

AUDIO FRAME X

Loudspeaker Systems
v1.6

Dear Customer,

Thank you for making the excellent decision of purchasing this WVL product.

WVL / Wolf von Langa - This name stands for true high end quality products in the audio industry, music reproduction technology, characterised by technical competence, extraordinary performance and permanent innovation.

Whether you are an ambitious music lover or a professional user - a product of the WVL brand family will provide you with the best music reproduction quality available today. Special features: We offer the sophisticated technology and reliable quality of our WVL products at an exceptional price/performance ratio.

Enjoy your new WVL / Wolf von Langa product!

These instructions are intended for several models. The respective differences between the different models are described in words and pictures. Also observe the type-related information in the section „Technical Specifications“

Subject to changes/modifications without notice

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FIELD COIL LOUDSPEAKERS

Introduction

The objective of the AUDIO FRAME X loudspeaker family is the realistic reproduction of music in an acoustically "normal" living room, a studio, a small theater or home cinema.

The difference to a conventional sound transducer is mainly the loudspeaker drive unit which is of highest importance and need to be energized. We develop and manufacture all these units in our own plant. Only this fact takes us to the best possible accuracy of music reproduction and enjoyment.

The AUDIO FRAME X loudspeaker's natural and fast transient response and decay behaviour lead to a lively and stress-free listening experience. The quietest pieces of music are reproduced just as naturally as large orchestral passages. The recording quality and the characteristics of your music sources and amplifiers are heard 1:1.

Please contact us after receiving your new loudspeaker system with any question there might be.

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Overview

WVL 23216 AUDIO FRAME LONDON

The model "London" takes its name by the use of our unique field coil drive unit based on the "Paul Voigt Mains Energised" full range loudspeaker from England, 1931. Our modern electromagnet achieves an even higher magnetic flux density in a deeper air gap, thus enabling a tremendously dynamic reproduction of the entire range of natural musical instruments. The model "London" consists of the BASE, the WOOFER BASS (WB), the WOOFER MID (WM) and the MID MODULE (M), the latter in this special case is responsible for the mid and high frequency reproduction, optional available is a super tweeter on request.

WVL 23239 AUDIO FRAME CHICAGO

The electrodynamic loudspeaker developed by Edward Kellog and Chester Rice appeared in 1925 for Western Electric from Chicago. In principle, this is still installed today in well over 90 percent of all reproduction systems.

After Paul Voigt designed the first strong permanent magnet in 1936, Western Electric began manufacturing loudspeakers for smaller rooms in the 1940s. From 1946, Western Electric manufactured a wide band speaker with the designation WE755A.

Our successor of the WE755A justifies the name giving and is used as the mid-range driver in the model "Chicago". For a realistic whole, we supplement the high frequency range in the MID MODULE (M/TW) with our super-fast Air Motion Transformer (TW). The remaining AUDIO FRAME CHICAGO consists of the BASE, the WOOFER BASS (WB) and the WOOFER MID (WM) MODULES.

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WVL 33221 AUDIO FRAME BERLIN

Horn speakers are modern again. Friedrich Rösch invented the spherical horn in the laboratories of the Klangfilm GmbH, Berlin-Steglitz, Germany. The advantages of the spherical compared to the exponential horn are the shorter design and the almost ripple-free radiation.

The AUDIO FRAME "Berlin" loudspeaker gives you a direct music reproduction of highest perfection. The use of three bass systems ensure a corresponding efficiency at very low frequencies.

The "Berlin" model consists of the BASE, three WOOFER MODULES and the SPHERICAL HORN MODULE (M/TW).

DIMENSIONS

The total height of the model London / Chicago (w/o top tweeter) is 1150 mm, the height of Berlin with four modules reach 1730 mm. As the base can be lifted with setting screws the given dimensions are only approximations.

BASE dimensions:

W 580 x D 420 x H 20 mm, weight \approx 20 kg.

WOOFER MODULE (WB/WM) London / Chicago / Berlin dimensions:

W 482 x D 300 x H 420 mm, weight \approx 25 kg.

MID MODULE (M) London / Chicago dimensions:

W 482 x D 300 x H 305 mm, weight \approx 16 kg.

SPHERICAL HORN MODULE (M/TW) Berlin dimensions:

W 482 x D 300 x H 420 mm, weight \approx 25 kg.

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AUDIO FRAME X

Owners Manual

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AFX Setup

BASE

Your new AUDIO FRAME X system is designed for set up in a few simple steps. Please read the instructions carefully before setup.

Common to all AUDIO FRAME models is the rigid sandwich BASE made of aircraft aluminum with a hardened surface, a phenolic paper layer, and four set screws for optimal positioning on uneven floors and the usability of „speaker foot‘ accessories.

With the cables upwards and the terminals showing to the rear, place the BASE at the position you wish the loudspeaker in your listening room or studio.

If you find yourself with a wooden or a stone floor, a piece of carpet underneath to move the AFX system is helpful until you find the optimum location in your room. Then, by screwing the fine thread set screws and lift the complete speaker system, remove the piece of „sliding“ carpet and set the BASE with the setting screws to level.

WOOFER BASS MODULE

By avoiding to crush any cable put the first WOOFER MODULE (WB - blue = memory aid = water, lowest), which you insert with the guide pins into the appropriate recesses of the BASE. From the inside and back, secure the seat with two screws M6 on the left and the right in the center. Secure these screw connections easily (hand-tight) with a ball-head allen key.

CROSSOVER (E = ENTRY)

Place the crossover board with the lettering towards the rear and secure it with all the M4 screws to the transparent network support . Connect the 2 audio cables coming from the BASE as indicated (E/M - E/TW and E/W). Red to + plus, black to - minus. Avoid bending the cables and secure them behind the prominent screws on the left and right inner back. Connect the wiring from the crossover to the lower WOOFER BASS (WB - blue). Preliminary leave the umbilical cable with the BASE.

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WOOFER MID MODULE

Proceed with the upper WOOFER MODULE (WM - green = memory aid - gras, above water). The Wolf von Langa logo should be positioned to the center, when you finalized the setup the logo of the left and right speaker should be seen from the listening position. Insert the guide pins into the appropriate recesses of the WOOFER BASS MODULE. Again secure the seat with two screws M6 on the inner left and the right in the center. Secure these screw connections easily (hand-tight) with a ball-head allen key.

Connect the audio cable from the crossover to the WOOFER MID (WM - green). Preliminary leave the umbilical cable with the BASE.

MID MODULE

Close by putting the MID MODULE by inserting the guide pins into the appropriate recesses of the WOOFER MID MODULE and secure it from above with the two short M6 screws with rubber washers hand-tight. Now connect all audio cables from the MID MODULE to the crossover as indicated (M/TW) and secure them behind the prominent screws on the left and right inner back again. Please look for a nice cable positioning.

Route the umbilical cable on the inner left rear side to the crossover board, secure it behind the prominent screws on the left inner back and lead back the black/brown pair indicated with a blue ring to the WOOFER BASS (WB - blue). Secure the connector with the clamp.

Proceed by connecting the red/orange pair indicated with a green ring to the WOOFER MID (WM - green) and secure the connector with the clamp.

Finally connect the yellow/green pair indicated with a yellow ring to the MID MODULE (M) and secure the connector with the clamp again.

In case of AUDIO FRAME BERLIN the yellow/green umbilical pair must be connected to the upper WOOFER MODULE and secured with the clamp.

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UMBILICAL CABLE COLOR CODING

Black/brown	-/+	blue ring	Lower Bass WB
Red/orange	-/+	green ring	Upper Bass WM
Yellow/green Bass (BERLIN only)	-/+	yellow ring	Midrange/Fullrange or upmost

This polarity is necessary to energize all drives correctly like specified.

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Special Instructions AUDIO FRAME BERLIN

The heavy SPHERICAL HORN MODULE as well as the „Berlin“ horns require special attention.

For security reasons, we supply these elements separately.

First place the SPHERICAL HORN MODULE on the back and remove the front panel by unscrewing the six M5 screws. Put the front bezel in a safe place.

To facilitate assembly, place the SPHERICAL HORN MODULE on the already setup upper BASS MODULE (WM) and secure it with two M6 screws from back, each in center of the lower aluminum profile, hand-tight.

Both horns can be positioned with each 2 long M6 screws with the retaining ring and the large washer from top. Markings on the horn support show the middle of the screw head position. The markings shifted more towards the front are for the small horn, the markings shifted towards the back are for the large horn. Control this position precisely after transport and setup and similar for the pair of speaker systems.

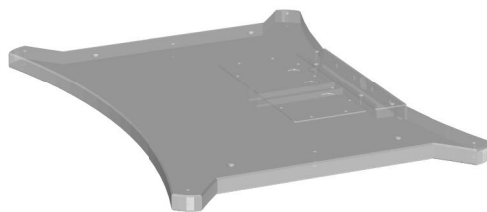
The audio cables have to be connected to M (midrange driver) and TW (high frequency driver) outputs on the crossover board.

Place the third WOOFER MODULE on top of the SPHERICAL HORN MODULE. At last put the end plate on top and secure with M6 screws from top. All WOOFER MODULES must be connected to the WM outputs on the crossover in case of BERLIN.

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AFX Setup in Pictures

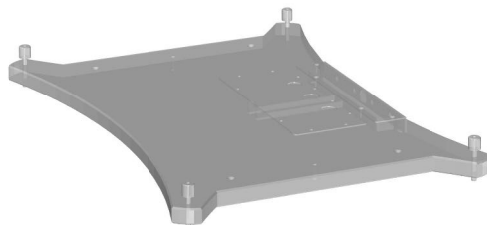
BASE



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AFX Setup in Pictures

BASE and set screws (4x M8 (standard thread))
Adjust them with POM and large decoupling rubber washers after
room location is perfect.

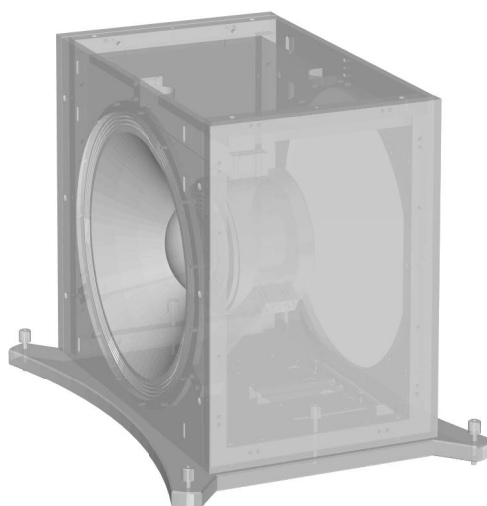


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AFX Setup in Pictures

WOOFER BASS MODULE (WB - blue)

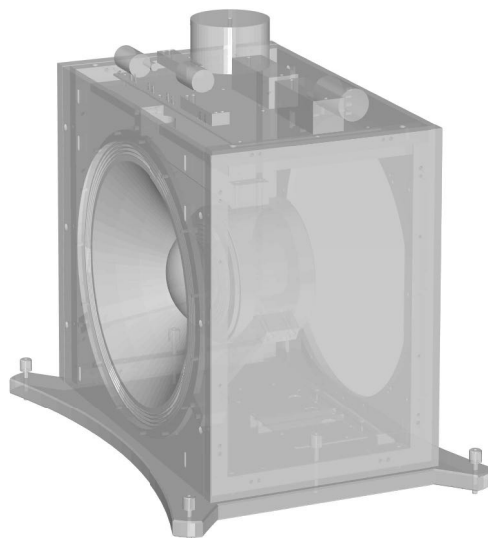
Secure with 2 M6 screws hand-tight from rear inside.



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AFX Setup in Pictures

CROSSOVER BOARD LETTERING TOWARDS BACK
Secure with M4 screws hand-tight to network support (only existing in lower BASS modules).



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AFX Setup in Pictures

WOOFER MID MODULE (WM - green)

Secure with 2 M6 screws hand-tight from rear inside.



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AFX Setup in Pictures

MID MODULE

Secure with 2 knurled M6 screws w/rubber washers from top hand-tight. If the module is wobbling carefully adjust the 4 set screws with a ball-head allen key.



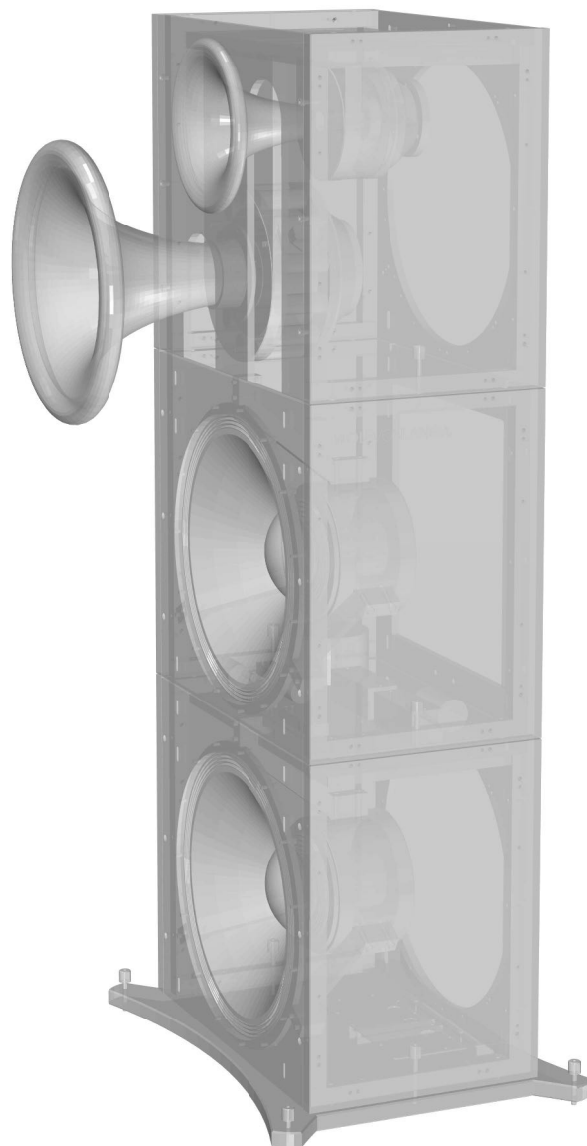
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AFX Setup in Pictures

SPHERICAL HORN MODULE

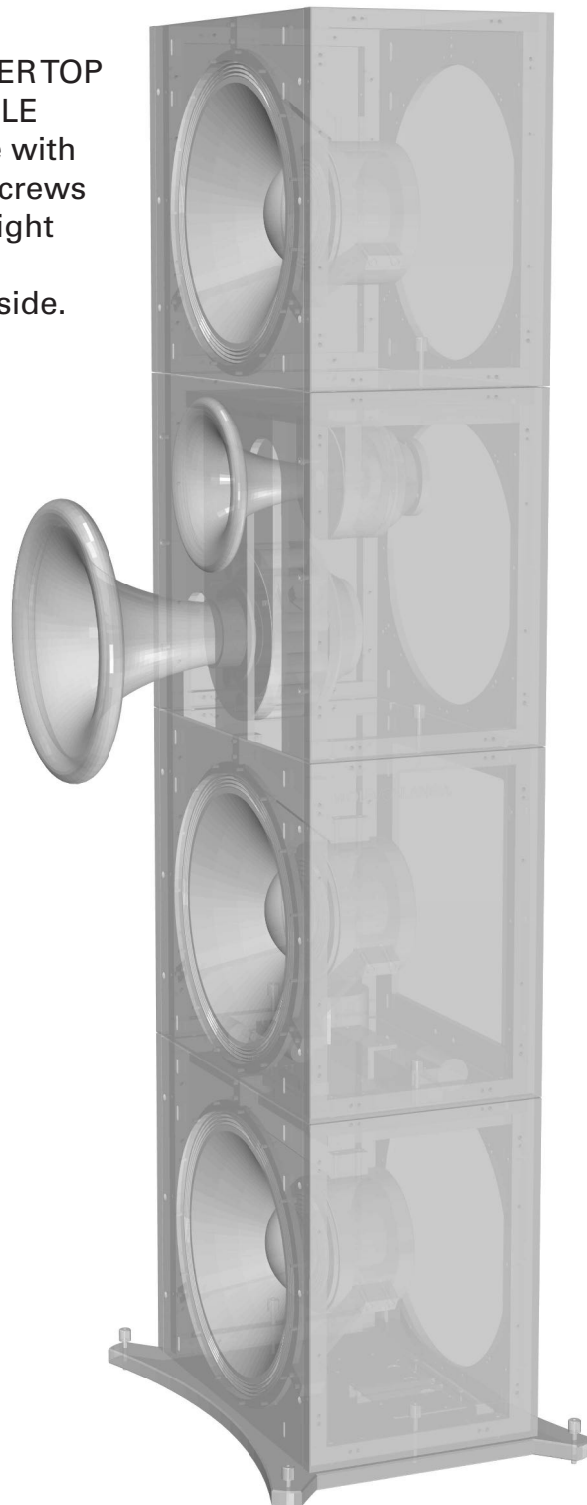
Secure with 2 M6 screws hand-tight from rear inside.

Use 4 long M6 screws with retaining ring and large washer all together from top to secure the horn brackets.



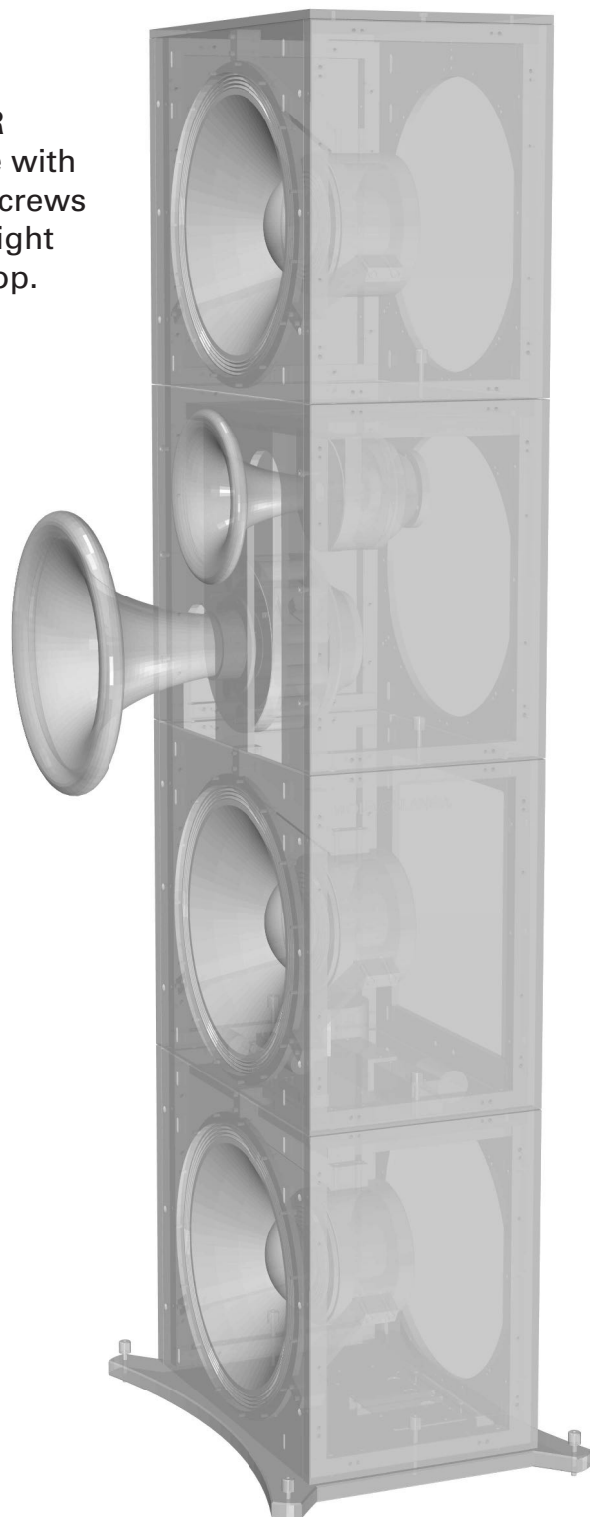
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WOOFERTOP
MODULE
Secure with
2 M6 screws
hand-tight
from
rear inside.



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TOP
COVER
Secure with
2 M6 screws
hand-tight
from top.



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Technical Specifications

WVL 23216 AF LONDON	B 571 x H 1147 xT 419 mm
Frequency range	30-20.000 Hz
Rating (5ms peak)	150 Watts (1000 Watts)
Impedance/Efficiency	4 Ohms/95dB/1W/1m
Field current DC	
WOOFER MODULE WB - blue	1,6...2,1 A
WOOFER MODULE WM - green	1,6...2,4 A
MID MODULE - yellow	1,6...2,1 A
WVL 23239 AF CHICAGO	B 571 x H 1147 xT 419 mm
Frequency range	30-30.000 Hz
Rating (5ms peak)	200 Watts (2000 Watts)
Impedance/Efficiency	4 Ohms/95dB/1W/1m
Field current DC	
WOOFER MODUL WB	1,6...2,1 A
WOOFER MODUL WM	1,6...2,4 A
MID MODUL	1,6...2,1 A
WVL 33221 AF BERLIN	B 571 x H 1285 xT 543 mm
Frequency range	30-30.000 Hz
Rating (5ms peak)	300 Watts (3000 Watts)
Impedance/Efficiency	4 Ohm/96dB/1W/1m
Field current DC	
WOOFER MODUL WB	1,6...2,1A
WOOFER MODUL WM	1,6...2,4 A
WOOFER MODUL WT	1,6...2,4 A
WVL BASS MODULE	B 482 x H 417 xT 300 mm
Frequency range	30-2.500 Hz
Rating (5ms peak)	150 Watts (1000 Watts)
Impedance/Efficiency	16 Ohm/93dB/1W/1m
Field current DC	
WOOFER MODULE	1,6...3,0 A

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Parts List

WVL AFX model _____ manufactured _____

AFX Base w/cables	<input type="checkbox"/>	<input type="checkbox"/>
Set screws M6 fine thread	<input type="checkbox"/>	<input type="checkbox"/>
WVL MODULE WB	<input type="checkbox"/>	<input type="checkbox"/>
WVL MODULE WM	<input type="checkbox"/>	<input type="checkbox"/>
WVL MODULE MID London	<input type="checkbox"/>	<input type="checkbox"/>
WVL MODULE MID Chicago	<input type="checkbox"/>	<input type="checkbox"/>
Binding screws M6	<input type="checkbox"/>	<input type="checkbox"/>
WVL SPHERICAL HORN MODULE Berlin	<input type="checkbox"/>	<input type="checkbox"/>
Horn small w/bracket and screw set	<input type="checkbox"/>	<input type="checkbox"/>
Horn large w/bracket and screw set	<input type="checkbox"/>	<input type="checkbox"/>
WVL crossover London/Chicago/Berlin	<input type="checkbox"/>	<input type="checkbox"/>
WVL MODULE WM Berlin	<input type="checkbox"/>	<input type="checkbox"/>
WVL MODULE w/crossover support	<input type="checkbox"/>	<input type="checkbox"/>
AFX top cover w/screws	<input type="checkbox"/>	<input type="checkbox"/>
AFX FC multi cable	<input type="checkbox"/>	<input type="checkbox"/>
AFX power supply	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>

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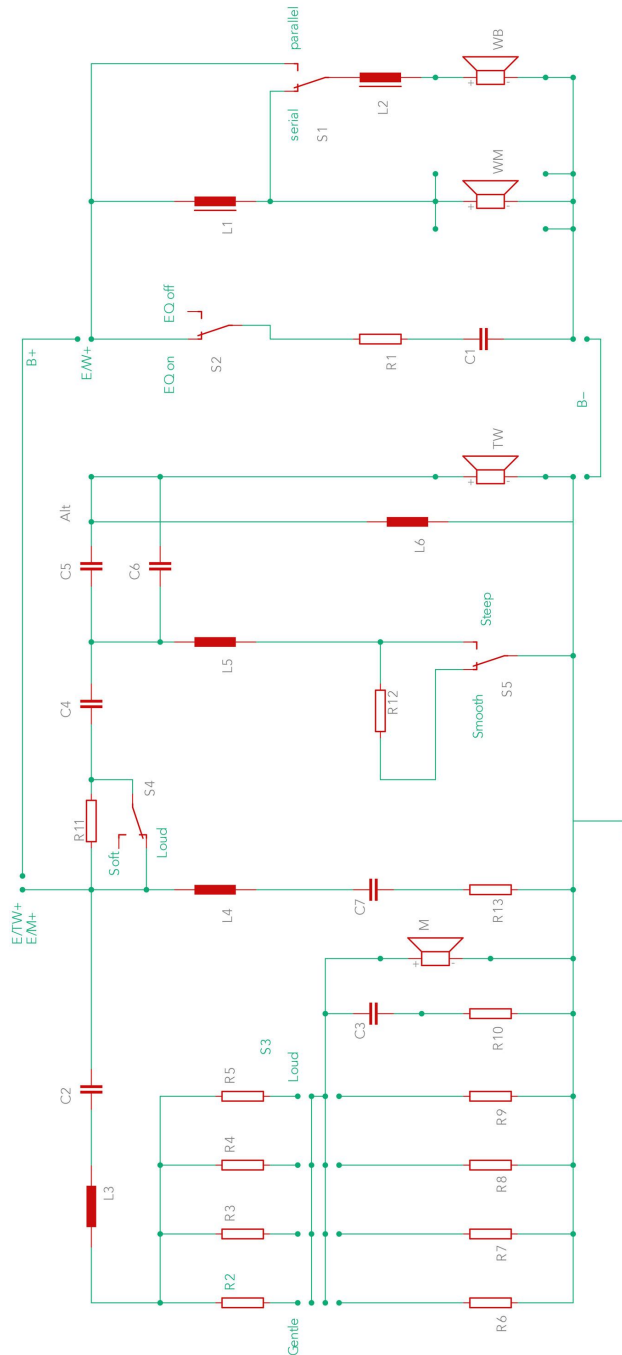
Your Notes

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Crossover for AFX

Schematics (components tipped individual)



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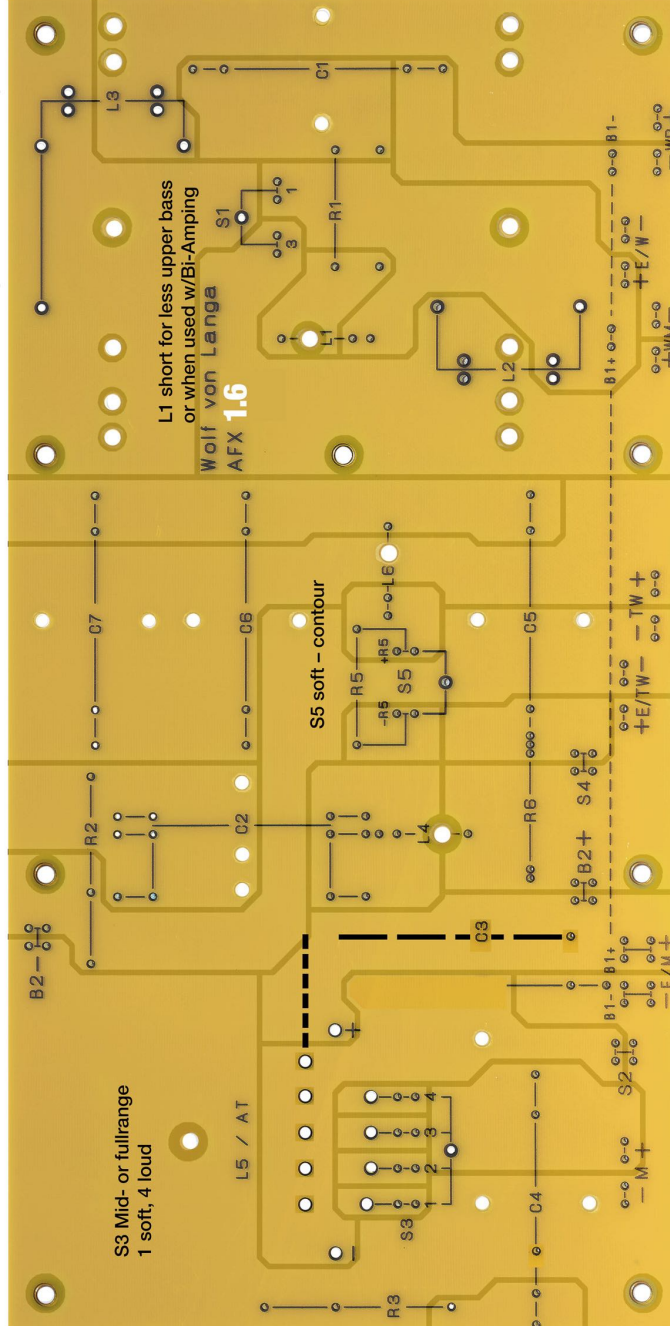
Crossover board functions

NETWORK AFX 1.6

Lower bass WB 1,6 ... 2,2A 1,9A Upper bass WM 1,8 ... 2,5A 2,2A Mid 1,6 ... 1,8A 1,7A

If B1-/B1- and B1+/B1+ are in place there is no need for bridging the 2 red and 2 black terminals at the base

B2 shorted



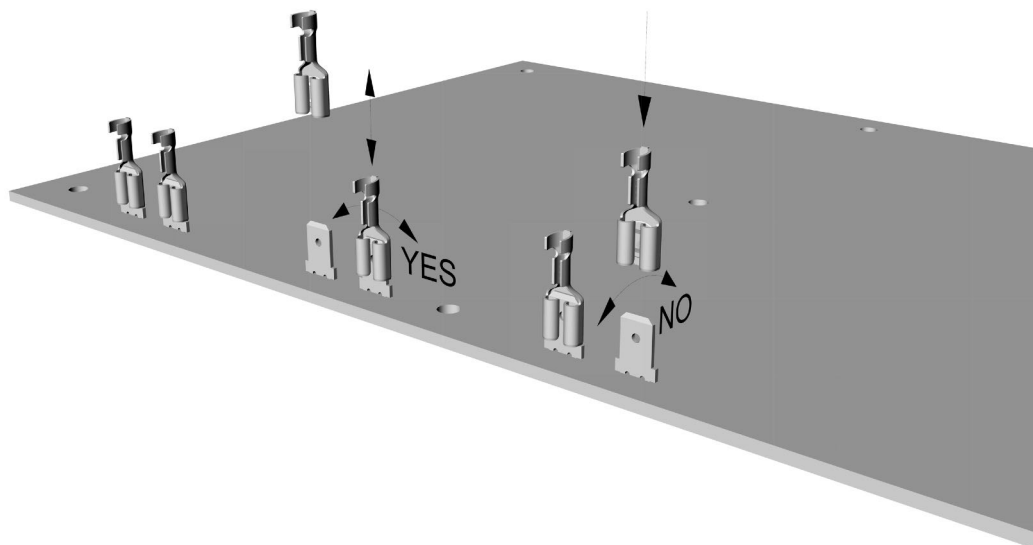
M Mid out
 S2 do not use
 E/M = Entry from Base, left terminals seen from back
B2 shorted
 B1- and B1+ remove for Bi-Amping
 E/TW do not use
S4 short to make tweeter louder
TW tweeter out
 TW tweeter out
 E/TW do not use
WM upper bass
 WM upper bass
WB lower bass
 WB lower bass
E/W = Entry from Base, right terminals seen from back

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Crossover for AFX

Please read!

Avoid bending the contacts on the PCB



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Connecting the crossover

We know the connectors on the circuit board look simple and they are indeed uncomfortable because they are hard to remove, especially the very first time.

But finally, you have to accept that there are no more reliable electrical connectors. They are used throughout the automotive industry and permanently withstand vibrations, temperature and humidity changes.

Please read these lines and follow our recommendation for attaching and removing these contacts. This allows you to connect your high-quality loudspeakers reliably and make individual adjustments.

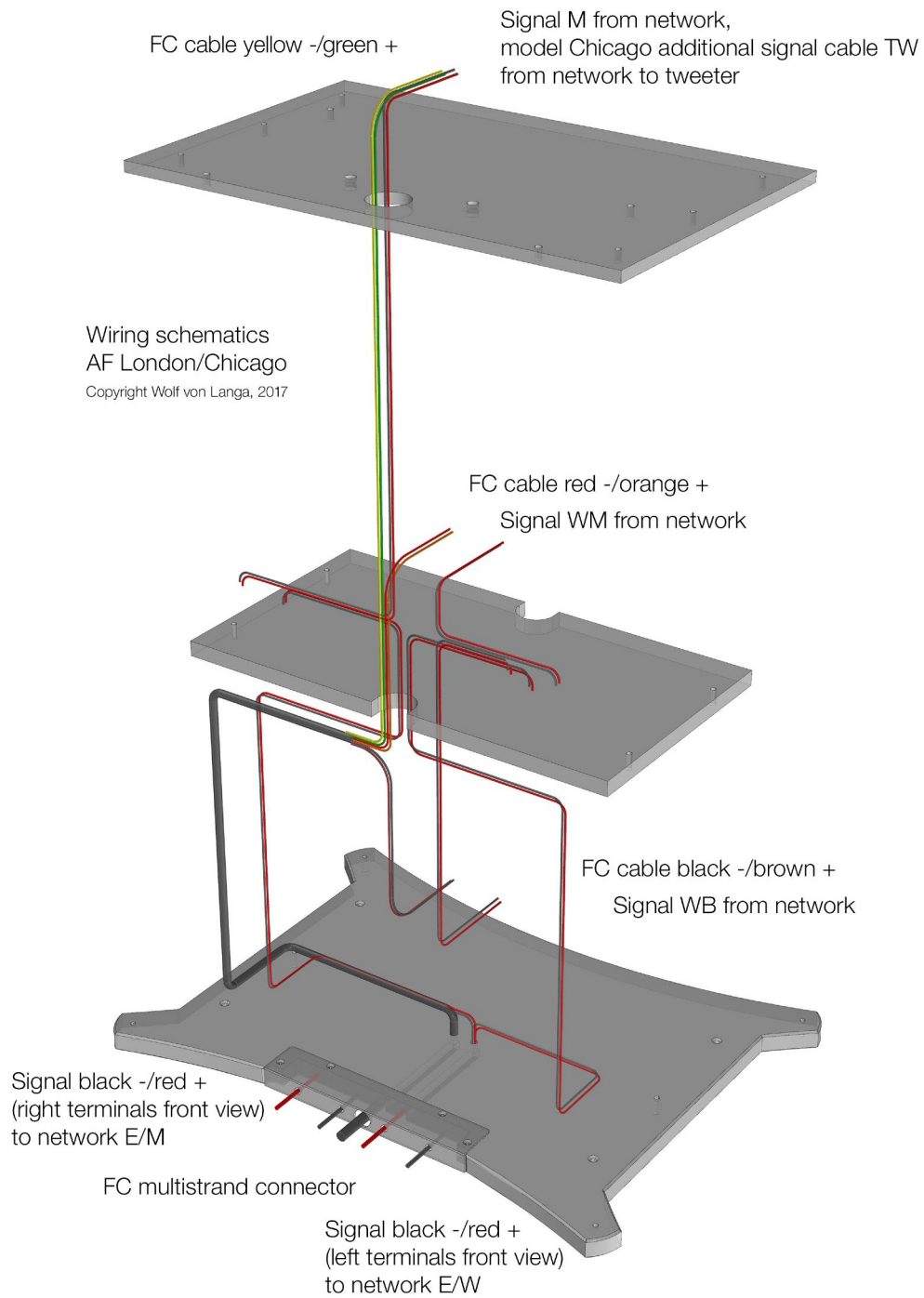
In all circumstances, avoid bending the flat connectors on the printed circuit board. The plug-in sleeves can be pushed better on the flat plug by slight lateral movements. Take your time please.

The same applies to the removal of the flat connectors. Take your time please.

Thank you and enjoy your new WVL loudspeaker!

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Connecting the AFX cables



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