

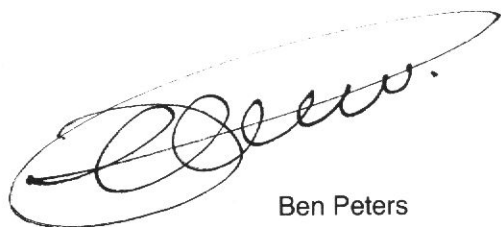


USERS  
INSTRUCTIONS

# INSTRUCTIONS AUDIOSTATIC ES 200/300/2-SW/3-SW

Thank you for choosing Audiostatic Electrostatic Loudspeakers, designed for high quality sound reproduction in the living room. Please read the instructions thoroughly before attempting to unpack or use these loudspeakers.

Wishing you many pleasant listening hours,

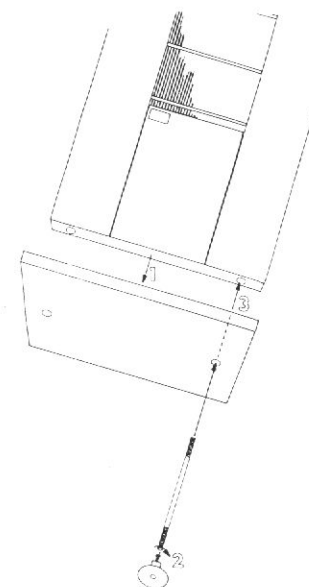


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## ASSEMBLING

Take the loudspeakers out of the cartons and put them frontside down on a flat table, covered with cloth, to protect the laquer finish. Remove the floorstands from the loudspeaker cartons and fix them to the loudspeakers using the delivered with hex bolts and nuts and driver.



1. Loudspeaker frame
2. Hex bolt and nut
3. Floor plate

## CONNECTIONS

Connect the red and black marked gold plated terminals to the amplifier terminals accordingly, using a good quality loudspeaker cable. Audiostatic electrostatics, European version, require 220-230 volts AC energising. Put the already mounted cord into a 220-230 volts AC wall outlet.

USA and other 117 volts versions need 12 volts AC energising. Use the delivered with 12 volts AC adapter, and put the 12 volts AC outlet into the connector next to the two gold-plated loudspeaker terminals.

The Audiostatics draw minimal current, and it is recommended to keep them connected with the mains, except being not in use for a long period of time.

After being connected with the AC line, the speakers need about 24 hours to achieve optimum sound quality.

Extra SW-2 or SW-3 electrostatic subwoofer panels simply have to be connected in parallel with the ES 200-300 RS full range panels.

(Red to red and black to black) by using short loudspeaker cables, and also need to be connected with the 12 volts or 220-230 volts AC line.

## PRECAUTIONS

Keep your Audiostatics from being exposed to direct sunrays, from being used in extremely humid and/or dusty environments, or from being placed close to open fires or other sources of heat.

Dry dust does not affect the loudspeaker membranes.

As soon as dry dust reaches the membrane surface, it will be electrically loaded with the same potential as the membrane and simply be dropped off while playing music.

The loudspeaker frame, which is electrically neutral, will become dusty after some time. Use a slightly moistened cloth (not wet) to clean.

Human or pet hair sometimes gets inside, causing a hissing noise.

Remove with a pair of twizzlers (DO NOT TOUCH THE MEMBRANE, IT CAN BE PENETRATED EASILY) or use a vacuum cleaner at a distance of 2 inches. (Do not touch the wire grid with the vacuum cleaner, to prevent destroying the membrane).

## AMPLIFIER REQUIREMENTS

Your Audiostatics can be used with any stable, high quality solid state or vacuum tube amplifiers between 50 and 250 watts.

One or two Audiostatic SW-2/3 electrostatic subwoofers can be switched in parallel with each channel without dropping the minimum impedance of the system below a safe 4 Ohms.

When overdriven at low frequencies, the loudspeaker membranes will hit the wire grid electrodes without causing immediate damage.

When overdriven at mid or high frequencies, the speakers will show severe distortion.

In both cases it is recommended to reduce the output level to prevent damage caused by continuously overloading.

## ROOM PLACEMENT

Audiostatic electrostatics are dipole radiators, so some care must be taken considering room placement.

In very hard rooms, with lots of glass and stone and sparsely furnished, it is recommended to place the loudspeakers in front of the most absorbing wall (curtains i.e.), approximately 1-1.5 meter from the back wall and 0.5-1 meter from the side walls, slightly angled inside to prevent standing waves bouncing back from the back wall into the panels.

In rooms with lots of curtains, rugs and furniture it is recommended to place the loudspeakers against a more lively wall, same distances as mentioned before.

It is also important to put no furniture between the speakers and the listener(s) to prevent a destroyed sound stage.

## ROOM DIMENSIONS

Bipolar loudspeakers have no loudspeaker enclosure, which means that the relationship between the active loudspeaker membrane surface and the volume of the room they are placed in is rather critical in regards of an optimum response of the lowest octave of the audio spectrum.

This is the main reason that the low frequency response of even huge bipolar loudspeakers is often very disappointing. This phenomenon is often caused by poor room matchment.

The Audiostatic modular bipolar electrostatic construction guarantees a nearly perfect low frequency response in almost every room.

To obtain as good as possible results, it is necessary to follow the room placement and room dimension advices, showed in the accompanying schematics, as close as possible.

## FINE TUNE POSSIBILITIES

On the back side of your Audiostatic ES 2/300 RS, (2/3 SW) you will find two (one) switch(es).

With these switches you have the possibility to fine tune your loudspeakers AFTER you have carefully followed the instructions and found the best possible position with all the switches in neutral position.

The treble switch has the possibility to decrease the highest frequencies, starting at plm. 15 kHz, with a roll off of plm. 1.5 dB at 20 kHz in the - position, and - 3 dB in the -- position.

The bass switch has the possibility to increase the lowest frequencies, starting at plm. 100 Hz, with an increase of plm. 1.5 dB at 30 Hz in the + position, and + 3 dB in the ++ position.

The bass adjustment switch on the SW-2/3 has the same function. Please be aware that increasing of the bass response always goes together with a decrease of maximum SPL at low frequencies.

## WARRANTY

All Audiostatic full range electrostatics carry a two years warranty against any defect in material and workmanship.

Audiostatic undertakes supplyment of replacement parts free of charge. Labour and carriage costs are not covered.

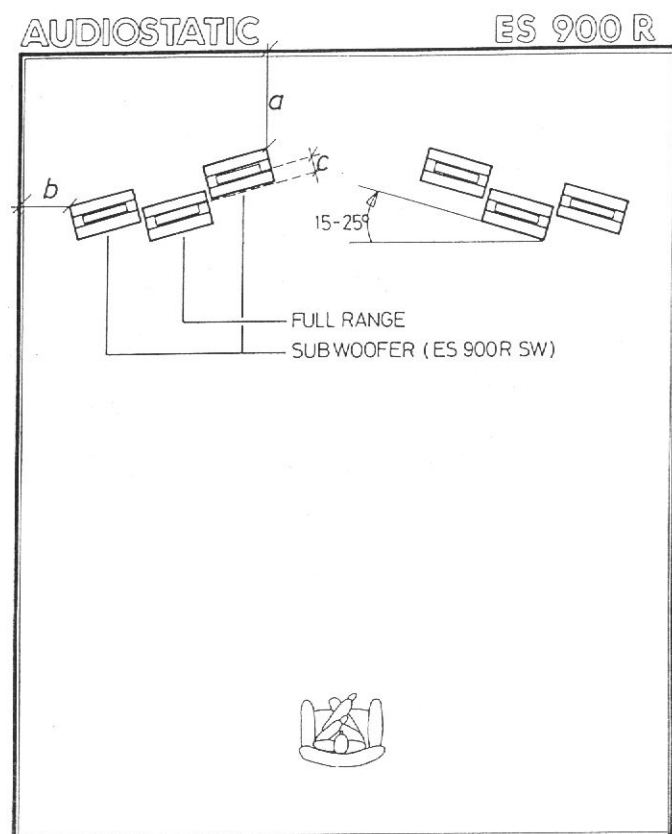
Misuse, accident or negligence are not covered by this warranty.

## SERVICE

If your Audiostatic does not function properly:

- 1) Check the connections from the loudspeakers to the amplifier.
- 2) Check the connections from the loudspeakers to the mains supply voltage. If in doubt, contact you dealer.

## ROOM DIMENSIONS & PLACEMENT

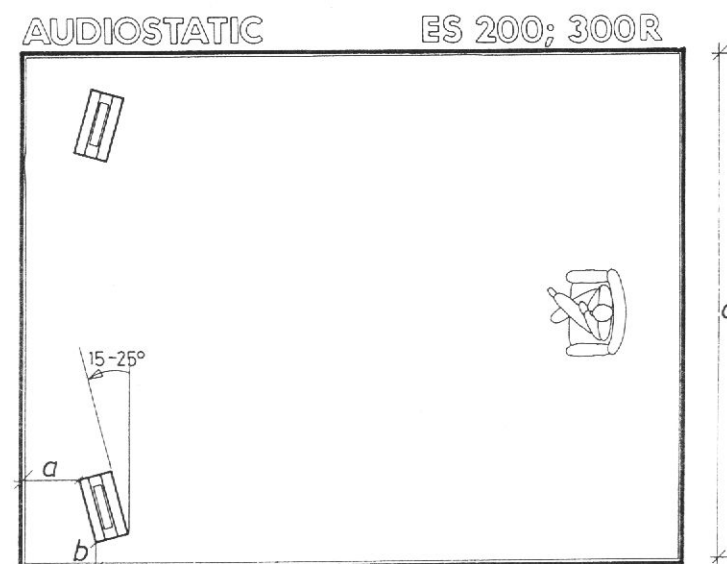
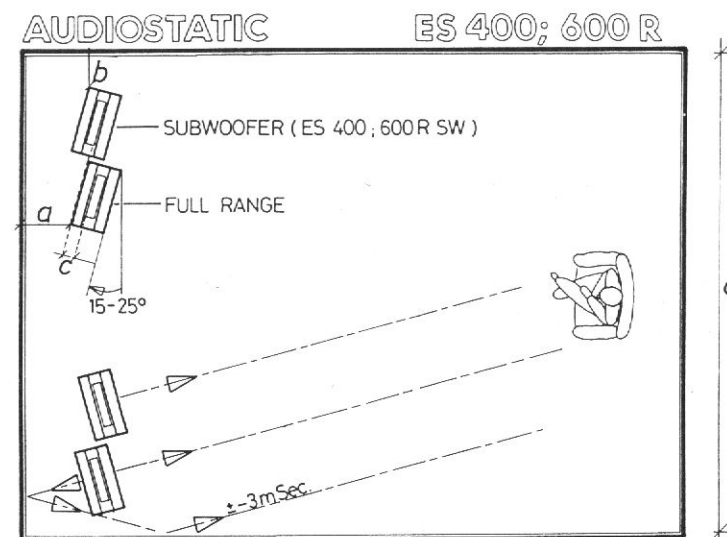


	ES200R	ES300R	ES400R	ES600R	ES900R
a	1.20-1.30m.	1.20-1.30m.	1.30-1.40m.	1.40-1.60m.	1.60-1.90m.
b	0.50-1.00m.	0.50-1.00m.	0.50-1.00m.	0.50-1.50m.	1.00-2.00m.
c	—	—	5 cm.	5 cm.	5 cm.
d	max. 4.50m.	max. 5.50m.	max. 6.00m.	max. 7.00m.	max. 10.00m.
r	15-30m <sup>2</sup>	25-50m <sup>2</sup>	30-60m <sup>2</sup>	50-80m <sup>2</sup>	70-120m <sup>2</sup>

r = area.

ceiling height approximately 2.80 meter.

## ROOM DIMENSIONS & PLACEMENT



## SPECIFICATIONS

Audiostatic full range electrostatic loudspeakers have a modular structure.

Model ES 200 RS can be extended to an ES 400 RS by adding a SW-2 electrostatic subwoofer.

Model ES 300 RS can be extended to an ES 600 RS by adding a SW-3 electrostatic subwoofer, or into an ES 900 RS by adding two SW-3 electrostatic subwoofers.

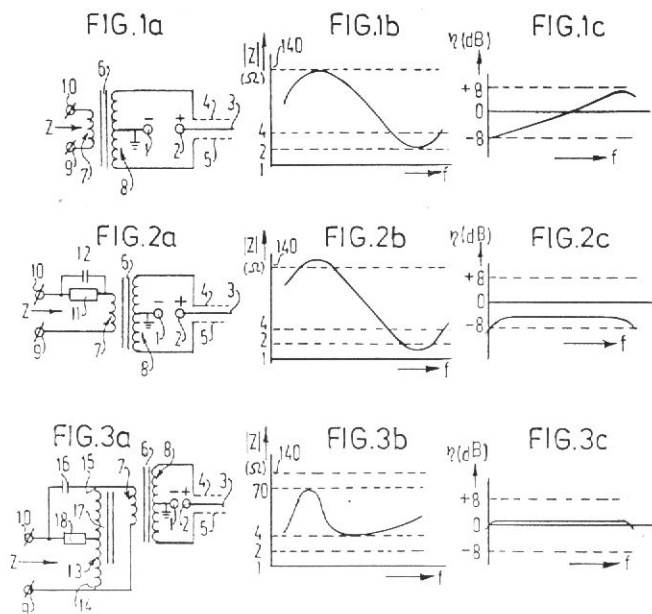
(Mono configurations, for stereo x 2).

MODEL	ES 200 RS	SW-2	ES 300 RS	SW-3
Freq. Range	30Hz-22kHz	30-300Hz	25Hz-22kHz	25-300Hz
Sensitivity	86dB/1W/1M	86dB/1W/1M	88dB/1W/1M	88dB/1W/1M
Impedance	80hm nom	80hm nom	80hm nom	80hm nom
Rec. Amplifier	50-200 W	50-200 W	50-250 W	50-250 W
AC input	12/220	12/220	12/220	12/220
Dimensions/cm.	143x42.6x5	143x42.6x5	193x42.6x5	193x42.6x5
Weight	28 kg	28 kg	31 kg	31 kg

Standard available in black and white glossy laquer.

Other colors or finishes at extra charges.

## THE AUDIOSTATIC MIRROR DRIVE INTERFACE



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FIG. 1a,

Standard way of driving an electrostatic loudspeaker through a step-up transformer:

- 9-10 input power amplifier
- 6-7-8 step-up transformer
- 1-2 membrane polarizing voltage unit
- 3-4-5 electrostatic loudspeaker element

FIG. 1, 2, 3- b, impedance curve

FIG. 1, 2, 3- c, frequency response

COMMENT: No flat frequency response  
Very high impedance at low frequencies  
Very poor bass response

FIG. 2a,

Standard way of creating a relatively usefull full range electrostatic loudspeaker by using an equalizing network between power amplifier and electrostatic loudspeaker.

- 11-12 equalizing network

COMMENT: Flat frequency response  
Very high impedance at low frequencies  
Average bass response  
Very low efficiency

FIG. 3a,

Patented Audiostatic mirror-drive transformer system

- 13-14 mirror drive transformer and equalizing network system to create a mirror image frequency response to fig. 1c. The final results achieved are:

FLAT FREQUENCY RESPONSE  
MODERATE IMPEDANCE ALL OVER THE  
FREQUENCY RANGE  
VERY GOOD BASS RESPONSE  
HIGH EFFICIENCY

US Patent nr. 4.462.931  
Can. Patent nr. 1190481  
German Patent nr. 3223817  
Further patents applied for.

## FINE TUNE POSSIBILITIES & CONNECTIONS

