

REL

Operating Instructions

STENTOR

Sub-Bass System

REL Acoustics Ltd,
North Road, Bridgend Industrial Estate,
Bridgend, Mid-Glamorgan, CF31 3TP.

Telephone: 01656 768777; International : +44 1656 768777

Fax : 01656 766093; International ; +44 1656 766093

WELCOME

Thank you for buying the REL STENTOR Sub Bass system. STENTOR has been carefully hand crafted from the finest materials available and we are sure that it will give you many years of listening pleasure. This manual contains important safety information as well as helpful advice and should be carefully studied before connecting up.

WARRANTY

At REL we believe in an easy to understand Warranty. STENTOR is covered by a 2 year Warranty (UK Mainland only) which covers both parts and labour. Damage caused by either physical or electrical abuse is NOT covered by this Warranty. Overseas buyers should check with their local Dealer/Distributor for the Warranty cover provided.

Should the STENTOR unit give you a problem, please contact your Dealer who will be able to make whatever arrangements are necessary to correct it.

SERVICE AFTER WARRANTY

Please contact your Dealer in the first instance before returning any product direct to us. Should the unit need to be returned for any reason, all carriage costs will be payable by the Customer. Losses or damage caused during transit are the Customer's risk.

CONNECTING UP

Always switch off your system before disconnecting any wires.

To increase the versatility of the choice of connecting up, Stentor includes a set of three gold plated 4mm connectors. These will accept large diameter speaker cables and will allow you to join the Stentor signal cable with your existing speaker cables, if desired.

The identification of the signal interconnect cable colour coding is as follows:-

Red wire to RED banded plug
Yellow wire to RED banded plug
Black wire to BLACK banded plug

STENTOR has two independent XLR sockets. This is to facilitate use with both professional and domestic equipment. The 600 Ohm balanced line input is the one intended for professional use. It also has a much higher sensitivity. Alternatively, it can be used with domestic equipment where there is either a dedicated low bass (sub-woofer) output on the amplifier or a separate line level output on the preamp. In these cases it is normally used unbalanced, i.e. only one of the input arms is used.

The other XLR input is intended for use with domestic equipment where the output is taken from the power amplifier's speaker outputs. This does have the advantage of ensuring that STENTOR receives exactly the same signal as the main speakers. This ensures that the character of the bass from the main system is carried forward into the sub-bass. This is a very important point and together with the STENTOR's Active Bass Controller (ABC) ensures far superior system integration of the sub-bass with the main system.

Screw the spikes into the feet of the sub-woofer, level them up or if necessary compensate for an uneven floor. It is important that all 4 spikes are located securely and that there is no tendency for STENTOR to rock. If it does rock, simply adjust one (or more) of the spikes until it fits securely.

To Connect to the Power Amplifier:

1. Your existing speaker wires can be twisted together with the signal interconnect to STENTOR and connected to the gold plated 4mm plugs supplied. Alternatively, use your existing plugs or connect the STENTOR lead to a spare set of speaker terminals. In effect the STENTOR is bi-wired from your power amplifier. However, note that there are only three connections to STENTOR. This is deliberate and helps preserve the existing star earthing of your system (assuming it has a star earth arrangement). Remove the speaker leads to the RIGHT or the LEFT channel of your power amplifier (whichever is the most convenient). Connect either one of the RED banded plugs on the interconnect to the RED terminal of whichever channel you have selected on your power amplifier. Connect the BLACK banded plug from STENTOR to the BLACK terminal of this channel. Now do the same with the other channel by connecting the other RED banded plug to this channel's RED terminal. Connect the XLR plug to the high level input on STENTOR.
3. Connect the Mains lead to STENTOR and to the mains and switch ON. Operate the Earth Lift switch, if there is no hum, leave in the OUT position. This ensures that there is only one earth return on your system, preserving the star earthing arrangements in your power amp. If the XLR plug is removed there will be a hum. The hum can be removed by operating the earth lift switch if desired. Sometimes this hum will reappear if the main power amp is switched off. If this occurs, leave the earth lift switch IN.

To Connect to a Dedicated Sub-woofer Output:

1. For this connection it will be necessary to use whatever type of connector is needed by this output. Normally it would be a phono type connector. Whatever the type, the yellow wire of the STENTOR interconnect should be connected to the signal live of this connector and the red and black to signal ground. The red wire is connected to ground to minimise hum pickup. The 600 Ohm balanced line input is then used in place of the high level XLR input. With very long interconnects and some amplifiers, particularly ones with a higher output impedance, there may be a slight hum. If so, screened interconnect will have to be used.
2. Plug the connector into the dedicated sub-woofer output on your power amplifier and the XLR plug into the 600 Ohm balanced Line level input on STENTOR.
3. Follow Step 3 above to connect to the mains.

To Connect to a Separate Preamp Output:

1. Do exactly as Step 1 above for connecting to a dedicated sub-woofer output.
2. Plug this phono connector into one of the separate preamp outputs (assuming there is a left and a right output) and the XLR into the 600 Ohm balanced Line level input of STENTOR. Note that this means STENTOR is sensing only one channel, either right or left. Two separate sub-woofers will be necessary for full stereo compatibility under these circumstances. This can be advantageous in a very large room as it ensures better room coupling from two spaced low frequency sources.
3. Connect to the mains as step 3 above.

To Connect to a 600 Ohm Balanced Line Output from a Mixing Desk:

1. Connect a three pin XLR to the open wire end of the STENTOR interconnect, using the established pin connection convention. This means the RED wire goes to Pin 1, YELLOW wire to Pin 2 and the BLACK wire to Pin 3. Note that in this configuration (i.e. balanced) the signal is across the YELLOW (phase) and the BLACK (anti-phase) with the RED to ground.
2. Plug the two XLR connectors into the mixing desk and into the balanced line input to STENTOR.
3. Connect to the mains as step 3 above.

SETTING UP

Initially, test the effect of the controls with STENTOR sited in any convenient position in your listening room.

Turn the two filter controls fully clockwise (maximum bandwidth) and the gain to minimum. Play some music with known bass content, then adjust the gain control for similar sound levels from your main system and your STENTOR. Now reduce both filter controls to minimum. Notice that the level of the bass has almost disappeared. This is because these very low frequencies are not being boosted by your room. Without the ABC you would never be able to hear them properly in your room. Increase the Gain control until this deep bass is heard. Slowly increase the coarse control one step at a time. If one position appears too much, reduce to the lower setting then increase the Fine control a notch at a time until there is a good match between the two systems. It may be necessary, also, to readjust the Gain control. Do not worry if it is not immediately obvious which setting is correct. It is sufficient at this stage that you perceive that there are differences and that one is too extreme in each direction, ie on maximum settings there is too much bass and at minimum settings there is too little. It will be necessary to test with different types of music with different instruments. At this stage try and get a roughly correct setting.

It may take several days before you are completely satisfied that you have found the final best setting. Your acuteness and ability to perceive very subtle differences will improve over these days, possibly because you may not have previously had the opportunity to hear very deep bass in your room. With the ABC you can site STENTOR almost anywhere you choose. If the bass sounds too prominent, simply reduce one of the filter controls a notch. If there is a "hole", increase one of the filter controls until it is filled in.

STENTOR has a phase reversal switch to allow partial cancellation of the frequencies around the crossover point between the two systems. Simply listen to the quality of the bass with the phase normal and inverted. Choose the position which subjectively offers the tightest and cleanest bass. This switch also allows you to ensure that any phase reversal within your power amp can be corrected (where the main speakers should then be connected deliberately in reversed phase). Doing this will ensure correct absolute phase of your system.

It is often surprising just how much effect the room is having on the bass response. Sometimes even quite small speakers appear to need very low settings of the ABC. If this is the case, accept it and feel pleased that your stereo imaging extends down so far. It is always better to try and set up for a subtle, rather than an overblown effect if possible. However, personal taste is the over-riding factor here. If it suits your ears, it is correct.

STENTOR is designed as a true sub-bass speaker. It is designed to reproduce those exceptionally deep notes that are felt rather than heard. This it will attempt to do at whatever volume you set on the gain control on its panel. If set too high the driver cone will simply run out of movement with the lowest notes, causing a "crack" to be heard. If this warning is not heeded and the unit is continuously played in this manner, permanent damage will be done to the driver. This damage is NOT covered by Warranty. Please remember, STENTOR is there to supplement your main system, not overwhelm it!

POSITIONING STENTOR WITHIN YOUR ROOM

Ideally, STENTOR should be positioned mid-way between your main speakers but pushed back as far against the wall as possible. This will help with sound integration between the two different sources. It seems that we humans prefer to

listen to plane waves rather than spherical. Waves become planar as they travel away from the source, just like waves expanding from a stone dropped in a pond. The further the waves travel, the more planer they become. Perhaps it is because

we tend to hear plane waves at a concert or in a Cathedral or any large building, but whatever the reason a more distant source, particularly of low frequencies, appears

more interesting. It follows that the very worst place to position a sub-woofer would be behind the listening chair. Because of the Haas effect (precedence effect of two similar frequencies) we would find such a position very fatiguing if not downright offensive.

Fortunately, in the preferred choice of position even with surround sound, very acceptable results can be obtained with a single very low frequency source. Note that these comments apply here because all REL sub-woofers are integrated into the main system by means of the ABC. Thus only very low bass is being generated by the sub-woofer. Such very low frequencies are truly omnidirectional. Unfortunately, with many sub-woofers which cross-over up around 100Hz, there will be problems because the crossover has a roll-off, it is not a brick wall! Therefore there will be some radiation from such sub-woofers even at 200 to 300 Hz. At these frequencies we *can* detect their source.

If the preferred position is not possible, try moving the sub-woofer to one side or the other. Possibly for a Classical music lover the right hand side may be preferred because the double basses are generally on that side. (This is being very purist, of course).

Note that a subtle effect is far more effective at improving imaging and depth than an up front, overblown bass. Tests appear to show that when the bass is made too prominent, the subtle effect of stage depth improvements are completely masked. This may mean a much lower setting of both the filter controls and the gain than might at first have been thought necessary. It is necessary to emphasise that manufacturer's claims for their speaker's in-room low frequency responses should be treated with care. It is far better to trust the results you are getting in the room with your own ears rather than someone else's in their room.

When the final position has been settled, it is better to shorten the signal lead to the ideal length, rather than coiling it up. Although most modern amplifiers are usually exceptionally load tolerant, it is foolish to tempt fate by inviting trouble with a coiled up speaker lead (which is what it is in effect). A shorter lead also minimises the risk of RFI (Radio Frequency Interference). This is more likely than instability today with so many CB enthusiasts around). STENTOR has internal circuitry designed to

reduce the possibility of RFI to almost zero. Unfortunately, many power amps do not. The pick up on the speaker leads (any speaker leads, not just STENTOR'S) can be fed back on the amplifier's internal negative feedback circuit to provoke trouble through the main speakers. Where this occurs, shortening the signal leads will usually effect the cure.

RUNNING-IN

Care taken over running-in will be rewarded by many years of pleasurable use. Both the electronics and the drive units will benefit from an initial period of carefully controlled use. During this period, permanent damage can be sustained by running the unit at too high a volume setting. On the other hand, by taking a little care over this initial period, about 24 hours of actual use, a longer life with a higher potential eventual performance is assured.

CARE AND POLISHING

The high quality finish is best cared for by using one of the many proprietary furniture polishes. Alternatively, a soft bristled brush may be used to sweep off any dust falling on the surface. If objects are to be placed upon the top, it is advisable to use a small mat to protect the surface and to avoid risk of any rattles.

Everything about STENTOR has been designed and engineered to last a lifetime.

SOME DO'S AND DONT'S

1. Always protect the sub-woofer from getting wet.
2. Always ensure that the panel is correctly earthed via the three core mains cable - it is not sufficient to rely on the earth being made via the signal ground.
3. If the mains lead is lengthened (or shortened) make absolutely certain that the wires are correctly terminated before switching on.
4. In the unlikely event of a fuse failure, always replace by an identical fuse of the same rating and characteristics. A spare set is included with this unit. Further replacements are available from your supplier.
5. Do not attempt to remove the panel or the drive unit from the enclosure - all Warranties become null and void if the seals are broken.
6. Never try to force the switches or the Gain control around further than their normal stops.
7. Do not try to modify or "improve" the design by putting things into the reflex port.

It is not necessary to switch off between listening sessions - it will not significantly shorten its life by leaving it switched on. On the other hand, it will not harm sound quality if it is always switched off. The power consumption in the quiescent state is negligible.

It is perfectly safe under all normal domestic circumstances as it is fully protected. There are 5 fuses to protect all circuits.

ACTIVE BASS CONTROLLER SWITCH versus CROSSOVER FREQUENCY

These settings determine the commencement of the upper frequency limit of the sub-woofer. The lowest operating frequency is totally unaffected by these switches.

The 4 steps on the Fine control equal 1 step on the Coarse control.

Switch Positions		Frequency
Coarse	Fine	Hz
1	1	25
1	2	26
1	3	28
1	4	30
2	1	32
2	2	35
2	3	38
2	4	42
3	1	47
3	2	52
3	3	58
3	4	65
4	1	72
4	2	80
4	3	90
4	4	100

SPECIFICATION

Type	Linkwitz-Riley extended response	
Enclosure volume	72 litres	
Input connectors	2 x Professional 3-pin XLR	Gain
control range	40dB	
Amplifier type	DC coupled complementary MOSFET	
Input impedances	100K Ohm unbalanced or 600 Ohm balanced or 15K Ohm unbalanced	
Power output	200W RMS, 400W Peak	
Drive Unit	Extra heavy duty Cast chassis 26cm	
Frequency Range	14 - 100 Hertz	
	(Upper frequency dependent on user setting of ABC)	
Phasing	Positive or reversed	
Mains input Voltage	220-240 or 110-120 V AC (user selected), via fused I.E.C. socket	
Dimensions	590mm x 560mm x 370mm (WxHxD) (23 x 22 x 15inches) approx.	
Weight	46Kg (101lbs) approx.	
Fuses	2 x 6.3 Amp anti-surge (power amp) 2 x 630mA anti-surge (filter stages) 1 x 2 Amp semi delay, 240V operation	1
x 4 Amp semi-delay, 120 V operation	with spare inside sliding drawer. (Factory selected - do not change without seeking expert advice)	
Supplied accessories:	1. Mains lead 2. 10 metre XLR Interconnect 3. Operating Manual 4. Set of Spikes 5. Set of spare fuses. 6. Set of 4mm plugs	

In the interest of product development, REL ACOUSTICS LTD reserves the right to vary this specification without notice.

WARNING

THIS APPARATUS MUST BE EARTHED

UK OPERATION

This apparatus is supplied with a fitted three pin mains plug. A 5 amp fuse is fitted in the plug. Should the fuse need to be replaced, use a 5 amp fuse approved to ASTA or BSI 1362. Do not use without the fuse cover in place. Replacement fuse covers are available from your dealer.

If for any reason the plug is cut off it must **NOT** be re used. Please dispose of any such plug safely. There is a danger of electric shock if the cut-off plug is inserted into a 13A mains socket.

IMPORTANT

The wires in the mains lead are coloured in accordance with the following following code:

Green and Yellow	-	Earth
Blue	-	Neutral
Brown	-	Live

As the colours of the wires in the mains lead may not correspond with the markings identifying the terminals in the replacement mains plug, proceed as follows:

- the wire coloured Green and Yellow must be connected to the terminal marked with the letter "E" or with the earth symbol , or coloured Green or Green and Yellow.
- the wire coloured Blue must be connected to the terminal marked with the letter "N" or coloured Black.
- the wire coloured Brown must be connected to the terminal marked with the letter "L" or coloured Red.