WH19 - Reworking Routing of Wire Harness for PASM Valve Unit (Workshop Campaign)

Important: **CRITICAL WARNING** - This campaign includes steps where control unit(s) in the vehicle will be programmed. The vehicle voltage must be maintained between 13.5 volts and 14.5 volts during this programming. Failure to maintain this voltage could result in damaged control unit(s). Damage caused by inadequate voltage during programming is not a warrantable defect. The technician must verify the actual vehicle voltage before starting the campaign and also document the actual voltage on the repair order. Please refer to Equipment Information EQ1401 for a list of suitable battery chargers/power supplies which should be used to maintain vehicle voltage.

Model Year: **As of 2017 up to 2018**

Model Line: **Panamera (971)**

Equipment: Adaptive air suspension with Porsche Active Suspension Management (**I-no. 1BK**)

Subject: **Wire harness for PASM valve unit**

Information: **The wire harness for the PASM valve unit is not routed correctly in the area around the heat protection panels for the valve unit on the affected vehicles.**

Due to relative movements while driving and if significant amounts of dirt get in, this can cause chafing on the wire harness and as a result, faults can be entered in the fault memory and the warning "Chassis system fault" may be displayed in the instrument cluster. As a result, the vehicle level can no longer be set.

Remedial Action:
- Check wire harness for PASM valve unit and secure with additional tie-wraps.
- If the wire harness is already damaged, repair wire harness for PASM valve unit.

Affected Vehicles: Only the vehicles assigned to the campaign (see also PIWIS Vehicle information). This campaign affects 1613 vehicles in North America.

Installation Position:

Installation position of wire harness for valve unit

1 – Wire harness for PASM valve unit (**check** and **secure again**)
2 – Heat protection panel, left
circle – Area of potential chafing

Required parts and materials

Parts Info: **Note: DO NOT ORDER PARTS. PARTS WILL BE AUTOMATICALLY ALLOCATED TO YOUR DEALERSHIP.**

Parts required for **checking** and **reworking routing of wire harness**:

Part No.	Designation – Use	Qty.
N 106 232 01	⇒ Tie-wrap, C2.5 x 95 – For securing wire harness	1 ea.
9A7 971 850 00	⇒ Tie-wrap with expanding clip – For securing wire harness	1 ea.

9A7 971 838 01	⇒ Tie-wrap with clip – For securing wire harness	1 ea.
999 049 032 40	⇒ Plastic nut – Rear underbody panelling	5 ea.

Part No.: **Additional** parts required for repairing a **wire harness that is already damaged**:

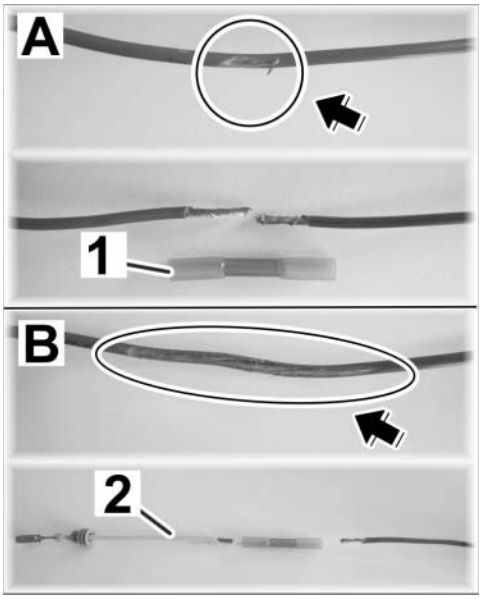
Information

Ordering repair lines and connector housing

If the required spare parts for the sectional repair of the wire harness are not already available as part of the **Connector Kit 95B** (TKR repair case), they **must be ordered separately** specifically for carrying out this work.
If necessary, the spare parts for repairing the wire harness can be ordered from the **TKR Automotive GmbH online shop**.

To order the spare parts required for repairing the wire harness, the following procedure must be observed:

- If only a small section of a line in the wire harness is damaged ⇒*Repairing the wire harness* **-Fig. A-**, the line can be repaired using a crimp connector. To do this, cut the line in question at the chafing point and join it again using a suitable crimp connector ⇒*Repairing the wire harness* **-1-**.



Repairing the wire harness

- Essentially, all suitable crimp connectors from any vehicle electrical system repair range (e.g. from Cartool, etc.) can be used provided they have the same line cross-section as the affected line.

- Repair lines ⇒*Repairing the wire harness* **-2-** are only required if more extensive chafing is discovered on a line ⇒*Repairing the wire harness* **-Fig. B-** and this damaged area cannot simply be covered by a crimp connector.

Part No.	Designation – Use	Qty.
... *	⇒ Repair parts (e.g. from TKR Automotive GmbH) – Sectional repair of PASM wire harness	1 ea. *
Includes:		
...	Repair line, 0.35 - 0.5 mm^2	As required
...	Repair line, 1 mm^2	As required
...	Repair line, 2.5 mm^2	As required
...	Crimp connector, white, 0.5 mm^2	As required
...	Crimp connector, red, 0.75 - 1.5 mm^2	As required
...	Crimp connector, blue, 1.5 - 2.5 mm^2	As required
...	PVC insulating tape, commercially available	As required

* **All** parts required for wire harness repairs must be invoiced together under **Part No. WH190000001** for warranty invoicing.
For Part No. WH190000001, enter “expendable items” designation as **sublet item & additional measure**, depending on the required repair parts.

You will find information on invoicing the shipping costs for repair parts from TKR Automotive GmbH under ⇒*Technical Information 'WH1900 Warranty processing'* at the end of this document.

Required tools

Tools:

- Torque screwdriver, 1.5 – 3 Nm (1 – 2 ftlb.), e.g. **VAS 6494 - Torque screwdriver**

Additional tools required for repairing a **wire harness that is already damaged**:

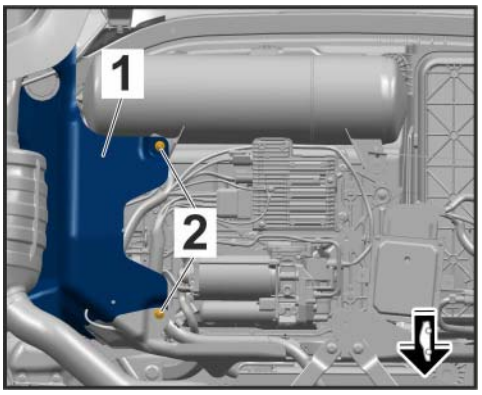
- **VAS 1978/1A - Crimping pliers**
- **VAS 1978/3 - Stripping pliers**
- **VAS 1978/14A - Heat Gun**
- Suitable unlocking tools for electric plug contacts, e.g. **VAS 1978/35-20 - Release tool set** and **VAS 1978/35-33 - Release tool set**

Preparatory work

Work Procedure: 1 Move the vehicle onto a lifting platform, deactivate the levelling system and then raise the vehicle ⇒ *Workshop Manual '4X00IN Lifting the vehicle'*.

2 Remove cover for rear underbody ⇒ *Workshop Manual '519419 Removing and installing cover for rear underbody'*.

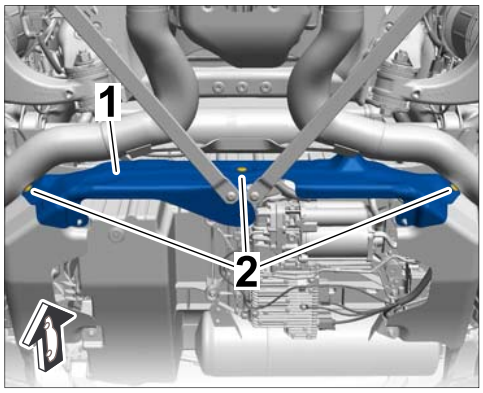
3 Loosen left heat protection panel ⇒ *Loosening left heat protection panel* **-1-** for PASM module and press it down carefully.
To do this, loosen the heat protection panel at the threaded connections ⇒ *Loosening left heat protection panel* **-2-** and guide it out.



Loosening left heat protection panel

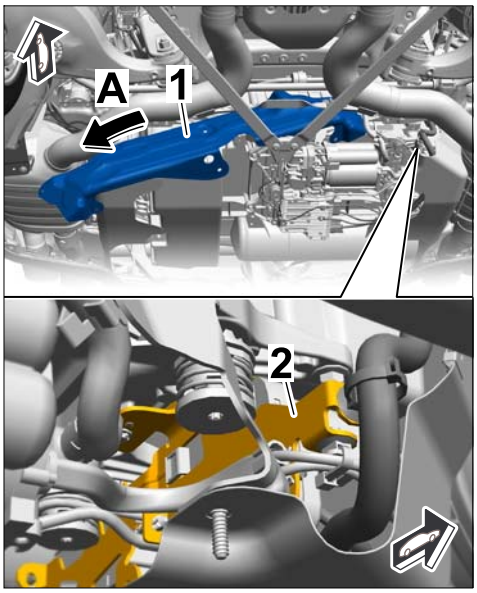
4 Loosen front heat protection panel for the PASM module and push it aside.

4.1 Loosen and unscrew fastening screws ⇒ *Loosening front heat protection panel* **-2-** on the heat protection panel ⇒ *Loosening front heat protection panel* **-1-**.



Loosening front heat protection panel

4.2 Carefully move the heat protection panel ⇒ *Moving front heat protection panel* **-1-** along the PASM module as far as the right-hand side of the vehicle ⇒ *Moving front heat protection panel* **-arrow A-** until the line bracket ⇒ *Moving front heat protection panel* **-2-** is accessible.

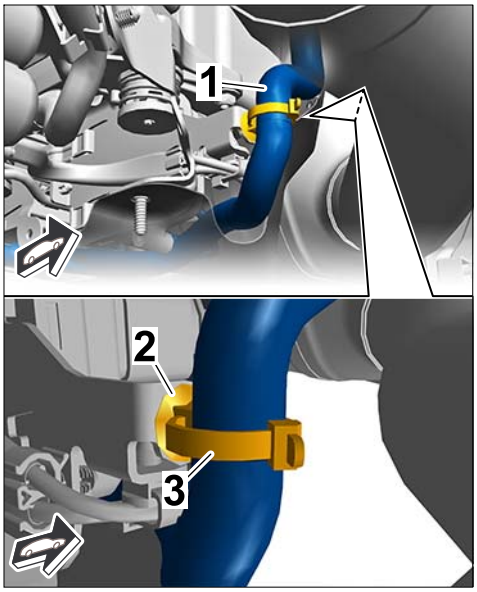


Moving front heat protection panel

5 Disconnect wire harness ⇒ *Loosening wire harness* **-1-** for PASM valve unit.

5.1 Carefully cut tie-wrap ⇒ *Loosening wire harness* **-3-** on the expanding clip ⇒ *Loosening wire harness* **-2-** for the wire harness.

5.2 Unclip expanding clip ⇒ *Loosening wire harness* **-2-** on the line bracket and remove it together with the tie-wrap.



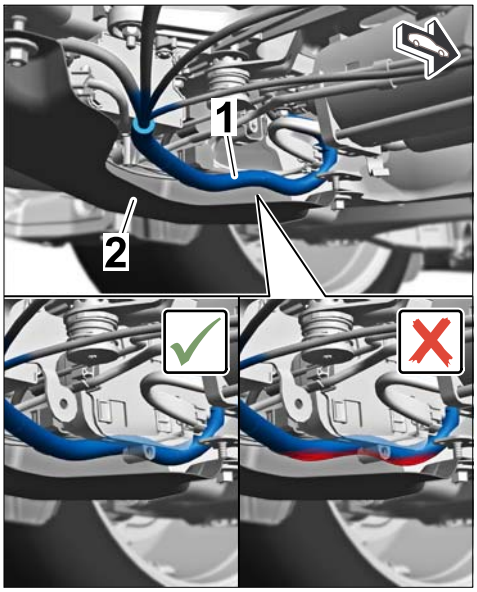
Loosening wire harness

Checking wire harness for PASM valve unit for damage

Work Procedure: 1 Perform a visual inspection to see if the wire harness for the PASM valve unit ⇒*Checking wire harness for damage* **-1-** shows signs of chafing or damage to the insulation on the line in the area around the heat protection panel.

- If there are **no** chafing marks or damaged areas visible on the wire harness, re-position the wire harness and secure it. To do this, continue with ⇒*Technical Information 'WH1900 Reworking routing of wire harness for PASM valve unit'*.

- If there are visible **chafing marks** or **damaged areas**, the wire harness must be repaired. To do this, **continue with Step 2**.



Checking wire harness for damage

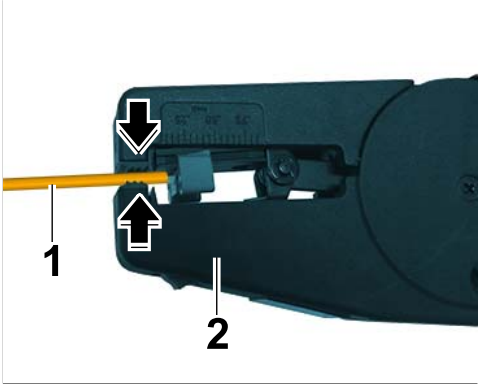
2 Repair wire harness for PASM valve unit.

Information

- Select a place for the joint where there is enough space to join the individual lines.
- Mark the electric lines if necessary.
- If the wire harness is damaged to such an extent that it cannot be repaired using a crimp connector, the individual line in the wire harness must be replaced by a repair line. For further information, see: ⇒*Technical Information '9X0000 Spare parts requirements for "connectors" - new repair concept: Information, required details and connector search (25/14)'* or information booklet for the **Connector Kit 95B** (TKR repair case).

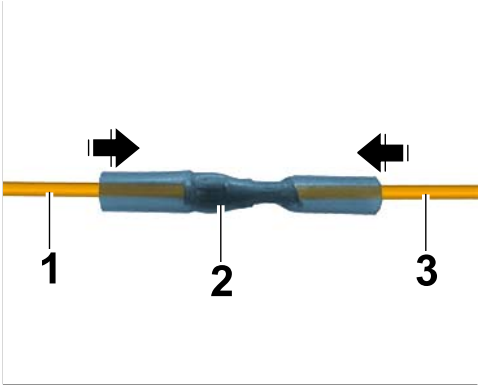
2.1 Remove insulating tape and protective sleeve from around the wire harness and cut through each of the damaged lines **at the chafing point** using side cutters or the **stripping pliers VAS 1978/3**.

2.2 Strip the ends of the line you have just cut ⇒*Stripping the line* **-1-** using the **stripping pliers VAS 1978/3** ⇒*Stripping the line* **-2-**.



Stripping the line

2.3 Guide the stripped ends of the line ⇒*Guiding lines into crimp connector* **-1-** into the corresponding crimp connector ⇒*Guiding lines into crimp connector* **-2-**.

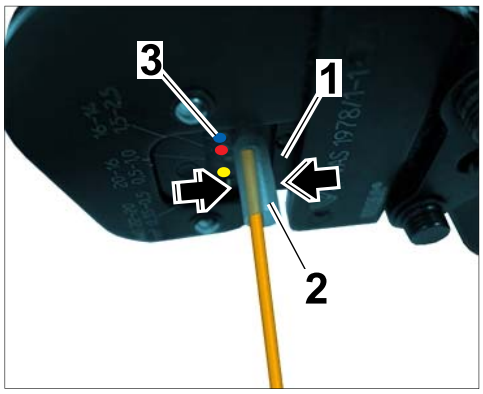


Guiding lines into crimp connector

2.4 Crimp on the line using **crimping pliers VAS 1978/1-1**.

2.4.1 Fit crimping pliers insert ⇒*Crimping on line* **-1-** according to the color marking ⇒*Crimping on line* **-3-** on the crimp connector ⇒*Crimping on line* **-2-**into the **crimping pliers VAS 1978/1-1**.

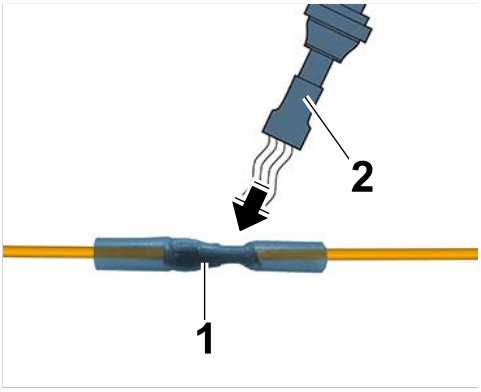
2.4.2 Crimp on the crimp connector ⇒*Crimping on line* **-2-** using **crimping pliers VAS 1978/1-1**.



Crimping on line

2.5 Seal shrink-fit hose on the crimp connection ⇒*Sealing crimp connection* **-1-** using **Heat Gun VAS 1978/14A** ⇒*Sealing crimp connection* **-2-**.

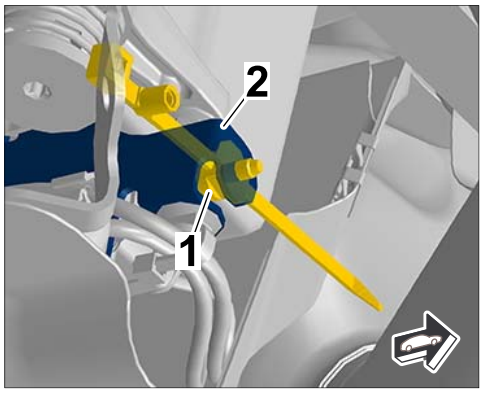
2.6 Wrap PVC insulating tape around the lines in the wire harness in the usual way and attach protective sleeve.
Then re-position the wire harness and secure it ⇒*Technical Information 'WH1900 Reworking routing of wire harness for PASM valve unit'*.



Sealing crimp connection

Rework routing of wire harness for PASM valve unit

Work Procedure: 1 Clip new expanding clip with tie-wrap ⇒*Clipping in expanding clip on retaining bracket* **-1-from the rear** - viewed in direction of travel - as shown into the relevant bore on the retaining bracket ⇒*Clipping in expanding clip on retaining bracket* **-2-**.



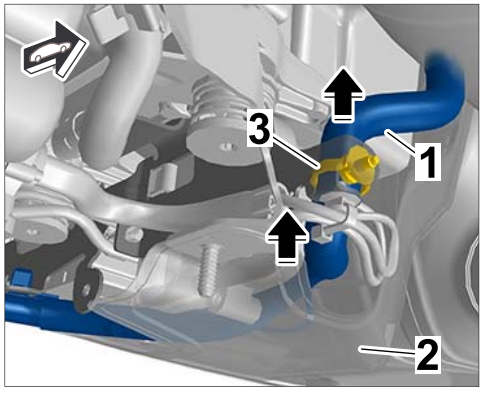
Clipping in expanding clip on retaining bracket

Part No.	Designation	Qty.
9A7 971 850 00	Tie-wrap with expanding clip	1 ea.

2 Route wire harness for PASM valve unit **behind the retaining bracket** - viewed in direction of travel - along the expanding clip and close the tie-wrap around the wire harness, but **do not tighten it initially**.

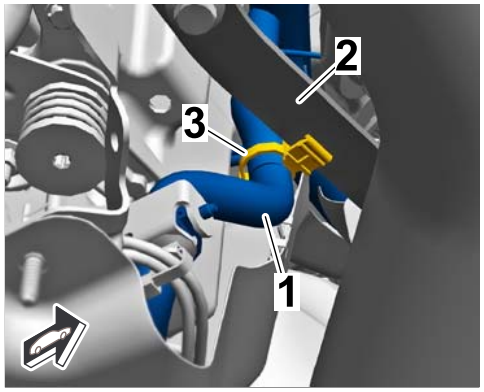
3 Press the wire harness ⇒*Re-positioning and securing wire harness* **-1-** up as far as required ⇒*Re-positioning and securing wire harness* **-arrows-** until the gap between the horizontal area of the heat protection panel ⇒*Re-positioning and securing wire harness* **-2-** and the wire harness is **at least 5 mm**.
To do this, bend the heat protection panel back into its installation position if necessary.

Then secure the wire harness at the new position using the previously fitted tie-wrap ⇒*Re-positioning and securing wire harness* **-3-** and cut off the extra length of tie-wrap.



Re-positioning and securing wire harness

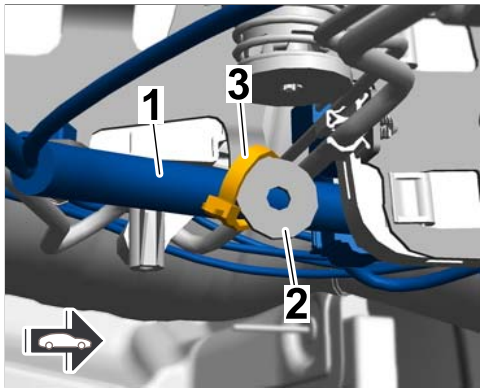
4 Press clip with tie-wrap ⇒ *Securing wire harness with clip* **-3-** as far as it will go onto the reinforcement strut ⇒ *Securing wire harness with clip* **-2-** for the rear-axle chassis subframe in the wire harness area. Then close the tie-wrap around the wire harness ⇒ *Securing wire harness with clip* **-1-**, tighten it and cut off the extra length of tie-wrap.



Securing wire harness with clip

Part No.	Designation	Qty.
9A7 971 838 01	Tie-wrap with clip	1 ea.

5 Secure the wire harness ⇒ *Securing wire harness with tie-wrap* **-1-** in the PASM valve unit area as shown using a tie-wrap ⇒ *Securing wire harness with tie-wrap* **-3-** at the eyelet ⇒ *Securing wire harness with tie-wrap* **-2-** of the retaining bracket and then cut off the extra length of tie-wrap.



Securing wire harness with tie-wrap

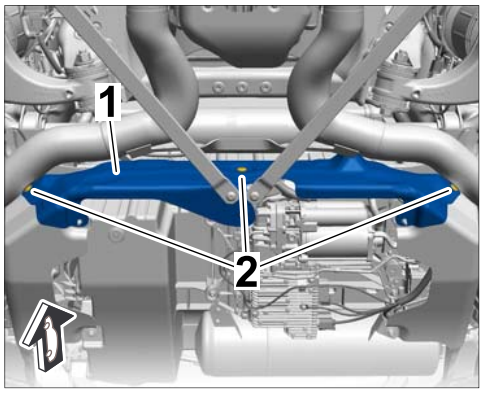
Part No.	Designation	Qty.
N 106 232 01	Tie-wrap	1 ea.

Concluding work

Work Procedure: 1 Secure front heat protection panel for PASM module.

1.1 Push heat protection panel ⇒ *Securing front heat protection panel* **-1-** carefully to the left side and position it in installation position.

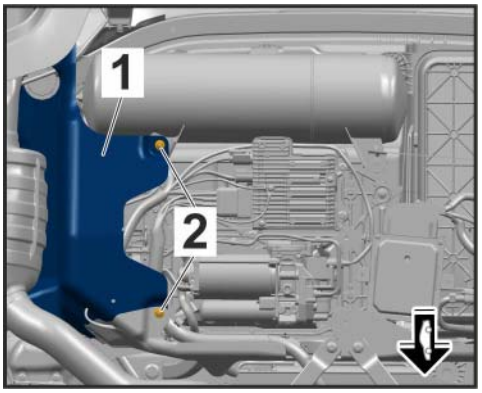
1.2 Screw in and tighten fastening screws ⇒ *Securing front heat protection panel* **-2-** for the heat protection panel.
Tightening torque 2.5 Nm (1.75 ftlb.)



Securing front heat protection panel

2 Press left heat protection panel ⇒ *Securing left heat protection panel* **-1-** for PASM module back into installation position and position it on the threaded connections ⇒ *Securing left heat protection panel* **-2-**.

3 Install rear underbody cover. Use new plastic nuts for this.
For instructions, see ⇒ *Workshop Manual '519419 Removing and installing cover for rear underbody'*.



Securing left heat protection panel

Part No.	Designation	Qty.
999 049 032 40	Plastic nut	5 ea.

4 Lower the vehicle and remove it from the lifting platform.

5 Enter the campaign in the Warranty and Maintenance booklet.

Warranty processing

Scope 1: **Checking wire harness for PASM valve unit and securing with additional tie-wraps.**
– **Result of check**: The wire harness must **not** be repaired.

Working time:

Checking and reworking wire harness for PASM valve unit		Labor time: **75 TU**
Includes:	Raising and lowering the vehicle Removing and installing rear underbody panelling Loosening and securing heat protection panels for PASM module	

Parts required:

N 106 232 01	Tie-wrap, C2.5 x 95	1 ea.
9A7 971 850 00	Tie-wrap with expanding clip	1 ea.
9A7 971 838 01	Tie-wrap with clip	1 ea.
999 049 032 40	Plastic nut	5 ea.

⇒ **Damage Code WH19 066 000 1**

Scope 2: **Checking wire harness for PASM valve unit and securing with additional tie-wraps.**
– **Result of check**: If the **wire harness is already damaged**, it must be **repaired**.

Working time:

Checking and reworking wire harness for PASM valve unit and repairing wire harness		Labor time: **101 TU**
Includes:	Raising and lowering the vehicle Removing and installing rear underbody panelling Loosening and securing heat protection panels for PASM module	

Parts required:

N 106 232 01	Tie-wrap, C2.5 x 95	1 ea.
9A7 971 850 00	Tie-wrap with expanding clip	1 ea.
9A7 971 838 01	Tie-wrap with clip	1 ea.
999 049 032 40	Plastic nut	5 ea.
WH190000001	Repair parts for sectional repair of wire harness	1 ea. *

* For warranty invoicing for Part No. WH190000001, enter "expendable items" designation as **sublet item & additional measure**, depending on the required repair parts.

⇒ **Damage Code WH19 066 000 1**

Information:

Information

Reimbursement of shipping costs for spare parts from TKR Automotive GmbH.

A **separate warranty claim** must be created for reimbursing the shipping costs incurred.

Important:

- The shipping costs must correspond to the amounts specified in the respective invoice. Please attach a copy of the invoice for this to the corresponding claim in PQIS.
- The separate warranty claim must be processed by specifying ⇒ **Damage code 9737 097 000 1**.
- Document the work in the PQIS job by entering **97370** under "Location" and **9735 – Repair in accordance with PAG instructions** as the "Damage code".
- Specify that the repairs were carried out due to workshop campaign WH19 under “Further Information” on the PQIS job.