

Air Traffic Control

HMD 46  
HME 46

Instructions for use





## Safety instructions

- Please read these instructions carefully and completely before using the headset.
- Make these instructions easily accessible to all users at all times.
- Always include these instructions when passing the headset on to third parties.
- 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 agent or the Sennheiser Service Department.
- Only replace those parts of the headset whose replacement is described in this manual. All other parts of the headset must be replaced by your Sennheiser agent.
- Protect the headset from humidity. Use only a slightly damp cloth to clean the headset. For information on how to clean the headset, contact your Sennheiser agent.

## Intended use of the headset

Intended use includes:

- having read these instructions especially the chapter "Safety instructions".
- use of the headset within the operating conditions as described in these instructions.

## Improper use

Improper use means use of the headset other than as described in these instructions or use under operating conditions different from those described in these instructions.

## HMD 46 / HME 46

The HMD 46 / HME 46 headset features dynamic, open headphones. The noise-compensating microphone ensures excellent speech transmission even in noisy environments. Designed for air traffic control, intercom systems and other communication purposes.

### Features

- Extremely lightweight
- Extremely comfortable to wear due to the patented two-piece automatic headband and soft ear pads
- ActiveGard™ safeguards you from the effects of an acoustic burst (except HMD 46-31 and HME 46-31)
- “Flip-away” headphone allows single-sided listening
- Flexible microphone boom, can be worn on either left or right-hand side
- Noise-compensating microphone ensures excellent speech transmission
- Single-sided cable, easy to exchange
- PTT button integrated in the cable (see “Product variants” on page 10)

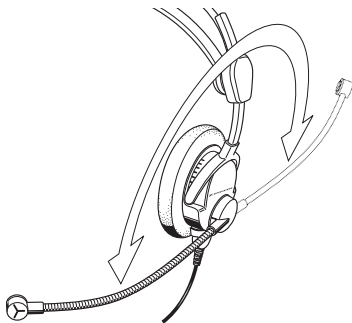
## Delivery includes

- HMD 46 / HME 46 headset
- Cable clip
- Wind and pop screen
- Instructions for use

## Operation

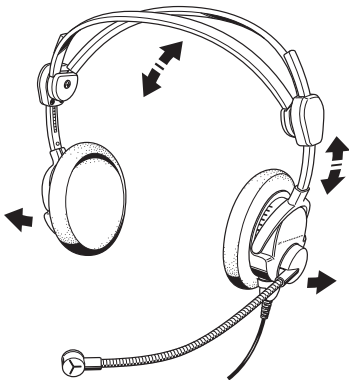
### Turning the microphone boom

The microphone boom can be rotated. This allows the headset to be worn with the microphone boom positioned on either the left or right-hand side of the head.



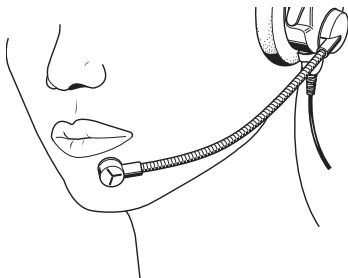
## Putting on the headset

When putting on the headset, the patented two-piece headband adjusts automatically.



## Positioning the microphone

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



## Flipping away one earcup

The headset features a “flip-away” earcup for single-sided listening.



## Adjusting the volume directly on the audio system

Connect the headset to the corresponding sockets of your audio system. Adjust the volume directly on the audio system.

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### **CAUTION!** 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!

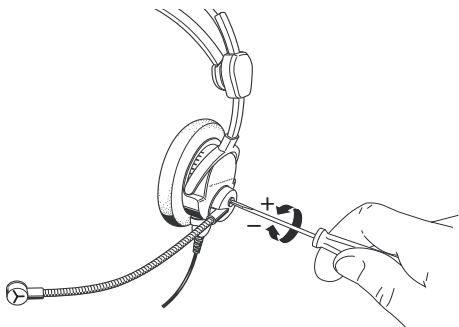
Set the volume to a medium level. Make sure that you can hear critical sounds such as warning alarms.

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## Adjusting the microphone sensitivity

The microphone sensitivity has been factory pre-set to 80 mV/Pa as per RTCA DO-214. You can change the microphone sensitivity by turning a small screwdriver in the direction of the arrow.



## Care and maintenance

### Cleaning the headset

Use a soft, slightly damp cloth to clean the headset from time to time. If the headset is very dirty, use a cloth dampened with mild, soapy water.

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**CAUTION!** Danger of short-circuit due to the ingress of water!



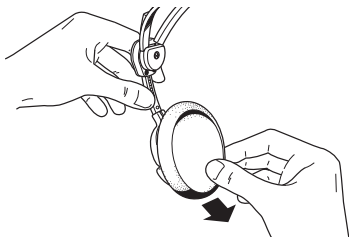
Water entering the housing of the headset can cause a short-circuit and damage the electronics.

Use only a slightly damp cloth to clean the headset. Do not use any solvents or cleansing agents.

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### Replacing the earpads

For reasons of hygiene, the black earpads should be replaced from time to time. Grasp the edge of the foam earpad behind the earcup as shown and peel it up and away from the earcup. Slide the new earpad onto the earcup. Repeat for the other earcup.



## Accessories and spare parts

By changing the cable, you can simply retrofit your headset (see "Product variants" on page 10).

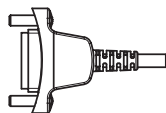
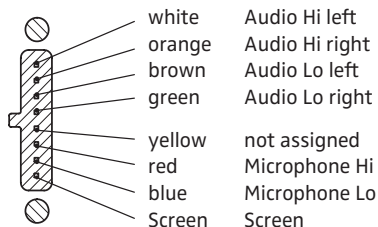
- Cable -6 Cat. No. 500836
- Cable -7 Cat. No. 502360
- Cable -L Cat. No. 502365
- Cable -PTT-6 Cat. No. 500844
- Cable -PTT-6-1 Cat. No. 502418
- Cable -PTT-L Cat. No. 500845
- Cable -PTT-LA Cat. No. 502187
- Cable D-3PTT-M Cat. No. 500930
- Cable E-3PTT-M Cat. No. 500931
- MZQ 2002 cable clip Cat. No. 044740
- HZC 08 cable clip Cat. No. 525787
- Earpads (1 pair) Cat. No. 515295
- Earpads (100 pairs) Cat. No. 515296
- HZH 46 hygiene pads (200 pairs) Cat. No. 502194
- Wind and pop screen (1 item) Cat. No. 515297
- Wind and pop screen  
(any number of items) Cat. No. 514127
- Headband padding (1 pair) Cat. No. 515629

## Product variants

Variant (Cat. No.)	Microphone type	Single-sided round cable
HMD 46-3 (500849)	Dynamic mic	–
HMD 46-31 (502483)	Dynamic mic	–
HMD 46-3-6 (500466)	Dynamic mic	with open ends, length 1.85 m
HMD 46-3PTT-M (500873)	Dynamic mic	with PTT button and mini DIN plug, length 1.85 m
HME 46-3 (500857)	Condenser mic	–
HME 46-31 (502484)	Condenser mic	–
HME 46-3-6 (500467)	Condenser mic	with open ends, length 1.85 m
HME 46-3PTT-M (500874)	Condenser mic	with PTT button and mini DIN plug, length 1.85 m
HME 46-3PTT-6 (500468)	Condenser mic	with PTT button and open ends, length 1.85 m
HME 46-3PTT-L (500469)	Condenser mic	with LEMO connector FFP.3S.310.CLA.252A, length 1.85 m
HME 46-3PTT-LA (502172)	Condenser mic	with LEMO connector FHG.2B.310.CLAD52Z, length 1.85 m
HME 46-ATC (500851)	Condenser mic	with LEMO connector FFP.3S.310.CLA.252A, length 2 m

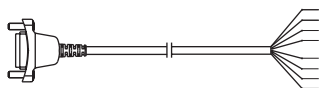
# Cable and connector assignment

## Headset connector



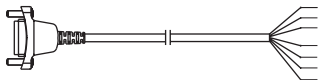
Steel wire cable,  
length 1.85 m

## Cable -6



white	Audio Hi left
orange	Audio Hi right
brown	Audio Lo left
green	Audio Lo right
yellow	not assigned
red	Microphone Hi
blue	Microphone Lo
Screen	Screen

## Cable -7 (steel wire cable)

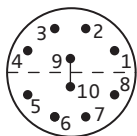


red	Microphone Hi
blue	Microphone Lo
Screen	Screen
yellow	Audio Hi left
gray	Audio Lo left
red	Audio Hi right
blue	Audio Lo right

Designed for 2-connector variants

## Cable -L

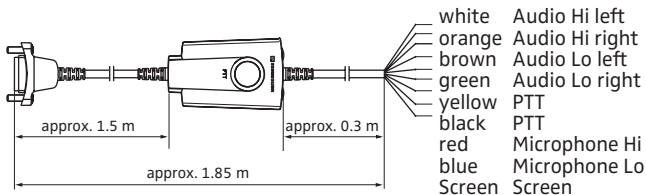
Solder side



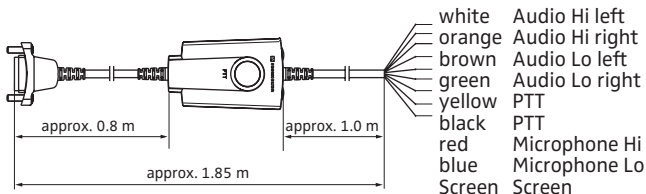
- 1 Audio Hi right
- 2 Audio Lo right
- 3 not assigned
- 4 Screen
- 5 Audio Hi left
- 6 Audio Lo left
- 7 Microphone Hi
- 8 Microphone Lo
- 9 Bridge to pin 10
- 10 Bridge to pin 9



## Cable -PTT-6

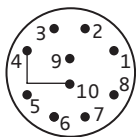


## Cable -PTT-6-1



## HME 46-3PTT-L

Solder side

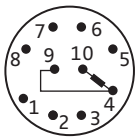


- 1 Audio Hi left
- 2 Audio Lo left
- 3 PTT
- 4 PTT (bridge to pin 10)
- 5 Audio Lo right
- 6 Audio Hi right
- 7 Microphone Hi
- 8 Microphone Lo
- 9 Screen
- 10 PTT (bridge to pin 4)

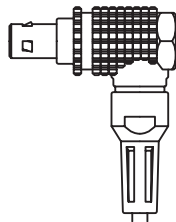


## HME 46-3PTT-LA

Solder side

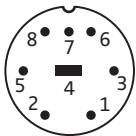


- 1 Audio Hi right
- 2 Audio Lo right
- 3 PTT
- 4 PTT / screen / bridge to pin 9
- 5 Audio Hi left
- 6 Audio Lo left
- 7 Microphone Hi
- 8 Microphone Lo
- 9 Bridge to pin 4 / PTT / screen
- 10 75-Ω resistor between pin 4 and pin 10 / screen



## HMD 46-3PTT-M and HME 46-3PTT-M

Solder side



- 1 Audio Hi
- 2 Audio Lo
- 3 Dynamic microphone Hi (HMD)
- 4 not assigned
- 5 Pre-polarized microphone Hi (HME)
- 6 PTT
- 7 PTT / screen
- 8 Microphone Lo

## Specifications

### Headphones

Transducer principle	dynamic, open
Ear coupling	supra-aural
Frequency response	20–14,000 Hz
Impedance	300 $\Omega$ per system
Characteristic SPL	95 dB SPL at 1 kHz, 1 mW, mono 83 dB SPL at 1 kHz, 1 V
THD	< 1 % at 95 dB SPL (350–3,000 Hz)
Contact pressure	approx. 3 N

### Microphone

Type	MD 46-413
Transducer principle	dynamic, noise-compensating
Frequency response	100–12,000 Hz
Output voltage	0.5 mV/Pa
Impedance	200 $\Omega$

### General data

Temperature range	Operation: –15 °C to 55 °C Storage: –55 °C to 70 °C
Weight without cable	150 g

## HMD 46-3



## Specifications

## HME 46-3

### Headphones

Transducer principle	dynamic, open
Ear coupling	supra-aural
Frequency response	20–14,000 Hz
Impedance	300 $\Omega$ per system
Characteristic SPL	95 dB SPL at 1 kHz, 1 mW, mono 83 dB SPL at 1 kHz, 1 V
THD	< 1 % at 95 dB SPL (350–3,000 Hz)
Contact pressure	approx. 3 N

### Microphone

Type	MKE 46
Transducer principle	pre-polarized condenser microphone, noise-compensating
Frequency response	100–15,000 Hz
Output voltage (HME 46-3, -3-6, -3PTT-M, -3PTT-6, -3PTT-L)	adjustable from 17–100 mV/Pa, 80 mV/Pa (factory pre-set) $\cong$ 400 mV at 114 dB SPL
Output voltage (HME 46-3PTT-LA, -ATC)	adjustable from 17–215 mV/Pa, 152 mV/Pa (factory pre-set) $\cong$ 1520 mV at 114 dB SPL
Terminating impedance	150–2,200 $\Omega$
Supply voltage	8–16 V DC

### General data

Temperature range	Operation: -15 °C to 55 °C Storage: -55 °C to 70 °C
Weight without cable	150 g

## Specifications

### Headphones

Transducer principle	dynamic, open
Ear coupling	supra-aural
Frequency response	20–14,000 Hz
Impedance	300 $\Omega$ per system
Characteristic SPL	103 dB SPL at 1 kHz, 1 mW, mono 83 dB SPL at 1 kHz, 1 V
THD	< 1 % at 95 dB SPL (350–3,000 Hz)
Contact pressure	approx. 3 N

### Microphone

Type	MD 46-413
Transducer principle	dynamic, noise-compensating
Frequency response	100–12,000 Hz
Output voltage	0.5 mV/Pa
Impedance	200 $\Omega$

### General data

Temperature range	Operation: –15 °C to 55 °C Storage: –55 °C to 70 °C
Gewicht ohne Kabel	150 g

## HMD 46-31

## Specifications

## HME 46-31

### Headphones

Transducer principle	dynamic, open
Ear coupling	supra-aural
Frequency response	20–14,000 Hz
Impedance	300 $\Omega$ per system
Characteristic SPL	103 dB SPL at 1 kHz, 1 mW, mono 83 dB SPL at 1 kHz, 1 V
THD	< 1 % at 110 dB SPL (350–3,000 Hz)
Contact pressure	approx. 3 N

### Microphone

Type	MKE 46
Transducer principle	pre-polarized condenser microphone, noise-compensating
Frequency response	100–15,000 Hz
Output voltage	adjustable from 17–100 mV/Pa, 80 mV/Pa (factory pre-set) $\cong$ 400 mV at 114 dB SPL
Terminating impedance	150–2,200 $\Omega$
Supply voltage	8–16 V DC

### General data

Temperature range	Operation: –15 °C to 55 °C Storage: –55 °C to 70 °C
Weight without cable	150 g

# Manufacturer Declarations

## Warranty regulations


The guarantee period for this Sennheiser product is 24 months from the date of purchase. Excluded are accessory items, rechargeable or disposable batteries that are delivered with the product; due to their characteristics these products have a shorter service life that is principally dependent on the individual frequency of use.

The guarantee period starts from the date of original purchase. For this reason, we recommend that the sales receipt be retained as proof of purchase. Without this proof (which is checked by the responsible Sennheiser service partner) you will not be reimbursed for any repairs that are carried out.

Depending on our choice, guarantee service comprises, free of charge, the removal of material and manufacturing defects through repair or replacement of either individual parts or the entire device. Inappropriate usage (e.g. operating faults, mechanical damages, incorrect operating voltage), wear and tear, force majeure and defects which were known at the time of purchase are excluded from guarantee claims. The guarantee is void if the product is manipulated by non-authorised persons or repair stations.

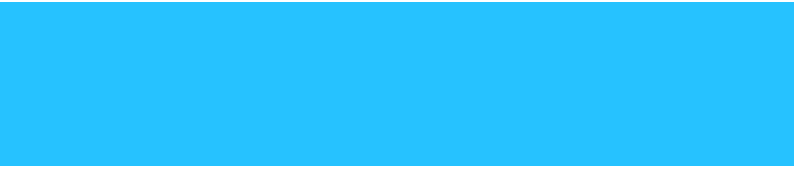
In the case of a claim under the terms of this guarantee, send the device, including accessories and sales receipt, to the responsible service partner. To minimise the risk of transport damage, we recommend that the original packaging is used. Your legal rights against the seller, resulting from the contract of sale, are not affected by this guarantee. The guarantee can be claimed in all countries outside the U.S. provided that no national law limits our terms of guarantee.

## CE Declaration of Conformity

 This equipment is in compliance with the essential requirements and other relevant provisions of Directive 89/336/EU. The declaration is available on the internet site at [www.sennheiser.com](http://www.sennheiser.com).

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





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