XTZ 99 W12.16
XTZ 99 W12.16S

Active subwoofer

User manual

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Congratulations to your purchase of the XTZ W12.16 Subwoofer!

When combined with surround audio/video electronics, you will experience sound of motion pictures or music records much more deeply and naturally. Now when you watch your favourite movie or listen to your reference music CDs, you will hear and feel the sound surrounding you in the same way as originally intended by mastering engineers.

XTZ Home Theatre Speaker Systems are modular, so you can select only the components you need to enhance your current system or create a totally new one. The 99 W12.16 subwoofer combines a 300-watt continuous power amplifier, heavy-duty 12" woofer.

99 W12.16 is a product with many options, so read the manual carefully before using it.

ROOM TUNING BY XTZ

About XTZ

Philosophy

Our reference and starting point is to recreate a natural sound, taking into account that acoustics always is a matter of personal taste.

XTZ Goal

Our main goal is to provide the best value for money.

Our concept:

- Cut down the numbers of middlemen

- Put more money on product quality and less on advertising.

- Manufacture cost-effective in large volume

- Provide perfect technical solutions

Contact

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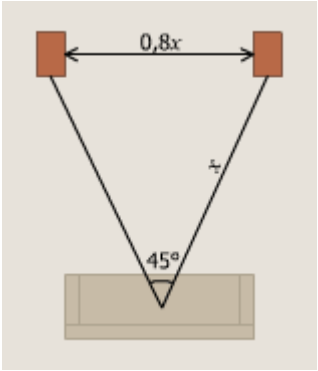
Technical presentation

Amplifier	The XTZ 99 W12.16 is equipped with a powerful 300 watt amplifier with a large heat sink for effective cooling. For professional use (studio, PA etc), it is equipped with a balanced input. The terminal connectors are gold plated and very solid. To achieve a high power and a long durability, the amplifier use a large toroidal transformer, large electrolytic capacitors and Toshiba bipolar transistors in the output stage. The active amplifier also provides a variety of adjustment options, not possible to obtain using a passive filter. These include phase, frequency, high pass filtering, volume etc. By using these settings, the main amplifier is relieved and only needs to drive the midrange and treble. This usually results in lower distortion and the risk of damages on it is lowered.
The woofer/ driver	The XTZ W12.16 is equipped with a powerful and well-sounding 12" woofer. The cone has an aluminium frame for maximal stiffness combined with low weight, which together with the powerful magnet contributes to the high efficiency. To achieve high power capacity, we have selected a larger diameter of the coil. The driver is equipped with rubber suspension for high strength, flexibility and obtains a longer peak-to-peak excursion. The "non pressed paper" type membrane allows for a very stiff, yet light driver. The basket is moulded in aluminium, ensuring low magnetic losses and low weight.
The cabinet	The cabinet is made from 25mm MDF with three internal bars making the box stable, without resonances. The surface is varnished giving a proper look.

Practice of sound / Installation and placement tips

	This chapter contains common information regarding loudspeaker placement and installation. These are general rules, so there are exceptions of some rules	
In which room do you achieve the best sound?	No matter how good the equipment is, in the wrong listening environment it will inevitably sound bad. There are some basic rules concerning a proper loudspeaker installation:	
Reflections	Carpets, curtains and soft furniture absorb mid range and high frequency sound, which is preferable. Big empty areas on the other hand, produce hard reflections that may lead to a blurry dialogue. Apart from colouring the sound, the perspective of the sound can also deteriorate. Reflections in the room can roughly be compared to the reflections that cause ghost pictures on a TV screen.	
Amplification of bass frequencies	A loudspeaker that is placed near a wall, ceiling or floor will amplify lower frequencies in a sometimes not desirable way (since it may lead to an indistinct sound reproduction). This amplification becomes even more obvious if the loudspeaker is placed near a corner. Thus, for a sound as clear as possible, the loudspeaker should be placed at least 30 cm (about 12 inch) away from the wall. Some speaker constructions are made to be placed close to a wall however.	
Furniture	Be aware that furniture may vibrate, creating noise at high sound levels.	
Room dimension	Quadratic rooms or rooms where the length is exactly twice as long as the width should be avoided, since they are very likely to produce unwanted resonances.	
Placement of the subwoofer	The placement of the subwoofer in the room dramatically affects the overall frequency response and sound level of the system. At low frequencies the effect of the room is strong. Even a slight change in the subwoofer's location can make a significant difference in the frequency balance. Patience and experimentation is needed to find the optimal placement. The placement affects the phase difference between the main loudspeakers and the subwoofer. Subwoofers often get a more linear frequency response placed in a corner.	

Cables	Try to keep cables and wires as short as possible. Due to its electrical features, a long conductor will have a bigger influence on the sound than a short one. Make sure that all connections are clean and not oxidized. All connections should be mechanically stable, both power, signal and loudspeaker cables. Signal cables should be separated from other cables carrying larger currents or higher voltages.	
Front speakers	To get the best result the front speakers should be placed symmetrically in front of the listener. The distance between the front speakers should be around 80% of the distance to the listener. In other words, the recommended angle between the front speakers should be 45°.	
Finally	Please remember that good sound is a matter of taste, so you have to experiment to obtain your favourite one. We wish you best of luck!	

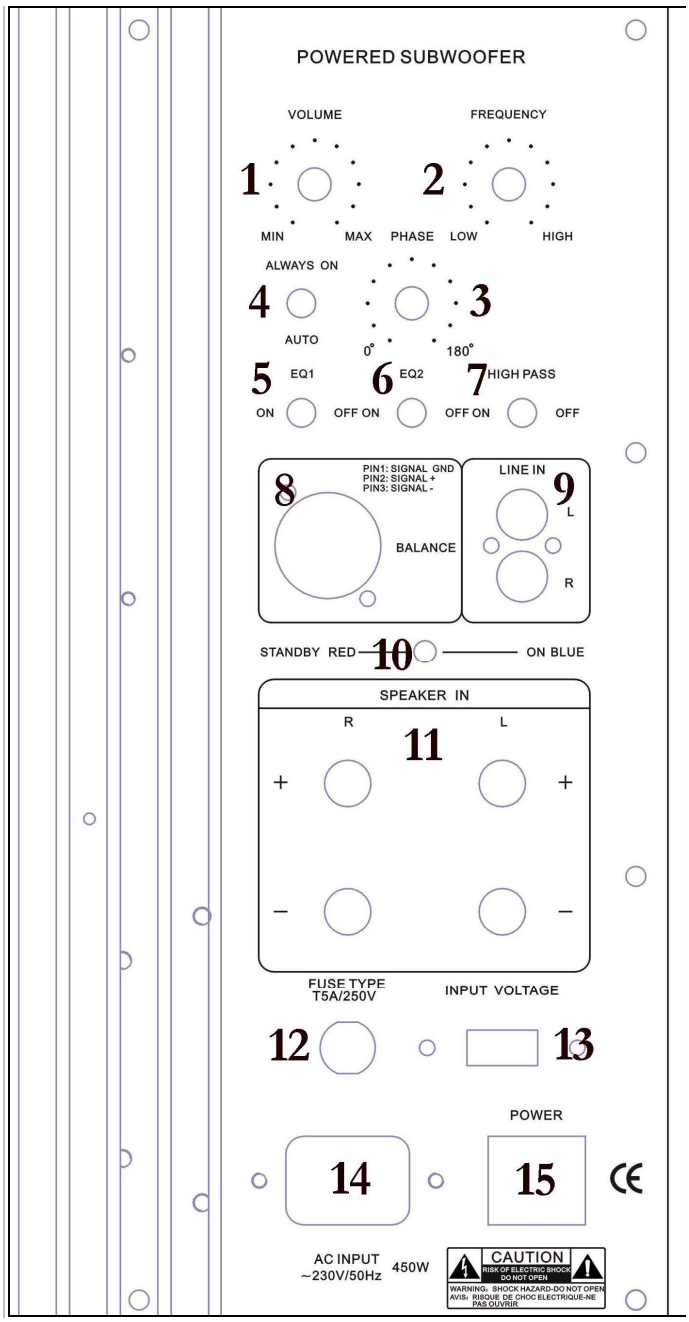
Mounting

Mounting	The XTZ 99 W12.16 is best placed standing on the floor. However it is fully possible to lay it down without affecting the sound. Driver and bass reflex gates should not be faced towards floor or wall; they need to "breathe" freely.	
Spikes	99 W12 .16 has feet of rubber to absorb vibrations. It's possible to change this to spikes.	M6 Screws size is used
Connect with the correct phase	Always connect using the correct phase, from the +-pole on the amplifier to the +-pole on the loudspeaker and respectively for the minus (-) pole. If connection with Line in is used, only one of the connectors needs to be used. If both of the connectors are used, the output level will be 3dB higher.	If you by accident connect the other way, there is no risk of damage. However, the phase of the signal will be not correct, resulting in improper sound.
Overload	Avoid playing very loud for longer periods of time. This causes higher stress on the amplifier and drivers.	If you play extremely loud for a prolonged period of time there is a potential risk of destroying the product.
The initial playing time	It takes about 50 to 100 hours of initial playing time for the driver to sound optimally. During this time, the speaker may be used normally.	
Amplifiers with low level output to XTZ W12.16 Line In	Connect either a stereo or mono RCA lead to your output device (surround decoder, TV, stereo receiver, etc) depending on whether a stereo or mono output is provided. If stereo, connect both RCA plugs into the subwoofer's RCA jacks. If mono, connect the RCA plug into either of the input jacks. Then connect the power cord to your power outlet.	

Functional reference

Rear panel

1. Input Volume
2. Frequency Crossover
3. Phase
4. Auto On/Always on
5. EQ 1
6. EQ 2
7. High Pass/Subsonic
8. XLR/Balanced Input
9. RCA/Low level Input
10. Standby/On indicator
11. High Level input
12. Fuse
13. Power select
14. Power connector
15. Main switch



1 Input Volume	Controls volume level of subwoofer	**Be gentle on the volume knob,** please remember that certain sound signals may contain a lot of energy.
2 Frequency	Frequency crossover Variable control ranging from 40Hz to 250Hz (-3dB) provides optimum setting of subwoofer crossover frequency to match crossover frequency of Home Theatre components.	The filter slope is 18 dB/octave. You can hereby change the character of the woofer, depending on what you prefer (more or less deep) and matched to your other speakers. On modern amplifiers you commonly have the possibility to set the size of the loudspeakers (small / big etc). If you have small front speakers, you should set the size to small. Thus, they will reproduce middle bas, mid-range and treble much better - leaving the deep bass tones alone to the subwoofer.

3 Phase	Variable control for 0-180 phase adjustment The technical difference between these two extremes (0 and 180 degrees) corresponds to altering the poles of the cables (setting + to - and - to +)	In a normal installation, this should be set to 0. The setting will have impact on the sonic characteristics, especially the co-operation with the front speakers. Please note that the difference between the lines is 18 degrees
4 Auto on	Auto on or Always on	Auto on starts the sub, when signal comes from amplifier. Always on keeps the subwoofer on all the time.
5 EQ 1	Increases 7dB @ 25Hz	Excessive use of EQ can lead to damage of the subwoofer, when used at high volumes EQ 1 and High Pass filter should not be used at same time.
6 EQ 2	Increases 7dB @ 50Hz	Excessive use of EQ can lead to damage of the subwoofer, when used at high volumes
7 High Pass	Subsonic filter Switch ON and the high pass is available. Switch OFF and the high pass is unavailable	The high pass crossover removes the deepest part of the bass spectra. This is helpful in many rooms, since they may heavily amplify the deep bass tones, which may lead to uncontrolled bass. High Pass filter and EQ 2 should not be used at same time.
8 Balanced input	XLR Balanced input.	
9 Low level input	RCA inputs Line-level inputs to subwoofer. Use these RCA jacks to connect audio signals from line-level outputs on a receiver, preamplifiers, television sets or a surround sound decoder. If only a mono (single) subwoofer output is provided, connect it to either of input jack.	Only one input needs to be used. Use of both increases level with 3 dB
10 Standby indicator	Turns red in standby. Turns blue when the subwoofer is on.	
11 High level input	High-level input. If your amplifier does not have subwoofer output use this input from your normal speaker output.	
12 Fuse	Electrical fuse. Always replace with the same value!	5 A
13 Power switch	Select your local mains voltage	230V in EU 110V in USA
14 Power connector	Connector of main power	
15 Main switch	Main switch for main power.	There is an automatic switch on the subwoofer. When it senses a signal, it will switch on and consequently switch to standby (this is indicated by the LED, which turns blue when in operating mode). When no signal is present (after a certain time period) the amplifier switches to standby mode. Turn off the subwoofer if it is not in use for a long period.

Sound settings

Basic setting for a neutral bass representation

Since the sonic characteristics depend on a wide range of external factors, there is no "standard" setting for a neutral presentation.

The external factors that have an impact on the sound include the room, placement of the speaker, output levels etc.

To simplify the installation, you may use this basic setting which is for an average room of about 20m²:

- Phase set at 0
- The frequency set at mid position
- EQ off
- High Pass off
- One bass plug in the left reflex gate

Room Tuning - Mechanical adjustment of the boundary frequency

By using the supplied bass plugs in the bass reflex ports, you can alter the lower boundary frequency of XTZ 99 W12.16.
This makes it possible to alter the sonic characteristics of the woofer. The picture below shows three basic settings.

One or two open reflex ports will increase the efficiency so that the subwoofer can handle higher sound pressure than with both ports closed.

1st mode - no plugs in the reflex gates
No plugs in the gates will provide a "quick" bass character especially suitable for larger rooms where the lower frequencies often are amplified by the room itself.

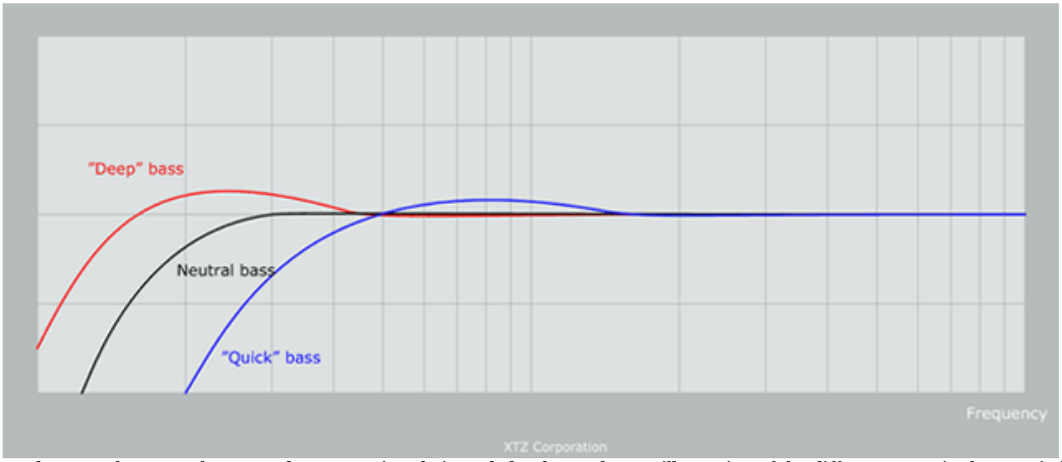
2nd mode - 2 bass plugs in the reflex gates
This will provide a neutral, even and controlled bass setting (Closed box)

3rd mode - 1 plug in the left reflex gate
This will provide a neutral bass setting.

4th mode - 1 plug in the right reflex gate
This will provide a "deep" bass suitable for smaller rooms.

Since the sonic characteristics depends on the room and a wide range of external factors, there exists no "standard" setting for a neutral representation.

Room tuning will also have influence on the efficiency you will have to adjust the volume, frequency and High Pass in the room tuning modes.
"Quick" bass explained:
By this we mean a bass with less deep bass information. This might also be called "hard", "attack", "tight", "punchy" etc.



This picture does not show actual measured curves. It is only intended to be used as an illustration of the different acoustic characteristics in the lower frequencies.

Technical specifications

Construction type	Active subwoofer, Bass reflex gate or may be set as closed box. Room-tuning.
Dimensions	500 x 350 x 400 mm (HxWxD) (Height with feet, 515 mm) Amplifier on rear panel +45 mm
Weight	31 kg
Power amplifier	300 W RMS in 4 ohm 400 W RMS in 2 ohm
Power handling driver	800 W Short term IEC 268-5 400 W Long term IEC 268-5
Driver	12" Coated non pressed paper, moulded aluminium frame, 100 oz magnet, 6.5kg
Impedance driver	4 ohm
Connections	● Gold plated RCA. ● XLR balanced input. ● High Level input Gold plated banana plug / pole screw.
Frequency response	23-250 Hz ±3dB

Service & support

	Warning! This subwoofer is capable of delivering sound pressure levels in excess of 85 dB, which may cause permanent hearing damage. If you open the product there is a risk of electrical shock.	
Safety	The 99 W12.16 subwoofer has been designed in accordance with international safety standards. However , to ensure safe operation and maintain the unit in safe operating condition ,the following warnings and cautions must be observed • Do not expose the subwoofer to water or moisture. Do not place any objects filled with liquid, such as vases on the subwoofer or near it. • Servicing and adjustment must only be performed by qualified service personnel. The subwoofer cabinet or electronics unit must not be opened. If you open the product there is a risk of electrical chock. • This subwoofer is capable of producing sound pressure levels in excess of 85 dB, which may cause permanent hearing damage. • Free flow of air around the subwoofer is necessary to maintain sufficient cooling.	
Guarantee	This product is supplied with a ONE year guarantee against manufacturing faults or defects that might alter the performance of the unit. Refer to your supplier for full sales and guarantee terms.	
Service	If you need service contact your local dealer. You are always welcome to contact us if you have problems with product by e-mail: **support@xtz.se** Webpage: **www.xtz.se**	ALWAYS pack the product / part very carefully. Unfortunately damages during transportation are very common. If the package is weak, the transporting company does not compensate damages. Always enclose a copy of the receipt and a description of the defect.
Support	Please contact our “free-of-charge” support if you need installation advice, or if any problems occur during the installation. Contact us by e-mail **support@xtz.se** and include your phone number if you require help, and we will ring you back.	