

**AEGIS** *NEO*  
SUB WOOFER



# 1. INTRODUCTION

Thank you for purchasing this Acoustic Energy product. As a valued customer we would like to keep you up to date with all news and events including new products, exhibitions and exclusive promotions. To enable us to communicate these exciting developments please go to our website - [www.acoustic-energy.co.uk](http://www.acoustic-energy.co.uk) - and complete the ownership registration form.

Perhaps more than any other hi-fi product, speakers are sensitive to installation so please take a little time to read this manual and to follow, as far as practical, the installation guidelines it contains. Careful installation will help ensure that your Aegis Neo Subwoofer performs optimally. Should you have any questions not covered here we are happy to try and answer them either by telephone or email. Contact information can be found in Section 10.

## Important Safety Instructions

Ensure that your Aegis Neo Subwoofer is set to the appropriate mains input voltage before it is connected to a mains socket. The warranty does not cover damage caused by incorrect mains voltage.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.
16. The MAINS plug is used as the disconnect device, the disconnect device shall remain readily operable.
17. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



Following this introduction, the Manual is divided into sections covering handling, installation, positioning, connecting, controls and system setup, specifications, matching products, warranty and contact information. We recommend that you read at least the first six of these sections carefully before installing and using your Aegis Neo Subwoofer. We would also draw your attention to the Important Safety Instructions on this page.

Finally, please enjoy your Aegis Neo Subwoofer, but remember it is capable of generating high volume levels of low frequency sound, so please also be considerate of your neighbours.

# 2. HANDLING

The Aegis Neo Subwoofer is a relatively delicate precision engineered product that can be damaged by inappropriate handling. It is also large and heavy. Please take great care therefore when unpacking or moving it. Plan any handling in advance of carrying it out - ideally with a second person to help. Please take care when unpacking or moving the subwoofer not to touch the driver. Damage to a driver will at best degrade the Aegis Neo Subwoofer's performance and at worst result in its complete failure.

The enclosure surfaces should also be handled sympathetically. Any cleaning should only require a soft cloth, slightly dampened if necessary. Do not use any polishes or solvent based cleaning agents.

The packaging should be retained for future use.

## 3. INSTALLATION

The Aegis Neo Subwoofer is intended to be used in either stereo audio music systems or multi-channel audio-visual (home theatre) systems. Although it is intended primarily to partner other products in the Aegis Neo range it may also be used successfully with alternative loudspeakers.

The Aegis Neo Subwoofer should be fitted with either floor spikes or rubber feet. Floor spikes offer the highest potential performance and should be fitted if the subwoofer is to be placed on a carpeted floor. If spikes are inappropriate for your floor covering, metal protection pads, coins for example, may be used between the spike and the floor.

**Note:** Damage to the drive unit may result if the Aegis Neo Subwoofer is placed face down on the floor.

The rubber feet or M8 floor spikes and lock-nuts should be fitted to the underside of the subwoofer once it has been moved near its final location. Carefully lay the subwoofer on its side to gain access to the tapped holes in the underside. If the rubber feet are to be used, simply screw them into the tapped holes and return the subwoofer to upright. If floor spikes are to be used, screw a spike and lock-nut into each hole leaving a length of spike extending beyond the lock-nut so that when the subwoofer is upright the lock-nuts will "float" just above the floor covering.



Tighten three of the lock-nuts with a 13mm spanner leaving one lock-nut finger-tight to aid adjustment once the subwoofer is upright in its final position. Once the final position has been established adjust the length of the loose spike so that the subwoofer is vertical and does not rock. If the floor is particularly uneven it may be necessary to loosen one of the tightened spikes to ensure that the subwoofer can be levelled.

Finally, tighten all loose lock-nuts. It may be necessary to re-adjust to minimise rock once the subwoofer has settled on the floor. Take care when installing floor spikes. They are sharp and can cause injury or pierce electrical cables.

The Aegis Neo Subwoofer is not magnetically shielded and may cause picture distortion if located too close to a CRT screen. Contact your dealer, installer or Acoustic Energy for advice.

## 4. POSITIONING

The position of the speakers in a home theatre installation will have great influence over its performance. It is worth spending some time experimenting both with the finer points of speaker positioning, as well as the larger scale issues of room layout. **Diagram One** over the page illustrates an idealised general home theatre speaker layout.

If you are already familiar with the characteristics of your room, and the way speakers perform in it, you may already have a good feel for where to position your Aegis Neo Subwoofer. However, installing any new component provides a good opportunity to review an existing set-up and perhaps make improvements.

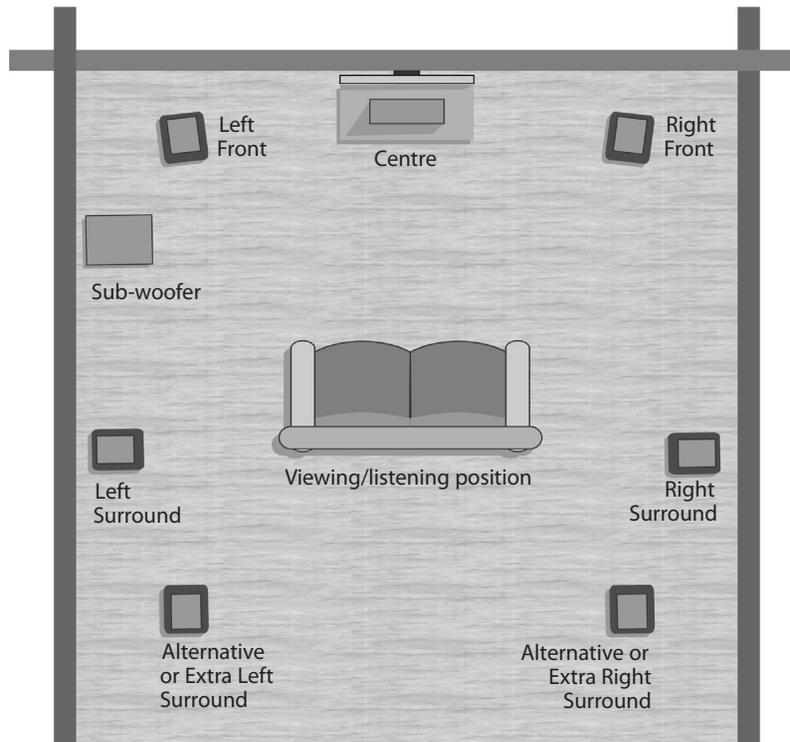
In principle there is great freedom of position of a sub-woofer in a listening room. In practice, however, the performance will be fundamentally influenced by the room and position. Small changes of location, or of the acoustic character of items in the immediate vicinity of the subwoofer, can significantly influence its performance.

Initially choose a site for the Aegis Neo Subwoofer along one of the walls of the listening room well away, but not equidistant, from the corners. It is not necessary that the subwoofer be positioned along the same wall as the main speakers. Choose a solid wall (rather than a partition) and keep the subwoofer clear of any large resonant objects - furniture panels, heating radiators, etc.

Don't worry if, thanks to the architecture or layout of your room, it is not practical to follow these guidelines exactly. The most important thing is to experiment with the different options that are practical and find the best one.

Once your Aegis Neo Subwoofer is working, and you begin to become familiar with its performance, it is likely to be worthwhile experimenting a little more with its positioning. For example, moving the Aegis Neo Subwoofer towards a room corner will increase the level of low bass. This gain may however be at the expense of bass definition and consistency over the listening area.

## DIAGRAM ONE



## 5. CONNECTING

The Aegis Neo Subwoofer requires connection both to mains power and an appropriate audio signal. The connection sockets are located on the back panel illustrated opposite in Diagram Two. Leave the subwoofer switched-off at the mains until all connections are made and ensure that the **Volume Level** control, also located on the back panel, is turned fully anti-clockwise. Connecting your Aegis Neo Subwoofer to an audio signal is a simple process, however, there are some choices to be made concerning connection mode.

### Signal Input Connections

Aegis Neo Subwoofer is fitted with an unfiltered mono **AV Subwoofer Line Input** and a standard stereo pair of filtered **Line Inputs**.

The **AV Subwoofer Line Input** is intended for connection to an audio-visual processor LFE (low frequency effects) output. As the LFE output of audio-visual processors is already low-pass filtered, the subwoofer's crossover filter is bypassed by the **AV Subwoofer Line Input**. The **Crossover Frequency** control has no effect on signals connected to the **AV Subwoofer Line Input**.

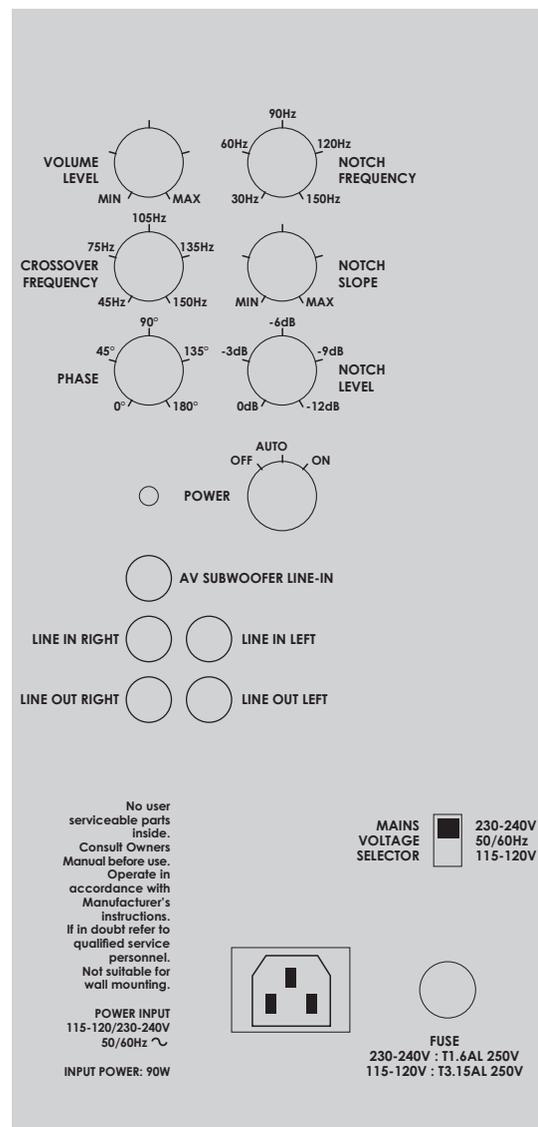
The stereo **Line Inputs** are intended for connection to preamplifier or other similar line outputs. The left and right inputs are combined to mono within the subwoofer.

Connect to the input sockets using an appropriate RCA Phono connection cable. Ensure that the cable is of good quality.

### Signal Output Connections

RCA Phono Line Level signal output sockets are fitted to the Aegis Neo Subwoofer. They carry an output signal identical to the input signal and may be used to transfer the signal back to a power amplifier or to connect multiple subwoofers.

## DIAGRAM TWO



### Mains Connection

After checking that the mains voltage specified on the subwoofer rear panel is set correctly, connect the subwoofer via its IEC mains input to a mains wall socket. Use only the mains cable supplied with the subwoofer.

## 6. CONTROLS AND SYSTEM SETUP

### Subwoofer Controls

Accompanying the mains and signal input sockets on the subwoofer connection panel are a **Power** switch, a **Volume Level** control, a **Crossover Frequency** control, a **Phase** control and **Notch Frequency, Slope** and **Level** controls. Their functions are described in the following paragraphs. Use of the controls to setup and adjust the subwoofer is described in the **System Setup** paragraphs.

#### Power

The power switch incorporates an automatic switch-on/off function. With the switch set to **AUTO** the subwoofer will switch on automatically when an audio signal is present. It will switch off again when no signal has been present for around 10 minutes. With **ON** selected the subwoofer remains switched-on permanently.

**Note:** There is a short delay between auto switch-on and audible sound from the subwoofer.

#### Volume Level

The level control adjusts the volume of the subwoofer relative to the satellites. Begin with the level control set to around 50%. Detailed subwoofer adjustment guidelines can be found in the following paragraphs.



#### Crossover Frequency

The crossover frequency control adjusts the upper frequency at which the subwoofer output is filtered for the full-range speakers to take over. If the Aegis Neo Subwoofer is to be used exclusively in an audio-visual system it should be connected via the **AV Subwoofer Line Input** on which the Crossover Frequency control is inoperative.

If the Aegis Neo Subwoofer is to augment the low frequency performance of a pair of full range speakers, the crossover frequency should be set to match their low frequency roll-off frequency. The larger the speaker, the lower its low frequency roll-off will be. Finding the optimal crossover frequency setting will require experiment and adjustment, but reasonable initial values for different speaker types are as follows:

Large floor stand speaker (Aegis Neo 3):	45Hz
Medium stand mount loudspeakers:	60Hz
Small stand mount speakers (Aegis Neo 1):	80Hz
Miniature satellite loudspeakers:	100Hz

#### Subwoofer Phase

The phase control varies the subwoofer acoustic phase (timing) with respect to the satellites. With the switch set to 0° the subwoofer output is in phase with the full range speakers. With the control set to 180° the subwoofer output is out of phase. Adjusting the subwoofer phase can help optimise the sound of subwoofer systems. Further subwoofer phase advice can be found below.

#### Notch Frequency, Slope and Level

The **Notch Frequency, Slope** and **Level** controls enable a targeted Notch Filter to be applied to the subwoofer output. Such a filter can be useful in reducing the audibility of any listening room resonances. The **Notch Frequency** control sets the centre frequency of the filter, the **Notch Slope** control sets the sharpness of the filter (maximum slope equals sharpest filter) and the **Notch Level** control sets the depth of the filter. Setting the **Notch Level** control to **0dB** switches-off the filter.

#### System Setup

Before listening to your subwoofer and system make one final check of the cables and connections. If all appears well begin listening at a relatively low volume to confirm that the system is operating as expected. Only increase the volume if you are happy that the sound at low volume is fundamentally as expected. If you are unhappy, turn the system off and re-check all the cables and connections.

The Aegis Neo Subwoofer may take a little time to reach normal operating temperatures and to "run-in". Your ears too will take some time to adjust to the new sound, so it is unwise therefore to make rapid judgements about the performance of the system.

The most important aspect of the Aegis Neo Subwoofer setup is its integration with the satellite speakers. Assuming the locations chosen for these are satisfactory, adjusting the subwoofer's location in the room, its **Volume Level** and **Phase**, and, if it is used in a conventional stereo system, its **Crossover Frequency**, should enable a good result to be achieved. Leave the **Notch Level** control initially at 0dB.

## 6. CONTROLS & SYSTEM SETUP

Select a few short examples of familiar programme material - both movie and music - to use while adjusting the subwoofer. Listen also from a variety of different positions in the room. Check for balance and consistency of sound - neither too much nor too little bass across the range of programme material and listening positions. Experimentation and careful listening is the key to finding a good subwoofer setup.

### Sub-woofer Location

Broadly speaking, the closer a subwoofer is to the corner of the room (assuming the walls are solid), the more bass it will generate in the room (and the lower its volume need be set). Moving the subwoofer closer to a corner however will also tend to reduce the consistency of the subwoofer volume over the listening room (a corner location being the worst in this respect). Positions closer to the corner will also tend to change the character of the bass produced by the subwoofer - it will emphasise the very lowest signals more. This change in bass character with location is the variable that enables a good compromise position for the subwoofer to be found.

### Volume Level

Setting the subwoofer volume is important in terms of both overall system balance and the demands of different types of programme material. You may find that material with an emphasis on music works better with a lower subwoofer volume than movie material with an emphasis on "effects". Finding a compromise between the two is a matter of subwoofer volume adjustment in parallel with adjusting its position in the room.

### Crossover Frequency

As you adjust other parameters you may find that moving the crossover frequency a little from the suggested starting value is beneficial. Adjust other aspects of the setup, particularly subwoofer location and phase, before adjusting the crossover frequency significantly.

### Phase

Adjusting the subwoofer **Phase** should be left until after the Location is chosen and the **Volume Level** and **Crossover Frequency** are set. Experiment with adjusting the phase if it is proving difficult to get satisfactory results by location, volume and crossover adjustment alone.

### Notch Frequency, Notch Slope and Notch Level

If, while adjusting the subwoofer, it becomes apparent that a low frequency room resonance (bass boom) is dominating the sound of the system, the **Notch Filter** can be used to suppress the resonance. First, set the **Notch Slope** to **MAX** and the **Notch Level** to **-12dB**. Now adjust the **Notch Frequency** in steps from 45Hz upwards and listen to the effect on the sound. When the **Notch Frequency** matches the frequency of the room resonance (usually between 60Hz and 90Hz in typically dimensioned rooms) its effect on the sound will be suppressed. When the correct frequency has been identified, adjust the **Notch Slope** and **Notch Level** to fine-tune the sound. Aim for a high **Notch Slope** value and a low **Notch Level** (i.e. close to 0dB) value.

**Note:** If the Notch Slope is set too low (especially if the Crossover Frequency is set to a low value) it will begin to operate more as a second volume control. Try to keep the slope set relatively high.

**Note:** The Notch Filter will have increasingly little effect as its frequency is adjusted above the crossover frequency (nominally 80Hz on audio-visual LFE signals).

Once the **Notch Filter** is set it will probably be worthwhile revisiting and fine-tuning the **Volume Level**, **Crossover Frequency** and **Phase** settings again.

## 7. SPECIFICATION

**Type:** Closed box, active subwoofer.

**Drivers:** 220mm pulp cone with 48mm thermally bonded voice coil. High-power long-throw magnet system.

**Low Frequency Cut-off:** - 6dB @ 26Hz

**Amplifier:** 200 Watts into 8 Ohms

**Low Pass Filter:** Variable 2nd order, 45Hz to 150Hz

**Phase:** Variable 0° to 180°

**Notch Filter:** Variable. Frequency: 40 to 100Hz, Q: 1.5 to 5.0, Level: 0dB to -12dB

**Dimensions (H x W x D):** 410 x 360 x 325mm

**Weight:** 17.0kg (single, unpacked)

Acoustic Energy reserves the right to modify product specifications.

## 8. THE AEGIS NEO RANGE

The **Aegis Neo Subwoofer** is part of a range that includes the **Aegis Neo One** stand-mount speaker, the **Aegis Neo Three** floor-stand speaker and the **Aegis Neo Centre** centre channel speaker.

### Aegis Neo One

Aegis Neo One is a compact high resolution two-way stand-mount speaker.

### Aegis Neo Three

Aegis Neo Three is 2.5-way floor stand speaker that builds on the performance of the Aegis Neo One with wider bandwidth, higher power handling and enhanced detail resolution.

### Aegis Neo Centre

Aegis Neo Centre is a 2.5-way centre channel speaker designed to combine with the Aegis Neo One or Three for perfectly matched audio-visual systems.

by Acoustic Energy or its agents for consequential loss or damage and specifically excludes fair wear and tear, accident, misuse or unauthorised modification.

This warranty is applicable in the United Kingdom only and does not in any way limit the customer's legal rights. If you have reason to claim under the warranty please contact your dealer in the first instance

Claims and enquiries under the warranty for Acoustic Energy products purchased outside the UK should be addressed to the local importers or distributors.

Please retain all original packaging materials for possible future use. We suggest that you complete details of purchase now and keep this information in a safe place for future reference.

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Dealer: \_\_\_\_\_

Purchase Date: \_\_\_\_\_

Serial Number: \_\_\_\_\_  
\_\_\_\_\_

## 9. WARRANTY

Your Acoustic Energy speaker is guaranteed against original defects in materials, manufacture and workmanship for three years from the date of purchase.

Under this warranty Acoustic Energy agrees to repair any defect or, at the company's discretion, replace the faulty component(s) without charge for parts or labour. This warranty does not imply any acceptance



## 10. CONTACT

**Acoustic Energy Limited**  
**16 Bridge Road**  
**Cirencester**  
**Gloucestershire GL7 1NJ**  
**UK**

**Tel: +44 (0)1285 654432 (Sales)**  
**+44 (0)1285 656890 (Technical)**

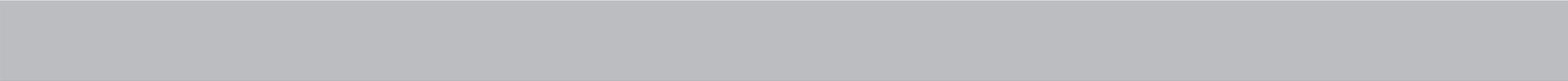
**Fax: +44 (0)1285 654430**

**Email: [info@acoustic-energy.co.uk](mailto:info@acoustic-energy.co.uk)**

**Web: [www.acoustic-energy.co.uk](http://www.acoustic-energy.co.uk)**

Products that display the crossed-out wheeled bin logo cannot be disposed of as domestic waste but must be taken to a facility capable of re-cycling them and appropriately handling any waste by-products. Contact your local authority for details of the nearest such facility.





**AEGIS***NEO*  
SUB WOOFER

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