










doorboards with soundsystem, BMW X 5

Technical Details:

Car Features:	4-doors, also for models with doorairbag, electrical window controls
Model/Year:	E53 (05.2000)
Setup-Advice:	To reach the best performance, the setup of the radio (Bass, Loudness etc.) should be null or neutral.
recommended amplifier power:	from 2x 100 - 200 Watt / 2 Ohm



Parts list:

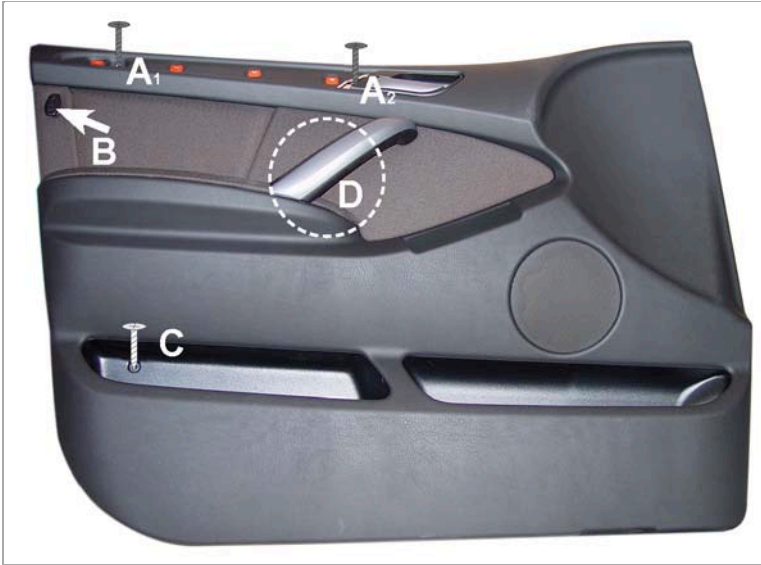
1x	Doorboards (right+left) BMW X5 E53 SUV, covered
1x	grills (right+left) BMW X5 E53 suv, cover: acoustic fabric
2x	XE 26 - Neodymium-Tweeter ø 26mm (1") incl. mounting device, Hex nut M4, washer ø 12mm
2x	XM 110 - High-End-midrange driver, ø 100mm (4"), incl. adapterring
4x	XM 165 - Low midrange driver, power woofer ø 165mm (6,5")
1x	3-way frequency crossover (right+left) BMW X 5 - part no. 45163
1x	Hardware bag, BMW X 5 - part no. 45163/41163
4x	 flat head srew M4 x 25
2x	 flat head srew M4 x 30
16x	 hex nut M4
4x	 sheet metal nut 4,2mm
2x	 spax screw 5 x 100
2x	 spax screw 5 x 90
3x	 Velcro strip à 2,5 cm (reserve)
10x	 washer 12mm
6x	 washer 20mm

Garantee:

We grant a manufacturers guarantee of 2 years starting from the date of purchase of the doorboard or sound system from the dealer. Within this guarantee period to our choice we either repair or replace free of charge all defects due to material or workmanship. Exempt from this guarantee are damages due to improper use, wear and tear or damages which have to be led back on wear or interventions by third parties. The guarantee does not cover subsequent damages or such defects that only insignificantly impair the value or the usability of the doorboard/sound system. The guarantee does not cover damages due to external influences. Doorboards with additional or wrong assembly drill holes cannot be returned. These are damages to the doorboard which cannot be repaired again.

1 Disassembly of the door card

1.1 Roll down window completely.



1.2 Pry out the design cover and unscrew the Torx screws underneath. **(A1+A2)**

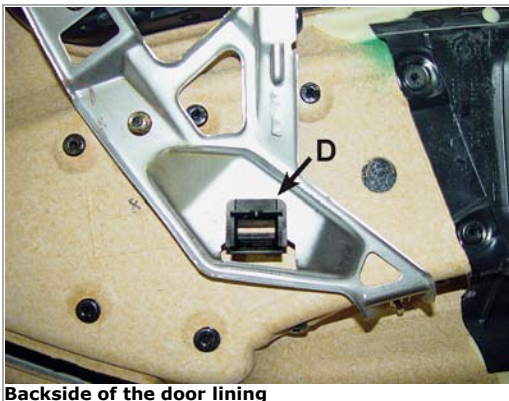
1.3 Unclip the airbag cover **(B)** and unscrew torx screw underneath.

1.4 Remove the screw **(C)** in the back tray.

1.5 Unclip all around the door clips.

1.6 Unclip the upper side of the door card.

1.7 Pull the door card upward away. Please consider the fastening point **D**.
(Clip keeps hanging in the door).



Backside of the door lining

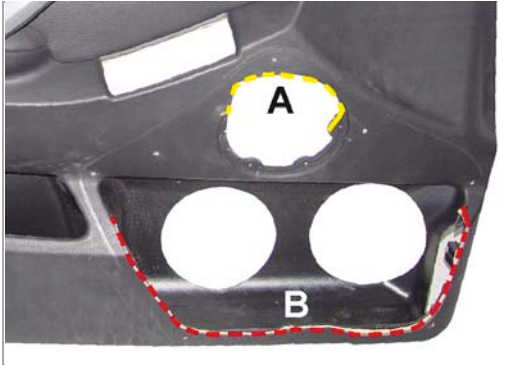
1.8 Remove the Bowden pull wire of the door latch lever.

1.9 Disconnect the plug for the switch module

1.10 Disconnect the original loudspeaker plugs and dismount the original speaker.

2 Handling of door card

2.1 Place the door card on a plane surface.



2.2 For a plane alignment of the doorboards start with the cut-out **(A)** of the angled midrange.

2.3 Cut out the tray **(B)** according to figure.

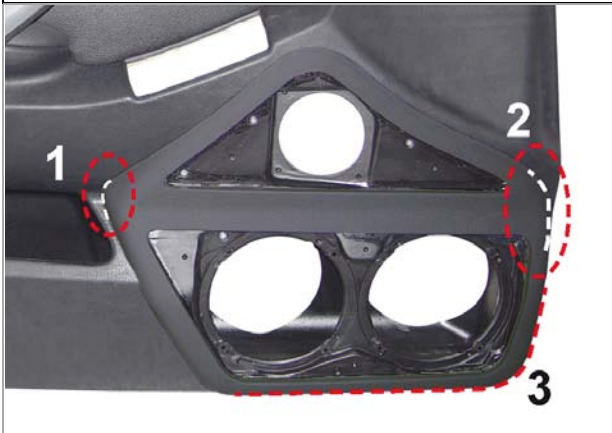
⚠ The fastenings of the door card must not be removed.

3 Handling of door card: Doorboard alignment

3.1 Dismount the loudspeakers attached to the doorboard for transport protection --> retain the screws for later assembly.

3.2 Place the doorboard without speakers on the door card and align it:

🔧 Only precise alignment of the doorboards with the door card warrants optimal fit!



3.3 Reference points for alignment:

Reference point 1 + 2:

Adjust the "noses" of the doorboard directly on the recessed part of the door card.

Reference line 3:

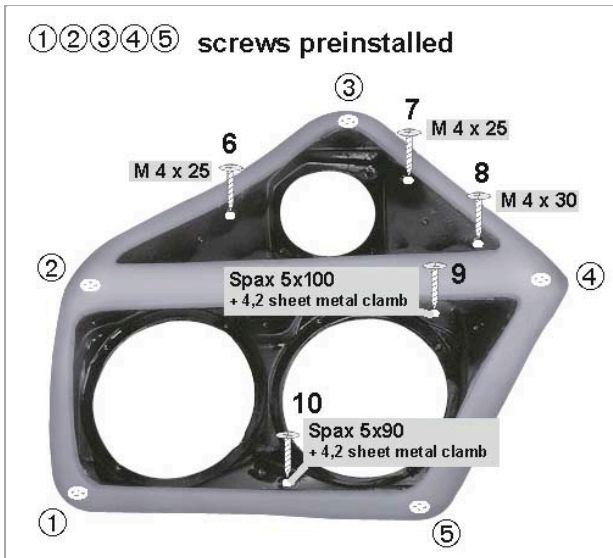
The lower edge of the doorboard is flush with the lower edge of the door card.

🔧 In order to align the doorboard first make the drills for the screw fastenings 1-5 already premounted (see step 4).

4 Fastening points

4.1 Mark the fixing points 1-5_ premounted in the doorboard:

Pressing the doorboard onto the door card leaves a visible impression of the screws - the fastening positions of the door card.



4.2 Remove the doorboard and drill the bore holes for the screws according to the marks set before - use a 6mm drill.

4.3 Realign the doorboard.

4.4 Marking of the pre-drilled fastening points 6-10:

Use a thin awl to set the marks on the door card.



4.5 Remove the doorboard and drill the bore holes for the screws according to the marks set before - use a 6mm drill.

5 Handling of door card cut-outs

The cut out behind the speakers are providing the required full volume of the car door:



5.1 Mark the cut outs for the woofers on the door card. Enlarge them approx. 1cm (= approx. outer diameter of the woofers)

⚠ IMPORTANT! Check all cut-outs marked:

👉 The fastenings of the doorboard must have to be screwed with the door card.

👉 The fastenings of the door card must not be removed!

5.2 Remove the doorboard again and cut out the positions marked on the door card. Use a compass saw.



6 Fastening Doorboard

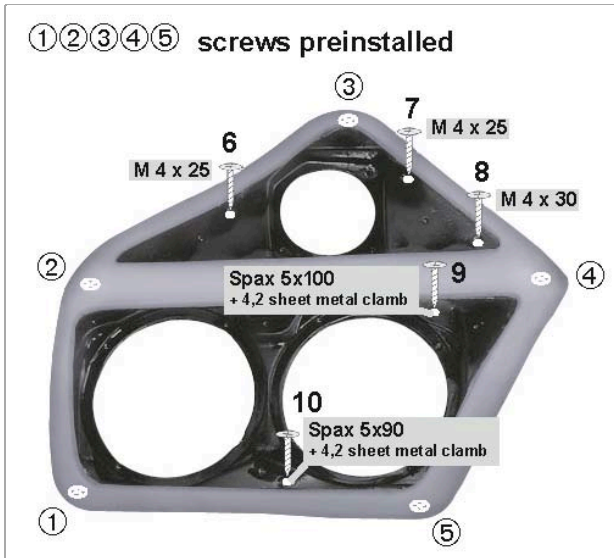
6.1 Screw in the screws supplied with. Affix the doorboard to the door card.

Screw all screws only hand-tight. Secure all screws with washers and nuts on the backside of the door card (Spax screw with sheet metal clamp).

TIP: Treat the screw thread with a liquid for screw-in type fuse. (Speaker vibrations may loosen the screws after some time)



Example



6.2 ⚠ Check the length of screws and staybolts:

In order to avoid damages to the car door, check all length of the staybolts / screws on the backside of the door card once again and possibly shorten staybolts or change screws.

6.3 Check again for precise fit and tighten the screws.

🔧 All cutting edges of the doorboard must fit to the door card snugly all around without gap!

7 Tweeter installation - original mount of the mirror triangle with mounting device

7.1 Dismount the mirror triangle and original tweeter. Unplug the cable connection. (Original connecting cables and tweeter will not be used any more).

7.2 Remove the tweeter out of the catch:

---> bayonet catch: turn to the right and pull out of the holding device - by means of the screw.

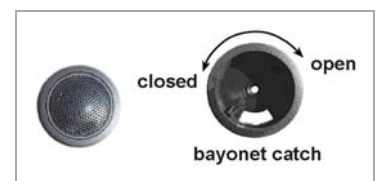
7.3 🛠 Adapt the original holding device on the backside of the mirror triangle with the JEHNERT tweeter.

Insert the tweeter and affix with hot melt adhesive.

7.4 Adapt the JEHNERT-tweeter cable with the speaker cable (1,5-4 qmm), length of cable up to where the crossover is installed in the door.


🔧 In order to avoid vibration noise insulate all cables with insulating tape e.g.

7.5 Reinstall the mirror triangle.



8 Adaptation amplifier - crossover circuit / Insulation of the car doors

8.1 Carefully remove the moisture protection foil.

8.2  **Insulation of the car doors** - Important tips against vibration-noise (see attached installation recommendation)

8.3 Adaptation amplifier - crossover circuit:

Lead 1x speaker cable (1,5 - 4 qmm) from amplifier to the crossover circuit:
mount of crossover circuit: car door

 **In order to avoid vibration noise secure all cables with insulating tape e.g.**

8.4 Reinstall the moisture protection foil to fit precisely.

8.5 For the bass performance the speakers are using the volume of the car door:
Place the door card on the car door as template and mark the position for the woofers on the moisture protection foil. Take away the the door card and cut out (**u-form see fig.**) behind the woofers. Stabilize the lateral cutting edges in order to avoid vibration noise (e.g. use a adhesion tape)



9 Insulation of the door card

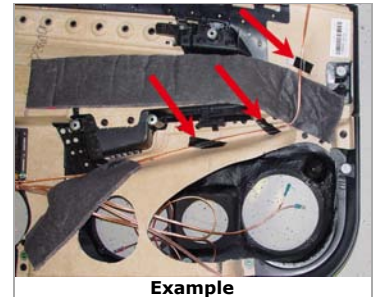
 **In order to avoid vibration noise insulate all cables with insulation tape e.g.**

9.1 Insulate the backside of the door card e.g. with self-adhesive vibration suppressing insulation fleece – see attached installation recommendation.


 **ATTENTION / danger ! No insulation behind the side-airbags!**

 **IMPORTANT:**

No insulation material behind loudspeaker, door latch lever and fastening points of the door card!

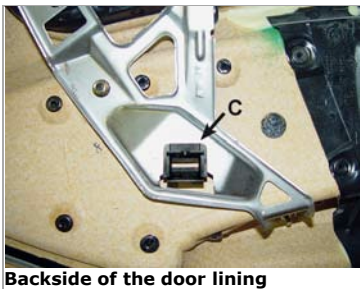


10 Installation of the door card onto the car doors

10.1  **Check up length of the screws and bolts:**

In order to prevent damages of mechanic parts of the car doors, please check once again the length of all bolts and screws on the back side of the door card! No touch with any mechanic parts of the car doors! (please shorten if necessary)

10.2 Pull the clip of fastening point **C** off the car door and insert it in the door card.



Backside of the door lining



10.3 Clip in the door card on fastening point **C** (from the front side).

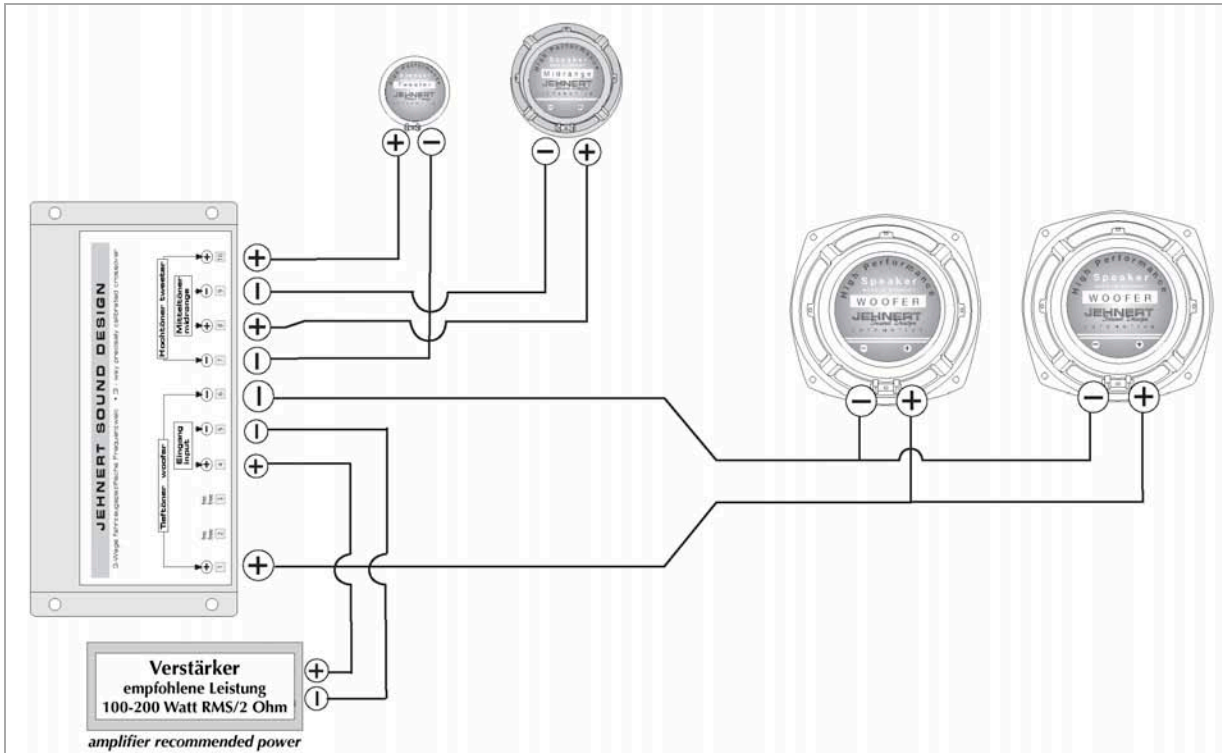
10.4 Fit the door card in contrary order of succession.

 **Final inspection after installation of the door card:**

Please check all functions of the operating elements such as seat adjustment, opening of the glove box, window winder etc.

11 Installation of crossover circuit + speaker connection

11.1 Precable crossovers - see wiring diagram.



11.2 Install crossover – without housing; covered with foamed material - in the hollow space behind the door card (see fig.) and ensure precise fit.

⚠ *Important:
Protect the sheet bar against humidity and observe that the sheet bar does not touch any metal parts – danger of short circuit!

11.3 Connect all speakers to the crossover circuit according to the wiring diagram.

11.4 Insert woofer and midrange.

11.5 Notice: You should check the polarity of all woofers after having connected them to the crossover circuit with a 9 volt battery (input cable on the side of the amplifier):

pole of the crossover circuit input + to + of a 9 Volt battery
pole of the crossover circuit input - to - of a 9 Volt battery

All woofers must move uniformly!

👉 Wrong polarity of a woofer can totally equalize the bass sound!



12 Installation of the doorboard grills

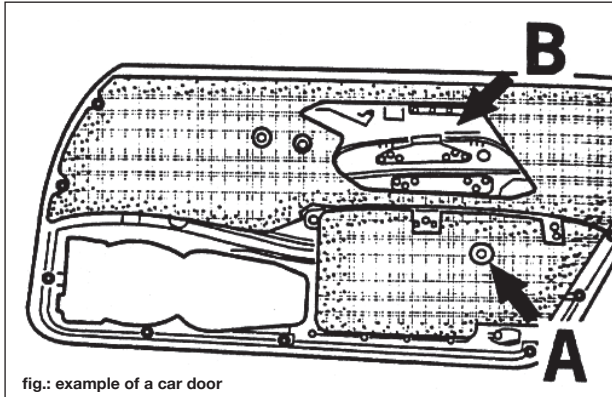
12.1 Carefully press grill with Velcro fasteners onto the doorboards:

👉 IMPORTANT: The Velcro fasteners stick very strongly!

Therefore only press the grills to the doorboard at the end of the installation of the doorboard and the soundsystem!

12.2 **👉 Further tips see attached installation recommendation.**

Insulation of the door lining



Attention / Danger !!!
No insulation behind
the side-airbags (fig. "B")



Important:
No insulation material behind
 - loudspeaker
 - door latch lever
 - drill ahole for the installation clip (fig. A)

Important tip:

the use of woofer in the door lining may cause vibrations which lead to annoying rattle noises in the car door

Preventive measurements against vibration noise:

- use our self-adhesive insulation fleece (art.no.: 27000) or a foam material for the backside of the door lining (see fig. above) or
- stabilize the backside of the door lining by means of a special material (Glass Fibre Filler or stiffening material)
 important: keep the cut-outs for the door-airbags and speakers open
- affix the *backside of the inner door metal with self-adhesive asphalt mats (see fig. *)
- by knocking on the car door, vibrations caused by mechanic parts (e.g. Bowden pull wire etc.) and wiring harness may be found out. Cover these parts with foamed material, felt or something like that
- cut off overlapping cable tie (rattle noise)
- adhere felt or foamed material under the original wiring harness



fig.: example of a car door

front side of
 inner door metal

door metal outside
 = back side of the
 inner door metal

Installation of the speaker's grill

Precisely align and carefully press grill into the Velcro fasteners.

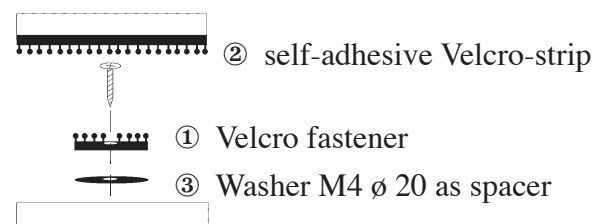
 **The Velcro fastener makes a crackling sound when it is closed correctly.**

Our Tip:

If the panel cannot be pressed on completely at some points. . .

Cause: the special form at these points and the resulting differences in material cross section of the grill.

Solution: the distance can be levelled out with spacers ③ under the Velcro disc.
(Spacers included with the screw kit)



6. Removing the grills:

The Velcro fasteners stick together very strongly! The grills can be removed anytime by carefully lifting them off. Please, avoid any way of forceful yanking at the grills. It could break!

Self-help and fault diagnosis

The following notes serve to help troubleshoot and eliminate faults or malfunctions on your own. If the following measures are not effective, please call us. **Info-Hotline Tel. 0049-7158/95699-0**

What can it be if ...	possible cause/ solution
...it doesn't sound right	<ul style="list-style-type: none">· wrong polarity on the subwoofers (see „speaker connection“)· crossover circuit attached wrong (see „wiring diagram speaker connection“)· door lining and moisture protection foil not cut out (see. „installation of the door lining“ and „installation of the speakers grill“)· amplifier doesn't have enough power (see. „technical details“)· amplifier connection
...it doesn't fit correctly	<ul style="list-style-type: none">· door panel customization (see „handling of the door lining“)· installation of the panels on the door lining
....grills do not hold	observe notes (see „installation of the speakers grill“)
vibrations	observe notes (see „insulation of the door lining“)