Sound guide

M•Flex PA speakers

M•Flex12. M•Flex 12XP. M•Flex15. M•Flex15XP. M•FlexS. M•FlexSXP
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M•Flex12. M. M•Flex15. M•FlexSXP

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Controller interface for M•Flex 12 and M•Flex 15

M•Flex 12 and 15 products feature build-in switch-mode amplification and Digital Signal Processing (DSP) made by T.C.Electronic. As such it represent the next generation of composite moulded speaker design. The amplifier interface is the connection panel which is mounted on the backside of the speaker.
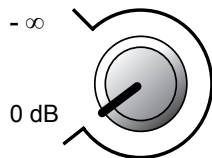

Limiter on

1

2

Mic./Line selector

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Limiter on
Red LED indicates when the limiter is active.

1. Master volume
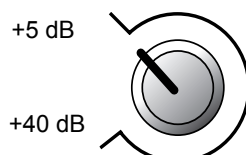Adjusts the master output signal from - ∞ to 0 dB.

- ∞

0 dB

Note

*The **Master volume** should normally be on max (0dB) and a mixer used to control the input signal. If the Limiters LCD lights red then the input signal is to high.*

2. Mic. gain
Control for the input signal volume.

+5 dB

+40 dB

Mic./Line selector
Pres the **Mic/Line** selector button when the microphone input is to be used as a line input. **The Mic/Line** selector control the sensitivity of the input as follows: Mic. +5 dB to +40 dB. Line. PAD –20 dB to +15 dB.
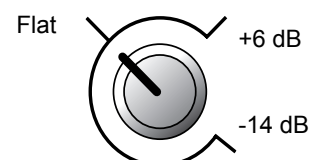
3. Treble
Adjust the high frequency output of the speaker. When the treble controller is on FLAT the input signal is

unchanged from the source.

Flat

+6 dB

-14 dB

4. Bass
Adjust the bass output of the speaker. When the bass controller is on FLAT the input signal is unchanged from

the source.

Flat

+6 dB

-14 dB

Selections and use of microphone with the M•Flex

To optimise the sound quality and the performance of your speaker you should carefully choose the microphone used. Use only dynamic vocal microphone. We recommend SHURE SM58, SHURE Beta 58A or similar.
Connect the microphone to **Mic. In** and adjust the input with the **Mic.gain** controller.

Note

To avoid feedback (when the sound from the speaker goes into a loop between the speaker and the microphone and generates a high frequency sound) it is important to place speaker and microphone correctly. The speaker may not play directly into the microphone.

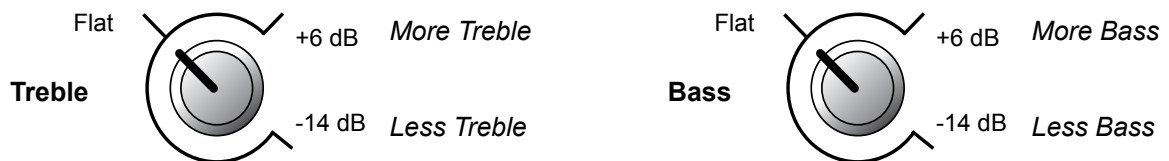*If you experience feedback then do one of following:*
Turn the speaker away from the microphone or move the microphone away form the speaker.
*Adjust the **Treble**.*
*Adjust the **Mic.gain**.*

Adjusting Treble and Bass

These controllers are used to adjust the input signal from the source. If the quality of the audio source is sufficient then the controllers should be on FLAT, to avoid modulation of the signal. If the quality of the audio source is NOT sufficient or the surroundings have poor acoustic then the **Treble** and **Bass** controllers can be used to correct the sound.

Flat **Treble** +6 dB *More Treble* -14 dB *Less Treble*

Flat **Bass** +6 dB *More Bass* -14 dB *Less Bass*

IMPORTANT

If the M•Flex is used with a CD/MP3 or other audio source that does not have a controller on the output signal, it is recommended to use a mixer to control the input signal to the speaker.

CD/MP3 — Mixer — M-Flex — Line 1
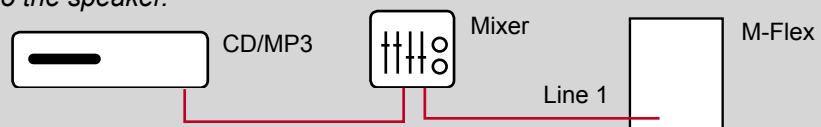
*If you do not have a mixer, then use the **Mic. In** input. Set the **Mic. Line** selector on Line and use the **Mic.gain** controller to adjust the input signal.*

CD/MP3 — M-Flex — Mic.In
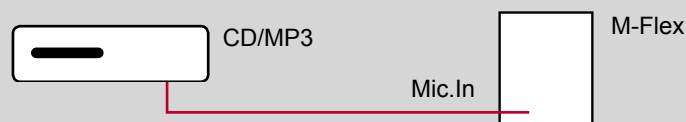
*If you want to use both microphone and CD/MP3 player and does not have a mixer, then use **Mic.In** for the microphone, and adjust it with the **mic.gain** controller. Connect the CD/MP3 player to the Line input and make sure that you can adjust the output signal on the CD/MP3.*

CD/MP3 — Line 1 — M-Flex — Mic.In

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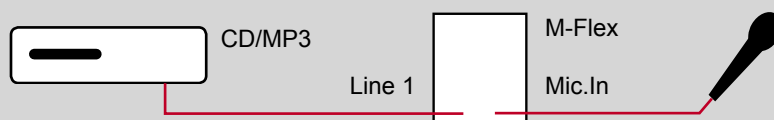
What is a limiter?

A limiter is used to limit the gain of an audio signal when the level reaches a particular threshold. A limiter prevents you from blowing up your speaker with too high input signal. The limiter clips the top and/or the bottom from the signal when the amplifier cannot provide the signal level demanded. This prevents the speaker from damage but the sound quality declines prior clipping, so it is recommended to keep the input level under the limiter level (the limiter LED should not be illuminated).
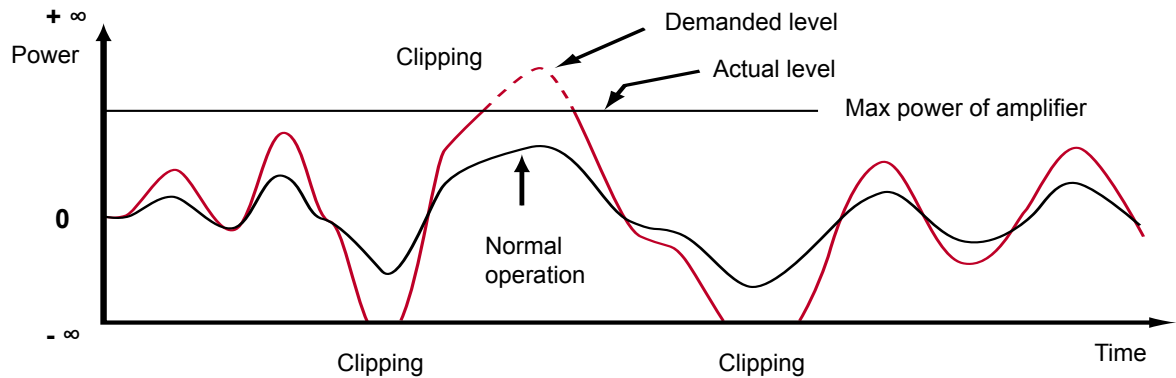
Note

When the limiter LED comes on now and then, the speaker is approaching the maximum output. The indicator comes on 2 dB before limiting sets in, and occasional flickering of the LED is fully normal. It does not mean that the speaker is overloaded. However, pushing the volume up until the LED lights up almost continuously might result in clipping the input and can in extreme situations cause damage to the amplifier or drive units.

In this case do one of following:
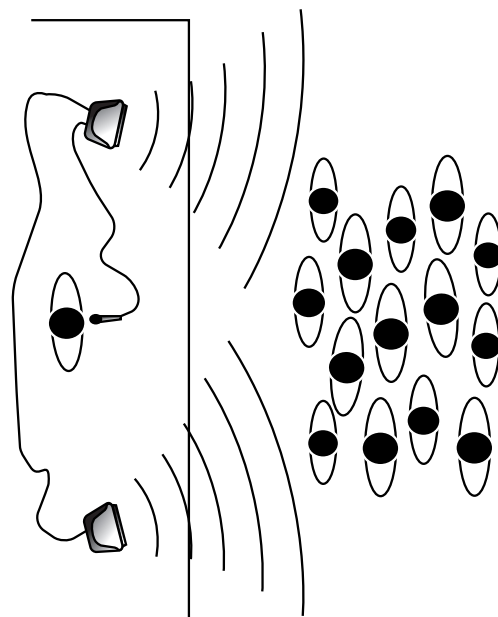*Reduce output signal from the source.*
Reduce bass or treble boost on the EQ.
*Reduce microphone gain (**Mic. gain**) or master volume.*

Note

Remember to direct the speakers towards the audience from similar angels and distance for the best performance.

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Controller interface for M•Flex S subwoofer

M-Flex Sub products feature build-in switch-mode amplification and analogue cross over. As such it represent the next generation of composite moulded speaker design. The amplifier interface is the connection panel which is mounted on the backside of the speaker.
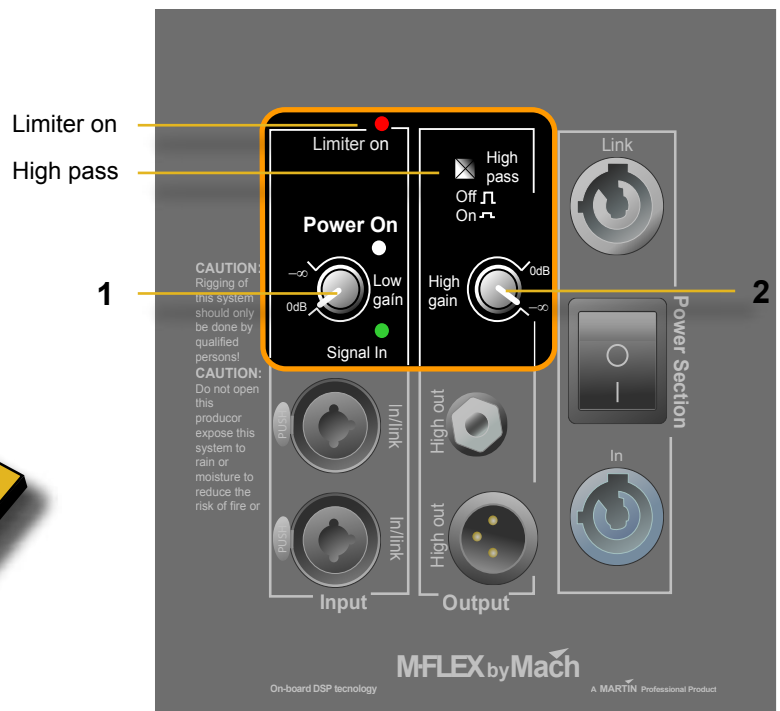
Limiter on
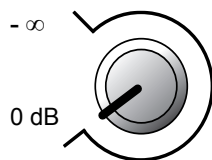Red LED indicates when the limiter is active.

2. High pass selector
On: High pass filter cuts the frequency of the output at 110 Hz.
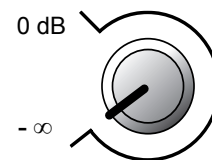Off: High pass filter cuts the frequency of the output at 35 Hz

1. Low gain
Adjusts the bass output of the speaker from - ∞ to 0 dB.

2. High gain
Adjusts the output signal of the High out from - ∞ to 0 dB.

If the Sub is used with another M-Flex speaker it is recommended to use the High gain controller to adjust the input signal to the other speaker and still have the master volume controller on the M-Flex 12/15 on max.

Note

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How to install M•Flex Sub with other speakers

With installation of M•Flex Sub like all other speakers the adjustment of the speaker sound is and will always be a matter of taste. However there are some guidelines that we recommend that you follow.

Placement

It is recommended to place the Sub on the floor and if possible close to a wall or in a corner. If placed on the floor you get 6 dB more effect from the Sub and 9 dB if it is placed in a corner.
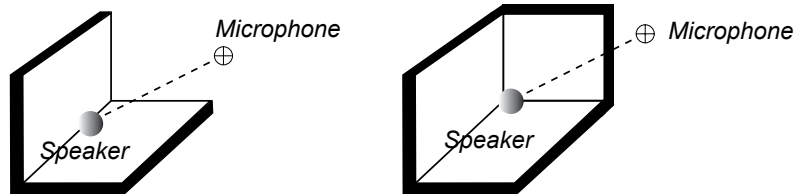
High pass selector

If the Sub is used together with other less powerful speakers or smaller installations speakers then it is recommended to press the High pass selector in to cut of the frequency at 110 Hz and therefore reduce the risk of damage to the other speakers.

In a setup were the sub is on the floor and a M•Flex 15 is placed on top of it, you can choose to have the High pass selector off. Then both the Sub and the M•Flex 15 receive the same frequency and support each other.

In a setup were the distance between the Sub and the M•Flex 15 is larger then 4 m, it is recommended to press the High pass selector in to cut the frequency at 110 Hz to avoid the bass from the speakers to play out of frequency.

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