



ASSEMBLY INSTRUCTIONS

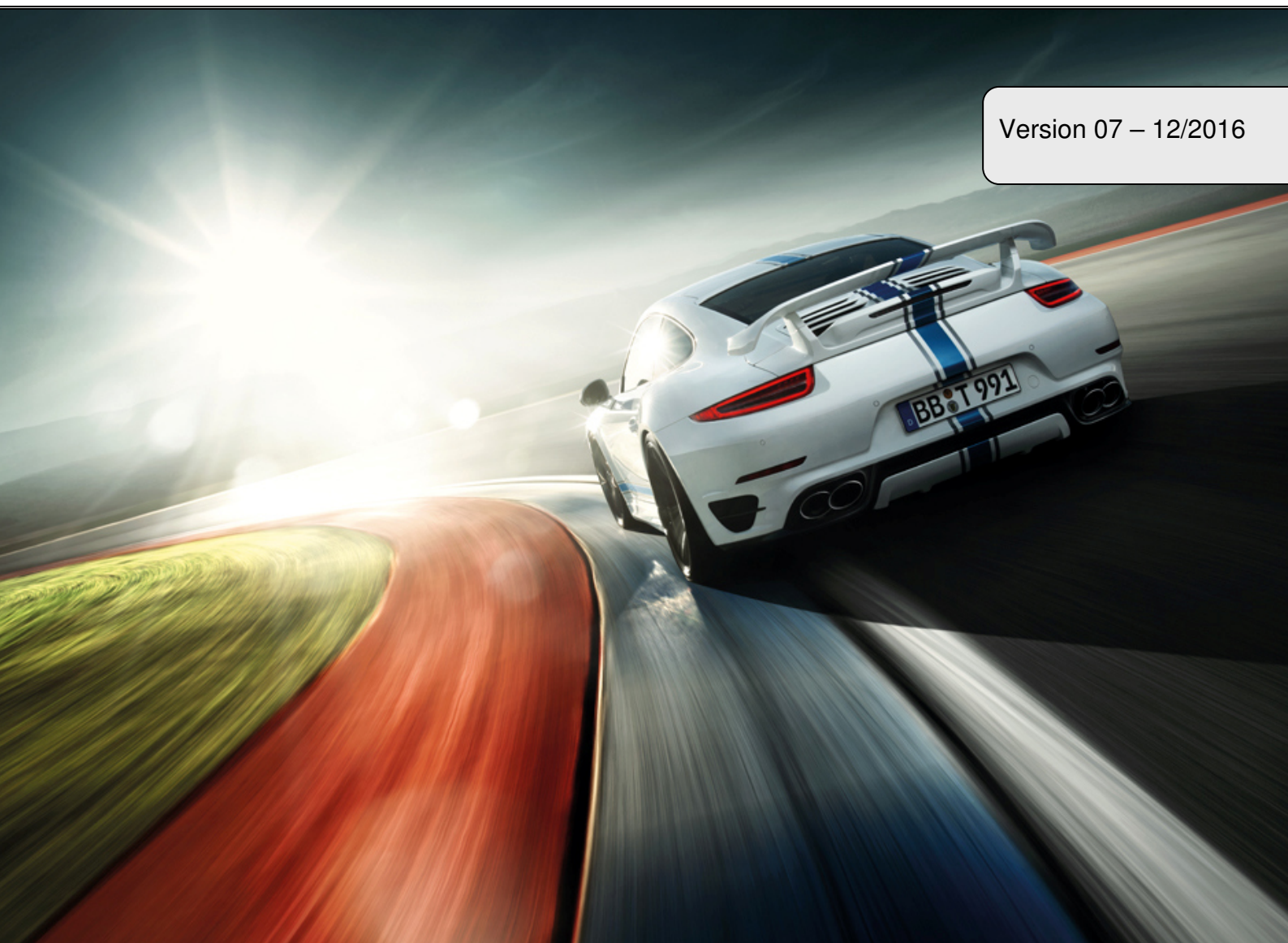
TECHART Sport Valve Exhaust System

for 991 Turbo and 991 Turbo S

Part-no. 091.310.650.009

Valve exhaust system "Sport" 991 Turbo / Turbo S

Version 07 – 12/2016





ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

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I Important safety information

All of the necessary work must be performed by qualified persons with an appropriate level of expertise.

| | | |
|--|--|--|
|  | <p style="text-align: center;"> WARNING</p> <p>Vehicle lifts with an insufficient lifting capacity can collapse under the weight of the vehicle and crush any persons standing underneath.</p> <p>Compare the weight of the vehicle with the lifting capacity of your vehicle lift. The weight of the vehicle must not exceed the lifting capacity of your vehicle lift. The weight of the vehicle can be found in the vehicle operating manual.</p> |  |
|  | <p style="text-align: center;"> WARNING</p> <p>Risk of injury from electric current.</p> <p>Switch off the ignition and disconnect the battery when working on the vehicle electrical/electronics systems.</p> |  |
|   | <p style="text-align: center;"> CAUTION</p> <p>Risk of injury from hands and arms being crushed, cut or lacerated when working with sharp-edged and bulky objects.</p> <p>Wear protective clothing and protective gloves. Keep limbs out of narrow and inaccessible areas of the vehicle and/or avoid dangerous situations by using special tools and suitable aids.</p> |   |
|  | <p style="text-align: center;"> CAUTION</p> <p>Risk of injury to back, muscles, joints, tendons and ligaments from lifting and carrying heavy and/or bulky objects.</p> <p>Lift and transport heavy and/or bulky objects with the help of other people and/or with suitable aids.</p> |  |
|  | <p style="text-align: center;">NOTICE</p> <p>Before starting the assembly procedure, carefully read the assembly instructions in full and pay attention to the safety information and sequence of the individual operation steps.</p> | |



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

II Preparation

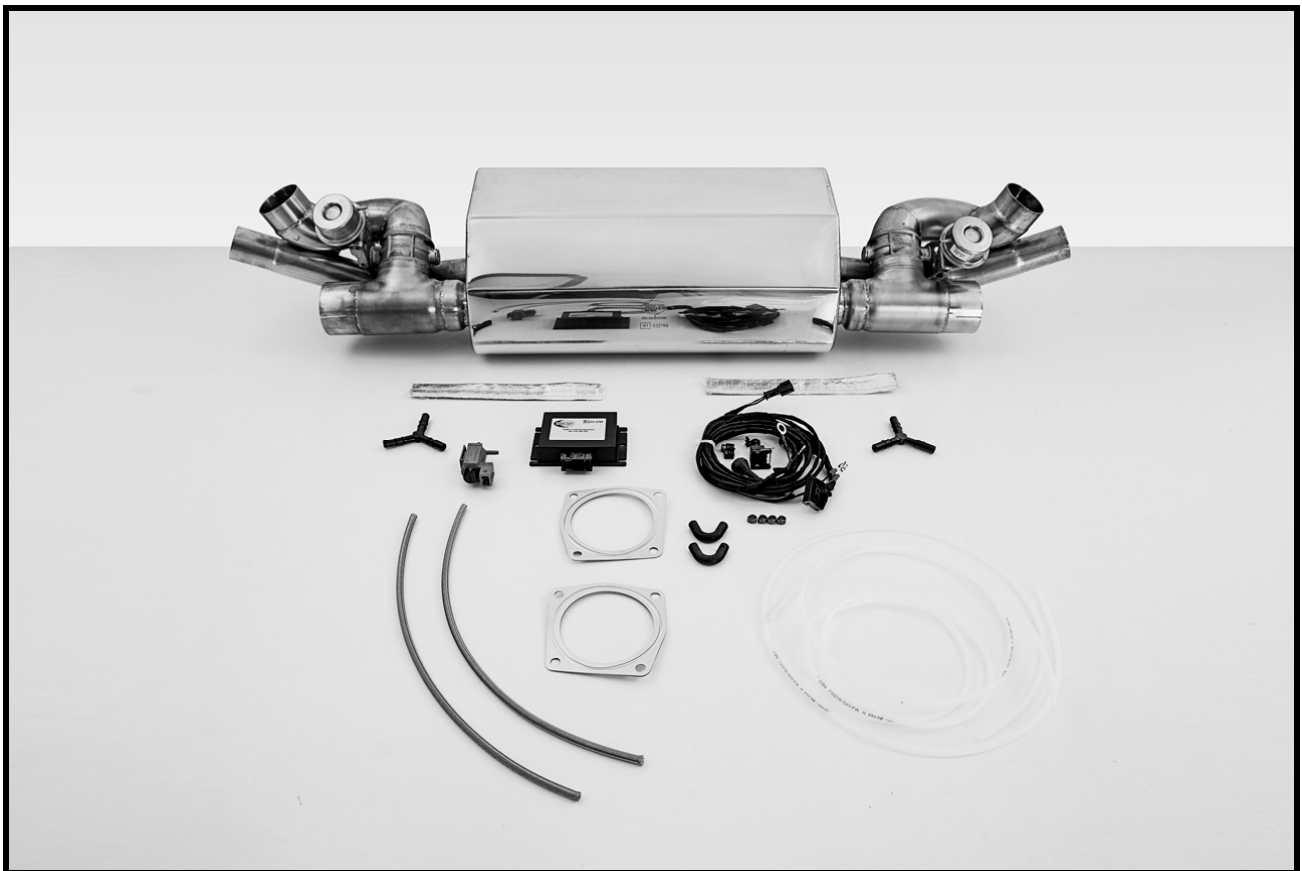
Number of people required



At least two people are required to install this product.

Help and support

If you have any technical queries, please contact us immediately:
support@TECHART.de





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TECHART "Sport" Valve Exhaust System

Check TECHART parts kit for completeness

| Quantity | Part number | Part name |
|----------------|--------------------|---|
| 1 | 091.310.650.009 | Valve exhaust system "Sport" for 991 Turbo (S) |
| Consisting of: | | |
| 1 | 091.310.650.100 | Exhaust system "sport" valve controlled |
| 2 | 997.111.217.70 | Gasket |
| 8 | 999.084.203.01 | Locknut |
| 1 | 091.310.300.330 | Control unit valve control incl. wiring harness |
| 3 | 900.918.005.40 | Pipe |
| 2 | 000.901.500.250 | Hose connector, straight reduced D4 |
| 1 | 928.573.727.05 | Y-piece |
| 2 | 000300872000 | Glass fiber hose 12mm, length=230mm |
| 1 | 7PP906270 | Switch valve |
| 2 | 917.355.021.00 | Hose line |
| 4 | 096.310.840.111 | Hose clip |
| 3 | 928.574.717.05 | Preformed hose |
| 1 | 991.111.488.00 | Bracket |
| 1 | 000.590.670.201.05 | Fixing strap Edge-Clip 1-3mm |
| 1 | 999.217.116.01 | Hexagon bolt |
| 8 | 008.900..369.8 | Hexagon nut self-locking M8 |

Please use the table to check whether all of the required parts are present.

Once parts have been removed from their original packaging, ensure that they are properly handled and stored.



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III Installation

1 Prepare vehicle



Before starting work, check that the vehicle is free of defects. Use the PIWIS system tester to read out all of the fault memories of the individual vehicle components and first rectify any faults displayed.

- 1 Raise vehicle at the factory-fitted jacking points.

2 Remove original parts



1 Remove rear wing, rear wing console, rear apron, bumper beam and intercooler in line with manufacturer's instructions.

2 Dismantle the rear muffler according to manufacturer's instructions.

3 Detach the tail pipes from the rear muffler.



Rear muffler is no longer required. The original tail pipes may optionally still be used.



TECHART recommends reading through the assembly instructions completely prior to the start and plan each working step in such way that there will be an ideal accessibility granted to each installation space. E.g. it might be reasonable to install the vacuum and the electronics before the new rear muffler will be installed, which could hinder the accessibility to this installation space.



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3 Install TECHART parts

3.1 Install TECHART valve exhaust system

- 1 Position the TECHART rear muffler (091.310.650.100) in the vehicle, take the original tightening straps and catalytic converters from the vehicle, install and align them.

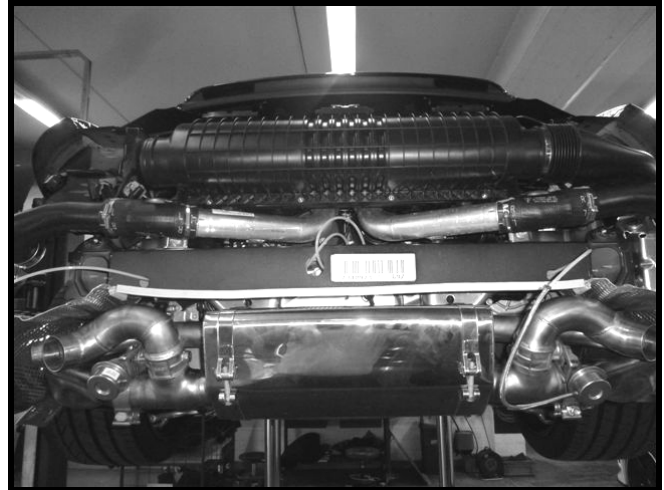


Fig. 01



- 2 Apply all hexagon nuts (999.084.203.01) and align the retaining clamp between the catalytic converters and the TECHART valve system (091.310.650.100).
- 3 Attach the original tail pipes or optional the TECHART tail pipes according the separate assembly instructions (091.310.9__009).
- 4 Check the alignment of the system.

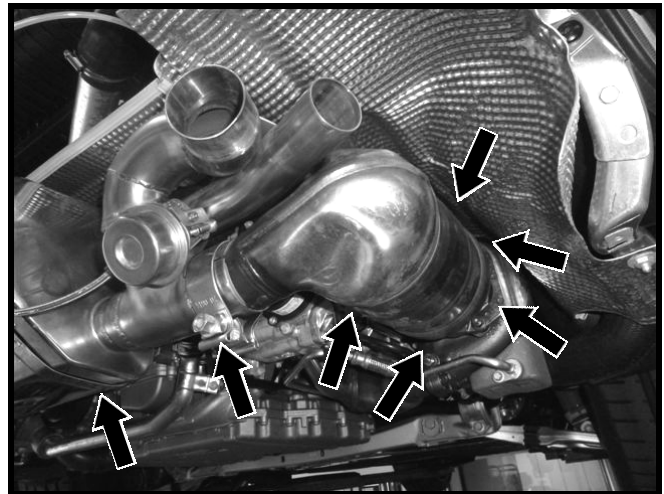


Fig. 02

- 5 Fasten all hexagon nuts at the catalytic converters. Again check the alignment of the exhaust system and adjust if necessary.
- 6 Tighten the retaining clamp.
- 7 Tighten the tightening straps.
- 8 Align and tighten the tail pipes. Care for a sufficient clearance between the tail pipes and the rear apron.
- 9 After the complete assembly perform a test drive and check the alignment of the tail pipes again!



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3.2 Install vacuum system

- 1 Dismantle the vacuum line from the switching valve of the sound symposer and replace the elbow piece with the supplied Y-piece (928.573.727.05).
- 2 Attach the Y-piece to the switching valve sound symposer and extend the second connection of the Y-piece with the pipe (L=260mm). See connecting diagram.

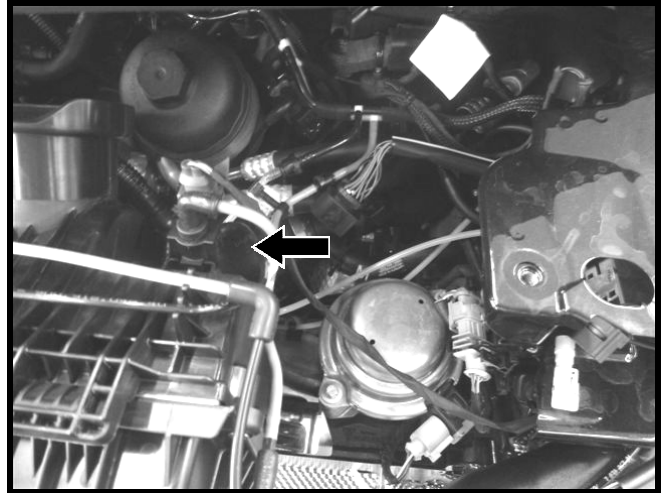


Fig. 03

- 3 Tighten the bracket switching valve (996.110.515.92) in the engine compartment and attach the switching valve.

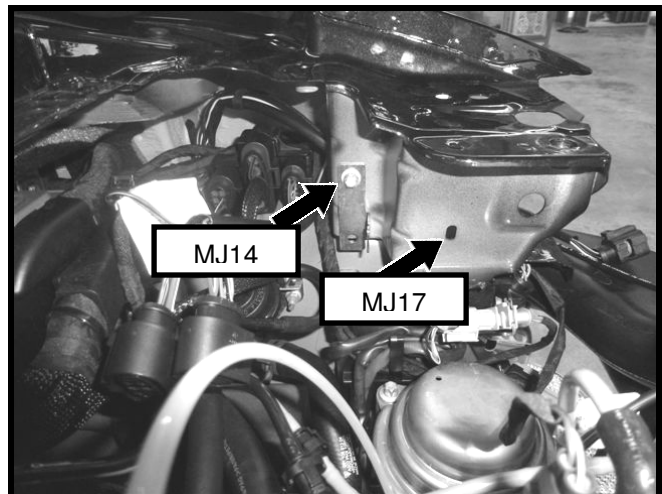


Fig. 04

- 4 From MY 17 on the bracket has to be built in at the shown position.

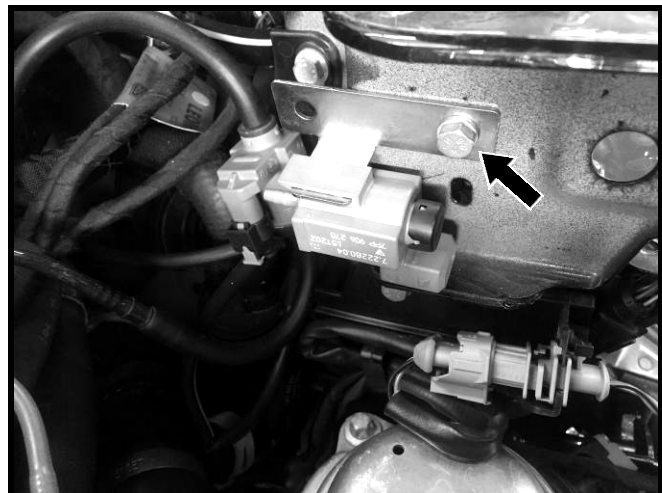


Fig. 05



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TECHART "Sport" Valve Exhaust System

- 5 Connect the switching valve (7PP.906.270) with the earlier detached elbow piece to the routed line mentioned in bullet point 2 according to the connecting diagram (page 12). (Built-in position of MY 14 is shown in the picture).

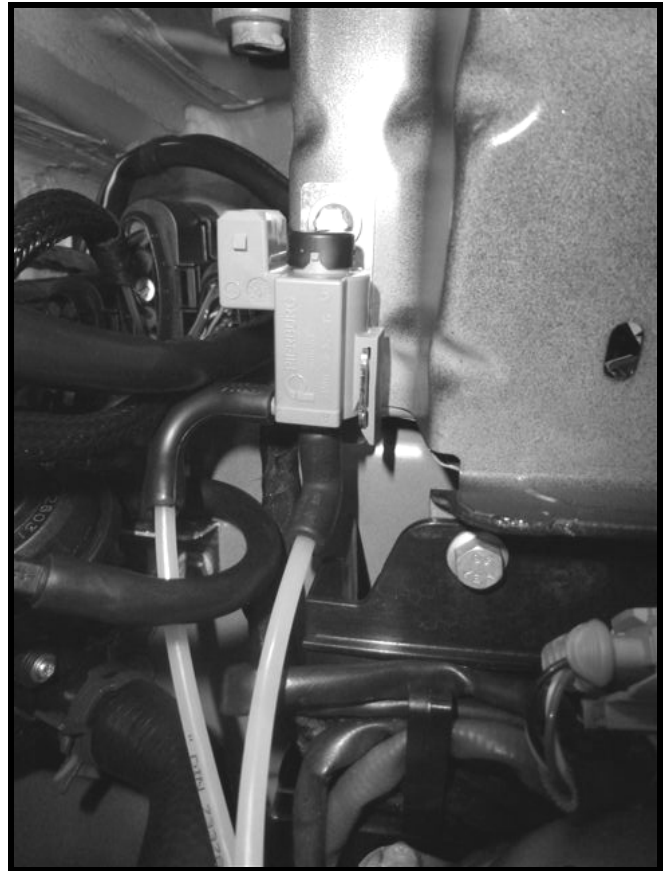


Fig. 06

- 6 Route the vacuum line from the switching valve exhaust flap below the air filter box to the area of the impact beam (see connecting diagram page 12). Care for sufficient clearance to hot and rotating parts.

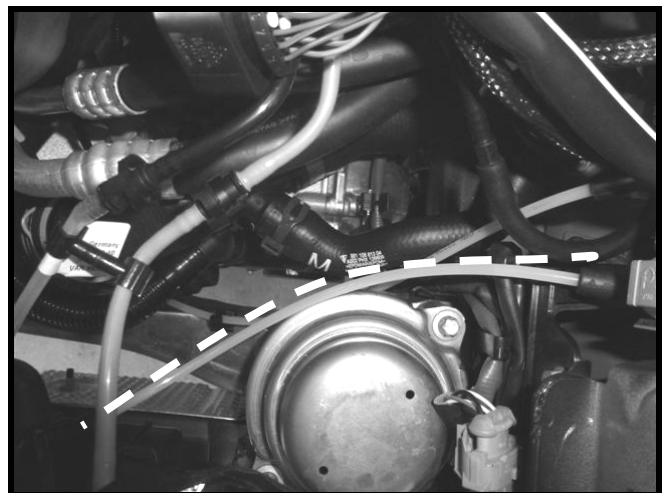


Fig. 07



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- 7 Fix the lines with the edge clip to the engine mounting sword.

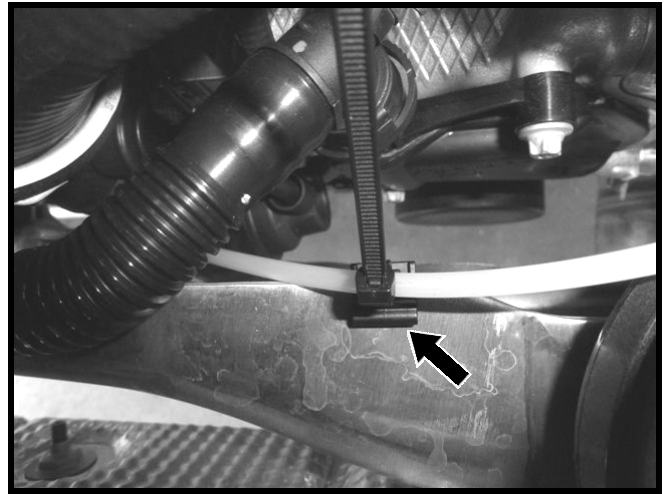


Fig. 08

- 8 Route the vacuum lines with the Y-piece towards the right and left through the frame (see fig. 09).

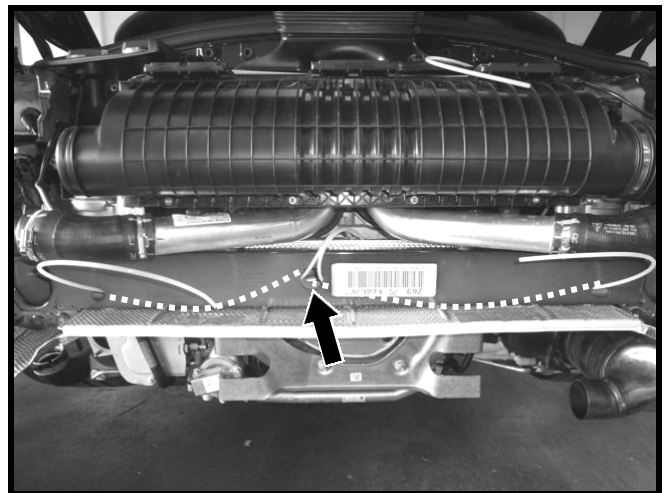


Fig. 09

- 9 Connect the steel braided lines and the vacuum lines with the hose connector and secure with the clips (see fig. 10).

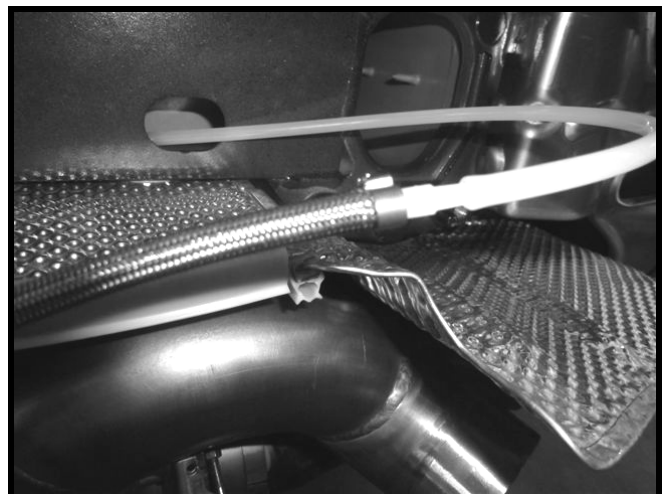


Fig. 10



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- 10 Slide the head protection hose over both end pieces (steel braided) and route the lines above the head protection plate to the pressure sensor. Care for sufficient clearance to the hot components.

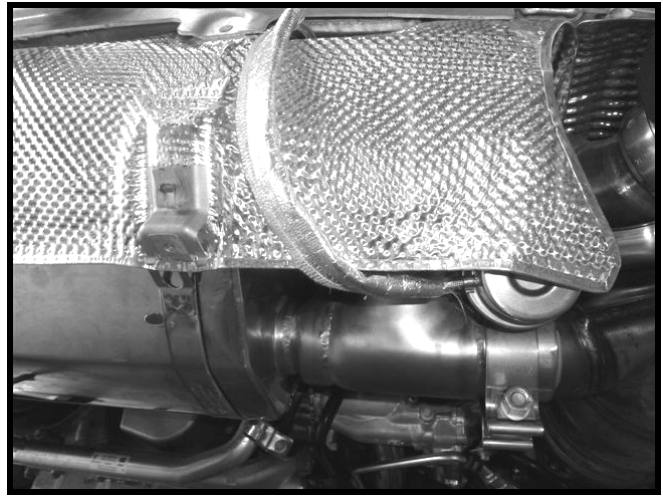


Fig. 11

- 11 Apply the end pieces to both pressure sensor and secure with the hose clip (096.310.840111). Afterwards slide the heat protection up to the pressure sensor.



Fig. 12

- 12 For vehicles from MY 17 on one has to cut the heat protection and to bend it upwards as shown on the picture. Make sure that the heat protection has sufficient clearance to the exhaust system.



Fig. 13



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

Connection diagram vacuum system

| Code | Designation |
|------|--|
| 1 | Y-piece |
| 2 | Vacuum line |
| 2a | Vacuum line coming from the vehicle |
| 3 | Vacuum sensor rear muffler |
| 4 | Preformed hose |
| 4a | Preformed hose takeover from the vehicle |
| 5 | Switching valve TECHART valve exhaust system |
| 6 | Switching valve original sound symposer |
| 7 | Steel braided line |

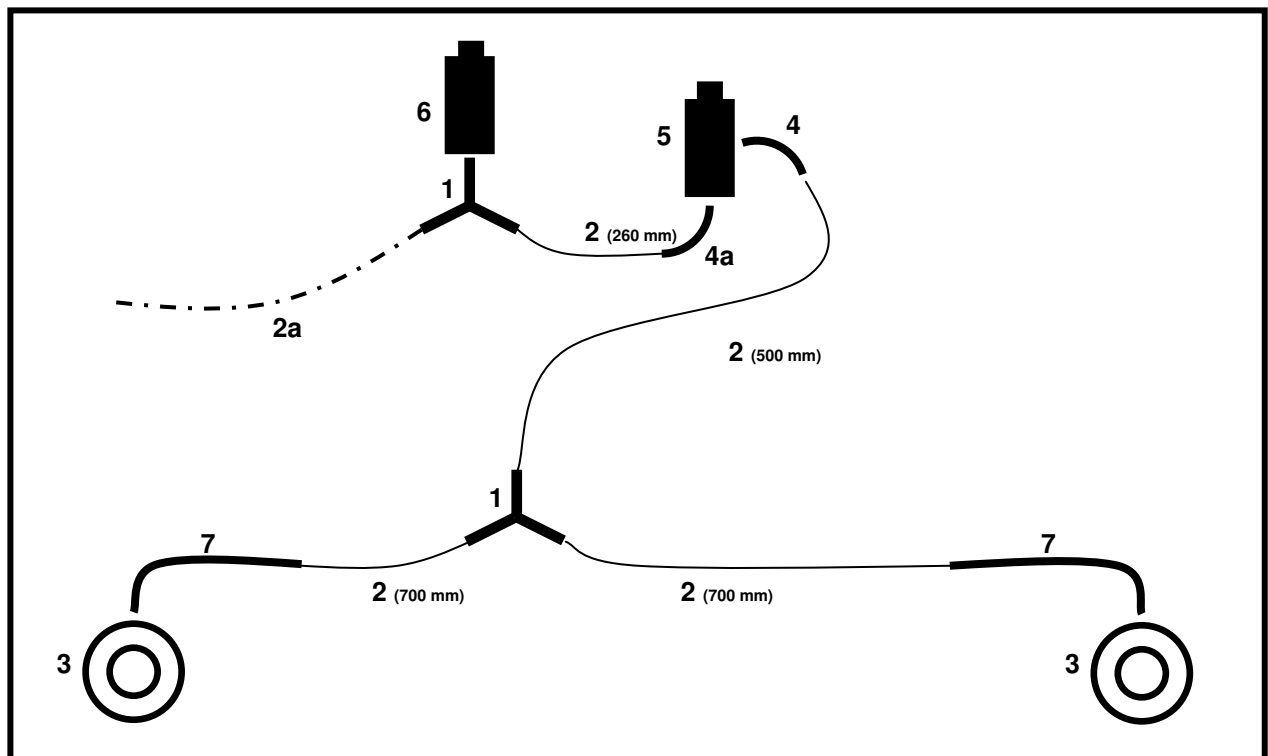


Fig. 14



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3.3 Connect control unit

 **Switch off the ignition and disconnect the battery when working on the vehicle electrical system.**

- 1 Dismantle the carpet in the rear vehicle.
- 2 Position the control unit of the exhaust valve (091.310.300.330) in the area of the PASM-control and fasten with the supplied hook-and-loop tape. (Figure shows the convertible version).

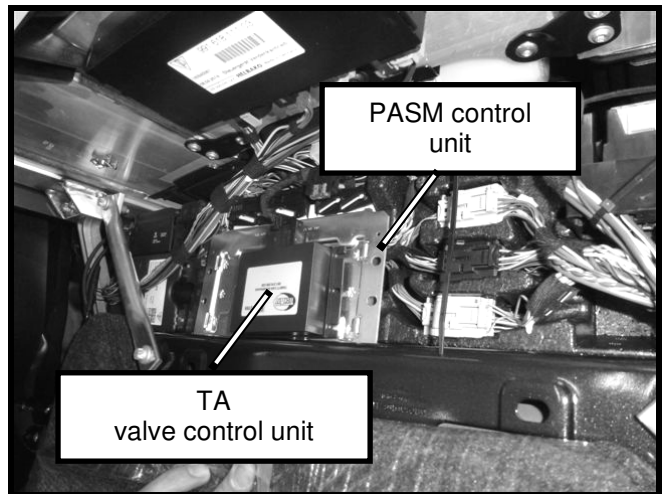


Fig. 15

- 3 Route the wiring harness with the connecting line of the switching valve from the passenger compartment through the cable sleeve right of the passenger compartment to the engine compartment (figure shows coupe version).



Fig. 16



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- 4 Connect the 2-pole plug in the engine compartment with the connecting line and attach the plug to the switching valve (see connecting diagram). Built-in position of MY 14 is shown in the picture.

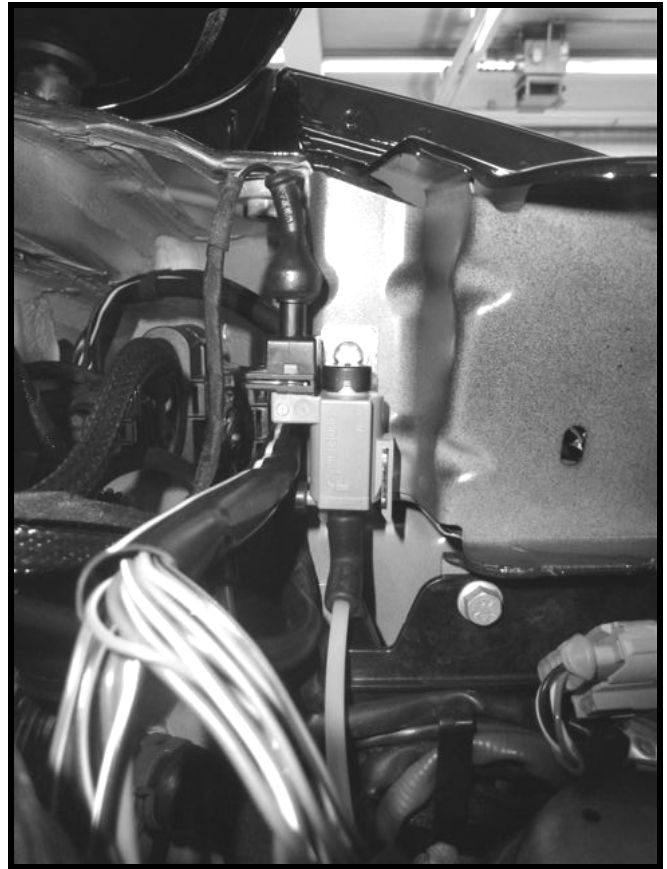


Fig. 17

- 5 Route the wiring harness with the connections for the CAN Bus and power supply to the rear passenger footwell to the PDK control unit.

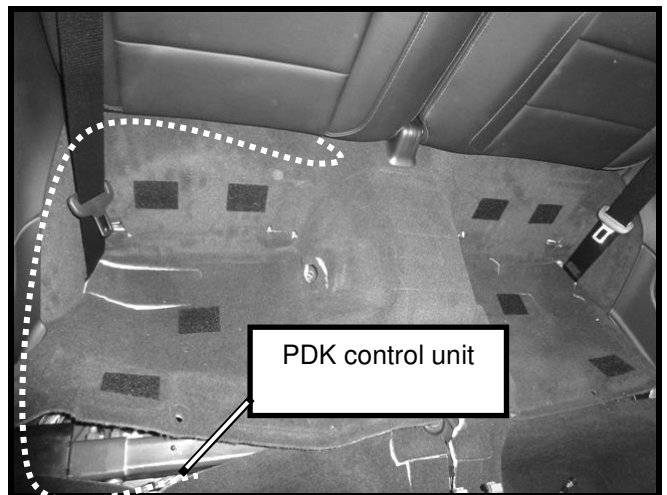


Fig. 18



The wiring harness will be pinned straight into the PDK control unit. The listed table in this assembly instruction shows the connection setup. Ground will be connected directly to the star ground at the vehicle.



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TECHART "Sport" Valve Exhaust System

- 6 Dismantle the black compact plug from the PDK-control unit

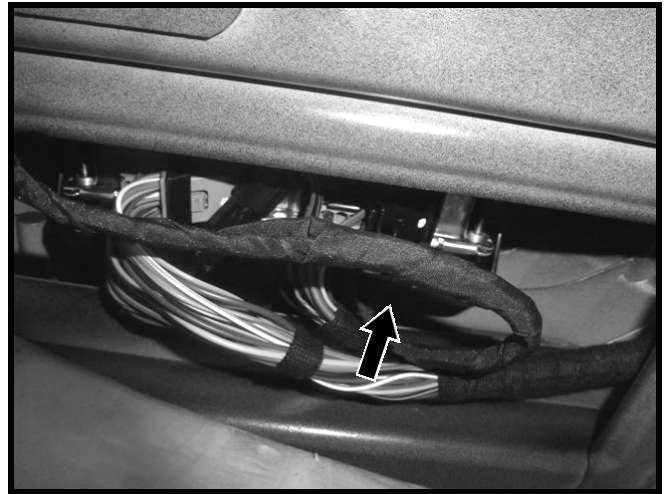


Fig. 19

- 7 Slide the pin carrier out from the plug housing, for that release the retaining clips (see arrow) with a pointed object.

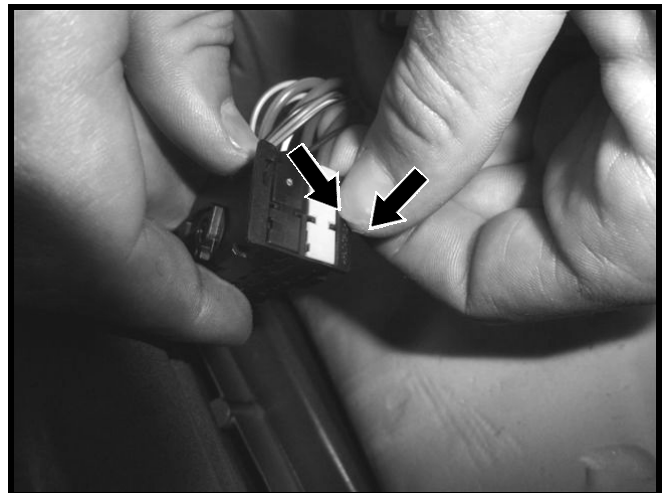


Fig. 20

- 8 Slide the pin carrier in the direction of the arrow.

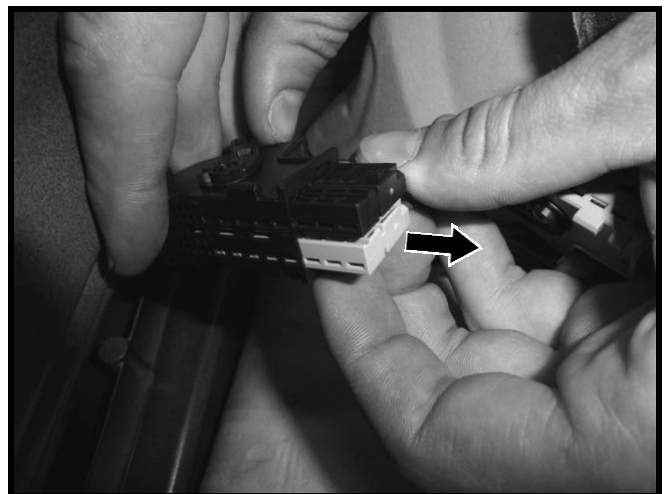


Fig. 21



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- 9 Slide the pin carrier out from the housing.

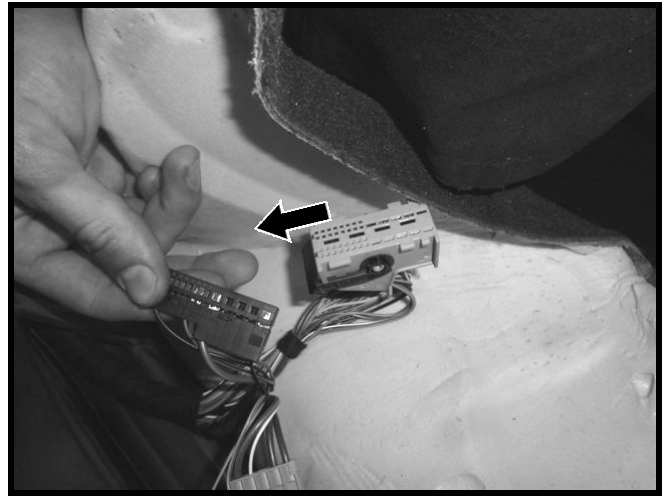


Fig. 22

- 10 Unlatch the detents of the relevant pins with a needle and pull them out, see connection plan.



Fig. 23

- 11 Mount the TECHART pin wiring harness as shown on the diagram and the connecting chart. Then complete the compact plug in reverse order.



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TECHART "Sport" Valve Exhaust System

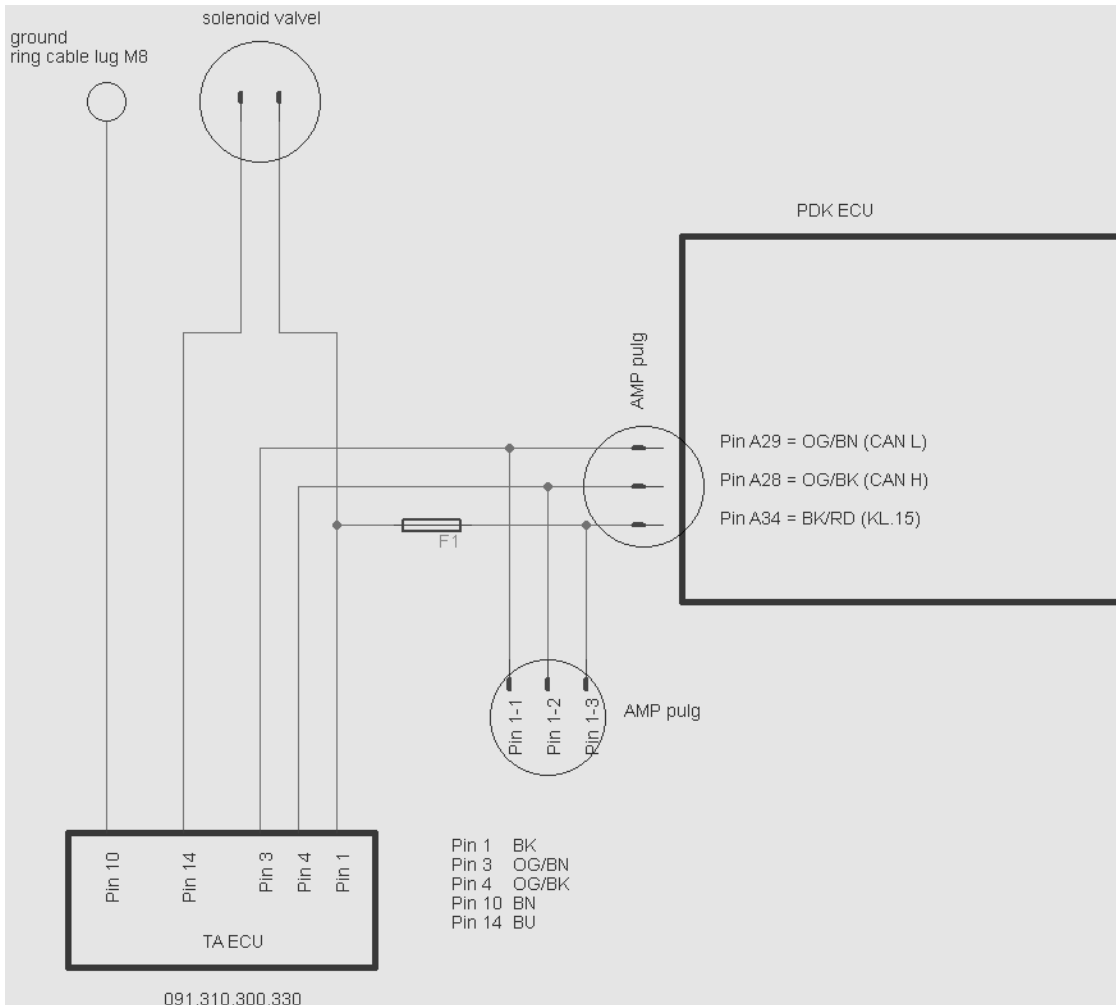


Fig. 24

Color labeling:

- BK – black
- OG – orange
- BN – brown
- RD – red
- GY – gray
- BU – blue



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TECHART "Sport" Valve Exhaust System

To prevent connection errors, please proceed step by step.
Connect one connection after the other.

For example:

Pin out line pin 41 (OG/BN) as described from the PASM compact plug and mount into position 1 to the 3-pole plug.
Then mount the line 1 (OG/BN) from the coupling at the pin-wiring harness to the position pin 41 of the vehicle's wiring harness.

Caution: the cable colors may vary, in this case pay attention to the numbering!

- 12 Mount the ground ring-eye to the star ground of the vehicle.



Fig. 25

- 13 Then insert the plug to the control unit.
- 14 Connect the battery and perform a function test.
- 15 To do this, start the engine and allow it to idle. Once a vacuum has built up, the valve is closed (if the button is not pressed). If the sport button, the sport plus button or the exhaust button is pressed, a considerably deeper exhaust sound can be heard.
- 16 Reinstall the carpet.

3.4 Schematic diagram exhaust valve MY 14

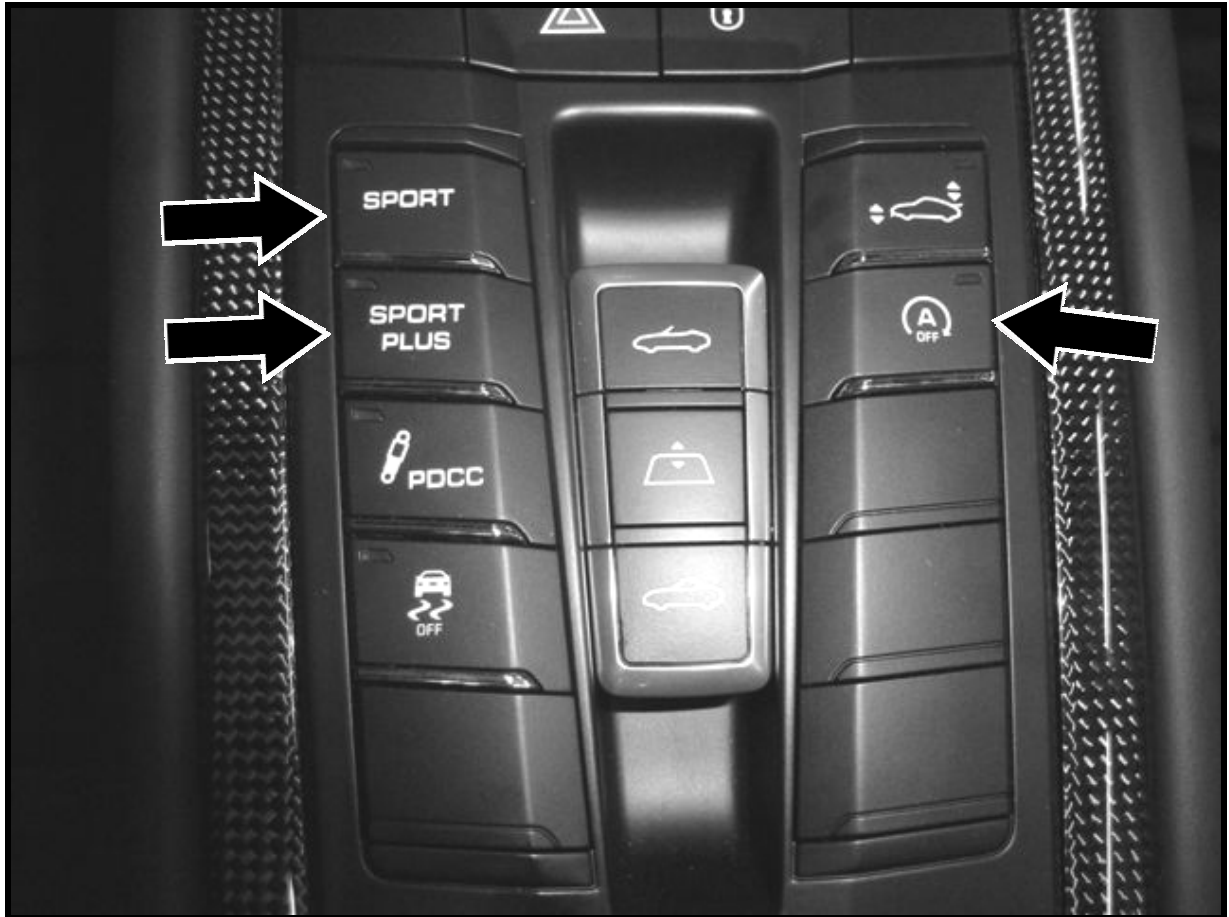


Fig. 26

No button is pressed: The valve is closed permanently and only opens at a boost pressure of 0.6 bar.

Sport button pressed; LED is set: The exhaust valve is only closed within the noise emission relevant range.

Sport Plus button pressed; LED is set: The exhaust valve is only closed within the noise emission relevant range.

Auto Start-Stop button pressed; LED is set: The exhaust valve is only closed within the noise emission relevant range. This button stands hierarchically above the Sport and the Sport Plus buttons! Consequently when the Auto Start-Stop button is pressed the Sport (Plus) buttons are irrelevant regarding to the exhaust valve control.



Depending on country-specific variant it is possible that the Auto Start-Stop function can be deactivated permanently (even after restart); then the exhaust valve control with the Sport (Plus) button will only be available after the driver activates the Auto Start-Stop function.

3.5 Schematic diagram exhaust valve MY 17

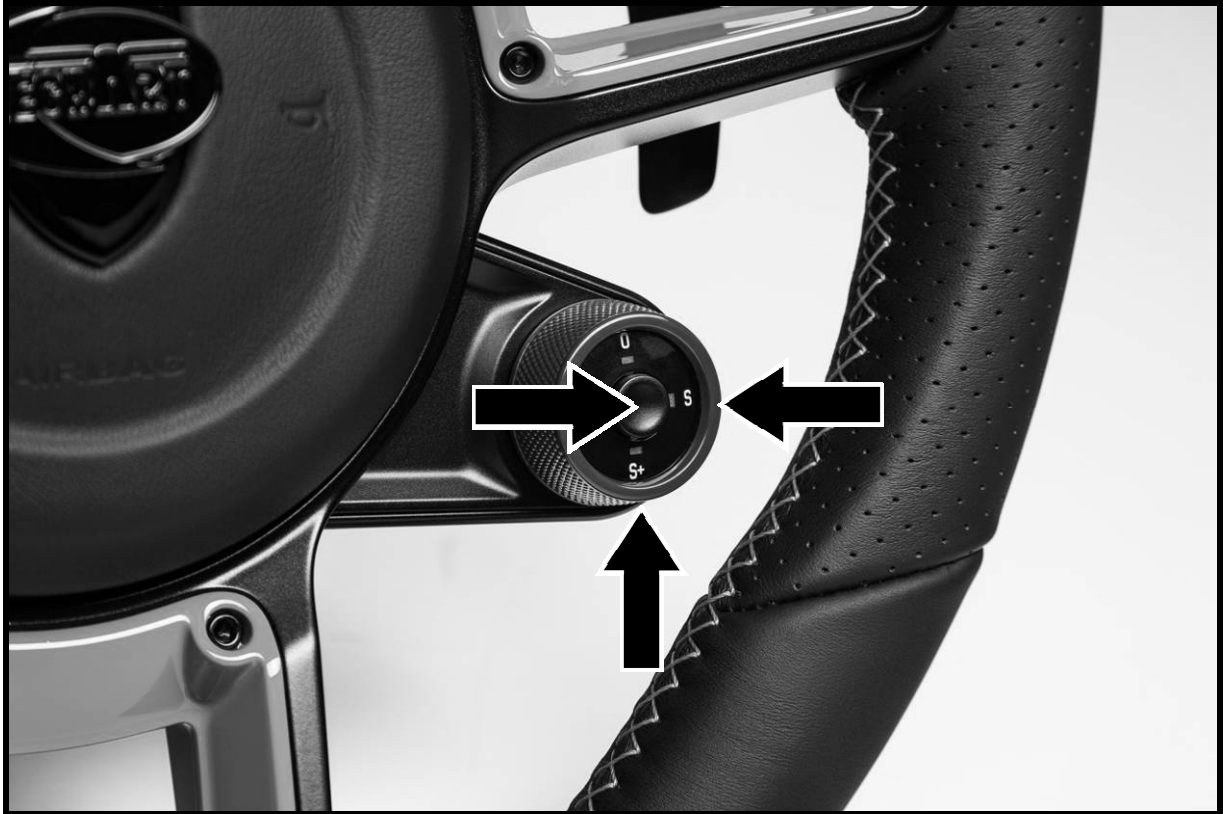


Fig. 27

Travel mode 0: The valve is closed permanently and only opens at a boost pressure of 0.6 bar.

Travel mode S; "Mode Sport" is displayed at the combination instrument: The exhaust valve is only closed within the noise emission relevant range.

Travel mode S+; "Mode Sport Plus" is displayed at the combination instrument: The exhaust valve is only closed within the noise emission relevant range.

Sport Response button; "Sport Response" is displayed at the combination instrument: The exhaust valve is only closed within the noise emission relevant range for only 20 seconds.

Auto Start-Stop button pressed; LED is set: The exhaust valve is only closed within the noise emission relevant range. This button stands hierarchically above the Sport and the Sport Plus buttons! Consequently when the Auto Start-Stop button is pressed the Sport (Plus) buttons are irrelevant regarding to the exhaust valve control.



Depending on country-specific variant it is possible that the Auto Start-Stop function can be deactivated permanently (even after restart); then the exhaust valve control with the Sport (Plus) button will only be available after the driver activates the Auto Start-Stop function.



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TECHART "Sport" Valve Exhaust System



When using travel mode "Individual" one may activate the exhaust valve for the individual mode by choosing the parameter Sport, Sport Plus or Auto Start Stop.



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TECHART "Sport" Valve Exhaust System



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