



## ABS M4 Porsche 991 Cup

### Installation instructions

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# 1 Introduction

This instruction describes how to fit the Bosch Motorsport ABS M4 to a Porsche 991 Cup. The manual is valid for the 991 Cup generation 1 and 2. Differences between the two models will be mentioned in the manual.

Please also refer to the manual for the ABS M4. It is available at [www.bosch-motorsport.de](http://www.bosch-motorsport.de).

## 2 Content of the Kit

Code letter	Part
A	Mounting bracket for hydraulic module HU
B	Spacer between bracket for HU and HU
C	3 fuses, 40 A, 25 A, 10 A
D	Hydraulic module HU
E	Wheelspeed signal splitter
F	Mounting plate for yaw rate sensor
G	Yaw rate sensor
H	Fittings for brake pipes at hydraulic unit VR und HR
I	Brake pressure sensor
J	Dummy plug M10x1
K	12-position switch
L	Malfunction light LED
M	Wiring loom
	Bracket for fuses (not in figure)



Fig. 1: ABS M4 components for Porsche 991 Cup

This instruction will also refer to the following drawing of Porsche 991 original parts.

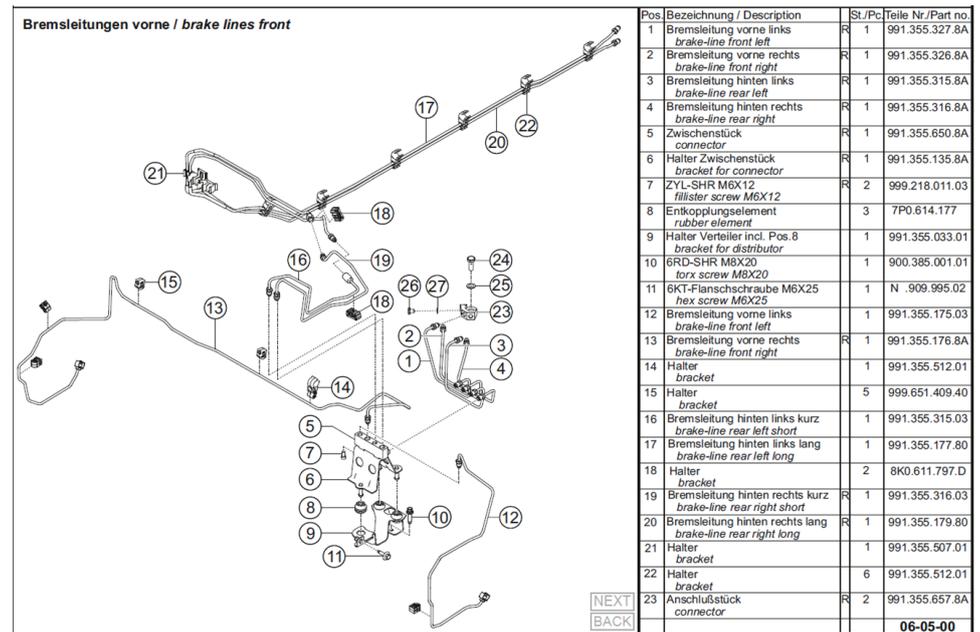


Fig. 2: Porsche 991 brake lines front

### Required parts, not included in the kit

Your Bosch Motorsport dealer will tell you where you can get these parts.

Part	Usage
1 x Brake Pipe Front Axle MC, see picture below	Brake pipe to link Porsche bracket 23 to ABS M4 item A labeled with HZ1.
1 x Brake Pipe Rear Axle MC, see picture below	Brake pipe to link Porsche bracket 23 to ABS M4 item A labeled with HZ2.
6 x Screw M6 x 10 mm, not shown	Mounting of the spacer C and the mounting plate B to the HU
2 x Screw M6 x 10 mm, not shown	Mounting of the yaw rate sensor E to the mounting plate F.
4 x Screw M3 x min 10mm with nut, not shown <b>(Only needed in the Cup Gen 1 Kit)</b>	Screws to mount the diagnostic connector to the fuse holder M and to mount the intersection connector to the bulkhead.



Fig. 3: Brake pipes, not included in the kit

## 3 Installation of the hydraulic components

Fit spacer item B to HU item D. Use 3 screws M6x10 or M6x12. **Screws are not included in the kit.**



*Fig. 4:* HU with spacer

Fit item B to the above described assembly. Use 3 screws M6x10. **Screws are not included in the kit.**



*Fig. 5:* HU with spacer and bracket

Remove the front left inner wing (plastic part).

Refer to picture "Porsche 991 brake lines front".

Disconnect brake pipe 12, 13, 16, 19 from connector 5.

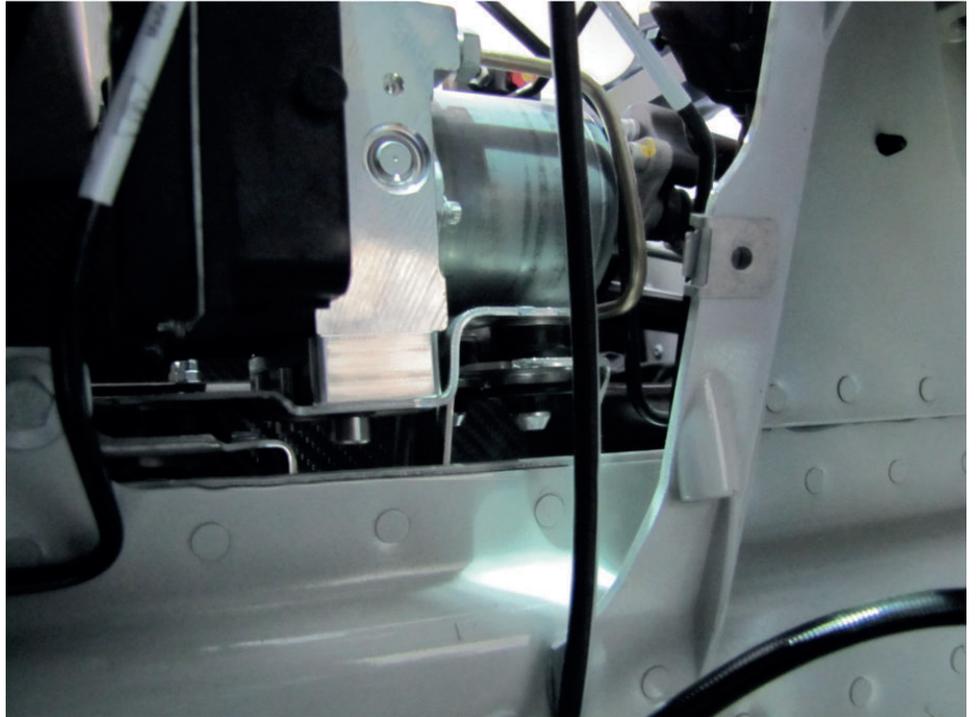
Remove the brake pipes 1, 2, 3, 4, you do not need them anymore.

Pull upwards on components 5 and 6 to remove them, you don't need them anymore.



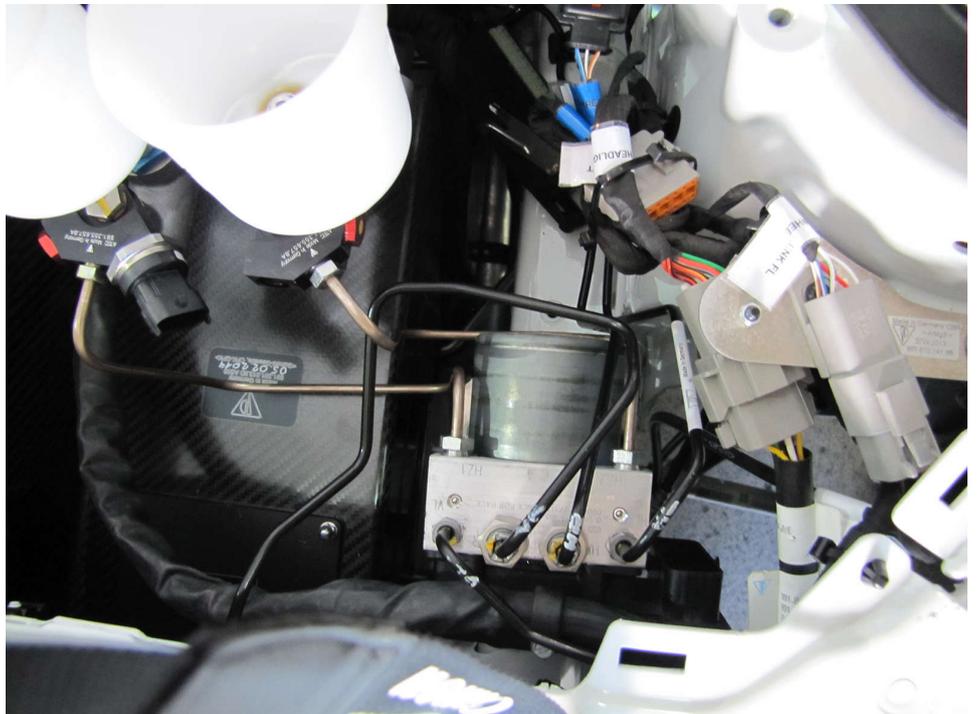
*Fig. 6:* Original Cup parts removed

For the installation of the ABS HU assembly, push it into the rubber bushes as shown in the picture below.



*Fig. 7:* HU pushed into bracket

Install the 2 new master cylinder brake pipes (**pipes are not included in the kit**) as shown in the picture below. Connect the black 991 Cup brake pipes while also fitting the 2 steel adapters for VR and HR. **Make sure you fit the pipes into the correct port** which are labeled. V=front, H=rear, R=right, L=left



*Fig. 8:* Brake pipes connected

Screw the dummy plug (item I) into the free hole of the connector for the rear axle. Fill the ABS brake pressure sensor with brake fluid to avoid air in the system. Use a syringe. Install the ABS brake pressure sensor in the left bore (view from the front) of the front axle connector.



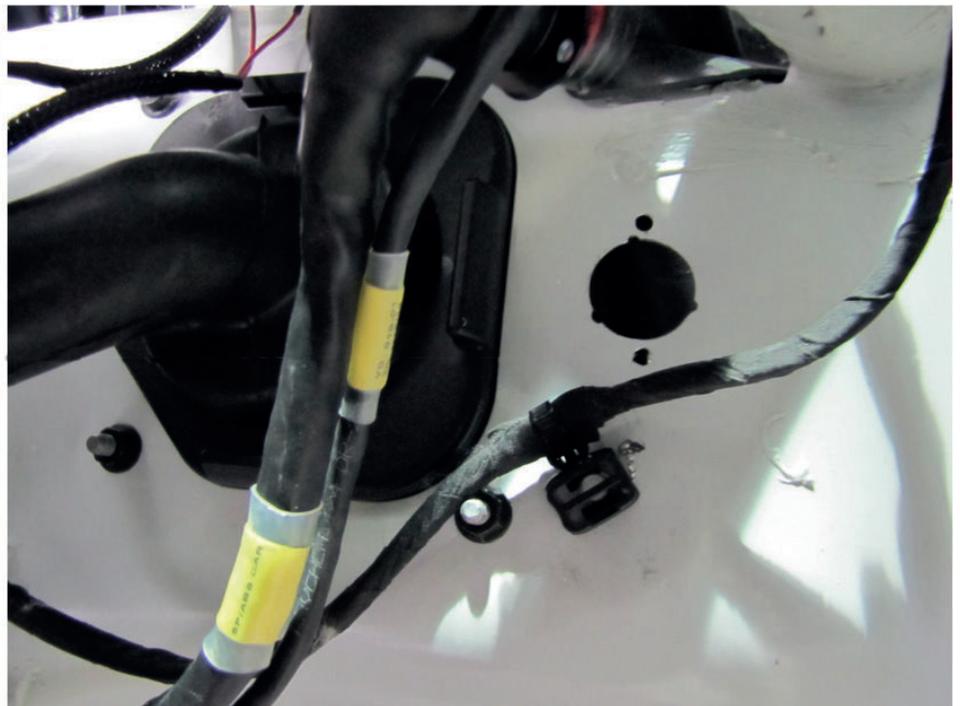
## 4 Installation of the front wiring loom

Drill a hole  $\varnothing = 26$  mm to feed the ABS wiring loom through the front bulkhead. Center is 50 mm to the bolt and 32 mm to the grommet. Use the connector of the loom to mark the positions for the three additional notches for the connector. Each notch is app.  $\varnothing = 1.5$  mm, file these notches out.



*Fig. 10:* Position of hole in bulkhead

Use the connector to mark the correct vertical positions for the two holes for the connector fixation and drill two holes.



*Fig. 11:* Position of fixation holes, vertical



*Fig. 12:* ABS loom for front boot area

Connect the main connector to the ABS unit, connect pressure sensor and ABS ground cable at the same bolt as other ground cables are connected at the bulk-head nearby.



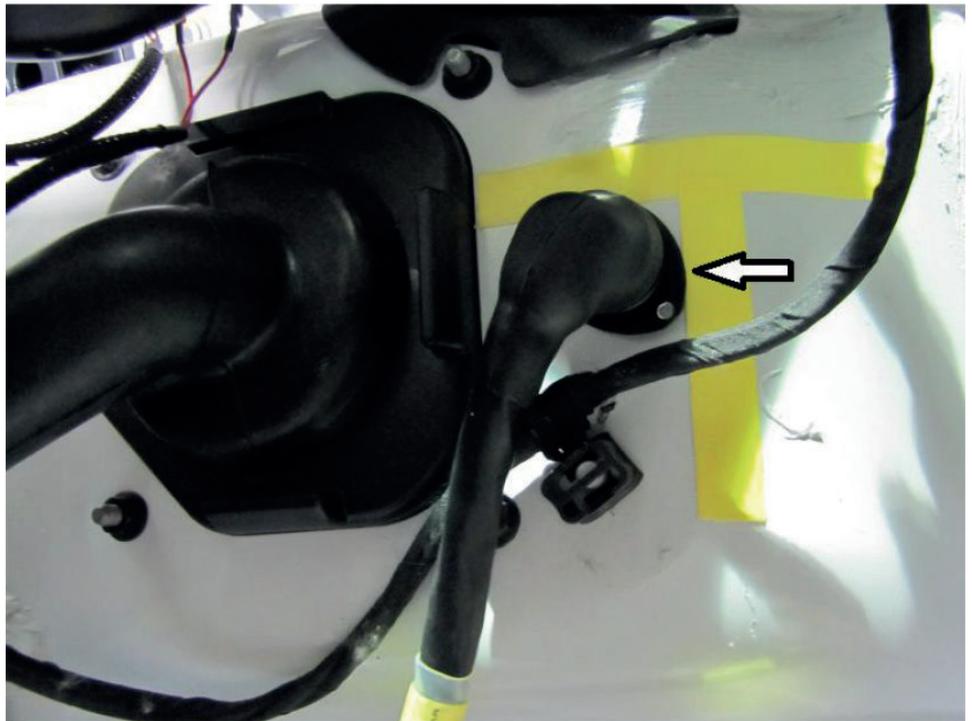
*Fig. 13:* Connection of ground cable

The loom is designed to run underneath the black transversal beam to the right.



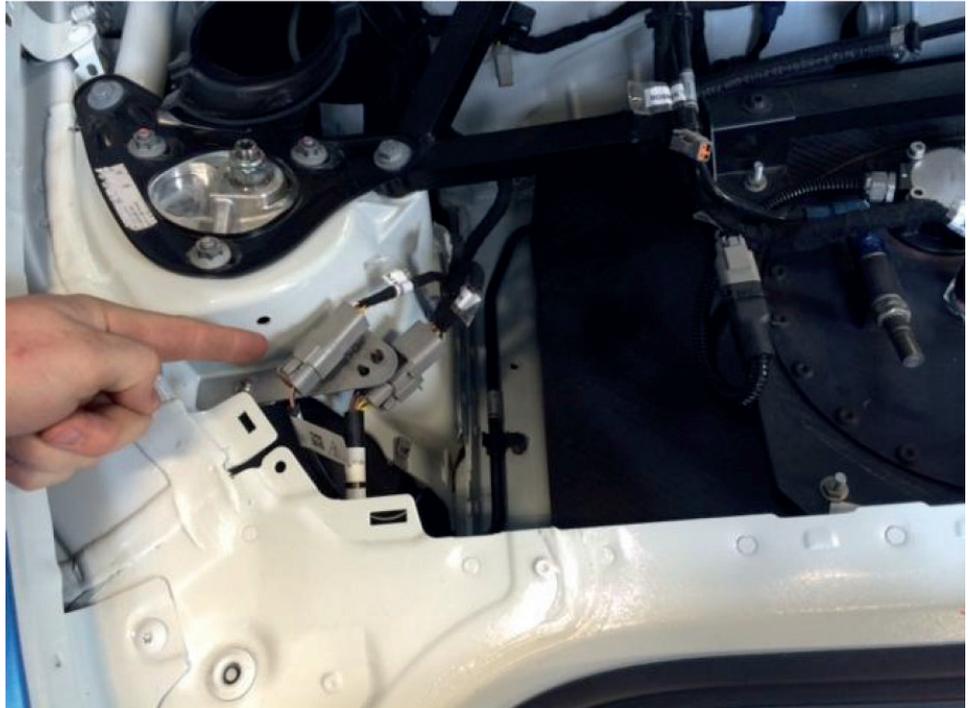
*Fig. 14: Wiring loom position at ABS exit*

Install the motorsport connector at the lead-in that goes through the fire protection wall.



*Fig. 15: Connection to the inside wiring loom*

Connect wheel speed sensors:



*Fig. 16:* Wheel speed sensor FR connector without ABS

Disconnect the connector of the wheel speed sensors. Connect the end that comes from the wheel speed sensor to the ABS loom "...in". Connect the connector that runs into the vehicle chassis loom to the ABS loom connector "...out". By doing this, the wheel speed signal is fed to the ABS and from the signal splitter back to the vehicle display. Do this for all sensors.

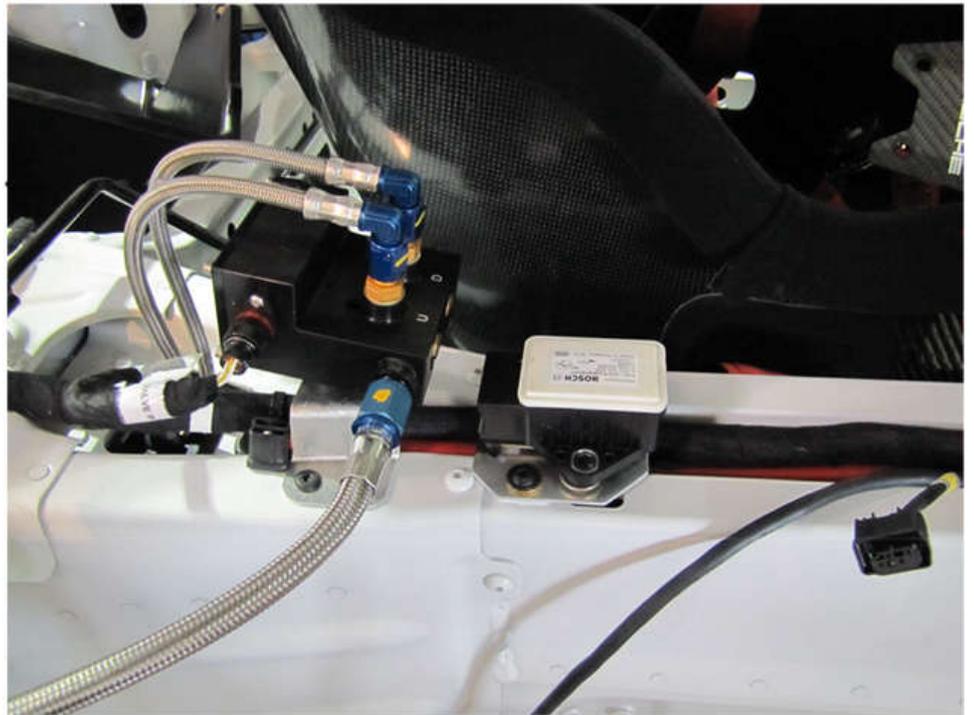


*Fig. 17:* ABS loom connected

## 5 Installation of the inside wiring loom

At first the parts of the ABS Kit for inside the car shall be installed.

Install the Yaw rate sensor (item G). Remove the screws from the loom fastener next to the driver seat on the center tunnel. Leave the fastener at its original place. Place the mounting plate (item F) for the yaw rate sensor on top of the fastener. Use a file to increase the width of the oval holes in the mounting plate (item F) slightly. Screw the yaw rate sensor (item G) onto the mounting plate.



*Fig. 18:* Yaw rate sensor (item G) on mounting plate (item F), Mounting plate on loom fastener

Install the wheelspeed signal splitter (item K), as shown on the picture in the front area on the tunnel, using velcrotape. This device duplicates the wheelspeed signal and provides it to the ABS unit as well as to the display. There is no change to the display configuration required.



*Fig. 19:* Wheelspeed signal splitter with wiring loom plugged in

Install the bracket for the fuses and the ABS diagnostic plug.

**On the Cup Gen 1**, the bracket is fitted at the glove box area. You will find two fixation points for it as shown in the picture.

Left fuse: 10 A; middle fuse 25 A; right fuse 40 A.



*Fig. 20:* Bracket with fuses and hole for ABS diagnostic plug on the Cup Gen 1

**On the Cup Gen 2**, the fuse mounting uses the same fixation points as the fire extinguisher ECU mounting. Dismount the ECU mounting and place the mounting plate behind the ECU mounting. Fix both mountings at the fixation points. Turn the mounting, so that the fuses face the center tunnel.

Remove the driver display. Fit the ABS warning light (MIL) above the display. The wiring loom is designed to fit the MIL at this location.



*Fig. 21:* ABS MIL

Don't reinstall the display before the full wiring loom installation has been completed.

Install the ABS 12-position switch (plus the corresponding sticker) and the ABS On/Off switch in the center console. The required holes are indicated on the back of the console.



Fig. 22: ABS On/Off and ABS 12-position switch

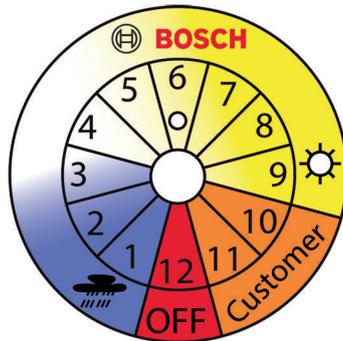


Fig. 23: Standard ABS scale (Label of rotary selector)

Fit the 2nd part of the ABS loom inside the car. The loom runs from the hole upwards behind the display (dismounted) and after that downwards behind the center console continuing on top of the center tunnel. Feed the loom underneath all the existing fixation points on the center tunnel.

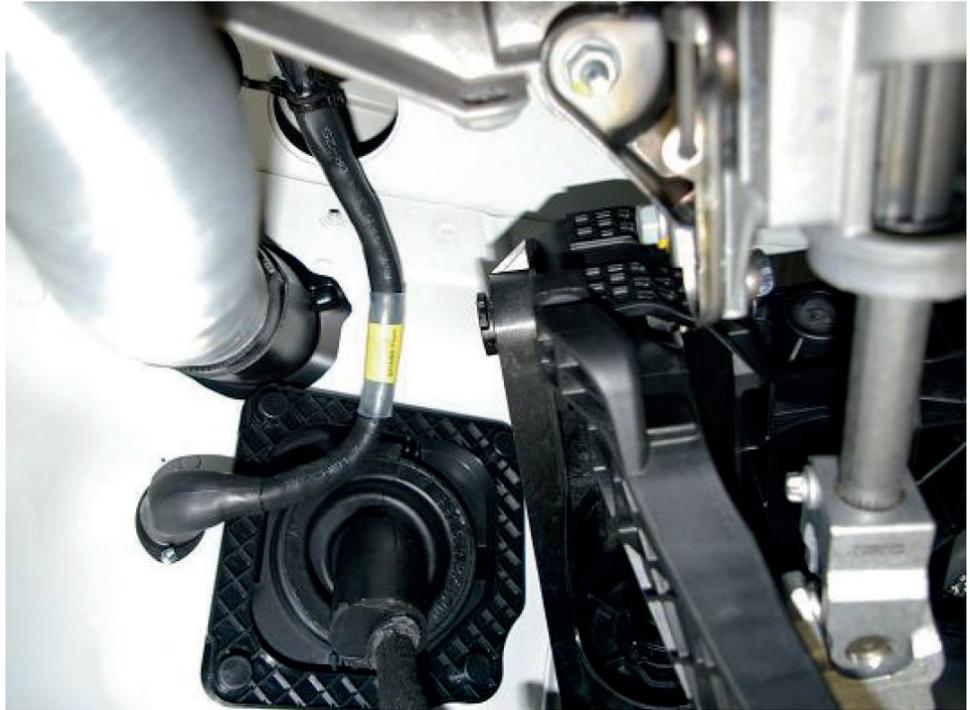


Fig. 24: ABS loom runs from connection point upwards

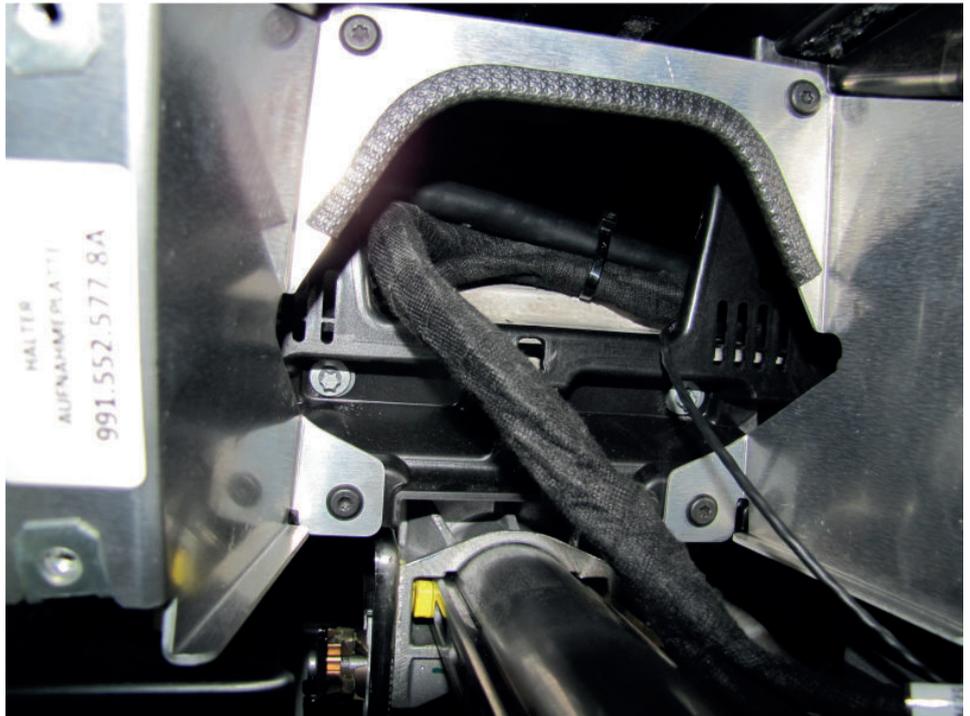


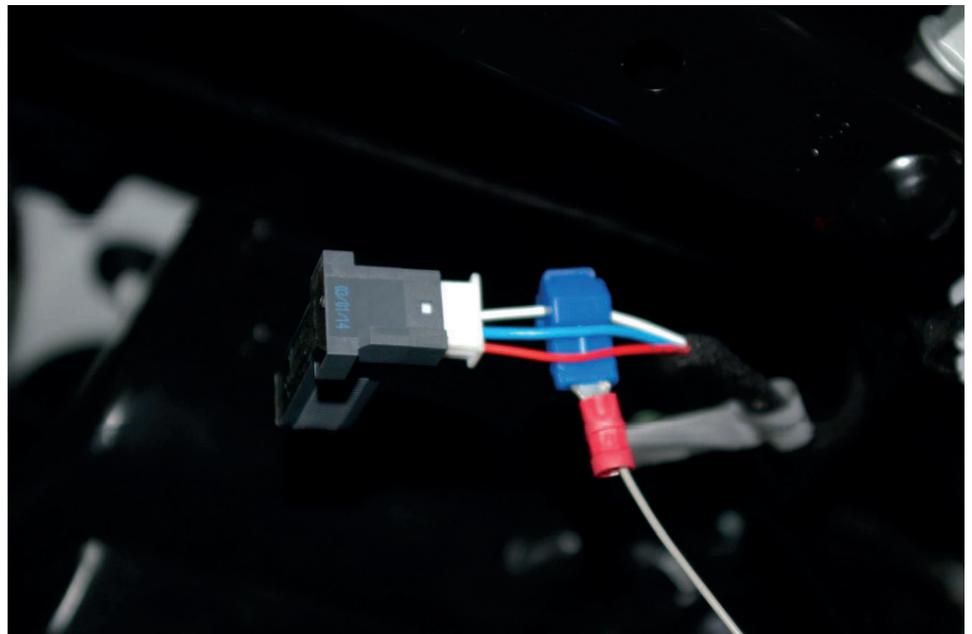
Fig. 25: ABS loom fixed behind display



*Fig. 26: ABS loom on top of center tunnel*

Fit the Diagnostic connector into the empty hole of the bracket for the fuses. Connect the On/Off switch, as well as the 12-position switch to the loom. Plug the connector for the YRS into the sensor. Plug in the connectors for the wheel speed sensors as described above.

Connect the open-end cable for the brake light switch (BLS) to the white cable from the BLS connector (output BLS signal) as in the picture below, for example by using a quick connector. After the installation, check with RaceABS, if the ABS receives a valid BLS Signal at a brake pressure of 2 to 5 bar on the front axle.



*Fig. 27: BLS connection*

Connect the main power supply for the ABS loom to the bolt for the power supply by fitting the ABS connection underneath the connector of the thick red cable as shown in the picture below.



*Fig. 28:* Power supply connection

Two connectors at the ABS loom remain unused. One is the intersection for the ABS CAN, the 2nd is the intersection to connect a data logger (e.g. Bosch Motorsport C70). They should be secured on the center tunnel.

## 6 Finishing the installation

Fix the loom tight to avoid damage due to vibrations. Reinstall parts that had to be removed for the installation. Bleed the brake system. Check the MIL by switching the ignition on and the ABS 12-position switch to position 12 (ABS function deactivated, all signals still transmitted). The MIL must come on. Run a test to make sure the ABS is operational. If you have an MSA-box available, run the Bosch Motorsport Software RaceABS to check all sensor signals, correct connection of the brake pipes and the wheelspeed sensors as well as the brake pressure sensor etc.

The Installation is completed.





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