

**Sport Exhaust System (I-no. 176)**

Revision: This bulletin replace bulletin Group 2, #25/14, dated February 9, 2017.  
An information note was added to Work Procedure Step 5.6.

Model Year: **As of 2014 up to 2016**

Vehicle Type: **Panamera Turbo/Panamera Turbo S** including related **Executive variants**

Engine Type: **MCW.BA** = 4.8-liter/382 kW (520 hp) – Panamera Turbo  
**MCW.CA** = 4.8-liter/419 kW (570 hp) – Panamera Turbo S

Concern: **Retrofitting**

Note: In the sport exhaust system, the signal for activating the flaps in the rear mufflers comes from the respective current map in the DME control unit. This depends on the driving status and the accelerator pedal position among other things.

The sport exhaust system can be activated using a new switch console with the additional "Twin tailpipe" button (close to the center console).

The regulating time after pressing the button, determined by the response time of the pneumatics, is approx. 2 - 3 seconds. The sport exhaust system is active when the diode in the "Twin tailpipe" button lights up.

Engine power and exhaust behavior of the vehicle are not affected. The sport exhaust system is also available as a factory installed option for new vehicles by requesting optional equipment "176".



Figure 1

Parts Info: **970.044.200.32** ⇒ Sport exhaust system, Panamera Turbo/Turbo S, set  
**970.044.200.33** ⇒ Sport exhaust system, Panamera Turbo Executive/Turbo S Executive, set

**Also order the following in accordance with vehicle equipment:**

**970.613.XXX.XX.FFF<sup>1</sup>** ⇒ Button module with "sport exhaust system" (switch console)

<sup>1</sup> See Porsche Electronic Parts Catalog – PET, illustration 903–05

Parts List:

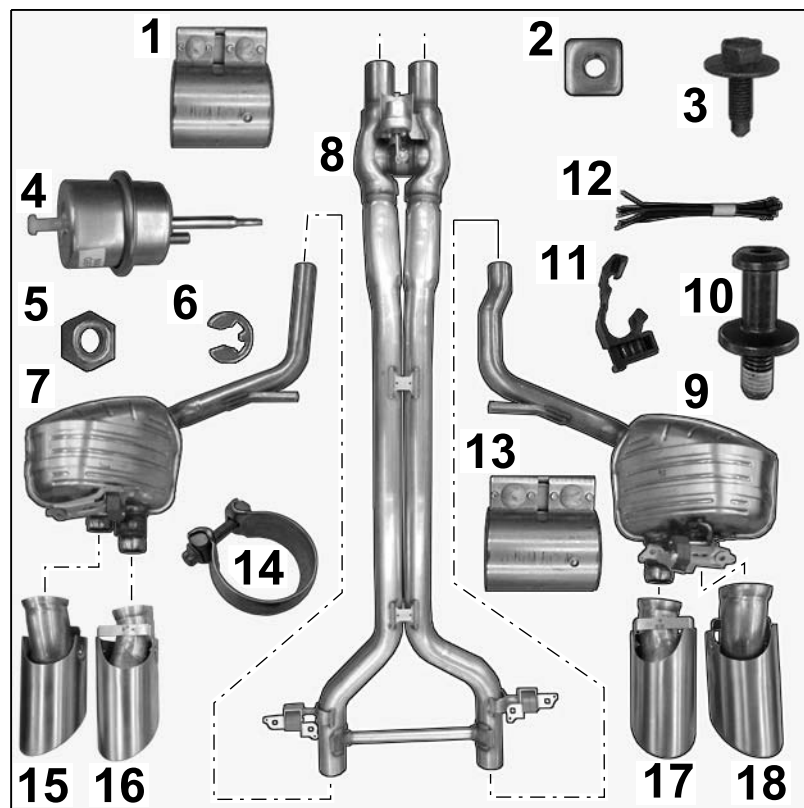


Figure 2

**Parts for exhaust system:**

955.111.220.21	2 x	Clamping sleeve, Ø 65 mm, 95 mm long ⇒ Figure 2-1-
970.111.360.00	2 x	Square nut, M8 (transverse strut) ⇒ Figure 2-2-
N 908.797.02	2 x	Hexagon-head bolt, M8 x 25 (transverse strut) ⇒ Figure 2-3-
7PP.253.835	2 x	Vacuum unit for rear silencer ⇒ Figure 2-4-
970.111.547.00	4 x	Lock nut, M6 ⇒ Figure 2-5-
7PP.253.080	2 x	Circlip ⇒ Figure 2-6-
970.111.911.94	1 x	Rear muffler, left ⇒ Figure 2-7-

970.111.919.92 <sup>2</sup>	1 x	Front muffler – short (I-no. 0E1) ⇒ <i>Figure 2-8-</i>
970.111.914.93 <sup>2</sup>	1 x	Front muffler – long (I-no. 0E2, not shown)
970.111.912.94	1 x	Rear muffler, right ⇒ <i>Figure 2-9-</i>
970.555.643.01	2 x	Locking pin (luggage compartment cover) ⇒ <i>Figure 2-10-</i>
900.386.101.01	2 x	Combination screw, M10 x 28 (side panel, not shown)
N 906.970.01	2 x	Hose holder, Ø 12 mm ⇒ <i>Figure 2-11-</i>
999.513.052.40	7 x	Tie-wrap, 4.8 x 188 mm ⇒ <i>Figure 2-12-</i>
958.111.220.10	2 x	Clamping sleeve, Ø 65 mm, 88 mm long ⇒ <i>Figure 2-13-</i>
958.111.240.00	4 x	Ball clamp, Ø 60 mm ⇒ <i>Figure 2-14-</i>
970.111.685.51	1 x	Tailpipe, outer left ⇒ <i>Figure 2-15-</i>
970.111.687.51	1 x	Tailpipe, inner left ⇒ <i>Figure 2-16-</i>
970.111.686.51	1 x	Tailpipe, inner right ⇒ <i>Figure 2-17-</i>
970.111.688.51	1 x	Tailpipe, outer right ⇒ <i>Figure 2-18-</i>
N 909.210.02	4 x	Hexagon-head bolt, M8 x 22 (front muffler bracket, not shown)
N 909.686.02	4 x	Hexagon-head bolt, M8 x 40 (rear muffler bracket, not shown)
970.421.347.02	3 x	Plate (front cardan shaft, not shown)
N 909.417.03	6 x	Cheese head bolt, M10 x 45 (front cardan shaft, not shown)
900.385.282.04	3 x	Hexagon round-head bolt, BM 12 x 1.5 x 55 (rear cardan shaft, not shown)

<sup>2</sup> **ONLY** contained in respective set!

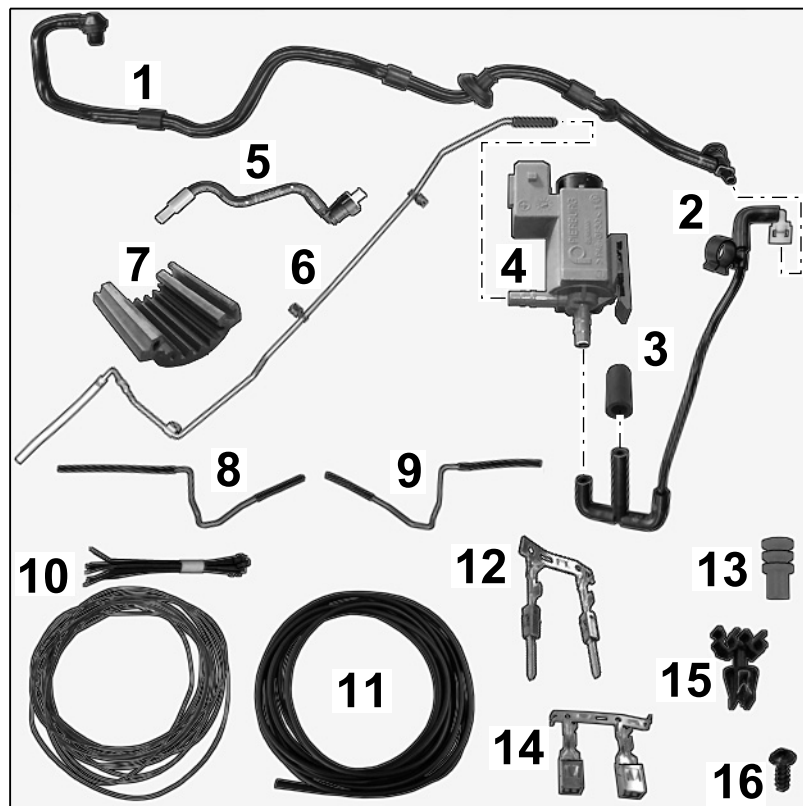


Figure 3

**Parts for vacuum supply system/electrics:**

970.355.577.05	1 x	Line (brake booster/vacuum pump for left-hand drive vehicles) ⇒ <i>Figure 3-1-</i>
970.110.045.76	1 x	Line (vacuum pump/change-over valve) ⇒ <i>Figure 3-2-</i>
970.110.727.00	1 x	Cap ⇒ <i>Figure 3-3-</i>
7PP.906.270	1 x	Change-over valve ⇒ <i>Figure 3-4-</i>
970.110.350.02	1 x	Line (change-over valve/control line) ⇒ <i>Figure 3-5-</i>
970.111.319.02	1 x	Control line assembly (ASSY) ⇒ <i>Figure 3-6-</i>
N 107.855.01	2 x	Toothed ring, B5.2 x 18 x 40 ⇒ <i>Figure 3-7-</i>
N 106.649.01	2 x	Screw, M8 x 16 (control line to transmission, not shown)
970.111.316.51	1 x	Control line, left ⇒ <i>Figure 3-8-</i>
970.111.317.51	1 x	Control line, right ⇒ <i>Figure 3-9-</i>
981.612.905.00	1 x	Electrics set ⇒ <i>Figure 3-10-</i> , contains: 1 x electric line, 0.5 <sup>2</sup> ; BK/YE with pins; 15 x tie-wrap
970.044.200.72	1 x	Insulation tube, length: 5.5 m ⇒ <i>Figure 3-11-</i>
999.650.366.12	2 x	Pin contact, 0.35 – 1.6 ⇒ <i>Figure 3-12-</i>
999.650.472.40	2 x	Single-wire seal, 0.8 +/- 0.2 ⇒ <i>Figure 3-13-</i>

999.650.568.22	2 x	Socket contact, 1.0 – 2.8 ⇒ <i>Figure 3-14-</i>
955.612.931.00	2 x	Cable clip, 193 x 4-45 (front right wheel housing, not shown)
999.507.176.40 <sup>3</sup>	1 x	Combination holder 6.0 (luggage-compartment pan) ⇒ <i>Figure 3-15-</i>
N 107.214.01 <sup>3</sup>	3 x	Oval-head screw, 6 x 16 ⇒ <i>Figure 3-16-</i>

<sup>3</sup> Not required.

Materials:	000.043.204.82	1 x	Adhesive/sealing compound, 340 g
	— — —	1 x	Commercially available rust solvent, e.g. WD40
	— — —	1 x	Wrapping tape (commercially available)
	— — —	2 x	Welding wire (e.g. MIG welder coil), approx. 6 m long

Notes:

**Identifying features when installed**

- 1** – Rear muffler, right
- 2** – Tailpipe, inner right
- 3** – Tailpipe, outer right

The Porsche logo and type number are shown on the underside of the rear mufflers as follows (⇒ *Figure 4*):

- Rear muffler – left (970.111.911.94): 948 / 61 Left
- Rear muffler – right (970.111.912.94): 948 / 61 Right

The Porsche logo, part number and week/year of manufacture are shown on the underside of the tailpipes. See example in list below:

- Tailpipe, inner right = 970.111.686.51/production week/year: 24W13
- Tailpipe, outer right = 970.111.688.51/production week/year: 24W13

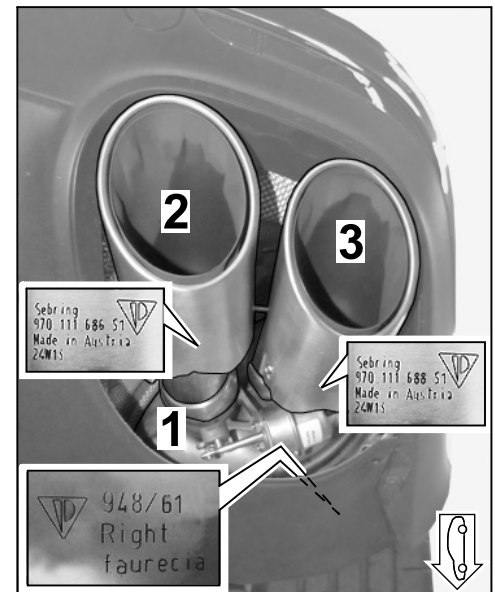


Figure 4

The markings on the rear mufflers can only be read by removing the rear underbody cover. The markings on the tailpipes can be read using a mirror.

Tools:	Shop light	Plastic wedge
	<b>9900 - PIWIS Tester 3</b>	Transmission jack

Work Procedure: 1 Convert –front– button module

- 1.1 Drive the vehicle onto a lifting platform.
- 1.2 Connect battery charger ( ⇒ *Workshop Manual '2X00IN Battery trickle charging*).
- 1.3 Cover the area you are working on with protective covers.
- 1.4 Remove switch console ( ⇒ *Workshop Manual '962719 Removing and installing switch console*).

- 1 – Switch console, front
- 2 – Button module with "sport exhaust system"

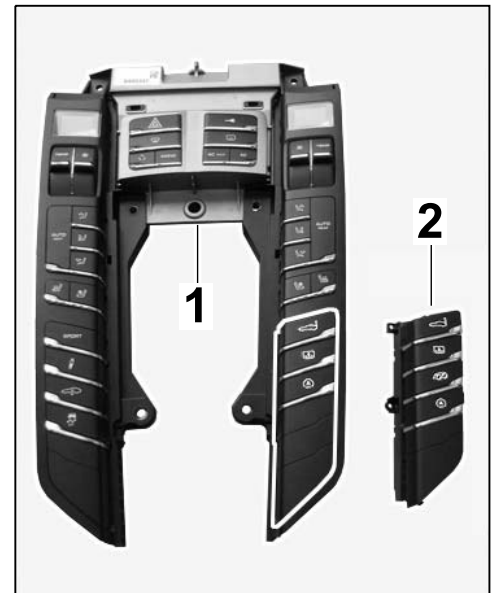


Figure 5

- 1.5 Replace button module (bottom right) ( ⇒ *Workshop Manual '962755 Replacing switch console*).

- 1 – Switch console, front
- 2 – Button module with "sport exhaust system"
- 3 – Connector
- arrows** – Screw, 2.5 x 12 (self-tapping)

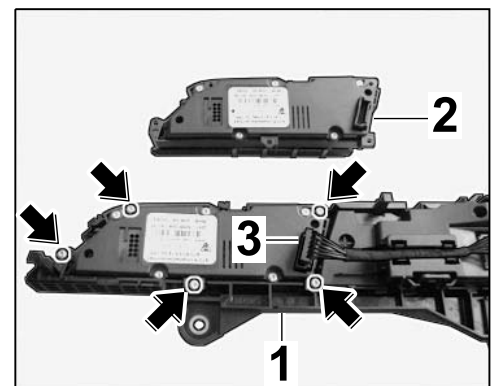


Figure 6

- 1.5.1 Disconnect plug connection.
- 1.5.2 Remove screw (2.5 x 12, self-tapping, 5 ea.).
- 1.5.3 Replace button module with new button module with "sport exhaust system".
- 1.5.4 Fit screw (2.5 x 12, self-tapping, 5 ea.).
- 1.5.5 Connect plug connection.
- 1.6 Install front switch console ( ⇒ *Workshop Manual '962719 Removing and installing switch console*).

- 2 Route vacuum supply lines for front mufflers for sport exhaust system

Diagram of vacuum routing to front mufflers  
(⇒ Figure 7)

- 1 – Line from brake booster to vacuum pump (left-hand drive)
- 2 – Line from vacuum pump to change-over valve
- 3 – Cap
- 4 – Change-over valve
- 5 – Line from change-over valve to control line (modified)
- 6 – Toothed ring, B5.2 x 18 x 40 (anti-chafing element)
- 7 – Control line ASSY via transmission to front silencer
- 8 – Clip (pre-assembled)

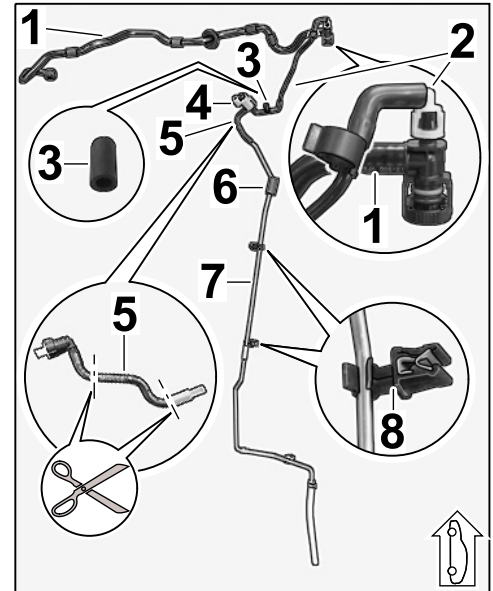


Figure 7

2.1 Remove line from brake booster to vacuum pump (⇒ Figure 8, shows left-hand drive vehicle)

- 1 – Vacuum pump line (left-hand drive)
- 2 – Cross panel (plenum panel)
- 3 – Wiper linkage

2.1.1 Remove plenum panel cover ( ⇒ *Workshop Manual '852219 Removing and installing plenum panel cover*).

2.1.2 Remove cowl panel cover ( ⇒ *Workshop Manual '508719 Removing and installing cowl panel cover*).

2.1.3 Remove windshield wiper linkage ( ⇒ *Workshop Manual '921919 Removing and installing wiper linkage*).

2.1.4 Remove cross panel (disassemble plenum panel, ⇒ *Workshop Manual '508119 Removing and installing cross panel (disassembling plenum panel)*).

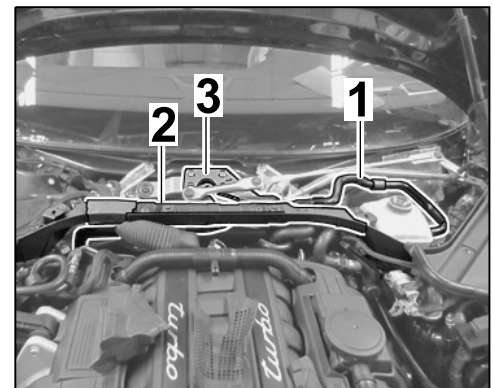


Figure 8

2.2 Unclip both connectors (2-pin) with cable holders from the bracket (metal) (⇒ *Figure 9*, shows left-hand drive vehicle).

- 1 – Vacuum pump
- 2 – Bracket (metal)
- 3 – Connector (2-pin)
- 4 – Connector (2-pin) for change-over valve for sport exhaust system

2.3 Install control line ASSY on the transmission.

2.3.1 Raise the vehicle ( ⇒ *Workshop Manual '4X001N Lifting the vehicle'*).

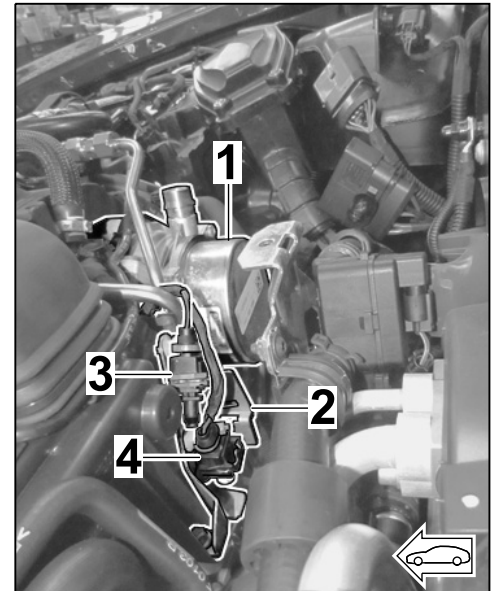


Figure 9

**CAUTION**

**Hot components**

- Risk of burns
- ⇒ Let hot components cool down.
- ⇒ Wear personal protective gear.

**CAUTION**

**Heavy components**

- Risk of squashing
- ⇒ Wear personal protective gear.
- ⇒ Get someone to help if necessary.

2.3.2 Remove exhaust system ( ⇒ *Workshop Manual '260119 Removing and installing exhaust system'*).

Remove transverse strut between the rear silencers (will be re-used; ⇒ *Workshop Manual '263319 Removing and installing rear silencer'*).

2.3.3 Remove rear cardan shaft ( ⇒ *Workshop Manual '393519 Removing and installing rear cardan shaft'*).

2.3.4 Remove fastening screws securing transmission support to body ( ⇒ *Workshop Manual '373837 Disassembling and assembling transmission support'*).

2.3.5 Prepare control line ASSY for installation

- 1 – Toothed ring, B5.2 x 18 x 40
- 2 – Rubber hose (pre-assembled)
- 3 – Clip (pre-assembled)

- Fit toothed ring B5.2 x 18 x 40 (anti-chafing element) in the specified area (⇒ *Figure 10*) on the control line.
- Pull rubber hose off the control line
- Check installation position of clip (pre-assembled) on the control line and move it if necessary. If the control line is fitted, the "open jaws" of a clip must be facing upwards.

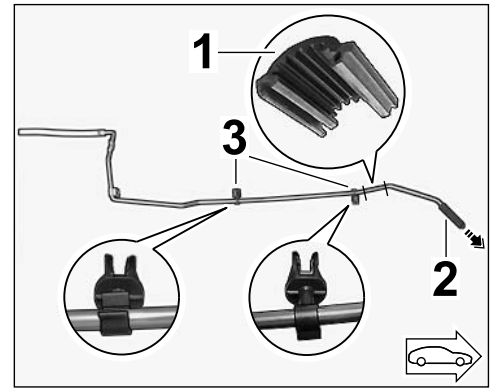


Figure 10

2.3.6 Lower the Porsche Doppelkupplung (PDK) slightly using a transmission jack.

- 1 – Porsche Doppelkupplung (PDK)
- 2 – Transmission jack
- 3 – Control line

Guide control line from transmission outlet (⇒ *Figure 11 -A-*) above the transmission to the engine compartment (⇒ *Figure 11 -B-*) and pre-fit M8 x 16 screws (2 x) loosely in the transmission outlet area.

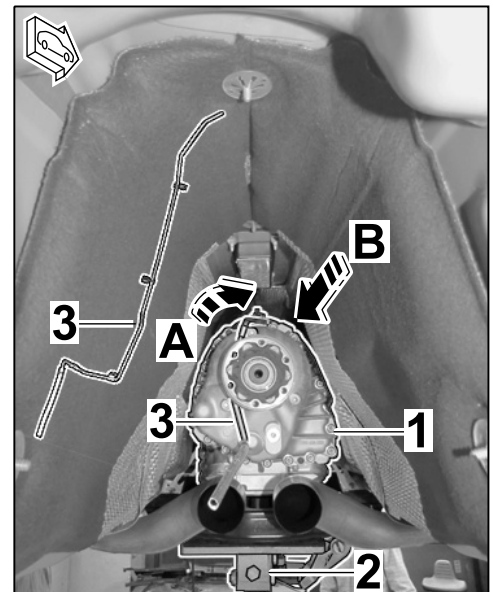


Figure 11

- 2.3.7 Secure control line clips (2 x) to the transmission housing ribs using a mounting lever if necessary.

- 1 – Control line
- 2 – Screw, M8 x 16
- 3 – Clip

Secure control line in the transmission outlet area using two screws (M8 x 16).

**Tightening torque 23 Nm (17 ftlb.) +/- 1 Nm (+/- 0.5 ftlb.)**

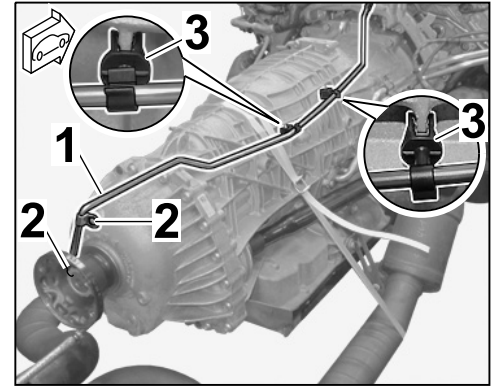


Figure 12

- 2.4 Fit change-over valve with lines

- 1 – Line from change-over valve to control line
- 2 – Line from vacuum pump to change-over valve
- 3 – Hose on T-piece
- 4 – Cap
- X – Dimension: approx. 55 mm

- 2.4.1 Modify line from change-over valve to control line:  
Measure a length of approx. 55 mm (⇒ Figure 13-X-) at the end of the hose on the connector side. Cut the hose in this area.

- 2.4.2 Pull off hose on T-piece for line from vacuum pump to change-over valve and close off end of line with a cap (⇒ Figure 13).

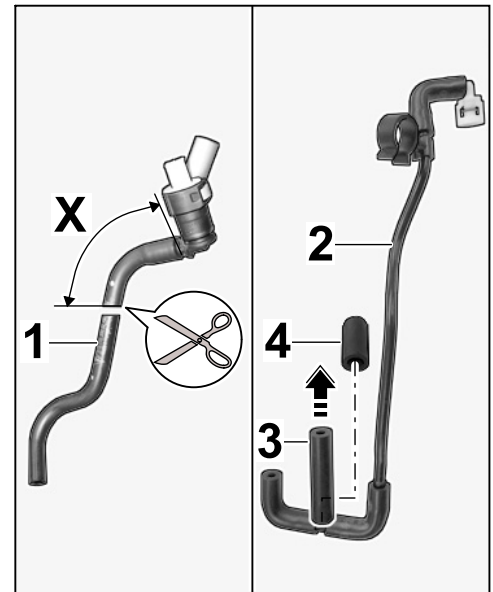
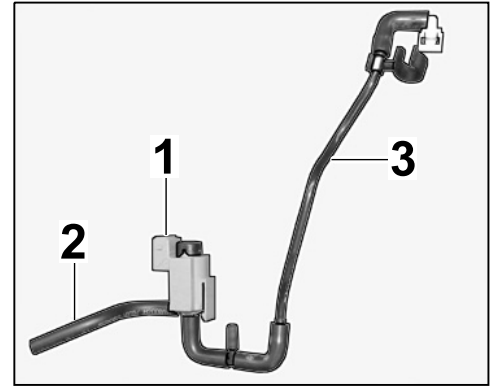


Figure 13

2.4.3 Connect lines to the change-over valve as follows (⇒ *Figure 14*):

- 1 – Change-over valve
- 2 – Line from change-over valve to control line
- 3 – Line from vacuum pump to change-over valve

- Line from vacuum pump to change-over valve at vertical connection for change-over valve
- Line from change-over valve to control line at horizontal connection for change-over valve



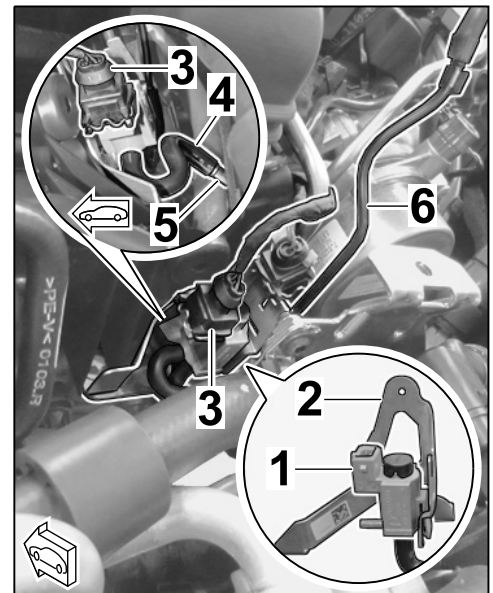
*Figure 14*

2.4.4 Clip change-over valve into the holder on the plenum panel bulkhead (⇒ *Figure 15*).

- 1 – Change-over valve
- 2 – Change-over valve holder
- 3 – Connector (2-pin, GN and BN)
- 4 – Line from change-over valve to control line
- 5 – Control line
- 6 – Line from vacuum pump to change-over valve

2.4.5 Remove combination holder at the dummy connector on the connector (2-pin, ⇒ *Figure 15-3-*) with line colors GN and BN.

Connect plug connection for the change-over valve.



*Figure 15*

- 2.4.6 Secure second connector (2-pin) with line colors OR/GN and BN above the change-over valve to the change-over valve holder using a combination holder.

- 1 – Connector (2-pin, OR/GN and BN)
- 2 – Change-over valve holder
- 3 – Change-over valve



#### Information

Ensure optimal line routing (bending radii). If the line is kinked or pressed in, turn the line or shorten it slightly.

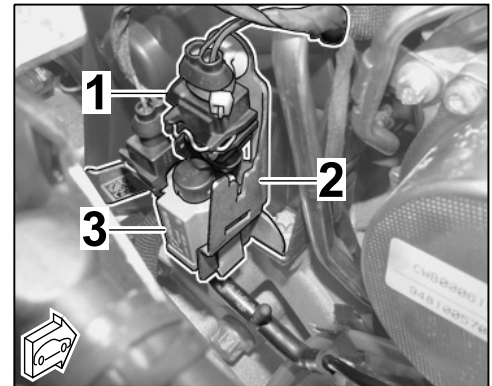


Figure 16

- 2.4.7 Insert line from change-over valve to control line at least 10 mm onto the control line.

- 2.5 Install new line from brake booster to vacuum pump

- 2.5.1 Install cross panel (disassemble plenum panel, ⇒ *Workshop Manual '508119 Removing and installing cross panel (disassembling plenum panel)*).

- 2.5.2 Install new line from brake booster to vacuum pump (⇒ *Figure 17, shows left-hand drive vehicle*).

- 1 – Line from brake booster to vacuum pump
- 2 – Vacuum pump
- 3 – Line from vacuum pump to change-over valve

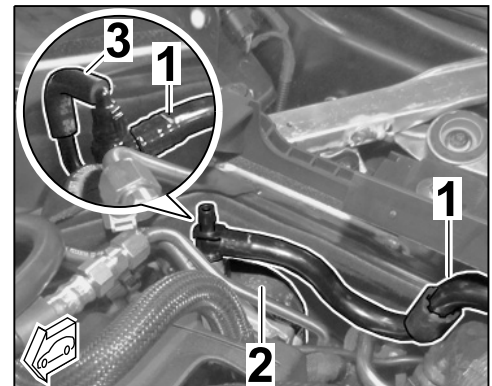


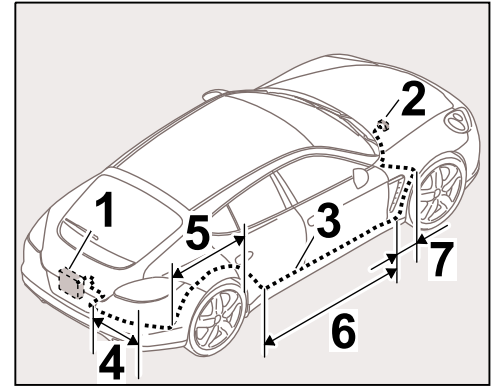
Figure 17

- 2.5.3 Connect line from vacuum pump to change-over valve to connection piece for line from brake booster to vacuum pump (⇒ *Figure 17 -inset-*).

- 3 Route electric line for exhaust flap (0.5<sup>2</sup>; BK/YE) from control unit for rear-end electronics to connection point for engine pre-wiring X031.1A1

– Routing and connection diagram ⇒ *Figure 18*

- 1** – Rear-end electronics control unit – connector A, chamber A5
- 2** – Connection point for engine pre-wiring X031.1A1 – chamber 8
- 3** – Electric line (0.5<sup>2</sup>; BK/YE)
- 4** – Rear end plate area
- 5** – Rear axle housing (chassis subframe) area
- 6** – Vehicle underbody, pneumatic line area
- 7** – Front right wheel housing (windscreen washer reservoir)



*Figure 18*

### 3.1 Preparatory work

- 3.1.1 Remove wheels on the right-hand side of the vehicle ( ⇒ *Workshop Manual '440519 Removing and installing wheel*).
- 3.1.2 Remove rear apron ( ⇒ *Workshop Manual '635519 Removing and installing rear apron*).
- 3.1.3 Remove heat protection plate above rear silencer at the right.
- 3.1.4 Remove rear part of front right wheel housing liner ( ⇒ *Workshop Manual '505619 Removing and installing front wheel housing liner*).
- 3.1.5 Remove trim panel for luggage compartment (luggage compartment cover) at the lock carrier ( ⇒ *Workshop Manual '70061903 Removing and installing trim panel for luggage compartment (luggage compartment cover)*).
- 3.1.6 Pull line 0.5<sup>2</sup>; BK/YE into the 5.5-mm long insulation tube using welding wire (e.g. MIG welder coil).

### 3.2 Connect line 0.5<sup>2</sup>; BK/YE to rear-end electronics control unit

- 3.2.1 Remove rear-end electronics control unit (⇒ *Workshop Manual '578919 Removing and installing control unit for rear-end electronics'*, ⇒ *Figure 19*).

- 1 – Fuse box
- 2 – Rear-end electronics control unit

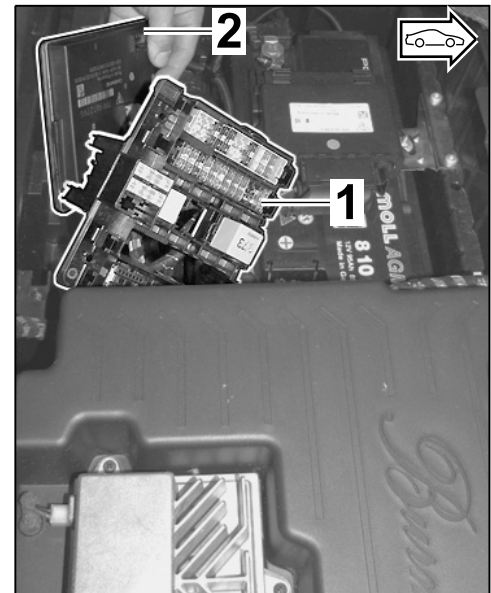


Figure 19

- 3.2.2 Release and remove socket strip (grey) in the connector housing (blue, 42-pin, control unit for rear-end electronics) (⇒ *Figure 20*).

- 1 – Connector housing (blue, 42-pin, control unit for rear-end electronics)
- 2 – Socket strip (grey)

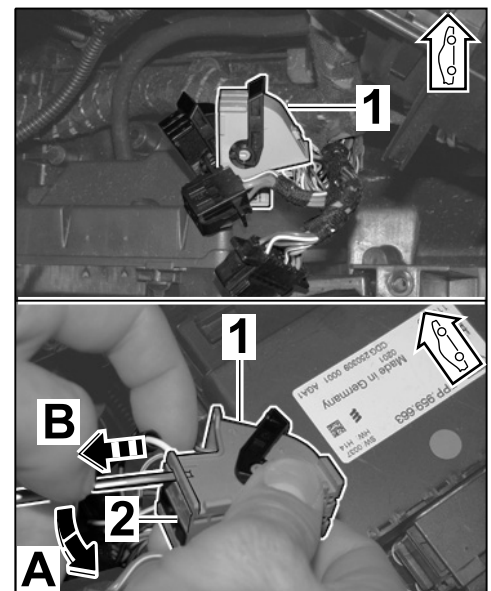


Figure 20

3.2.3 Socket contact; connect line 0.5<sup>2</sup>; BK/YE → socket strip (grey), chamber 5 (⇒ *Figure 21*).

- 1 – Line 0.5<sup>2</sup>; BK/YE
- 2 – Socket strip (grey)
- 3 – Connector housing (blue, 42-pin)

3.2.4 Fit and lock socket strip (grey) in the connector housing (blue, 42-pin, control unit for rear-end electronics).

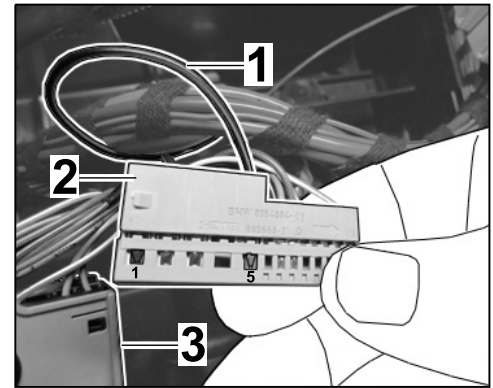


Figure 21

3.3 Route line 0.5<sup>2</sup>; BK/YE to the connection point for engine pre-wiring X031.1A1

3.3.1 Route line 0.5<sup>2</sup>; BK/YE along electric wire harness to the rubber sleeve (rear end plate) and secure lines without tension so that no chafing occurs (⇒ *Figure 22*).

- 1 – Line 0.5<sup>2</sup>; BK/YE
- 2 – Rubber sleeve (rear end plate)
- 3 – Fuse box

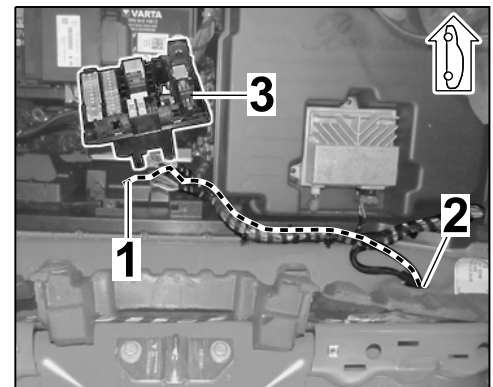


Figure 22

3.3.2 Install rear-end electronics control unit (⇒ *Workshop Manual '578919 Removing and installing control unit for rear-end electronics*).

Guide line 0.5<sup>2</sup>; BK/YE through the rubber sleeve (rear end plate) from the luggage compartment and route it towards the rear axle housing (chassis subframe) on the right (⇒ *Figure 23*).

- 1 – Rubber sleeve (rear end plate)
- 2 – Line 0.5<sup>2</sup>; BK/YE
- 3 – Heat protection plate for rear muffler, right
- 4 – Rear axle housing (chassis subframe)

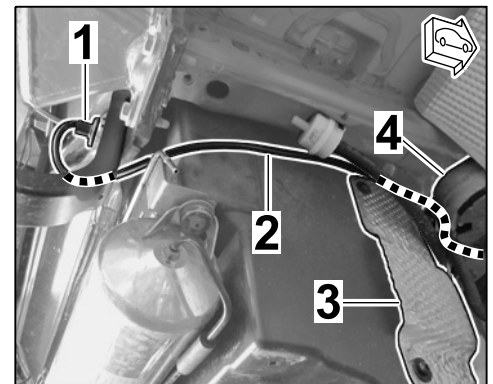


Figure 23

3.3.3 Seal rubber sleeve (rear end plate, ⇒ *Figure 23-1-*) from inside and outside with adhesive/sealing compound.

3.3.4 Route line 0.5<sup>2</sup>; BK/YE along pneumatic line (color: green) over the rear axle housing (chassis subframe) to the vehicle underbody, area: right door sill (⇒ *Figure 24*).

- 1 - Line 0.5<sup>2</sup>; BK/YE
- 2 - Pneumatic line (color: green)
- 3 - Rear axle housing (chassis subframe)
- 4 - Tie-wrap

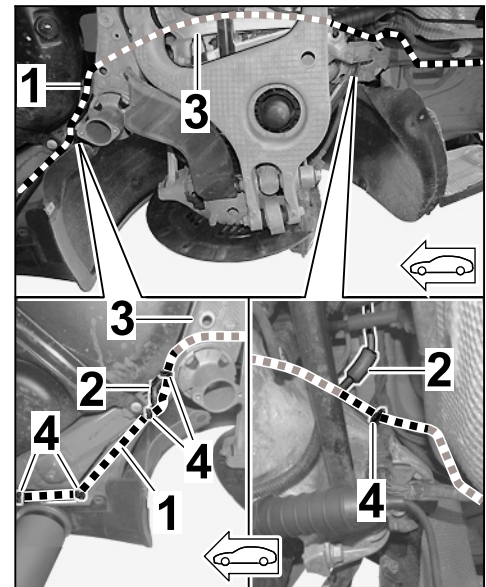


Figure 24

3.3.5 Route line 0.5<sup>2</sup>; BK/YE along pneumatic line (color: green) on the vehicle underbody to the front right wheel housing (⇒ *Figure 25*).

- 1 - Line 0.5<sup>2</sup>; BK/YE
- 2 - Pneumatic line (color: green)
- 3 - Cable clip

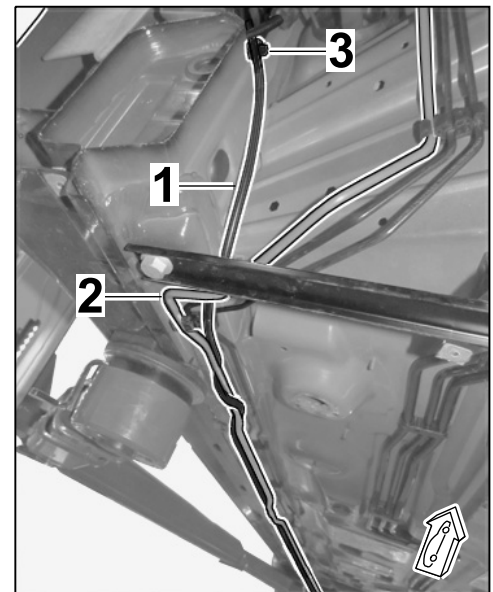


Figure 25

3.3.6 Route line 0.5<sup>2</sup>; BK/YE on the washer-fluid reservoir through the opening in the wheel housing to the plenum panel (⇒ *Figure 26*).

- 1 - Line 0.5<sup>2</sup>; BK/YE
- 2 - Washer-fluid reservoir
- 3 - Cable clip (supplied)
- 4 - Tie-wrap

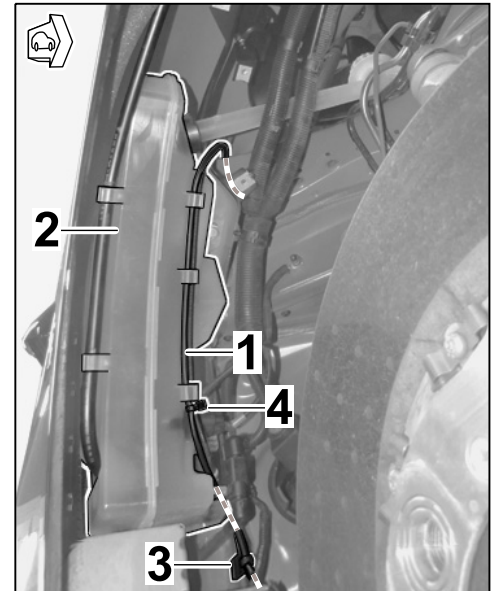


Figure 26

3.3.7 Unclip plug connection for engine pre-wiring X031.1A1 in the plenum panel at the holder and disconnect plug connection.

3.3.8 Route line 0.5<sup>2</sup>; BK/YE along the existing line to the connector for engine pre-wiring X031.1A1.

- 1 - Line 0.5<sup>2</sup>; BK/YE
- 2 - Connector for engine pre-wiring X031.1A1
- 3 - Cable clip
- 4 - Wrapping tape

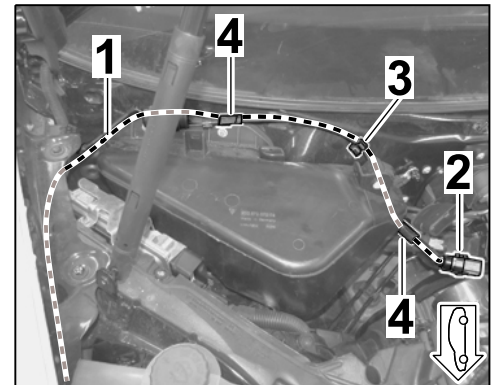


Figure 27

3.4 Connect line 0.5<sup>2</sup>; BK/YE to connector for engine pre-wiring X031.1A1

3.4.1 Release secondary lock for connector X031.1A1.

Insert a screwdriver between the housing and secondary lock and press it to the left (⇒ *Figure 28-A*).

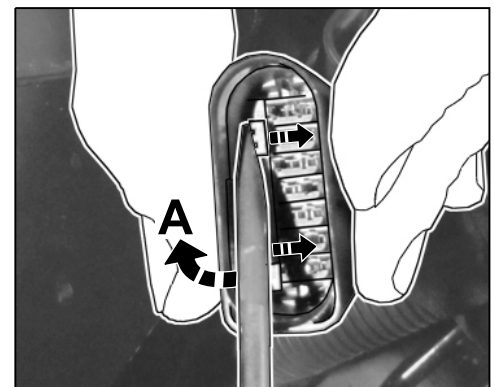


Figure 28

- 3.4.2 Remove chamber seal (white) from chamber 8.

- 1** – Single-wire seal  
**2** – Line 0.5<sup>2</sup>; BK/YE  
**3** – Connector X031.1A1  
**arrows** – Chamber seals (white) for unassigned chambers

- 3.4.3 Cut off pin contact 0.35 – 1.6 on the line 0.5<sup>2</sup>; BK/YE and slide single-wire seal onto the line while bearing in mind the subsequent installation position (⇒ *Figure 29 -top-*).

- 3.4.4 Attach new pin contact 0.35 – 1.6 to the line 0.5<sup>2</sup>; BK/YE and fit it into chamber 8.

- 3.4.5 Fit single-wire seal on the line 0.5<sup>2</sup>; BK/YE into chamber 8.

- 3.4.6 Lock secondary lock on connector X031.1A1 (⇒ *Figure 28*).

- 3.4.7 Connect plug connection for engine pre-wiring X031.1A1 and fit it on the holder in the plenum panel.

### 3.5 Concluding work

- 3.5.1 Check routing of line 0.5<sup>2</sup>; BK/YE in the vehicle and secure it without tension to existing components/lines using additional tie-wraps/wrapping tape so that no chafing occurs.
- 3.5.2 Install windshield wiper linkage (⇒ *Workshop Manual '921919 Removing and installing wiper linkage*).
- 3.5.3 Install cowl panel cover (⇒ *Workshop Manual '508719 Removing and installing cowl panel cover*)
- 3.5.4 Install plenum panel cover (⇒ *Workshop Manual '852219 Removing and installing plenum panel cover*).
- 3.5.5 Install rear part of front right wheel housing liner (⇒ *Workshop Manual '505619 Removing and installing front wheel housing liner*).
- 3.5.6 Install heat protection plate above rear silencer at the right.
- 3.5.7 Install trim panel for luggage compartment (luggage compartment cover) at the lock carrier (⇒ *Workshop Manual '70061903 Removing and installing trim panel for luggage compartment (luggage compartment cover)*).

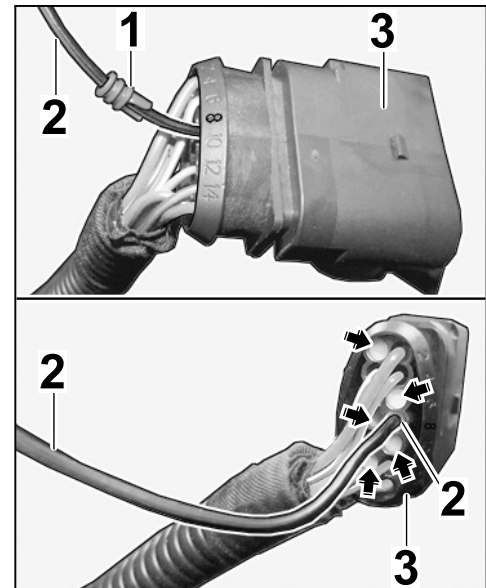


Figure 29

3.5.8 Install rear apron ( ⇒ *Workshop Manual '635519 Removing and installing rear apron*).

3.5.9 Fit wheels on the right-hand side of the vehicle ( ⇒ *Workshop Manual '440519 Removing and installing wheel*).

#### 4 Install new sport exhaust system

4.1 Install cardan shaft with new screws and plates ( ⇒ *Workshop Manual '393519 Removing and installing rear cardan shaft*).

4.2 Install new front muffler with a new clamping sleeve –Ø 65 mm, 95 mm long– (2 ea.) (see also ⇒ *Workshop Manual '260119 Removing and installing exhaust system*).

**Tightening torque 23 Nm (17 ftlb.)**

4.3 Fit fabric-reinforced hose for control line (above the transmission) at least 10 mm onto the front muffler vacuum unit connection.

- 1 – Fabric-reinforced hose
- 2 – Control line
- 3 – Transmission
- 4 – Heat shield on front muffler vacuum unit

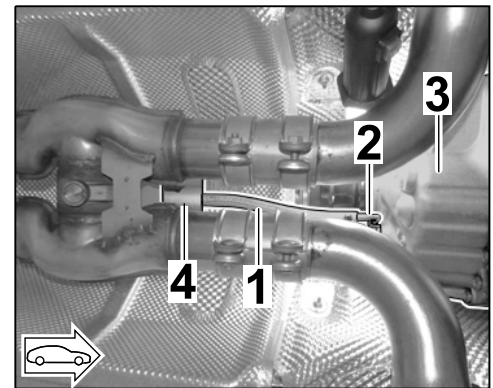


Figure 30

4.4 Install new rear mufflers (see also ⇒ *Workshop Manual '263319 Removing and installing rear silencer'*).

- 1 – Rear muffler, left
- 2 – Rear muffler, right
- 3 – Rear muffler vacuum unit
- 4 – Lock nut, M6
- 5 – Control line, left
- 6 – Control line, right

4.4.1 Fit new rear muffler vacuum unit on the left/right rear muffler for the sport exhaust system using new lock nuts (M6, 2 ea.) and a new lock washer (1 ea.) (⇒ *Figure 31*).

4.4.2 Position left control line (⇒ *Figure 31-5*)/right control line (⇒ *Figure 31-6*) on the relevant rear muffler and fit into the clamps.

4.4.3 Fit left/right rear muffler with a new clamping sleeve –Ø 65 mm, 88 mm long– (2 ea.) on the front muffler (⇒ *Figure 32*).

**Tightening torque 23 Nm (17 ftlb.)**

- 1 – Front muffler
- 2 – Clamping sleeve –88 mm long–
- 3 – Transverse strut

4.4.4 Fit rubber line for control lines at least 10 mm onto the relevant connection for the change-over valve ASSY.

4.4.5 Install transverse strut using new hexagon-head bolts (M8 x 25, 2 ea.) and square nuts (M8, 2 ea.) between the left and right rear muffler (⇒ *Figure 32*).

**Tightening torque 23 Nm (17 ftlb.) +/- 3 Nm (+/- 2 ftlb.)**

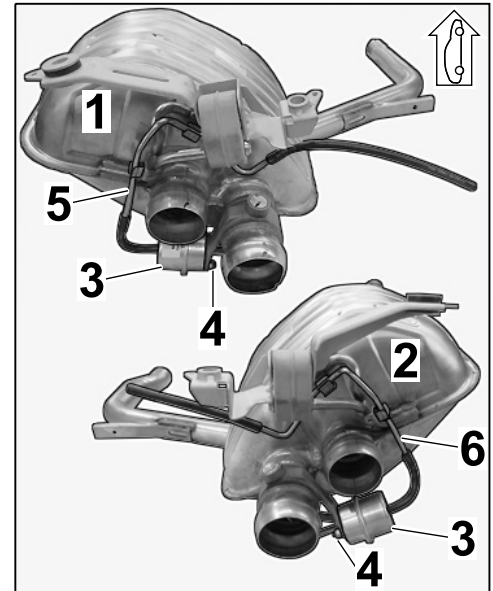


Figure 31

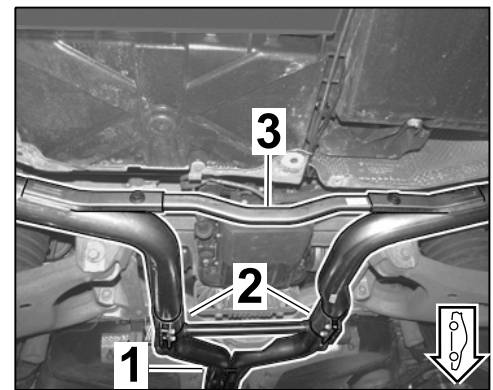


Figure 32

4.5 Install new tailpipes at the left/right side (⇒ *Workshop Manual '263419 Removing and installing tailpipe'*)

- 1 – Tailpipe, outer left (970.111.685.51)
- 2 – Tailpipe, inner left (970.111.687.51)
- 3 – Ball clamp

4.5.1 Pre-fit ball clamp (⇒ *Figure 33-3-*) on inner/outer tailpipe as shown in Figure 21 (left side: ⇒ *Figure 33*, right side: mirror image).

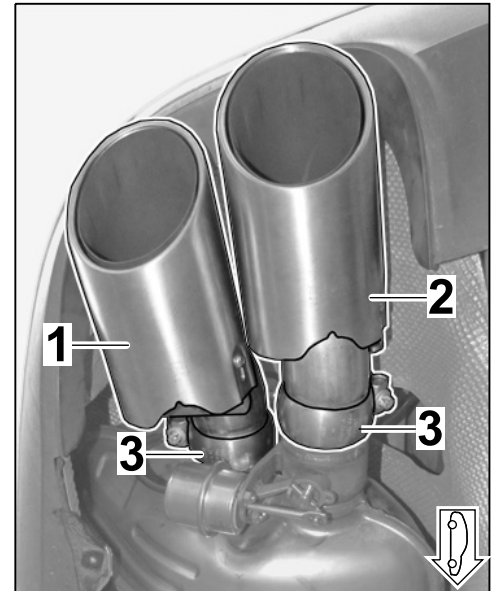


Figure 33

4.5.2 Fit tailpipe with a new ball clamp on the relevant connection piece for the rear silencer and pre-fit hand-tight.

- 1 – Direction of rotation around axis of symmetry of tailpipe
- 2 – imaginary edge of the rear apron
- 3 – imaginary edge of both tailpipes
- X – Dimension "X"

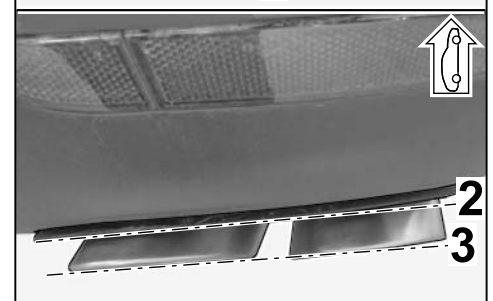
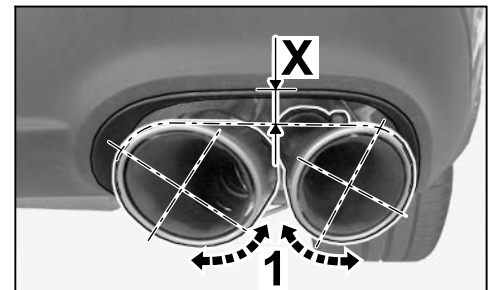


Figure 34

4.5.3 Turn the left and right tailpipe (⇒ *Figure 34 -arrows-*) until both tailpipes are aligned parallel to the imaginary edge of the rear apron.

4.5.4 Set the same dimension "X" for both tailpipes all the way around.

4.5.5 Tighten both tailpipes.  
**Tightening torque 30 Nm (22 ftlb.)**

4.5.6 Install tailpipes on the other side of the vehicle in the same way.

4.6 Concluding work (sport exhaust system)

- 4.6.1 Install –center– underbody panelling ( ⇒ *Workshop Manual '519319 Removing and installing cover for centre underbody*).
- 4.6.2 Install –rear– underbody panelling ( ⇒ *Workshop Manual '519419 Removing and installing cover for rear underbody*).
- 4.6.3 Check the engine coolant level and add coolant if necessary. Check the engine coolant level again and add more coolant after the test drive if necessary.

**NOTICE****Voltage drop**

- Risk of irreparable damage to control unit
  - Risk of damage to control unit
  - Fault entries in the control unit
  - Coding in the control unit is aborted
  - Malfunctions in control unit, even during programming
- ⇒ Switch off the ignition and remove the ignition key before disconnecting the control unit.
- ⇒ Ensure that the power supply is not interrupted during programming.
- ⇒ Connect a battery charger with a current rating of at least Nominal value 70 A to the vehicle battery.

**NOTICE**

Control unit programming will be aborted if the Internet connection is unstable.

- An unstable Internet connection can interrupt communication between PIWIS Tester III and the vehicle communication module (VCI). As a result, control unit programming may be aborted.
- ⇒ During control unit programming, always connect PIWIS Tester III to the vehicle communication module (VCI) via the USB cable.

## 5 Code sports exhaust system and perform function test

**Information**

The **9900 - PIWIS Tester III** instructions take precedence since the description may be different with later Tester releases.

The procedure described here has been structured in general terms; different text or additions may appear on the **9900 - PIWIS Tester III**.

- 5.1 **9900 - PIWIS Tester 3** must be connected before switching on the ignition.
- 5.2 Select vehicle type "Panamera". Press •F12" to continue.
- 5.3 Code new button module and enter the sport exhaust system in the vehicle data.

- 5.3.1 Switch to the control unit overview by touching the "Overview" cell. Press •F7" to switch to the "Additional menu" item.
- 5.3.2 Select the "Maintenance of vehicle data" function. Press •F12" until "X numbers" appears in the Value group column.
- 5.3.3 Select "X numbers" in the Value group column, "Exhaust systems" for Family and then select the value "176 - Sport exhaust system". Press •F8" to save.
- 5.3.4 Wait until the message "Modified values have been buffered" is displayed and a tick appears next to "176 – Sport exhaust system". Press •F12" several times until •F8" appears. Press •F8" to write the value.
- 5.3.5 Wait until the message "Generation of the vehicle order is complete" appears. Continue to Log management by pressing •F12" .
- 5.3.6 Open the log by pressing •F10" and check that vehicle equipment "176 – Sport exhaust system" has been entered. Then close the log.
- 5.3.7 Press •F11" to switch to the control unit overview.
- 5.4 Code the sport exhaust system
  - 5.4.1 Select all control units (•CTRL+A" ). Press •F12" to continue.
  - 5.4.2 Switch to the "Automatic coding" of control units mode in the "Codings/adaptations" menu. Press •F12" to continue.
  - 5.4.3 Once coding is completed successfully, a tick will appear in the "Status" column.
- 5.5 Perform "Sport exhaust system" function test
  - 5.5.1 Start the engine and select "Rear-end electronics" in the Control unit overview menu. Then switch to the "Drive links/checks" menu.
  - 5.5.2 Select the "Actuators" function. Press •F12" to continue.
  - 5.5.3 Select "Exhaust flap activation" in the Drive links/checks column and start the function by pressing •F8" .  
"Function is running" will appear as the status.  
  
Check that the tappets on the rear silencer vacuum units extend and retract correctly if necessary.

**Information**

- New vehicles straight from the factory with "sports exhaust system (I-no. 176)" have a sound symposer with electric change-over valve.
- When retrofitting the "sports exhaust system", these components are **NOT** included in the parts kit. There should be no need to retrofit these components.
- The fault entry "1046 Acoustic simulator solenoid valve output stage", which is stored after coding, must be ignored.
- The "sports exhaust system" has been tested and approved as fully functional. There is **NO** technical defect.

5.6 Once coding is complete, read out the fault memories of all systems, work through any existing faults and erase the fault memory ( ⇒ *Workshop Manual '0X03IN Diagnostic maintenance: Diagnostic system and maintenance inter...* ).

5.7 Switch off ignition and disconnect **9900 - PIWIS Tester 3**.

5.8 Disconnect battery charger ( ⇒ *Workshop Manual '2X00IN Battery trickle charging* ).

26 01 31 00:	–Sport exhaust system (1 ea.) retrofitted– Includes: Standard front muffler and rear muffler converted; Routing and connecting vacuum lines from the engine compartment to the front muffler vacuum unit; Converting and coding button module; Routing electric line for exhaust flap from rear-end electronics control unit to connection point for engine pre-wiring; Coding sport exhaust system and performing function test; Reading out fault memory, working through faults and deleting faults.	Labor time: <b>918 TU</b>
26 51 19 00:	In the event of repairs: –Removing and installing control box (1 x) for exhaust flap–	Labor time: <b>31 TU</b>
26 51 20 00:	In the event of repairs: –Removing and installing control box (2 x) for exhaust flap–	Labor time: <b>39 TU</b>

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