LINN

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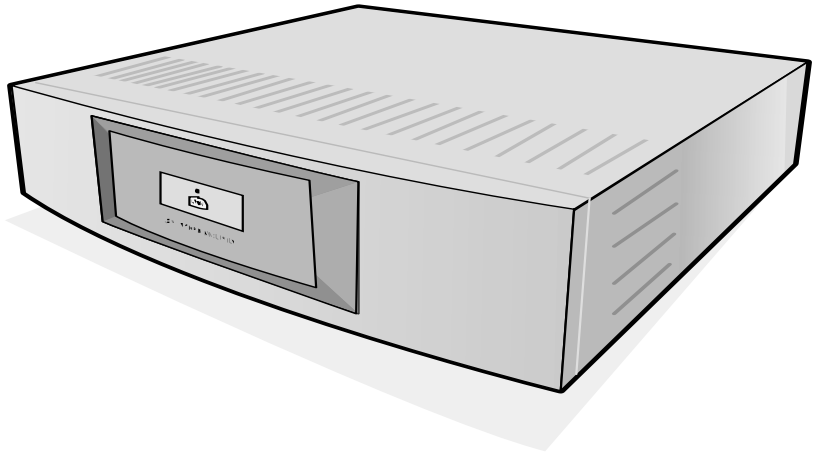
2250 POWER AMPLIFIER

OWNER'S MANUAL



Important Safety Information

Explanation of symbols used in this manual and on the product:

This symbol is intended to alert the user to the presence of uninsulated dangerous voltages within the enclosure of sufficient magnitude to cause electric shock.

This symbol is intended to alert the user to the presence of important maintenance and servicing information in the instruction and service manuals.

CAUTION

TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE THE COVER.
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
WARNING: SHOCK HAZARD. DO NOT OPEN.
AVIS: RISQUE DE CHOC ELECTRIQUE. NE PAS OUVRIR.
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH THE CORRECT TYPE OF FUSE
ATTENTION: POUR UNE PROTECTION DURABLE CONTRE LES RISQUES D'INCENDIE, REMPLACER UNIQUEMENT CE FUSIBLE PAR UN AUTRE DU MÊME TYPE:
DISCONNECT SUPPLY CORD BEFORE CHANGING FUSE.
ATTENTION: DEBRANCHER AVANT DE REMPLACER LE FUSIBLE.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

MAINS PLUGS

This appliance is supplied with a non-rewireable mains plug for the intended country.
Replacement mains leads can be obtained from your Linn retailer.
Should you need to change the plug please dispose of it carefully.
A plug with bared conductors is dangerous if engaged in a live socket.
The Brown wire must be connected to the Live (Line) supply pin.
The Blue wire must be connected to the Neutral supply pin.
The Green/Yellow wire must be connected to the Earth (Ground) supply pin.
Please contact your retailer or a competent electrician if you are in any doubt.

GENERAL SAFETY INSTRUCTIONS

1. **Read instructions.** Read the safety and operating instructions before operating the appliance.
2. **Retain instructions.** Retain the safety and operating instructions for future reference.
3. **Heed warnings.** Observe all warnings on the appliance and in the operating instructions.
4. **Follow instructions.** Follow all operating and use instructions.
5. **Water and moisture.** Do not use the appliance near water, for example near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool and the like.
6. **Carts and stands.** Use only with a cart or stand that is recommended by the manufacturer.

6a. An appliance and cart combination should be used with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. **Wall or ceiling mounting.** Mount to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation.** Site the appliance so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings, or placed in a built-in installation such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. **Heat.** Site the appliance away from heat sources such as radiators, heaters, stoves, or other appliances (including amplifiers) that produce heat.
10. **Power sources.** Connect the appliance to a power supply only of the type described in the operating instructions or marked on the appliance.
11. **Grounding or polarisation.** Do not defeat the safety purpose of the polarised or grounding type plug. A polarised plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
12. **Power cord protection.** Route power cords so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, power sockets, and at the point where they exit from the appliance.
13. **Protective attachment plug.** As a safety feature the product is equipped with an attachment plug containing overload protection. See the instruction manual about resetting or replacing the plug. Should the plug need replacing ensure that a replacement is used which has the same overload protection as the original.
14. **Cleaning.** The product should be cleaned only as recommended by the manufacturer.
15. **Power lines.** An outdoor antenna should be located away from power lines.
16. **Outdoor antenna grounding.** If an outdoor antenna is connected to the tuner/receiver, ensure that the antenna system is grounded to provide some protection against voltage surges and static build up. In the USA see article 810 of the National Electrical Code ANSI/NFPA 70 concerning installation requirements.
17. **Lightning storms.** Unplug this apparatus during lightning storms or when unused for long periods of time.
18. **Objects and liquid entry.** Take care not to let objects or liquids fall into the product.
19. **Damage requiring service.** The product should be serviced by qualified personnel if:
    a) The power cord or plug has been damaged.
    b) Objects or liquid have fallen into the product.
    c) The product has been exposed to rain.
    d) The product does not appear to operate normally or exhibits a marked change in operation.
    e) The product has been dropped or the enclosure damaged.
20. **Servicing.** Don't attempt to service the product beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

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UK USERS PLEASE READ THIS IMPORTANT SAFETY INFORMATION

Replacing the fuse in the mains plug

This appliance is fitted with a non-rewireable 13 Amp mains plug. The plug contains a 5 Amp fuse. If the fuse has blown it can be replaced as follows:

a) Pull out the red fuse cover/carrier.
b) Remove and dispose of the blown fuse.
c) Fit a new 5 Amp BS1362 approved fuse into the carrier and push the carrier back into the plug.
   Always ensure the fuse cover is fitted. If the fuse cover is missing do not use the plug. Contact your Linn retailer to obtain a replacement fuse cover.
   Fuses are for fire protection and do not protect against electric shock.

Mains plug replacement

Should your mains plug need replacing and you are competent to do this proceed as follows. If you are in doubt contact your Linn retailer or a competent electrician.

a) Disconnect the plug from the mains supply.
b) Cut off the plug and dispose of it safely. A plug with bared conductors is dangerous if engaged in a live socket.
c) Only fit a 13 Amp BS1363A approved plug with a 5 Amp fuse.
d) The cable wire colours or a letter will be marked at the connection points of most quality plugs. Attach the wires securely to their respective points. The Brown wire must go to the Live pin, the Blue wire must go to the Neutral pin, and the Green/Yellow wire must go to the Earth pin.
e) Before replacing the plug top ensure that the cable restraint is holding the outer sheath of the cable firmly and that the wires are correctly connected.

WARNING

THIS APPLIANCE MUST BE EARTHED.

CE Declaration of Conformity

Linn Products Ltd declare that this product is in conformance with the Low Voltage Directive 73/23/EEC and Electromagnetic Compatibility 89/336/EEC as amended by 92/31/EEC and 93/68/EEC.
The conformity of the designated product with the provisions of Directive number 73/23/EEC (LVD) is proved by full compliance with the following standards:

Standard number	Date of issue	Test type
EN60065	1998	General requirements
		Marking
		Hazardous radiation
		Heating under normal conditions
		Shock hazards under normal operating conditions
		Insulation requirements
		Fault conditions
		Mechanical strength
		Parts connected to the mains supply
		Components
		Terminal devices
		External flexible cords
		Electrical connections and mechanical fixings
		Protection against electric shock
		Stability and mechanical hazards
		Resistance to fire

The conformity of the designated product with the provisions of Directive number 89/336/EEC (EMC) is proved by full compliance with the following standards:

Standard number	Date of issue	Test type
EN55013	2001	Conducted emissions
EN55013	2001	Absorbed emissions
EN55020	2002	Immunity

FCC Notice

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Copyright and Acknowledgements

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Introduction

Linn 2250

The Linn 2250 is a high power two-channel amplifier designed for use in multi-amplifier audio and video systems. It exemplifies Linn's unremitting commitment to exploiting the latest technology in order to produce ever better sounding products. The unit's features include Linn's switch mode power supply (see below), automatic signal sensing, bi-wireable speaker outputs and the option to add a stereo Aktiv card (see opposite) for improved audio performance.

Switch mode power supply

The power supply in most amplifiers contains a large and heavy transformer, a rectifier and reservoir capacitors. These components convert the voltage of the mains supply to the low voltage required by electronic circuits, and supply this lower voltage to the amplifier circuitry at a constant level – regardless of the demands of the amplifier. Such power supplies use electricity inefficiently and cause mains power distortion which can lead to electrical and acoustic noise.

In a switch mode power supply, the incoming mains voltage is chopped up by very fast semiconductor switches and is then passed through a small transformer and other components, which convert the voltage to the value needed by the amplifier circuitry. By controlling the timing of the semiconductor switches, the voltage supplied to the amplifier circuitry can be instantly altered to suit demand. Linn's switch mode power supply is not only efficient, it also eliminates mains power distortion resulting in superior performance and sound quality.

Aktiv cards

The Linn 2250 power amplifier has been engineered to support both passive and active loudspeaker crossovers. In a passive crossover the audio signal from a system's amplifier is split by circuitry inside a loudspeaker into bass and treble, or bass, mid and treble (depending on the type and size of loudspeaker). With a passive system a portion of the energy in the audio signal is required to power the crossover, which naturally has an affect on the overall quality of sound reproduction. The benefit of an active system is that the audio signal is split within the amplifier and each split 'segment' is further amplified before being fed to the speakers. Active crossover systems sound more dynamic than passive systems as the speakers are provided with more energy to drive them.

Linn have developed active crossovers, called Aktiv cards, which have been optimised for our range of loudspeakers. Once fitted, Aktiv cards can be fine-tuned to suit the requirements of your room and enhance your listening experience. Aktiv cards can be fitted into your Linn 2250 power amplifier by your local Linn specialist retailer.

Unpacking

The Linn 2250 power amplifier comes in a box with the following accessories:

- 2 x 1.2m phono leads
- 2 pairs of speaker plugs
- mains lead
- warranty card
- this manual

We recommend that you retain all packaging in case you need to transport the unit at a later date.

Voltage Selection

Do not connect the mains supply until you have verified that the unit is set to the correct voltage for your mains supply.

The unit is factory-set for a 230 volt mains supply and must not be connected to a mains supply other than this before it is adjusted for your local voltage. To set the voltage, use a screwdriver to adjust the voltage selector on the back of the unit to the correct setting.

This unit must be earthed. Use the earthed moulded mains lead supplied. Never use an unearthed plug or adaptor.

Positioning

Allow at least 10cm of space to the front, rear, sides and above the Linn 2250 power amplifier. Do not block the ventilation grills on the front of the unit or the vents on the sides, top and bottom.

The unit can be rack mounted in a 19" rack (Linn part no. RAKK-19/1).

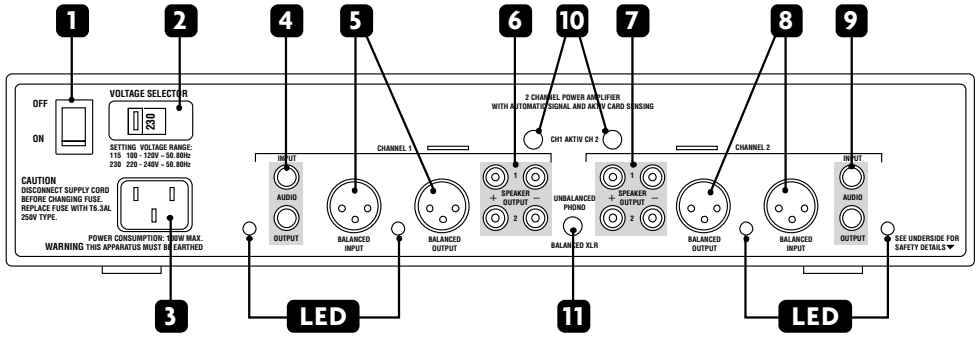
Cleaning

Disconnect the Linn 2250 power amplifier from the power supply before cleaning. Remove dust and fingerprints with a soft damp cloth. Avoid using domestic cleaning products on the unit.

Inputs and Outputs

The unit has both unbalanced and balanced inputs, selected by a push-button switch on the back panel. Use the appropriate push-button position to suit your choice of preamplifier and cabling. The LEDs on the back panel will indicate which inputs are selected. The push-button does not directly pass the audio signal but instead sends a control signal to distortionless solid state switches. Both unbalanced and balanced signals are passed through the unbalanced and balanced line out sockets to enable daisy-chaining of amplifiers.

Back Panel



Channel 1

- **1** Power switch
- **2** Voltage selector
- **3** Mains input
- **4** Audio (unbalanced) input and output
- **5** Balanced input and output
- **6** Speaker outputs

Channel 2

- **7** Speaker outputs
- **8** Balanced input and output
- **9** Audio (unbalanced) input and output
- **10** Aktiv card controls (if card is fitted)
- **11** Unbalanced/balanced push-button
- **LED** Indicate selected input

The Linn 2250 power amplifier should be powered down then disconnected from the mains supply before connecting or disconnecting any of the plugs on the back panel. If this is not done you may generate surges which could damage the unit or other components in your AV system.

Signal Sensing

The signal sensor in the Linn 2250 power amplifier waits about one second before powering-up the amplifier to be certain the input signal is real, not just noise. The detection threshold is a good compromise between sensitivity to low-level signals and immunity to noise. However, residual hiss level from phono preamplifiers at moderate volume settings can be enough to trigger the sensor. Mute the preamplifier or turn the volume down after use to prevent this happening.

If there is audible hum from the loudspeakers then you may have enough noise present to trigger the signal sensor. Always try to eliminate any source of hum as this is essential for a system to sound its best.

Ten minutes after an audio input signal ceases, the unit reverts to a low-power standby mode.

Heat

The Linn 2250 power amplifier is very powerful and hence must dissipate a lot of heat. This is normally done via the internal heat sink and vents in the outer casing. However, if the amplifier is being worked enthusiastically or has restricted ventilation, the unit's two internal fans will operate and will remain running until the internal temperature has dropped to a pre-set level.

Operation

The blue light on the front panel will be dim when power is first applied, and remains dimmed when the unit is in standby mode. When a signal is detected the light brightens as the amplifier is enabled. If the amplifier needs to protect itself (for example, if the internal temperature gets too high) it will shut down for a few seconds and the light will dim. There is no half-way current limiting: the unit can either do what is required of it or will shut down. The amplifier will revert to standby mode ten minutes after the input signal ceases.

To operate the Linn 2250 power amplifier, select a source on your preamp, wait a couple of seconds for the unit to power up, then sit back and enjoy it.

Guarantee and Service

This product is guaranteed under the conditions which apply in the country of purchase and your statutory rights are not limited. In addition to any statutory rights you may have, Linn undertake to replace any parts which have failed due to faulty manufacture. To help us, please ask your Linn retailer about the Linn warranty scheme in operation in your country.

In parts of Europe, the United States of America and some other markets, extended warranty may be available to customers who register their purchase with Linn. A warranty registration card is included with the product and should be stamped by your retailer and returned to Linn as soon as possible.

Warning

Unauthorised servicing or dismantling of the product invalidates the manufacturer's warranty. There are no user serviceable parts inside the product and all enquiries relating to product servicing should be referred to authorised retailers only.

Technical support and information
For technical support, product queries and information, please contact either your local retailer or one of the Linn offices opposite.

Full details of your local retailer/distributor can be found on the Linn web site: www.linn.co.uk

Important

- Please keep a copy of the sales receipt to establish the purchase date of the product.
- Please ensure that your equipment is insured by you during any transit or shipment for repair.

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Technical Information

Input connectors		
Unbalanced (switch position in)	WBT phono socket	
Balanced (switch position out)	XLR socket	
Pin connections	Phono	Inner: Hot (+)
		Outer: 0V
	XLR	Pin 1: 0V
		Pin 2: Hot (+)
		Pin 3: Cold (-)
Gain		
Unbalanced	28.3dB	
Balanced	22.3dB	
Input impedance		
Unbalanced	7K8ohms	
Balanced	7K8ohms	
Input level for clipping		
Unbalanced	1.2V rms	
Balanced	2.4V rms	
Signal sensing threshold	›150uV	
Output power	230W rms into 4ohms 115W rms into 8ohms	
Load tolerance	Unconditionally stable into all loudspeaker loads	
Harmonic distortion	‹0.02%	
Frequency response	7Hz to 35kHz (-3dB)	
Peak output voltage	45V	

Protection	
Fuse rating	T6.3A
Mains input range	90VAc – 126VAc 200VAc – 253VAc @50/60Hz
Maximum input power	1000W
Typical operating input power	44W
Standby power	15W
Dimensions	75mm (H) x 381mm (W) x 354mm (D)
Weight	5.25kg