



# VM1 • VMX • VMA MANUAL



THE ART OF MICROPHONES



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 brauner. vm1



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Thank you for purchasing this original Brauner microphone and thus supporting a part of the world famous German craftsmanship and our love for quality, detail, precision and persisting values. Our microphones go to the full extent of what is physically possible today to achieve unparalleled results.

To reach this high level of perfection only best components are carefully selected, assembled and calibrated to become these wonderful works of art and sound. Even though this is a time-consuming and costly process, it ensures the quality of our microphones in a way industrial mass production could never do. As our goal is to offer the best microphones money can buy, we will not make any compromises for the sake of our products' quality. Thus a Brauner microphone is not only a professional and reliable tool for your daily work but also a lifetime investment.

According to our company's philosophy we try to think of sound recording as an art rather than a technical method. For this reason we build and develop our microphones not just as pure technical but also artistic tools. Of course, one emphasis of our work is reaching the best physical limits (e.g. extremely low self noise, highest possible dynamic range and proper impulse response), but the most important, as we believe, is the sound.

As „sound“ cannot be entirely evaluated with audio measurement capabilities given today, a very important part of building our microphones is a severe listening test. Not one microphone will leave our factory unless it has passed tests by the critical and unforgiving ears of our engineers who do not tolerate the smallest deviation from our high standards.

This approach has created the enormous reputation and esteem Brauner products have become famous for. A reputation we feel deeply committed to.

We would like to wish you success and enjoyment with your new microphone into which we have put all our experience and knowledge and which will surely accompany you during your work for many, many years.

### **The difference between VMA, VM1 and VMX**

At first sight these three microphone models seem to be almost identical, just with one little difference: the toggle switch found on the front of the power supply will turn on a 10 dB pad on the VM1 and VMX (good for extremely high sound pressure levels), but will select between the two available microphone circuits on the VMA.

In fact the VMA represents the combination of VM1 and VMX. In the lower switch position it is tuned like the classic VM1, in the upper it sounds like a VMX. Both tonal characters of VM1 and VMX – and thus of the VMA, too – excel in high resolution of finest sonic detail and enormous depth and space of sound. But whereas the VM1 represents the classic and famous Brauner sound – wide open and transparent, with all detail and resolution and homogeneous imaging over the whole frequency range, the VMX has a soft and silky top end and a slightly pronounced high mid and bottom range. This sound is a reminiscence to the classic vintage microphones and is very popular in the USA.

Both sounds are useful in a variety of applications depending on whether you like it more soft, silky and warm or more shiny, wide and clear. We know it is hard to describe the sonic characteristics of a microphone especially as we are talking about subtle nuances which might not become obvious instantly.

## 2.0 Safety Instructions

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Tube equipment runs on fairly high voltages that can be lethal in case of direct contact. Brauner products comply to all international safety regulations, are tested severely and can therefore be used safely and without any risks if the following regulations are met:

- 1) Please read this manual carefully.
- 2) The manufacturer will in no way be able to be held responsible for damages of any kind whatsoever if these occur from unintended use of the equipment or occur from any changes to the equipment made by someone not explicitly authorized by the manufacturer.
- 3) Do not open the equipment if not told to by our service personnel. Always disconnect the mains if you should open it (HIGH VOLTAGE!). Unauthorized opening will void your warranty. Only authorized service personnel is allowed to repair this equipment.
- 4) The equipment contains high voltage capacitors that charge voltages up to 230V even when it is switched off and disconnected from the mains. Internal resistors will discharge the capacitors within about 10 minutes after disconnecting.
- 5) The equipment must be grounded. Never disconnect or bypass the safety ground from your power supply.
- 6) Check the voltage settings of the power supply before turning it on. Exchange fuses only with the same type (at 115V mains voltage: 800mA/230V time lag, according to DIN 41662).
- 7) Take good care of your cables. Check them for damages regularly and replace them if damaged. Don't work with damaged cables.
- 8) Avoid the use of the equipment under extreme conditions such as dust or high humidity. Do not throw away the desiccant bag but keep it in the case close to your microphone. It is filled with non toxic, activated clay which has an excellent long term stability and a very high absorption potential for humidity.
- 9) Avoid dropping or punching the equipment. Always store it in the transport case if not used. If the equipment is dropped or damaged in any way, disconnect it from the mains, wait for 15 minutes and then check it for visible damages or loose parts and get in touch with our service team.
- 10) Be sure to use a microphone stand that can support the weight of the microphone. We recommend products by König & Meyer.
- 11) When switching on the 10 dB pad (VM1/VMX only) be sure to mute your channel or pre-amp, since the switch might generate a peak that may damage your monitor speakers. Even though this peak is limited internally, it still might be harmful if the monitors run on high sound levels while switching.

## 2.1 Setting Up

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Experienced users:

If you already have experiences with tube microphones, setting up and working with this Brauner microphone shouldn't be a problem to you. Mount the suspension on a stand, insert the microphone and connect the cables. If you're not used to the Brauner microphone suspension read the according chapter in this manual.

New users:

If this is your first Brauner tube microphone, please read this manual carefully. It contains many valuable hints that might save you a lot of time and help you to handle this microphone and get the best results in daily use.

## 2.2 Aluminum Case

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All Brauner microphones and their accessories come in a sturdy aluminum case that provides effective protection. When not used you should always store your microphone in this case.

Power and microphone cables are stored in the case's top compartment behind the lid. Try to store your cables exactly like they were shipped to avoid any damages as the quality of your signal chain depends on its weakest link.

In the bottom compartment you will find the microphone, the suspension, the windscreen and the power supply which also acts as a remote control for the microphone.



## 2.3 Suspension

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The provided microphone suspension was designed to ensure a good acoustic decoupling and positioning of the microphone. In the suspension the microphone can be rotated 360° horizontally and 180° vertically. It might take a little while to get used to how the suspension works but then re-positioning the microphone will be a quick and easy task for you.

First attach the suspension to a suitable microphone stand, then loosen the lever on the back of the suspension and position it so that the Brauner logo on the front is facing your way. Now tighten the lever again. You can always adjust the lever's arm to another position by simply pulling it upwards and positioning it again without loosening its tension as it is a wingnut.

It is very popular to install the microphone in an overhead position with it facing down and thus giving the singer or speaker the possibility to look at music or lyric sheets.

Using the microphone on a table, it should always face up to avoid picking up reflections from the table's surface.



## 2.4 Inserting The Microphone

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Before inserting the microphone into the suspension you should have a look at the two black collar rings on each end of the suspension's inner cylinder. These rings can be turned 360° and the little white dots should align with the black screws on the cylinder to be in the open position (see picture).

Now insert the microphone into the suspension with the grill first. To help you align the microphone there is a black dot right below the grill showing the 0° angle in the polar diagram.

While holding the microphone with one hand, tighten the black collar rings. Looking at the front of the suspension, the upper black ring should be turned to the right, the lower one to the left. You should turn the rings until the microphone is tight and safe in the desired position, but never overwind them.

If you should have the feeling that the microphone is askew in the suspension, you've probably turned the rings in the wrong direction.

## 2.5 Connections

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Before connecting any cables make sure there are no damages and the power is turned off. At first connect the microphone and its power supply with the 8 pin Tüchel cable and tighten the screws. This avoids hum or interference problems.

Once again check if the power supply is set to the right voltage of your environment and then connect the power cable. At last connect the signal output on the back of the power supply with your mixing console's or microphone preamp's input.

You are now all set to power up the microphone. As it is using a tube it will need some time before you hear a first signal (15s). You should let it warm up about 15 minutes for the microphone to properly acclimate and evolve its sound.

## 2.6 Windscreen

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To attach the provided windscreen onto the suspension unscrew both screws from the two holding rods first. Insert the windscreen with these rods in the outer ring of the suspension aligning the rods with the two screw threads. Locate the windscreen into position by tightening the screws through the threads in the suspension ring into the holding rods.

Make sure that you do not damage any of the rubber bands with the windscreen while inserting it.



## 3.0 Power Supply (Remote Control)

The power supply is built as a module to fit into any 19 inch studio rack next to preamps and effects or to be used as a stand alone device. It also serves as a remote control unit for the microphone providing you with an adjustment wheel for its directional pattern and a switch for the 10 dB pad (VM1/VMX) respectively the desired microphone circuit (VMA) on the front panel. The LED can show two colors: red for normal mode, green for alternative mode (10 dB pad or 2nd microphone circuit).

As the microphones have an excellent phase and frequency response there are no integrated filters.

### 3.1 Pattern Control

With the continuously variable pattern control you have full control of the microphone's directivity changing it to whatever is best for your very purpose. I.e., in an MS configuration you will be able to influence the mid signal very efficiently.

It is even possible to change the directivity during a recording (without any interferences or noise). It will take about 15 seconds for the directivity to fully transform if you turn the knob a whole step (from one symbol to the next) as capacitors have to be charged and discharged. If you only make a little adjustment the pattern adapts much faster.



For new users we would like to offer a short description of every pattern and its advantages:

#### **Omni**

In omni characteristic the microphone will pick up sonic information about equally from every direction. This pattern is perfect for making ambience recordings which are often mixed with an orchestra or movie recording to give it more space. Two microphones in omni pattern are a great set up for stereo recordings.

#### **Cardioid**

The cardioid pattern is probably used most often with the microphone having its greatest sensitivity for sound coming from the front. Sound from the sides (90° and 270°) is reduced by half and sound from the back (180°) to a tenth. It's often used for vocals or single instruments without picking up too much of the room.

#### **Figure of eight**

In this pattern the sensitivity for sound coming from the back and the front is equal, but information coming from the sides is cancelled out. This is due to the back side diaphragm being phase reversed to the the front side diaphragm. Main application of the figure of eight pattern are stereo recordings such as the MS or XY technique which require an MS matrix decoder to achieve a proper stereo signal. The stereo version of the VM1, the VM1S, is best suited for this kind of recordings.

#### **Wide cardioid**

The wide cardioid pattern lies between cardioid and omni. In comparison to cardioid it has greater sensitivity for sound coming from the sides and lets recordings gain more ambience elements without emphasising them too much (like omni).

#### **Hypercardioid**

Hypercardioid lies between cardioid and figure of eight. In comparison to cardioid sensitivity for sound from the sides is less but greater for sound from the back. Thus hypercardioid is even more directional to the front and is for example used to record brass section or drums to achieve a good separation between single instruments.

### 3.2 10dB-Pad (VM1/VMX only)

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The 10 dB pad allows you to dampen the microphone's sensitivity by 10 dB in order to handle a higher possible sound pressure level before the impedance converters start to distort. As the microphone is capable of handling a sound pressure level of up to 140 dB without any significant distortion or the typical compression artefacts tube microphones usually show, you will probably need this switch only on very rare occasions.

### 3.3 Mode Switch (VMA only)

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Instead of the 10 dB pad switch the VMA has a mode switch to choose between the two microphone circuits and their tonal characters. In the lower position the VMA is set to a VM1 sound (natural and transparent), in the upper position to a VMX sound (soft top end, pronounced mid range and bottom end).

Combining these two tonal characters into one microphone was a technical challenge which our engineers achieved by integrating two complete high quality signal paths and not by simply using frequency response correction. This opens up the VMA to a wide variety of applications.

Even though you will hear a sound directly after changing the mode on the VMA, you should wait a couple of minutes before using the microphone again as the operating points of the circuitry need some time to bias to the new setting.

### 3.4 Power Supply Back Panel

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On the back panel of the power supply there are three connectors: power, microphone (Tuchel connector) and signal out (XLR phase signal on pin 2). Additionally there are two switches – power and ground lift – and the voltage setting/fuse holder.

### 3.5 Ground Lift Switch

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The ground lift switch detaches the ground pin (pin 1) of the XLR output from ground and can be set to three positions. Safety earth is never detached of course. Use the switch to eliminate hum problems you might have.

Lower position: (H)ard-ground: The ground pin is conductively connected to the ground center of the internal circuit.

Mid position: Ground-(L)ift: The ground pin is completely disconnected from ground.

Upper position: (S)oft-Ground: The ground pin is connected to the ground via a safety capacitor that decouples the AC portion of the hum to the ground.

### 3.6 Adjusting The Voltage Selector/Changing Fuses

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Before operating the microphone at a new location always make sure the voltage is set to the right value. It can be set to either 115V or 230V.

To change the setting, turn off the power supply and disconnect the power cable. Take out the fuse holder which is right next to the power connector by squeezing the little latch. On the back of the black fuse holder is a grey plug-in which you can pull out, turn around and push back in again to switch the voltage setting. Make sure the right voltage number can be seen in the little window on the other side of the fuse holder. If you need to change fuses you can do so now before inserting the fuse holder back into the power supply again.



We suggest that you always check the setting when you travel somewhere, or make a note and stick it to the power supply if you have changed the setting. Fuses are cheap, but usually not around when you need them.

Exchange fuses only with the same type (at 115V mains voltage: 800mA/230V time lag, according to DIN 41662).

## 4.0 Maintenance and Care

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We take great care and attention when we manufacture our microphones. We only use the highest quality components available, many of which are exclusively manufactured according to our specifications and individual needs. All components must pass our severe QC and selection processes without which the production of such a delicate microphone would not be possible.

The material used for the diaphragm of our capsules is especially made for us and withstands a wide moisture and temperature range and will show no aging effects even after many years of operation.

Nevertheless you should regard some simple rules to maintain the longevity of your microphone we have laid the foundations for:

1) Always store the microphone in its case when it's not being used for a longer period of time. Place the provided desiccant close to the microphone, especially in places with high humidity.

2) Don't use the microphone under extreme environmental conditions. Try to avoid dust and humidity.

3) Do not smoke when using the microphone. Cigarette smoke contains acids that can harm the microphone's diaphragm and build up high resistance shortcuts which can lead to a loss in signal quality and increased noise. Smoking is bad for you and your microphone.

4) The suspension's black collar rings might leave black marks on the microphone in the beginning. Use a damp cloth to remove them and treat the nickel surface of the microphone with a mild acid free oil that you can put on very carefully using a soft cloth and distribute thinly over the whole surface so there is no smear or fingerprints.

Never use any aggressive detergents to clean the surface of your microphone or its accessories. Never let any liquids get inside of your microphone or power supply.

5) The supplied VOVOX-TubeLink cable is custom made and of very high quality. Do not bend or knot it in a sharp angle. Do not drop the Tuchel connectors to the ground. Always wind the cable in big slopes and free of twists to avoid damages to the shielding or wire leads. The overall quality of your audio chain can only be as good as its weakest part which often is the cable.

6) Avoid dropping the microphone or any influence of force to it or its accessories. If it is dropped or hit, power it off immediately and check for damages or loose parts and contact our service team.

7) Always secure the microphone with one hand when inserting it into the suspension.

## 5.0 Technical Specifications

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Microphone Category:	Tube Microphone
Pattern:	Any / Continuously Variable
Acoustical Principle:	Large Diaphragm Condenser Microphone
Frequency Range:	20 Hz to 22 kHz
Sensitivity:	28 mV/Pa @ 1 kHz @ 1m
Impedance:	200 Ohm
Self Noise:	< 11 dB A (IEC 651)
Signal to Noise:	> 83 dB A (1 Pa/1kHz cardioid)
Maximum SPL:	142 dB SPL @ 0.3% THD
Included in Delivery:	Microphone, Suspension, PSU/remote w/ Cable, Microphone Cable 7.5m, Windscreen, Manual, Aluminum Case

## 6.0 Warranty Regulations

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### Limited warranty:

Brauner Microphones will provide warranty and service for this unit in accordance to the following warrants:

Brauner Microphones warrants to the original purchaser that this product and the components thereof will be free of defects in workmanship and material for a period of 24 months from the date of purchase. Brauner Microphones will, without charge, repair or replace, at its option, defective product or component parts upon prepaid delivery to the factory service department or authorized service center, accompanied by proof of purchase given in the form of a valid sales receipt.

### Exclusions:

This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. This warranty is void if the warranty seal is altered, defaced or removed.

Brauner Microphones reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install the same on products previously manufactured.

Brauner Microphones shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. For units purchased outside the Federal Republic of Germany, an authorized distributor of Brauner Microphones will provide service.









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