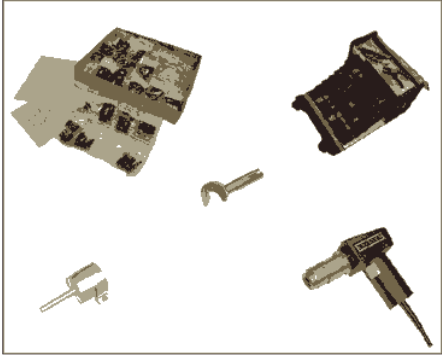
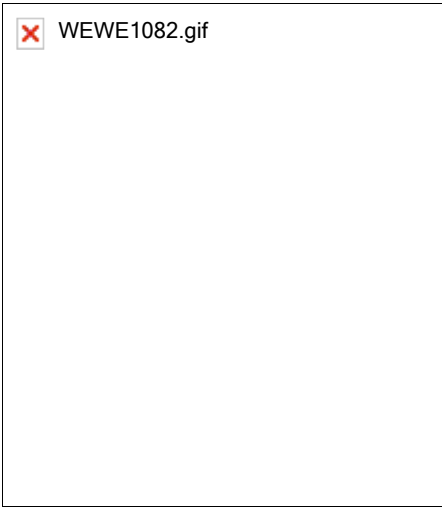


The present document was valid at the time of print. A later version may be available online

# WM 974519 Removing and installing wire harness for battery wiring

## Tools

Designation	Type	Number	Description	
repair kit for harnesses	Special tool	NR.155-1		
transmission jack	Workshop equipment	WE WE1082		

## Technical values

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Pole terminals to battery M6		Tightening torque	5 Nm (3.5 ftlb.)		
Pole terminals to battery M6		Tightening torque	5 Nm (3.5 ftlb.)		
Fastening screw, B+ line to body		Tightening torque	10 Nm (7.5 ftlb.)		
Fastening nut, B+ line to body		Tightening torque	10 Nm (7.5 ftlb.)		
Transmission support to body/transmission M10		Tightening torque	65 Nm (48 ftlb.)		
Fastening nut, B+ line to box M8		Tightening torque	23 Nm (17 ftlb.)		
Fastening nut, B+ line to box M8		Tightening	23 Nm		

		torque	(17 ftlb.)		
Starter lead for terminal 30		Tightening torque	18 Nm (13.0 ftlb.)		
Fastening screw, ground strap to engine M8		Tightening torque	23 Nm (17 ftlb.)		
Fastening nut, ground strap to body M8		Tightening torque	23 Nm (17 ftlb.)		

## Preliminary work

### Preliminary work for ground strap and B+ line of battery

1. Disconnect battery. → *27061N Working instructions after disconnecting the battery*

### Preliminary work for B+ line from power distributor to transmission connection point

1. Disconnect battery. → *271000 Work instructions after disconnecting the battery*
2. Remove current distributor. → *978919 Removing and installing power distributor - chapter on "Removing"*
3. Unscrew triggering unit. → *695319 Removing and installing triggering unit for airbag - chapter on "Removing"*



#### Information

For vehicles with manual transmission.

4. Remove shift console. → *340819 Removing and installing gearshift bracket - chapter on "Removing"*



#### Information

For vehicles with automatic transmission.

5. Remove selector support. → *370819 Removing and installing selector support - chapter on "Removing"*
6. Remove parking-brake lever. → *466119 Removing and installing parking-brake lever - section on "Removing"*
7. Remove rear underbody cover. → *519419 Removing and installing rear cover - section on "Removing"*
8. Remove cover for centre underbody. → *519319 Removing and installing centre cover - chapter on "Removing"*

### Preliminary work for B+ line from starter to transmission connection point

1. Disconnect battery. → *271000 Work instructions after disconnecting the battery*

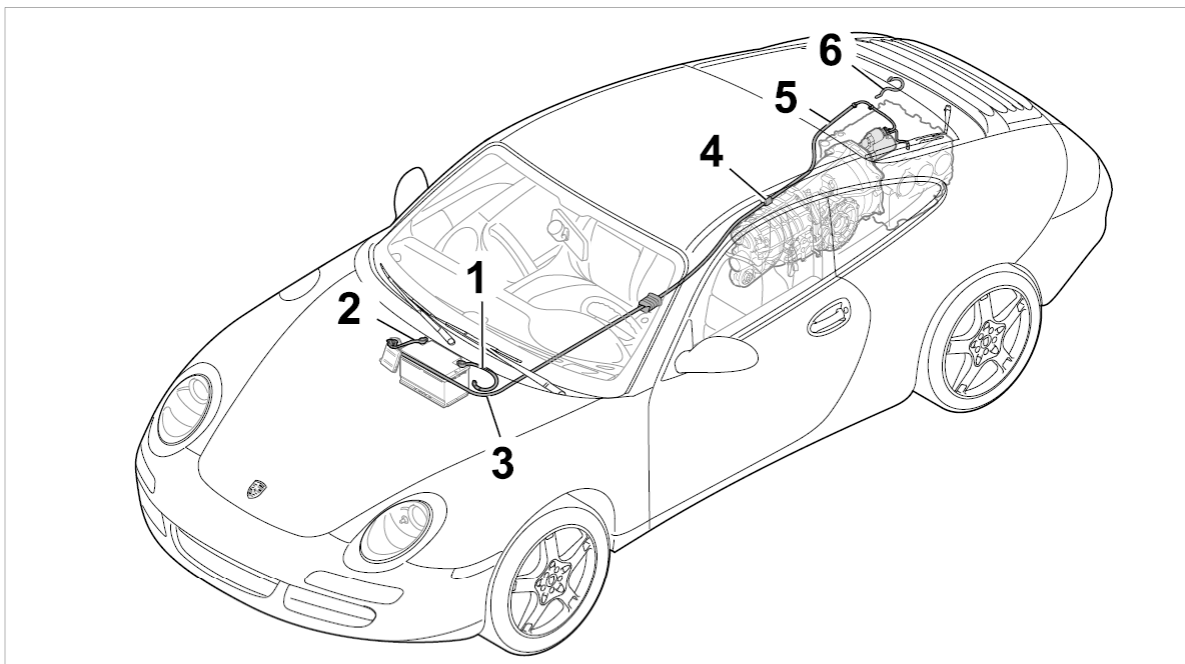
2. Remove throttle housing. → 244219 *Removing and installing throttle housing - chapter on "Removing"*
3. Remove generator. → 272219 *Removing and installing three-phase generator - section on "Removing"*
4. Remove rear underbody cover. → 519419 *Removing and installing rear cover - section on "Removing"*

### Preliminary work for engine ground strap

1. Lift the vehicle. → 401000 *Raising the vehicle*

## Removing wire harness for battery wiring

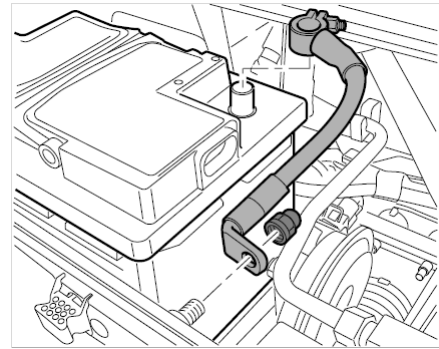
### Removing ground strap and B+ line of battery



#### *Installation position of wire harness for battery wiring*

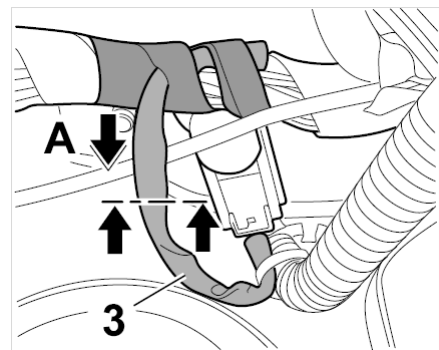
- 1 - Ground strap for battery
- 2 - B+ line for battery

1. Remove ground strap for battery -1- .



*Ground strap from battery to body*

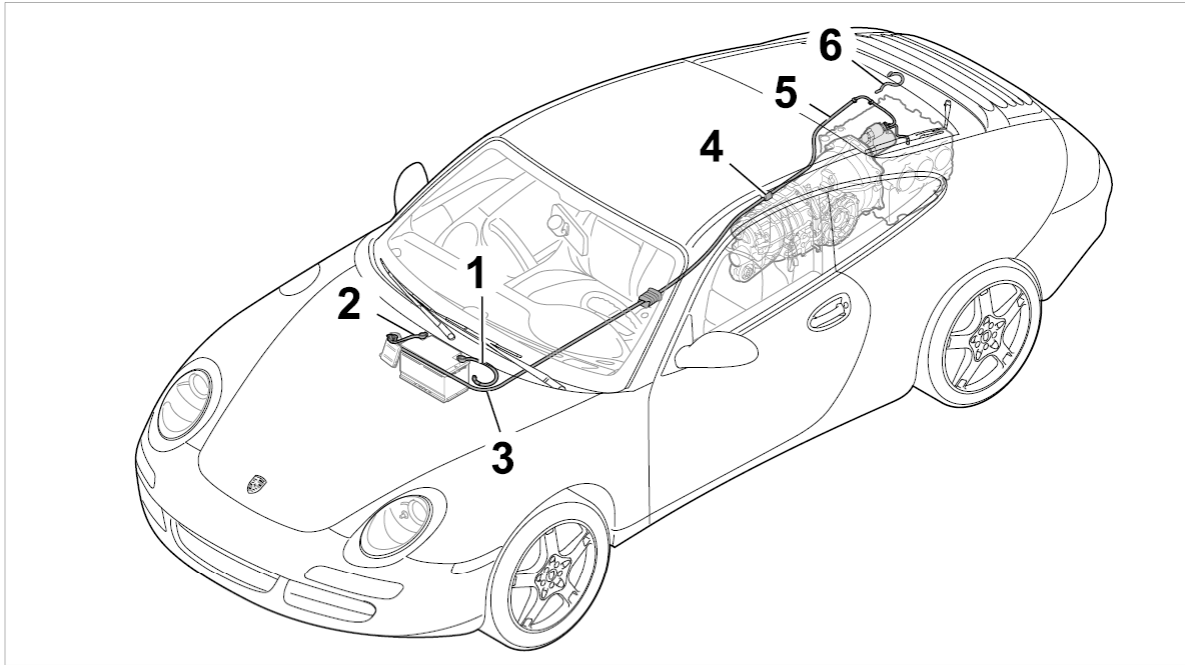
- 1.1. Unscrew fastening nut of battery ground strap to body and remove ground strap for battery.
2. Remove B+ line for battery **-2-** .



*Cut through the positive cable.*

- 2.1. Cut through the positive cable of main wire harness **-3-** at the place indicated **-arrows-** .
- 2.2. Remove binding band from main wire harness until the sheathing of the positive cable **-3-** can be removed **-Arrow A-** .
- 2.3. Unscrew B+ line from battery. → *270619 Removing and installing battery - chapter on "Removing"*
- 2.4. Release and pull off B+ line from power distributor → *978919 Removing and installing power distributor - chapter on "Removing"*
- 2.5. Remove B+ line for battery.

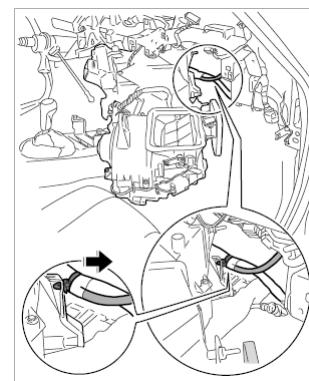
### **Remove B+ line from power distributor to transmission connection point**



*Installation position of wire harness for battery wiring*

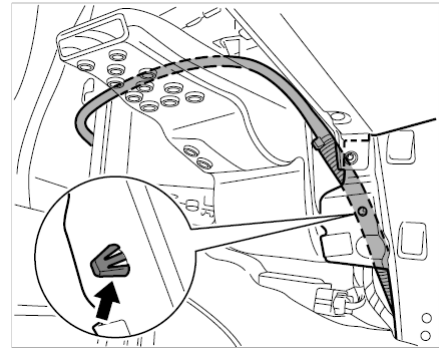
- 3** - B+ line from power distributor to transmission connection point
- 4** - Connection point of B+ box on transmission

1. Unclip B+ line **-3-** from heater/air-conditioning unit.



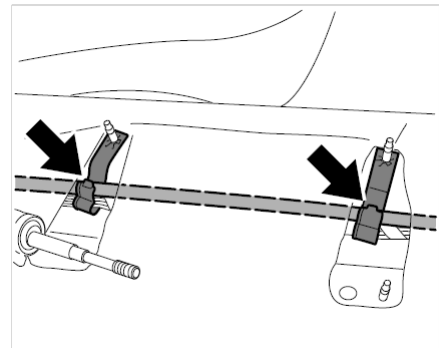
*Unclipping B+ line from heater/air-conditioning unit*

- 1.1. Unclip B+ line at tie-wrap from heater/air-conditioning unit.
- 1.2. Disconnect B+ line from main wire harness. To do this, remove the tie-wrap and the binding band.
- 2. Unclip B+ line **-3-** at unit carrier.



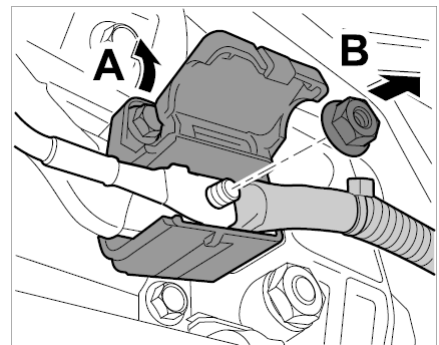
*Fastening of B+ line at unit carrier.*

- 2.1. Unclip B+ line at retaining clip **-arrow-** from unit carrier.
- 2.2. Pull B+ line through unit carrier.
3. Loosen B+ lead **-3-** at centre tunnel.



*Fastening of B+ line at centre tunnel*

- 3.1. Pull B+ line out of the two holders **-arrows-** .
- 3.2. Push B+ line under the carpet away from the direction of travel.
4. Unscrew B+ line **-3-** at box for B+ line.



*Unscrewing B+ line at box for B+ line*

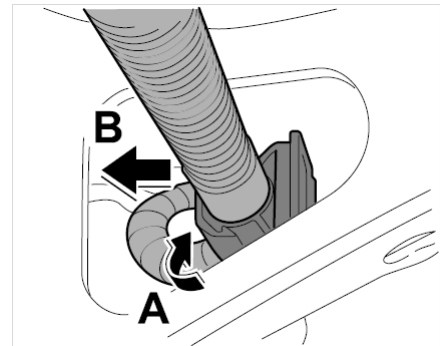
- 4.1. Open box for B+ line at transmission **-Arrow A-** , unscrew fastening nut **-Arrow B-** and remove the B+ line.



### Information

For vehicles with manual transmission.

5. Unclip B+ line **-3-** from transmission bracket.



*Unclipping B+ line from transmission bracket*

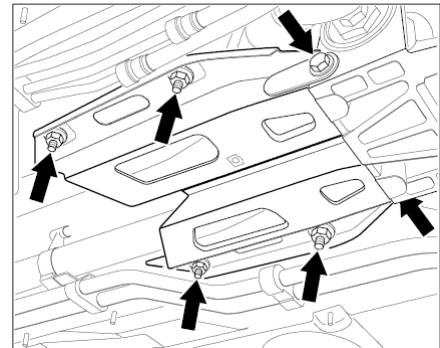
- 5.1. Open holder **-Arrow A-** and remove B+ line **-Arrow B-**.



### Information

For vehicles with automatic transmission.

6. Remove transmission bracket.



*Transmission bracket*

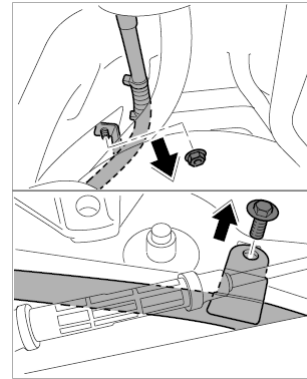
- 6.1. Support automatic transmission with **transmission jack WE WE1082**.
- 6.2. Unscrew the four fastening screws and the two fastening nuts.
- 6.3. Remove transmission bracket.



### Information

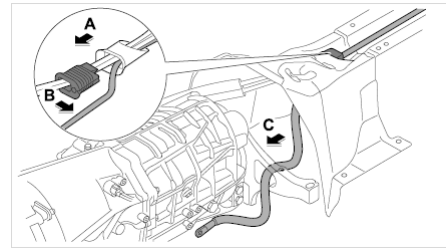
For vehicles with automatic transmission.

7. Unscrew guide tube of B+ line **-3-** from body.



*Unscrewing guide tube of B+ line*

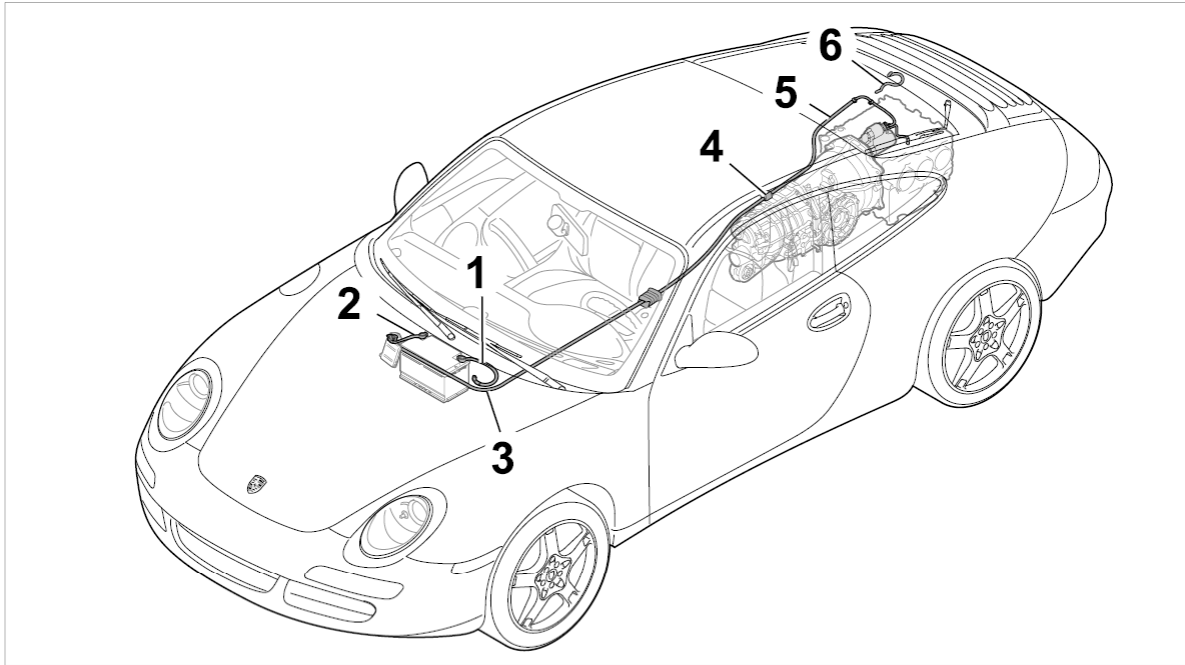
- 7.1. Unscrew fastening screw and fastening nut on guide tube of B+ line.
8. Remove B+ line **-3-** .



*Removing B+ line*

- 8.1. Remove grommet **-Arrow A-** .
- 8.2. Remove B+ line from grommet **-Arrow B-** .
- 8.3. Pull B+ line out of the vehicle interior and remove **-Arrow C-** .

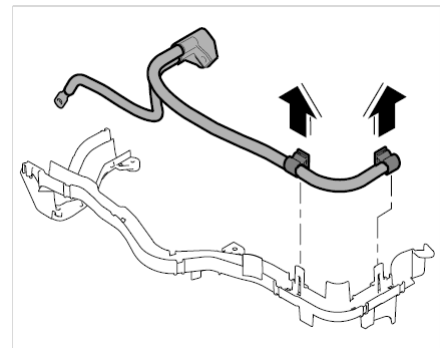
### **Removing B+ line from starter to transmission connection point**



*Installation position of wire harness for battery wiring*

- 4 - Connection point of B+ box on transmission
- 5 - B+ line from starter to transmission connection point

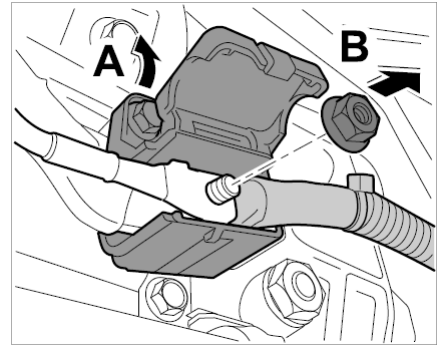
1. Screw off fastening nut on starter lead at terminal 30 and remove it. → 276019 *Removing and installing starter - chapter on "Removing"*
2. Unclip B+ line -5- at cable duct for engine wire harness.



*Unclipping B+ line to starter at cable duct*

- 2.1. Unclip B+ line at cable duct -arrows- .

3. Unscrew B+ line **-5-** at box for B+ line **-4-** .



Unscrewing B+ line at box for B+ line

- 3.1. Open box for B+ line at transmission **-Arrow A-** , unscrew fastening nut **-Arrow B-** and remove the B+ line.



#### Information

For vehicles with manual transmission.

4. Remove cable duct of B+ line **-5-** at manual transmission. → *343519 Removing and installing transmission - chapter on "Removing"*

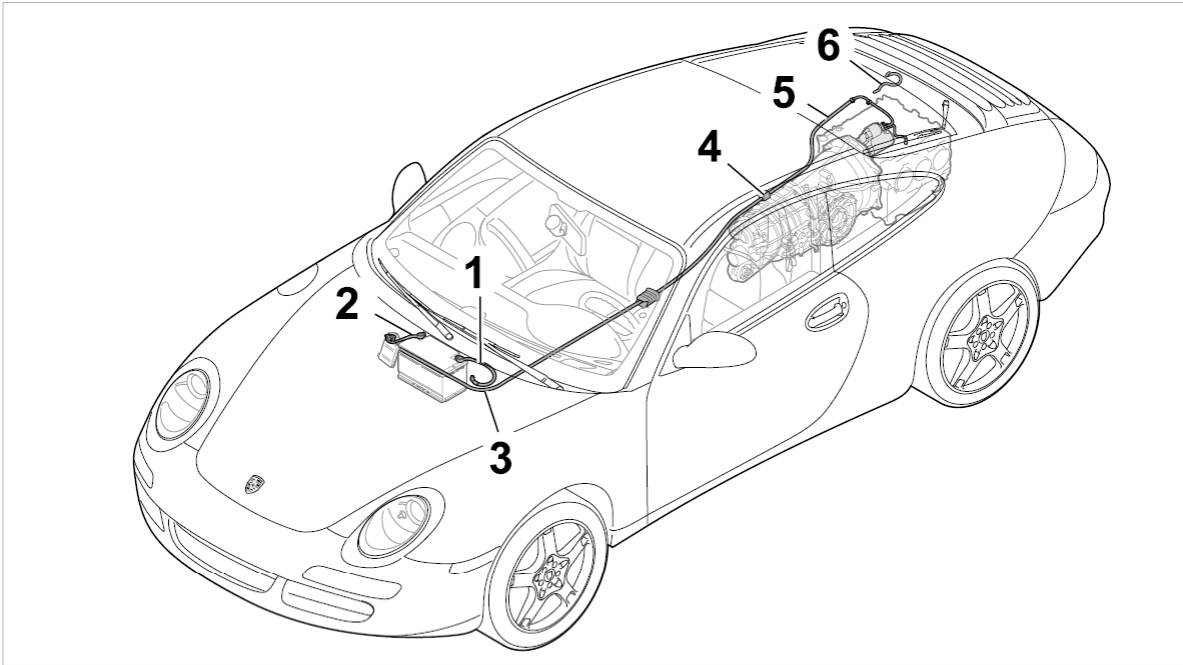


#### Information

For vehicles with automatic transmission.

5. Remove cable duct of B+ line **-5-** at automatic transmission. → *373527 Removing and mounting automatic transmission - chapter on "Mounting"*
6. Remove B+ line **-5-** .

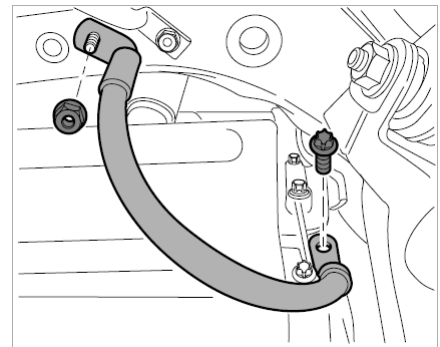
### Removing engine ground strap



*Installation position of wire harness for battery wiring*

**6** - Engine ground strap

1. Remove engine ground strap -6- .

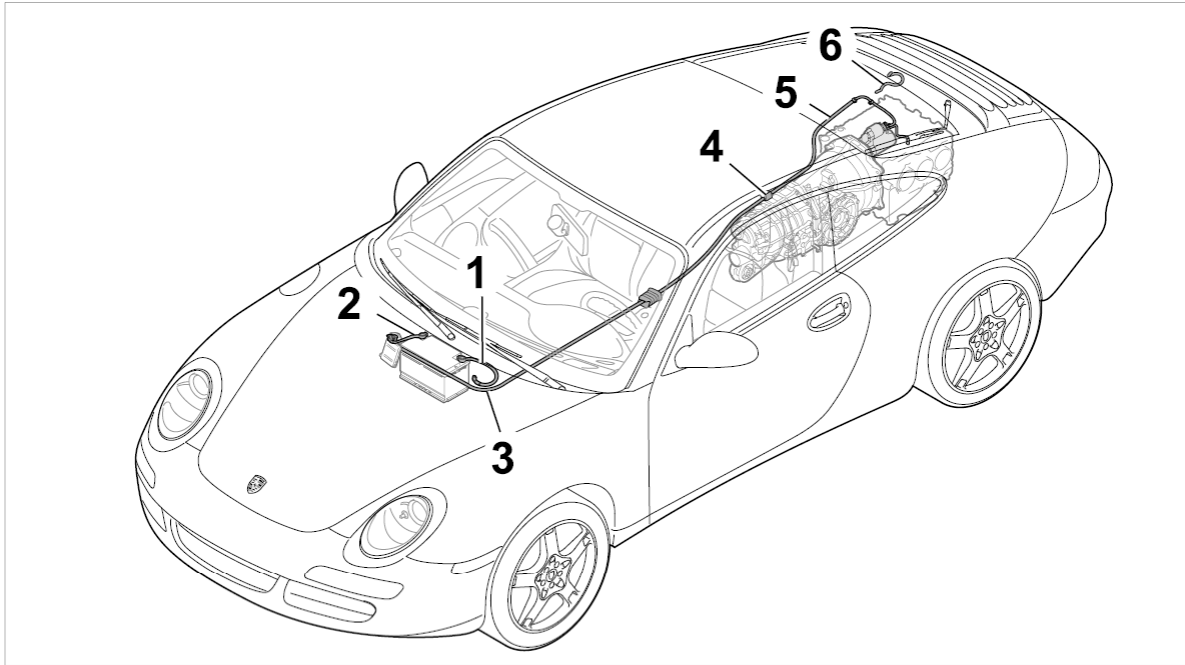


*Fastening engine ground strap*

- 1.1. Unscrew fastening screws on engine, fastening nut on body, and remove ground strap.

## **Installing wire harness for battery wiring**

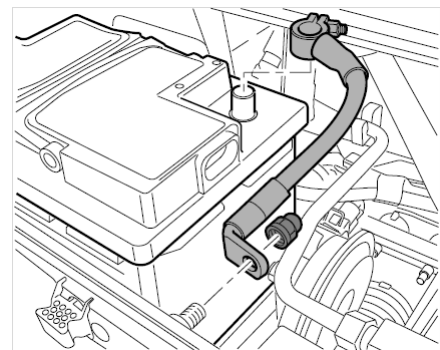
### **Installing ground strap and B+ line of battery**



*Installation position of wire harness for battery wiring*

- 1 - Ground strap for battery
- 2 - B+ lead for battery

1. Install ground strap for battery -1- .



*Ground strap from battery to body*

1.1. Screw down battery ground strap on the body with the fastening nut. → **Tightening torque: 5 Nm (3.5 ftlb.)**

2. Install B+ line for battery -2- .

2.1. Push the B+ line of the battery onto the mounting point at the power distributor as far as the stop. Check

that the B+ line sits firmly. → 978919 *Removing and installing power distributor - chapter on "Installing"*

- 2.2. Screw B+ line tightly to battery. → **Tightening torque: 5 Nm (3.5 ftlb.)** → 270619 *Removing and installing battery - chapter on "Removing"*



### Information

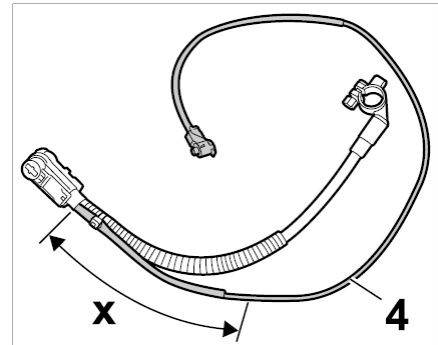
The electric lines are located in the plenum panel and are thus exposed to the highest demands.

The greatest care must be used in the individual work steps for stripping insulation from, crimping, and shrinking/insulating the electric lines.

The procedure for stripping insulation from, crimping, and shrinking/insulating the electric lines must be complied with and observed. The procedures are described in detail in the **repair kit for harnesses NR.155-1**.

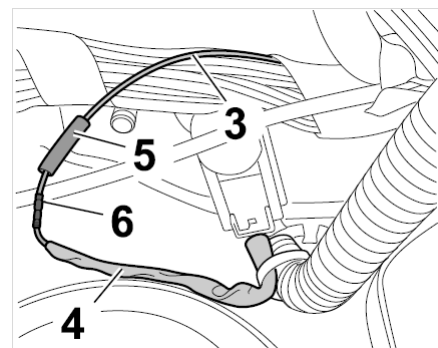
Crimping samples are to be prepared before beginning work.

3. Crimp the positive cable.



*Trimming the positive cable.*

- 3.1. Trim the new positive cable -4- to the **-dimension X = approx. 20 cm-** and strip the insulation.
- 3.2. Strip insulation off original positive cable of main wire harness -3- and push on the shrink-fit hose -5- .



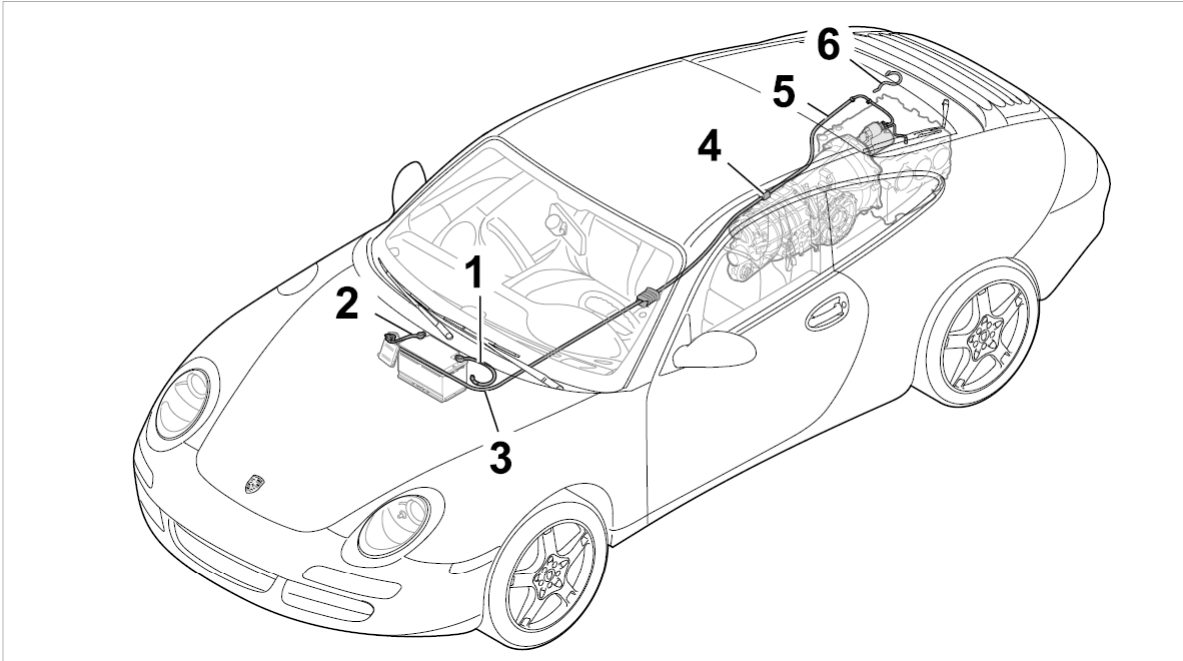
*Crimping the positive cable*

- 3.3. Crimp crimping sleeve -6- using the **hand crimping pliers** from the **repair kit for harnesses NR.155-1** to the positive cable -3- .
- 3.4. Crimp crimping sleeve -6- using the **hand crimping pliers** from the **repair kit for harnesses NR.155-1** to the new positive cable -4- . Check the crimp connection carefully.
- 3.5. Slide the shrink-fit hose over the crimp connection and carefully shrink it using the **hot-air blower with**

**special nozzle** (recommended accessories for the repair kit for harnesses) so that it is watertight.

3.6. Tie positive cable to the main wire harness with adhesive tape.

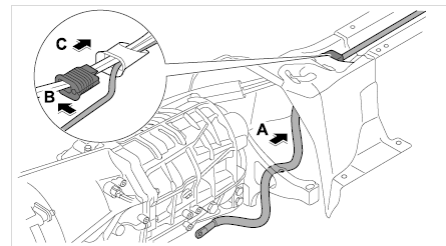
**Install B+ line from power distributor to transmission connection point**



*Installation position of wire harness for battery wiring*

- 3** - B+ line from power distributor to transmission connection point
- 4** - Connection point of B+ box on transmission

1. Install B+ line **-3-** .



*Installing B+ line*

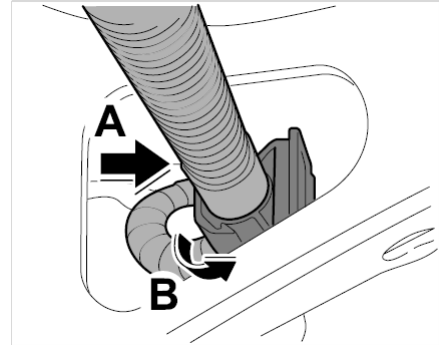
- 1.1. Lay B+ line to transmission and push into the vehicle interior **-Arrow A-** .
- 1.2. Press B+ line into the grommet **-Arrow B-** .
- 1.3. Fit grommet **-Arrow C-** .



### Information

For vehicles with manual transmission.

2. Clip B+ line **-3-** onto transmission bracket.



*Clip B+ line onto transmission bracket.*

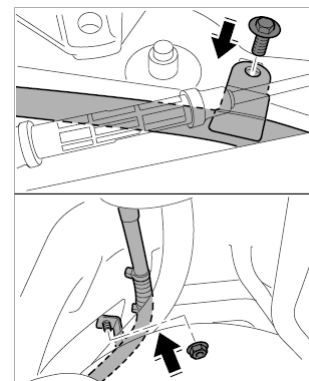
- 2.1. Insert B+ line into holder **-Arrow A-** and close holder **-Arrow B-**



### Information

For vehicles with automatic transmission.

3. Screw down guide tube of B+ line **-3-** on the body.



*Fastening guide tube of B+ line*

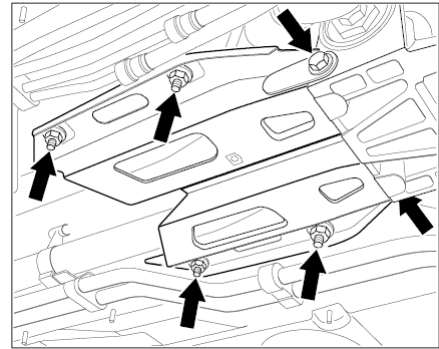
- 3.1. Position guide tube of B+ line on the body and screw down with fastening screw and fastening nut. → **Tightening torque: 10 Nm (7.5 ftlb.)** → **Tightening torque: 10 Nm (7.5 ftlb.)**



### Information

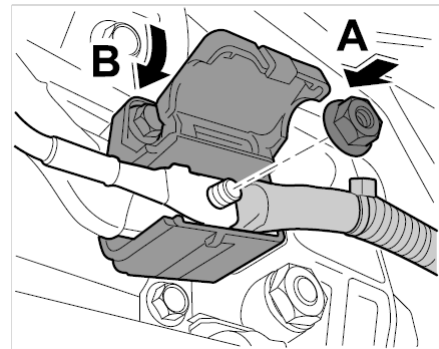
For vehicles with automatic transmission.

4. Install transmission support.



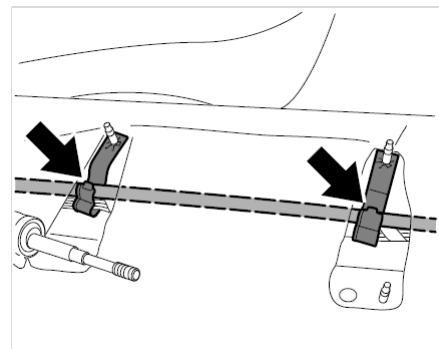
*Transmission support*

- 4.1. Position the transmission support and secure with the four fastening screws and the two fastening nuts.  
→ **Tightening torque: 65 Nm (48 ftlb.)**
- 4.2. Lower **transmission jack WE WE1082** and remove from under the vehicle.
5. Screw down B+ line **-3-** at box for B+ line **-4-** .



*Screw down B+ line at box for B+ line.*

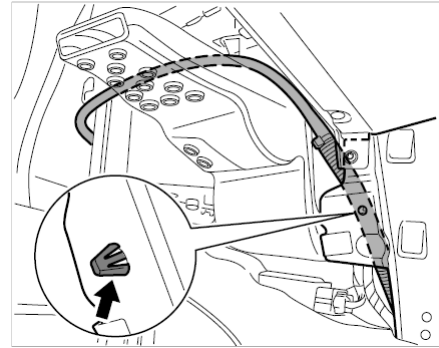
- 5.1. Insert B+ line into the box and tighten with the fastening nut **-Arrow A-** . → **Tightening torque: 23 Nm (17 ftlb.)**
- 5.2. Close box for B+ line on transmission **-Arrow B-** .
6. Fasten B+ lead **-3-** at centre tunnel.



*Fastening of B+ line at centre tunnel*

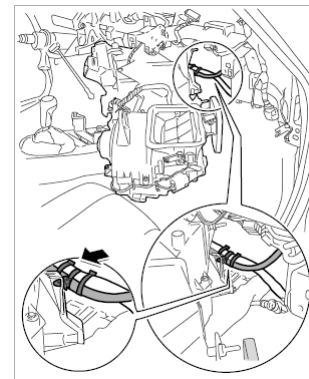
- 6.1. Push B+ line under the carpet in the direction of travel.

- 6.2. Insert B+ line into the two holders **-arrows-** .
7. Clip in B+ line **-3-** at unit carrier.



*Fastening of B+ line at unit carrier.*

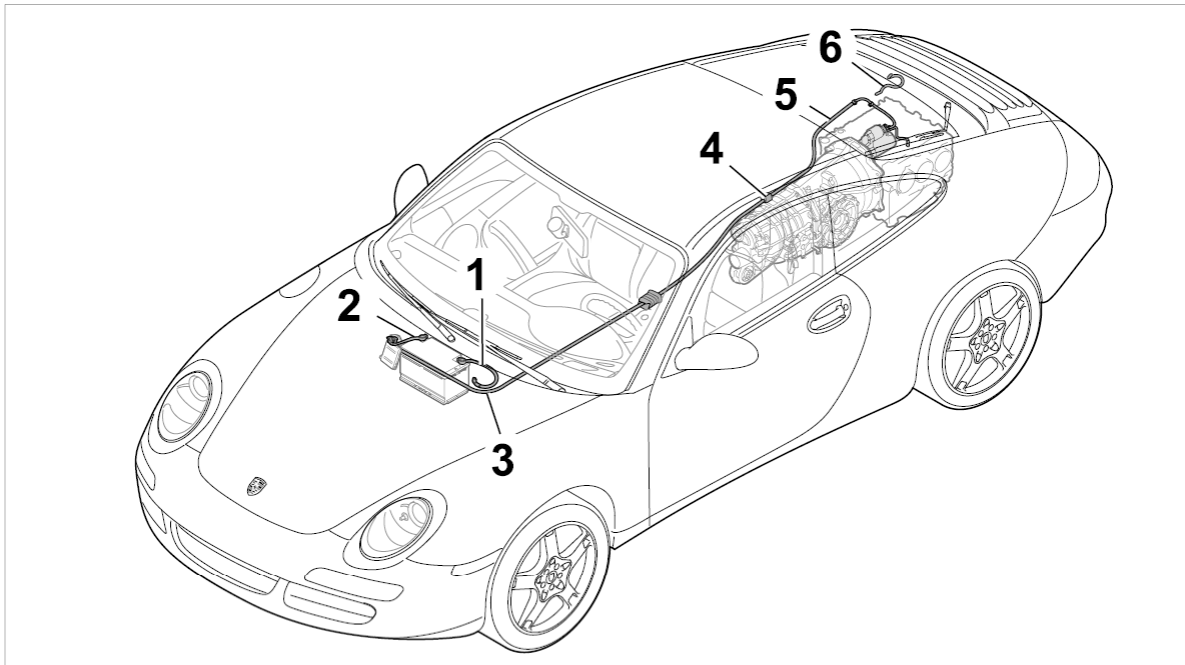
- 7.1. Push B+ line through the unit carrier and across the footwell air vent.
- 7.2. Clip in B+ line **-arrow-** at unit carrier with the retaining clip.
8. Clip in B+ line **-3-** at heater/air-conditioning unit.



*Fastening B+ line at heater/air-conditioning unit*

- 8.1. Secure the B+ line to the main wire harness with the two new tie-wraps.
- 8.2. Clip in B+ line at heater/air-conditioning unit with the tie-wraps.

### **Installing B+ line from starter to transmission connection point**



*Installation position of wire harness for battery wiring*

- 4 - Connection point of B+ box on transmission
- 5 - B+ line from starter to transmission connection point

1. Lay B+ line -5- .



**Information**

For vehicles with manual transmission.

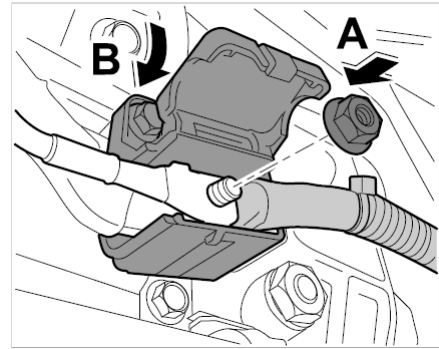
2. Install cable duct of B+ line -5- at manual transmission. → *343519 Removing and installing transmission - chapter on "Installing"*



**Information**

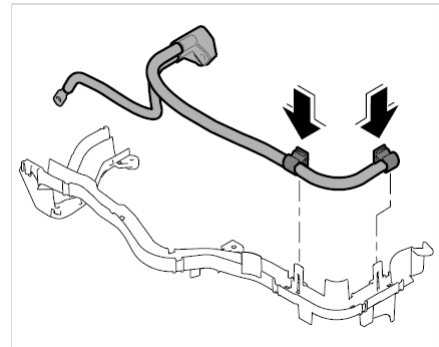
For vehicles with automatic transmission.

3. Install cable duct of B+ line -5- at automatic transmission. → *373527 Removing and mounting the automatic transmission - chapter on "Removing and Mounting"*
4. Screw down B+ line -5- at box for B+ line -4- .



*Screwing down B+ line at box for B+ line*

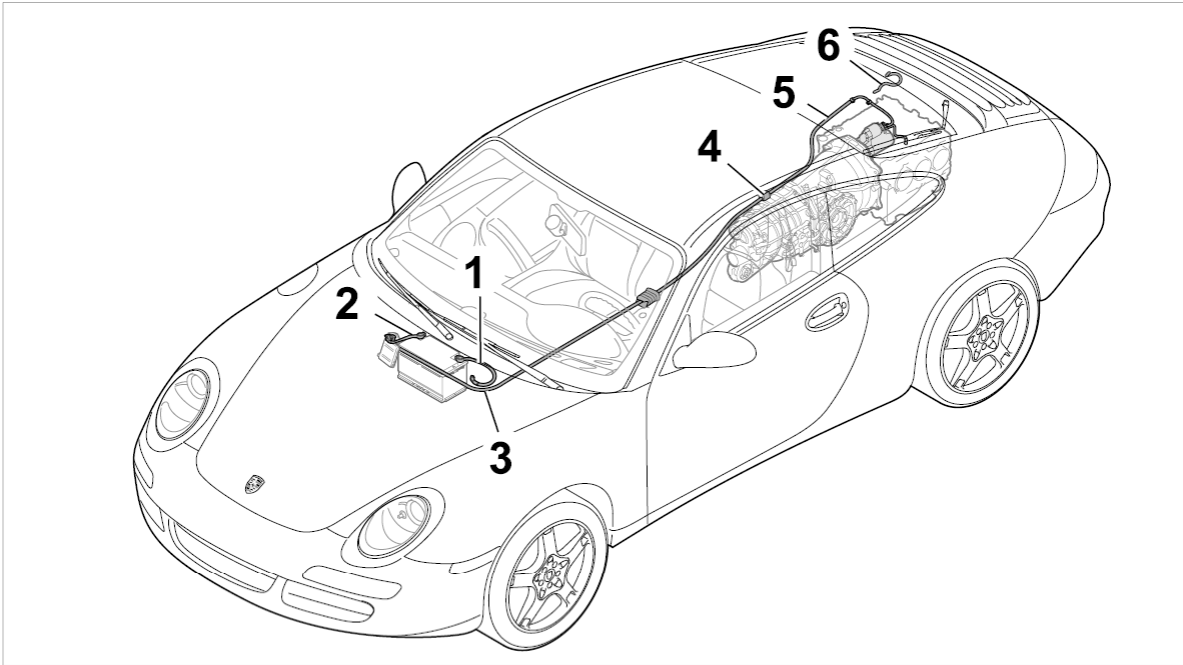
- 4.1. Insert B+ line into the box and tighten with the fastening nut **-Arrow A-** . → **Tightening torque: 23 Nm (17 ftlb.)**
- 4.2. Close box for B+ line on transmission **-Arrow B-** .
5. Clip in B+ line **-5-** at cable duct for engine wire harness.



*Clipping in starter lead at cable duct*

- 5.1. Clip in B+ line at cable duct **-arrows-** .
6. Position starter lead for terminal 30 and secure with fastening nut. → **Tightening torque: 18 Nm (13.0 ftlb.)** → 276019 *Removing and installing starter - chapter on "Installing"*

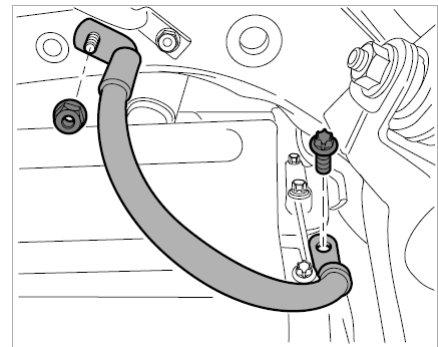
### Fitting ground strap to engine



*Installation position of wire harness for battery wiring*

**6** - Engine ground strap

1. Fit engine ground strap -6- .



*Fastening engine ground strap*

- 1.1. Position ground strap and screw down with the fastening screw and fastening nut. → **Tightening torque: 23 Nm (17 ftlb.)** → **Tightening torque: 23 Nm (17 ftlb.)**

## Subsequent work

### Subsequent work for ground strap and B+ line of battery

1. Carry out work instruction after disconnecting the battery. → *27061N Work instructions after disconnecting the battery*

### Subsequent work for B+ line from power distributor to transmission connection point

1. Install cover for centre underbody. → *519319 Removing and installing centre cover - chapter on "Installing"*
2. Install rear underbody cover. → *519419 Removing and installing rear cover - section on "Installing"*
3. Install parking-brake lever. → *466119 Removing and installing parking-brake lever - section on "Installing"*



#### Information

For vehicles with automatic transmission.

4. Install selector support. → *370819 Removing and installing selector support - chapter on "Installing"*



#### Information

For vehicles with manual transmission.

5. Install gearshift bracket. → *340819 Removing and installing gearshift bracket - chapter on "Installing"*
6. Fasten triggering unit. → *695319 Removing and installing triggering unit for airbag - chapter on "Installing"*
7. Install power distributor. → *978919 Removing and installing power distributor - chapter on "Installing"*
8. Carry out work instructions after disconnecting the battery. → *271000 Work instructions after disconnecting the battery*

### Subsequent work for B+ line from starter to transmission connection point

1. Install the generator. → *272219 Removing and installing three-phase generator - section on "Installing"*
2. Install throttle housing. → *244219 Removing and installing throttle housing - chapter on "Installing"*
3. Install rear underbody cover. → *519419 Removing and installing rear cover - section on "Installing"*
4. Carry out work instructions after disconnecting the battery. → *271000 Work instructions after disconnecting the battery*

### Subsequent work for engine ground strap

1. Lower the vehicle.

997431, 997510, 997511, 997520, 997521, 997610, 997611, 997620, 997621, 997630, 997631, 997810, 997811, 997830, 997840, 997841, 997850, 997851, 997140, 997141, 997150, 997151, 997160, 997161, 997170, 997350, 997351, 997360, 997361, 997370, 997450, 997451, 997460, 997461, 997560, 997561, 997650, 997651, 997660, 997661, 997720, 997721, 997820, 997860, 997861

Model year as of 2005

C00, C02, C05, C07, C08, C09, C10, C11, C12, C13, C14, C15, C16, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C32, C33, C34, C35, C36, C37, C38, C39, C45, C46, C98, C99