

MIGHTY Mighty M10
Mighty M12
Mighty M15

USER MANUAL

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INTRODUCTION

Thank you for having chosen an stage monitor. If you follow the instructions given in this manual, we are sure that you will enjoy this device for a long period of time. Please keep this manual for future needs.



For your own safety, please read this user manual carefully before you initially start-up.

Every person involved with the installation, operation and maintenance of this device has to

- be qualified
- follow the instructions of this manual
- consider this manual to be part of the total product
- keep this manual for the entire service life of the product
- pass this manual on to every further owner or user of the product
- download the latest version of the user manual from the Internet

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SAFETY INSTRUCTIONS



CAUTION!

Keep this device away from rain and moisture!



CAUTION!

Be careful with your operations. With a dangerous voltage you can suffer a dangerous electric shock when touching the wires!



HEALTH HAZARD!

By operating speaker systems with an amplifier, you can produce excessive sound pressure levels that may lead to permanent hearing loss.



DANGER OF BURNING!

The materials used in this speaker system are normally flammable. If B1 is required at the installation place, the surface must be treated with an appropriate fire retardant in regular intervals.



DANGER TO LIFE!

A crashing speaker system can cause deadly accidents. All safety instructions given in this manual must be observed.



WARNING!

Speaker systems must only be operated by trained persons. Danger of Life due to crashing speaker systems or hearing loss due to excessive sound pressure levels! The different local conditions have to be considered in terms of safety rules.

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.

Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.

Unpacking

Please make sure that there are no obvious transport damages. Should you notice any damages on the connection panel or on the casing, do not take the speaker system into operation and immediately consult your local dealer.

Protection Class

This device falls under protection class I. The power plug must only be plugged into a protection class I outlet. The voltage and frequency must exactly be the same as stated on the device. Wrong voltages or power outlets can lead to the destruction of the device and to mortal electrical shock.

Power Cord

Always plug in the power plug least. The power plug must always be inserted without force. Make sure that the plug is tightly connected with the outlet. Never let the power cord come into contact with other cables! Handle the power cord and all connections with the mains with particular caution! Never touch them with wet hands, as this could lead to mortal electrical shock. Never modify, bend, strain mechanically, put pressure on, pull or heat up the power cord. Never operate next to sources of heat or cold. Disregard can lead to power cord damages, fire or mortal electrical shock. The cable insert or the female part in the device must never be strained. There must always be sufficient cable to the device. Otherwise, the cable may be damaged which may lead to mortal damage. Make sure that the power cord is never crimped or damaged by sharp edges. Check the device and the power cord from time to time. If extension cords are used, make sure that the core diameter is sufficient for the required power consumption of the device. All warnings concerning the power cords are also valid for possible extension cords. Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power cord by the plug. Never pull out the plug by tugging the power cord. Otherwise, the cable or plug can be damaged leading to mortal electrical shock. If the power plug or the power switch is not accessible, the device must be disconnected via the mains. If the power plug or the device is dusty, the device must be taken out of operation, disconnected and then be cleaned with a dry cloth. Dust can reduce the insulation which may lead to mortal electrical shock. More severe dirt in and at the device should only be removed by a specialist.

Liquids

There must never enter any liquid into power outlets, extension cords or any holes in the housing of the device. If you suppose that also a minimal amount of liquid may have entered the device, it must immediately

be disconnected. This is also valid, if the device was exposed to high humidity. Also if the device is still running, the device must be checked by a specialist if the liquid has reduced any insulation. Reduced insulation can cause mortal electrical shock.

Foreign Objects

There must never be any objects entering into the device. This is especially valid for metal parts. If any metal parts like staples or coarse metal chips enter into the device, the device must be taken out of operation and disconnected immediately. Malfunction or short-circuits caused by metal parts may cause mortal injuries.

Secure Setup

Please note that speaker systems could move due to bass beats and vibrations. Furthermore, unintended pushes from DJs, musicians or the audience present further risk. This is why the speaker system must always be secured against moving or the respective area has to be blocked.

Prior to Switching on

Before the speaker system is switched on all faders and volume controls have to be set to zero or minimum position.

Children and Amateurs

Keep away children and amateurs!

Maintenance and Service

There are no serviceable parts inside the speaker system. Maintenance and service operations are only to be carried out by authorized dealers!


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OPERATING DETERMINATIONS

The active monitors **Mighty M10, M12, M15** are suitable for professional applications on stage and for amateur applications in smaller rooms.

Power

This product is allowed to be operated with an alternating current of 115/230 V AC, 50/60 Hz and was designed for indoor use only. The occupation of the connection cables is as follows:

Cable	Pin	International
Brown	Live	L
Blue	Neutral	N
Yellow/Green	Earth	

The earth has to be connected! If the device will be directly connected with the local power supply network, a disconnection switch with a minimum opening of 3 mm at every pole has to be included in the permanent electrical installation. The device must only be connected with an electric installation carried out in compliance with the IEC standards. The electric installation must be equipped with a Residual Current Device (RCD) with a maximum fault current of 30 mA.

Public and Industrial Use

Operating an amplification system in public or industrial areas, a series of safety instructions have to be followed that this manual can only give in part. The operator must therefore inform himself on the current safety instructions and consider them.

Maximum Power

The maximum power of the speaker system must never be exceeded. When operating the speaker system, please make sure that the loudspeakers always sound well. When distortions can be heard, either the amplifier or the loudspeaker is overloaded. Overloads can quickly lead to amplifier or speaker damage. In order to avoid damage, please reduce the volume immediately when distortions can be heard. When speaker systems are destroyed by overload, the guarantee becomes void.

Ambient Conditions

This device must never be operated or stockpiled in surroundings where splash water, rain, moisture or fog may harm the device. Moisture or very high humidity can reduce the insulation and lead to mortal electrical shocks. The ambient temperature must always be between -5° C and +45° C. Keep away from direct insulation (particularly in cars) and heaters. The relative humidity must not exceed 50 % with an ambient temperature of 45° C. This device must only be operated in an altitude between -20 and 2000 m over NN. When using smoke machines, make sure that the device is never exposed to the direct smoke jet and is installed in a distance of 0.5 meters between smoke machine and device.

Installation

Do not shake the device. Avoid brute force when installing or operating the device. When choosing the installation spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. You endanger your own and the safety of others! This speaker system

must only be installed at a solid, plane, anti-slip, vibration-free, oscillation-free and fire-resistant location. Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation!

Transport

Please use the original packaging if the device is to be transported.

Cleaning

Never use solvents or aggressive detergents in order to clean the device! Rather use a soft and damp cloth.

Serial Barcode

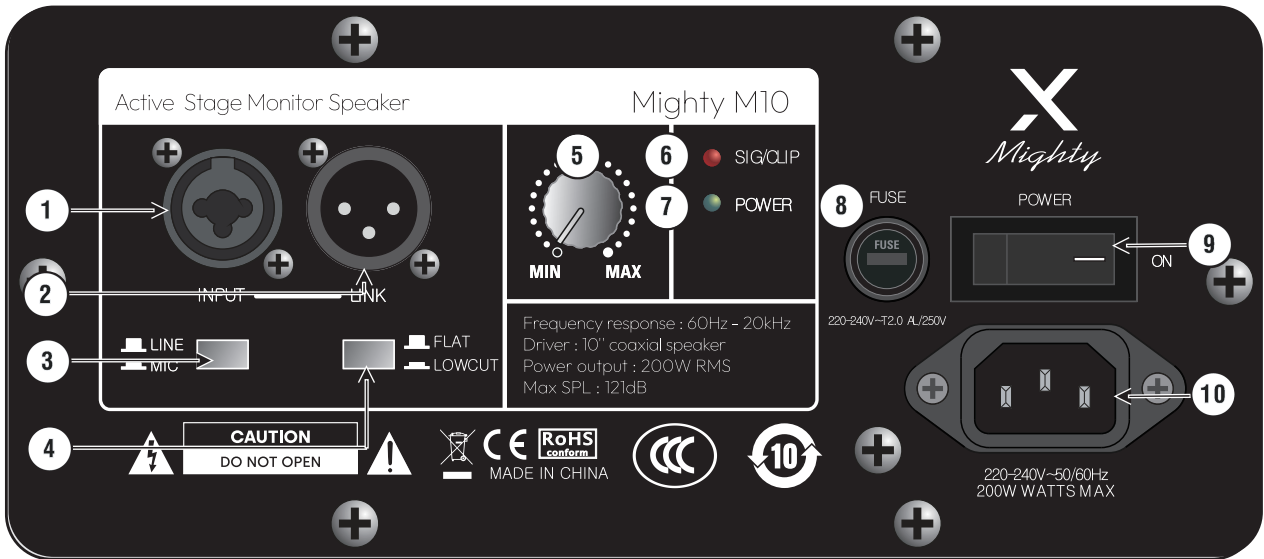
Never remove the serial barcode from the device as this would make the guarantee void.

Modifications and Guarantee

Please consider that unauthorized modifications on the speaker system are forbidden due to safety reasons! If this speaker system will be operated in any way different to the one described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like crashes, hearing loss etc.

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OPERATING ELEMENTS & CONNECTIONS



1	MIC/LINE input Balanced combo input (XLR/6.3 mm jack) for connecting microphones or audio units with line level (e.g. mixer, CD player).
2	Feed-through output LINK Balanced XLR jack, connected in parallel to the input, to connect another device, e.g. a further active stage monitor.
3	MIC/LINE input selector switch Switches between microphone and line input.
4	FLAT/LOW CUT button Button for the low cut filter; when the button is pressed, the low bass range is attenuated.
5	LEVEL control For adjusting the volume of the input signal.
6	SIG/LIM indicator Lights up green as input signal indicator and red when the signal level is too high; the limiter will reduce the signal level to protect the speakers. If this LED lights up red frequently, reduce the volume of the input signal accordingly.
7	POWER indicator
8	Fuse Only replace the fuse when the device is disconnected from mains. Only use fuses of the same rating and power. The correct fuse value is specified on the rear panel.
9	Power switch
10	Power input Plug in the supplied power cable here.

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INSTALLATION

The stage monitors can be placed as desired or put onto a PA speaker stand via the stand flange on the lower side. Always install the speakers at a solid, plane, anti-slip, vibration-free, oscillation-free and fire-resistant location. Before installing the system, make sure that the installation area can hold a minimum point load of 5 times the system's load (e.g. weight 20 kg - point load 100 kg).

- Stands or satellite systems must only be installed on a plane area with a maximum inclination angle of 5°.
- When using stands or satellite systems under the influence of horizontal forces, e.g. through wind, the standing safety can be impaired. This is why additional safety measures like attaching ballast weights have to be taken.
- If inclined tension cables or prolonged outriggers are used, the area of danger has to be marked or even be blocked.
- Before lifting or lowering the telescopic tubes, you must always block a safety area around the stand or satellite system. This safety area must have a diameter of 1.5 times the maximum height.
- Lifted telescopic tubes always have to be secured with a secondary securing!
- The total weight of the installation (=total weight of all individual parts) must never exceed the maximum load of the installation area.
- The stand has to be installed out of the reach of people.
- An unintended movement of the load has to be avoided - also in case of fire!
- The installer is responsible for adhering to the carrying capacity given by the manufacturer, the safety requirements and the qualification of possible co-workers.
- When people are located below the load, all necessary safety measures have to be taken in order to avoid injury.
- The personnel have to be instructed on the content of the user manual and on the dangers related with operating stands.
- Depending upon the individual installation spot, all necessary measures against movement and for securing the standing safety have to be created.
- The installation is only allowed on carrying areas. In some cases, an appropriate substructure, e.g. via a balancing foot, has to be created. When choosing the installation material, optimum dimensions have to be chosen in order to secure maximum safety.
- Speaker systems installed on stands or satellite systems may cause severe injuries when crashing! If installing on slippery surfaces, the legs must be secured with screws or nails via the provided holes or an anti-slippery mat has to be used.

Avoiding Feedback



CAUTION!

Do not direct any microphones to the speakers. This can result in dangerous and unpleasant acoustic feedback which will generate a loud whistling sound.

One of the most frequent problems when operating speaker systems is feedback. It can be recognized by howling and growling loudspeakers. Feedback is created when a signal is recorded by a microphone, amplified, played back by a loudspeaker and then again recorded by the microphone.

The prerequisite for feedback is that the played back signal is louder than the original signal. Feedback never covers the whole frequency range but only one overboosted frequency. Make sure that you install especially the monitor speakers so far away from the microphone that another recording of the microphone signal is impossible. Never hold microphones directly in front of the speaker system!

Extreme levels like feedback, bass hum or the beats of a dropping microphone can destroy the loudspeakers within a very short time and produce immediate hearing damage. Such extreme levels must be avoided at any rate. We recommend using appropriate equalizers and compressors/limiters.

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MAKING THE CONNECTIONS

Route the audio signal from a mixer's monitor or aux output to the When using the monitor mix with several speaker systems, route the audio signal of the first stage monitor to the next monitor via the feed-through output.

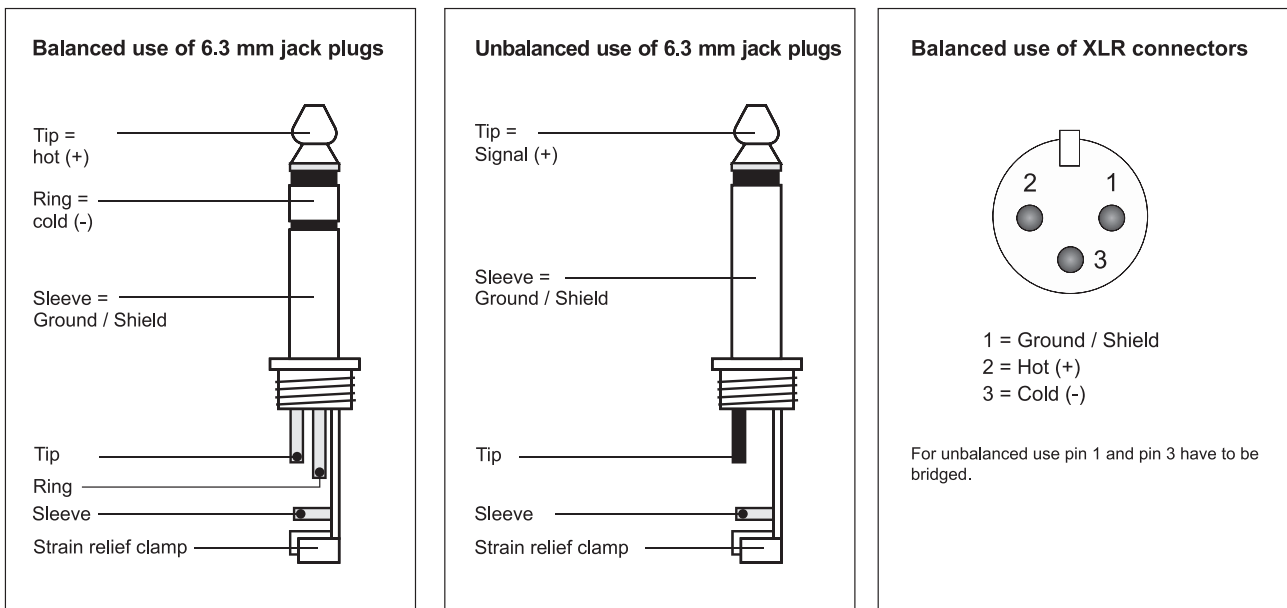
Switch off the stage monitor and the units to be connected before making or changing the connections.

Connecting the Signal Source

As signal source, both microphones and units with line level output (e.g. mixer, CD player, keyboard) can be connected to the INPUT jack via XLR or 6.3 mm plugs, balanced and unbalanced.

A good cable run improves the sound quality remarkably. Signal cables should be short and direct, since high frequencies will mostly be absorbed if cables are unnecessarily long. Besides that a longer cable may lead to humming and noise trouble. If long cable runs are unavoidable, you should use balanced cables. In order to obtain highest sound quality, only use high-quality cables for connecting the devices. Make sure that the cables are properly fixed.

Connector Configuration



Connecting Two or More Stage Monitors in Series

The LINK jack is connected in parallel to the input jack. Connect this output to the input of another speaker system. Connect further units likewise.

Connection to the mains

Finally, connect the supplied power supply cable to the corresponding input and the mains plug to an outlet (AC 230 V, 50 Hz). The device can also be operated with AC 115 V, 60 Hz ~. For this purpose, set the voltage selector switch to the 115 V position.

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OPERATION

- 1 First turn down the **LEVEL** control to the left stop position to avoid a possible switching-on noise. Then switch on the stage monitor. The **POWER** indicator lights.
- 2 Use the **MIC/LINE** input selector button to switch the input to microphone or line level according to the signal source connected.
- 3 Adjust the desired volume for the signal source with the **LEVEL** control. Only turn up the control to such an extent that the sound reproduction will not be distorted. The **LIMIT** indicator lights up when the signal level is too high so that the level limitation will be activated. If this indicator lights up frequently, reduce the volume of the input signal accordingly.
- 4 Press the **FLAT/LOW CUT** button to activate on the low cut filter. Then the low bass range is attenuated. When the button is disengaged, the frequency response is not affected.
- 5 When operating the speaker system, please make sure that the loudspeakers always sound well. When distortions can be heard, either the amplifier or the loudspeakers are overloaded. Overloads can quickly lead to amplifier or speaker damage. In order to avoid damage, please reduce the volume immediately when distortions can be heard. When speaker systems are destroyed by overload, the guarantee becomes void. Always check the sound pressure level with a meter in order to keep to the threshold.
- 6 After operation, set the **LEVEL** control to minimum, then switch off the stage monitor with the power switch. The power indicator extinguishes.

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CLEANING AND MAINTENANCE



DANGER TO LIFE!

Disconnect from mains before starting maintenance operation!

We recommend a frequent cleaning of the speaker system. Please use a soft lint-free and moistened cloth. Never use alcohol or solvents!

There are no serviceable parts inside the device except for the fuse. Maintenance and service operations are only to be carried out by authorized dealers.

If the stage monitor distorts, one of the loudspeakers may be defective. In this case the system should not be operated any more in order to prevent further damage. Please contact your dealer. If clacking sounds are heard from the system, screws may have loosened due to the continuous vibrations. The speaker system should be checked by a specialist.

Should you need any spare parts, please use genuine parts.

If the power supply cable of this device becomes damaged, it has to be replaced by a special power supply cable available at your dealer.

Should you have further questions, please contact your dealer.

Replacing the Fuse

If the fine-wire fuse of the device fuses, only replace the fuse by a fuse of same type and rating.

Before replacing the fuse, unplug mains lead.

Procedure:

Step 1: Open the fuseholder on the rear panel with a fitting screwdriver.

Step 2: Remove the old fuse from the fuseholder.

Step 3: Install the new fuse in the fuseholder.

Step 4: Replace the fuseholder in the housing.

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TECHNICAL SPECIFICATIONS

	Mighty M10	Mighty M12	Mighty M15
Power supply:	115/230 V AC, 50/60 Hz	115/230 V AC, 50/60 Hz	115/230 V AC, 50/60 Hz
Power consumption:	80 W (1/8 power)	180 W (1/8 power)	300 W (1/8 power)
Rated power:	250 W RMS	350 W RMS	450 W RMS
Program power:	500 W	700 W	900 W
Bass speaker:	25 cm (10")	30 cm (12")	38 cm (15")
Driver:	2.5 cm (1")	3.5 cm (1.35")	3.5 cm (1.35")
Input:	combination XLR/6.3 mm jack, switchable mic/line	combination XLR/6.3 mm jack, switchable mic/line	combination XLR/6.3 mm jack, switchable mic/line
Parallel output:	XLR	XLR	XLR
Input impedance:	30 k Ω (balanced), 15 k Ω (unbalanced)	30 k Ω (balanced), 15 k Ω (unbalanced)	30 k Ω (balanced), 15 k Ω (unbalanced)
Frequency range:	60-20000 Hz	50-20000 Hz	45-20000 Hz
Max. SPL:	123 dB (1 m)	124 dB (1 m)	126 dB (1 m)
Dispersion angle (HxV):	80° x 80°	80° x 80°	60° x 60°
Circuitry:	class D/AB	class D/AB	class D/AB
Protection circuits:	overload, limiter	overload, limiter	overload, limiter
LED indicators:	power, signal, limit	power, signal, limit	power, signal, limit
Cabinet material:	15 mm MDF	15 mm MDF	15 mm MDF
Flange:	35 mm	35 mm	35 mm
Dimensions (LxWxH):	420 x 480 x 300 mm	460 x 500 x 340 mm	510 x 600 x 370 mm
Weight:	14 kg	17 kg	20 kg



MYFIX

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