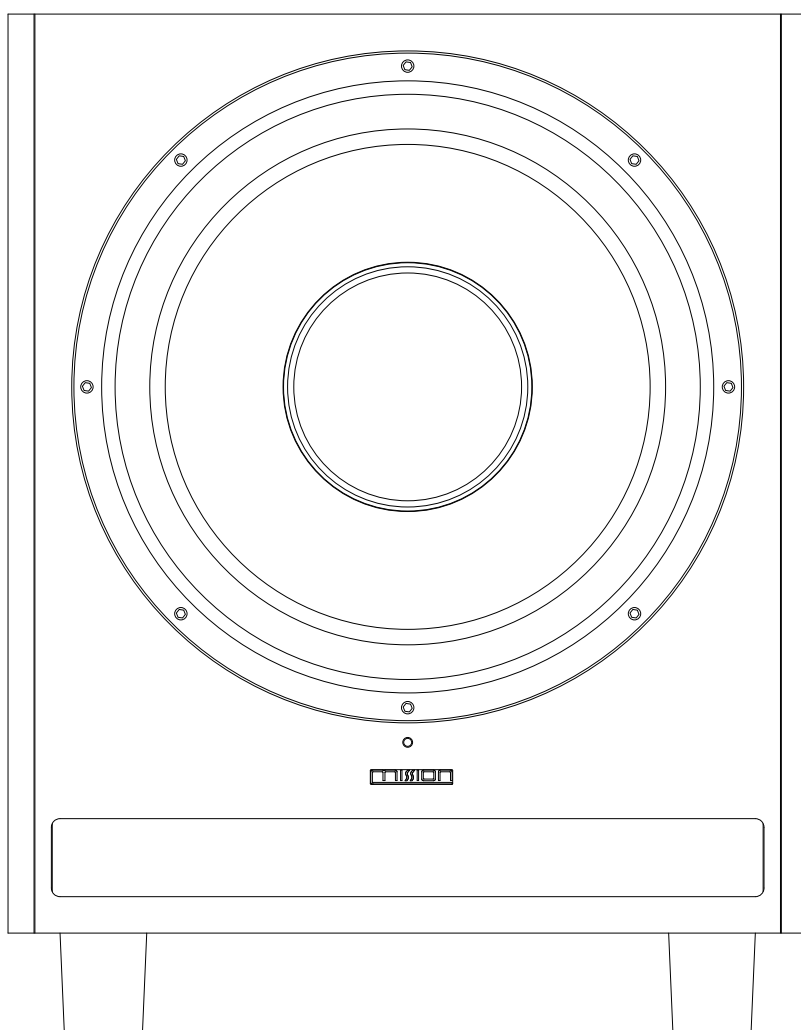




MS-450 Subwoofer



User's Manual

MISSION

IMPORTANT SAFETY INFORMATION

	CAUTION! RISK OF ELECTRIC SHOCK DO NOT OPEN	
TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK) NO USER-REMOVEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED PERSONNEL		
ADVERTISEMENT: RISQUE DE CHOC ELECTRIQUE- NE PAS OUVRIR		



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

WARNING: TO REDUCE THE RISK OF FIRE OF ELECTIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

Read these instructions.

Keep these instructions.

Heed all warnings.

Follow all instructions.

Do not use this apparatus near water.

Clean only with cloth.

Do not block any ventilation openings.

Install in accordance with the manufacturer's instructions.

Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

Do not defeat the safety purpose of the polarised or grounding plug. A polarised plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into you outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

Only use attachments/accessories specified by the manufacturer.



Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart or rack is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

Unplug the apparatus during lightning storms or when unused for long periods of time.

Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been exposed to rain or moisture, does not operate normally, or has been dropped.

CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that objects filled with liquids, such as vases, shall not be placed on apparatus.

WARNING: The mains plug/appliance coupler is used as disconnect device shall remain readily operable.

No naked flame sources, such as lighted candles, should be placed on the apparatus.

Do NOT place heavy objects on top of loudspeaker cabinets. If you play them with the grilles removed be careful to protect the drive units from children and pets.

DO NOT change any connections to the subwoofer or your system without first switching off the power.

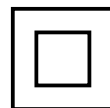
DO NOT use your amplifier or receiver at its maximum volume setting. This will produce high levels of distortion which may damage your loudspeakers and subwoofer. Allow your amplifier a little headroom so that it can operate without stress.

DO turn down the volume control on your amplifier or receiver before turning the equipment on or off. This will protect your subwoofer against switching 'thumps' and other spurious signals.



IAG-WHARFE

Correct disposal of this products. This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.



This equipment is a Class II or double insulated electrical appliance. It has been designed in such a way that it does not require a safety connection to electrical earth.

Welcome to Mission

The MS series is the latest in a long line of distinguished Mission active subwoofers. These technologically advanced subwoofers will complement the finest electronics and decor. Robust bass drivers are used throughout the range.

Screw fastening tri-lobe multi-way binding posts feature on all models. Your Mission MSsubwoofers will bring you great listening pleasure for many years.

General Information

Please read these instructions carefully before installing your subwoofers. A few minutes studying this manual will ensure superb performance from your subwoofer for many years.

Please pay attention to all cautions printed on the pages marked with this symbol.

Unpacking MS Subwoofers

- Carefully unpack each subwoofer.
- Retain all the packing materials so that your subwoofer can be repacked and shipped without damage.
- If you dispose of the packing, do so with regard to all recycling provisions in your area.



Warning: The MS-450 subwoofers are heavy.

Always get someone to help you to lift and manoeuvre the loudspeakers.

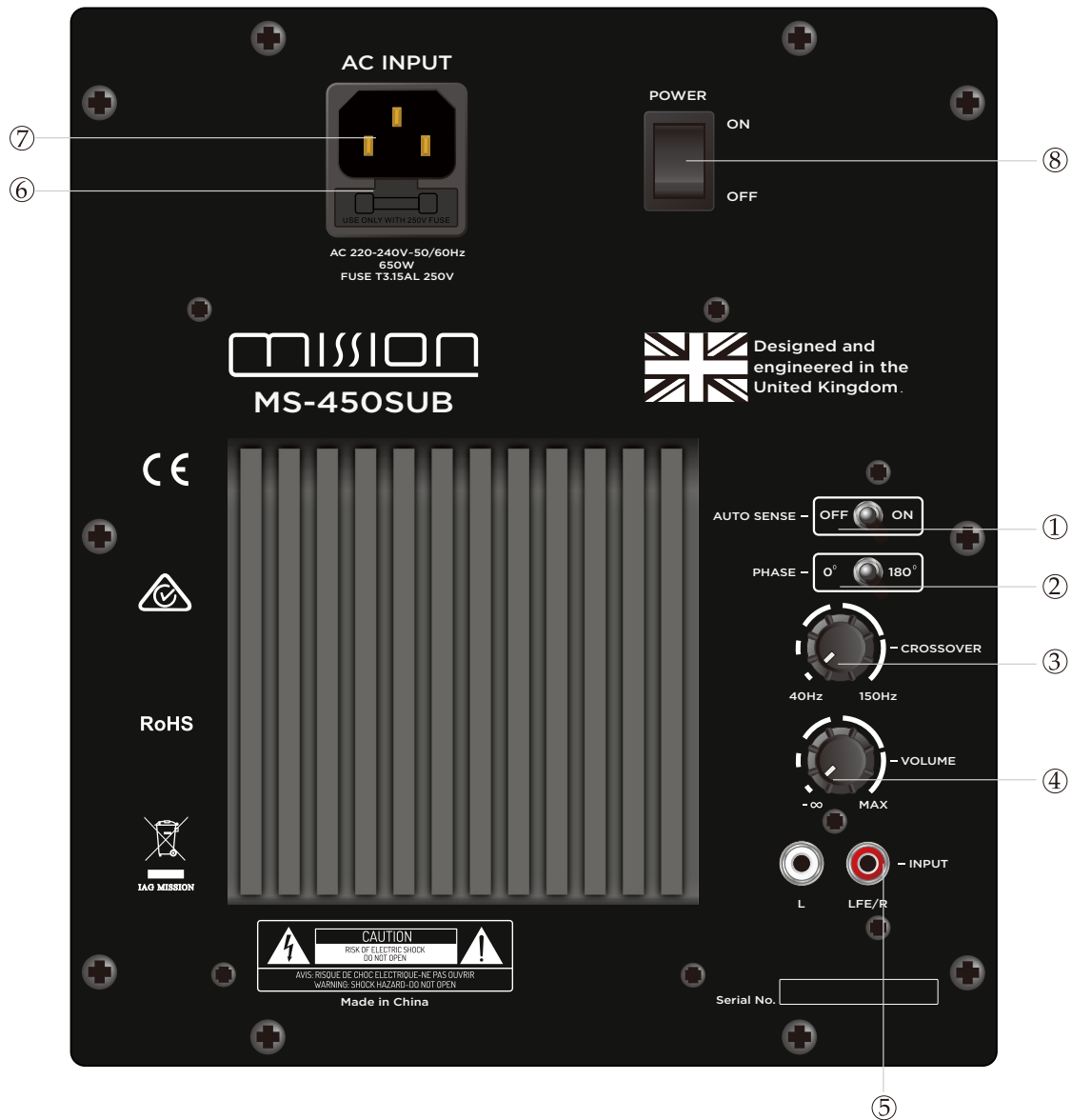
Never drag a loudspeaker. When moving subwoofers lift them clear of the floor and replace them carefully.

Specifications

Model	MS-450SUB
Description/Format	Active Dynamic-Drive IB subwoofer system
Drive Units	1*(15")380mm cone long-throw
Frequency Response	25-150Hz (±3dB)
Amplifier Power Output	400W
Line Input Sensitivity	200mv for maximum output
Crossover Range	40-150Hz
Inputs	Stereo Line In (2 x RCA Phono) Mono (LFE) Line In (RCA Phono)
Input Impedance	Line In: 10kΩ LFE: 5kΩ
Signal-to-noise ratio (S/N)	≥85dB
Avg. Max Output @1m	124dB
Features	Phase inversion, Auto on-off Auto Sense
Dimension (W x H x D) mm	460 x (530+58) x 560
Net Weight	32.5kg
Gross Weight	36.5kg

Mission reserves the right to change all specifications without notice. E & OE

The Mission MS-450 Powered Subwoofers



- 1 Auto Sense Switch
- 2 Phase Switch
- 3 Crossover Frequency Control
- 4 Volume Control
- 5 Line Level Input/LFE Input
- 6 Mains Power Fuse
- 7 IEC Mains Input Socket
- 8 Mains Power Switch

Preliminaries

Open the carton and remove all the top packing pieces. Lift the subwoofer out carefully. **DO NOT** lift the subwoofer out of the carton using the protective bag. The unit is heavy; if you cannot manage it easily, get assistance.

Retain the packing materials. If you decide not to keep the packing, please dispose of it having regard to any recycling regulations in your area. Please retain the user manual. If you transfer this equipment to a third party, please ensure all the instructions are passed on with the product.

Power Connections

The subwoofer is factory set to operate from the mains voltage marked on the amplifier panel. Before connecting check this voltage is correct for your mains supply.

If you move to an area with a different mains supply, consult your dealer for advice.

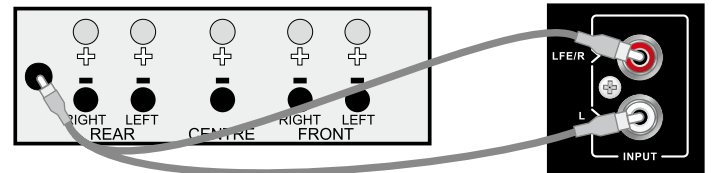
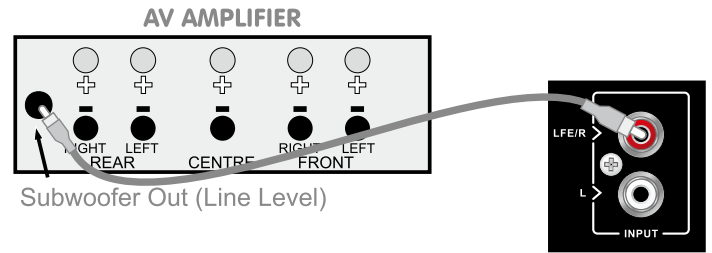
***DO NOT** change the operating voltage of this product without seeking expert advice first.

Connecting the MS-450 Subwoofer

A/V Processor Connections

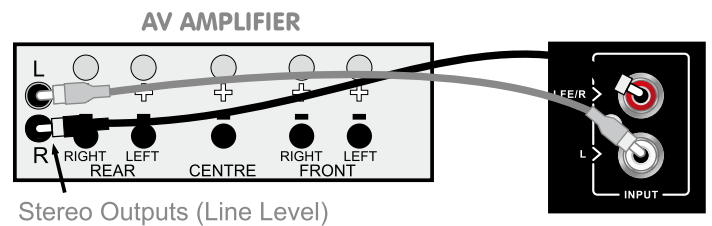
Your subwoofer has been designed for optimum performance with a digital processor. If your A/V processor has a line level or LFE subwoofer output you should use this connection. You will need to purchase a single screened RCA phono lead from your dealer. Connect this lead to the LFE input of the subwoofer as shown.

Alternatively, you may use a split mono lead from the processor to Line Inputs of the subwoofer. In this case the input level at the subwoofer will be slightly higher.



Stereo Line Output Connections

If your amplifier has a spare preamplifier output or a stereo subwoofer output, connect the subwoofer as shown. You will need a stereo screened RCA phono cable.

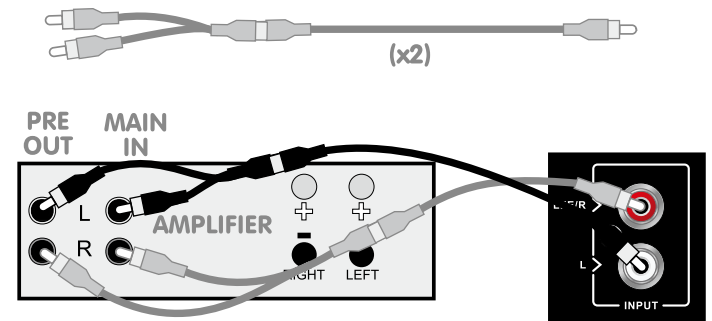


Pre Out - Main in Connections

If you use a stereo pre and power amplifier, or an amplifier where the pre and main amplifier cab be separated, connect the subwoofer as shown. There are two alternative methods.

You will need two screened RCA 'Y' adaptors and two single RCA phono cables.

Remove the Pre-Main links on your amplifier. Connect the socket (common) of an RCA 'Y' adaptor to the Left Channel Pre Out socket on the amplifier and the other leg to the Left Channel Main In socket. Connect the remaining plug on this combination to the Left Channel Line Level input on the subwoofer. Repeat this for the Right Channel.



Setting Up Your Subwoofer

- Set the subwoofer power switch to OFF.
- Turn the system volume control to minimum.
- Re-check all system connections.
- Connect the supplied power lead to the IEC power socket on the subwoofer and connect the mains plug into the wall socket.
- Set the subwoofer volume control midway (12 o'clock).
- Switch on the mains power.

Fine Tuning Your Subwoofer

First switch on the system. Then switch on the subwoofer power switch. Check that the power indicator on the amplifier panel glows. Play a programme with extended bass and set the system volume to a reasonable level. Adjust the subwoofer volume control to produce the desired level of bass.

PHASE SWITCH: If the bass is indistinct or lacks depth, the Phase switch may need adjustment. Set the switch to 0° and listen carefully to some music with extended bass. If there is insufficient bass output from the subwoofer set the Phase switch to 180°. Select the position which produces the most natural, extended bass.

Setting Up Your Subwoofer

LOW PASS (CROSSOVER) FILTER: This adjusts the blend between the subwoofer and the main speakers, and enables the system to be set up for optimum bass performance. The higher settings are for use with bookshelf loudspeakers, the lower settings for large floorstanding models. If you choose too low a setting with small speakers, there will be a 'hole' in the bass response; too high a setting with large speakers will result in the upper bass becoming bloated.

AUTO SENSE SWITCH: In normal mode the subwoofer is permanently on. This may result in low level hum or noise if the rest of the system is switched off and the subwoofer is left switched on.

When the system is not in use for extended periods, we suggest you switch off the subwoofer to protect it from switching noises.

LOUDSPEAKER SIZES: Many digital AV processors require you to specify the size of speakers in the various channels. These are usually 'Large' or 'Small'. We recommend that you set the centre and surround speakers to 'Small'. This will direct all the bass in the system to the subwoofer and provide clean, deep and louder bass. Set the 'Subwoofer' option on the processor to 'On' or 'Yes'.

Subwoofer Settings for Front Loudspeakers

Set large floorstanding loudspeakers to 'Large' and the subwoofer setting to 55Hz. Smaller floorstanding loudspeakers may be optionally set to 'Small'. In this case the subwoofer crossover setting should be 85Hz. If you find the bass excessive, set the loudspeaker to 'Large' and resume the 55Hz crossover setting.

Set bookshelf and stand mounted loudspeakers to 'Small'. If you are using a digital AV processor the subwoofer crossover setting should be 85Hz.

SETTING LEVELS: (Read this together with your processor instructions.) Once the loudspeaker settings have been finalised, put the AV amplifier into its 'Test' mode. Adjust the levels until all channels are equally loud. You may need to adjust the subwoofer output level. Avoid setting too high a level which may limit the subwoofer's ability to respond to large bass transients. Set a sensible level going into the subwoofer. The subwoofer volume control should be between 12 o'clock and 3 o'clock .

LFE: If all the speakers are set to 'Small', the LFE channel will be combined with the bass from other channels and all this feeds into the subwoofer. When you set the LFE level from your AV processor, use care as the LFE channel may contain powerful low frequencies which may overload a domestic subwoofer. If, during a programme, you hear popping or thumping noises coming from the subwoofer, immediately turn the AV processor's volume level down and then back off the LFE level. If this does not cure the problem, back off the volume level at the subwoofer.

Stereo Reproduction

Low Pass Filter

The subwoofer crossover point should be set having regard to the size and low frequency extension of the main speakers. The role of the subwoofer is to extend the bass response of the system, not to increase the overall bass level. If the loudspeakers are large the crossover should be set low, a value around 55Hz is a good place to start. With smaller speakers this can be increased, up to 85Hz for the small bookshelf units. As always the final value is determined by listening.

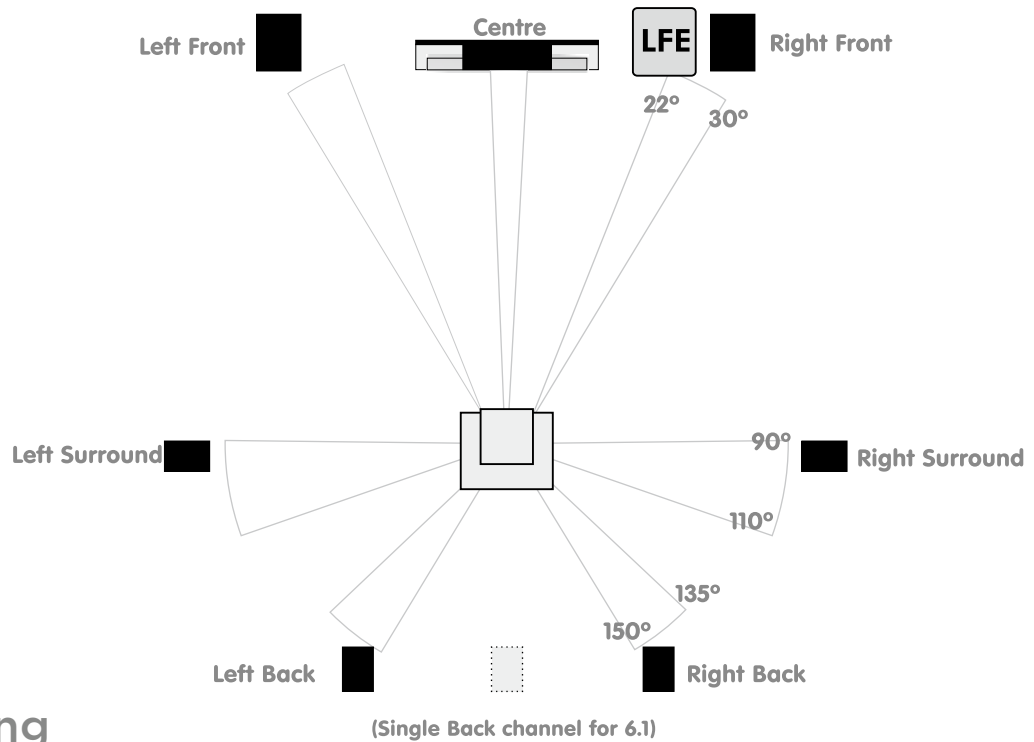
Low-level Listening

Our ears are far more sensitive to midrange frequencies (2-5 kHz) than bass frequencies. Very low bass and especially percussive bass is 'felt' rather than heard. At low sound levels bass frequencies appear to attenuate faster than midrange and treble. As the level increases this bass roll-off decreases. Occasionally we may wish to listen to a normally loud piece of music at a low level but with retention of the bass information.

Testing the System

The simplest way to test the system is to play, at a moderate level, music with deep consistent bass. Switching the subwoofer on and off should cause change of the depth of bass, and the ambience will also alter. If there is a significant change in bass volume, or a noticeable step in the bass response, or an increase in colouration when the subwoofer is playing, the setup needs to be refined. By selecting different crossover and volume settings, you will be able readily to identify the most favourable combination.

Dolby Labs Recommended 7.1 Placement



Troubleshooting

Before investigating a problem, always switch off the system at the mains.

If your system is not working properly please work through this checklist before returning a unit to your dealer.

Symptom	Possible Cause
No Sound	System not switched on; Speaker cables shorting terminals out; Wrong source selected
Sound lacks bass content	Subwoofer not switched on
Bass reproduction indistinct	Subwoofer phase incorrect; Subwoofer crossover control too low
Excessive bass distortion at low volume	Subwoofer level set too high; LFE level set too high; Subwoofer incorrectly wired
Excessive or distorted bass at high levels	System level set too high; Bass control set too high; Subwoofer too close to room corners
Distorted / rattling sounds at high levels	System level set too high; Objects on subwoofer; Objects too close to subwoofer
Popping or thumping from the subwoofer	System level set too high; Subwoofer level set too high; LFE level set too high
Television picture colour is distorted	Subwoofer too close to TV. (Switch off system and TV. Move units away. Leave 15 mins. Switch on.)

Subwoofer Maintenance

Subwoofers should only ever be cleaned with a soft dry cloth to remove fingermarks, etc.

Never touch subwoofer drive units as they can be damaged by improper handling.

Never use a vacuum cleaner to clean a subwoofer grille. Brush it carefully by hand with a soft brush.

When cleaning the floor under a subwoofer, switch it off, unplug it from the mains supply then lift it clear of the floor and move it to another location. Replace the subwoofer after cleaning.

Product Service

Should a fault occur with your subwoofer, please pack it correctly, using the original packing, so you can ship it safely.

Product for service should be returned to the appointed dealer from whom you purchased the product. If you experience difficulties or there is no Mission dealer in your area, contact the Mission distributor for your country or the Main Service Centre for your region.

Authorised Service Centre

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