TRIM** .

Main fuse panel in left rear luggage compartment - Audi RS4, removing and installing

Removing

- Disconnect battery --> **Battery in luggage compartment, disconnecting and connecting.**
- Remove left luggage compartment side trim --> **70 - INTERIOR TRIM** .

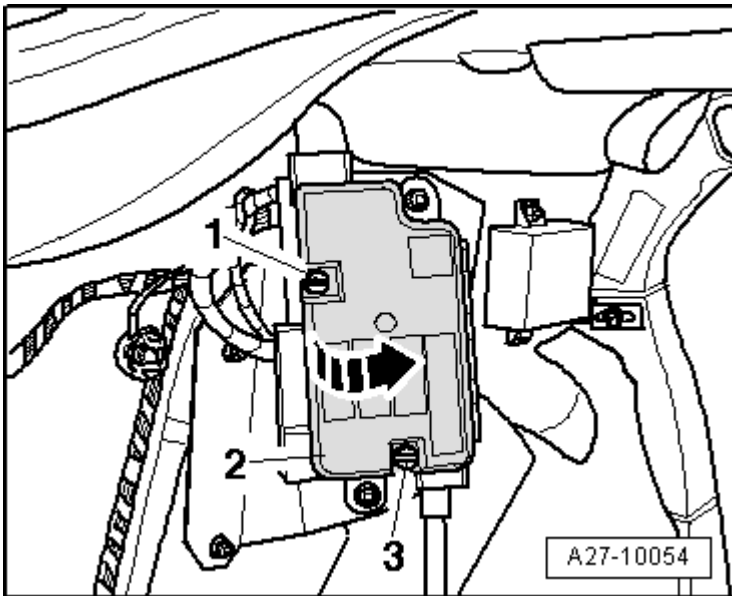


Fig. 596: Identifying Quick-Release Fasteners, Main Fuse Box Cover, And Luggage Compartment
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Loosen quick-release fasteners - 1 - and - 3 - and open main fuse box cover - 2 - in luggage compartment - **arrow** -.

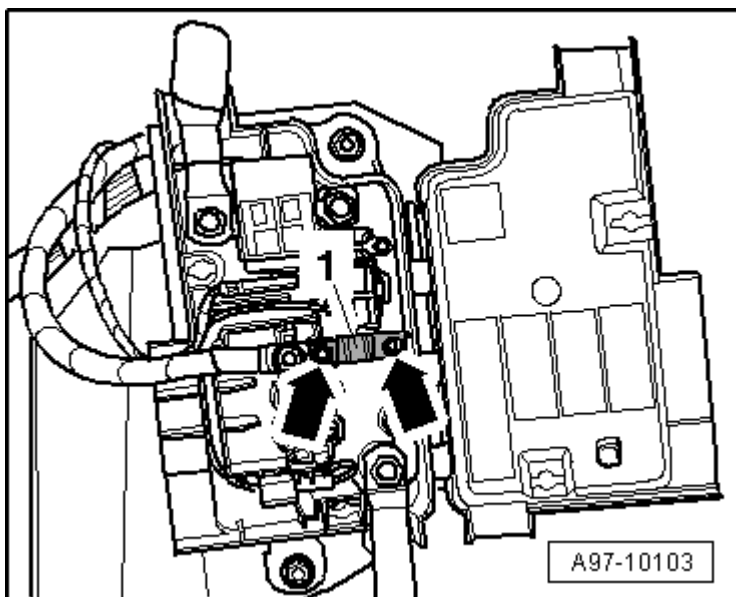


Fig. 597: Removing Nuts And Main Fuse
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove nuts - **arrows** -.
- Remove main fuse.

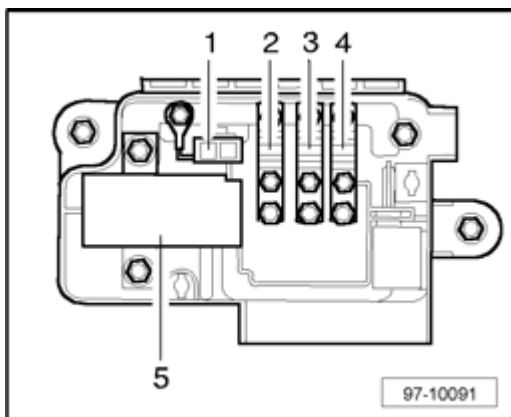


Fig. 598: Identifying Main Fuse
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

NOTE:

- Refer to the applicable wiring diagram for exact identification of relays and fuses Wiring Diagrams.

Installing

Install in reverse order of removal, observing the following:

- Install left luggage compartment side trim --> **70 - INTERIOR TRIM** .

- Connect battery. Required steps **Connecting**.

Tightening torque

Component	Nm
Main fuse to main fuse box	7,5

Electronics box in plenum chamber, removing and installing

Removing

- CAUTION:**
- Switch off all electrical consumers.
 - Switch ignition off and remove ignition key.

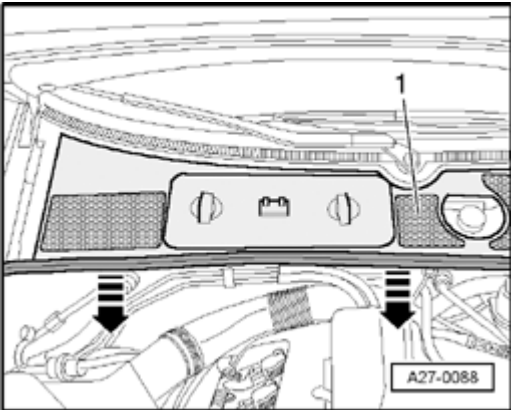


Fig. 599: Identifying Plenum Chamber Cover & Removing Rubber Seal
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove rubber seal of plenum chamber cover in direction of - **arrow** -.
- Remove plenum chamber cover - **1** - to front.

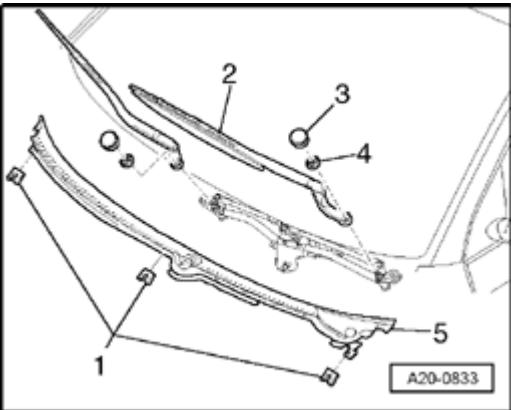


Fig. 600: Removing Securing Clips And Cowl
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Use screwdriver to pry off the two caps - **3** -.
- Loosen nuts - **4** - (do not remove).
- Remove wiper arms - **2** - from wiper shaft by tilting slightly.
- Remove nuts completely and remove wiper arms.
- Pull off retaining clips - **1** - and detach cowl panel grille - **5** -.

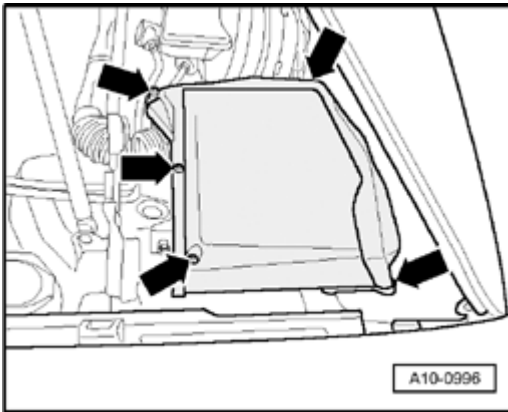


Fig. 601: Removing Screws And Cover From E-Box In Plenum Chamber
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove cover for electronics box in plenum chamber - **arrows** -.

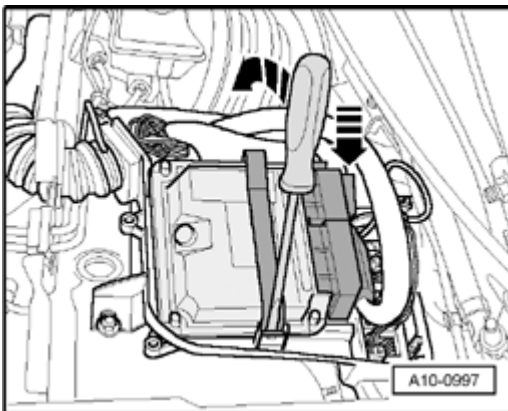


Fig. 602: Using Screwdriver To Remove Retainer Bar And Engine Control Module (ECM) J623
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Use screwdriver to pry off retaining strap - **arrows** -.

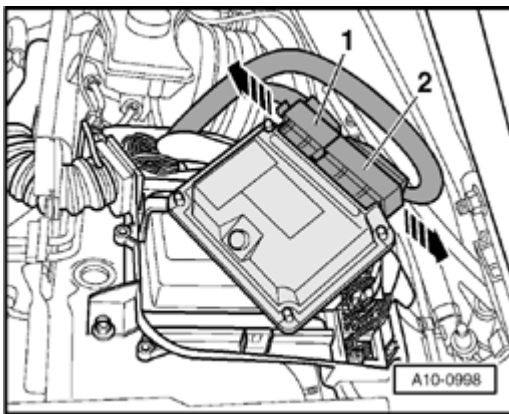


Fig. 603: Releasing Connector Latches And Pulling Off Connectors On Engine Control Module
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Release connector locks tabs - **arrows** - and disconnect electrical connections - **1** - and - **2** - for Motronic Engine Control Module (ECM) J220 (where applicable).
- Where applicable, release retaining clip for transmission control module.

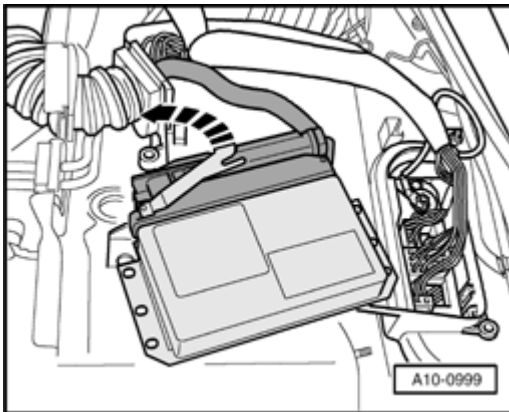


Fig. 604: Releasing Connector Lock And Disconnecting From Transmission Control Module
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Release connector lock - **arrow** - and disconnect from transmission control module.

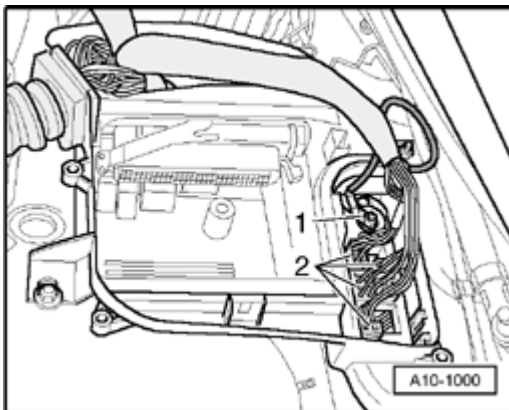


Fig. 605: Identifying Electrical Connections And Wire
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Disconnect electrical connections - **2** - at rear of connector console.
- Remove wire - **1** -.

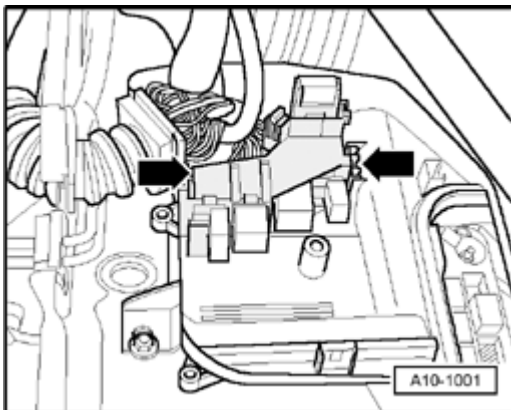


Fig. 606: Releasing Retaining Clips And Lifting Auxiliary Relay Carrier Out Of Electronics Box
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Release retaining clips - **arrows** - and lift auxiliary relay carrier out of electronics box.
- Remove the engine wiring harness at electronics box and bulkhead and set aside.

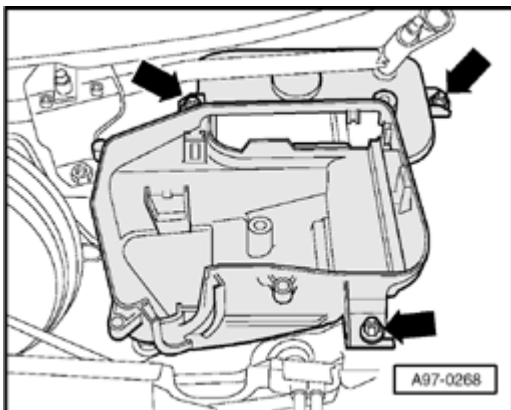


Fig. 607: Identifying Securing Nuts
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove nuts - **arrows** -.
- Lift electronics box and remove upwards.

Installing

Install in reverse order of removal.

Tightening torque

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Component	Nm
Plenum chamber electronics box to body	3

Electronics box fan in plenum chamber, removing and installing

NOTE:

- Depending on market version, the plenum chamber electronics box may be equipped with a fan motor.

Removing

- Remove the electronics box (plenum chamber) --> **Electronics box in plenum chamber, removing and installing.**

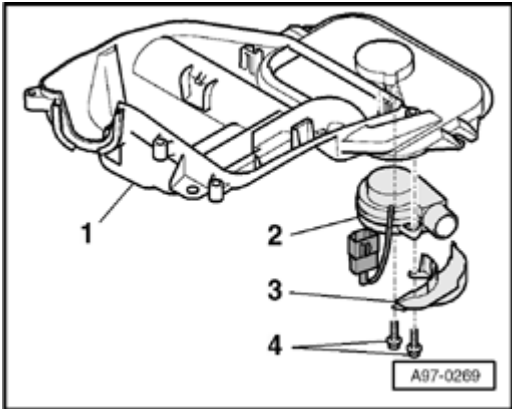


Fig. 608: Identifying Bolts, Fan, And Air Duct
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove screws - 4 - and remove fan - 2 - with air cowl - 3 - from electronics box in plenum chamber - 1 -

Installing

Install in reverse order of removal.

Tightening torque

Component	Nm
Fan to plenum chamber electronics box	3

4-way relay carrier in electronics box in plenum chamber, removing and installing

Removing

CAUTION:

- Switch off all electrical consumers.

- Switch ignition off and remove ignition key.

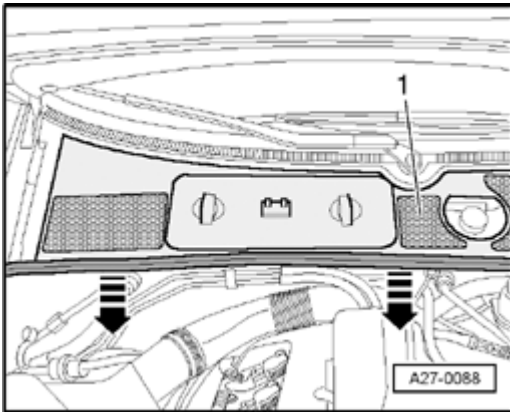


Fig. 609: Identifying Plenum Chamber Cover & Removing Rubber Seal
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove rubber seal of plenum chamber cover in direction of - **arrow** -.
- Remove plenum chamber cover - **1** - to front.

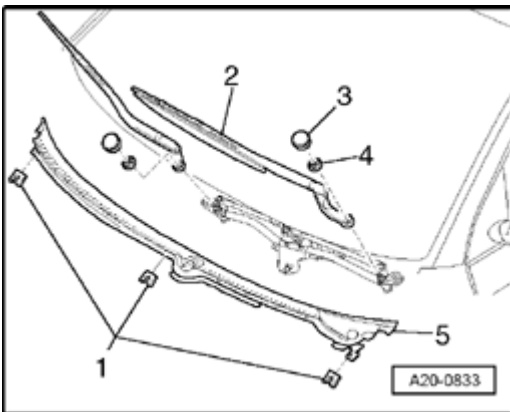


Fig. 610: Removing Securing Clips And Cowl
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Use screwdriver to pry off the two caps - **3** -.
- Loosen nuts - **4** - (do not remove).
- Remove wiper arms - **2** - from wiper shaft by tilting slightly.
- Remove nuts completely and remove wiper arms.
- Pull off retaining clips - **1** - and detach cowl panel grille - **5** -.

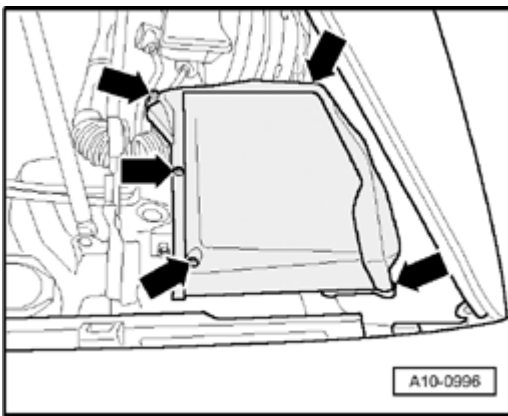


Fig. 611: Removing Screws And Cover From E-Box In Plenum Chamber
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove cover for electronics box in plenum chamber - **arrows** -.

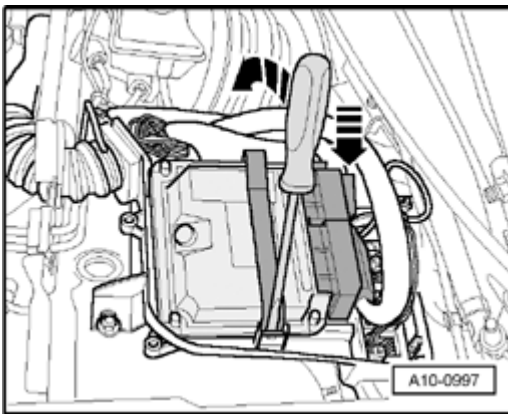


Fig. 612: Using Screwdriver To Remove Retainer Bar And Engine Control Module (ECM) J623
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Use screwdriver to pry off retaining strap - **arrows** -.
- Lay aside engine control module with wires attached.
- Where applicable, release the retaining clip for the transmission control module.
- Lay aside transmission control module with wires attached.

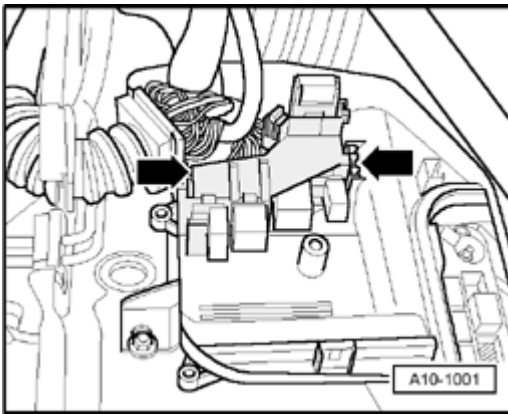


Fig. 613: Releasing Retaining Clips And Lifting Auxiliary Relay Carrier Out Of Electronics Box
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Release retaining clips - **arrows** - and lift auxiliary relay carrier out of electronics box.
- Unclip the fuse carriers at the 4-position relay carrier.
- Remove relays and control modules and then unclip appropriate relay carrier.

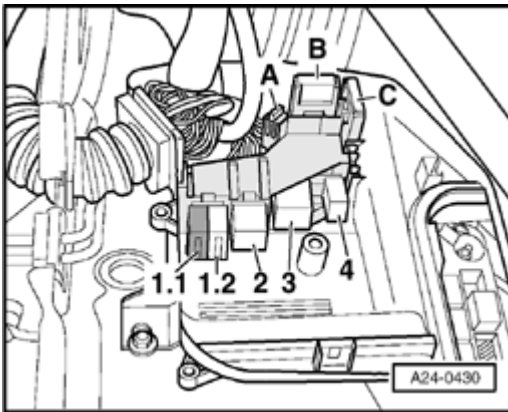


Fig. 614: Removing Motronic Engine Control Module (ECM) Power Supply Relay J271 From E-Box
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

NOTE:

- Refer to the applicable wiring diagram for exact identification of connections on electronics box Wiring Diagrams.

Installing

Install in reverse order of removal.

Connector junction, electronics box in plenum chamber, removing and installing

Removing

- Disconnect battery. Audi A4 S4 --> **Battery in engine compartment, disconnecting and reconnecting.**
 Audi RS4 --> **Battery in luggage compartment, disconnecting and connecting.**

- Where applicable, remove drivers storage compartment --> **68 - INTERIOR EQUIPMENT** .
- Remove electrical wire at bottom of connector point in plenum chamber electronics box.

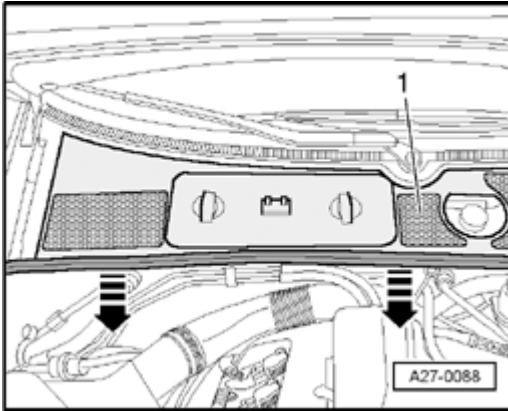


Fig. 615: Identifying Plenum Chamber Cover & Removing Rubber Seal
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove rubber seal of plenum chamber cover in direction of - **arrow** -.
- Remove plenum chamber cover - **1** - to front.

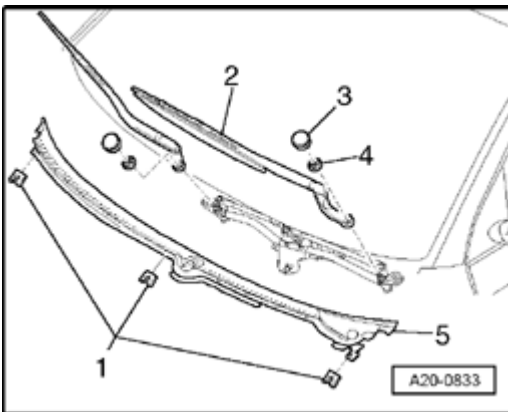


Fig. 616: Removing Securing Clips And Cowl
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Use screwdriver to pry off the two caps - **3** -.
- Loosen nuts - **4** - (no not remove).
- Remove wiper arms - **2** - from wiper shaft by tilting slightly.
- Remove nuts completely and remove wiper arms.
- Pull off retaining clips - **1** - and detach cowl panel grille - **5** -.

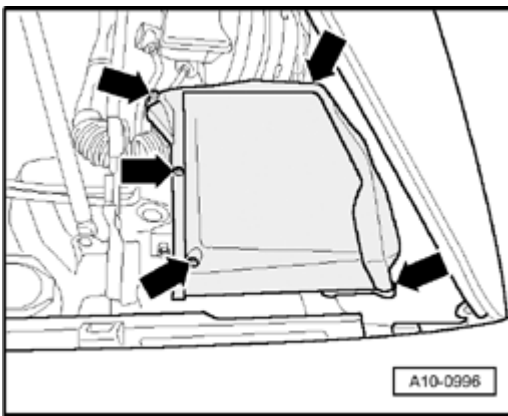


Fig. 617: Removing Screws And Cover From E-Box In Plenum Chamber
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove cover for electronics box in plenum chamber - **arrows** -.

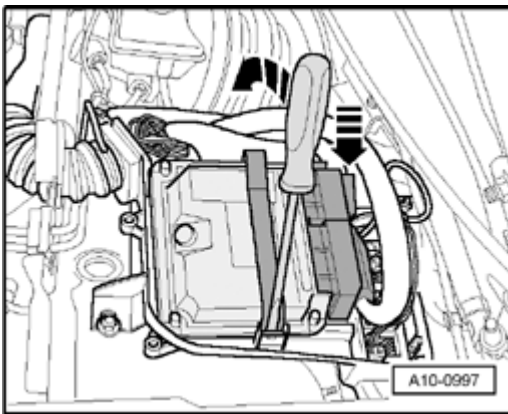


Fig. 618: Using Screwdriver To Remove Retainer Bar And Engine Control Module (ECM) J623
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Use screwdriver to pry off retaining strap - **arrows** -.
- Lay aside engine control module with wires attached.
- Release retaining clip for transmission control module.
- Lay aside transmission control module with wires attached.
- Disconnect electrical connections at rear of connector console.

Vehicles through 10.04:

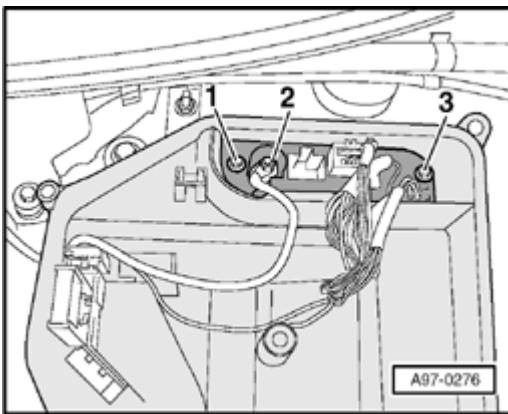


Fig. 619: Identifying Wire Connection And Bolts
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove electrical wire - 2 -.
- Remove screws - 1 - and - 3 -.
- Unclip appropriate socket.

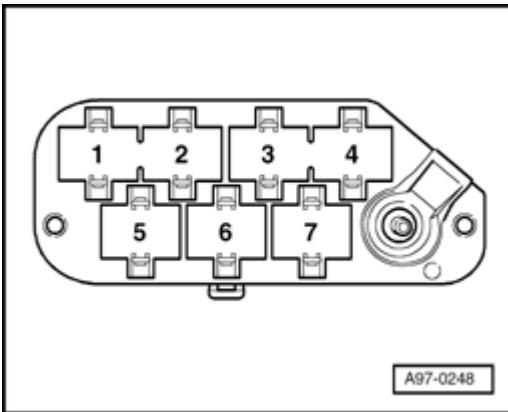


Fig. 620: Identifying Connection Point E-Box Plenum Chamber
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

NOTE:

- Refer to the applicable wiring diagram for exact identification of connections on connector station Wiring Diagrams.

Vehicles from 11.04:

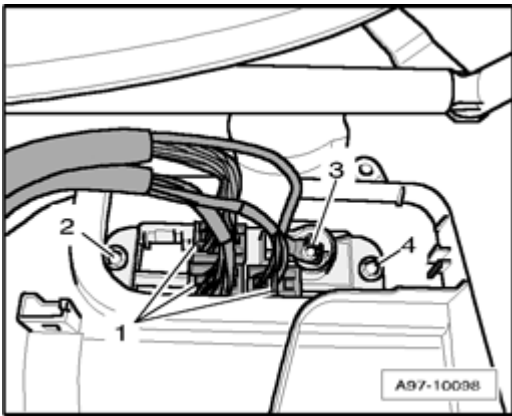


Fig. 621: Identifying Electrical Wire, Screws, And Socket
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove electrical wire - **3** -.
- Remove screws - **2** - and - **4** -.
- Unclip appropriate socket - **1** -.

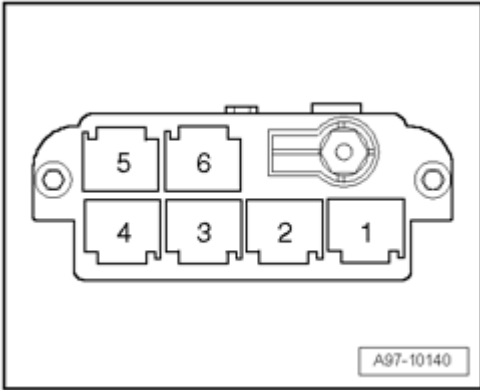


Fig. 622: Identifying Electronics Box
Courtesy of VOLKSWAGEN UNITED STATES, INC.

NOTE:

- Refer to the applicable wiring diagram for exact identification of connections on connector station Wiring Diagrams.

Installing

Install in reverse order of removal, noting the following:

- Reconnect battery. Required steps Audi A4 S4 **Reconnecting**. Required steps Audi RS4 **Connecting**.

Tightening torques

Component			Nm
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Connector point in plenum chamber electronics box to central tube for instrument panel	3
Bolt connection for electrical wires	9

Main fuse panel - vehicles with battery in engine compartment, removing and installing

Removing

- Disconnect battery --> **Battery in engine compartment, disconnecting and reconnecting.**

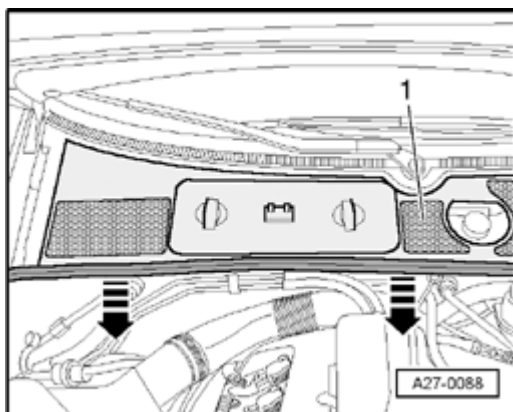


Fig. 623: Identifying Plenum Chamber Cover & Removing Rubber Seal
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove rubber seal of plenum chamber cover in direction of - **arrow** -.
- Remove plenum chamber cover - **1** - to front.

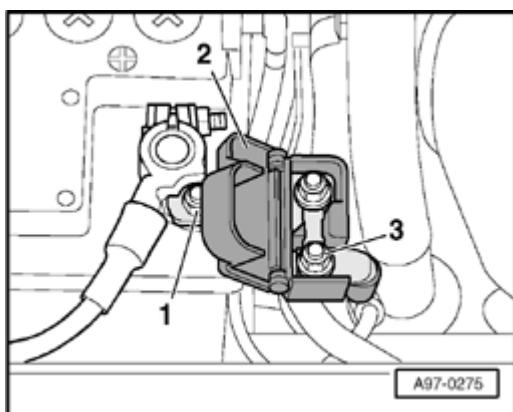


Fig. 624: Identifying Cap, Nut At Electric Cable, And Nut For Carrier Fuse On Positive Post
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Fold cover - **2** - aside and remove nut - **3** - at terminal.
- Remove nut - **1** - for fuse (positive terminal).

Installing

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Install in reverse order of removal, noting the following:

- Reconnect battery. Required steps Audi A4 S4 **Reconnecting**. Required steps Audi RS4 **Connecting**.

Tightening torques

Component - fastener	Nm
Fuse panel to positive terminal - nut	6
Fuse to fuse panel terminal - nut	6

Positive terminal in plenum chamber - Audi RS4, removing and installing

Removing

- Disconnect battery --> **Battery in luggage compartment, disconnecting and connecting**.

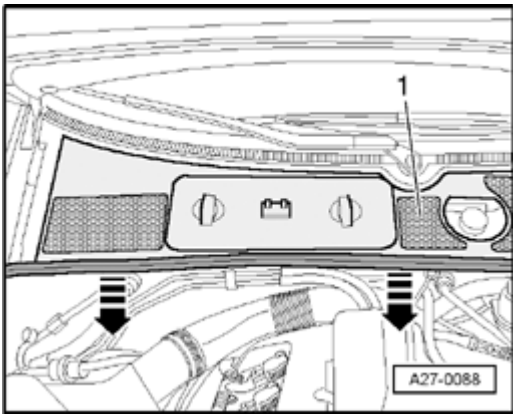


Fig. 625: Identifying Plenum Chamber Cover & Removing Rubber Seal
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove plenum chamber cover rubber seal in direction of - **arrow** -.
- Remove plenum chamber cover - **1** - forward.

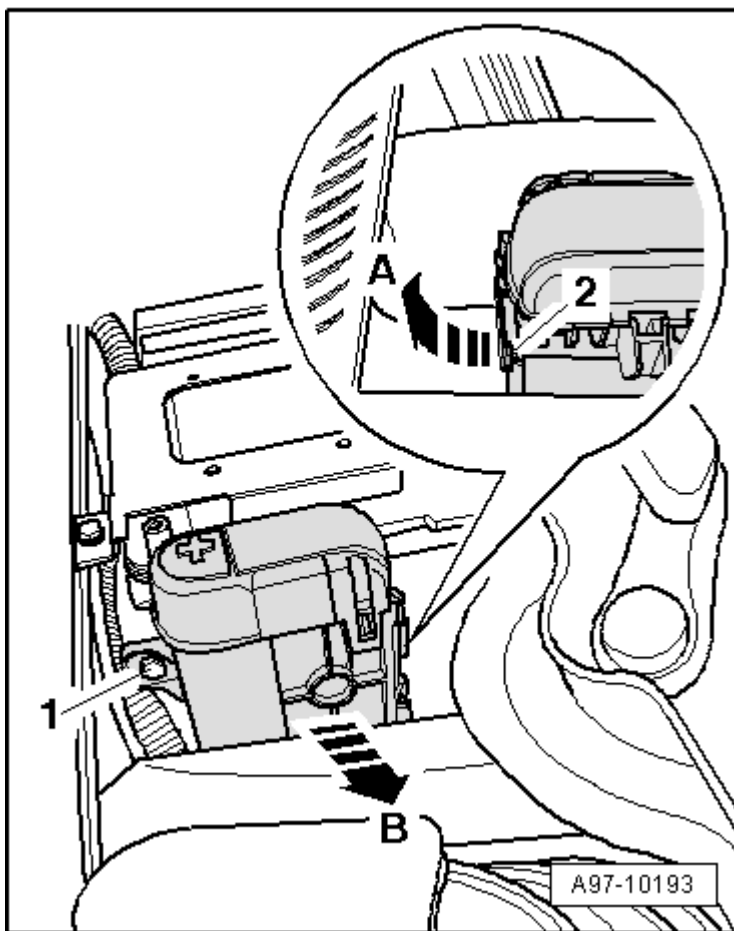


Fig. 626: Removing Screw, Retaining Clip, And Positive Terminal
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove screw - **1** -.
- Release retaining clip - **2** - in direction of - **arrow A** -.
- Remove positive terminal in direction of - **arrow B** - from bracket.

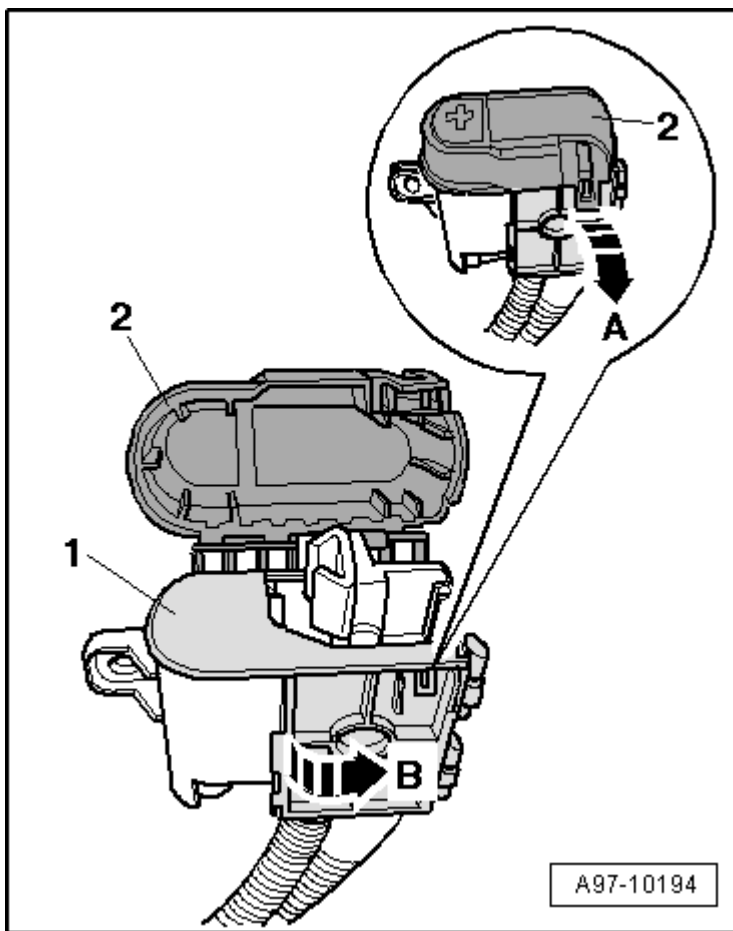


Fig. 627: Releasing Retaining Clip And Opening Cover Over Positive Terminal Pick-Off
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Release retaining clip - **arrow A** - and open cover - **2** - over positive terminal.
- Release wiring cover - **1** - in direction of - **arrow B** -.

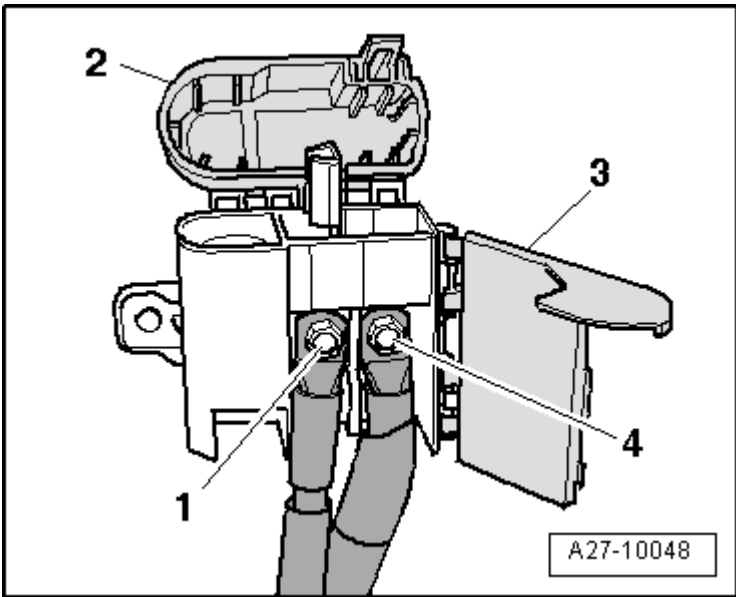


Fig. 628: Removing Terminal Nuts, Cables, And Positive Terminal
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove terminal nuts - 1 - and - 4 - and remove cables.
- Remove positive terminal.

Installing

Install in reverse order of removal, noting the following:

- Connect battery. Required steps **Connecting**.

Tightening torques

Component	Nm
Positive cables to positive terminal grip	15
Positive terminal grip to bracket	9

WIRING HARNESS AND CONNECTORS, SERVICING

General information

CAUTION: Before beginning repairs on the electrical system:

- Where applicable, obtain anti-theft radio security code.
- Switch off all electrical consumers.
- Switch the ignition off and remove ignition key.
- Disconnect negative (-) battery terminal.

- On vehicles equipped with Audi Telematics by OnStar ^(R) , switch-off the emergency (back-up) battery for the Telematic/Telephone Control Module prior to disconnecting vehicle battery --> 91 - COMMUNICATION
- After reconnecting vehicle battery, re-code and check operation of anti-theft radio. Also check operation of clock and power windows according to Repair Information and/or Owners Manual.
- After reconnecting vehicle battery on vehicles equipped with Audi Telematics by OnStar ^(R) , switch-on the emergency (back-up) battery for the Telematic/Telephone Control Module --> 91 - COMMUNICATION

Special tools, testers and auxiliary items required

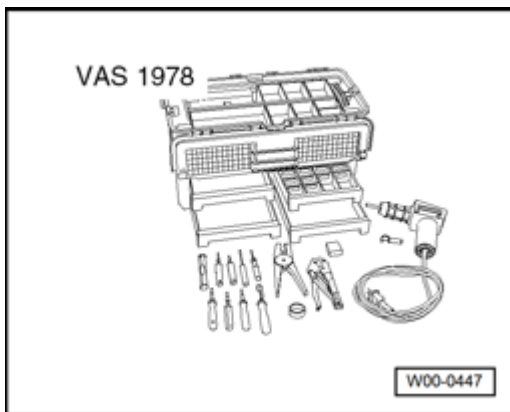


Fig. 629: Wiring Harness Repair Kit V.A.S 1978
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Wiring harness repair set VAS 1978

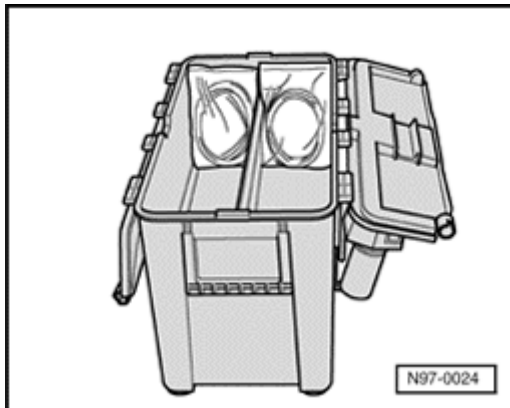


Fig. 630: Opened Wiring Harness Repair Kit VAS 1978
Courtesy of VOLKSWAGEN UNITED STATES, INC.

NOTE:

- Wiring harness and connector repairs on the vehicle electrical system are only to be performed using wiring harness repair set VAS 1978.
- An instruction manual is included in the wiring harness repair set VAS 1978 , in which the procedure for repairs is described in detail.

Safety precautions for repairing wiring harnesses and connectors

CAUTION:

- Wiring harness and connector repairs on the vehicle electrical system are only to be performed using wiring harness repair set VAS 1978.
- Pay attention to the relevant regulations in the individual countries.
- Disconnecting the battery negative (-) terminal prevents accidents when working on electrical system. Disconnect battery. Audi A4 S4 --> Battery in engine compartment, disconnecting and reconnecting. Audi RS4 --> Battery in luggage compartment, disconnecting and connecting.
- Heed stickers on vehicle pointing out components with high voltage. Remaining voltage must be dissipated before commencing repair work.
- Before commencing repair work, always eliminate cause of damage, e.g. sharp body edges, malfunctioning electrical components, corrosion etc.
- Do not loosen ground straps on body if this can be avoided (danger of corrosion).
- Further information, for example about removal and installation of individual components, can be found in the appropriate Workshop Manual.

Notes on repairs on wiring harnesses and connectors

CAUTION:

- Do not solder components of the vehicle electrical system.
- Do not perform repairs on heat-shrink sleeves. Route a new wire along the faulty wire if necessary.
- Shielded wires, e.g. on speed sensor and knock sensors, are NOT to be repaired. These wires must be replaced complete if damaged.
- Only use yellow wires for repairs to wiring. Mark location of repair with yellow insulating tape.
- Yellow wiring and locations with yellow insulating tape on wiring harness designate a previous repair.

Notes on repairs to airbag and safety belt tensioner wiring harness

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CAUTION:

- To maintain the repair standards required by the factory, repairs on airbag and belt tensioner wiring harness may only be performed on in-vehicle wiring using wiring harness repair set VAS 1978 and genuine spare parts (connector housings, contacts, wiring).
- Wires on the individual airbag modules are NOT to be repaired.
- If wires or connectors at airbag modules are damaged, the corresponding airbag modules must be replaced for safety reasons.
- Repair operations must be recorded in the Audi Service Schedule under "Workshop entries" with a brief outline of the repair work completed, company stamp and signature.
- Any warranty claims are invalid if airbag wiring harness repairs have not been performed using genuine spare parts and wiring harness repair set VAS 1978.

Notes for repairs on CAN-Bus wires

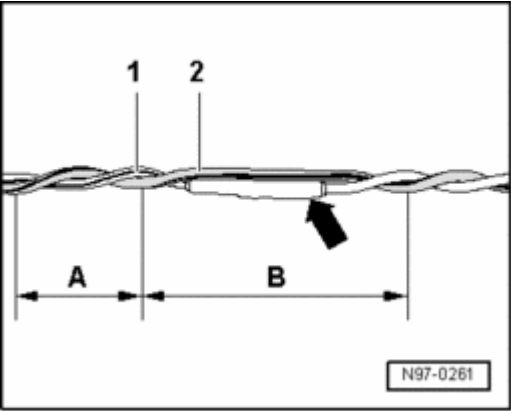


Fig. 631: Repairing Twisted Wire Pairs
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Use an unshielded two-wire line - 1 - and - 2 - (cross-section 0.35 mm² or 0.5 mm²) as CAN-Bus bus wire.
- color coding of CAN-Bus bus wires:

Drive CAN-Bus High	orange/black
Convenience CAN-Bus High	orange/green
Infotainment CAN-Bus High	orange/violet
CAN-Bus Low (all)	orange/brown

- Only use yellow wires for repairs to wiring. Mark location of repair with yellow insulating tape.
- Both bus wires must be of the same length when repairing. When twisting the wires - 1 - and - 2 - , length of twist - A - = 20 mm must be attained.

- When making repairs, there must be no untwisted section of wire which is longer than - **B** - = 50 mm, e.g. in the vicinity of heat-shrink sleeves - **arrow** -.

Repairing a wire with cross-section 0.22 mm² or 0.35 mm²

Procedure

NOTE:

- Wiring harness repair set VAS 1978 contains repair wires of three different cross-sections (0.5 mm², 1.5 mm², 4.0 mm²) and the corresponding crimp connectors.
- 0.5 mm² repair wire must be used for repairing 0.35 mm² wire.

Perform the repair as follows:

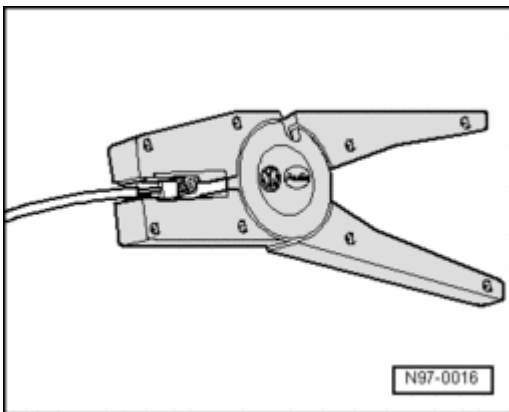


Fig. 632: Stripping Insulation At Wiring Using Stripping Pliers
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Strip the ends of the 0.22 mm² and 0.35 mm² wires to a length of 12... 14 mm using the stripping pliers VAS 1978/3.
- Fold back half of the stripped wire ends.
- Strip the ends of the 0.5 mm² repair wire to a length of 6 to 7 mm using the stripping pliers VAS 1978/3.

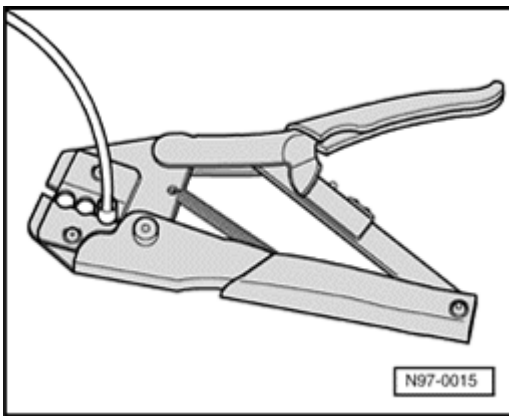


Fig. 633: Crimping On Both Sides With Crimping Pliers
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Slip crimp connector over ends of wires and crimp on both sides using crimping tool VAS 1978/1.

NOTE:

- Be sure to select the correct red crimp insert VAS 1978/24 for 0.5 mm² wires.
- Do NOT crimp the insulation on the wires.

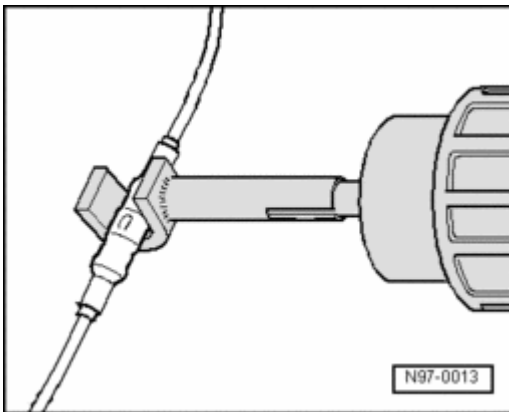


Fig. 634: Heating Crimp Connection Using Hot Air Gun
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- After crimping, you must shrink-fit the crimp connector using the hot-air blower, 220 V/ 50 Hz VAS 1978/14 and hot-air blower shrink fitting VAS 1978/15.
- Crimp connector must be heated working outwards from center until it is completely sealed and adhesive emerges.
- Set the hot air blower to the correct temperature; refer to operating manual for VAS 1978.
- When shrink-fitting, ensure no other wires, plastic components or insulating materials are damaged by the hot nozzle.
- If repair wire was previously wrapped, yellow insulating tape must again be wound around this point;

reattach wire with a cable tie if necessary.

- Reconnect battery. Required steps Audi A4 S4 **Reconnecting**. Required steps Audi RS4 **Connecting**.

Antenna cables, replacing

A new repair concept has been developed for repairing antenna cables. Instead of a complete antenna cable, connecting wires of different lengths and various adapter leads are now available as replacement parts.

Spare part numbers.

NOTE:

- Antenna cables are NOT to be repaired, rather replaced using connecting cables and adapter leads available as genuine replacement parts.
- These genuine replacement parts are suitable for all cable cross-sections and antenna cables which have to be replaced.
- Replacing of individual antenna connectors during repair work is not intended.
- The cables are now to be used retrospectively for all Audi models and for all antenna cable-cross sections fitted.
- All adapter leads and connecting cables are suitable for all transmission and reception signals.
- The repair concept can also be used for testing and service installation purposes (e.g. retrofitting).

Antenna connector cable, replacing

Example:

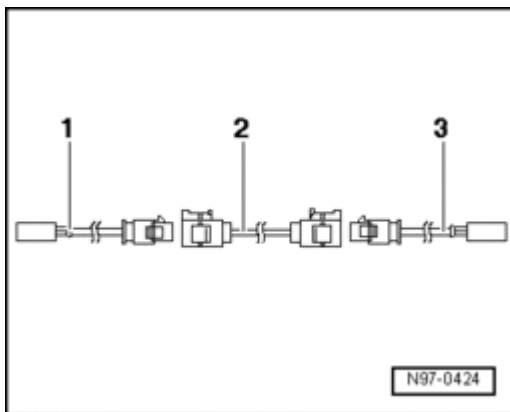


Fig. 635: Assembly Overview Of Antenna Wire
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Faulty antenna cable from radio to antenna

The following are required for repair purposes:

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1. Adapter wire for connection to radio; length approx. 30 cm
 2. Connecting wire; available in various lengths
 3. Adapter wire for connection to antenna; length approx. 30 cm
- Disconnect electrical connections of faulty antenna cable from devices.
 - Determine routing of faulty antenna cable in vehicle and measure out overall length of antenna connection to be replaced in vehicle.

Total length of antenna connection = length of adapter leads - **1** - and - **3** - required as well as connecting wire - **2** -.

- Subtract 60 cm from total length of antenna connection measured to calculate required length of connecting wire needed.
- Procure the necessary adapter leads and connecting wire in the calculated length as genuine replacement parts.
- Cut connectors off faulty antenna cable.
- Leave remains of faulty antenna cable in vehicle.
- Connect adapter leads to units in vehicle.
- Fit connectors with a piece of foam sheathing to prevent rattling noise.
- Lay and secure connecting wire parallel to old antenna cable.

**CAUTION: Antenna cable must not be kinked or bent excessively during installation.
Do not attempt to bend antenna cable in a radius smaller than 50mm.**

- Attach connecting wire to adapter leads.
- To prevent rattling noise, apply a suitable piece of foam sheathing to antenna connectors.
- Check operation.