

HMEC 250

Headset for
general aviation

Instruction manual

 **SENNHEISER**

Contents

Important safety instructions	2
Delivery includes	4
The HMEC 250 headset	5
Operating elements	7
Putting the headset into operation	8
Inserting the batteries	8
Connecting the headset	8
Connecting a mobile telephone	9
Connecting an additional audio player	10
Adjusting the microphone sensitivity	11
Switching between mono and stereo mode	11
Using the headset	12
Attaching the cable clip	12
Adjusting the headset	12
Adjusting the microphone boom	13
Adjusting the volume	13
Switching the TalkThrough function on/off	14
Adjusting the volume of the TalkThrough function ...	14
Switching NoiseGard on/off	15
Replacing the batteries	16
Folding up the headset	17
Care and maintenance	18
Replacing the ear pads	18
Replacing the wind shield	19
Specifications	20
Manufacturer declarations	22

Important safety instructions

- Please read this instruction manual carefully and completely before using the headset.
- Make these this instruction manual easily accessible to all users at all times.
Always include this instruction manual when passing the headset on to third parties.
- During flight operation, do not use the headset for telephone calls.
- With the NoiseGuard active noise compensation switched on, typical aircraft sounds (for example, those from engines, propellers, warning alarms, etc.) may sound different to you. Before operating any aircraft, make sure that, with NoiseGuard switched on, you can hear and recognize these sounds. Set the volume to safe levels that do not interfere with your ability to hear critical sounds, especially warning alarms and sounds resulting from malfunction.
- The headset is capable of producing sound pressure levels exceeding 85 dB(A). In many countries 85 dB(A) is the maximum legally permissible level for continuous noise exposure during the working day. Exposure to sounds of higher volume levels or for longer durations can permanently damage your hearing.
- Never repair or attempt to repair a defective headset yourself. Contact your Sennheiser partner or the Sennheiser Service Department.
- Only replace those parts of the headset whose replacement is described in this instruction manual. All other parts of the headset must be replaced by your Sennheiser partner.
- Protect the headset from wetness. Use only a slightly damp cloth to clean the headset. For information on how to clean the headset, contact your Sennheiser partner.

Safety instructions for batteries

If abused or misused, batteries may leak and, in extreme cases, may even present an explosion and fire hazard. Sennheiser does not accept any liability for damage arising from abuse or misuse.

	Keep batteries out of reach of children.		Observe correct polarity.
	Do not heat or throw into fire.		Switch off battery powered devices when not in use.
	Remove batteries when the device is not used for extended periods of time.		Dispose of exhausted batteries at special collection points or return them to your specialist dealer.
	Do not solder.		Do not short-circuit.
	Do not mutilate or dismantle.		Do not attempt to recharge non-rechargeable batteries.
	Do not pack charged batteries loose – danger of shorting out – fire hazard.		Always remove flat or exhausted batteries from the device immediately.
	Do not mix old or used batteries with new ones. Do not mix batteries of different types or brands.		

Intended use of the headset

Intended use includes:

- having read this instruction manual, especially the chapter “Important safety instructions” on page 2,
- using the headset within the operating conditions and limitations described in this instruction manual.

“Improper use” means using the headset other than as described in this instruction manual, or under operating conditions which differ from those described herein.

Delivery includes

Delivery of the HMEC 250 headset includes:

1 HMEC 250 headset

1 soft case

1 HZC 08 cable clip

2 Wind and pop shields for MZW 46

1 audio-in cable for mobile telephones, length 0.6 m,
with two 2.5 mm jack plugs

1 audio-in cable for additional audio players, length 0.6 m,
with two 3.5 mm jack plugs

2 AAA size batteries

1 instruction manual

The HMEC 250 headset

The HMEC 250 headset with NoiseGard 2.0 active noise compensation features closed, dynamic, circumaural stereo headphones. The HMEC 250 is a headset for general aviation use.

NoiseGard 2.0™

The NoiseGard 2.0 active noise compensation system is based on the principle of cancelling out sound using “anti-sound” (phase-inverted sound). Tiny microphones pick up low-frequency ambient noise (up to 1 kHz) near the ear. The NoiseGard 2.0 electronics use this noise to generate a sound wave which is the exact opposite (i.e.: at the same level but polarity reversed – 180° out-of-phase), the result is that the polarity reversed signal cancels most of the outside noise.

Fail safe operation

When the batteries are completely discharged, NoiseGard automatically switches off. RT traffic (e.g. ATC) and intercom will still be heard through the headphones.

Peak level protection

The peak level protection safeguards your ears from volume peaks above 110 dB.

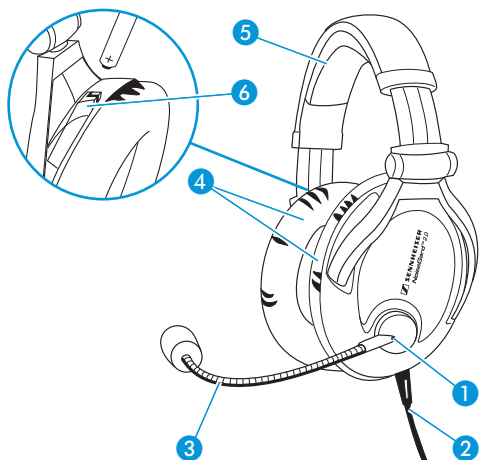
TalkThrough function (TT)

The TalkThrough function allows you to communicate with the people around you while wearing the headset. The NoiseGard active noise compensation and the peak level protection remain unaffected by the TalkThrough function and help to protect your hearing.

Additional features

- Outstanding transmission quality for clear communications
- Good passive attenuation of ambient noise
- Foldable design for space-saving storage and transportation
- Noise-compensating boom microphone ensures excellent speech transmission
- Flexible microphone boom
- Separate left and right channel volume control
- Excellent comfort resulting from soft ear pads and headband padding
- Audio-input facility for external audio sources, such as mobile phones, MP3 players

Operating elements

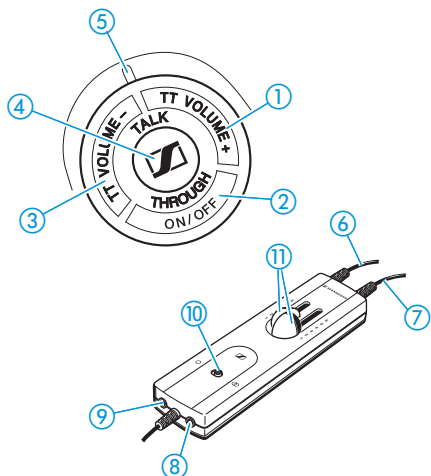


Headset

- ① Microphone sensitivity control
- ② Headset cable
- ③ Microphone boom
- ④ Ear pads, ergonomic
- ⑤ Headband
- ⑥ Battery compartment (on both sides)

Operating control integrated in the headset

- ① **TT VOLUME +** button (Talk Through)
- ② **ON/OFF** button (NoiseGard)
- ③ **TT VOLUME –** button (Talk Through)
- ④ **TALK THROUGH** button (on/off) 
- ⑤ LED (status display)



Operating control integrated in the cable

- ⑥ Cable with microphone plug, 5.25 mm jack plug
- ⑦ Cable with headphone plug, ¼" (6.35 mm) jack plug
- ⑧ 3.5 mm jack socket for connecting an additional audio player (3-pin)
- ⑨ 2.5 mm jack socket for connecting a mobile telephone (3-pin)
- ⑩ Mono/stereo switch
- ⑪ Separate left and right channel slide volume controls

LED indications

Meanings of the LED ⑤:

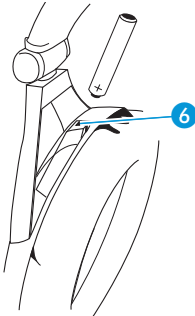


LED	Meaning
red	NoiseGard is switched on
green	TalkThrough is switched on
flashing	Batteries are almost flat

Putting the headset into operation

Inserting the batteries

Insert the batteries into the battery compartments on the left and right ear cups as follows:

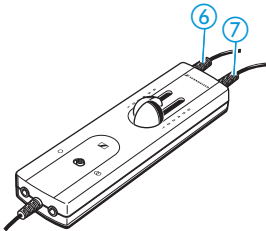


- ▶ Open the battery compartment by pushing the catch and open the cover.
- ▶ Insert the AAA size battery as shown.
- ▶ Close the battery compartment. The battery compartment cover locks into place with an audible click.

Connecting the headset

The headset's operating control features two cables with one jack plug each.

- ▶ Connect the headset to the corresponding sockets of your intercom.



Connector	for connection to the
1/4" (6.35 mm) jack plug	headphone output
5.25 mm jack plug	microphone input

Connecting a mobile telephone

The 2.5 mm jack socket allows you to connect a mobile telephone. For this purpose, the NoiseGuard active noise compensation must be switched on and the microphone connector must be connected to the aircraft intercom. A suitable adapter for your mobile telephone with 2.5 mm jack socket is available from your specialist dealer.

⚠ DANGER!

Danger of accident due to reduced attention!



Making telephone calls or operating the mobile telephone limits your attention and may cause accidents.

- ▶ During flight operation, do not use the headset for telephone calls!

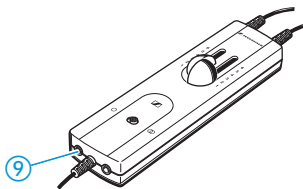
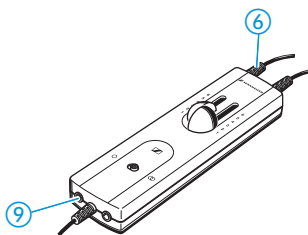


For the latest list of compatible mobile telephones, please refer to the „Professional Audio“ > „Aviation Headsets“ section on our website at www.sennheiser.com.

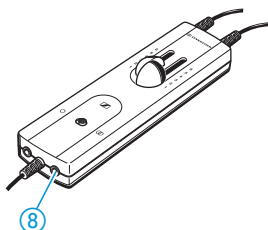
- ▶ Connect the audio cable to the 2.5 mm jack socket (3-pin) on the operating control and to the corresponding jack socket on your mobile telephone (4-pin).

You can adjust the volume of the mobile telephone via the headset's operating control. However, the functions of the mobile telephone cannot be controlled via the headset's operating control.

- ▶ Switch NoiseGuard on (see "Switching NoiseGuard on/off" on page 15).
Audio from the mobile telephone and from the intercom are heard simultaneously through the headset.
- ▶ Operate your mobile telephone as usual and observe the manufacturers instructions.



Connecting an additional audio player



The 3.5 mm jack socket allows you to connect an additional audio player (e.g. MP3 player).

DANGER!



Danger of accident due to reduced attention!

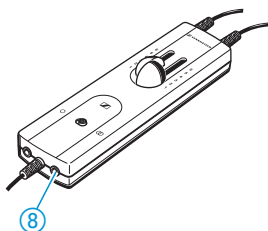
Listening to music or operating an audio player limits your attention and may cause accidents.

- ▶ During flight operation, do not use the headset for listening to additional audio sources!

Hearing damage due to high volumes!

This headset is capable of producing high sound pressure levels. Higher volumes or longer durations can damage your hearing!

- ▶ Set the volume to a medium level. Make sure that you can hear critical environmental sounds and warning alarms!



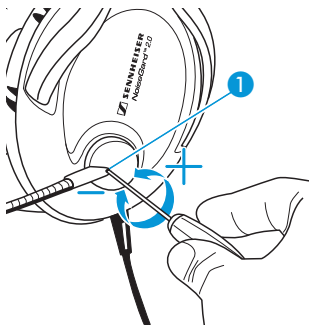
- ▶ Connect the audio cable to the 3.5 mm jack socket on the operating control and to the corresponding jack socket on your audio player.
- ▶ Switch NoiseGard on (see "Switching NoiseGard on/off" on page 15).
Audio from the additional audio source and from the intercom are heard simultaneously through the headset.
- ▶ Operate the connected audio player as usual and observe the manufacturers instructions.

Adjusting the microphone sensitivity

The microphone sensitivity has been factory preset to 80 mV/Pa.

To change the input sensitivity of the microphone:

- ▶ Use a suitable slotted screwdriver.
- ▶ Turn the microphone sensitivity control as shown.

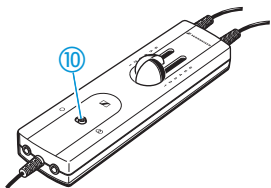


Switching between mono and stereo mode

The mono/stereo switch ⑩ allows you to switch between mono and stereo mode, depending on the intercom system.

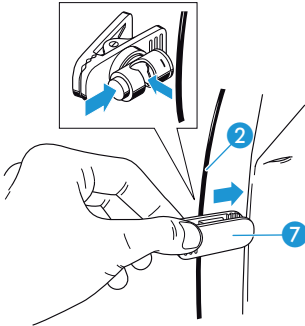
Set the mono/stereo switch ⑩ to the desired position:

- ○ mono
- ○○ stereo



Using the headset

Attaching the cable clip



The cable clip ⑦ allows you to attach the headset cable ② to your clothing so that the cable doesn't hinder or distract you.

Guide the headset cable ② through the cable clip ⑦ as shown.

Attach the cable clip ⑦ to your clothing.

Adjusting the headset

Wear the headset so that

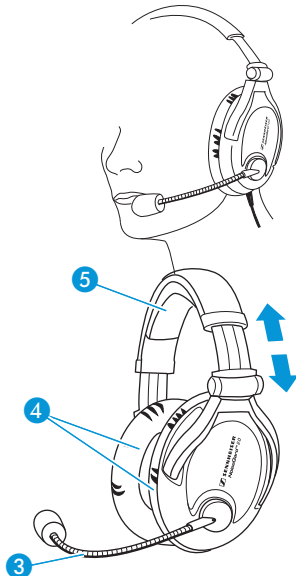
- the microphone boom ③ is on the left side of the mouth (see right/left labeling on the headband joints) and
- the headband ⑤ runs over the top of your head.

Adjust the length of the headband so that

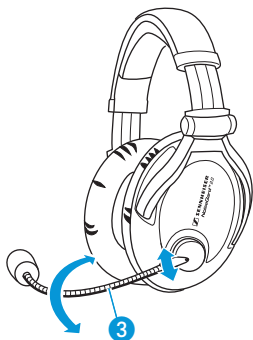
- your ears are completely inside the ear pads ④,
- you feel even, gentle pressure around your ears,
- a snug fit of the headband ⑤ on the head is ensured.

In this way, optimum transmission quality, good noise attenuation and best possible comfort is ensured.

To ensure sufficient noise attenuation, final adjustment is best made in a noisy environment.



Adjusting the microphone boom



Bend the microphone boom ③ so that the microphone is placed at the corner of the mouth. Maintain a distance of approx. 2 cm between microphone and mouth.

Adjusting the volume

CAUTION!



Hearing damage due to high volume levels!

The headset is capable of producing high sound pressure levels. Higher volumes or longer durations can damage your hearing!

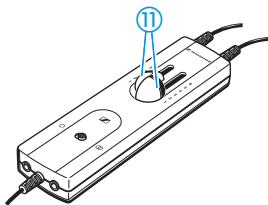
Adjust the volume to a medium level.
Make sure that you can hear critical environmental sounds and warning alarms.

You can adjust the volume directly on the intercom or via the operating control integrated into the headset cable.

To adjust the volume for the left or right channel:

Slide one of the two volume controls ⑪

- upwards to increase the volume or
- downwards to reduce the volume.

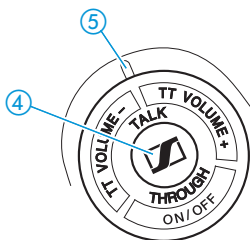


Switching the TalkThrough function on/off

The HMEC 250 provides excellent attenuation of ambient noise. In order to allow you to communicate undisturbed with the people around you while wearing the headset, the HMEC 250 features a TalkThrough function.

Press the **TALK THROUGH** button  ④ to switch the TalkThrough function on or off.

When the TalkThrough function is switched on, the LED ⑤ lights up green.



Adjusting the volume of the TalkThrough function

To increase the volume of the TalkThrough function:

Press the **TT VOLUME +** button ①.

To reduce the volume of the TalkThrough function:

Press the **TT VOLUME -** button ③.



If you change the volume with the TalkThrough function switched on, the new volume setting is saved and will be used as the default the next time the TalkThrough function is activated.

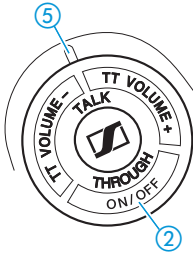
Switching NoiseGard on/off

To switch the NoiseGard active noise compensation on or off:

Press the **ON/OFF** button ② for approx. one second.

When NoiseGard is switched on:

- the LED ⑤ lights up red and
- you can listen to music and make telephone calls at the same time.



Fail safe operation

When the batteries are completely discharged, NoiseGard automatically switches off. RT traffic (e.g. ATC) and intercom will still be heard through the headphones.

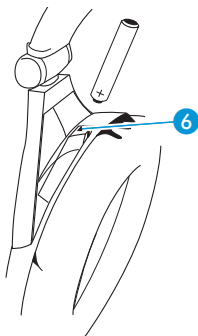
Replacing the batteries



When the batteries are almost flat, the LED ⑤ flashes. When the batteries are completely discharged, NoiseGard automatically switches off (fail safe operation). Replace the batteries or the rechargeable batteries as follows:



Always replace the two batteries at the same time.



Open the battery compartment ⑥ by pushing the catch and open the cover.

Remove the battery.

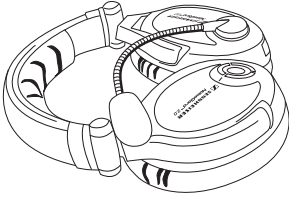
Insert a new AAA size battery as shown.

Close the battery compartment ⑥. The battery compartment cover locks into place with an audible click.



Remove the batteries from the battery compartments ⑥ if the headset will not be used for extended periods of time.

Folding up the headset



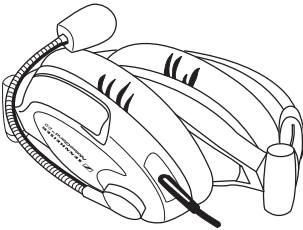
For space-saving transportation, the headset can be folded up in different ways:

To fold up the headphones as **flat** as possible:

Rotate the ear cups by 90° and turn the microphone boom flat as shown.

To fold up the headphones as **compact** as possible:

Fold the ear cups in as shown.



For **safe** transportation of the headset, use the supplied soft case and fold the headset as follows:

Rotate the ear cups by 90°.

Turn the microphone boom flat as shown.

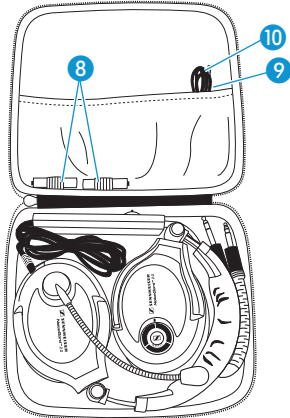
Pull out the right ear cup and then fold it in.

Place the headset flat into the soft case as shown.

The two AAA size batteries **8** can be inserted into the two straps at the side of the soft case.

The accessories can be transported in the cover of the soft case:

- audio cable (two 3.5 mm jack plugs) **9**
- audio cable (two 2.5 mm jack plugs) **10**
- wind and pop shields



Care and maintenance

CAUTION!



Liquids can damage the electronics of the headset!

Liquids entering the housing of the headset can cause a short-circuit and damage the electronics.

Only use a soft, slightly damp cloth to clean the headset. Do not use any solvents or cleansing agents.

Use a soft, slightly damp cloth to clean the headset from time to time.

Replacing the ear pads

You can replace the ear pads. Spare ear pads are available as accessories.

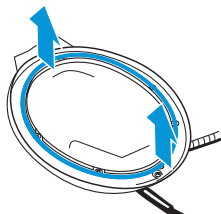
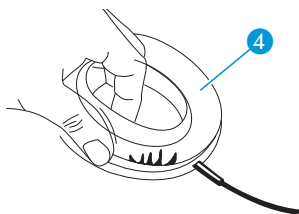


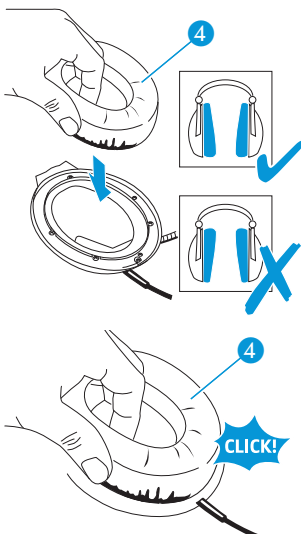
Accessories are available from your Sennheiser partner. A list of suitable accessories can be found on our website at www.sennheiser.com > „Service & Support“.

Grasp the edge of the ear pad ④ and peel it up and away from the ear cup.



When removing the ear pads, it might be that a black plastic ring remains on the ear cup. Remove this ring before attaching the new ear pads.





Attach the ear pad ④ so that the side with the thicker padding points downwards as shown.

Press the new ear pad ④ onto the ear cup until it clicks audibly into place. Repeat for the other ear cup.

Replacing the wind shield

You can replace the wind shield. The HMEC 250 is supplied with a spare wind shield.

Carefully pull the wind shield ⑪ from the microphone.

Slide-on the new wind shield ⑪ and ensure that it fits securely over the microphone.



Specifications

General data

Weight without cable and without batteries	approx. 285 g
Temperature range (operation)	−10 to +55°C
Temperature range (storage)	−55 to +55°C
Power supply for NoiseGard	2 x 1.5 V AAA size battery or 2 x 1.2 V AAA size rechargeable battery
Operating time	approx. 30 hours
Cable length	1.85 m
Headphone connector	¼" (6.35 mm) jack plug
Microphone connector	5.25 mm jack plug
Additional features	• NoiseGard on/off • TalkThrough on/off • TalkThrough volume +/− • mono/stereo switch • line input • mobile telephone input • peak level protection • fail safe operation

Headphones

Transducer principle	dynamic, closed
Ear coupling	circumaural

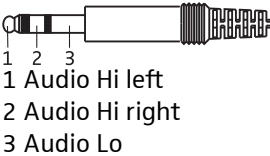
Frequency response (headphones)	8–28,000 Hz
Frequency response (TalkThrough)	300–5,000 Hz
Nominal impedance passive	150 Ω mono/300 Ω stereo
Nominal impedance active	600 Ω mono/1.200 Ω stereo
Sound pressure level	passive 98 dB at 1 kHz, 1 V active 100 dB at 1 kHz, 1 V
THD at 94 dB SPL	< 1 %
Noise attenuation	13–34 dB passive attenuation, plus 16–25 dB active noise compensation at low frequencies
Contact pressure	approx. 8 N

Microphone incl. preamplifier

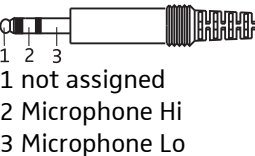
Type	BKE 46
Transducer principle	pre-polarized condenser microphone, noise-compensating
Frequency response	350–6,000 Hz
Output voltage	80 mV/Pa (factory preset) = 800 mV at 114 dB SPL –2 dB (adjustable from 17–100 mV/Pa)
Terminating impedance	150–2,200 Ω
Supply voltage	8–16 V —

Connector assignment

¼" (6.35 mm) jack plug



5.25 mm jack plug



Manufacturer declarations

Warranty

Sennheiser electronic GmbH & Co. KG gives a warranty of 36 months on this product.

For the current warranty conditions, please visit our website at www.sennheiser.com or contact your Sennheiser partner.

CE Declaration of Conformity



This equipment is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC.

The declaration is available at www.sennheiser.com.

Before putting the device into operation, please observe the respective country-specific regulations!

Batteries



The supplied batteries can be recycled. Please dispose of them as special waste or return them to your specialist dealer. In order to protect the environment, only dispose of exhausted batteries.

WEEE Declaration



Please dispose of this product by taking it to your local collection point or recycling centre for such equipment.

Sennheiser and NoiseGard™ are registered trademarks of Sennheiser electronic GmbH & Co. KG.

Sennheiser electronic GmbH & Co. KG

Am Labor 1, 30900 Wedemark, Germany
www.sennheiser.com

Printed in China, Publ. 05/10, 516578/A04

