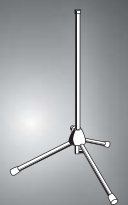
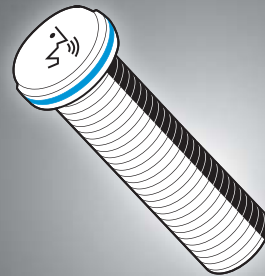
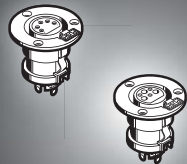
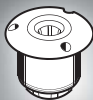
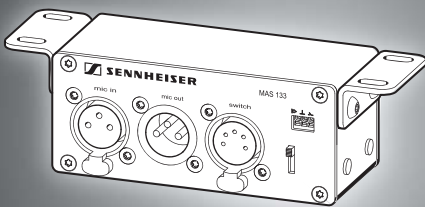


SpeechLine microphones

Microphone solutions for corporate
and commercial applications



Sennheiser SpeechLine – True to the word

The spoken word remains the most personal and powerful tool in communication. It enables us to convey and exchange messages, thoughts and opinions, as well as emotions. Therefore, when using technical devices like microphones, it is most important that no content is lost or misunderstood.



The best microphone is one you don't have to think about while speaking, because it fully captures your voice and picks up your words as precisely as you form them. Easy operation and clear speech intelligibility are perhaps most popularly embodied in the characteristically shaped Sennheiser ME 36, which can be seen on virtually every TV news program.

The qualities of these iconic microphones can also be found in all other microphones of the versatile Sennheiser SpeechLine series. These qualities are also built into any microphone of the versatile Sennheiser SpeechLine portfolio.

Wired or wireless, digital or analog, this comprehensive range of easy to integrate and unobtrusively designed microphones offer a solution for just about any situation, including yours.

In many applications, a speech microphone can help to increase the speech intelligibility or even make it possible in the first place (as in teleconferences). The following chapters describe the most common applications.

Typical applications

A) Conferences (voice lift)



The larger the room, the more helpful is an audio system which enhances the speech intelligibility. Especially in large conference rooms, a speaker seated at one end is difficult to understand at the other end. Table or ceiling microphones can be used to pick up what the speaker says. The audio signal can then be spread evenly around the room using wall or ceiling loudspeakers. This application is also known as "voice lift", i.e. the speech is amplified in the room.

B) Teleconferences

If the participants of a conference are seated in different rooms, they have to be connected via telephone or remote conference circuit. As a telephone alone can only offer inadequate speech transmission for all participants in the room, table or ceiling microphones should be used in this case too. These are connected to a telephone conference unit such as the Sennheiser TeamConnect system. This processes the signals and establishes the connection to the remote participant.

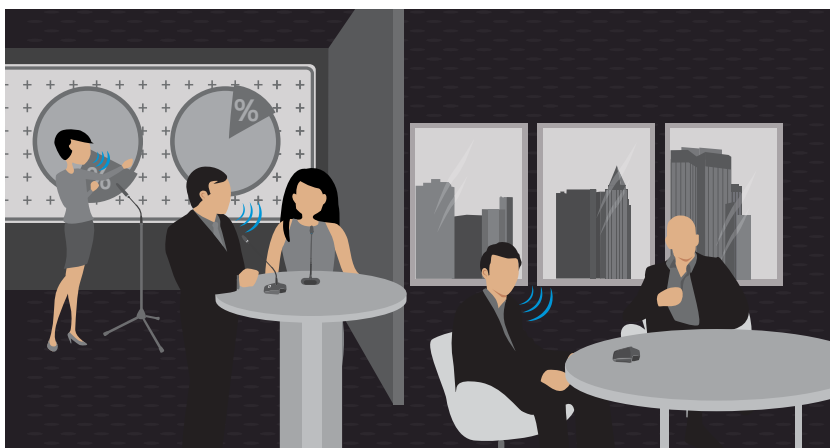
C) Presentations



Especially in a presentation, in which the focus is on the transmission of content, it is important to understand every word. Here, too, the larger the room, the more necessary it is to amplify the voice. In this case, gooseneck microphones offer the speaker orientation and enhance his presentation.

Typical ways of setting up and installing microphones

Mobile microphones:



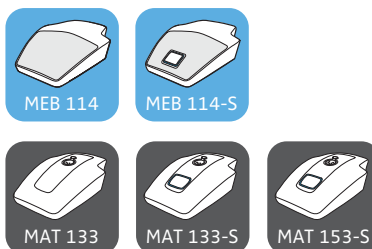
Permanently installed microphones:



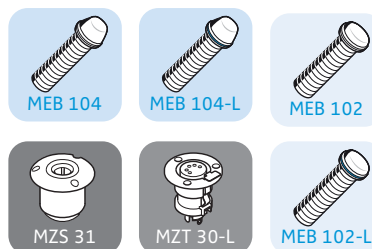
A) Table

Especially in conference rooms, an obvious solution is miking up the table. Here all participants are seated around the table. Sennheiser offers mobile solutions as well as permanently installed microphones. The mobile microphones are simply placed on the table.

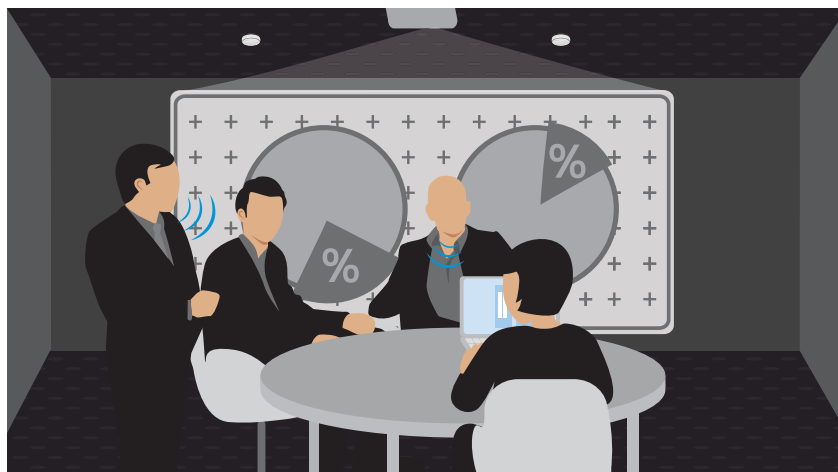
Mobile installation:



Permanent installation:



B) Ceiling



Suspending a microphone from the ceiling is another alternative. It has the advantage that the microphones can be installed virtually invisibly in the room. Ceiling installation requires precise prior planning, as the microphones are further away from the speaker and the speech intelligibility can be impaired by noise coming from the ventilator of a projector or from an air conditioning unit.

C) Lectern



A lectern is usually used for presentations. Here, too, the microphones can be positioned temporarily or installed permanently. A gooseneck microphone positions the microphone capsule close to the speaker, thus ensuring maximum speech intelligibility. Flexible gooseneck microphones prevent conflicts with laptops because they can be oriented flexibly.

D) Floor

For spontaneous presentations or panel discussions, floor stands provide a solid base for a gooseneck microphone.

Pick-up patterns of the microphones



Omni-directional pick-up pattern

An omni-directional pattern picks up the sound uniformly from all directions.



Cardioid pick-up pattern

A cardioid pattern has a wide directional characteristic, i.e. a wide opening angle. Sound hitting the rear of the microphone is attenuated very strongly.



Super-cardioid pick-up pattern

A super-cardioid pattern has a slightly stronger directional characteristic than the cardioid pattern, so it suppresses noise coming from the side even more strongly but also picks up some of the sound coming from the rear.

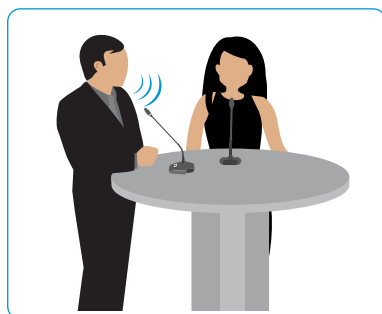


Super-cardioid | lobar pick-up pattern

A super-cardioid or lobar pattern has the strongest directional characteristic, i.e. it provides the maximum suppression of sound coming from the side, but it also picks up sound coming from the rear. However, the ratio is lower than it is with the super-cardioid pattern.



Positioning the microphones



A) Distance from the speaker

Basically, the nearer a speaker is to the microphone, the higher the speech intelligibility. For this reason, gooseneck microphones are optimal from an acoustic point of view. They position the microphone capsule close to the speaker while offering excellent orientation.

Boundary layer microphones do not achieve the excellent acoustic characteristics of gooseneck microphones, but they can be positioned especially unobtrusively. These microphones can be integrated into any room due to their small size and the colors they are available in. As a result of the so-called boundary layer effect, the signal picked up by the microphone capsule is amplified on a surface (for example a table or a ceiling panel). In this way, part of the distance to the speaker can be compensated for again.

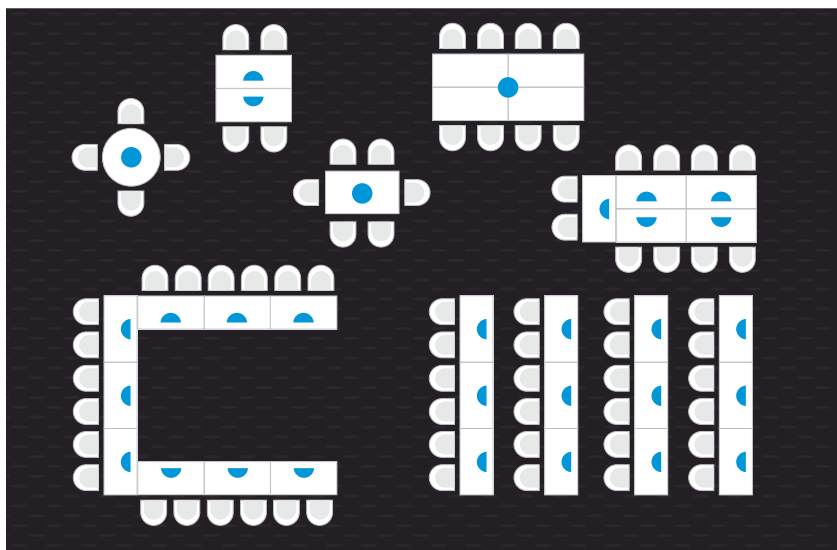
B) One microphone for each speaker

In the ideal case, a dedicated microphone is used for each speaker. This allows the best possible orientation and distance to the speaker to be ensured at all times. It is also possible to choose a narrower directional characteristic. This allows noise coming from the side as well as acoustic reflections to be minimized, resulting in the highest speech intelligibility.

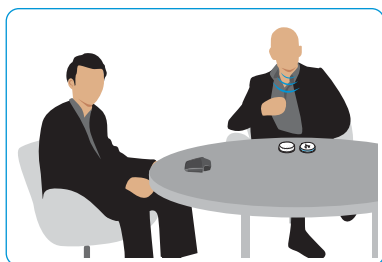
C) "Shared microphones" - several speakers share one microphone

One microphone per speaker is ideal, but one microphone shared by two speakers is often adequate for many applications. A microphone with a sufficiently wide opening angle should be selected here. The microphone can thus pick up both speakers if installed centrally before them.

D) Typical table shapes - U-shaped, round, long, rows

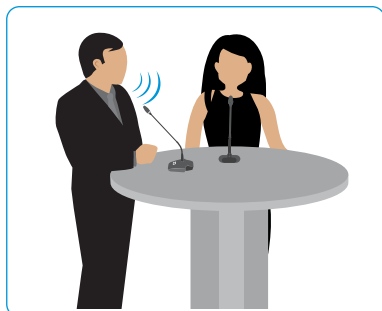


Depending on the configuration of the tables in a room, different microphones can be selected. In the case of a small round table, for example, a microphone with an omni-directional pick-up pattern (shown as a blue circle) is adequate to pick up all participants uniformly. Directional microphones (shown as a semicircle) are suitable for rows of tables. These microphones minimize the sound coming from the rear and the sides. In oblong conference rooms with long tables, a combination of directional and omni-directional microphones can be a good solution.



E) Speaker is seated

For conferences in which the speakers are seated, planning is easy as the distance between the speaker and the microphone is easy to estimate or measure. Here, the microphone is simply placed on the table and oriented towards the speaker.



F) Speaker is standing

In the case of presentations held at a lectern, the speaker is usually in a standing position. Here, the distance between lectern and mouth is virtually as large as it is with a seated speaker. In courtrooms, the speakers frequently stand up although the table in front of them is often of "normal" height. In this case, long gooseneck microphones should be used ideally in order to reduce the distance between the microphone capsule and the speaker.

Typical acoustic situations

A) Normally attenuated room

A normally attenuated room provides an average attenuation of reflections. This is contributed to by carpets, curtains or special acoustic ceilings. In the case of reduced reflections in the room, microphones pick up less noise, which results in the highest speech intelligibility.

B) Room with amplified sound

If the speech in the room is amplified by loudspeakers, this signal can enter the microphone again. This can cause echo, but in the worst case acoustic feedback can be the result. The effect can be reduced by using microphones with stronger directional characteristics.

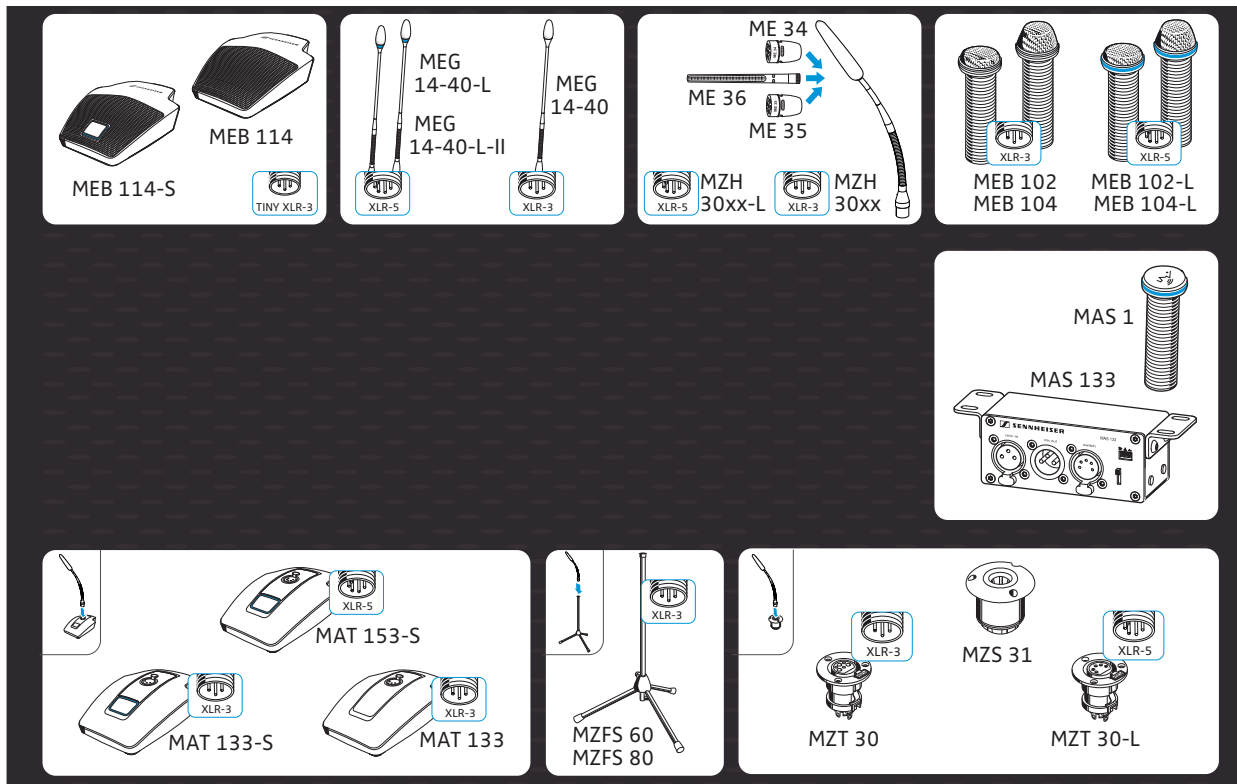
C) Large rooms with echo – acoustically challenging rooms

The larger the room, the more probable is acoustic disturbance due to reflections or sound coming from loudspeakers. If the room also has many smooth surfaces such as glass fronts or smooth floors, the result is a scenario which is extremely unfavorable acoustically. In this case, only microphones with strong directional characteristics like the ME 36 can ensure speech intelligibility.

For assistance in selecting suitable microphones, please visit our website at www.sennheiser.com > "IS Microphone Finder" or contact your local Sennheiser partner.

Overview of the SpeechLine IS microphone series

The SpeechLine IS microphone series offers microphones for different room and speech situations (with speakers in a standing or sitting position). Depending on the application, the microphones can be permanently mounted into tables or lecterns, mounted to the ceiling or simply set up somewhere.



The series comprise the following products:

Microphone with XLR-5 connection	Microphone with XLR-3 connection
Boundary layer microphones signal light ring : <ul style="list-style-type: none"> • MEB 102-L • MEB 104-L 	Boundary layer microphones: <ul style="list-style-type: none"> • MEB 114 with microphone button: MEB 114-S • MEB 102 MEB 104
Gooseneck microphones with signal light ring : <ul style="list-style-type: none"> • MZH 30xx-L goosenecks: MZH 3015-L, MZH 3040-L, MZH 3042-L, MZH 3062-L, MZH 3072-L with ME 34, ME 35 or ME 36 microphone head • MEG 14-40-L, MEG 14-40-L-II gooseneck microphones 	Gooseneck microphones: <ul style="list-style-type: none"> • MZH 30xx goosenecks: MZH 3015, MZH 3040, MZH 3042, MZH 3062, MZH 3072 with ME 34, ME 35 or ME 36 microphone head • MEG 14-40 gooseneck microphone
	MAS 133 inline switch box and MAS 1 microphone button for controlling a microphone
Table stands for gooseneck microphones: <ul style="list-style-type: none"> • with microphone button: MAT 153-S 	Table stands for gooseneck microphones: <ul style="list-style-type: none"> • MAT 133 with microphone button: MAT 133-S
Table mounts for gooseneck microphones: <ul style="list-style-type: none"> • MZS 31 • MZT 30-L 	Table mounts for gooseneck microphones: <ul style="list-style-type: none"> • MZS 31 • MZT 30
Floor stands for gooseneck microphones: <ul style="list-style-type: none"> • MZFS 60 or MZFS 80 	

For technical details of the microphones refer to the respective product pages at www.sennheiser.com.



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TI 1063 v 1.0