

Air Traffic Control

HMD 46
HME 46
HME 46-3S



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 this instruction manual especially the chapter "Safety instructions".
- using the headset within the operating conditions as described in this instruction manual.

Improper use

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

HMD 46 / HME 46 / HME 46-3S

The HMD 46 / HME 46 / HME 46-3S 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 11)

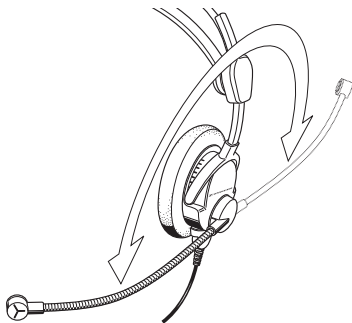
Delivery includes

- 1 HMD 46 / HME 46 / HME 46-3S headset
- 1 cable clip
- 1 wind and pop screen
- 1 instruction manual

Operation

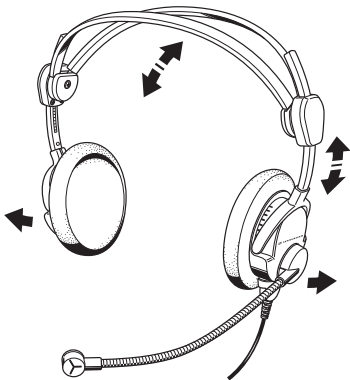
Turning the microphone boom

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.



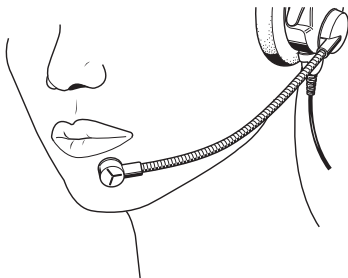
Putting on the headset

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.

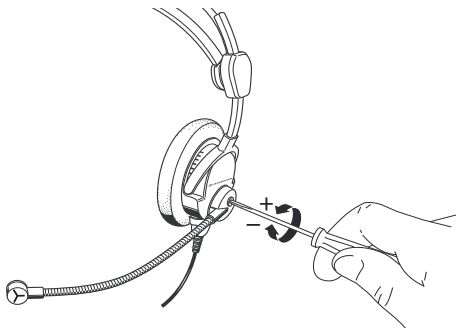
CAUTION! Hearing damage due to high volumes!

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.

Adjusting the microphone sensitivity

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



Care and maintenance

Cleaning the headset

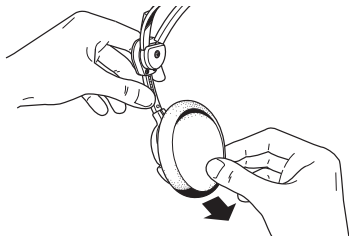
Use a soft, slightly damp cloth to clean the headset from time to time. If the headset is very dirty, use a cloth dampened with mild, soapy water. Do not use any solvents or cleansing agents.

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.

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 11).

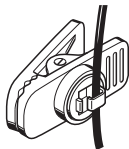
- Cable -6 Cat. No. 500836
- Cable -7 Cat. No. 502360
- Cable -H-6 Cat. No. 502533
- Cable -L Cat. No. 502365
- Cable -PTT-6 Cat. No. 500844
- Cable -PTT-6-1 Cat. No. 502418
- Cable -PTT-L Cat. No. 500845
- Cable -PTT-LA Cat. No. 502187
- Cable D-3PTT-M Cat. No. 500930
- Cable E-3PTT-M Cat. No. 500931
- Headband padding, 1 pair Cat. No. 515629
- Earpads, 1 pair Cat. No. 515295
- Earpads, 100 pairs Cat. No. 515296
- Hygiene pads HZH 46, 200 pairs Cat. No. 502194
- Wind and pop screen for BKE 46, 1 item Cat. No. 515297
- Wind and pop screen for BKE 46, any number of items Cat. No. 514127
- Wind and pop screen for BMD 46, any number of items Cat. No. 034177

- Cable clip MZQ 2002
- Cable clip HZC 08

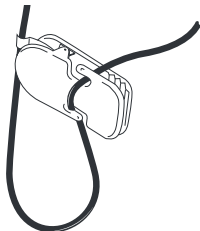
Cat. No. 044740

Cat. No. 525787

Cable clips



HZC 08
(for round cable only)



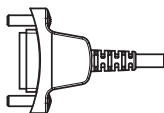
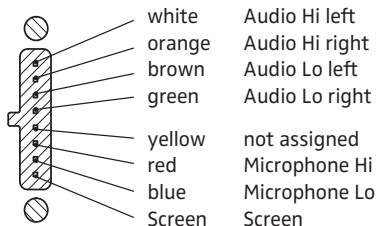
MZQ 2002
(for round cable or flat cable)

Product variants

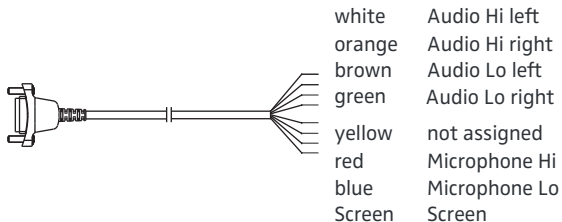
Variant (Cat. No.)	Description	Single-sided round cable
HMD 46-3 (500849)	Headset with dynamic mic	–
HMD 46-31 (502483)	Headset with dynamic mic	–
HMD 46-3-6 (500466)	Headset with dynamic mic	with open ends, length 1.85 m
HMD 46-3PTT-M (500873)	Headset with dynamic mic	with PTT button and mini DIN plug, length 2.45 m
HME 46-3 (500857)	Headset with condenser mic	–
HME 46-31 (502484)	Headset with condenser mic	–
HME 46-3S (502592)	Single-sided headset with condenser mic	–
HME 46-3-6 (500467)	Headset with condenser mic	with open ends, length 1.85 m
HME 46-3PTT-M (500874)	Headset with condenser mic	with PTT button and mini DIN plug, length 2.45 m
HME 46-3PTT-6 (500468)	Headset with condenser mic	with PTT button and open ends, length 1.85 m
HME 46-3PTT-L (500469)	Headset with condenser mic	with LEMO connector FFP.3S.310.CLA.252A, length 1.85 m
HME 46-3PTT-LA (502172)	Headset with condenser mic	with LEMO connector FHG.2B.310.CLAD52Z, length 2.30 m
HME 46-ATC (500851)	Headset with condenser mic	with LEMO connector FFP.3S.310.CLA.252A, length 2 m

Cable and connector assignment

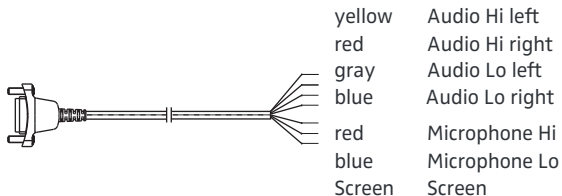
Headset connector



Cable -6

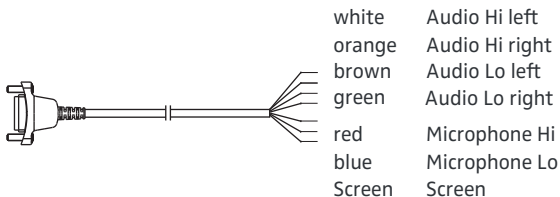


Cable -7 (steel wire cable)



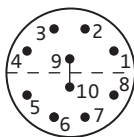
Designed for 2-connector variants

Cable -H-6



Cable -L

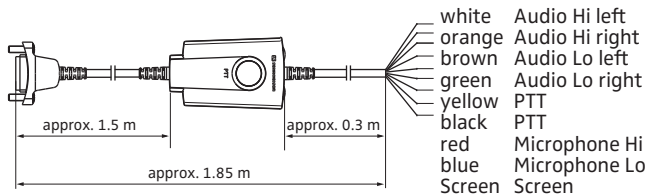
Solder side



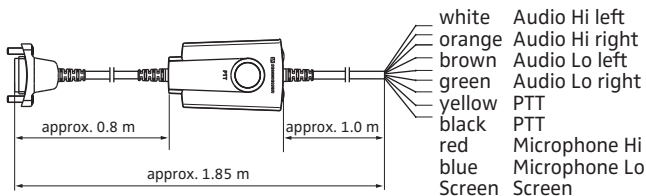
- 1 Audio Hi right
- 2 Audio Lo right
- 3 not assigned
- 4 Screen
- 5 Audio Hi left
- 6 Audio Lo left
- 7 Microphone Hi
- 8 Microphone Lo
- 9 Bridge to pin 10
- 10 Bridge to pin 9



Cable -PTT-6

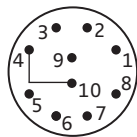


Cable -PTT-6-1



HME 46-3PTT-L

Solder side

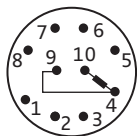


- 1 Audio Hi left
- 2 Audio Lo left
- 3 PTT
- 4 PTT (bridge to pin 10)
- 5 Audio Lo right
- 6 Audio Hi right
- 7 Microphone Hi
- 8 Microphone Lo
- 9 Screen
- 10 PTT (bridge to pin 4)

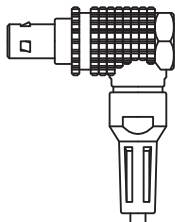


HME 46-3PTT-LA

Solder side

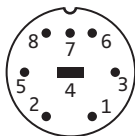


- 1 Audio Hi right
- 2 Audio Lo right
- 3 PTT
- 4 PTT / screen / bridge to pin 9
- 5 Audio Hi left
- 6 Audio Lo left
- 7 Microphone Hi
- 8 Microphone Lo
- 9 Bridge to pin 4 / PTT / screen
- 10 75-Ω resistor between pin 4 and pin 10 / screen



HMD 46-3PTT-M

Solder side



- 1 Audio Hi
- 2 Audio Lo
- 3 Microphone Hi
- 4 not assigned
- 5 not assigned
- 6 PTT
- 7 PTT / screen
- 8 Microphone Lo

Specifications

HMD 46-3

Headphones

Transducer principle	dynamic, open
Ear coupling	supra-aural
Frequency response	20–14,000 Hz
Impedance	300 Ω 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	BMD 46-413
Transducer principle	dynamic, noise-compensating
Frequency response	100–12,000 Hz
Output voltage	0.5 mV/Pa
Impedance	200 Ω

General data

Temperature range	operation: –15 °C to 55 °C storage: –55 °C to 70 °C
Weight without cable	approx. 150 g

Specifications

HME 46-3

Headphones

Transducer principle	dynamic, open
Ear coupling	supra-aural
Frequency response	20–14,000 Hz
Impedance	300 Ω 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	BKE 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 -2 dB (factory pre-set) = 800 mV -2 dB at 114 dB SPL
Output voltage (HME 46-3PTT-LA, -ATC)	adjustable from 17–215 mV/Pa, 152 mV/Pa (factory pre-set) = 1520 mV at 114 dB SPL
Terminating impedance	150–2,200 Ω
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	approx. 150 g

Specifications

HME 46-3S

Headphones

Transducer principle	dynamic, open
Ear coupling	supra-aural
Frequency response	20–14,000 Hz
Impedance	300 Ω mono
Characteristic SPL	92 dB SPL at 1 kHz, 1 mW, mono 83 dB SPL at 1 kHz, 1 V
THD	< 1 % at 98 dB SPL (350–3,000 Hz)
Contact pressure	approx. 3 N

Microphone

Type	BKE 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 -2 dB (factory pre-set) = 800 mV -2 dB at 114 dB SPL
Terminating impedance	150–2,200 Ω
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	approx. 110 g

Specifications

HMD 46-31

Headphones

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

Microphone

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

General data

Temperature range	operation: –15 °C to 55 °C storage: –55 °C to 70 °C
Weight without cable	approx. 150 g

Specifications

HME 46-31

Headphones

Transducer principle	dynamic, open
Ear coupling	supra-aural
Frequency response	20–14,000 Hz
Impedance	300 Ω per system
Characteristic SPL	95 dB SPL at 1 kHz, 1 mW, mono 103 dB SPL at 1 kHz, 1 V
THD	< 1 % at 110 dB SPL (350–3,000 Hz)
Contact pressure	approx. 3 N

Microphone

Type	BKE 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 -2 dB (factory pre-set) = 800 mV -2 dB at 114 dB SPL
Terminating impedance	150–2,200 Ω
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	approx. 150 g


Manufacturer Declarations

Warranty

Sennheiser electronic GmbH & Co. KG gives a warranty of 24 month on this product.

For the current warranty conditions, please visit our web site 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 89/336/EU. The declaration is available on the internet site at www.sennheiser.com.

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



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