



BH Series Microphones Owners Manual



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Safety Precautions

Detailed safety precautions:

Please read all safety precautions and operating instructions before attempting to operate the unit. Keep all safety precautions and operating instructions for future reference.

Water and moisture:

Condenser microphones are extremely moisture-sensitive. Never use your microphone in close proximity to water (e.g. bath tubs, wash basins, sinks, washing machines, pools, etc.).

Damage:

Take care not to drop your microphone as this can lead to severe damage. JZ Microphones assumes no liability for any damage caused by the user.

Service and care:

After each use, remove the microphone from its mount and wipe the microphone down with a soft cloth and place it back into its protective casing (included with the microphone).

Never open the microphone as it will void warranty!

Refer all servicing to qualified and manufacturer's appointed personnel. Servicing is required when the microphone is damaged in any way, such as liquid has been spilled or objects have been fallen into the microphone, the microphone has been exposed to rain or moisture, microphone does not operate normally or has been dropped. Never remove grille covers in order to service microphone capsule. The capsule system does not contain any user serviceable parts.

Usage:

Only use attachments or accessories specified by the manufacturer. Check if packing contains all of the items listed. If any of these items are missing, contact your nearest JZ Microphones dealer or JZ Microphones directly.

Always turn down the levels (means no sound) of the microphone preamp or console while connecting or disconnecting the microphone to avoid possible damage to your speakers or headphones and your hearing.

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BH Series Microphones Set Up

1. Firmly hold the wooden case and use your thumbs to open it. (see pictures)



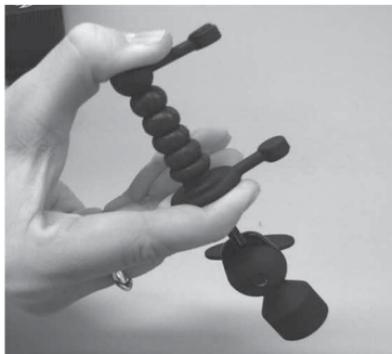
2. Replace the shipping screw from included shock-mount with the included thumb screw. To unscrew the shipping screw use either the included thumb screw or appropriate screw driver, or you can use the coin if you have one with you. (see pictures)



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BH Series Microphones Set Up

3. Mount the shock-mount on the microphone stand. When it is done, take your BH microphone, squeeze the shock-mount so it's both circular ends fits the two metal pins inside BH microphone and accurately apply the microphone on the shock-mount and ensure that microphone sits safe on the shock-mount (see pictures)



4. Included shock-mount gives you the opportunity to position and angle your microphone to the sound source in many various ways for desired results to be achieved (see pictures)



Tip: When using your BH series microphones on drum overheads you can apply included shock-mount from the front of the microphone.

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All BH series microphones come in a wooden case with included FREE standard BH shock-mount and thumb screw for it to replace a shock-mounts` shipping screw for easy adjustment when positioning the microphone. This standard shock-mount fits to BH series microphones only. Included shock-mount can be attached to any standard microphone stand.



BH series packing includes:

- 1 x Wooden case
- 1 x BH series microphone
- 1 x standard shock-mount
- 1 x Thumb screw
- 1 x User Manual
- 1 x Warranty sheet

Installation:

Before mounting your shock-mount on a microphone stand replace the shipping screw from the shock-mount with included thumb screw for easy operation. Squeeze the shock-mount and carefully put on the microphone.

There is removable adapter in your shock-mount which lets you mount it on mic stands with either metric (Europe) or imperial-gauge threads (North America). Make sure that your microphone is standing safe on the shock-mount.

The angle of the microphone to the sound source influences the sound of your recording; therefore, experiment with different positions until you achieve the desired sound.

As all our microphones are extremely high quality, we recommend to use a highest quality balanced XLR microphone cables in connection with highest quality microphone preamps to grant cleanest signal path from the sound source to your recording equipment.

BH Series Microphones Owners Manual

BH series microphone models

The BH series includes 4 microphone models with different capsules, polar pattern and pad options:

BH1s

Large diaphragm condenser microphone
GDC2 capsule
Class A discrete electronics
3 polar patterns: cardioid, figure of 8, omni
-10 and -20dB PAD
Lifetime warranty

BH1

Large diaphragm condenser microphone.
GDC2 capsule
Class A discrete electronics
3 polar patterns: cardioid, figure of 8, omni
5 year warranty

BH2

Large diaphragm condenser microphone
GDC1 capsule
Class A discrete electronics
Fixed cardioid polar pattern
5 year warranty

BH3

Large diaphragm condenser microphone
GDC1 capsule
Class A discrete electronics
Fixed cardioid polar pattern
-5 and -10 dB PAD
5 year warranty

All BH series microphones operate on 48 volt phantom power.

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The Golden Drop Capsule (GDC)

One of the most important components in every microphone is the capsule, its design and how it transforms the reproduced sound in to electric energy, giving a soul to your recording.

Golden Drop technology is Innovative capsules diaphragm sputtering method, where a lot of tiny and different sized golden dots are systematically sputtered on the capsules diaphragm. It is invention of Juris Zarins and is applied to most of JZ Microphones products.

Advantages of Golden Drop technology

With applied Golden Drop technology, capsules diaphragm is lighter therefore it moves and gets to its default position faster than the same capsules diaphragm without Golden Drop technology, imagine handling the truck compared to sports car, in other words lighter diaphragm can detect and deliver much faster changes in musical content.

It gives more clarity, precision, less colorations and distortions in frequency response. When applied, Golden Drop technology can improve the sonic characteristics of any type of ordinary capsule giving more realistic picture of your recording.

BH Series microphones use 2 types of GDC

1. Single large diaphragm 27 mm GDC (GDC1)

GDC1 is single large diaphragm Golden Drop microphone capsule. GDC1 is applied only to our fixed cardioid BH2 and BH3 microphones.

2. Two separate and back to back placed large diaphragms 27mm GDC (GDC2)

GDC2 is two separate and back to back placed single large diaphragm Golden Drop microphone capsules combination.

Innovative GDC2 was developed for our flagship BH series microphones to have polar pattern options, where unwanted interaction between both diaphragms is maximally reduced (due to air gap between the capsules) to have improved polar pattern response, plus has all advantages from GDC diaphragm sputtering technology to deliver the captured sound field in more accurate way.

GDC2 is not working in cardioid polar pattern mode. Only frontal capsule is working in cardioid mode.

GDC2 is applied only to our multi-pattern BH1s and BH1 microphones.

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Electronics

All JZ Microphones products use Class A discrete electronics, where all components are tested and measured for a maximum performance and grants to the audio signal cleanest path and extremely low self noise properties before any recording gear. All components are hand soldered by our engineers to avoid overheating of selected parts. While soldering the components, either it is done by un-experienced engineer or bad programmed machine, overheating can ruin specifications of very carefully selected electronic part.

BH series microphones are tube-less at this point, therefore electronic circuit is designed to work perfectly without tube as modern electronics is developed to manage the signal path without it.

BH series microphones are transformer-less, therefore electronics are designed to have maximum performance with minimum self noise without the transformer.

BH1s and BH3 series microphones comes with a PAD switch to have an option to lower the signal level from -5dB to -20dB depending on microphone model. Our PAD switch is applied to microphone electronics circuit right after the capsule which avoids to cut low and high frequencies destroying the signal quality, instead it just lowers the signal level allowing capsule to handle high SPL's and keeping the signal unaffected.

Important is that in most cases the microphone can handle high signal level but the microphone preamplifiers can't. That is why we care about your pre-amplifier and made a BH1s and BH3 microphones with pad option.

BH series microphones share basically the same electronic parts. Every BH series microphone except BH1s use component selection with tolerance 1.5 % in differences between them (only 35% of 1000 parts can pass 1.5% tolerance test)

Components selected for BH1s have tolerance 0.4 % and are custom-made from those 1.5% parts therefore we are giving lifetime warranty for all BH1s microphones.

Electronic circuit design and component selection for every JZ Microphones product is done according to the capsule properties and its special needs to grant the best possible performance and extremely low self noise before any gear in the recording chain.

BH Series Microphones Owners Manual

Technical Specifications

BH2 and BH3 series microphones

Transducer type	electrostatic
Operating principal	pressure gradient
Diaphragms active diameter	27 mm
Frequency range	20 Hz to 20 kHz
Polar pattern	Cardioid
Pad switch	-5/-10dB (only for BH3 microphones)
Output impedance	50 ohms
Rated load impedance	>100 ohms
Suggested load impedance	>250 ohms
Sensitivity at 1000 Hz into 1000 ohms load	21 mV/Pa
S/N Ratio CCIR 468-3 weighted	76,5 dB
S/N Ratio DIN/IEC 651 A-weighted	87,5 dB-A
Equivalent noise level DIN/IEC A-weighted	6,5 dB-A
Maximum SPL for 0.5% THD at 1000 ohm load	134,5 dB
Dynamic range of the microphone preamplifier	128 db
Phantom powering voltage on pins 2 & 3 of XLR	+48 V (+/-4 V)
Current consumption	1,5 mA
Output connector	3-pin XLR male, gold plated contacts
Signal polarity	positive toward pressure on a frontal diaphragm produces positive polarity voltage on XLR pin #2 relatively to pin #3
Dimensions	203 x 51 x 28

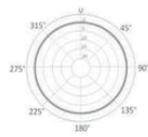
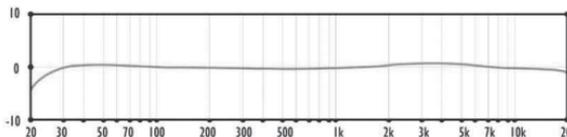
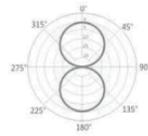
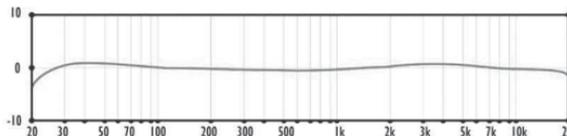
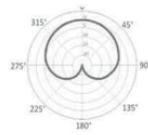
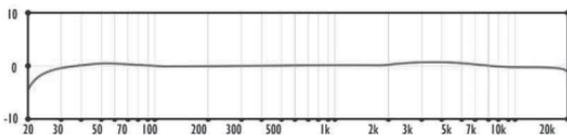
BH1s and BH1 series microphones

Transducer type	electrostatic
Operating principal	pressure gradient
Diaphragms active diameter	2 x 27 mm
Frequency range	20 Hz to 20 kHz
Polar pattern	Cardioid/Omni/Figure of 8
Pad switch	-10/-20dB (only for BH1s microphones)
Output impedance	50 ohms
Rated load impedance	>250 ohms
Suggested load impedance	1000 ohms
Sensitivity at 1000 Hz into 1000 ohms load	18 mV/Pa
S/N Ratio CCIR 468-3 weighted	75,5 dB
S/N Ratio DIN/IEC 651 A-weighted	86,5 dB-A
Equivalent noise level DIN/IEC A-weighted	7,5 dB-A
Maximum SPL for 0.5% THD at 1000 ohm load	134,5 dB
Dynamic range of the microphone preamplifier	127 dB
Phantom powering voltage on pins 2 & 3 of XLR	+48 V (+/-4 V)
Current consumption	1,5 mA
Output connector	3-pin XLR male, gold plated contacts
Signal polarity	positive toward pressure on a frontal diaphragm produces positive polarity voltage on XLR pin #2 relatively to pin #3
Dimensions	203 x 51 x 28

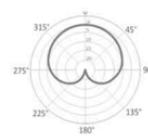
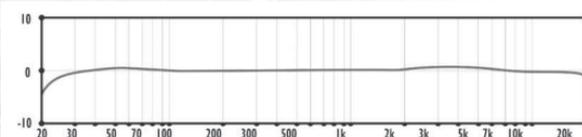
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Frequency response graphs

BH1S & BH1 cardioid, figure of 8, omni



BH3 & BH2 cardioid



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