

**The Lundahl Company**

Lundahl Transformers was founded in 1959 by Lars Lundahl and is today one of the world's leading manufacturers of high performance audio transformers. Our unwillingness to compromise on quality even required the development of a number of manufacturing machines. These enable us to produce high quality C-cores, coils, mu-metal housings and the like in almost any size and shape.



Founder of Lundahl AB, Mr. Lars Lundahl

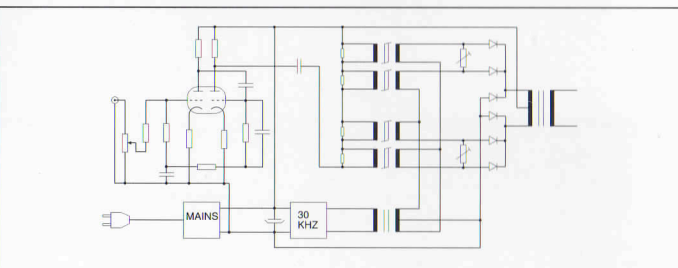
The company is located in Norrtälje, a popular seaside resort 45 minutes north of Stockholm's international airport, Arlanda.

**Technical Details**

Stereo Class A amplifier  
 Output power 2 x 15 W  
 Power consumption < 70 W  
 Size 110 x 230 x 440 mm  
 Weight ca. 10 kg  
 Mains voltage (factory set):  
 230V (210-240V)  
 115V (105-125V)

The magnetic amplifier conforms to CE regulations for EMC and electrical safety. In addition, the unit is tested and approved for the Swedish S (electrical safety) certificate and for the international CB certificate.

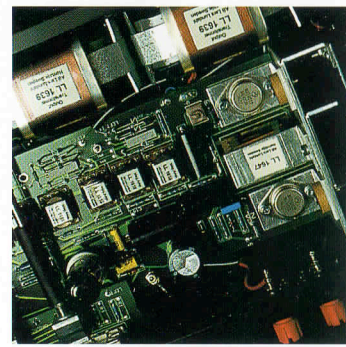
There is a 3 years factory warranty.



Schematic diagram of the amplifier (one channel)

**Controls**

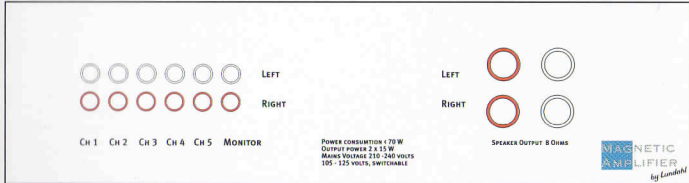
- On/off switch with LED indicator
- Balance control
- Volume control
- Input channel selector



Top view on motherboard

**Terminals**

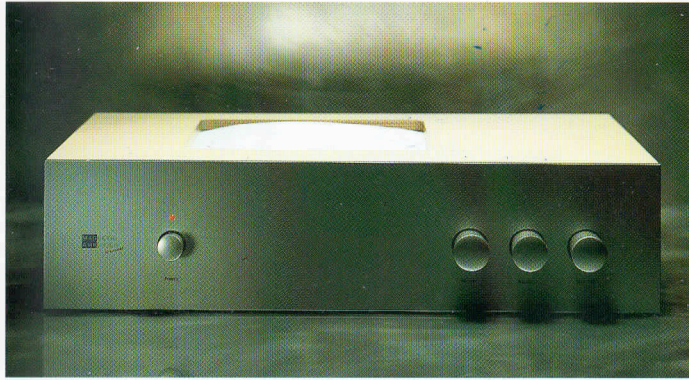
- 5 dual input channels
- 1 tape monitor output
- left and right speaker outputs



Rear view of the amplifier

Distribution: Auditorium 23, Keith Aschenbrenner, Gabelsbergerstraße 23, D-60389 Frankfurt

**How to use magnetism for music**



Class A Magnetic Stereo Amplifier

**MAGNETIC  
 AMPLIFIER**  
*by Lundahl*

AB Lars Lundahl  
 Tibeliusgatan 7  
 S-76150 Norrtälje  
 Sweden

**MAGNETIC  
 AMPLIFIER**  
*by Lundahl*

Graphics & Design: Topel & Pauser Industriestudio

## The Idea

As a young engineer, Lars Lundahl was interested in high fidelity music reproduction and built a number of tube (valve) amplifiers. Later, while working on servo systems for the Swedish J35 Draken „Dragon“ fighter airplane, he developed a thorough understanding of magnetic amplifiers. Now, after having manufactured high quality transformers in his own company for almost 40 years, Mr. Lundahl has managed to realize an old dream – combining his knowledge of tube (valve) amplifiers and transformers to build a hi-fi magnetic amplifier. The result is astonishing, both from the point of view of sound quality and the interest the amplifier has aroused among audiophiles.



Front view of the MagAmp

## The Principle

The principle of a magnetic amplifier is very different from that of a standard audio amplifier where the amplifying elements are tubes (valves) or transistors. For each channel, four magamps make a class A push-pull output stage.

A magamp is an inductive component (like a transformer) consisting of two separate windings and a magnetic core. The core is made from one amorphous strip and has a very high initial permeability and a sharp saturation characteristic.

Each single magamp works as a controlled rectifier. In the control phase, the saturation level of the core is preset by a control signal, the music signal. In the working phase, the magamp stops the current until the core becomes saturated, after which current flows through the load. The width of the output pulse is thus proportional to the core preset.

A pair of magamps work together to give continuous operation. When one is in the control phase, the other is in the working phase.

A current recycling system recycles the direct current through a switch transformer. Through this system, excessive heat dissipation (a common problem for class A amplifiers) is avoided and power consumption is reduced.

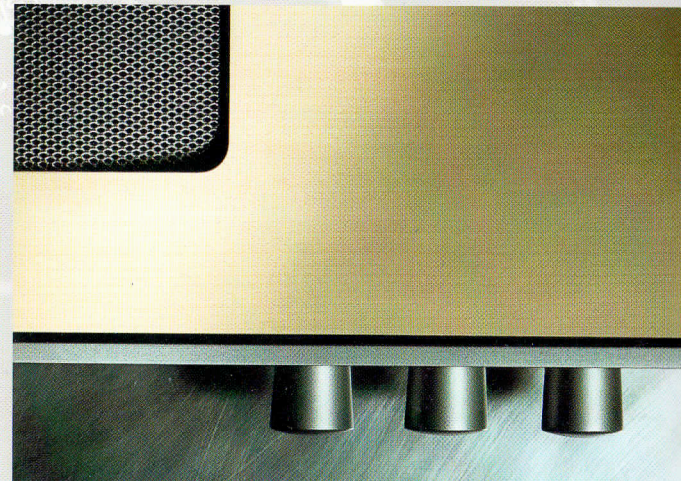
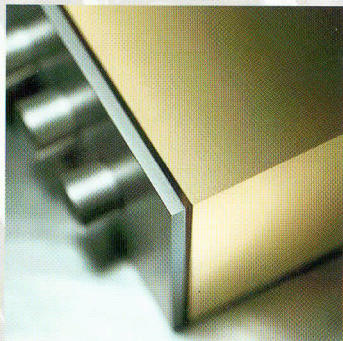
Each channel requires two pairs of magamps for push-pull operation. Therefore, in a stereo amplifier there are eight magamps (for schematic diagram see overleaf).

## The Differences

The first thing that strikes you when listening to a magnetic amplifier is the pure and natural sound. The sounds of instruments are neither improved nor distorted, and each instrument is clearly identifiable, even in a large orchestra. This is a quality we noticed from the very beginning.

Secondly, in spite of the rather modest output power rating, there is a large amount of power for deep bass and high intensity crescendos.

This is probably due to a soft saturation curve. In addition, the amplifier is very robust and outputs can be opened or short-circuited without risk. However, in spite of the output transformers, the outputs should not be bridged. This is due to the operation principles of the amplifier.



Top view. Ventilation, maple veneered birchwood cabinet, aluminum front panel and knobs