

Final Sound S90 Subwoofer User Manual

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1. IMPORTANT SAFEGUARDS

Please observe all the following safeguards when using your S90 subwoofer.

1. Save these instructions for future use.
2. Read all of these instructions.
3. Unplug from the wall socket before cleaning.
4. Do not use abrasive cleaners. Use a soft, damp cloth for cleaning.
5. Verify power supply voltage setting prior to initial use.
6. Do not allow anything to rest on the power cord.
7. Position the power cord out of all walkways.
8. Unplug the unit when it will not be used for a long period of time.
9. Never spill any kind of liquid on the unit.
10. Do not attempt to service the unit yourself. Refer all servicing to your dealer.
11. Refer servicing to your dealer under the following conditions:
 - A. When the power cord or plug is damaged.
 - B. If liquid has been spilled onto the unit.
 - C. If the unit does not operate properly by following the operating instructions.
 - D. If the unit has been dropped and damaged.
 - E. When the unit exhibits a drastic change in performance.
12. This item weighs 6,9 kg. Take all precautions when moving or relocating the unit.

2. WELCOME

We congratulate you on the purchase of a FINAL SOUND S90 subwoofer. The Final Sound S90 belongs to the attractive Final Sound Audio equipment product line and can be considered as one of the finest instruments for audio reproduction available. The FINAL SOUND product line (Final Sound panels, Final Sound Central Unit, Final Sound Center Speaker and Final Sound Subwoofer) is a Flat panel modular system: in other words, one can start buying a stereo setting of panels and subwoofer and easily extend this later on to a complete Final Sound Home Theater setting by adding a Final Sound Center Speaker and/or another set of panels. The electronics are concentrated in one Central Unit. The S90 is carefully hand built using the finest materials available and is designed for maximum performance. This manual contains important safety information as well as helpful advice and should be carefully studied before use.

2.1. WORLD WIDE WARRANTY

In addition to any local Warranty, Final Sound offers a 1 year conditional Worldwide Warranty to the end user. Please see your dealer for any warranty service.

Final Sound warrants its Subwoofers to be free from defects in material and workmanship for a period of 1 year from the date of purchase. Final Sound and/or its designated representatives shall have all final determination about the validity of a warranty claim.

This warranty shall not apply to any product that has been subject to misuse, neglect, accident, or abnormal conditions of operation, including but not limited to use in professional sound/PA systems. Burnt voice coils and broken tinsel leads are not covered as warrantable items. This warranty is limited to the original owner, and is not transferable.

Final Sound's obligation under this warranty is limited to repairing, replacing or refunding the original purchase price (exclusive of shipping charges), at Final Sound's option, any product returned to the factory within 1 year of the date of purchase, provided that Final Sound determines that the unit is defective and has been used in compliance with the terms of this warranty.

For products that failed due to manufacturing defects Final Sound will reimburse shipping costs. Shipping costs will be limited to delivery by UPS Ground. Costs incurred above and beyond these levels will not be reimbursed.

If the failure has been caused by misuse, neglect, accident, or abnormal conditions of operation, repair or replacement will be billed at a nominal cost, pursuant to customer agreement to such repair or replacement. No shipping costs will be reimbursed. The foregoing warranty is exclusive and in lieu of all other warranties, expressed or implied, including, but not limited to, any warranty of merchantability or fitness for any

particular purpose. Final Sound shall not be liable for any special, incidental or consequential damages, whether in contract, tort, or otherwise.

3. DESIGN SAFETY

This subwoofer is supplied with a removable IEC power cord. Use only IEC power cords designed for the power receptacle of your country, and with a minimum current rating of 2.5A.

For 220V operation, a 1A fuse is required. For 110V operation, a 2A fuse is required. In both cases the fuse must be rated for 250V operation. Use only the rated sized fuses. Do not use without the fuse cover in place. If the fuse holder is damaged or worn, see your dealer for replacement.

4. FEATURES OF THE S90 SUBWOOFER

The S90 subwoofer has a wide variety of features, including:

- Dedicated volume control
- Switchable phase control
- Variable low pass crossover (60 Hz to 240 Hz)
- Auto turn-on
- High and low level inputs
- High level outputs
- Switchable power supply (110/220V user selectable)

The cabinet of the S90 uses 12mm thick high density composite walls. The cabinet is finished in a high gloss acrylic piano black finish.

The amplifier is a 60W RMS at 4 ohm class A/B design. It is not a switching/class D amplifier, and as such has a very low noise floor. It features a large power transformer, oversized power supply capacitors, and a large external aluminum heatsink to ensure long-term cool operation.

The driver is a very long throw 16,25 cm diameter driver with a patent pending stamped frame XLB2 woofer.

The linear motor strength curve from this motor ensures extremely low distortion and compression over the full operating bandwidth, as well as a very high transient response.

4.1. Control Panel

The control panel of the S90 is labeled for easy identification and use. The most commonly adjusted controls are located the top of the amplifier, while the least accessed connections are located at the bottom.

The volume control allows setting the gain of the built-in amplifier to match your main speakers. A total range of 60 dB is provided, allowing integration with nearly any audio system.

Phase can be switched between 0 and 180 degrees. Phase adjustment is critical to get proper subwoofer/speaker integration.

The crossover frequency has a roll-off range from 60 Hz to 250 Hz. For use with Final Sound electrostatic panels the crossover is typically set to 170 Hz.

4.2. Connections

The auto-on switch will place the amplifier in low-power mode until an input signal is detected on the low or high level inputs. When an input signal is detected the amplifier will automatically turn on, and will stay on for approximately 10 minutes after the input signal is removed.

The line level inputs are standard RCA connectors, and are compatible with all consumer electronics. The amplifier will automatically sum the two input signals together to create a mono bass signal. In the event an LFE/SUB-OUT signal is fed to the subwoofer, either line level input may be used.

The high level inputs are regular binding posts, and are compatible with all consumer amplifiers. The input impedance of the high level inputs is high enough to not draw significant amounts of power or load down the output of any power amplifier. Small gauge wire may be used to provide the input signal.

The power connection is a standard IEC connector with a built-in fuse holder. The power supply cord must be plugged into the connector before the power supply cord is plugged into the wall socket.

The fuse is contained inside the IEC connector. The small tab inside the connector must be depressed allowing the fuse holder to be slid out. The power supply cord cannot be used when the fuse holder is extended or removed.

4.3. Installation of feet

The feet of the S90 are supplied loose. Installation of the feet is accomplished with 2 supplied screws for each foot. The cabinet and feet are pre-drilled for your convenience.

The screws are recessed into the feet; place the screws tip-down into the feet through the larger side hole.

Mount each foot at the corner, with the smooth/rounded edge to the outside.

Tighten each screw down hand-tight; do not over-tighten the screw or you may strip the screw out of the cabinet.

Ensure that all feet are secured to the bottom of the cabinet before setting the subwoofer upright.

5. CONNECTING THE S90 TO YOUR SYSTEM

Always switch off your system before connecting any wires!

To increase the versatility of connecting up, the S90 has various separate high and low level inputs.

5.1. High Level Inputs

Make sure your entire system is powered off.

Use a second set of speaker wires from your amplifier output to connect to the S90.

Connect the right amplifier output to the right high level input; connect the left amplifier output to the left high level input.

Connect the positive amplifier output to the red binding post; connect the negative amplifier output to the black binding post.

Ensure that the speaker wire is completely seated in the amplifier outputs and the subwoofer's high level inputs before turning on any component.

5.2. Low Level Inputs

Make sure your entire system is powered off.

For stereo connection, use a pair of RCA cables. For mono/LFE/SUB-OUT use a single RCA cable.

Connect one end of the RCA cables to the proper output of your receiver/preamplifier/processor.

Connect the other end of the RCA cables to the line level inputs of the subwoofer.

Ensure that the RCA cables are fully seated in all connectors before turning on any component.

6. ADJUSTING THE S90

Set the S90 in the desired location.

Connect the S90 to the stereo or home theatre system (see the instructions in section 5).

Set the volume control to a minimum, the crossover frequency to the 12 o'clock position and the phase to 0 degrees.

Turn on your audiosystem and play music you are familiar with.

Turn up the subwoofer volume to a level that matches the main speakers.

Switch the phase control to a maximum bass output.

Re-adjust the volume control.

Turn up the crossover frequency until the location of the bass becomes obvious, or the bass from the subwoofer overwhelms that from the main speakers.

Re-adjust the volume control.

If you have a dedicated stereo/surround setup guide/disc, refer to the directions included in it.

Note that you may need to try more than one location to reach optimum results.

7. OPERATIONAL GUIDELINES

As with all Final products, the S90 is designed to provide the highest level of performance. However, the S90 still has limits that should be observed.

If the S90 begins to overload or heavily distort, turn down the bass or volume.

If the S90 overwhelms the output of the main speakers, turn down the volume.

If the main speakers sound strained, raise the S90 crossover frequency.

If the bass sounds loose or dislocated, adjust the phase or placement of the subwoofer until the problem disappears.

Placement of the subwoofer within the room is critical to the operation of the S90. Recommended locations include the center of the front wall, either front corner, or the center of the side walls.

If the S90 malfunctions, turn the subwoofer off, check the connections and turn the subwoofer back on. If the problem persists, contact your dealer for additional troubleshooting.

8. CABINET CARE

The finish on the S90 is a high strength, scratch-resistant acrylic. However, as with all fine furniture finishes the cabinet can still be scratched.

Always unplug the S90 prior to cleaning.

Do not clean or dust the cabinet with any abrasive cleaner. Use only a fine quality spray or wipe-on furniture/dust cleaner.

Do not use any abrasive rag or scrubber. Use only a lint-free clean cloth.

Never use a liquid to clean the cabinet or amplifier.

9. SPECIFICATIONS

Size	26cm cube, with 4cm high feet
Weight	6,9 kilograms
Anechoic Frequency Response	45 Hz to 240 Hz, ± 3 dB
In-Room Frequency Response	Typically 40 Hz to 240 Hz, ± 3 dB
THD	Less than 3% THD at 94 dB SPL from 45 Hz and up
Maximum Output	106 dB SPL in room
Amplifier Type	Discrete class A/B with linear power supply
Volume Adjustment	60 dB of range
Crossover Frequency	60 Hz to 240 Hz
Crossover Type	2 nd order Butterworth (12 dB/octave, Q=0.707)
Subsonic Filter	2 nd order Butterworth at 40 Hz
Phase Adjustment	Selectable between 0 to 180 degrees
Power Output	60 W RMS at 4 Ohms
Power Consumption	100W RMS on/12W in standby
Low Level Input Impedance	20 k Ω
High Level Input Impedance	2 k Ω
Effective Internal Volume	12 liters sealed with 300 grams of polyester stuffing
Driver	16,25cm long throw driver with XBL ² motor technology

XBL² is a trademark of Extremis Audio, LLC, Lynnwood, WA, USA. Driver manufactured under license of Extremis Audio LLC, Lynnwood, WA, USA.

9.1. Limited Warranty Registration

Your FINAL SOUND Home Theatre System is provided with limited 3-year warranty coverage on the flat-panel speakers and 1-year warranty coverage for the Final Sound Central Unit and the subwoofer. The limited warranty will not be honored when the product has been used or handled other than in accordance with the instructions in the user manual.

In order to validate your warranty registration we kindly ask you to fill in the following data or go to our Web site at www.finalsound.com to register on-line. For registration, this form has to be accompanied by a copy of your purchase receipt. The address to send to has already been printed on the envelope included. We thank you and wish you great enjoyment with your new Final Sound product.

Name: _____

Email: _____

Address: _____

City: _____ .State _____

Country: _____

Authorized Final Sound dealer: _____

Salesperson's Name: _____

Please fill in for warranty registration the serial numbers of all units you have bought.
(Numbers appear on labels at the back of the product)

1 Final Center Speaker (e.g. 200FSCP-08): _____

1 Final Central Unit (e.g. FCU2-15): _____

1 Final S200 Subwoofer (e.g. S-200-1): _____

1 set Final Front Speakers (2 panels)(e.g. 200FSP-02): _____

1 set Final Rear Speakers (2 panels)(e.g. 200WMP-03): _____

To improve our products and customer service, we would greatly appreciate your answers to the following questions.

Title or profession: _____ Age: _____

How did you find out about Final Sound? _____

Advertisement in _____

Relations/friends _____

Internet: _____

Other _____

What kind of amplifier do you use?

Brand: _____

Type: _____

If you have any comments on our products and services, please use the back of the form.
Thank you very much for taking time to complete in this form and sending it to:

Final Sound Solutions B.V., Eisenhowerweg 8d, 5466 AC, Veghel, The Netherlands