



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System
for 991 Carrera S and Carrera with optional sport exhaust system

Part-no. 091.310.320.009-01 Valve exhaust system 991 Carrera S





ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

Contents

I	Important safety Information	3
II	Preparation	4
III	Installation	6
1	Prepare vehicle	6
2	Remove original parts	7
3	Install TECHART parts.....	8
3.1	Install TECHART valve exhaust system	8
3.2	Install vacuum pipe Carrera S.....	10
3.3	Install vacuum pipe Carrera S with optional sport valve system	12
3.4	Connect control unit	13
3.5	Schematic diagram exhaust valve	23

















ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

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



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

Check TECHART parts kit for completeness

Quantity	Part number	Part name
1	091.310.320.009	"Sport" valve exhaust system for 991 Carrera with sport valve system
Consisting of:		
1	091.310.320.100	Exhaust system "sport" valve controlled
2	991.111.482.00	Gasket
6	900.910.003.03	Hexagon nut
2	996.111.119.72	Tightening strap
1	091.310.200.330	Control unit valve control incl. wiring harness
1	000901895513	Car hose, length=230mm
2	000901895513	Car hose, length=70mm
1	00090150025048	Y-piece hose connector 4mm
1	000300872000	Glass fiber hose 12mm, length=230mm
2	000300872000	Glass fiber hose 12mm, length=70mm
2	991 612 944 00	Adapter line
Optional		
1	+91310200325-01	Vacuum kit for serial Carrera S
Consisting of:		
1	991.111.448.00	Bracket vacuum line
1	000901895513	Car hose, length=40mm
1	+91.310.910.000	Tail pipe shiny chrome
or		
1	+91.310.911.000	Tail Pipe black chrome matt

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.



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

III Installation

1 Prepare vehicle

i 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.



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

2 Remove original parts



1 Remove the vacuum pipes from the original flap valve.

2 Detach center muffler in line with manufacturer's instructions.



Center muffler is no longer required.



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

3 Install TECHART parts

3.1 Install TECHART valve exhaust system

- 1 Position the TECHART center muffler (091.310.320.100) in the vehicle, take the original tightening straps and gusset plates, install and align them.



Fig. 01



- 2 Apply all hexagon nuts (900.910.003.03) and align the retaining clamp between the side muffler and the TECHART valve system (091.310.320.100).
- 3 Attach the TECHART tail pipes (091.310.91_009-01).
- 4 Check the alignment of the system.

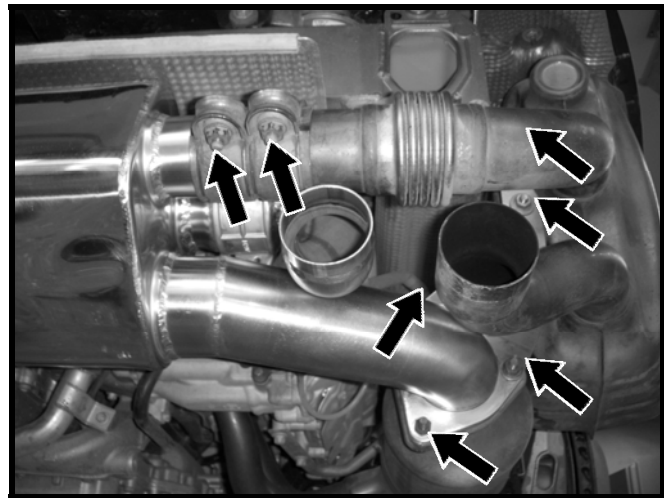


Fig. 02

- 5 Fasten all hexagon nuts at the manifold flanges and the gusset plates to the rear mufflers. 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.



The dismantling of the rear apron is not imperative, but it will make it easier to work.



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

- 9 After the complete assembly perform a test drive and check the alignment of the tail pipes again!



There is a difference between the installation of the vacuum control for the 991 with original valve system and for the 991 with optional sport valve system (I176).

3.2 Install vacuum pipe 991 Carrera S

- 1 Dismantle the vacuum line which has been factory-mounted from the T-piece rear right to left. Shorten the vacuum line to 42 cm.
- 2 Reconnect the vacuum pipe to the T-piece and route the line to the cover at the engine mounting sword.

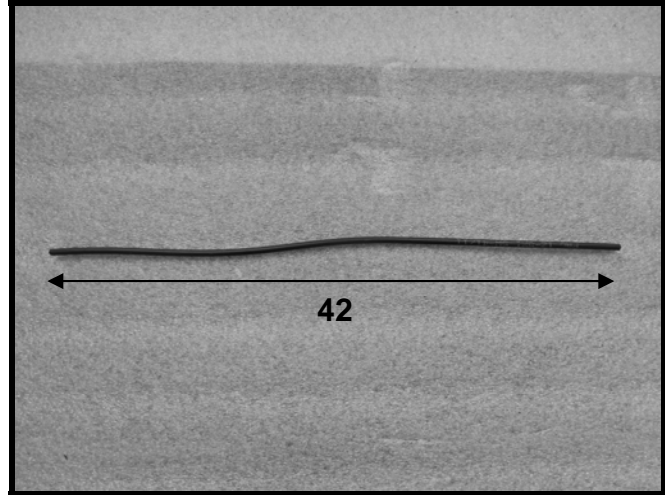


Fig. 03

- 3 Dismantle the cover of the engine mounting sword. Connect the bracket of the vacuum line to the vacuum line and assemble them together with the cover of the engine mounting sword.

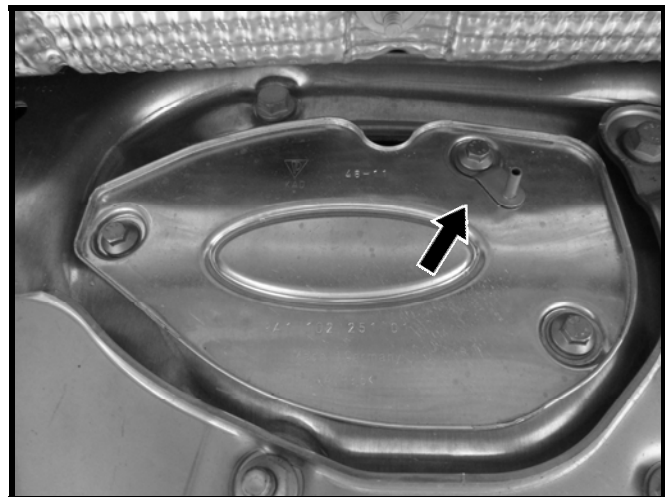


Fig. 04



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

- 4 Connect the supplied vacuum line and connect it to the exhaust system.

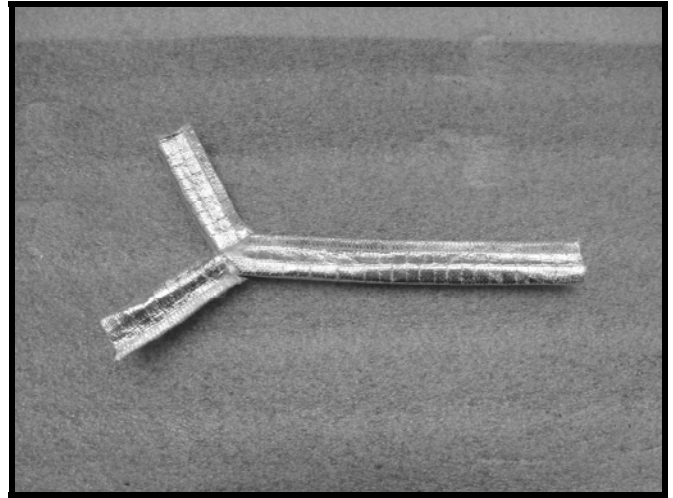


Fig. 05



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

3.3 Install vacuum pipe 991 Carrera S with optional sport valve system

- 1 Attach the TECHART vacuum line to the vacuum connection of the engine mounting sword and plug them to both exhaust flaps at the TECHART exhaust system.

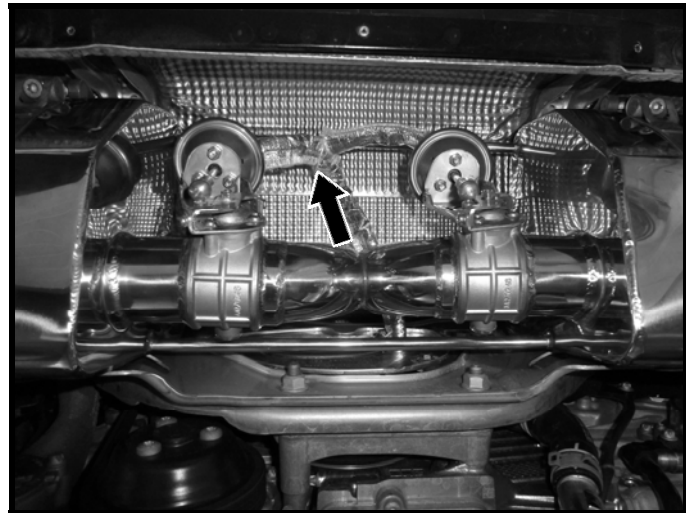


Fig. 06

Connection diagram for vacuum supply

Code	Designation
1	T-piece
2	Vacuum line
3	Vacuum sockets rear muffler

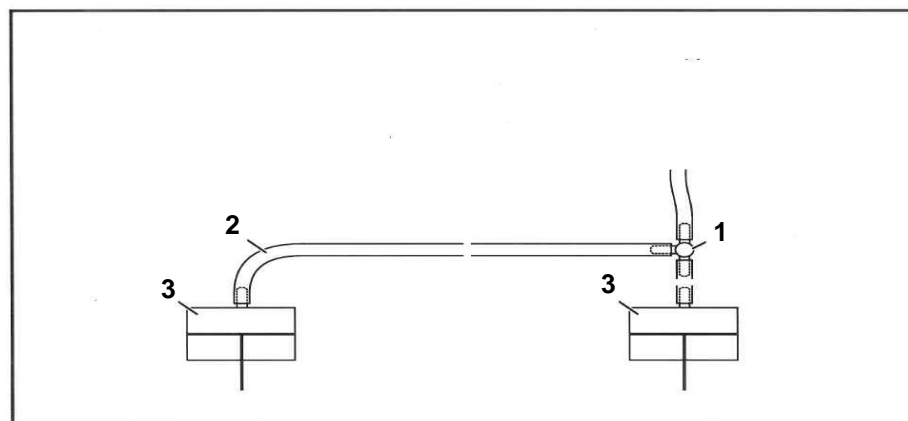


Fig. 07

3.4 Connect control unit

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

- 1 Dismantle the carpet in the rear vehicle.

! There is a difference whether the vehicle is equipped with PASM or with conventional suspension struts.

For vehicles with PASM:

- 2 Position the control unit of the exhaust valve (091.310.200.330) in the area of the PASM-control and fasten with the supplied hook-and-loop tape.



Fig. 08

- 3 Lead the wiring harness with the two connecting lines of the both switch valves from the passenger compartment through the cable bushing into the engine compartment.



Fig. 09



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

- 4 Connect the 2-pole plugs in the engine compartment with the connecting line and attach the plugs to the respective switch valve (see connecting diagram).

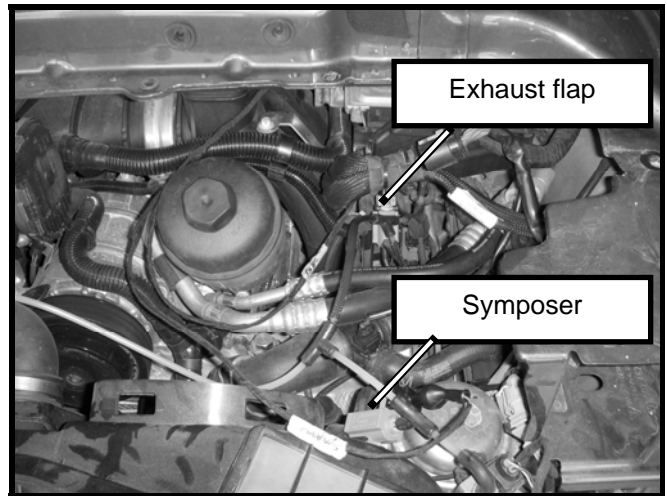


Fig. 10

i Depending on the model year it is possible that the compact plugs of the TECHART wiring harness are not compatible with the cycle valve of the exhaust valve and/or the symposer.

- 5 In this case mount one TECHART adapter line each (fig. 11) between the respective cycle valve and the TECHART wiring harness.

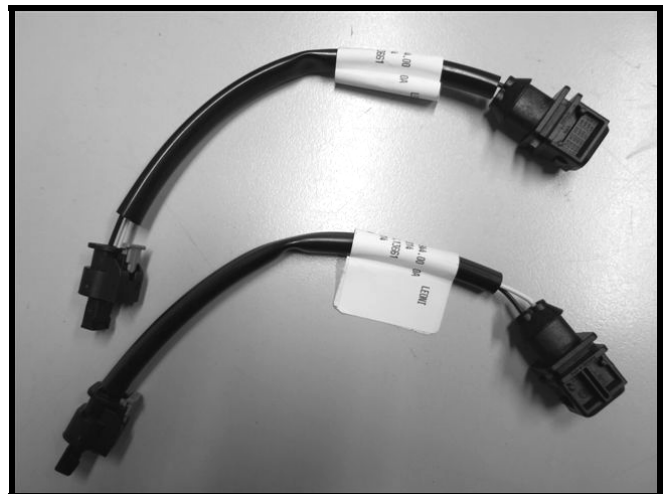


Fig. 11

i The wiring harness will be pined straight into the PASM 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.



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

- 6 Dismantle the big compact plug from the PASM-control unit.



Fig. 12

- 7 Dismantle the interlock rail, to do that lift the detent with a pin and slide out the rail.



Fig. 13

- 8 Slide guiding rail out (see arrow).

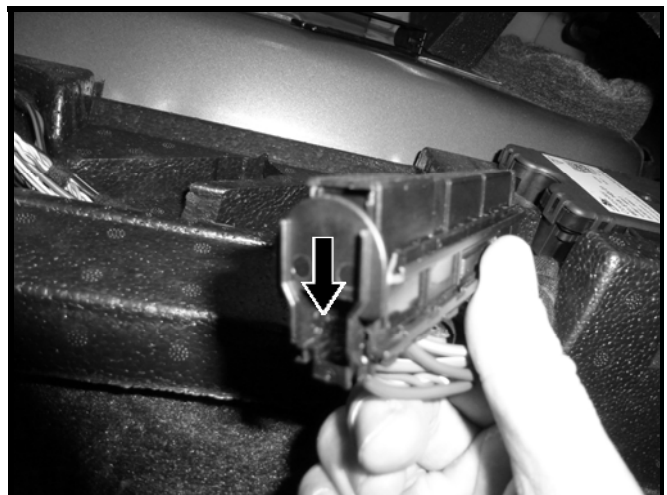


Fig. 14



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

- 9 Slide the pin carrier out from the housing.



Fig. 15

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

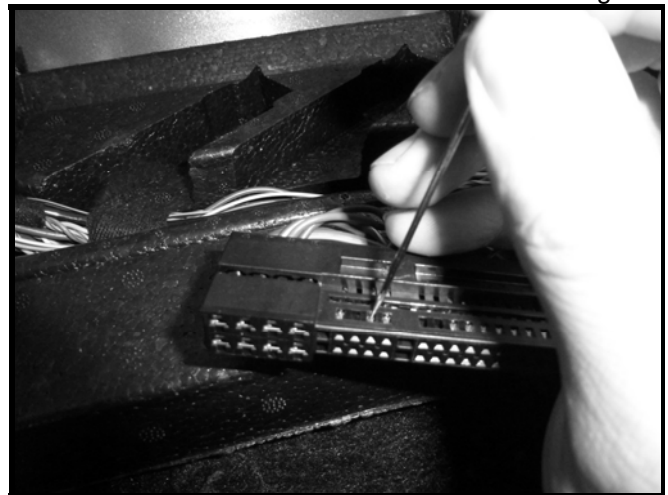


Fig. 16

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



ASSEMBLY INSTRUCTIONS

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) A41 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.

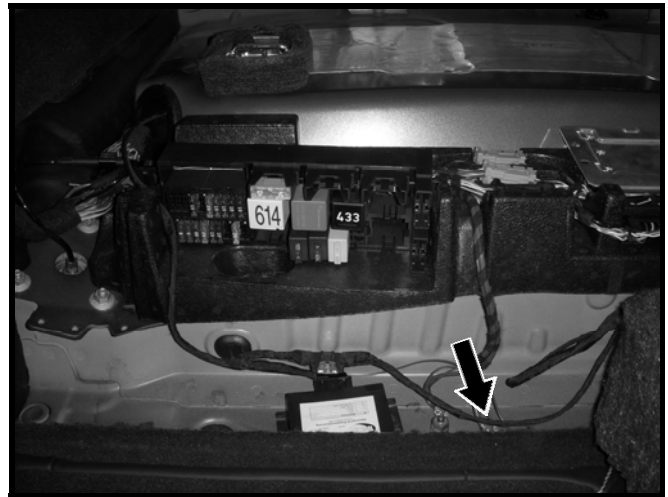


Fig. 18

- 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.



There is a difference if the vehicle is equipped with PASM or with conventional vibration damper.



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

For vehicles without PASM:

- 1 Position the control unit of the exhaust valve in the area of the control unit of the electrical parking brake und fasten with the supplied hook and loop tape.



Fig. 19

- 2 Lead the wiring harness with the two connecting lines of the both switch valves from the passenger compartment through the cable bushing right into the engine compartment.



Fig. 20

- 3 Connect the 2-pole plugs in the engine compartment with the connecting line and attach the plugs to the respective switch valve (see connecting diagram).

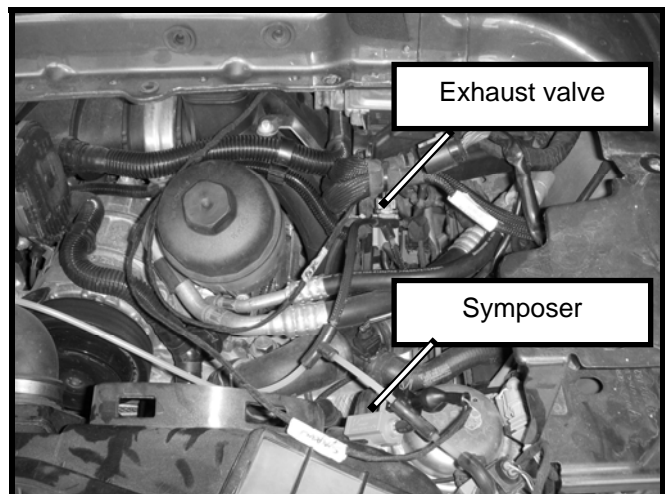


Fig. 21



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

i Depending on the model year it is possible that the compact plugs of the TECHART wiring harness are not compatible with the cycle valve of the exhaust valve and/or the symposer.

- 4 In this case mount one TECHART adapter line each (fig. 22) between the respective cycle valve and the TECHART wiring harness.

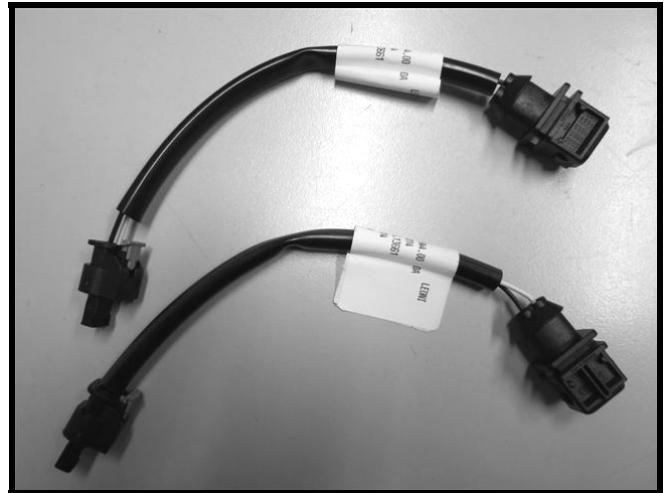


Fig. 22

i The wiring harness will be soldered straight to the wiring harness of the control unit of the electrical parking brake. The listed table in this assembly instruction shows the connection setup. Ground will be connected directly to the star ground at the vehicle.

- 5 Solder the wiring harness as shown on the diagram and the connecting table. For that cut off the pins at the 3 lines (bk, or/br, or/bk) of the TECHART wiring harness and remove the insulation at the end of the line.
- 6 Also remove a piece of the insulation at the lines A1 (or/br), A16 (or/bk) and A21 (bk/rd) of the wiring harness of the control unit of the electrical parking brake and solder them with the three lines of the TECHART wiring harness (see connection plan).
- 7 Insulate the soldering points accurately.



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

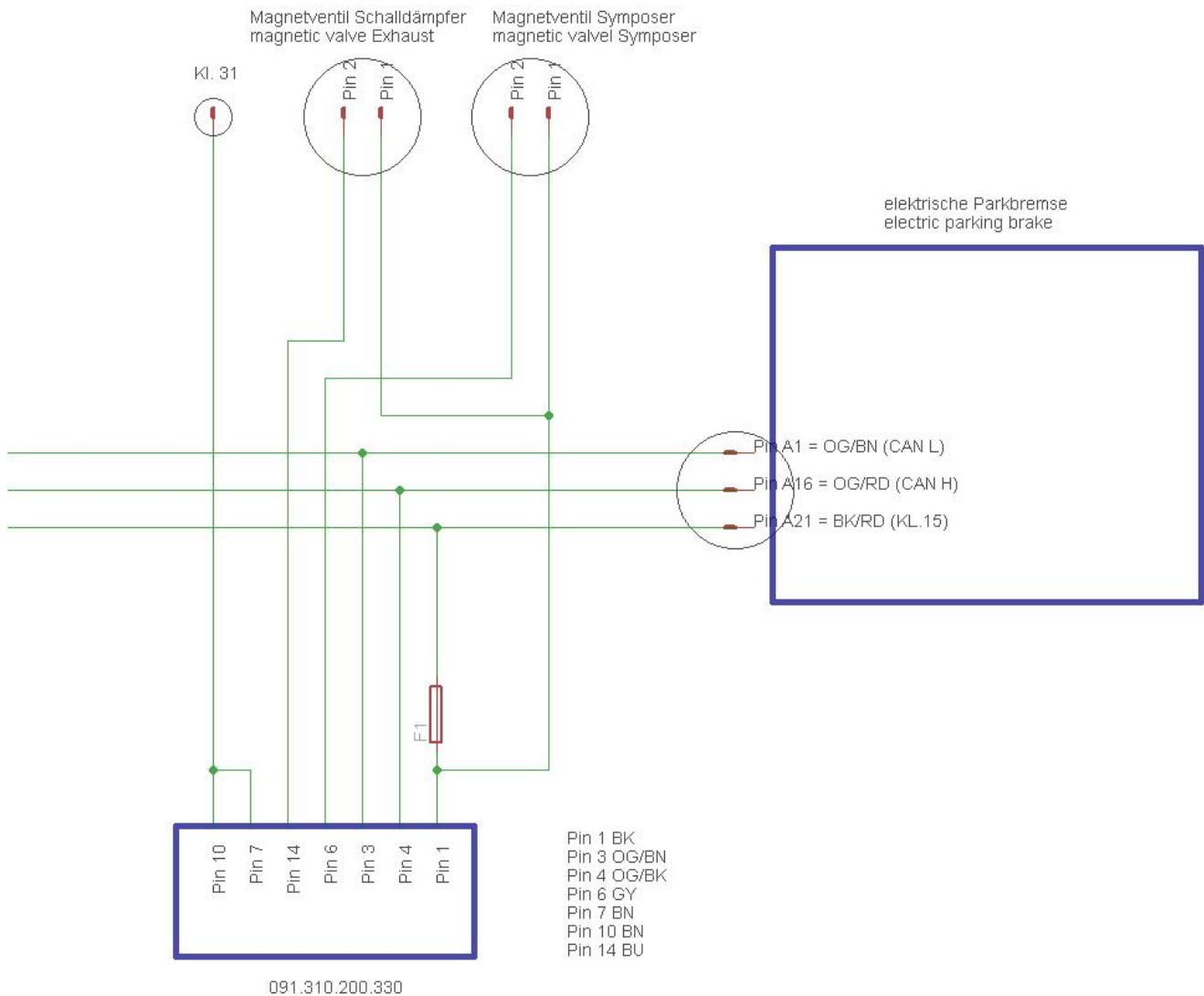


Fig. 23

Color labeling:

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



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System

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

For example:

Strip line pin A1 (OG/BR) as described and solder with the orange/brown line of the TECHART wiring harness.

Then strip the line pin A16 (OG/BK) and solder with the orange/black line of the TECHART wiring harness, etc.

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

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

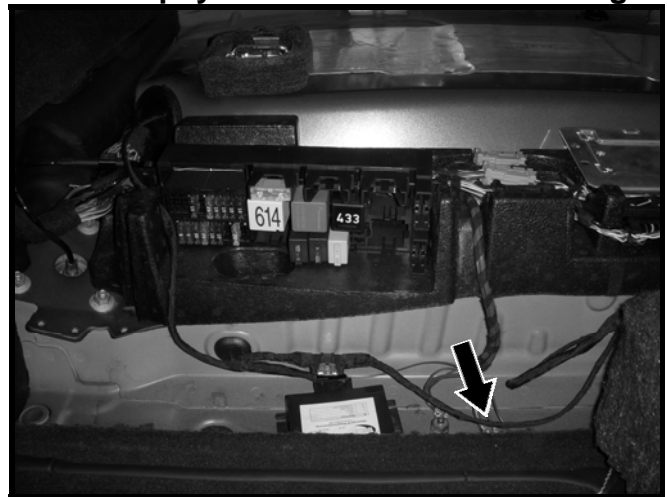


Fig. 24

- 9 Then insert the plug to the control unit.
- 10 Connect the battery and perform a function test
- 11 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.
- 12 Reinstall the carpet.

3.5 Schematic diagram exhaust valve



Fig. 25

No button is pressed: The valve is closed permanently; the sound symposer will be map-controlled.

Sport button pressed; LED is set: The exhaust valve is only closed in the authorized range; the sound symposer will be permanently active.

Sport Plus button pressed; LED is set: The exhaust valve is only closed in the authorized range; the sound symposer will be permanently active.

Exhaust button pressed; LED is set: The exhaust valve is only closed in the authorized range; the sound symposer will be permanently active.

i There is also the possibility to close the exhaust valve while the sport mode is activated (sport button or sport plus button pressed, all LEDs are set) by pressing the exhaust button again. The sport mode stays activated then (LED is lit), the exhaust valve, however, will always be closed (LED exhaust valve is off), the sound symposer will be map-controlled.



ASSEMBLY INSTRUCTIONS

TECHART "Sport" Valve Exhaust System



TECHART AUTOMOBILDESIGN GMBH

RÖNTGENSTRASSE 47

D-71229 LEONBERG / GERMANY

TEL +49 7152 / 9339- 0

FAX +49 7152 / 9339-33

info@TECHART.de

www.TECHART.de

Änderungen und Irrtümer vorbehalten.
Subject to change at any time without prior notice.
Copyright 2015 by **TECHART** Automobildesign GmbH

Artikel-Nr./Part No. 091.310.320.099