



KM 100

Application Guide



INTRODUCTION

Foreword

The KM 100 miniature microphone system debuted in 1988; down through the years, it has been expanded with accessories, turning it into a universal, modular system that adapts well to individual requirements. This "Application Guide", which is intended as a supplement to the KM 100 product catalog, explains the modular construction of these microphones and numerous sample applications.

This brochure lays no claim to exhaustiveness – the possibilities inherent in this modular system are simply too varied for that.

Many combinations have been developed by our customers themselves in practical settings. Some of these ideas have since found their way "into series" and are presented in this brochure. Think of it as a source of inspiration for your own approach to using the KM 100 system creatively.

As a supplement to the standard accessories available, Neumann can also manufacture variants and special parts according to customer request, thus additionally expanding the range of applications for this system.

The Foundations of the Modular System

The most important prerequisite for the modularity of this miniature microphone system is the ability to separate the microphone capsule from the so-called output stage. Electronics built right into the microphone – placed right after the capsule – ensure optimum decoupling of all subsequent accessories or cables, so that they have no influence on audio signal quality.

Because of the electronics that they contain, these capsules are known as **active capsules (AK)**. There are seven different active capsules with varying directional characteristics: AK 20, AK 30, AK 31, AK 40, AK 43, AK 45 and AK 50.



Active Capsules

The required level of miniaturization was achieved through the use of highly advanced hybrid components that permit a very high packaging density.



Section of Capsule with Hybrid Module Visible

The flexibility of the KM 100 system is due especially to numerous electrically passive accessories that can be connected between the capsule and the output stage, and an extensive range of mechanical accessories for mounting and positioning.

For the most part, Neumann accessories are freely combinable, since they are provided with both a 5/8" internal thread (US standard) and 3/8" and 1/2" internal threads (EU). This adaptation is made using a reversible adaptor that screws into the 5/8" threads. (Exception: The SGE 100 has only a 3/8" thread and an M6 bolt respectively).

First, however, let us consider the various electrical connection possibilities available.

Electrical Connection Possibilities of the Microphone

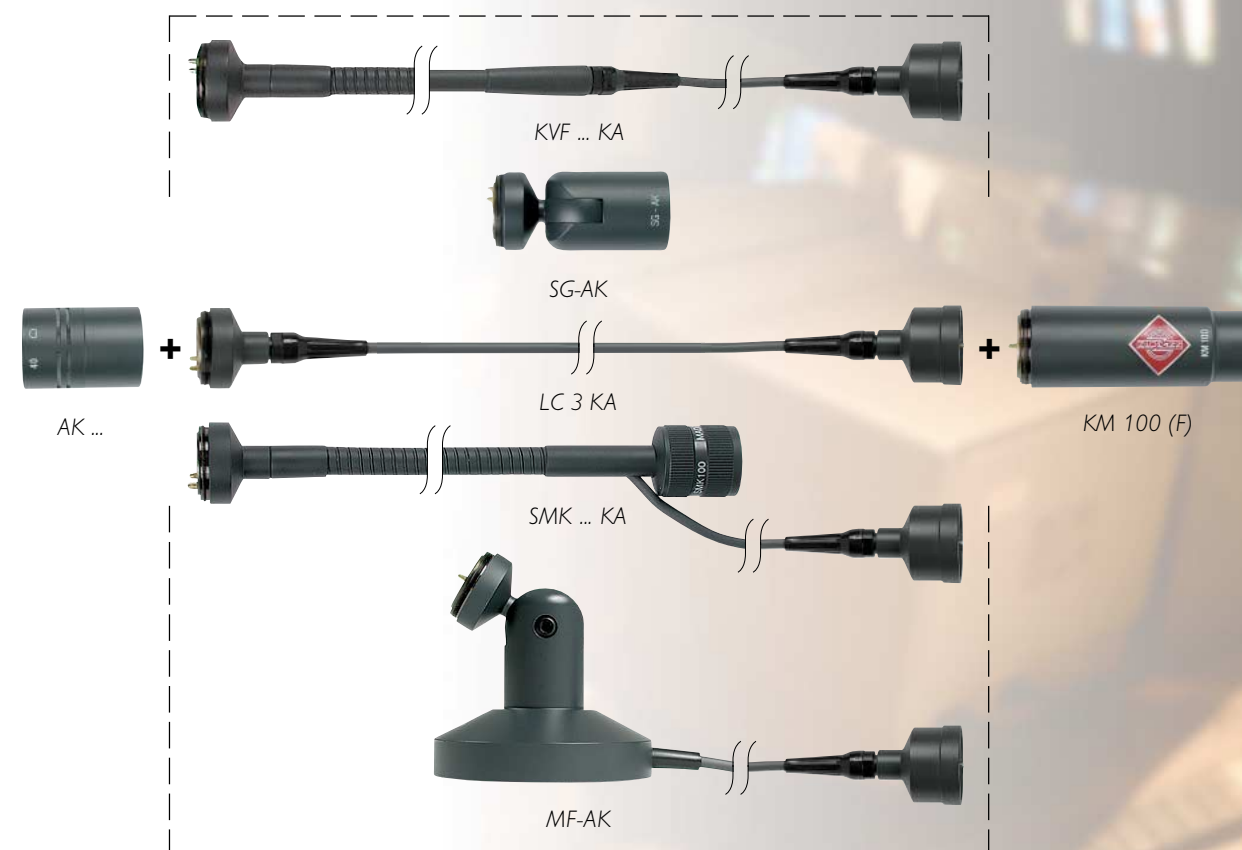
In the simplest case, an active capsule is connected directly to the output stage of the KM 100. This results in a compact miniature microphone that measures 92 mm in length – for example, the KM 140:



In many situations, especially for spoken voice applications, it is advisable to filter out low-frequency noise electrically. This is done with the help of the KM 100 F filter output stage, which can be used instead of the normal KM 100 output stage and has a slide switch permitting selection of an 80 Hz or 120 Hz cutoff frequency.



Numerous **strictly passive**, mechanical accessories can be inserted between the capsule and the output stage.



There are also various ways of connecting the microphone to the mixing console.

INTRODUCTION

Connecting to a Mixing Console with Phantom Power

At the XLR connector, the KM 100 and KM 100 F output stages have the same outer diameter as an XLR plug. In the simplest case, the output stage is plugged directly into the XLR input jack on the mixing console:

- 1 AK ... + KM 100 (F) + Mixing Console

or connected via an XLR microphone cable:

- 2 AK ... + KM 100 (F) + XLR 3 Cable + Mixing Console

Connecting to a Mixing Console without Phantom Power / Power Supplies

If phantom power is unavailable, then an external power supply unit is inserted between mic capsule and mixing console. The following power supply units are available:

- N 48 i-2: Plug-in mains unit, two-channel, 3-pin XLR connectors
- BS 48 i: 9 V battery operation, one-channel, 3-pin XLR connectors
- BS 48 i-2: 9 V battery operation, two-channel, 5-pin XLR connectors

The complete signal path then looks like this:

- 3 AK ... + KM 100 (F) + (XLR 3 Cable) + N 48 i-2 / BS 48 i + XLR 3 Cable + Mixing Console

or

- 4 2x AK ... + 2x KM 100 (F) + AC 21 + BS 48 i-2 + AC 20 + Mixing Console

All the necessary adapter cables for connecting to portable recording equipment with 3.5 mm or 6.3 mm jacks are described in our accessories catalog.

Power and Matrixing

Highly compact, portable solutions are possible with the help of the **MTX 191 A matrix amplifier**. It powers two active capsules directly, using the **AC 30 adapter cable**, with no output stages required. The MTX 191 A can be powered via phantom power or by an internal 9 Volt battery. In addition, both signals can be matrixed from MS (= middle/side) to XY- (= left/right) format. Moreover, the MTX 191 A incorporates a switchable high-pass filter with cutoff frequencies of 80 and 160 Hz and a switchable 10 dB attenuation.

- 5 2x AK 20 + AC 30 + MTX 191 A + AC 20 + Mixing Console

For this application, too, there are numerous adapter cables for connection to portable recording equipment with 3.5 mm or 6.3 mm input jacks.



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TABLETOP APPLICATION



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One of the most varied applications is as a speaker's microphone on a table. Usually the microphone should be placed so that it is inconspicuous or even invisible, especially in television, while delivering optimum signal quality. Moreover, body noise and wind noise should be suppressed effectively. For this reason, many variants are offered depending on the optical and acoustical requirements and budget.

The preferred capsule for speech applications is the **AK 40 cardioid**, or, in rooms with strong reflections, loud environments, or strong table reflections, the **AK 50 hypercardioid**. With the latter, it is also a question of whether the specific geometry (incident angle) of the table reflections is such that the hypercardioid offers the best cancellation ($\pm 120^\circ$).

The **AK 45 "speech cardioid"** is the right choice for extremely close distances (< 10 cm). This mic capsule has a frequency response that has been optimized to deliver balanced response even at extremely close distances.

To pick up several speakers at the same time, for example, in the context of a round-table discussion, the **AK 43 wide-angle cardioid** can be used to cover a wider angle or the **AK 30 omnidirectional** can be used to cover an omnidirectional field. If there are only two speakers, then occasionally the bidirectional **AK 20** with **figure-eight characteristic**, which completely suppresses sounds coming from the side, is set up between the two speakers.

If the microphone is positioned very close to the speaker, then wind-screens and pop filters should be used (see "Pop Screens and Wind-screens").

Small Setups

A typical example for use of small setups is miking a television news anchor. The mic should be inconspicuous, and yet its directional pattern should reject noise and possible table reflections.

The Smallest Variant

The simplest and most cost effective variant is to use the included **SG 21/17 mt clamp** to mount the entire microphone on a table stand, for example, the **MF 3 table stand**.

1 KM ... + SG 21/17 mt + MF 3

The Simplest Variant

The smallest of all solutions is embodied by the **MF-AK table stand**. The active capsule screws right onto the swiveling headpiece, is alignable in the horizontal and vertical planes, and connects to the **KM 100** output stage via the permanently attached cable. The cable exits at the side or below, making it possible to run the cable through the table where it is hidden by the stand itself.

The microphone stand rests on a soft cellular rubber disk that dampens body noise.

2 AK ... + MF-AK

The following combination, in which the active capsule with extension cable **LC 3 KA** is attached to the **SGE 100 stand mount**, is not much bigger. The **MF 2 table stand** has the same small diameter as the MF-AK and also rests on a shock-absorbing cellular rubber pad. Moreover, it incorporates rubber mount for additional suppression of body noise.

3 AK ... + SGE 100 + LC 3 KA + MF 2

The Flexible Variant

If a short gooseneck is desired in order to keep the capsule away from table reflections while still permitting a large range of angle adjustments, the **SMK 100 KA gooseneck** can be used. The cable runs through the inside of the gooseneck to the base, where it exits from the side above the **MF 2 table stand**.

4 AK ... + SMK 100 KA + MF 2

The Failsafe Variants

If two microphones are needed in the same place or one is to serve as a "reserve", it is sometimes desirable to double microphones. Special mounts are also available for this.

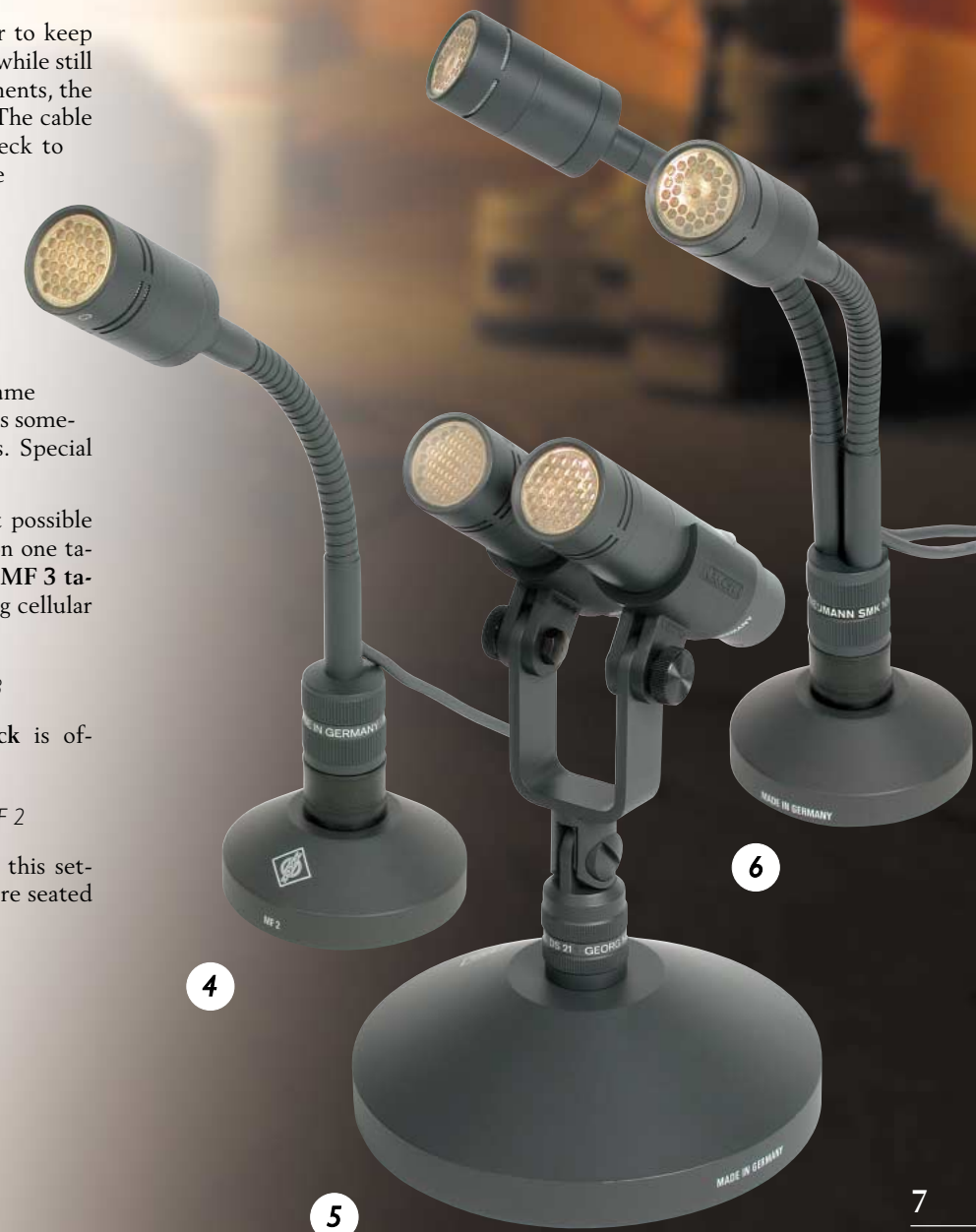
The **DS 21 mt double mount** makes it possible to mount two complete microphones on one table stand, for example, the **MF 3**. The **MF 3 table stand** also rests on a shock-absorbing cellular rubber pad.

5 2x KM ... + DS 21 mt + MF 3

The **SMK 100-2 KA double gooseneck** is offered for most flexible solutions.

6 2x AK ... + SMK 100-2 KA + MF 2

With the capsules aligned accordingly, this setup can even be used for speakers who are seated opposite one another.



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TABLETOP APPLICATION

Small, Elastic Setups

Apart from the acoustical quality of signal reproduction, the biggest problem in tabletop applications can be suppression of body noise. This should have been taken into account already in the planning phase by using a solid table construction with high internal damping. If this is not the case, then elastic suspensions or other damping components are indispensable.

The Simplest Variants

If only light body noise occurs, then it is sufficient to insert a **Z 26 mt shock mount** between the microphone mount and the table stand.

7 KM ... + SG 21/17 mt + Z 26 mt + MF 3

If the microphone is mounted on the table stand in an **EA 2124 A elastic suspension**, even loud, low-frequency noise is suppressed effectively. The double gooseneck joint at the base of the suspension makes it possible to point the microphone in any direction.

8 KM ... + EA 2124 A + MF 3

The Invisible Variant

For work with cameras, the **EA 2124 A elastic suspension** should not be visible. The elastic suspension can be mounted, for example, on a table flange, so that the microphone peeks out through a hole in the table. To permit free vertical alignment of the capsule, the **SG-AK swivel joint** is inserted between the active capsule and the output stage. Thus it is easy to aim the capsule at the speaker.

9 AK ... + SG-AK + KM 100 F + EA 2124 A

Large Setups

Positioning the microphone closer to the speaker improves the signal-to-noise ratio as well as cancelling table reflections. For non-camera work, e.g., in radio, the following variants are recommendable:

The Simplest Variant

The **SMK 8 i gooseneck** permits simple mounting of an entire microphone on a tabletop stand, for example, the MF 3. The gooseneck incorporates an XLR 3 connector; the cable runs through the inside and exits on the side above the tabletop stand.

10 KM ... + SMK 8 i + MF 3

The Elegant Variant

A more discrete solution is made possible by capsule extensions, here, for example, the **KVF 118 KA flexible capsule extension**. It is mounted to the tabletop stand using the **SG 100 stand mount** and makes it possible to position the capsule very close to the speaker.

11 AK ... + KVF 118 KA + SG 100 + MF 3

The Invisible Variant

In order to keep the tabletop stand out of the picture, the capsule extension can also be fastened underneath the table. For this, the **KVFF 148 KA capsule extension** permits free alignment of the capsule. The capsule extension is mounted to a **TF 221 c table flange** under the table using the **SG 100 stand mount**. In addition, the table flange incorporates a rubber metal connection for noise suppression.

12 AK ... + KVFF 148 KA + SG 100 + TF 221 C

The Upside Down Variant

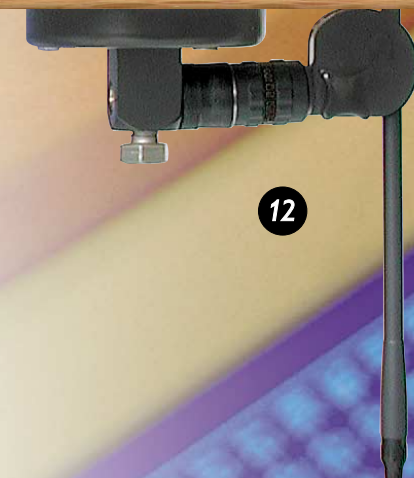
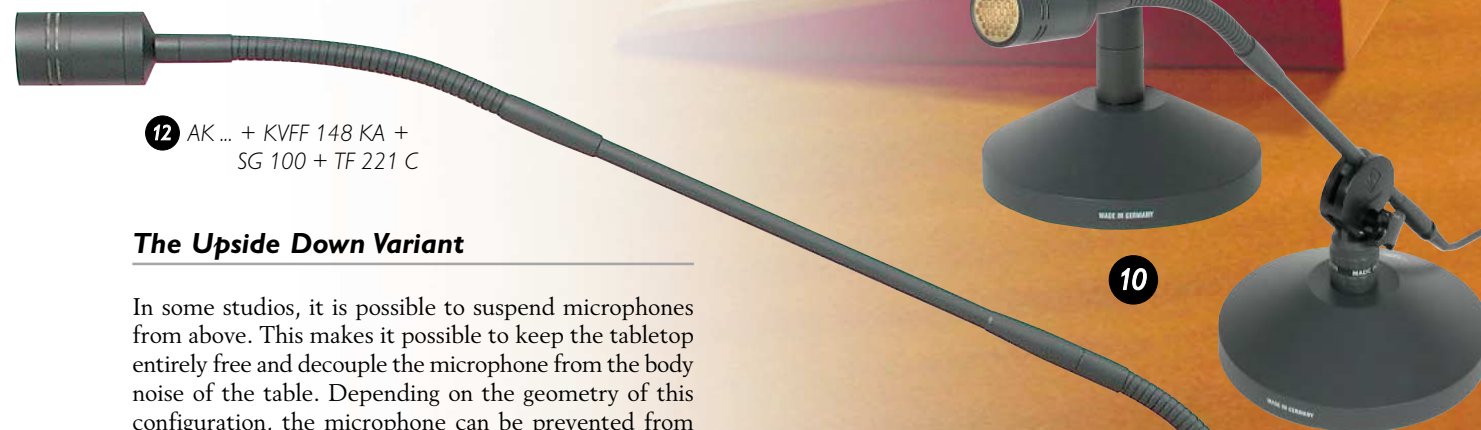
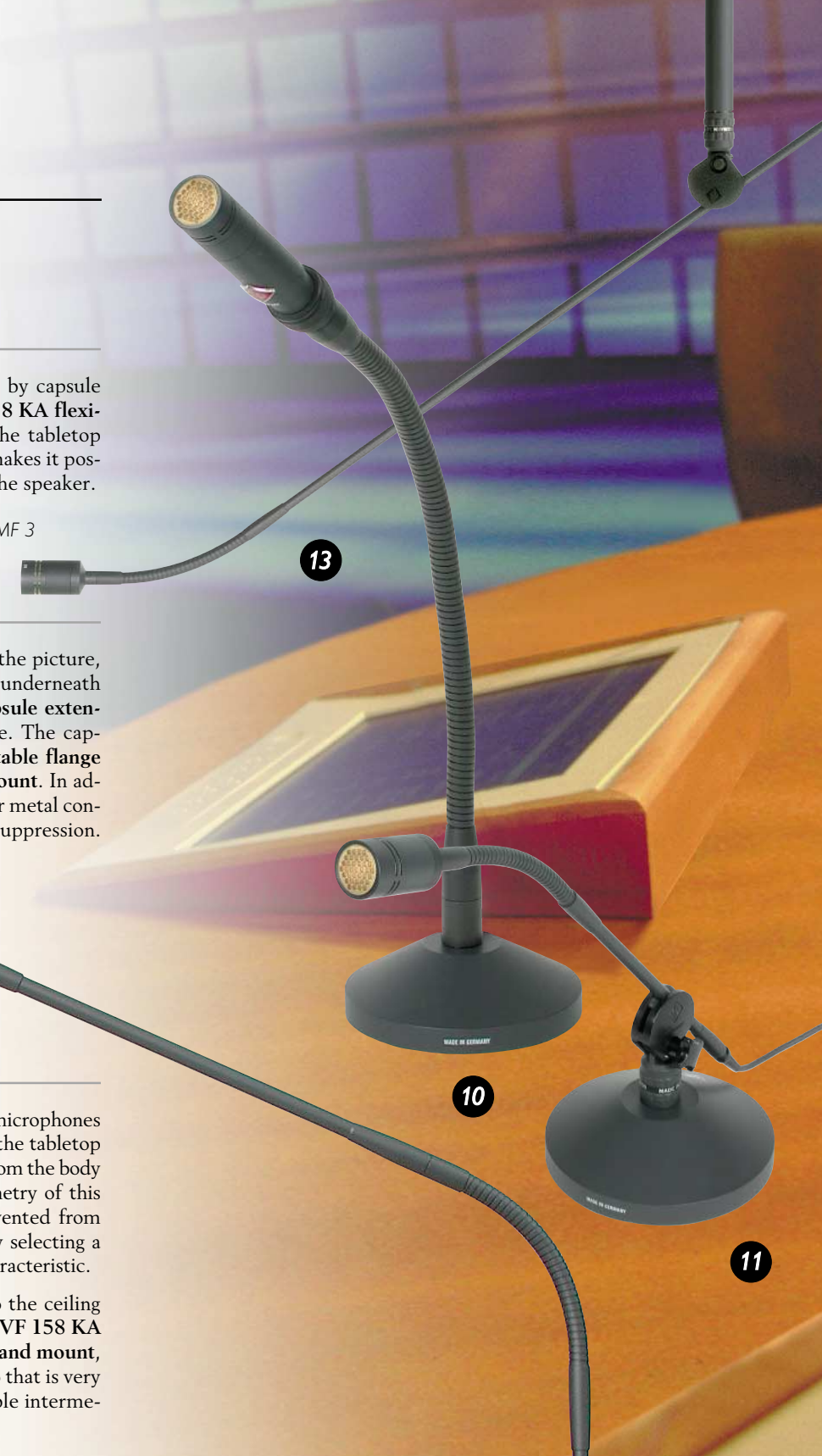
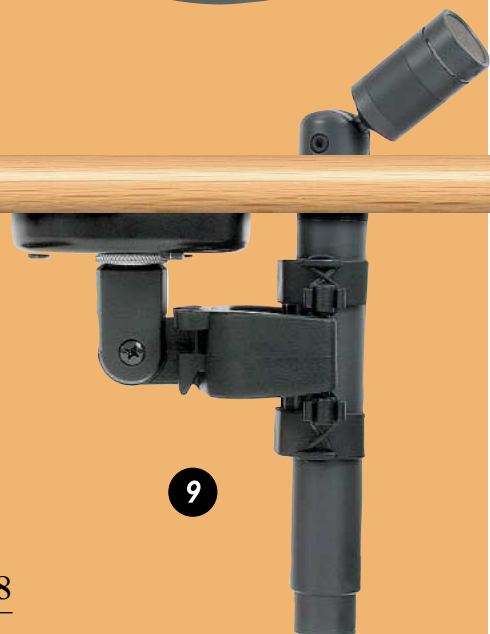
In some studios, it is possible to suspend microphones from above. This makes it possible to keep the tabletop entirely free and decouple the microphone from the body noise of the table. Depending on the geometry of this configuration, the microphone can be prevented from picking up reflections from the tabletop by selecting a capsule with the appropriate directional characteristic.

The **STV stand extensions** are fastened to the ceiling with the help of a table flange. The long **KVF 158 KA capsule extension** is held by the **SG 100 stand mount**, making it possible to position the capsule so that is very close to the speaker. If necessary, a rotatable interme-

diated piece can be inserted between the swivel mount and the stand extension.

13 AK ... + KVF 158 KA + SG 100 + STV 60

There is also a **DS 100 double mount** available for the capsule extensions. Since this solution presents itself above all for stand-based solutions, however, the DS 100 is presented in the next section.



POP SCREENS AND WINDSCREENS

Not only in outdoor work, but also in indoor work with close miking, unexpected low-frequency noise may occur due to the rustling of manuscript pages right in front of the microphone, fishpole movement, air conditioning, etc. Then effective pop screens or windscreens are indispensable.

The **WNS 100 windscreen** is included with every microphone in the KM 100 series (KM 120: WNS 120). This is sufficient protection against light winds and popping, with minimal effect on frequency response, and that only in the very highest frequencies.

1 WNS 100 + KM ... + SG 21 + MF 3

Note: Due to physics, pressure transducers (KM 130, KM 131) are considerably less prone to wind and popping noise than pressure gradient transducers. Thus microphones of the first type are preferable for use in such situations.

Pop Screens

The most frequent type of noise in spoken-word recordings are so-called "popping consonants", which are caused in particular by plosives in spoken language. They can be prevented very effectively by acoustic using a **PS 10 pop screen** that remains completely transparent for the useful signal. The PS 10 can be mounted on a separate stand or on the microphone itself. For optimum effect, a minimum distance of 3 ... 5 cm should be maintained between the pop screen and the microphone.

All pop screens are provided with a 3/8" threaded nut that makes it possible to attach the pop screen to any other accessory.

The Smallest Variant

If the active capsule is operated on a **KVF ... capsule extension**, then the pop screen can be screwed onto the **SGE 100 stand mount** and its clamp can be slid from the cable over the capsule extension to the capsule.

2 AK ... + PS 10 + KVF 118 KA + SGE 100 (Top) + SG 100 + MF 3

The Simplest Variants

A PS 10 pop screen can be fastened with an **MKV quick-release tilting clamp** directly to the microphone.

3 KM ... + PS 10 + MKV on SG 21 + MF 3

If the complete microphone is fastened to the XLR connector using the little clamp always enclosed with the **SG 21/17 mt stand mount**, then the pop screen can also be snapped directly onto the microphone using a second stand mount. The SG 21/17 mt stand mount is included with all of our miniature microphones, but is also available separately.

4 KM ... + PS 10 + SG 21 on SG 17 + MF 3

In order to cover a larger angle in front of the microphone, the **PS 20 pop screen** can be used.

Windscreens

If strong winds or major microphone pans with the fishpole are anticipated, then additional precautions should be taken.

Note: For pressure transducers (KM 130, KM 131), foam windscreens are the optimal solution. The following remarks apply to pressure gradient transducers.

The Simplest Variant

The **WS 100 windscreen**, which measures 9 cm in diameter, provides a markedly better protection against wind than the WNS 100 does, but also has more of an effect on high frequencies. Additionally, a foam windscreen always has some effect on the directional characteristics, causing them to shift somewhat toward an omnidirectional pattern.

5 WS 100 + KM ... + SG 21 + MF 3

The Effective Variant

As seen in numerous outdoor applications, windscreens provide outstanding protection against wind noise. For best results, the enclosed volume surrounding the microphone should be maximized. The **WKD-AK** and **WKD-KM windscreens** are offered to fit the light, elastic double suspensions for active capsules and/or complete miniature microphones. See the section "Microphone Fishpoles".

6 AK 20 + AK ... + DA-AK + 2x LC 3 KA + WKD-AK
w/o fig.: KM 120 + KM ... + DA-KM + WKD-KM

The Most Effective Variant

In addition, the **WJ-AK** and **WJ-KM windjammers** are available for use in extremely high winds. These are fur covers that can be pulled on over the **WKD-AK** and **WKD-KM windscreens**.

6 AK 20 + AK ... + DA-AK + AC 30 (oder 2x LC 3 KA) + WKD-AK + WJ-AK
w/o fig.: KM 120 + KM ... + DA-KM + WKD-KM + WJ-KM



STAND-BASED SOLUTIONS

Stand-based solutions are for cases in which it is necessary to position the microphone capsule further away from the floor. Microphone configurations for podiums are discussed in the **Tabletop Applications** section.

Thus stand-based solutions are configurations in which a microphone used as a speaker's microphone stands in an open space or at a lectern. However, this also includes setups for miking instruments in an orchestra, etc.

The extremely flexible gooseneck of the KVF... capsule extension also permits overhead miking by aiming the microphone at the instrument from above, as it is the usual practice with strings. See "Suspended Variants and Overhead Miking".

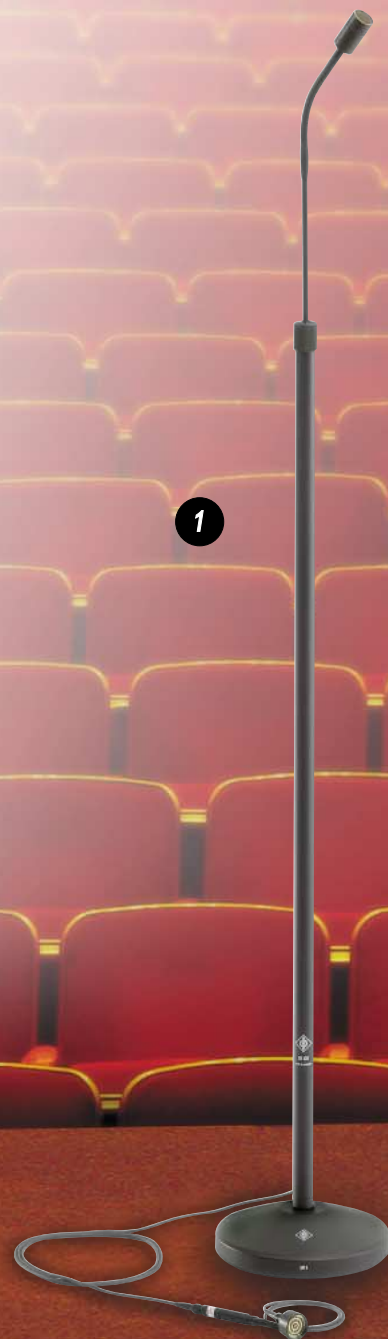
The conditions for all of these applications resemble those for tabletop applications, but with the advantage that the setup is mechanically decoupled from the table or lectern. Except in situations with highly resonant floors, body noise is negligible. The graceful capsule extensions, which are made of tubing measuring only approx. 6 mm in diameter, are both inconspicuous and elegant.

The Simplest Variant

The **SR 100 stand tube** constitutes an already almost complete system for applications at lecterns or with standing speakers or singers. It contains an adjustable-height capsule extension (see **KVF 158 KA**), that is guided inside a stable tube. The tube is screwed onto a table stand (see **MF 4**) that rests on a rubber ring for the purpose of decoupling body noise. Once an active capsule is screwed onto the capsule extension, it can be positioned at heights ranging from 95 to 145 cm and aligned at a specific angle.

The cable of the SR 100, which exits laterally at the base of the stand, ends in a Lemo plug. A **KA 100 cable adapter** is required in order to connect it to the output stage.

1 AK ... + SR 100 + KA 100 + MF 4



The Concealed Variant

The setup in the first example can also be used if plans call for the whole setup to be concealed in a lectern or table. To this end, the capsule extension is guided through a hole drilled in the lectern or table, or the stand tube is placed inside a ring of tables. Thus it is ideally decoupled from the tabletop, since the base of the microphone stand rests on the floor.

2 AK ... + SR 100 + KA 100 + MF 4



The Elegant Variant

A very unobtrusive setup for singers and speakers can be realized using the **KVF 158 KA capsule extension**. This is snapped onto a **SG 100 stand mount** and mounted on any stand. An elegant setup with virtually continuous height adjustment can be attained by screwing a stand extension, for example, the **STV 60 stand extension**, onto a **MF 4 table stand**.

3 AK ... + KVF 158 KA + SG 100 + STV 60 + MF 4

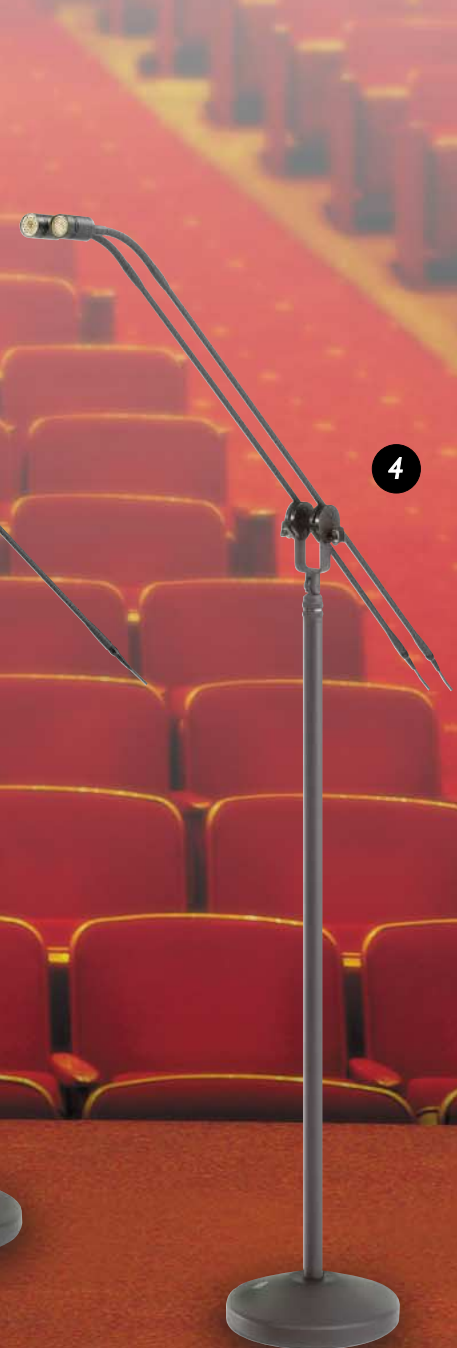


The Failsafe Variant

Certain critical applications require increased operational reliability through doubled microphones. With the help of the **DS 100 double mount**, two capsule extensions can be mounted parallel to one another.

When miking instruments or multiple speakers, the active capsules can also be oriented in varying directions and thus, for example, cover different sections of an orchestra.

4 2x AK ... + 2x KVF 158 KA + DS 100 + STV 60 + MF 4



STEREO APPLICATIONS



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The KM 100 system accessories make it possible to realize compact setups for all common stereo configurations. The accessories described below can simply be mounted to any stand, preferably with a shock-absorbing rubber pad. If necessary, the **Z 26 mt shock mount** can also be inserted to reduce body sound transmission even further.

MS Configuration

The **STH 120 stereo mount** makes it possible to position two active capsules in an “over/under” configuration and orient them in relation to the sound source using the ball joint on the mount.

- 1 AK 20 + AK ... + 2x LC 3 KA + STH 120

If the active capsules or microphones are to be mounted in elastic mounts, this can be done using the **DA-AK** and **DA-KM elastic suspensions**. See the section “Microphone Fishpoles”.

The **MTX 191 A matrix amplifier** is designed to power and matrix the two active capsules specifically in applications like this one. See the section “Introduction/Power and Matrixing”.

XY Configuration

The easiest way to position two capsules coincidentally is by using the ‘XY clamps’ of the **STH 100 stereo mount**. This permits variation of the included angle between the two capsules within a range of 30° to 180°, while keeping the centers of the membranes always positioned ideally over and under one another. When mounted on a table stand, this is the smallest possible solution at all.

- 2 2x AK ... + 2x LC 3 KA + STH 100

For complete microphones, or even active capsules, an XY configuration is realized using the **DS 110** or **DS 120 double mount**. The microphones in the SG 21/17 mt stand mount are snapped onto the double mount. The double mount, which is likewise adjustable over a large range of angles, is mounted on a table stand or stand. The capsules are positioned next to one another.

- 3 2x KM ... + 2x SG 21 + (DS 110 /) DS 120
w/o fig.: 2x AK ... + 2x LC 3 KA + 2x SG 21 + DS 110 / DS 120

AB Configuration

The **DS 120 double mount** can also be used for (small) time based AB stereo setups. The microphones or even just the active capsules are mounted with the swivel mounts on the double mount with a definite spacing and any angle of the user’s choosing.

- 4 2x KM ... + 2x SG 21 + DS 120
w/o fig.: 2x AK ... + 2x SG 21 + 2x LC 3 KA + DS 120

ORTF Configuration

The “ORTF clamp” of the **STH 100 stereo mount** holds two active capsules in the standard ORTF configuration with an included angle of 110° and a distance of 17.5 cm between membranes.

- 5 2x AK ... + 2x LC 3 KA + STH 100

The **DS 120 double mount** can be used for complete microphones or active capsules.

- w/o fig.: 2x AK ... + 2x SG 21 + 2x LC 3 KA + DS 120
w/o fig.: 2x KM ... + 2x SG 21 + DS 120

Blumlein Configuration

The so-called Blumlein configuration is a special type of XY technique with two microphones with a figure-eight characteristic positioned above one another and an included angle of 90°. This is easy to realize with a **DS 120 double mount** attached to a horizontal boom. The two microphones or active capsules are screwed onto the DS 120 in their swivel mounts.

- 6 2x KM 120 with SG 21 + DS 120 on horiz. boom
w/o fig.: 2x AK 20 + 2x LC 3 KA + SG 21 + DS 120 on horiz. boom

SUSPENDED VARIANTS AND OVERHEAD MIKING



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Frequently it is necessary to position microphones as inconspicuously as possible without using a stand. Overhead variants in which the microphone is suspended from the ceiling are ideal in such situations. Thanks to their low weight, the miniature microphones of the KM 100 series can be fastened by their own cables without any problems. The same holds true for the LC 3 KA cable (just 3.5 mm thick) used to connect the detached active capsules to the output stage. Using an additional thread, it is possible to attain precise and stable positioning of the microphone(s).

Especially in concert halls and theaters, suspended microphones are frequently used as permanent installations, both above the orchestra and for miking the reverberations in the hall and the audience.

The Simplest Variant

The MNV 21 auditorium hanger holds the complete microphone and swivels to permit adjustment. The microphone cable is held by a clamp device, and the entire setup is suspended from the ceiling.

1 KM ... + MNV 21 + XLR Cable

The Smallest Variant

An active capsule is connected to the output stage using the LC 3 KA cable. The plug end of the cable snaps



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into the MNV 100 auditorium hanger. The clamp swivels to permit adjustment of the active capsule. The cable is held in place by the clamp of the MNV 100 and the entire setup is suspended from the ceiling.

2 AK ... + MNV 100 + LC 3 KA

The Elastic Variant

If additional mechanical decoupling from the ceiling is required, then the microphone can also be suspended from the ceiling in an elastic suspension. On the one hand, any accessory can be screwed onto the 1/2" threaded neck of the MNV 87 mt auditorium hanger, while on the other hand, the entire setup can be suspended from its own cable. For example, a complete miniature microphone in an EA 2124 A elastic suspension can be mounted on the MNV 87 and suspended from the ceiling on its own cable.

3 KM ... + MNV 87 mt + EA 2124 A + XLR Cable

Stereo Setups

The MNV 87 mt auditorium hanger also makes it possible to connect the STH 100 (for XY and ORTF stereophony) or STH 120 stereo mount (for MS stereophony) to the microphone cable. This makes it possible to suspend a nearly invisible stereo setup right from the ceiling and swivel it into the correct orientation.

4 2x AK ... + MNV 87 mt + STH 100 (/ STH 120) + 2x LC 3 KA



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Of course, it is also possible to suspend the DS 110 and DS 120 double swivel mounts.

w/o fig.: 2x KM ... + DS 110 / DS 120 + MNV 87 mt + XLR Cable

Overhead Miking

The KVF 158 KA capsule extension can also be used with an SG 100 stand mount for inconspicuous miking of instruments, etc. Thanks to the gooseneck, the active capsule can be aimed from above at the sound source. The STV... stand extension, when mounted on the MF 4 table stand or a floor stand, makes it possible to reach virtually any height.

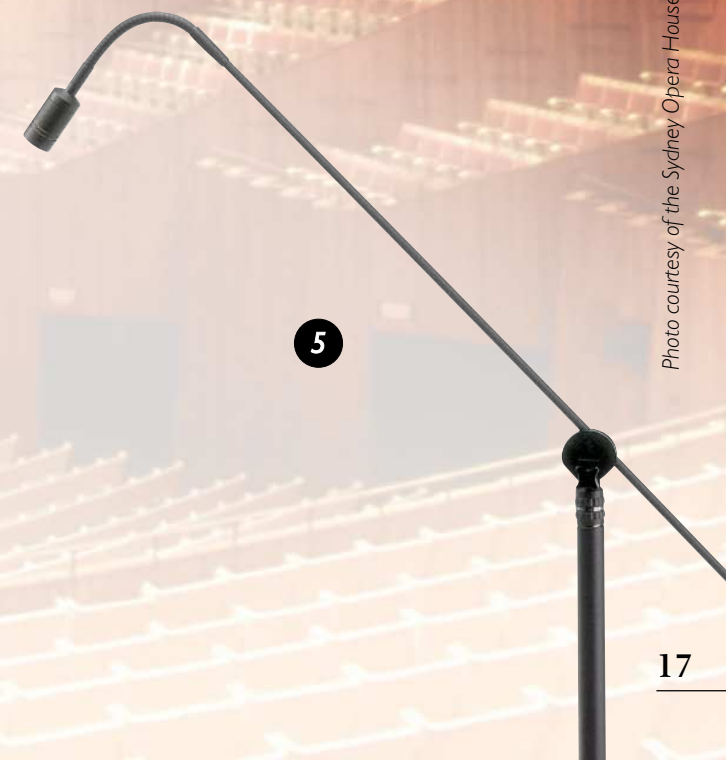
5 AK ... + KVF 158 KA + SG 100 + STV 60 + MF 4

The DS 100 double mount is offered for stereo applications or miking two different areas.

w/o fig.: 2x AK ... + 2x KVF 158 KA + DS 100 STV 60 + MF 4



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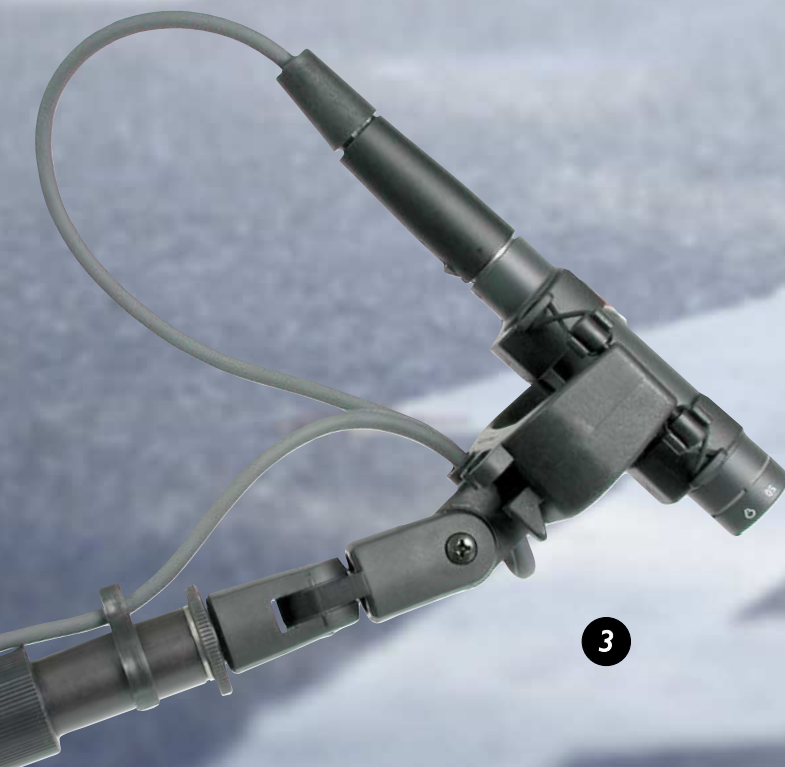
MICROPHONE FISHPOLES



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In film and TV shooting, a microphone fishpole is often used to get the microphone as close to the speaker as possible in a given situation. Shotgun microphones are frequently used for this. But miniature microphones – for example, ones with a hypercardioid pattern – produce comparable directivity indices. When working in small spaces with microphones placed near sound-reflecting walls, the cardioid pattern can be very advantageous, since it does the best job of minimizing the amount of backward reflection picked up.

For use with windscreens, etc., see the section “Pop Screens and Windscreens”.

Mono Applications

Very small and flexible combinations are offered for mono applications.

The Smallest Variants

The lightest solution is to mount the active capsule on the upper part of the **SGE 100 stand mount**. Together, the capsule and the swivel mount weigh approx. just 45 g.

1 AK ... + LC 3 KA + SGE 100 (Top) + MA

Alternatively, the same flexibility can be achieved with the enclosed **SG-AK swivel joint**. This solution weighs 160 g.

2 KM ... + SG-AK + MA

The Elastic Variant

Interference through body noise cannot be avoided entirely when there are fast movements of the microphone fishpole. Then the **EA 2124 A elastic suspension** included with our microphone fishpole should be used.

3 KM ... + EA 2124 A + MA

Stereo Applications

The MS stereo configuration is usually used for stereo setups on the microphone fishpole. In this arrangement, usually a cardioid (AK 40) or hypercardioid (AK 50)



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capsule is used for the middle signal and combined with the diagonal figure-eight characteristic of the AK 20.

For other coincident or semi-coincident techniques, see the section “Stereo Applications”.

The Smallest Variant

The two active capsules are mounted on the rotatable, swiveling **STH 120 stereo mount** and result in an MS system with a total weight of just 150 g.

4 AK 20 + AK ... + 2x LC 3 KA + STH 120 + MA

The Elastic Variants

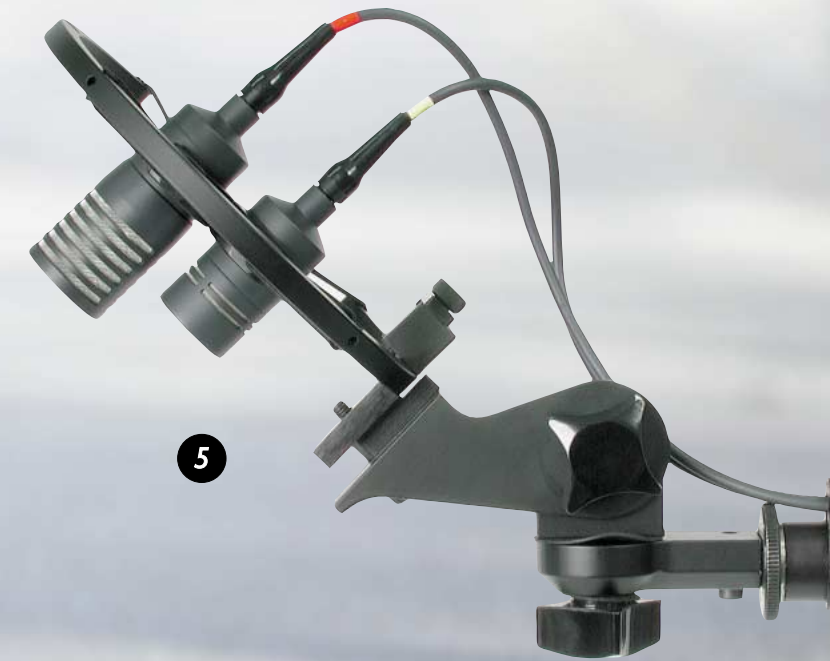
If the microphones are supposed to be elastically suspended, the **DA-AK** and **DA-KM elastic suspensions** provide solutions both for active capsules with capsule extension and for complete miniature microphones.

5 AK 20 + AK ... + 2x LC 3 KA + DA-AK + MA

6 KM 120 + KM ... + DA-KM + MA

Windscreens and windjammers are available for such applications. (See the section “Pop Screens and Windscreens”)

Note: Two active capsules can be powered and matrixed by the **MTX 191 A matrix amplifier**, see the section “Introduction/Power and Matrixing”.



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ACCESSORIES

Accessories*



AK 20, Active capsule
Catalog No.: 08416



AK 30, Active capsule
Catalog No.: 07057



AK 31, Active capsule
Catalog No.: 07063



AK 40, Active capsule
Catalog No.: 07045



AK 43, Active capsule
Catalog No.: 07117



DS 21 mt, Double mount
Catalog No.: 06798



DS 110, Double mount
Catalog No.: 07342



EA 2124 A mt,
Elastic suspension
Catalog No.: 08433



MNV 21 mt, Auditorium hanger
with clamp for KM ...
Catalog No.: 06802



MNV 87 mt, Auditorium hanger
(with threaded adapter)
Catalog No.: 06806



AK 45, Active capsule
Catalog No.: 07074



AK 50, Active capsule
Catalog No.: 07081



SBK 130, Sound diffraction sphere
for dia. 22 mm, Catalog No.: 07371



KM 100, Output stage
Catalog No.: 07395



KM 100 F, Output stage
Catalog No.: 07376



MNV 100, Auditorium hanger
(with clamp for AK ...)
Catalog No.: 06811



SG 211/17 mt Swivel mount
(with 21 mm and 17 mm clamp)
Catalog No.: 06149



SGE 100, Swivel mount for MF 2
(with rubber mounted thread
for AK ...) Catalog No.: 06742



MF-AK Table Stand
(with Swivel Joint)
Catalog No.: 08453



SMK 100 KA, Gooseneck
(with cable, 160 mm)
Catalog No.: 08413



N 48 i-2, Power supply
230 V: Catalog No.: 06500
117 V: Catalog No.: 06502



BS 48 i, Battery supply
Catalog No.: 06494



BS 48 i-2, Battery supply
Catalog No.: 06496



DS 100, Double swivel mount
(for KVF ... extension tubes)
Catalog No.: 07318



SG 100, Swivel mount (for KVF ...)
Catalog No.: 06688



SMK 100-2 KA, Double gooseneck
(with cable, 160 mm)
Catalog No.: 08414



SMK 8 i, Gooseneck
Catalog No.: 06181



STH 100, Stereo mount
(for 2xAK ... with LC 3)
Catalog No.: 07315



SG-AK Swivel Mount
Catalog No.: 08452



Stand extension
STV 4, Catalog No.: 06190
STV 20, Catalog No.: 06187
STV 40, Catalog No.: 06188
STV 60, Catalog No.: 06189



KVF 118 KA, Capsule extension
(with gooseneck, 300 mm)
Catalog No.: 08410



KVF 158 KA, Capsule extension
(with gooseneck, 700 mm)
Catalog No.: 08411



KVF 148 KA, Capsule extension
(with double gooseneck, 700 mm)
Catalog No.: 08412



MKV, Quick release clamp
Catalog No.: 07199



DS 120, Double mount
Catalog No.: 07343



TF 221 c, Table flange
(with rubber mounted thread)
Catalog No.: 07278



MF 2, Table stand
(with rubber mounted thread)
Catalog No.: 07266



MF 3, Table stand
Catalog No.: 07321



MF 4, Table stand
Catalog No.: 07337



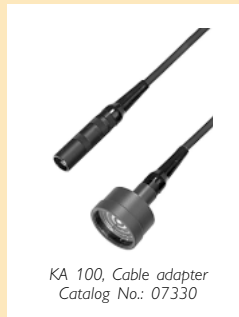
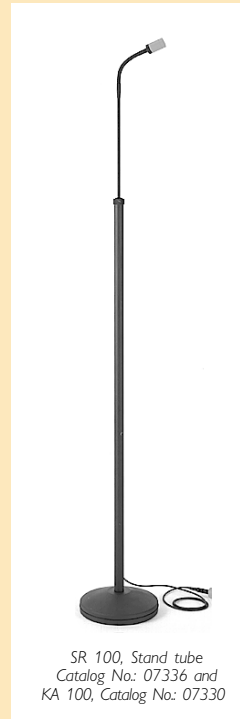
Windscreens, 45 mm
WNS 100 blk, Cat. No.: 07323
WNS 100 red, Cat. No.: 07324
WNS 100 gm, Cat. No.: 07325
WNS 100, yel, Cat. No.: 07326
WNS 100, blu, Cat. No.: 07327

*) Detailed descriptions of all accessories are contained in the accessories catalog.

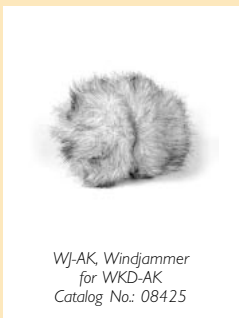
*) Detailed descriptions of all accessories are contained in the accessories catalog.

ACCESSORIES

Accessories



Special Accessories for AK 20 and Stereo-Applications



Application Hints

For recording situations where the microphone must remain "invisible".

KM 120

- MS-Stereo microphone, as a combination of the AK 20 with the AK 40 cardioid capsule or another AK ...
- Two crossed AK 20s in Blumlein technique
- Inconspicuous spot microphone with optimum attenuation of lateral sound sources
- Single microphone for two speakers facing each other

KM 130

- Ideal as AB stereo pair in the diffuse sound field because of the flat frequency response
- As a main mic, especially for capturing room acoustics
- For stereo recordings with a baffle plate
- As a spot mic for piano, wind instruments, organ, and choir

KM 131

- For close miking of instruments when there is no need to attenuate extraneous noise, and in a balanced acoustic environment to record acoustic guitar, wind instruments, strings, percussion, and drums
- Flat frequency response for close miking, spot mic

KM 140

- Universal usage, especially in situations when it is necessary to attenuate sound coming from adjacent instruments
- As XY and ORTF stereo pair
- Announcer's mic for broadcasting
- Spot mic, overhead
- Close miking of strings, wind instruments, percussion, piano, Leslie speakers, guitar amps
- We recommend using an additional windscreen to minimize the effects of high wind velocity

KM 143

- Polar response characteristic acts more like an omni. Therefore, it is an ideal tool to record larger instrument ensembles
- As AB stereo pair, especially in rooms with less than ideal acoustics
- As spot mic for strings, wind instruments, percussion, and Leslie speakers
- Acts very neutral when used close up to bass instruments, such as double bass, bass amps, guitar amps

KM 145

- It naturally compensates for proximity effect
- Very neutral tonal balance during close miking of speech, as in TV, movie and video, PA
- Acts very neutral when used close up to bass instruments, such as double bass, bass amps, guitar amps, Leslie speakers, toms

KM 150

- As XY stereo pair
- Overhead, toms
- In situations that are susceptible to acoustic feedback
- To attenuate unwanted sound of nearby instruments
- Recording of speech, as in TV, movie and video productions, PA systems
- Produces especially warm and bass supporting sound for artists who perform in proximity effect range
- We recommend using an additional windscreen to minimize the effects of high wind velocity, and plosive sounds

These are just some of the most common applications. We recommend additional experimentation to gain maximum use from this microphone.

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