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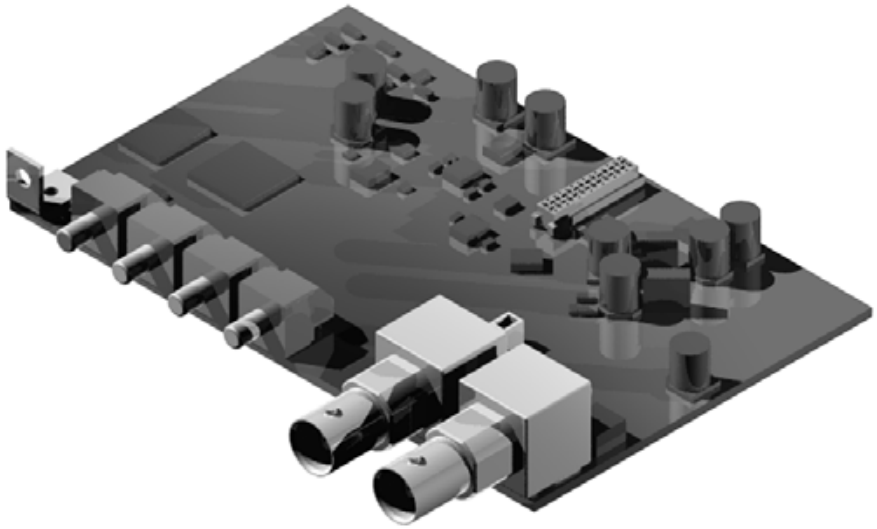
DIM 1 Digital Input Module

Fitting instructions for the KH 420



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Contents

The DIM 1 digital input module

Thank you for purchasing a Neumann DIM 1 digital input module. The DIM 1 is designed to complement Neumann‘s extensive range of monitors. The DIM 1 brings digital interconnectivity and delay for time-of-flight and lipsync adjustment.

Package contents

1 DIM 1 digital input module
1 foam seal
1 digital input board
4 Torx 8 screws
4 toothed lock washers 3.2 mm DIN 6798
2 1/2" nuts for BNC
2 toothed lock washers for 1/2" nuts
1 ribbon cable with 14-pin connectors
1 cable with 2-pin connectors
2 cable ties
1 instruction manual

Required tools

- manual torque tool (0.5 - 1.0 - 2.6 - 3.0 Nm)
- Torx T8, T10 and T25 tools
- 14 mm wrench socket
- medium strength thread locking compound, e.g. Loctite 290

Fitting instructions

CAUTION
Danger of injury and material damage if the product is not installed by a specialist or due to tipping/dropping of the product!

If improperly mounted or if the product tips/drops, injury to persons or damage to objects or the product itself may occur.

- Have the installation carried out by a specialist according to local, national and international regulations and standards.
  Due to his/her technical training, know-how and experience as well as knowledge of relevant provisions, regulations and standards, the specialist must be able to assess assigned tasks, recognize potential hazards and ensure appropriate safety measures. The following safety and mounting instructions are addressed to this specialist.
- Work with a second person.
- Place the loudspeaker on a sturdy and flat surface with sufficient load-bearing capacity, e.g. a table.

CAUTION
Material damage due to incautiousness!

Incautious actions may scratch delicate surfaces or damage the drivers.

- Always use soft working surfaces, e.g. non-abrasive foam material.
- Always work carefully, especially when removing the woofer ring.

CAUTION
Damage to the product due to electrostatic discharge!

The components of the DIM 1 can be damaged or destroyed by electrostatic discharge.

- Ground yourself before unpacking the DIM 1, e.g. by using a grounding strap or by touching a grounded metal part like an unpainted plumbing pipe etc.
- Do not remove the ESD protective packaging until immediately before installing the DIM 1.
- Use a grounded table mat when placing the DIM 1 or the backplate on the working surface.
- Never touch the components on the DIM 1.

Switching the loudspeaker off

- Switch off the KH 420. Disconnect it from the mains power supply and disconnect all audio signals (see KH 420 operating manual).
- Wait at least 1 minute until all capacitors of the loudspeaker electronics have fully discharged.

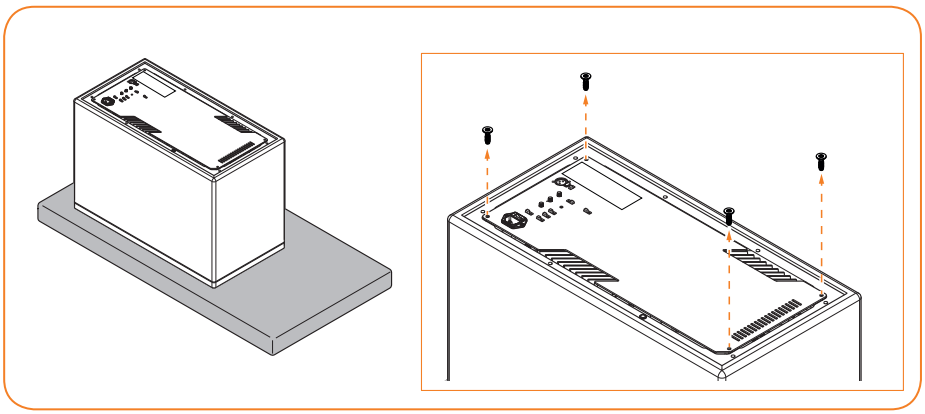
Removing the woofer ring

- Carefully place your fingers on either side of the inside of the woofer ring, press outwards, and then pull towards you.
- Make sure not to damage the bass driver.

Removing the backplate with the loudspeaker electronics

- Place the loudspeaker face down on a sturdy, flat and soft surface.
- Unscrew and remove the four Torx 25 cylinder head screws and washers from the backplate (see figure).

  Keep the screws and washers. You will need them later for re-installing the backplate.

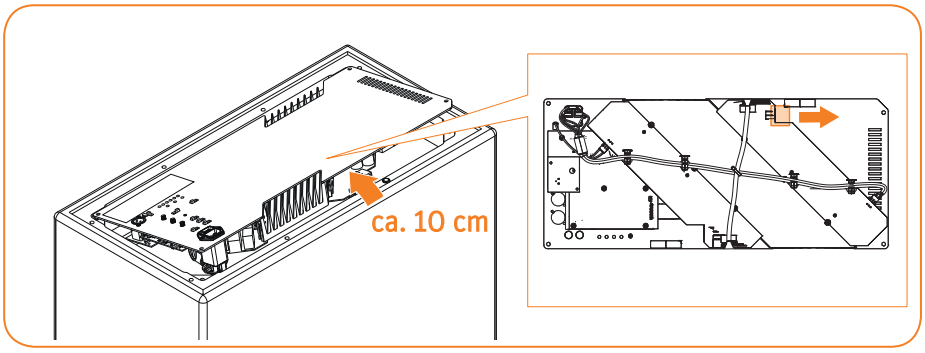


CAUTION
Danger of injury due to sharp edges!

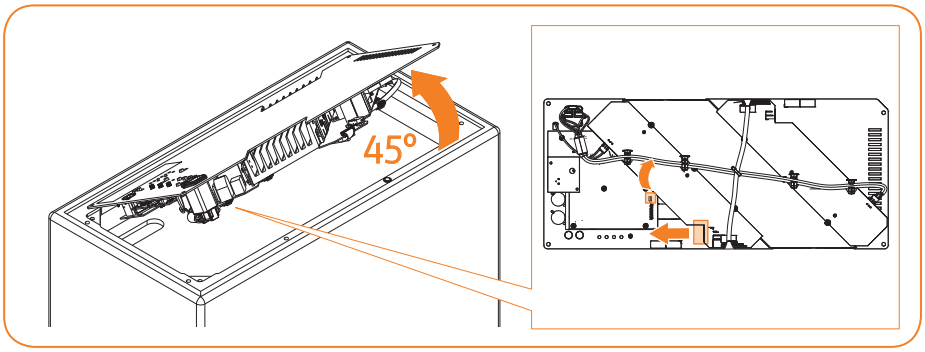
The cooling fins of the backplate may have sharp edges.

- Do not touch the cooling fins.

- Lift the backplate upwards by approx. 10 cm, as shown below.
  For that purpose you can use a wood or plastic wedge. Do not use a metal wedge.
- Carefully pull the white 3-pin connector of the bass driver cable off the loudspeaker electronics.



- Tilt the backplate to an angle of 45° (approx. 20 cm).
- Carefully pull the white 4-pin connector of the treble and midrange driver cable off the loudspeaker electronics.
- Carefully pull the small white connector of the display cable off the loudspeaker electronics.

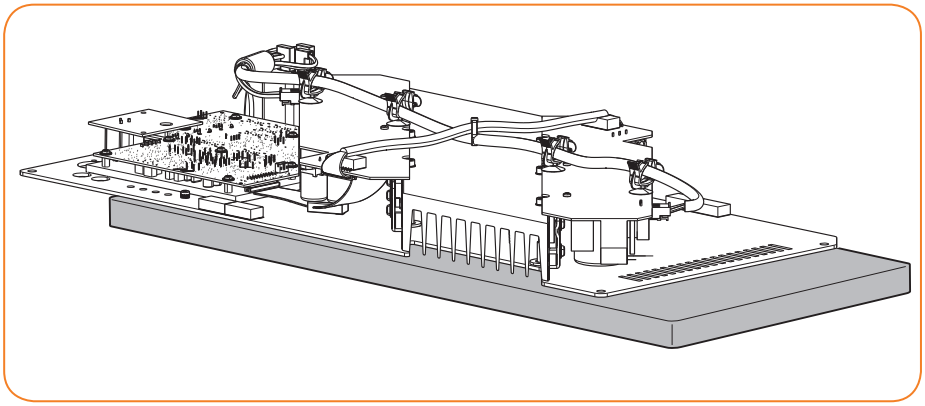


CAUTION
Material damage due to wrong material placement!

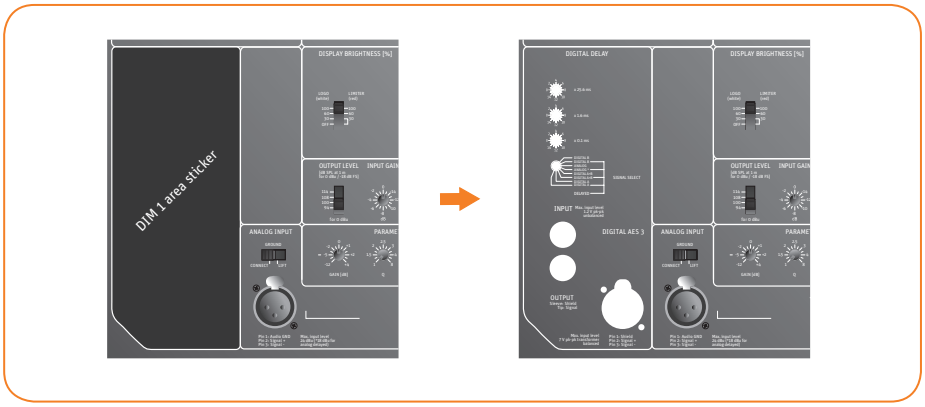
The loudspeaker electronics and the backplate are equipped with sensitive components. Control knobs and switches on the backplate might break.

- Never place the backplate with the loudspeaker electronics facing downwards.
- Place the backplate on a surface in such a way that the control knobs and switches on the backplate cannot be damaged by the surface.

- Carefully lift the backplate with the loudspeaker electronics out of the loudspeaker housing.
- Place the backplate with the printed side down on a soft surface, so that the area with the control knobs and switches overhangs the surface.



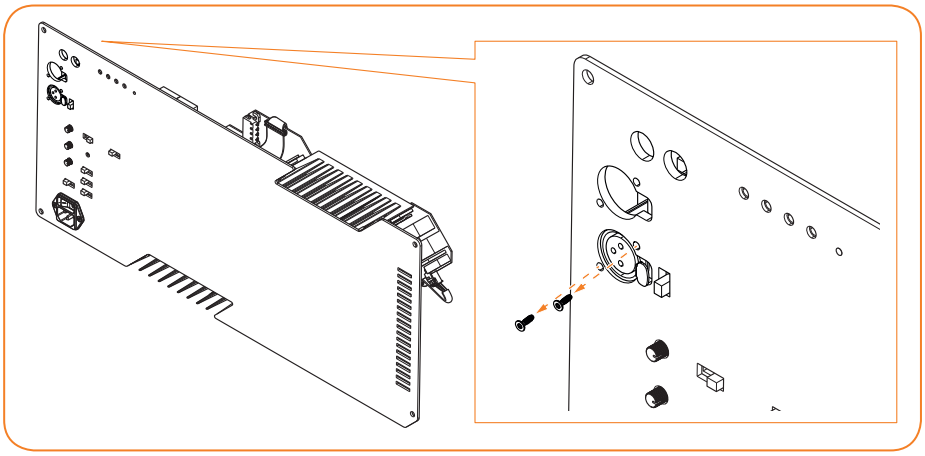
- Carefully remove the sticker from the DIM 1 area of the backplate. Do not remove the other smaller sticker.



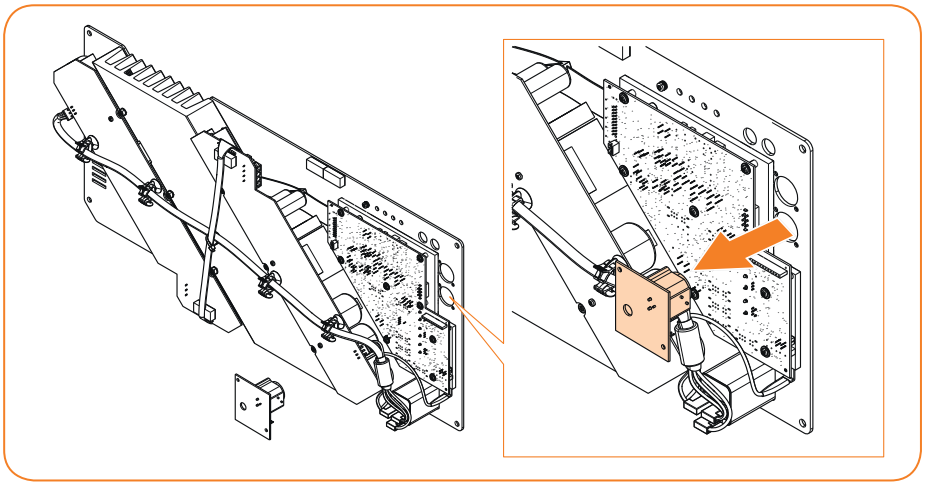
Removing the analog input board

- ▶ Lift the backplate into an upright position.
- ▶ Unscrew and remove the two Torx 8 screws next to the ANALOG INPUT socket (XLR), as shown below.

  Store the screws, together with the removed analog input board, in a safe place.

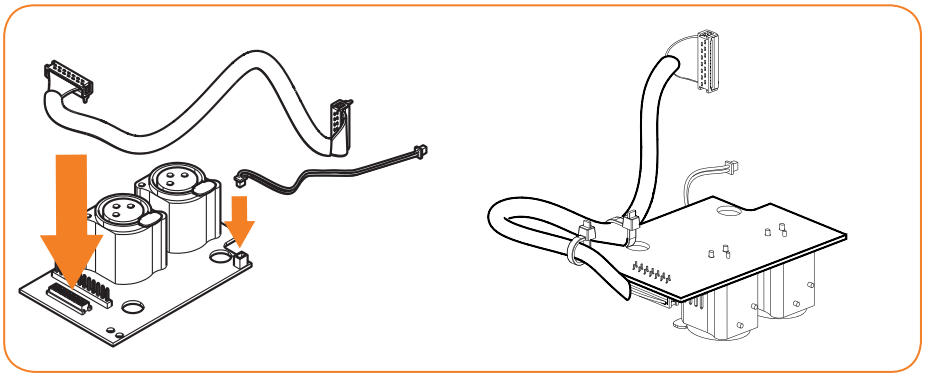


- ▶ Carefully pull the analog input board off the loudspeaker electronics, as shown below.

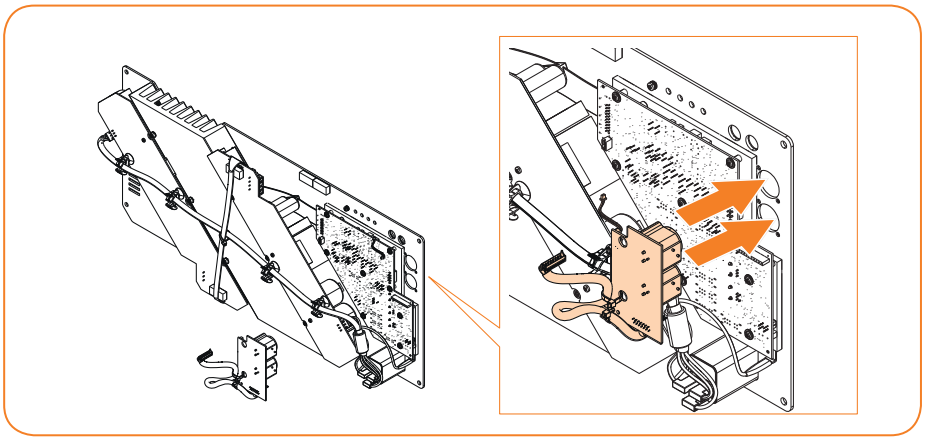


Installing the digital input board

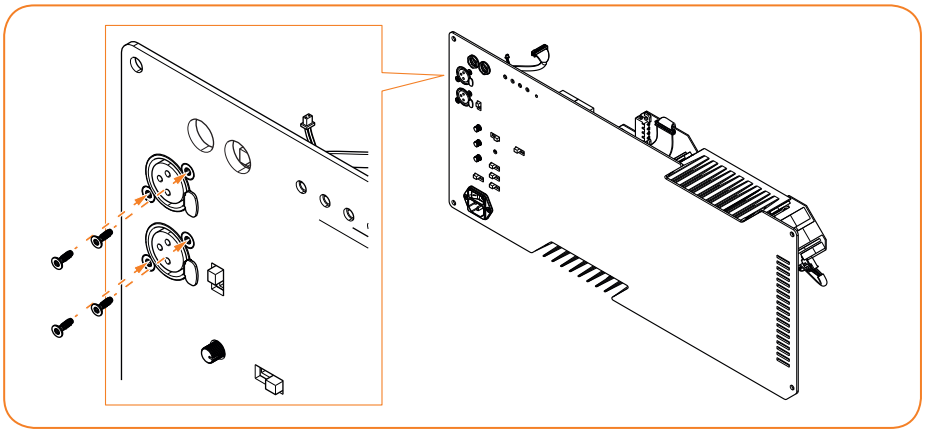
- Plug the white connector of the supplied 2-pin cable into the respective socket of the digital input board.
- Plug the red connector of the supplied 14-pin cable into the respective socket of the digital input board.
- Attach the 14-pin cable to the digital input board using the two supplied cable ties, as shown below.



- Attach the digital input board to the loudspeaker electronics, as shown below. The two XLR sockets will only fit into the holes in one orientation.



- Fasten the digital input board using the four supplied Torx 8 screws and lock washers on each of the two XLR sockets (ANALOG INPUT and AES3 INPUT) with a torque of 0.5 Nm, as shown below.
  The powder coating material must be removed from the lower holes before fastening the screws.



CAUTION
Material damage due to too high torque!

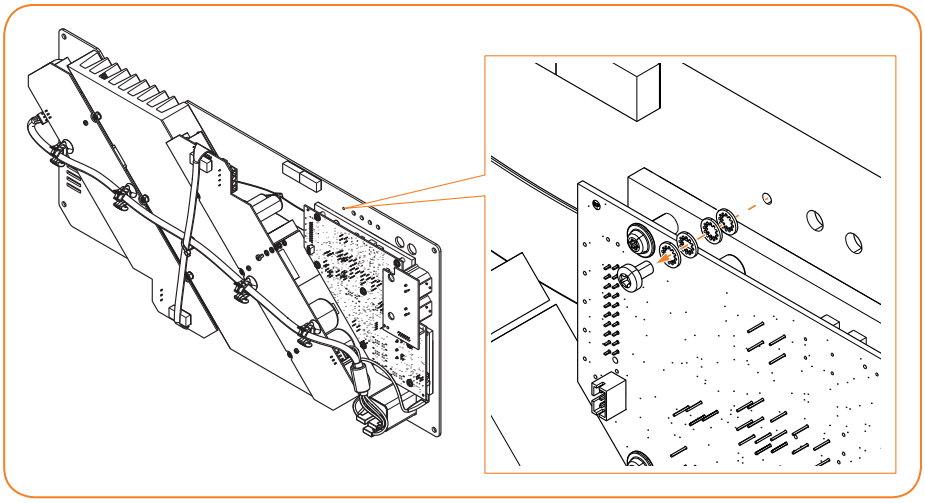
If the torque is too high, the threads of the XLR sockets can be damaged by the screws.

- ▶ Fasten the screws with the indicated torque.
- ▶ Always use manual tools. Do not use any pneumatically or electrically driven tools.

Installing the DIM 1

- ▶ Remove the Torx 10 screw, together with the four washers, next to the DIGITAL DELAY rotary switches, as shown below.

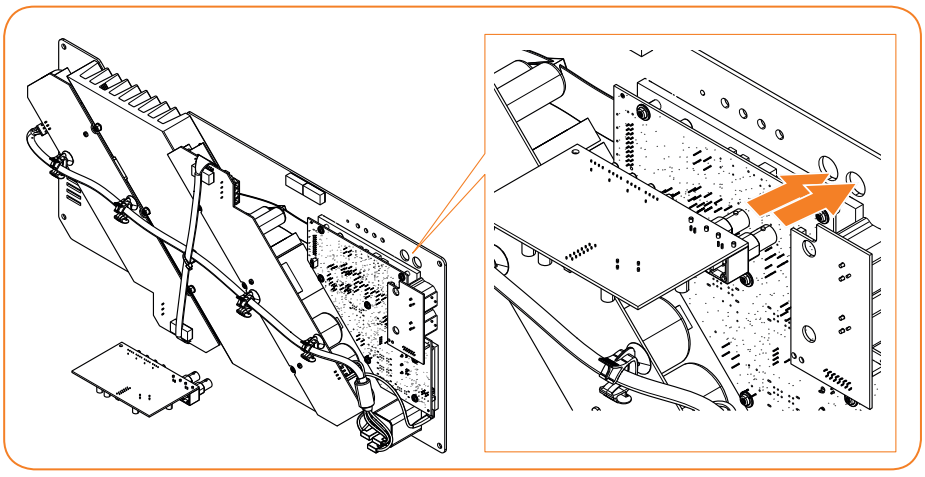
  The screw and one of the washers will be needed in the next step. Store the remaining three washers in a safe place.



- ▶ Position the foam seal in the correct orientation over the sockets and rotary switches of the DIM 1.

  If the foam seal is not mounted or not positioned correctly, the trimmers of the DIM 1 may rattle during operation of the loudspeaker.

- ▶ Insert the DIM 1 and rubber gasket vertically into the backplate with the sockets and rotary switches fitting into the respective holes, as shown below.
- ▶ Fasten the mounting bracket of the DIM 1 to the backplate using the Torx 10 screw and one of the four washers.



- Approaching from the printed side of the backplate, put the two supplied lock washers and nuts over the AES3 INPUT (BNC) and AES3 OUTPUT (BNC) sockets.
- First, fasten the nut of the AES3 INPUT (BNC) socket with a torque of 2.6 Nm.
- Then, fasten the nut of the AES3 OUTPUT (BNC) socket with a torque of 2.6 Nm.
- Fasten the two BNC nuts again in the same order as before with a torque of 2.6 Nm.
- Apply a very small amount of medium strength thread locking compound (e.g. Loctite 290) into the joint fissure between the BNC nuts and the threads of the BNC sockets.

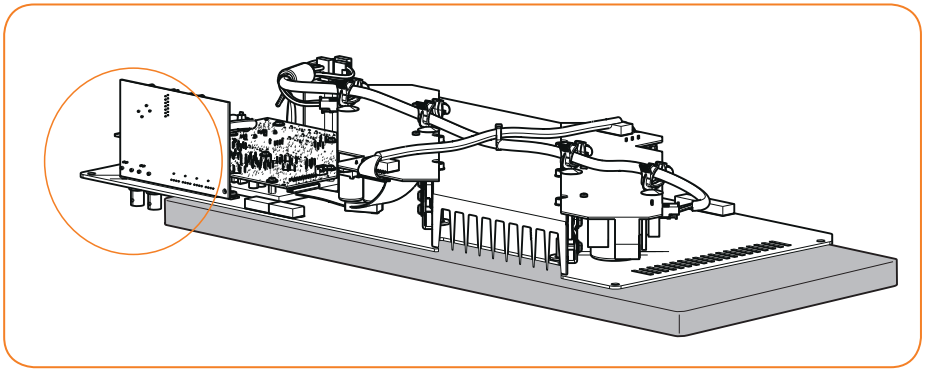
CAUTION
Material damage due to superfluous thread locking compound!

If you use too much thread locking compound, it can flow down the components and damage the loudspeaker electronics.

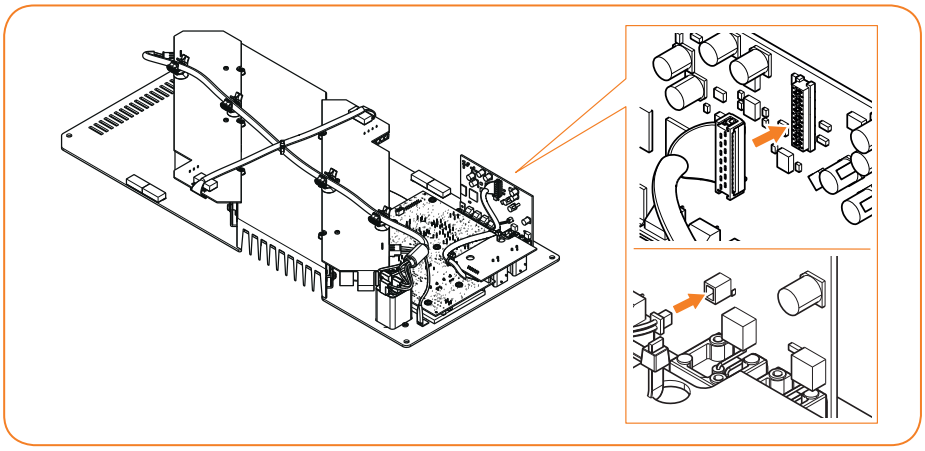
- Apply the thread locking compound with a thin pipette, ideally with a Loctite dispensing needle.
- Remove any superfluous thread locking compound with a cloth.

Connecting the DIM 1

- Place the backplate with the printed side down on a soft surface, so that the area with the control knobs and switches overhangs the surface.



- Plug the white connector of the 2-pin cable coming from the digital input board into the white socket of the DIM 1.
- Plug the red connector of the 14-pin cable coming from the digital input board into the red socket of the DIM 1.
- Ensure the correct orientation of the two connectors. Make sure they click into place.

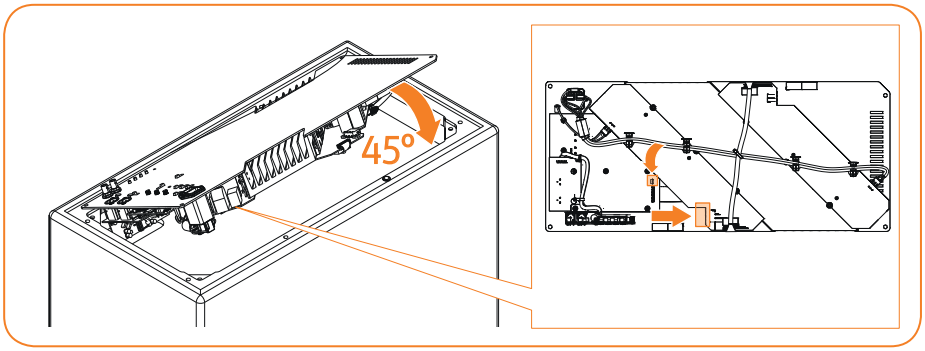


Re-installing the backplate into the loudspeaker cabinet

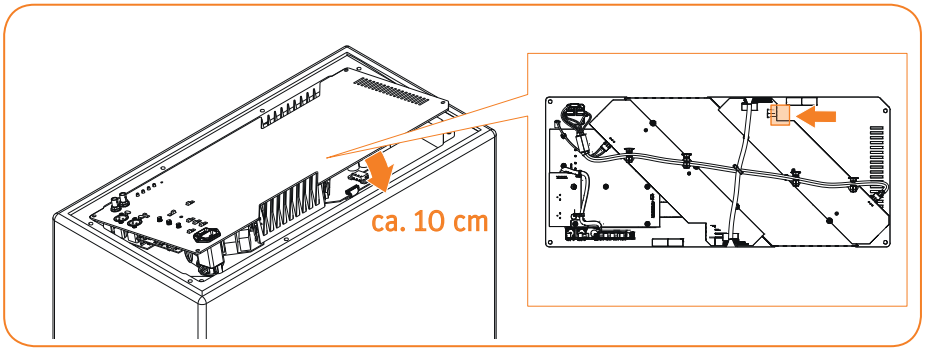
If you have installed several DIM 1 modules into more than one KH 420, make sure to re-install the backplates into the corresponding original cabinets. The electronics have been matched individually.

The serial numbers under the woofer ring and on the backplate must be identical.

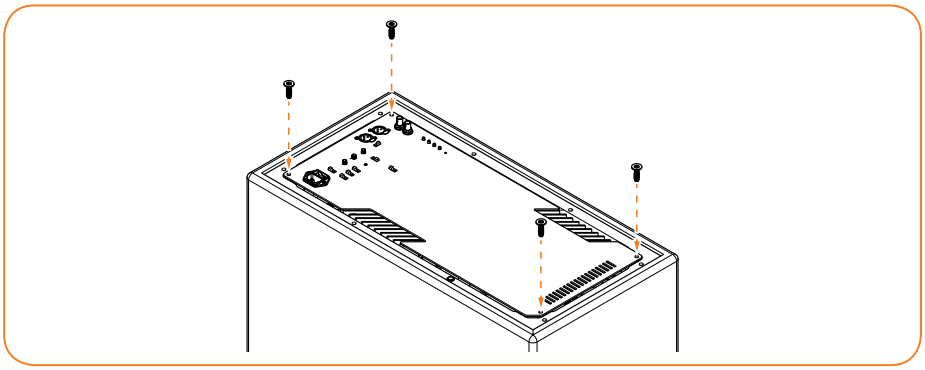
- Carefully position the backplate back into the loudspeaker cabinet, as shown below.
- Tilt the backplate downwards and leave it open at an angle of 45° (approx. 20 cm).



- Carefully plug the small white connector of the display cable into the respective socket of the loudspeaker electronics
- Carefully plug the white 4-pin connector of the treble and midrange driver cable into the respective socket of the loudspeaker electronics.
- Tilt the backplate further downwards leaving it open for approximately 10 cm.
- Carefully plug the white 3-pin connector of the bass driver cable into the respective socket of the loudspeaker electronics.



- Carefully lift the backplate out of the loudspeaker cabinet and align it horizontally without pulling the cables.
- Fit the backplate into the loudspeaker cabinet
- Fasten the backplate using the four Torx 25 cylinder head screws and washers with a torque of 3.0 Nm.



- Bring the loudspeaker into an upright position and refit the woofer ring by aligning the pegs with the holes and gently pushing until the woofer ring is fully inserted.