User Manual

brauner.vm1-lite

brauner.vmX-lite

brauner. microphones

Top lid of the aluminum case

Main cable

User manual

Cable

Microphone

Suspension

Remote control

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User Manual VM1-lite/VMX-lite:

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1.1 Introduction

Thank you for purchasing this original Brauner microphone and congratulations on your wise and advised decision. Through your support of highest quality products you ensure to keep up the good work and help to keep an important part of the world famous German engineering art and culture alive and so, the spirit of non compromising quality, attention to detail, precision and endurance. Important things that get lost along marketing strategies that loose their sense for real values more and more each day. A trend that might end up in the loss of individualism one day. – A high price to pay!

Through your purchase of this quality product you have set an example and clearly dissociated yourself from supporting this trend. There is an endless number of microphones available on the market today, but there is only one Brauner. Its technical specifications are at the edge of physics and define a quality standard, that is only made possible through highest precision crafting technology, smallest tolerances and enormous efforts in selecting the best components. Sure, you paid a lot of money for this product, but we did the same because we build to a standard, not to a price.

There is rarely any microphone available today that contain such expensive components as those being used in Brauner microphones. We do anything to ensure maximum endurance, reliability and highest sonic quality in regards to our products. Brauner microphones got nothing in common with industrial mass products. Every single microphone is build by hand and with passion, from people who love building microphones and who believe that this is the only way to make a product carry a spirit and to become invaluable. Our philosophy is to consider recording as an art rather than a science. So we perceive microphones as creative tools for the artist using them. Nevertheless we put a lot of effort into setting the benchmark in regards to important technical issues such as lowest self noise, highest possible dynamic range and proper impulse response, but the thing that matters the most is definitely the sound!

You can not entirely evaluate sound with the audio measurement capabilities given today. For this reason, the most important part in building our microphones is a severe listening test. No Brauner microphone leaves our factory unless it passed the critical and unforgiving ears of our engineers, that do not tolerate even the smallest deviation from our highest standards. This has created the high reputation and esteem that the name Brauner became synonymous for. An esteem we deeply feel committed to. Our target is to make each Brauner microphone a perfect tool to give you distinctive and unsurpassed sound reproduction quality. Experience a sound that will surely change your recording life forever. Due to its high resolution, you might hear details in your recordings that you probably never even noticed before. We wish you all the greatest joy in the world with this wonderful microphone that we have paid all our love and attention to. May it be your reliable companion for many years to come and may it give many unforgettable moments to you. Moments that money can´t buy…

The difference between a VM1-lite and a VMX-lite:

The VM1-lite and the VMX-lite are technically almost identical, with the exception of a little detail, that makes a huge difference.

Both sounds differ through their unique character. What they both share is their high resolution of finest sonic detail and the enormous depth and space around the sound. The VM1-lite has the sound that made Brauner famous. Wide open and transparent, with all the resolution and detail you can dream of and its homogeneous imaging over the whole frequency range. In contrast the VMX-lite offers a sound that has a soft and silky top end and its slightly pronounced High Mid and Bottom range. Still not coloured, still all the resolution and detail, but just to give honour to the spirit of the most fabulous old vintage microphones. You will love this sound for male vocals. But that is just one example. Both sounds are useful for a huge variety of applications, depending on weather you like it more soft, silky and warm or shiny, wide and clear. It is hard to verbally describe the sonic characteristics of a microphone and as we are talking about subtle nuances, these might not instantly become obvious after just toggling the switch and also a frequency plot does not tell a big difference. But your ears will! Listen closely. Get into the sound. Huge, isn't it?

Tell us about your favourite applications, that you like to use our microphones on. If you like to share your experience with others, we might publish it on our websites knowledge base, where we will report about user experiences frequently.

2.0 Safety regulations

Tube equipment in comparison to transistor equipment is running on fairly high voltages, which in case of direct contact with the human body, can be lethal. Brauner products comply to all international safety regulations and are severely tested and therefore can be run safely and without any risk, as long as they are properly used and the safety regulations are met. So please take some time to read them carefully:

1. Before using this equipment, carefully read these safety instructions and always keep them in reach for further reference.
2. The manufacturer will in no way be able to be held responsible for damages of any kind whatsoever, when these occur from unintended use of this equipment or occur from any changes to the equipment that have been made by people, that are not explicitly authorized by the manufacturer.
3. Never open the equipment when it is powered up. Always disconnect from the mains before opening this equipment. No user serviceable parts inside. Unauthorized opening will void your warranty.
4. The equipment contains high voltage capacitors that charge voltages up to 230V even when the equipment is switched of and disconnected from the mains! Through internal resistors, these capacitors discharge within about 10 minutes after disconnecting the equipment from the mains supply.
5. This equipment must be grounded. Never disconnect or bypass the safety ground from your powersupply.
6. Check the voltage adjustment of the equipment before powering up! (See details in chapter 3.7/Adjusting the voltage selector/ changing fuses)
7. Exchange only with the same type of fuse: At 115V mains voltage: 800mA, time lag and at 230V mains voltage: 400mA, time lag, according to DIN 41662!
8. Servicing this equipment is allowed by qualified service personal only! Breaking the internal warranty seal will void your warranty!
9. Always take good care about the cables supplied with the equipment. Frequently check the cables for damages and handle them carefully and exchange cables right away if they are damaged. Never use a damaged cable as this might damage the equipment or even lead to severe injury!
10. Avoid to use the equipment under extreme environmental conditions, i.e. in environments that are extremely dusty or with high humidity!
11. Avoid dropping and punching the equipment. If the equipment is not in use, keep it in its transport case for safe storage. Never use the equipment if it is broken. Contact the service department right away when the equipment is damaged.
12. If the equipment has been dropped, power off immediately and disconnect it from the mains. Wait for about 15 minutes and then carefully check for any visible damages. Then shake the equipment carefully. If any parts became loose inside or if any damages occurred, do not power the unit up again and get in contact with your service department.
13. Always keep the desiccant bag in the transport case. It is filled with activated clay that is non toxic and has an excellent long term stability and very high absorption potential for humidity. Always place this bag close to the microphone, when you keep it in the case. It will avoid moisture damages when the microphone is exposed to temperature changes as they occur during transport, shipping or storage in place with high humidity.
14. Be sure to use a microphone stand that is suitable to support the weight of the microphone. In example a boom stand that is equipped with a counterweight. Ensure that the microphone can not loose its balance and fall to the ground!

2.1 Setting up

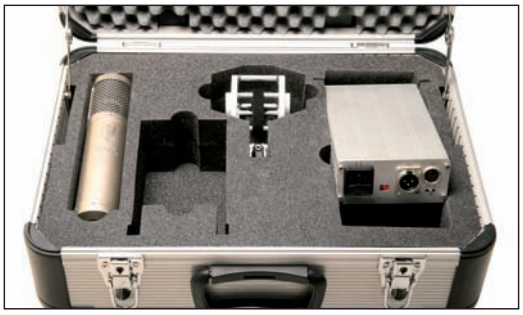
Are you experienced?:

When you have experience in working with tube microphones, using this microphone should not be a big deal for you. In that case, just get the cables from behind the lid in the top of the case and at least read the chapter on how to use the microphone suspension properly (as described in chapter 2.3/The suspension), which might save you some time and hassle since the suspension supplied with this microphone has some special features and handling qualities, that you should familiarize yourself with and that will become very useful once you are used to it. It will pay off!

From the beginning:

If this is your first tube microphone (You got taste man!;-) and you have no experience with this type of microphones, you should carefully study this manual. It contains many valuable hints that can save you a lot of time and that will help you to professionally handle this microphone to get the best results out of it in daily use. These hints are printed in bold letters so you can quickly locate them in the text.

2.2 The aluminum case



Brauner microphones get delivered in a sturdy aluminum case, containing the microphone and all its accessory parts in a foam wadding that was made to effectively protect them. When not used for a longer period of time or during travel or transport, you should keep the microphone in its case for optimum protection. You should also keep the microphone cables in this case.

The cables are located behind the snap lid that you will find as part of the top lid of the case. On the top end in front of the snap lid you will find a black latch, that secures the flap that holds the lid in place. Just turn the latch and flip up the flap. Then pull down the snap lid to the front, while holding the top of the case with your other hand. Behind the lid you find the microphone cable, the mains cable, this user manual and the keys for the case. Important: See how carefully the cables have been wound and stored here by us. You should always treat the cables as good as that. Remember, that your whole audio chain can only be as good as the weakest part in it. Do not let this be your cables!

In the bottom case you will find the microphone, the elastic suspension and the remote control/power supply unit. Please first take out the suspension and attach it to a suitable microphone stand, which is capable of handling the heavy weight of the microphone, such as a good boom stand with a counterweight on the other end of the boom. Such a stand will also allow you to place the microphone in an overhead position.

2.3 The suspension

Let us now take a look at the microphone suspension. Many people have problems handling it in the beginning. It turns out that those people have often not read the manual carefully and just tried by themselves and ran into problems. But handling the suspension is quick and easy, once you are used to it.

The suspension was designed to ensure several important tasks. At first it should ensure a good acoustic decoupling and should also ensure that the microphone can be positioned very easily. If used correctly, you can rotate the microphone 180° vertically, so you can always find the right spot in accordance to the sound source.

After you have taken the suspension from the case, you should mount it on a suitable microphone stand (as such, which was described in the last paragraph) At the backside of the suspension you find a lever to tighten or loosen the tension, with which the suspension is held in place. This lever is a bit unusual but comes very handy. No more fiddling around with coins, screwdrivers, warn out screws and such trouble. Just a quick move and the suspension sits right in place or is being moved to a new position anywhere from 0° to 180° in the vertical Axis. What is also special about this lever, is that you can rotate the lever itself by just grabbing it by its center Axis and lift it until you can rotate it without tightening or loosening the suspension itself! (See picture for details) The lever is suspended by a spring. Just let it snap in at its new position. After getting used to this, changing the vertical position of the microphone becomes very easy. From time to time we talk to customers that have not yet discovered this feature until today! (Sometimes it does make sense to read a manual…)

2.4 Inserting the microphone into its suspension

The suspension is tighten correctly to the stativ. Now you take the microphone and push it with both hands carefully but with a certain higher pressure into the inner halfring of the suspension.

As you see it on the picture it is a good way to hold and fix the microphone with yout thumbs while the forefingers provide the right counterpressure.

The microphone is now securely fixed into the suspension. In some cases e.g. at a situation where the microphone is arranged in a floating position you can safeguard the microphone with an additional hook-and-loop tape.

2.5 Connections

After the microphone has securely being placed into its suspension, it needs to be connected. Now it is time to check all cables that are being used for damages again. Never use cables that show damages. (refer to safety regulations; paragraph 2.0) Take the black 8 Pin Tuchel® cable out of its compartment and attach the female connector to the microphone. Make sure the connector sits tight and is properly plugged and screwed onto the male plug that sits inside the center of the microphone bottom. (See picture for details) Plug the 8 Pin male connector into the female plug on the backside of the power supply and secure it the same way as the one on the microphone. It is very important to properly screw the connectors to their appropriate plugs. Otherwise hum or interference problems may result! Before connecting the mains lead next, make sure the right voltage is set and change the voltage setting if necessary. (Refer to paragraph 3.6/Adjusting the voltage selector/Changing fuses) In Europe this should be 230V, while in the US it should be 115V. Refer to an Electrician in case you are not sure about the correct mains voltage.

After it is made sure that the mains voltage settings are correct, plug in the mains cable at the back of the power supply and attach the other end to an appropriate wall outlet or power bar which must be earthed. Never detach or bypass the earth connection from your mains cables! (Refer to safety regulations in paragraph 2.0) Now connect the output of the microphone, on the back of the microphone power supply, to the input of your mixing console or microphone preamp. You should use a high quality microphone cable of an appropriate length. (The shorter the better…) Check the product section of our website for recommended cables. (www.brauner-microphones.com) After connections have been made and have finally being checked properly, you can now power up the microphone by switching on its power using the illuminated switch on the back of the power supply. Do not use phantom power with this product. Since this is a tube microphone that comes with its own power supply, it does not require phantom power.

The microphone should be ready to use about 20 seconds after powering up. However, we recommend to let it warm up for at least 15 minutes before use, since the sound of tube devices can change audibly during warm up time; the sound gets more rich and detailed.

3.0 The remote

The microphones power supply/remote unit is build into a modular housing .The PSU/remote should be placed near the console to take advantage of changing parameters during the rehearsal session in order to make changes to the pattern or to activate the phase reverse in case it is needed, without having to go into the recording room again to access the microphone, which enables a better work flow in the studio and lets you hear changes more quickly. Since one of the major strengths of Brauner microphones is their excellent Phase- and Frequency response, we have not included filters into the microphones signal path. So if you need i.e. a low cut filter, please use an external one that you know is good.

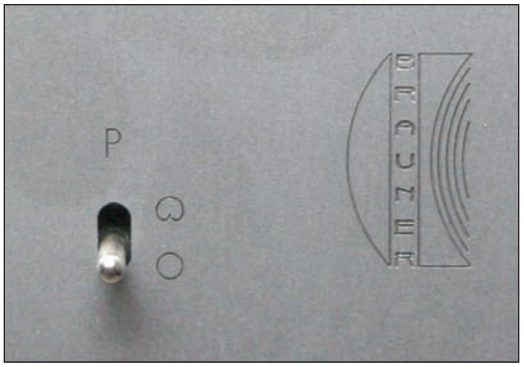
3.1 The front panel of the remote

On the front panel you find the switch for chaning the pattern and the switch for the phase reverse.

Also, on the front panel there is the “ON/Off“ switch.

3

3.2 The pattern switch



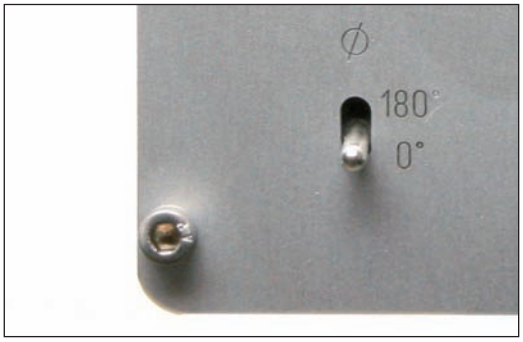
You can choose between two different pattern. The OMNI and the CARDIOID pattern.

Following now is a short description of the different pattern and their behaviour, for people that have no further experience in using microphones yet. If you are a professional user, you might proceed to the next paragraph now. Please notice that the information on this subject given here can only be an introduction. You should refer to dedicated literature for further and more detailed information. The best thing to gain experience in working with microphones is being curious about what happens when you change the microphone, its placement and pattern, as well as the whole recording environment or chain. It might help to think of a microphone as a camera.

A microphone in OMNI characteristics will pick up sonic information about equally from either side. This pattern is ideal to get a very life impression of recorded material and it contains a lot of sonic detail of the ambience in which the recording takes place. In the early days, monaural recordings where often made with just a single omni mic in the right place. You should listen to the decent quality of such recordings and their charming quality. With one or more microphones in omni placed at the right spot, you can create recordings that have a distinct beauty and a very holistic, detailed and natural feel. Omni microphones are ideal to capture the whole image of a recording and its ambience. Also you can place omni microphones in the room as ambience microphones to add their signal to the mix to make it come more alive. (Try feeding the signal of the ambience microphones into an equalizer, effects unit or distortion unit to see what happens…)

Microphones in CARDIOID characteristics are the ones being used the most. The characterisstic is activated in the upper switch position presented by the cardioid symbol that looks a bit like a kidney. Cardioid microphones are more directive than omni microphones and have their highest sensitivity when the sound is coming from the front. (While omni microphones have about the same sensitivity in any direction) When the sound is coming from the side, i.e. 90° degrees from the front, the sensitivity is only about half the front sensitivity. On the back of the microphone it is only about one tenth of the sensitivity in the front of the microphone. This means that information is being dampened the more it is coming from the side and even more from the back. Cardioid microphones can be used as spot or solo microphones to capture sources without being influenced too much by information coming from the back or from the side.

3.3 The phase reverse switch



The phase reverse switch is located on the front panel of the remote and can be used to invert the phase of the audio signal (180°). When the switch is in the lower position (0°) the non-inverted signal of the transformer outputs at Pin 2 of the XLR connector (standard compliant; Pin2 “hot“). While most of the microphone preamps expect the non-inverted signal at Pin2, some products (in particular US products) are expecting the non-inverted signal at Pin3! One might think that due to the symmetric layout of the preamplifiers and the microphones that doesn´t matter. However, practical experience shows that there are big differences in sound when using the false pin assignment.

This means, if you have connected your microphone standard compliant (Pin2 “hot”) to product where Pin 3 is “hot“ and the sound is “thinner” compared to other preamps, then you should turn the phase reverse switch into the 180° position. You will recognize that the microphone sounds better now.

The phase reverse might also be used for diagnosis purposes in case you are working with many different preamps alternately. So you will find out which products are compliant to the standard and which are not.

3.4 The back panel of the remote

On the back panel of the remote (see picture for details) you find the "MAINS" input with the fuse holder and the XLR output "OUT" with pin 2 carrying the in-phase signal (Pin 2 "hot"). Connect this output to your console or microphone preamp using a high quality cable. (Check our websie for recommendations; <www.brauner-microphones.com>)

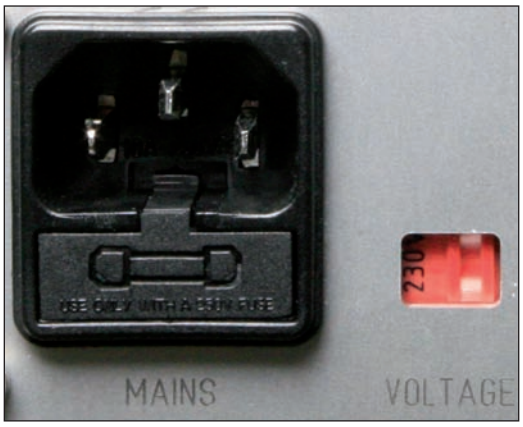
On the right side of the XLR output you find the 8 pin Tuchel® connector for the connection to the microphone. Below there is the ground lift switch (see paragraph 3.5). Between the "Mains" input and the XLR output you find a voltage selector.

3.5 The ground lift switch

The ground lift switch is located on the right side of the XLR output that you find on the back of the power supply/remote (see picture for details). It detaches the ground pin (pin 1) of the XLR output from ground. Safety earth is of course never detached in any position! (By the way, you should under no circumstances detach the safety earth from any of your cables or plugs. It can lead to lethal accidents if you do so and the manufacturer of this product is in no way responsible for such damages! Refer to the safety regulation for further details!) With using the ground lift switch you can solve hum problems caused by potential differences as they might occur in on location recordings or when the equipment you use is supplied with power from different sources. **To avoid hum problems, you should be sure to use proper power and wiring techniques, with one central ground and earth potential and no ground loops in between. The ground lift lets you cut such loops without effecting your safety!** The positions are as follows:

1. Right position: (H)ard-ground: The ground pin (Pin 1) of the XLR connector is conductively connected to the ground center of the internal circuit.
2. Mid position: Ground-(L)ift: The ground pin is now completely disconnected from the ground.
3. Left position: (S)oft-Ground: The ground pin is now connected to the ground via a safety capacitor, that decouples the AC portion of the hum to ground.

3.6 Adjusting the voltage selector/changing fuses



Before operating this device you should check for the correct setting of the mains voltage. This can be set to either 115V or 230V. If you are not sure about the voltage in your environment, you should ask a qualified technician or electrician.

To change the voltage setting you have to switch off and disconnect the power supply/remote from the mains plug first! Afterwards you can change the voltage switch to the desired voltage using an apropriate tool such as a screwdriver. Please note that you should change the fuse when you change the voltage setting. The fuse is located in a fuse holder that is part of the "MAINS" voltage input connection device. You can pull it out to the front using a screwdriver to unlock it from its compartment and put it back in in the reverse order. For 115V operation 800mA fuses and for 230V operation 400mA fuses are required. (DIN 41662, time lag).

You should always take care to use the right voltage and fuse configuration when using your microphone while you are travelling and working in countries with different mains voltages. **You should configure to the appropriate voltage setting of the country you are travelling to, before you start travelling and should configure for home use again before travelling home. Also you should always carry some spare fuses with you, as they are specified in this manual.**

4.0 Maintenance and care

We take great care and loving attention when we manufacture our microphones. We only use the highest quality components available, many of which are exclusively manufactured according to our specification and individual needs. Apart from that all components must pass our severe QC and selection processes, without which the production of such a delicate microphone, setting the benchmark in what is the edge of physics today, would never be possible! Even the material that we use for the diaphragms of our capsules is especially made for us and withstands an extremely wide moisture and temperature range and will show now aging effects even after many years of operation. Since your Brauner microphone is almost made for eternity and has good chances to survive you when you treat it good, you should look for someone you love, to pass it to, when you stop working with it at a time in the far away future…

Nevertheless you should recognize some important facts to keep the value of your delicate investment and to ensure its long term stability and operation over a long period of time:

Always store the microphone in its case when it is not being used for a longer period of time and keep a good desiccant bag in the case when you store it in places with higher humidity. (Such as the one supplied from the factory, which is long term reliable and non toxic/according to MIL D 3464/DIN IEC 55473 A)

Don't use the microphone under extreme environmental conditions. Avoid high humidity and dusty environments.

Do not smoke when using microphones. Cigarette smoke contains acids that can harm the microphones diaphragm when it is exposed to it over a long period of time. The smoke can also condensate on the diaphragm and build up high resistance shortcuts there, which can lead to a loss in signal quality and can increase the noise. As you can see, smoking is also harmful to microphones as well.

The cable supplied with your microphone is custom made and of very high quality. It has a very low self capacitance and a very low resistance, while it has a perfect shielding and is still very flexible. It took years to develop this special cable and it can only be as good as your treatment of it will allow. Never extremely bend or knot a cable in a sharp angle. Avoid twisting and tearing it and do not guide it over sharp edges, that can cut or damage it. Never drop the Tuchel® connectors to the ground because this might damage them and you will not be able to securely screw the connectors to the plugs once they are deformed. Always wind the cable in bigger slopes and free of twists, so as you find it when it is delivered from the factory. You should always treat your cables like this to avoid damages of the shielding and inside wire leads. Always keep in mind, that the overall quality of your audio chain can only be as good as the weakest part of it, which is many times the bad cables and wiring that people use!

Never use any aggressive detergents to clean the surface of your microphone or its accessories. Never let any liquids get inside your microphone or the power supply and never clean it while it is powered up. Do only use a soft dry cloth to clean the surface.

Never drop the microphone or its accessories or hit or punch them. If your microphone or the power supply has been dropped or hit or being punched, power it off immediately and check for any damage. (Also check the safety regulations of this product for further reference, that you find under paragraph 2.0)

Always secure the microphone with your hands, while you insert it, or take it out of its suspension. Doing so becomes much easier, when you slightly turn the microphone body left and right, while getting it in or out of the suspension.

When you follow all these recommendations, you will always have great pleasure in using your Brauner microphone and it will reliably last a very long time. If nevertheless you should you run into any problems that require service, our customer support will assist you as soon as possible: service@brauner-microphones.com

5.0 Technical specifications

Microphone category:	tube microphone
Pattern:	omni and cardioid
Acoustical principle:	Dual large diaphragm pressure gradient transducer
Frequency range:	20 Hz to 22 KHz
Sesitivity:	28mV/Pa @1KHz @1m
Impedance:	200 Ohm
Self Noise:	less or equal 11dBA /IEC 651/21dB CCIR 468-4
Signal to noise ratio:	83 dB A - @(1Pa/1KHz/1m)
Maximum SPL:	142 dB SPL @ 0,3% THD
Type of impedance converter:	Ultralinear Class A
Frequency range of converter.:	10Hz ... 120KHz linear in Frequency & Phase
Tube type:	EF 86, EF 806 S, EF 732 or Brauner CMVT1
Dimensions of the microphone:	Height: 8.66 inches Diameter: 1.97 inches
Weight of the microphone:	1.23 lib.
	Supplied accessories: VM1-lite/VMX-lite microphone, suspension, PSU/remote unit, microphone cable 24.60 ft, user manual & aluminum case.

Technical specs are subject to change without notice

brauner.vm1-lite

brauner.vmX-lite

6.0 Warranty regulations

Limited warranty:
Brauner microphones will provide warranty and service for this unit in accordance with the following warrants:

Brauner microphones warrants to the original purchaser that this product and the components thereof will be free of defects in workmanship or material for a period of 24 month 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 date 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.

In case of any specific questions please refer to:

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7.0 Finally

Finally we want to thank you once again for purchasing another finest piece of German engineering art that is made to an ideal and not to a budget. Our products are manufactured according to the highest industry standards and set the benchmark in their category. There is further equipment that is being released by Brauner in the future. Equipment that will fulfill the same high demands and excels as well as the equipment we already released and that made the name Brauner world famous. Facts that will always enable you to clearly perceive the difference our products make. There are many microphones, but there is only one Brauner.

To take full advantage of the extraordinary capabilities of your Brauner microphone, you should have a solid background on the usage of microphones. Beside some little basic theory, the thing that matters the most is experience. Be creative, be skeptical and be willing to experiment. Stunning new sounds have never come from people that just do what others do. Or as a good old friend of ours would say (Bruce Swedien): Find and develop your own audio personality! Have Fun!

Sincerely yours,

Dirk Brauner

Imprint:

Release: June 2006

Text and images:
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Proof reading:
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