

***Sonographe Owner's Manual:  
SA120 Power Amplifier***

*Congratulations* on your purchase of the Sonographe SA120 FET amplifier. The SA120 is a precision audio amplifier, remarkable for its' musicality. Designed for durability as well as sonic purity, the circuit has been executed with quality componenet parts. Each unit has been carefully hand assembled and subjected to a rigorous quality inspection program.

Please take a few minutes to read this manual so that you will better understand the features and capabilities of your SA120.

## **LIMITED WARRANTY FOR THE SONOGRAPHE SA120**

1. conrad-johnson design, inc. warrants to the original owner that the Sonographe SA120 will be free from defects in material and workmanship for a period of two years from the date of original purchase.

2. conrad-johnson will repair defective units without charge for labor or parts subject to the following conditions:

a) The unit must not have been altered or damaged through misuse, abuse, negligence, accident or improper operation.

b) The purchaser must provide evidence of purchase at the time service is requested.

c) All repairs must be undertaken at the factory or other service center designated by conrad-johnson design, inc. Units submitted for warranty repairs must be shipped in the factory packing carton to conrad-johnson design or its designated service center, freight and insurance prepaid by the owner, and will be returned to the owner, freight and insurance prepaid by conrad-johnson design. Replacement cartons are available from the factory for a nominal charge.

d) Normal wear and maintenance are not covered by this warranty.

3. Where permitted by law, conrad-johnson design's liability shall be limited to that set forth in this warranty. No other warranty of any kind, expressed or implied, is made by conrad-johnson design, inc., and all implied warranties, including merchantability and fitness for a particular "purpose", which exceed the obligations and time limits set forth herein are hereby disclaimed. conrad-johnson design, inc. shall not be liable for incidental or consequential damages. Some states do not allow the exclusion or limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you.

4. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Questions about warranty service should be addressed to:

Service Department  
conrad-johnson design, inc.  
2800 R Dorr Avenue  
Fairfax, VA 22031

## **REGISTERING THE WARRANTY**

Please return the enclosed card to the factory within 30 days of purchase to register the warranty. Proper registration of the warranty is important! It will enable us to inform you of any alterations in the design of a given model and of any new products we offer which are likely to be of interest to you.

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# ***I*NSTALLATION**

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Because the SA120 amplifier dissipates considerable heat it is essential that proper attention be paid to ventilation. The unit should be mounted horizontally on a flat hard surface so that the heat sinks are unobstructed. At least six inches of clearance should be provided above the unit, and at least two inches on the sides. The cabinet or shelf should be open at both front and back. For more restricted installations, cooling fans are recommended.

To minimize hum pickup, keep the unit well away from the preamplifier and turntable and route power cords away from input cables.

**THE SA120 IS TO BE OPERATED ONLY ON AC LINE VOLTAGE OF 108 TO 125 VOLTS.**

The SA120 is also available wired for 100, 220 or 240 volt, 50/60 Hz current.

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## CONNECTION

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**INPUT:** Connect the preamplifier to your SA120 amplifier at the RCA type connections located on the amplifier heat sinks.

**OUTPUT:** Five way binding posts are provided for connection of your loudspeakers, with correct spacing to accept a standard "double banana" plug. They will also accept spade lugs, bare wire, or pin connectors.

The two channels should be connected in correct "relative phase". This means that when the same signal is applied to both channels, the right and left channels speaker diaphragms should move synchronously-in and out together. Terminals on the speakers are usually coded - one designated "C", "earth", "ground", "-" or black, the other designated "+" or red.

"In phase" connection of the speakers can normally be achieved by taking care to connect the wire from the red (+) amplifier terminal marked on each channel to the red or "+" coded terminal on each speaker.

In phase connection of the speakers can be readily ascertained by ear. With the preamplifier mode switched into the MONO position, play a record of a solo vocalist. With the speakers in phase the voice should be clearly focused between the two speakers. With the speakers connected out of phase, the voice will be diffused, with no identifiable source. Relative phase may be reversed by switching the "+" and "-" leads at one speaker only.

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## ***GETTING THE MOST FROM YOUR SONOGRAPHE SA120***

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The Sonographe SA120 offers a remarkable degree of refinement in music reproduction, but it cannot transform an inferior stereo system. Only the very best loudspeaker systems will be capable of fully revealing the capabilities of this precision instrument. On the other hand, the SA120 is capable of revealing faults in the phono system which may not be discernable with an amplifier of lower resolution.

Proper set-up is important in any high-fidelity system. Before installing the SA120, be sure that your phono system has been set up carefully according to manufacturer recommendations. Adjustment of the cartridge vertical tracking angle can be especially critical with modern stylus configurations.

Given a system of high quality components, there remain a number of important details which must be attended to.

### ***ABSOLUTE PHASE***

Musical notes are heard through the ear's response to waves of alternating rise and fall of air pressure. Musical transients are exclusively positive: that is, the initial effect is a rise in pressure. The ear is capable of distinguishing these positive transients from the musically unnatural alternative of a negative transient (an initial fall in air pressure). In your stereo system, these transients are created by your loudspeakers. If the speakers respond to musical transients by first moving out, they are creating a rise in pressure, and the system is said to be "phase correct". If they respond by moving in, they create a fall in pressure and the system is said to be "phase inverting". Each component in the stereo system is either phase correct or phase inverting (including the cartridge and speakers—these are normally phase correct). It is of no consequence if an individual component is phase inverting, as long as the system as a whole is phase correct. This will be the case as long as the number of phase inversions is even (or zero). If your system has an odd number of inversions, then you must add one phase inversion. This is conveniently done by reversing the positive and negative connections on either your cartridge or your speakers (be sure to reverse both channels).

Your Sonographe SA120 is phase correct. If you are not sure about the phase of every component in your system, you can establish correct absolute phase by careful listening. When the system is in correct phase, transients will be noticeably cleaner and more sharply defined. The effect is especially apparent on plucked string sounds. A final warning-not all records are phase correct (including some "audiophile" recordings), so listen to several before concluding your investigation of absolute phase.

### ***THE IMPORTANCE OF WIRES***

Interconnect and speaker wires are an important element in your stereo system. Interconnects are available which will permit your system to blossom and fulfill its promise of musical reality. Others will strangle the system to the point where it becomes no better than average. To complicate matters, our experience suggests that the choice of interconnects will be system dependent-those that are ranked first on a given system may be a poor choice for a different system. Consult your Sonographe dealer for recommendations for your specific system.

### **QUESTIONS?**

If you have any questions about the installation or function of your SA120 do not hesitate to call the conrad-johnson group's Customer Service at (703) 698- 8581.

## **SPECIFICATIONS:**

**Power:** 120 watts per channel RMS both channels driven into 8 ohms from 20Hz to 20KHz with no more than 1% total harmonic distortion or intermodulation distortion.

**Sensitivity:** 1.1V to rated power.

**Phase:** Phase correct (non-inverting)

**Frequency response:** 20Hz to 20KHz +0, -.25dB

**Hum and noise:** 90dB below full power output.

**Input impedance:** 100K ohms.

**Dimensions:** 16.75D x 19W x 5.25H inches.

**Weight:** 40 lbs.

**Fuses:** The AC line fuse is user replaceable on the SA120. It is a type 3AG 7 amp slow-blow (5 amp slow-blow for 220 or 240V operation). **NEVER REPLACE THE FUSE WITH A TYPE OR VALUE DIFFERENT FROM THAT ORIGINALLY SUPPLIED BY THE FACTORY.** If the fuse blows repeatedly, contact your dealer, or the Conrad-Johnson group service department.

## **SERVICE**

In the event your Sonographe SA120 stereo amplifier requires service, repack it with the original packing material and ship via United Parcel Service (UPS) to:

conrad-johnson design, inc.  
Service Department  
2800R Dorr Avenue  
Fairfax, VA 22031

Be sure to enclose a note explaining the problem you are having in as much detail as possible. If the problem is intermittent, please indicate. If you do not have the original packing material, replacements are available from conrad-johnson design at a nominal charge. If the unit is under warranty, be sure to enclose a copy of your receipt as proof of purchase.