



ABS M5 Kit Porsche 991 Cup

Installation Manual

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1 Introduction

This Installation Manual describes how to fit the Bosch Motorsport ABS M5 into a Porsche 991 Cup car. The manual is valid for the 991 Cup generations 1 and 2. Differences between these two models will be mentioned in this manual.

Please also refer to the ABS M5 Operation Manual. It is available at www.bosch-motorsport.com.

2 Content of the Porsche 991 ABS M5 Kit

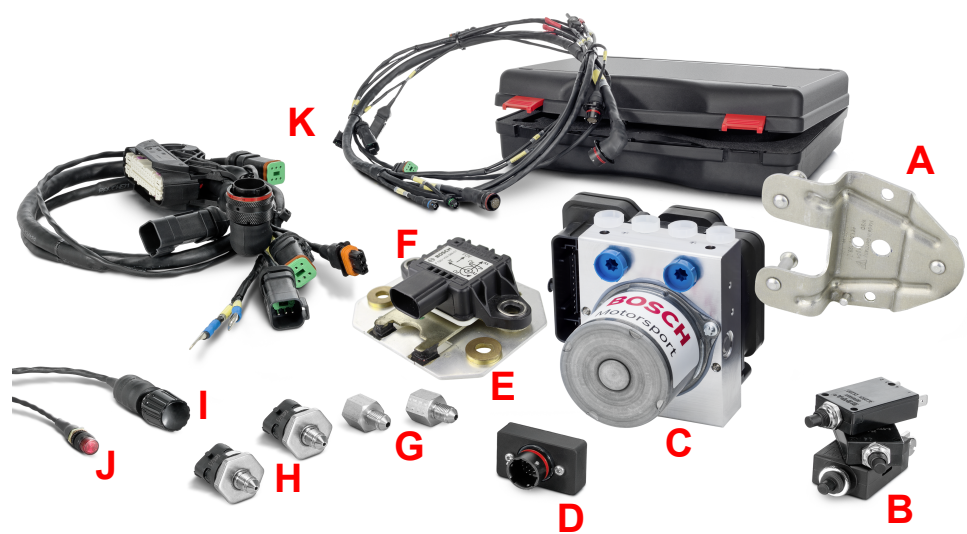


Illustration 1: ABS M5 Porsche 991 Kit Parts (Image shows not all parts of the Kit)

Item	Description
A	Mounting bracket for Hydraulic Module HU
B	Brackets for fuses
C	Hydraulic module HU
D	Wheelspeed signal splitter
E	Mounting plate for Yaw rate sensor
F	Yaw rate sensor
G	Fittings for brake pipes at hydraulic unit VR und HR
H	2 brake pressure sensors
I	12-position switch
J	Malfunction light LED
K	Wiring loom
w/o image	3 fuses, 40 A, 25 A, 10 A

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

Pos.	Description	Pc.	Part no.
1	Brake-line front left	R	1 991.355.327.8A
2	Brake-line front right	R	1 991.355.326.8A
3	Brake-line rear left	R	1 991.355.315.8A
4	Brake-line rear right	R	1 991.355.316.8A
5	Connector	R	1 991.355.650.8A
6	Bracket for connector	R	1 991.355.135.8A
7	Fillister screw MS6X12	R	2 999.218.011.03
8	Rubber element	3	7P0.614.177
9	Bracket for distributor	R	1 991.355.033.01
10	Torx screw M8X20	1	900.385.001.01
11	Hex screw M6X25	1	N .909.995.02
12	Brake-line front left	1	991.355.175.03
13	Brake-line front right	R	1 991.355.176.8A
14	Bracket	1	991.355.512.01
15	Bracket	5	999.651.409.40
16	Brake-line rear left short	1	991.355.315.03
17	Brake-line rear left long	1	991.355.177.80
18	Bracket	2	8K0.611.797.D
19	Brake-line rear right short	R	1 991.355.316.03
20	Brake-line rear right long	R	1 991.355.179.80
21	Bracket	1	991.355.507.01
22	Bracket	6	991.355.512.01
23	Connector	R	2 991.355.657.8A
			06-05-00

Illustration 2: Porsche 991 brake lines front

Two further brake pipes are required for the installation. Please contact your dealer for that.



Illustration 3: Brake Pipes (not included in the Kit)

This brake pipes replace the pipes 1 to 4. The brake pipes link Porsche bracket 23 to both ABS M5 connections, labeled with MC1 and MC2 on the hydraulic module.

3 Required Parts

Part	Usage	Quantity
Brake Pipe Front Axle MC	Brake pipe to link Porsche bracket 23 to ABS M5 item A labeled with MC1.	1
Brake Pipe Rear Axle MC	Brake pipe to link Porsche bracket 23 to ABS M5 item A labeled with MC2.	1

4 Installation of the ABS M5 Kit

4.1 Installation of the hydraulic parts

Fit the mounting bracket item A to HU. Use the M10x1 screw, which comes with the kit.

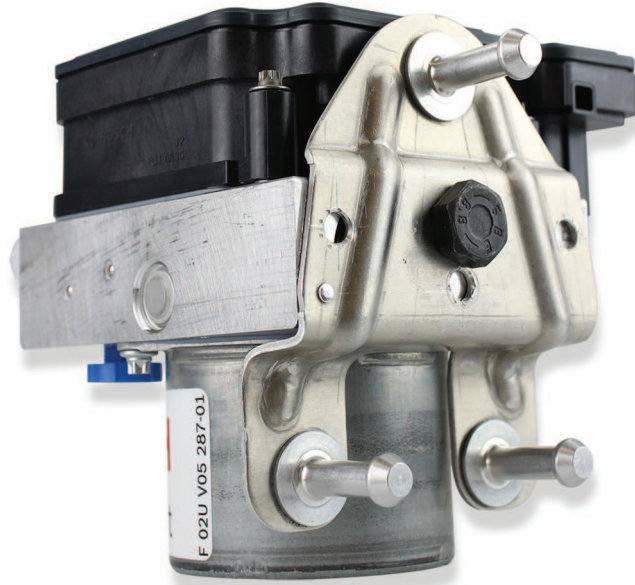


Illustration 4: HU with Bracket

Remove the front left inner wing (plastic part).

Refer to picture "Porsche brake parts" in the previous chapter Content of the Porsche 991 ABS M5 Kit [► 4]. Disconnect brake pipe 12, 13, 16, 19 from connector 5.

Remove the brake pipes 1, 2, 3, 4, as they are no longer needed. Pull upwards on components 5 and 6 to remove these. These are no longer needed.



Illustration 5: Original Cup parts removed

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

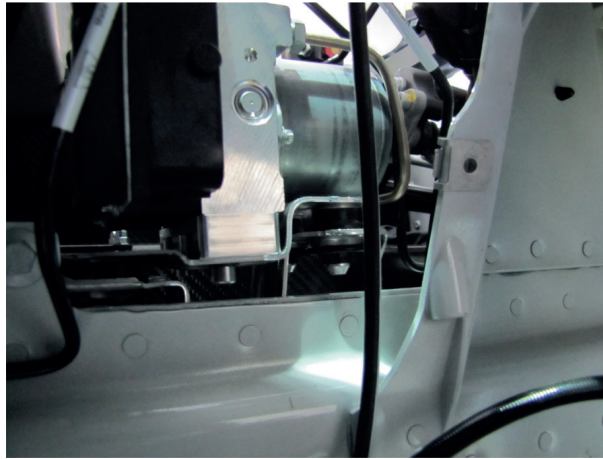


Illustration 6: HU pushed into bracket

Attention: This picture is outdated and will be renewed soon.

Install the two new master cylinder brake pipes – **pipes are not included** – as shown in the following picture. Connect the black 991 Cup brake pipes while also fitting the two steel adapters for VR and HR. Make sure you fit the pipes into the correct port which are labeled: F = front, R = rear, R = right, L = left.

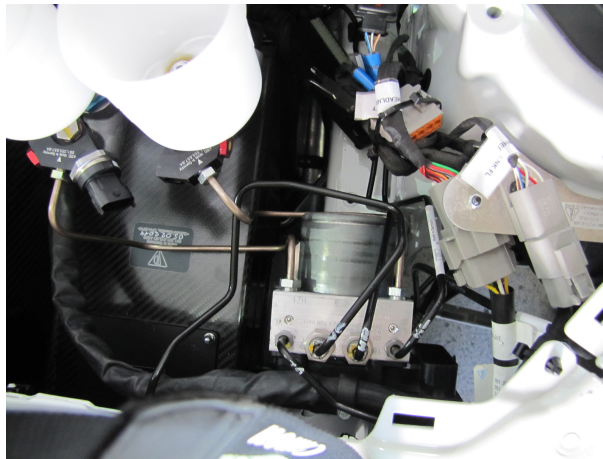


Illustration 7: Brake pipes connected

Attention: This picture is outdated and will be renewed soon.

Prime the ABS brake pressure sensor with a syringe and install one of them on each brake circuit connector. This is the last step of the installation of the brake hydraulics.

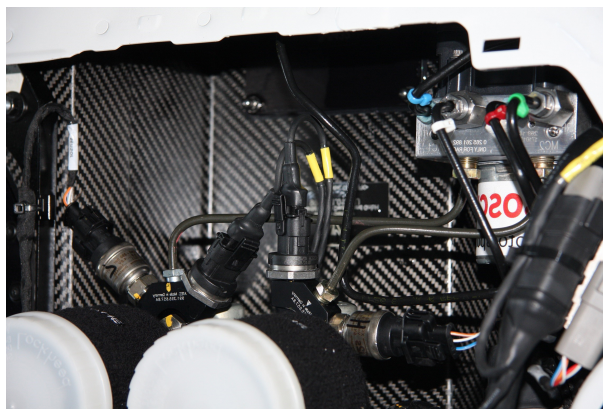


Illustration 8: ABS brake pressure sensors installed

4.2 Installation of wiring loom and electrical components

Now install the two-piece ABS wiring loom.

Installation of the front wiring loom

Drill a hole of $d = 26$ mm to feed the ABS wiring loom through the front bulk head. The 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 has approximately a diameter of ca. 1.5 mm. File these notches out.

Mark the correct vertical positions for the two holes for the connector fixation and drill two holes.

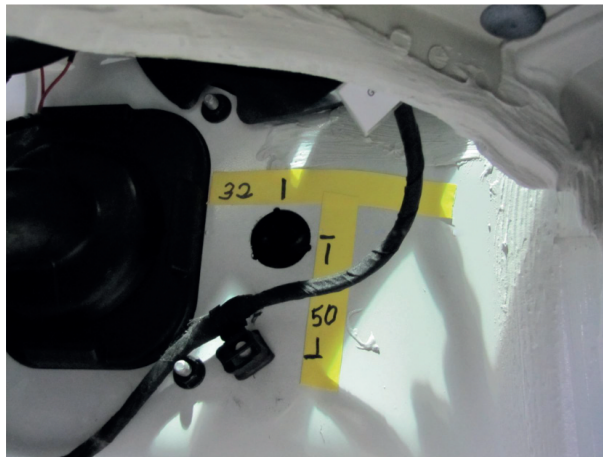


Illustration 9: Position of hole in bulk head

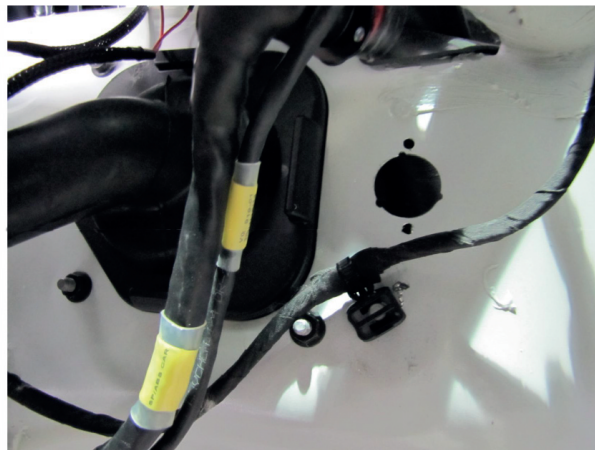


Illustration 10: Position of fixation holes, vertical

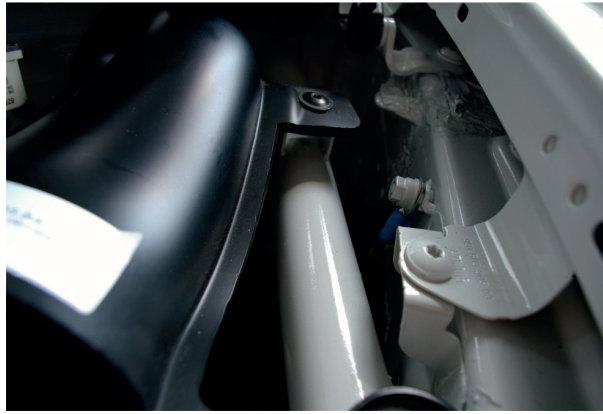


Illustration 11: Connection of ground cable

The installation of the front wiring loom starts from the ABS connector.

Connect the main connector to the ABS unit.

Connect the pressure sensors. Pay attention, to connect the correct brake circuit.

Connect the ABS ground cable at the same bolt as other ground cables are connected at the bulkhead nearby. The loom is designed to run underneath the black transversal beam to the right. Mount the connector to connect to the inside loom into the bulkhead by using the delivered nutplate.

Connect the wheel speed sensors: Disconnect the connector of the wheel speed sensor. Connect the end that comes from the wheel 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. Repeat this for front left.



Illustration 12: ABS loom for front boot area



Illustration 13: Wiring loom position at ABS exit



Illustration 14: Wheel speed sensor FR connector w/o ABS



Illustration 15: ABS loom connected

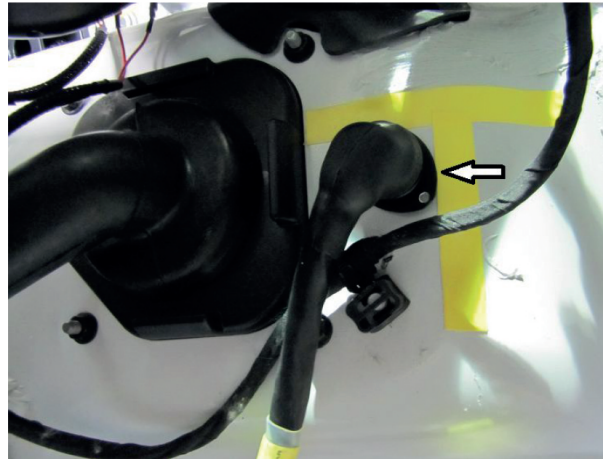


Illustration 16: Connection to the inside wiring loom

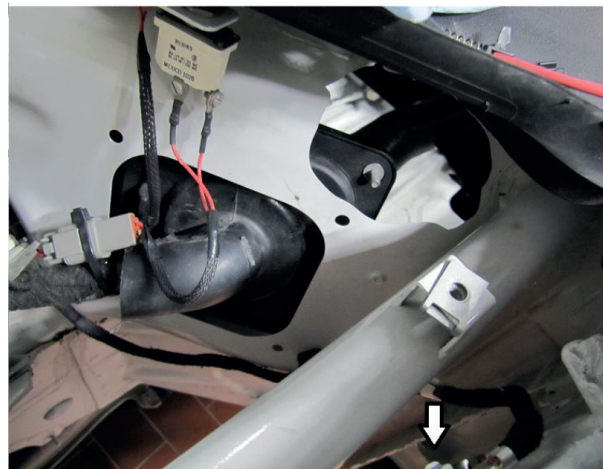


Illustration 17: Arrow shows the Ground point

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 F. 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 E for the yaw rate sensor on top of the fastener. Use a file to slightly increase the width of the oval holes in the mounting plate E. Screw the yaw rate sensor F onto the mounting plate.

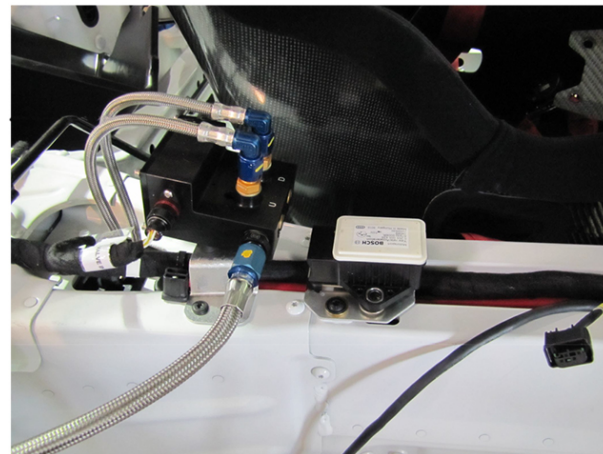


Illustration 18: Yaw rate sensor F on mounting plate E. Mounting plate on loom fastener

Attention: This picture is outdated and will be renewed soon.

Install the wheelspeed signal splitter D 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.



Illustration 19: Wheelspeed signal splitter with wiring loom plugged in

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

In 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.



Illustration 20: Bracket with fuses and hole for ABS diagnostic plug in Gen. 2

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. Only put the display back after 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.



Illustration 21: ABS MIL



Illustration 22: ABS On/Off and ABS 12-position switch

Fit the 2nd part of the ABS loom inside the car. The loom runs from the hole upwards behind the display 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.



Illustration 23: ABS loom runs from connection point upwards

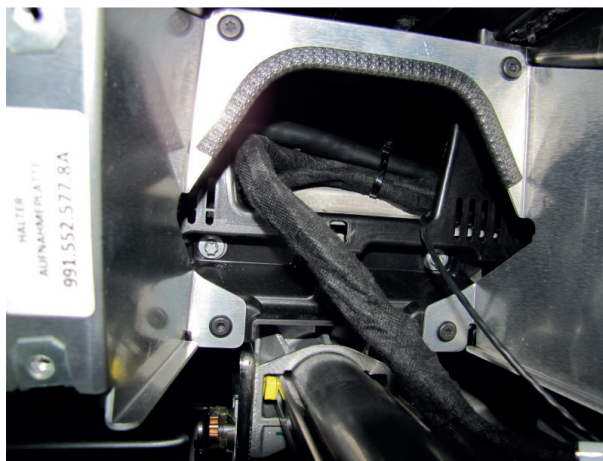


Illustration 24: ABS loom fixed behind display



Illustration 25: ABS loom on top of center tunnel

Connect all ends of the ABS loom to the required switches/sensors etc.

Mount the diagnostic connector with the delivered nutplate into the free hole of the bracket at the passenger door or at the bracket for the fuses. Connect the On/Off switch to the loom as well as the 12-position switch. Plug the connector for the YRS into the sensor. Plug in the connectors for the wheelspeed sensors as described above.

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



Illustration 26: Power supply connection

The connector C-Sport Logger at the ABS loom remains unused and can be used by the customers if needed to connect the ABS CAN to the vehicle or to an additional logger. The connector should be fixed on the center console.

The pinning is as follows: Pin 1 – 12V unfused, Pin 2 – GND, Pin 3 – 12V fused with 10A, Pin 4 – CAN High, Pin 5 – CAN Low.

4.3 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 ABS is operational.

If you have a 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 finished.

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