

K-3x Preamplifier

Owner's Manual

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Welcome to

Ayre

*Please send in your warranty
registration card so we can
stay in contact with you.*

The Ayre K-3x offers a significant advance in the musical performance of audio preamplifiers. The warmth and immediacy of a live performance are apparent from the first listening. The combination of superb resolution and a natural, relaxed quality will draw you into the music, time and time again. This level of performance has been implemented using the highest level of workmanship and materials. Your Ayre K-3x preamplifier will provide a lifetime of musical enjoyment.

Operation

The Ayre K-3x is easy to hook up and use. The following guidelines will ensure that the installation goes smoothly.

Location

The Ayre K-3x comprises two components - the main preamplifier and the external power supply. If necessary, these two pieces can be temporarily separated by your dealer to facilitate installation into a cabinet.

The preamplifier's power supply emits a mild hum field, and should be located away from other components.

The main unit produces very little heat and can normally be stacked with other components. However, in certain situations, hum can be induced into the audio circuitry. In this case, try separating the components by a few feet (one meter or so) to isolate the interfering component.

The receiver for the optional infrared remote control is mounted behind the left-most scallop on the preamplifier's front panel. Although the transmitter's beam will reflect off of most wall surfaces, a direct line of sight from the listening position will ensure the maximum range. The beam will also travel through glass if necessary.

Inputs

When you have a choice, a balanced connection will offer slightly higher sound quality than an unbalanced connection.

The Ayre K-3x offers two pairs of balanced inputs and two pairs of unbalanced inputs. Balanced connections are made via three-pin XLR connectors, while unbalanced connections are made via RCA jacks. In accordance with the IEC standard, pin 2 is the positive phase (hot) of the XLR connectors.

The input connectors on the rear panel are labeled “1” through “4”.



If you are connecting a tape deck to your system, be sure to connect it to input “4”.

If a tape deck is not installed in your system, input “4” performs like the other unbalanced inputs.

This will prevent the undesired possibility of a feedback loop when monitoring a tape recording.



If the optional phono stage is installed, it will use input “2”. Do not connect a line-level source to this input, as it may damage the phono stage.

If the phono stage is not installed, input “2” performs like the other balanced input.

Please refer to the section “**Optimizing the Phono Stage**” for more detailed information on connecting your turntable.

Input Labels

Input “1” on the rear panel corresponds to the top label, while input “4” corresponds to the bottom label.

The front panel switches can be labeled to reflect the components in your individual system. The faceplate must be removed to install custom labels for the selector switches. Use the supplied 1/8" allen wrench to remove the four screws visible on the faceplate. Then slide the faceplate away from the unit, taking care not to scratch the knobs.

Remove the old label by using a small object (such as an allen wrench) to push through the access holes on the rear of the faceplate. The labels have a self-adhesive backing, and new ones are simply pressed into place.

Outputs

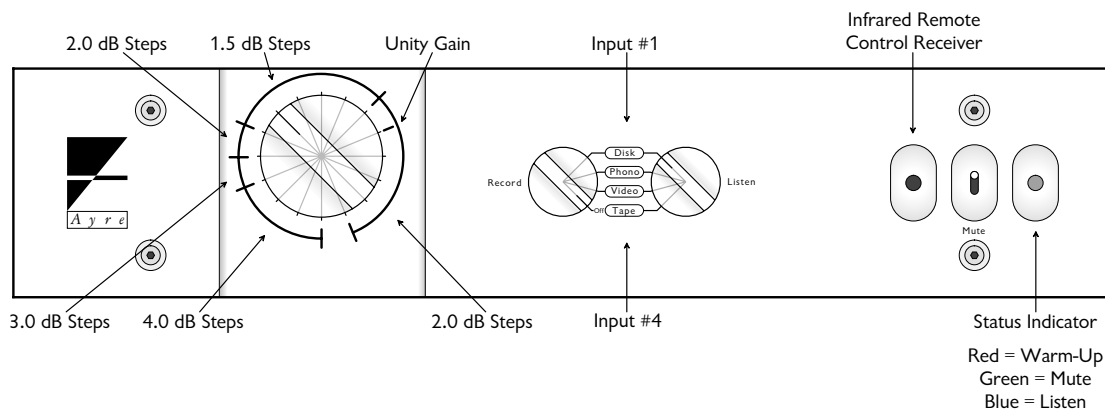
*Both pairs of outputs may be used simultaneously.
However, please note that the level of the unbalanced output will be 6 dB lower than the balanced output.*

The Ayre K-3x offers one pair of balanced outputs and one pair of unbalanced outputs.



Please note that the unbalanced outputs invert absolute polarity.

When using an unbalanced connection between the Ayre K-3x and your power amplifier, it is suggested that the speaker cables' "plus" and "minus" leads be reversed at the amplifier. This will restore absolute polarity and can enhance the sense of realism on many recordings.



Powering the Unit

The Ayre K-3x draws very little power and is designed to be left on at all times.

The Ayre K-3x features a sophisticated power monitoring system. When first plugged in to an AC power source, the front panel indicator light will glow red for approximately 90 seconds. During this time, the outputs are muted and the mute switch is inoperable.

After the circuitry has stabilized, the indicator light will change to green, indicating that the unit is ready for play, though the unit remains muted. When the listener toggles the mute control, the unit is operational and the indicator light glows blue.

Controls

The volume control and the mute switch may be operated either by the optional remote control or the front panel controls.

There are four controls on the Ayre K-3x preamplifier - the volume control, the input selector ("Listen"), the tape record selector ("Record"), and the mute switch. These controls provide the ideal combination of flexibility and ease of use.

Unlike other products that use conventional volume controls (potentiometers), the Ayre K-3x uses a mil-spec, precision stepped attenuator with solid-silver contacts to provide the ultimate in sound quality. This volume control features 31 distinct positions, offering precise and repeatable settings.

The remote control transmitter furnished with the K-3x has four buttons. The three buttons on the right side of the unit control the volume and muting functions. The fourth button on the left side will control the V-1x power amplifier, should you have one in your system.

It is normal to listen with the volume knob advanced farther than you may be used to with other equipment.

The volume control offers 1.5 dB steps over most of its range, allowing you to exactly select the desired listening level. To maximize its capabilities, it has been designed so that the volume knob will be between 1 o'clock and 3 o'clock for a loud playback level in most systems.

When a surround-sound processor is used, it is sometimes useful to know the unity-gain volume setting. Since the gain of the Ayre K-3x line-stage is 16 dB when driving a power amplifier with balanced inputs, unity gain occurs when the volume control is eight steps below the maximum setting (see illustration).

Since the tape record selector ("Record") is controlled separately from the main input selector ("Listen"), it is possible to listen to one source while recording from another.

The tape record selector ("Record") controls which source component is connected to the tape output jacks. It is recommended that the tape record selector be switched to the "Off" position except when making a recording. This will isolate the tape deck's circuitry from the preamplifier, providing the highest level of sound quality when listening.

Unbalanced Power Amplifiers

When using the Ayre K-3x with an unbalanced power amplifier, note that the unity-gain volume setting will now occur when the volume control is five steps below the maximum setting.

Unbalanced power amplifiers with single-ended inputs only utilize one-half of the Ayre K-3x's balanced output signal. The result is a 6 dB gain reduction, requiring that the volume control be further advanced for an equivalent listening level. However, certain systems may have insufficient gain to produce a satisfying listening level, even with the volume control turned fully up.

If required, the gain of the line stage can be increased 6 dB to compensate for this loss. Please contact your authorized Ayre dealer or the factory for information on this procedure. (It is not recommended to increase the gain of the Ayre K-3x when using a balanced amplifier, as the level of the lowest volume setting may be too loud.)

Break-In

Please note that the optional phono stage utilizes additional circuitry and will require its own break-in period, achieved by playing records.

A break-in period is required to achieve the maximum sonic potential of the Ayre K-3x due to the manufacturing processes used in the capacitors, circuit board material, and wires. This normally requires between 100 and 500 hours of playing time.

Phono Stage

The optional phono stage in the Ayre K-3x offers the ultimate in flexibility and performance for all types of phono cartridges.

Connections



Do not connect a line-level source to the phono input as damage to the phono stage may result.

The balanced phono configuration yields maximum sonic performance with minimum hum or interference.

As the phono cartridge is an inherently balanced device, the Ayre K-3x phono stage is also balanced, using XLR jacks at the input. Since most tone arms and/or turntables are not equipped with XLR connectors, there are two choices for making the proper connection:

- 1) Use an RCA-to-XLR adapter. This often may be the easiest solution to implement, but introduces an extra set of contacts into the signal path. In addition, this converts the balanced source into an unbalanced input and causes a slight loss of sound quality.
- 2) Use dedicated cables with XLR connectors at the preamplifier end and the appropriate connector (RCA or DIN, depending on the particular installation) at the turntable end. This is the preferred solution and offers the highest level of sound quality.

Ayre manufactures both adapters and dedicated cables. These high-performance custom designs are available from your authorized Ayre dealer. In addition, termination instructions are available if you wish to reterminate your current cables. Please contact the factory for further details, or refer to our web site at www.ayre.com.

Gain and Loading

The gain is factory-set to 50 dB, which is well suited to most modern phono cartridges.

The gain of the phono stage is adjustable in 10 dB steps from 40 dB to 60 dB, accommodating virtually any cartridge made. Recommended gain settings are as follows:

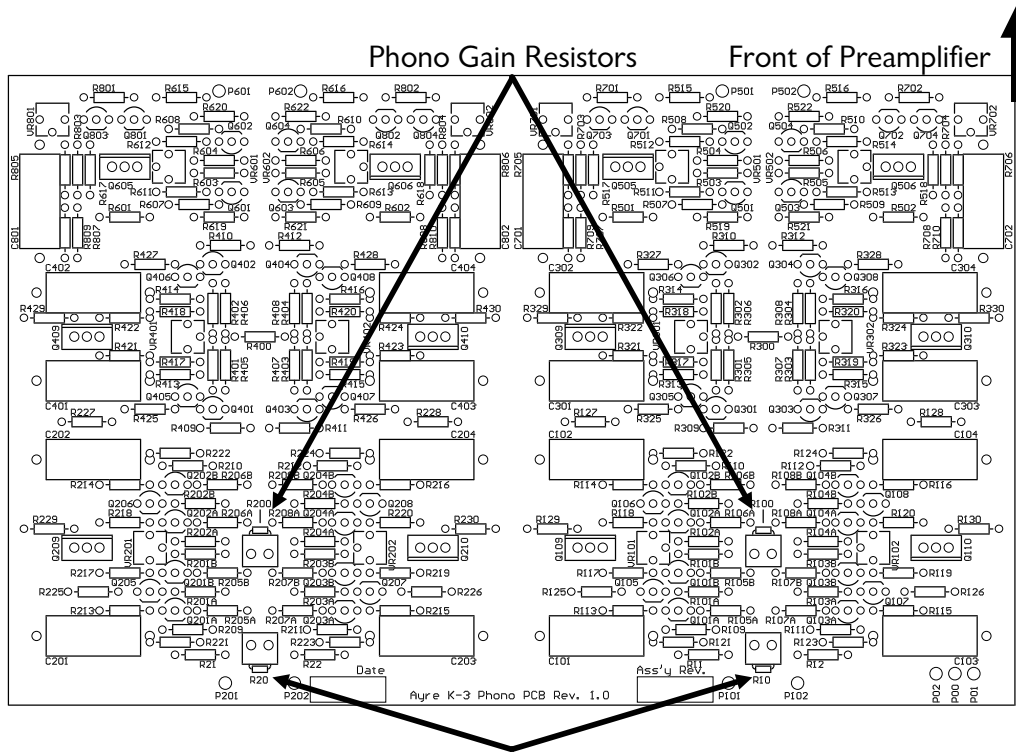
Cartridge Output	Phono Gain	Gain Resistor
Less than 1.0 mV	60 dB	20 Ω
1.0 mV to 3.0 mV	50 dB	150 Ω
Greater than 3.0 mV	40 dB	500 Ω

These are guidelines only. Variations from these settings are perfectly acceptable.

It is recommended that the loading not be changed from 50 k Ω when using a moving-magnet cartridge.

The default cartridge load is 50 k Ω , which is suitable for almost all cartridges. However, many moving-coil cartridges yield better performance if they are loaded with a lower impedance.

Usually, a lower load impedance results in a more focused soundstage, with greater image solidity and less apparent distortion. A higher load impedance will give a more open sound, with greater “air” and “life”. The final value must be chosen by ear to give the best sound in your particular system.



Cartridge Loading Resistors

The phono gain and loading can be adjusted by your authorized Ayre dealer. However, for those owners that prefer to perform this task themselves, the following tools are required:

- 5/64" allen wrench (supplied)
- Small screwdriver - 0.080" to 0.100" (2.0 to 2.5 mm)
- Tweezers, or small needle-nose pliers



Changing the phono gain and loading resistors is comparable in complexity to installing a phono cartridge. Do not perform this task yourself unless you are completely comfortable with it.



Disconnect the preamplifier's power supply from the AC power before working on the unit.

To adjust the gain or loading of the phono stage, use the supplied 5/64" allen wrench to remove the six screws that secure the top cover. The phono board is horizontally mounted and located toward the right side of the chassis.

The phono board has two small brown terminal strips per channel used to connect small metal-film resistors. The terminal strips towards the front of the preamplifier is used to adjust the gain of the phono stage, while the terminal strip towards the rear of the unit accepts the loading resistor. The resistor leads are clamped by the two screws in the terminal strip, forming a gas-tight connection for optimum sound quality.

To remove the installed resistors, use a small flat-bladed screwdriver to loosen the two screws in the terminal strip until the screw heads are flush with the top surface of the terminal strip. Gently remove the resistor with a pair of tweezers or small needle-nose pliers.

To install the new resistors, use the tweezers or small needle-nose pliers to insert the two leads into the holes on the side of the terminal strip. Orientation is not important — the resistor can be installed either way. Use the flat-bladed screwdriver to gently snug the two screws down. Do not overtighten them.



Do not operate the preamplifier without the gain-adjusting resistors installed.

Replace the top cover, reinstalling the six screws with the 5/64" allen wrench.

Specifications

<i>Gain - Line</i>	16 dB to balanced outputs, 10 dB to unbalanced outputs. Other values available upon request.
<i>Gain - Phono</i>	Adjustable — 40 dB, 50 dB (factory setting), 60 dB
<i>Input Impedance - Line</i>	10 k Ω (each phase)
<i>Input Impedance - Phono</i>	Adjustable — 50 k Ω (factory setting) 100 Ω , 250 Ω , 500 Ω , 1000 Ω loading resistors supplied. Other values available upon request.
<i>Output Impedance</i>	300 Ω (each phase)
<i>Power Consumption</i>	30 watts
<i>Dimensions</i>	18" W x 11" D x 3-3/4" H (46cm x 28cm x 9.5cm) — Main Unit 10" W x 8" D x 3" H (25cm x 20cm x 7.6cm) — Power Supply
<i>Weight</i>	25 pounds (11.5 kg) — Complete Unit

Trouble

Should the Ayre K-3x preamplifier ever fail to operate properly, please check the following:

Symptom: Remote control not working.

Check the batteries located in the remote control.

Symptom: No sound, and the status indicator is glowing red.

If the AC line voltage drops below 80% of normal (brown-out), the outputs will mute and the indicator light will glow red. After the line voltage returns to normal, the initial power-up cycle will begin again.

Symptom: Status indicator lamp not lit.

Should the AC line lose power, the preamplifier's outputs are immediately muted. This avoids any loudspeaker damage due to "thumps" or "pops".

1) Be sure that the power supply unit is connected to a working AC outlet.

2) Check the AC line fuse.

To check the fuse, locate the rectangular fuse holder mounted on the rear panel of the power supply. Press downwards on the top edge, then pull outward. There are two fuses mounted in the fuse holder. The inner one is the operating fuse, and the outer one is a spare.

The condition of the fuse can be determined by a visual inspection, although an ohm-meter provides a more reliable method. If in doubt, substitute the spare for the operating fuse. If the spare fuse also blows, do not attempt further repairs.

Always use the correct fuse!

Line Voltage Fuse Rating (5 x 20 Time-Delay)

100 V	1 A
120 V	1 A
230 V	500 mA

There are no user-serviceable parts in the Ayre K-3x. If the preamplifier still does not operate, bring the unit to your dealer for assistance.



**Do not remove the power supply cover.
Hazardous voltages may exist inside the unit.**

Statement of

Warranty

*Please take the time to fill out
and return the enclosed
warranty registration card.*

Your Ayre K-3x preamplifier is warranted against defects in workmanship and materials for a period of five years from the date of purchase. This warranty is transferable to subsequent purchasers within the original five-year period. All warranty claims must be made through an authorized Ayre dealer or distributor. A complete statement of warranty is given below.

Warranty Statement

1. Ayre Acoustics, Inc. (Ayre) warrants the materials and workmanship of this product for a period of five years from date of first purchase. If any defects are found in the materials or workmanship of this Ayre product within the warranty period, the unit will be repaired or replaced by Ayre or its authorized agent.
2. Purchaser must return the product, packed in the original shipping carton, freight prepaid to:

Ayre Acoustics, Inc.
2300-B Central Avenue
Boulder, Colorado 80301

3. Ayre reserves the right to inspect any product that is the subject of any warranty claim prior to repairing or replacing it. Final determination of warranty coverage lies solely with Ayre. Out-of-warranty claims will be billed for labor, materials, return freight, and insurance as required. Any product for which a warranty claim is accepted will be returned to the purchaser and the cost of shipping and insurance will be factory prepaid within the boundaries of the USA. Units to be shipped outside of the USA will be shipped freight collect only. This warranty gives specific legal rights. The purchaser also has implied warranty rights, and may also have other rights which vary from state to state.

4. Ayre strives to manufacture the finest possible equipment, and therefore reserves the right to make improvements on its products, without necessarily assuming an obligation to retrofit such changes upon its previously manufactured models.

5. The above warranty is the sole warranty given by Ayre, and is in lieu of all other warranties. All implied warranties, including warranties of merchantability or fitness for any particular purpose shall be strictly limited in duration to five years from the date of original purchase, and upon expiration of the warranty period (five years), Ayre shall have no further obligation of any kind, whether express or implied. Further, Ayre shall in no event be obligated for any incidental or consequential damages as a result of any defect or any warranty claim, whether express or implied. Some states do not allow exclusion or limitations of incidental or consequential damages or limitations on how long implied warranties last, so the above limitation and exclusions may not apply to you.

6. Ayre does not authorize any third party, including any dealer or sales representative to assume any liability of Ayre or make any warranty for Ayre. The unit must not have been altered or improperly serviced. The serial number on the unit must not have been altered or removed.

7. Warranty registration cards must be completed and mailed to Ayre within 30 days of purchase. Ayre may, at its option, require from the purchaser valid proof of purchase (dated copy or photocopy of dealer's original invoice).

A Place for

Notes

Ayre Acoustics, Incorporated
2300-B Central Avenue
Boulder, Colorado 80301
303 442.7300
www.ayre.com