

MERIDIAN M2500 USER GUIDE

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Introduction

In choosing a Meridian M2500 Active Subwoofer, you have acquired refined equipment which will bring you listening pleasure for many years to come. Whether as part of an enhanced stereo system or a full home theatre, the subwoofer is designed to bring you the highest quality sound possible. This manual should help you get the best from it.

If you have any queries regarding the M2500, remember that Meridian Dealers have been selected for their expertise. You should refer to your dealer in the first instance.

General Description

The M2500 is part of the current range of Meridian Active Loudspeakers. They use built-in power amplifiers specifically tailored for the cabinet and drive units to give a perfectly matched system. This superior approach to the design of high-fidelity loudspeaker systems has been a speciality of Meridian for fifteen years.

Your M2500 has several inputs, unbalanced and balanced, a switchable electronic crossover and two power amplifiers, one for each of the drive units. The drive units are 10" long throw woofers with 2kg shielded magnet in a magnesium basket.

Unpacking

WARNING Take great care when unpacking or repacking the M2500 that you do not put undue pressure on the front, as the drive units may be damaged if pressed.

The packaging should be opened at the end indicated on the box, with that end facing sideways.

The subwoofer is fitted with castors to aid installation. When the four accessible foam corners have been removed, it should be possible to lower and roll out the unit.

Inside the packaging you should have found:

- 1 M2500 Active Subwoofer complete with grilles and castors
- 4 screw in spikes
- 4 lock nuts and a nut spanner
- 4 plastic spike covers
- this manual

- 1 power cord suitable for your territory
- 1 long phono-phono analogue audio lead

If any of these items is missing, please contact your dealer. We suggest that you retain the packaging carefully, as it provides maximum protection in transit.

Getting Going

IMPORTANT Before connecting to the AC supply, check that the unit has been manufactured to the correct supply voltage for your territory.

IMPORTANT Do not make any alterations to the connections of your system with the M2500 AC power switched on.

We suggest you follow the full instructions in the **Installing your M2500** section. If, however, you want to get going fast:

- Use the audio cable supplied to connect the **L+** unbalanced input of the speaker to an appropriate preamplifier or surround sound decoder.
- Switch on the power at the source at a low volume level.
- Connect the M2500 to AC power with the cord provided.
- Switch on the M2500 with the switch located next to the AC power inlet. A green light should appear at the front of the unit and you should be able to play music.

If you cannot hear any sound, refer to **Help!**

Installing your M2500

This section explains how to get the best from your M2500 installation. If your system includes a Meridian 565 Digital Surround Processor, you will find more information on correct installation in its *User Guide*.

Siting

The position of the subwoofer in your room is just as important as that of any other loudspeaker to the final sound. Whilst the ear finds it hard to localise very low frequency sound, you may not get the best from your system if you site your subwoofers badly.

You will probably want to place your subwoofer where it is not too obtrusive, but if possible follow these guidelines.

- The closer the subwoofer is to the speakers it handles the bass for, the more impressive the bass will be.

- Thus if you have stereo subwoofers, which are best for music reproduction, place them near the Left and Right speakers. Then the bass will blend optimally between the main speakers and the subwoofers and the system will image well.
- If you are using the subwoofer as a mono or centre subwoofer, place it close to the centre of the room at the front, ideally under the centre channel if you have one.
- The front of the subwoofer should be directed at the listening seats if possible. In home theatre applications, this makes effects more convincing.
- Do not place anything in front of the subwoofer which could obstruct the air movement from the drive units.

Note. Systems containing subwoofers can produce very high levels of bass which may cause fixtures in a room to rattle and excite 'boomy' standing wave resonances due to the shape of the room. Correct speaker positioning can help minimise these problems, which can be tested for when calibrating the subwoofer. The 565 Digital Surround Processor has a built in test which can help with this without the need for special equipment or source material.

Vertical operation

Although primarily intended for horizontal siting, the M2500 can also be used in the vertical orientation. Care must be taken to ensure adequate ventilation on the heatsinks, which are optimised for horizontal use.

General Guidelines

Please note the following:

- If possible, you should locate the M2500 so that the electronics (front) of the speaker are not subjected to long-term strong sunshine. The heatsink should be cool (less than hand-hot) when the unit is not in use.
- The M2500 is magnetically shielded and may be placed close to a television.
- In a custom cabinet it is entirely the responsibility of you and your dealer to ensure adequate ventilation. If in doubt this can be determined by operating the unit and monitoring the temperature of the heatsink.
- Permanent wiring to a building is prohibited by most building codes.

Final adjustments

Having sited your loudspeaker, we suggest you leave it on its castors until the system has been calibrated, and then remove them and optionally fit the spikes as described below.

Connections

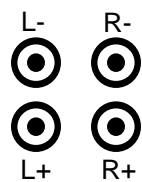
All connections to the subwoofer are made on the recessed panel at the rear of the unit. The unit should be switched off before any connections to the system are changed.

Power

AC mains is connected to the IEC power inlet. Where possible connect the M2500 to an grounded socket using the mains lead provided. Try to use a separate AC power outlet for each active speaker. The use of adapter units is discouraged as they degrade the sound quality.

Unbalanced Audio

Unbalanced audio may be connected to the phono sockets on the M2500 with the audio lead provided.



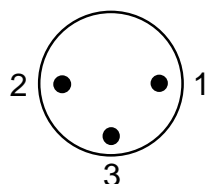
If your preamp or surround sound decoder has a mono subwoofer output, connect this to the **L+** socket only. This is the connection you should make if you have a 565 Digital Surround Processor.

If your preamp or surround sound decoder does not have a mono subwoofer output, you can connect to both the **L+** and **R+** sockets. The M2500 will combine these signals to produce the mono signals it needs.

If you know that you require the subwoofer to invert absolute phase, you can connect to the negative **L-**, or **L-** and **R-**, sockets instead. If you are unsure, Use the positive **L+**, or **L+** and **R+** sockets to start with.

Balanced Audio

Balanced audio may be connected to the **LEFT** and **RIGHT BALANCED INPUT** XLR sockets. If your preamp or surround decoder has a balanced output, it may be connected as follows.



Connections to XLR:

1. Shield and ground or common.
2. Signal phase positive.
3. Signal phase negative.

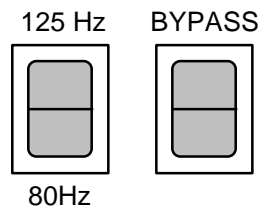
If your preamp or surround decoder provides a mono subwoofer output, connect to the **Left** input only. If it does not, you can connect to both the **Left** and **Right** inputs and the M2500 will combine them.

Calibration

Calibrating the subwoofer may be done in conjunction with the setup procedure of your surround sound decoder if you have one. On the 565 Digital Surround Processor this is *Calibration* mode. See the *565 User Guide* for further details.

Crossover Selection

The M2500 has three crossover settings which can be selected with the two toggle switches on the rear panel. It is vital that these are set correctly.



Pushing the right hand switch to **BYPASS** bypasses the crossover in the M2500. Use this if the subwoofer output of your preamp or surround sound decoder has an internal crossover. This is the setting to use if you are connecting to a 565.

Pushing the right hand switch down engages the crossover, which is a second order low pass. The left hand switch then selects the crossover frequency to **125Hz** or **80Hz**. This choice depends on the high pass crossover frequency used for the main speakers.

Sensitivity Setting

The sensitivity of the subwoofer needs to be set to give the correct level of bass for the system. If you have a surround sound decoder such as the 565, it will have a procedure which allows you to calibrate this level.

Sensitivity is set with the knob on the back panel. Turning it clockwise increases the sensitivity and turning anti-clockwise makes it less sensitive. To avoid loud surprises, always start with a low sensitivity setting and increase as necessary.

If you do not have a surround decoder, you can calibrate by listening to well known source material and adjusting the sensitivity until the bass sounds solid and deep but not boomy or intrusive. Alternatively, it can be calibrated with the aid of a noise generator and a sound pressure level meter.

If you have a 565, start with the **minimum** sensitivity setting on the M2500. Adjustments should be made using the control on the M2500 rather than on the 565. This makes full use of the high precision available in the 565 processor. Follow the *Calibration* procedure in the *565 User Guide*.

Phase Correction

If, when calibrating the system, the bass sounds hollow or phasey and does not image correctly, you will need to invert the phase of the subwoofer as it is out of phase with the rest of the system. If

you have a 565, this can be done in the 565 *Calibration* procedure. If not, turn off the subwoofer and connect to the negative unbalanced inputs, **L-**, or **L-** and **R-**, instead of the positive.

Fitting the Spikes

When the subwoofer is finally positioned and calibrated, the spikes and optional covers can be fitted.

1. Assemble each spike by screwing on a lock nut until it is about 2mm away from the spike end of the thread.
2. Unscrew and remove the castor at one corner of the unit.
3. Screw in a spike, but do not fully tighten it.
4. Place a plastic cover on the spike if required.
5. Repeat instructions 2-4 for all corners.
6. Carefully place the subwoofer in its final position and check that it is level and stable. Adjust the lock-nuts as necessary.
7. Tighten the lock-nuts with the spanner provided.

Operation

Normally the M2500 should be left switched on, even when the unit is not in use.

The electronics in the M2500 use the very latest techniques to ensure that the idle power consumption of the unit is very low. This ensures long periods of cool running and low energy consumption. All audio equipment should be switched off if you expect to be away from the installation for an extended period.

Maintenance

There are no user serviceable parts inside the M2500.

One or two days after installation check the tightness of the fixing screws of the loudspeaker drivers. These screws may loosen slightly in shipping or with extremes of temperature or humidity, and the speaker will not sound at its best with them loose. Do not over tighten them. It is worth checking these screws after transit or extended periods of loud playing.

The electronics do not need routine maintenance.

The audio sockets are gold plated and, where gold plated phono sockets are used, there should be no need to clean the contacts. Other phono plugs should be unplugged and replugged once a year. Some proprietary contact cleaners may be used to advantage, but you should seek the advice of your dealer.

Cleaning

Turn off the subwoofer at the power switch before cleaning.

The cabinet of the M2500 is finished with veneer and can be wiped clean with a damp cloth.

The heatsink is anodised and painted aluminium which can be dusted with a paint brush if necessary.

Do not use abrasive cleaners on any part of the M2500.

Help!

No Sound.

- Check the AC power supply to the M2500. The green light on the front should be lit.
- Check the AC supply to the other units in the system.
- Check that the correct source is selected and that the source itself is producing music.
- Check that the interconnections are made to the correct sockets.
- The loudspeaker outputs are protected by a fuse. In the unlikely event of a fault condition, this will blow to protect the drive units from damage.

Unit goes silent when played hard.

M2500 has a temperature sensing system on board which prevents overheating of the electronics. The sound will continue when the loudspeaker has cooled.

Too little or too much bass when listening.

Have you calibrated the system properly? See the section on *Sensitivity Setting*

Bass sound phasey or hollow.

Your subwoofer may be out of phase with the main system. See the section on *Phase Correction*.

Bass sounds boomy when certain notes are played.

Systems containing subwoofers can produce very high levels of bass which may cause fixtures in a room to rattle and excite 'boomy' standing wave resonances due to the shape of the room. Correct speaker positioning can help minimise these problems. Try adjusting the position of the subwoofer. If the subwoofer is close to a corner, move it further out from the corner if possible.

Bass sounds coloured.

You may have selected the wrong crossover frequency for your system. See the section on *Crossover Selection*.

Subwoofer squawks, producing high frequency sounds.

You may have inadvertently selected **bypass**. Does your preamp or surround sound decoder have an internal crossover? See the section on *Crossover Selection*.

Service

The Meridian M2500 has been carefully designed to give years of untroubled service.

In the unlikely event that your M2500 fails to function correctly, it should be returned, in its original packing, to your Meridian dealer. In case of difficulty, please write to the following address if you live in the UK:

Digital Gramophone & Wireless Ltd
14 Clifton Road
Huntingdon
Cambridgeshire PE18 7EJ

Outside the UK, contact the importing agent for the territory. A list of Meridian agents abroad is available from the above address.

No responsibility can be accepted for the M2500 while it is in transit to the factory or an agent, and customers are therefore advised to insure the unit.

In the USA and Canada, contact

Meridian America Inc.
3800 Camp Creek Parkway
Building 2400 Suite 112
Atlanta GA 30331
Tel (404) 344-7111
Fax (404) 346-7111

Guarantee

The Meridian M2500 is guaranteed against defects in material and workmanship for 12 months from the date of purchase.

The guarantee is void if the M2500 has been subjected to misuse, accident or negligence, or has been in any way tampered with or modified without the written authorisation of DGW Ltd.

Attempted servicing by unauthorised people may invalidate the guarantee.

Labour and carriage charges are not covered unless by local agreement.

If you request service under guarantee, proof of the date of purchase will be required.

Outside the UK, local warranty liability is restricted to equipment purchased within the territory. Our agents abroad are contractually obliged to service under guarantee only equipment sold through them. They are entitled to make a non-refundable charge for any service carried out on other equipment.

This guarantee does not limit your statutory rights within the United Kingdom.

Specification

Audio Inputs	
Unbalanced	6V - 500mV, gold plated phono
Balanced	12V - 1Vrms max, XLR
Power Amplifiers	Complementary high-efficiency bipolar design, with output-stage error correction and twin loop design
Output	200W mean power
Distortion	<0.1%, typically less than 0.02% up to full power at relevant frequencies
Noise and hum	< -72dBm
Acoustic	
Output	Typically > 110dB spl @ 1m
Noise	< 15dB spl @ 1m
Frequency response	In room response within 3dB, 30Hz–400Hz (Bypass)
Crossover	2nd Order Butterworth at 80Hz or 120Hz, switchable.
Drive units	2 x 10" long throw woofer with 2kg shielded magnet in a magnesium basket.
Cabinet	Constructed from fine veneered MDF
Dimensions	752 x 525 x 342mm
Weight	56 kg
Power	100–125; 200-230; 210–250V AC 50–60Hz 10VA idle; 200VA max.

