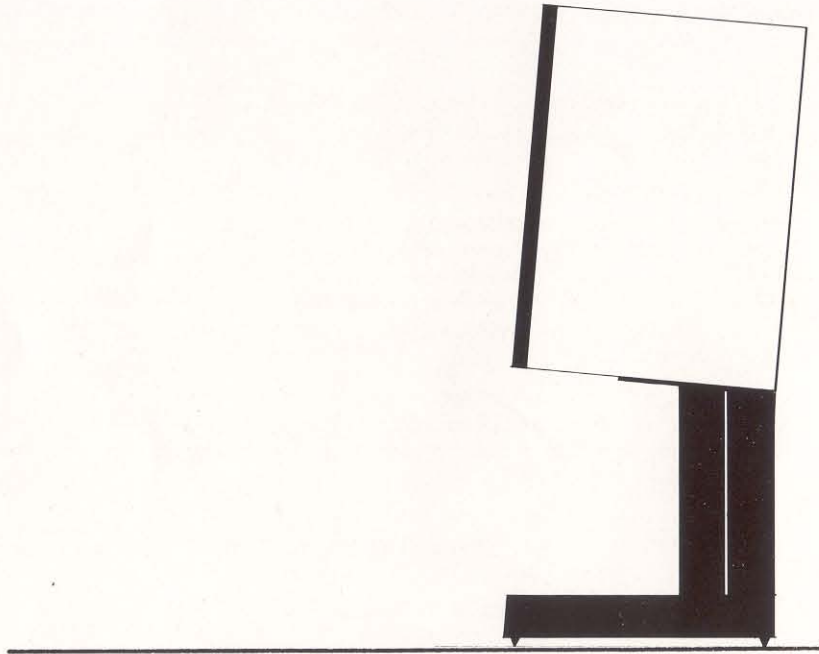


MERIDIAN M20 ACTIVE LOUDSPEAKER INSTRUCTION MANUAL



INTRODUCTION

The M20 is a two-way three-unit integrated active loudspeaker system from Boothroyd Stuart. The design has been developed from the M2, perhaps the best-known active loudspeaker in the world.

Careful alignment of the long-throw bass-mid drivers with the enclosure, the electronic crossover and the committed power amplifiers has resulted in a new low-frequency system giving a perturbed sixth order Butterworth response at low frequencies. This results in smooth, firm and powerful bass to below 40 Hz with accurate transients.

The design employs a new high frequency drive unit with ferro-fluid damping. This gives exceptional power handling capacity. A smaller diaphragm results in better dispersion of the extreme high frequencies.

This ingenious loudspeaker benefits from over ten years experience in the design and making of active loudspeakers and represents a true systems approach.

The M20s are supplied with stands. The power amplifiers, power supplies and crossovers are all contained within the cabinet.

BOOTHROYD STUART
MERIDIAN

UNPACKING

Each loudspeaker is packed in an inner and outer carton spaced with sturdy chip-foam corners. DO NOT SLIT THE SEALING TAPE ON THE INNER CARTON; this can result in damage to the loudspeaker.

One of the loudspeaker cartons contains the connecting cables consisting of

1. A balanced twisted unscreened directional audio cable (UK market only).
2. Two three-core power cords, one for each loudspeaker.

The Stand Pack contains, in addition to the parts for two stands

1. A long bolt and large washer to assemble each stand.
2. Six spike feet with plastic covers as alternative feet when spikes cannot be used.
3. A spanner to lock the spike with the provided locking nut and star washer.
4. A hex wrench for assembling the stands and for attaching them to the speakers.
5. Six bolts and washers to attach the stands to the speakers.
6. Instructions for assembling the stands and attaching them to the speakers.
7. Two wire clips for retaining the power cords.

Where possible, retain the packing for future transportation.

STAND ASSEMBLY

Please see separate assembly instructions packed with the stand.

CONNECTIONS

First check the power voltage setting indicated at the voltage selector switch (where fitted) on the back of the speaker adjacent to the AC inlet. DO NOT SWITCH VOLTAGE WITH THE POWER CORD ATTACHED.

To set the speaker to the European voltage (220 volts), an internal wiring change is needed. The switch should then be set to the 240 position. Units pre-adjusted for 220 as opposed to 240 volts carry a label indicating this adjustment has been made. Similarly for operation at 100 volts, an internal wiring change is needed. The switch should then be set to the 120 position. Units pre-adjusted for 100 as opposed to 120 volts carry a label indicating this adjustment has been made.

Separate power cords are provided for each speaker, and these should be directly connected to a wall outlet. Where the supply is two-wire (with no grounding or earthing connection), switch number 8 (adjacent to the audio input at the back of the speaker) should be switched ON.

The audio connection is made to the phono socket (top back centre) on the speaker. The twisted directional lead (where supplied) is suitable for use with the MERIDIAN control units 101, 101B and MLP (MCLP). It may also be suitable for the more conventional unbalanced outputs from ordinary preamplifiers, provided that the output impedance is sufficiently low to ensure hum- and interference-free sound. No harm will come from experimenting with the audio lead to find out if it is suitable.

With conventional (unbalanced) preamps it will often be necessary to employ screened connecting audio leads. Advice on suitable cable types should be sought from your dealer.

IMPORTANT: Always use the spring clip to retain the power cord. This inhibits removal by small animals, human, domestic or wild.

INSTALLATION

The siting of the loudspeakers in your room plays a very important part in obtaining the best possible results from the system. Priorities vary. Decor needs may deny the speakers their best acoustic position, and this will result in a compromised performance. Having said this, the M20 has been designed to present sound on a readily interpreted scale by having a radiation pattern similar to the speaking human being. In consequence, the M20 is less susceptible to room placement than most other designs.

The M20s should be placed so that they form an equilateral triangle with the listener. They should be angled so that the axes of the speakers cross at the listener.

For best results, the speakers should be mounted on their stands, using the spikes provided to control the coupling of the speaker to the floor, and positioned three feet (1m) or more from any side wall, and with two feet (0.6m) or more clearance behind. A really substantial space behind the speakers can help realize the astonishing imaging and sound stage capabilities of the speakers.

Rooms with large plate glass windows can be difficult, and damping in the form of upholstered chairs and sofas, heavy lined curtains and substantial carpets or rugs can greatly improve the sound. Unglazed pictures can help break up reflections from walls.

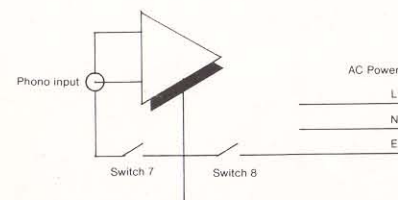
The wall behind the speakers should not be glazed doors. If possible, do not have the speakers facing glazed doors either.

For two-wire AC supply (no grounding lead) switches 7 and 8 should be ON.

For three-wire supply and balanced audio signal, switch 7 should be OFF and switch 8 ON.

For three-wire supply and unbalanced (screened or coaxial) audio signal, start with switch 7 OFF and switch 8 ON. In some installations superior sound may be achieved by reversing these, that is switch 7 ON and switch 8 OFF.

The diagram shows how these switches are connected.



The M20 is provided with "equalizing" controls for final adjustment of the sound. These controls are the switches 2 through 6 (top back) on the speakers. The table below (and on the back of the speakers) shows the effects of the switches on the response. At first sight this may seem confusing, but the procedure for selecting your preferred sound is quite straightforward. Start with response B + Y. This is achieved by turning 2 OFF, 3 ON, 4 OFF, 5 ON

Switch 6 equalizes for Stand or Wall mounting.

The Frequency Response of the M20 may be altered by Switches 2, 3, 4, 5 and 6. Switches 4 and 5 select the amount of tilt in the Response. Switches 2 and 3 select the Frequency at which the tilt occurs. The Standard Response of the M20 is B+Y.

NB For balanced operation or 2 wire power systems switch 8 should be in the GROUNDED position. Balanced input may give the best sound quality even with unbalanced sources.

CAUTION Disconnect the supply cord before removing the rear panel. **LIVE VOLTAGES ACCESSIBLE WITHIN.** The product is protected by internal fuses - consult Handbook for correct value.

CAUTION. Do not place the speaker nearer than 2 inches to any wall surface.

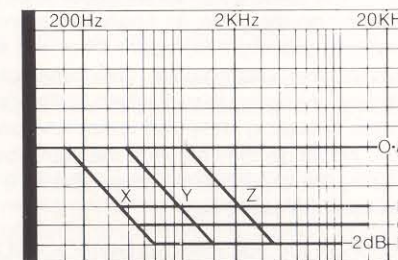
SWITCH	ON	OFF
1	Override	Music Sense

Tilt Freq	X	Y	Z	
2	on	off	on	
3	on	on	off	

Amount	A	B	C	D
4	off	off	on	on
5	off	on	off	on

	ON	OFF
6	Freestanding	Shell

Input		
7	Balanced	Unbalanced
8	Grounded	Ungrounded



For listening material it is advisable to include the speaking human voice together with different sorts of music. Because of the

great familiarity we all have with the sound of the speaking voice, it is possible to detect artificiality in the form of "boominess", "chestiness" and excessive sibilants more quickly with this source (provided of course that the original microphone techniques used in the recording or broadcast are up to standard). When you have become familiar with the sound in the B + Y response setting, it is time to experiment by altering the position of the switches one at a time. Do not attempt to arrive at your final choice by altering more than one parameter at once. When you have selected your preferred setting, it is advisable to return to B + Y for a direct comparison with the starting point. This procedure is not difficult, but requires patience which will be well rewarded. We strongly recommend that each speaker be adjusted with the same final setting.

The two six-way sockets (top back) on the speakers are designed for "networking" operation. A facility provided with this type of operation will include remote volume control as well as other sophisticated applications. Explanations of these sockets will follow the availability of the necessary ancillary equipment.

The M20 is provided with "music sensing". This music sensing facility may be by-passed using switch 1 (top, back) on the speakers. Normally the AC supply can be left connected to the speakers and they will be in "stand-by" mode until any music signal is fed to them. The stand-by state is indicated by a green lamp behind the badge on the grille. As soon as a signal is received (for example by playing a Compact Disc), the speakers automatically move to the operating state. This transition is indicated by the lamps changing to red. When first connected the speakers move to the operating state (red lamp), and only after some minutes of no signal do they move to the stand-by (green lamp) state. After using the equipment it takes about 10 minutes for the speakers to revert to stand-by.

In the stand-by condition the speakers consume about the same amount of electricity as a nightlight.

Some people prefer to disconnect all appliances from the supply at night or when they leave the house unattended. No damage results to the M20 from following these precautions.

Should you prefer to disconnect the cord or switch off the supply to the speakers when they are not in use, it is well to note that the performance from the speakers improves gradually over several hours from the time the supply is connected. This improvement is caused by the very gentle equalization of temperatures in the crossover section of the electronics which is kept warm in the stand-by state.

The practice of disconnection from the AC outlet before leaving home for several days is recommended.

Although great trouble has been taken over the front grille design, nevertheless some enthusiasts prefer to use the speakers with the grilles removed. For this reason the grilles have been made easy to "unplug".

MAINTENANCE

Cleaning:

The cabinet is finished over the veneer with a thin coating of clear polyurethane. This can be cleaned with any furniture polish or household non-abrasive cleaner. Do not use strong solvents, and if in doubt, experiment on the bottom surface of the speaker. Remove the grille before cleaning the cabinet because the polish will mark the grille material. Do not apply any polish or cleaning compounds to any part of the loudspeaker drive units.

The grille should only be lightly brushed with a clothes brush.

Some colour change will occur in the veneer particularly if the speaker is placed in sunlight. This is unavoidable and takes place mostly in the first year.

It is good practice to clean the plug connections every six months or so. This can be achieved by removing and replacing the plugs once or twice, since the contacts are self-wiping. Some proprietary switch and contact cleaners are available and no harm results from their use.

Due to the settling of the cabinet front baffle, it is advisable to tighten the bolts which hold the two bass-mid drive units.

Looseness of these bolts deteriorates the sound quality by reducing definition and detail. Care and common sense must be employed when tightening these bolts to ensure that they are not overtightened. The tightness of the drive unit bolts should be checked after three, six and twelve months. Thereafter an annual check should suffice.

There are no user-serviceable parts inside the cabinet. ON NO ACCOUNT SHOULD THE BACK PANEL BE REMOVED WHILE THE POWER CORD IS CONNECTED.

FAULT FINDING

If you suspect a fault, there are a few simple tests which you can carry out to help your dealer diagnose the problem. Fault diagnosis can be confusing, and it helps to write down your results.

No sound from one channel

1. Check lamp is lit – if unlit check AC power is on and connected.
2. Check balance control on pre-amp is not swung over to one side.
3. If the lamp stays green, by-pass the music sensing by switching switch 1 OFF. If lamp still stays green, speaker has fault. If lamp goes red and speaker works, there is a fault only in the sensing circuits of the speaker. If the lamp goes red and speaker does not work, switch off and swap the audio connection between the speakers. If the original suspected speaker works now, fault lies in audio lead pre-amp or source. If the original suspected speaker still does not work, it has fault.

Sound distorted or lacking bass or treble

Try an alternative source e.g. radio or tape.

TECHNICAL SPECIFICATION

Response	38Hz – 20kHz $\pm$ 3dB
Sensitivity	0dBm (775mV) over 22k balanced or unbalanced
Power amplifiers	70 watt bass + 70 watt tweeter
Noise	<20dB spl @ 1m
Distortion	<0.01%, 38Hz–20kHz all power levels
Crossover	2kHz, double Butterworth
Frequency response shape	24 dB/octave acoustic slopes. Roll off at 38 Hz 6th order Butterworth. Roll off at 35 kHz 2nd order Bessel
Music sensing	switchable
Controls	music sensing on/off free-standing/wall input balanced/unbalanced chassis grounded/ungrounded 10 response settings for room acoustics matching
Transducers	2 x 110mm bextrene coned high power bass-mid units 1 x 35mm soft-domed ferrofluid damped tweeter
Consumption	max: 200VA idle: 30VA stand-by: 6VA
Protection	internal fuse + thermal detectors
Indicator	two-colour LED at front shows green stand-by and red operating
Cabinet size	19.7"H x 7.1"W x 14.8"D 500 H x 180 W x 375 D
Weight with stand	36lbs 16kg

Supplied complete with stands

SAFETY

The power line socket which plugs into the speakers is unshuttered. Because the socket is used near ground level special care should be taken if young children or animals might play with the cords. USE THE SPRING CLIP PROVIDED TO SECURE THE AC CORD IN THE BACK OF THE LOUDSPEAKER.

DO NOT MAKE ANY CONNECTIONS TO THE SPEAKERS OR TO YOUR AMPLIFIER OR PRE-AMPLIFIER WHILE THE AC SUPPLY IS CONNECTED.

DO NOT REMOVE THE SCREWS RETAINING THE BACK PLATE OF THE SPEAKER WHILE THE AC CORD IS CONNECTED. THERE ARE NO USER-SERVICEABLE PARTS WITHIN.

SITE THE SPEAKER SO THAT THE BACK PLATE (HEAT DISSIPATOR) RECEIVES CIRCULATED AIR, OR HAS A SUFFICIENT SPACE BEHIND IT. DO NOT SITE IMMEDIATELY IN FRONT OF A RADIATOR OR WHERE IT IS SUBJECT TO DIRECT SUNLIGHT.

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