CODA TECHNOLOGIES INC.

Preamplifier 07x

OPERATION MANUAL

CAUTION

WARNING

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

THIS SYMBOL IS TO ALERT YOU OF THE PRESENCE OF UNINSULATED DANGEROUS VOLTAGE WITHIN THE UNIT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.

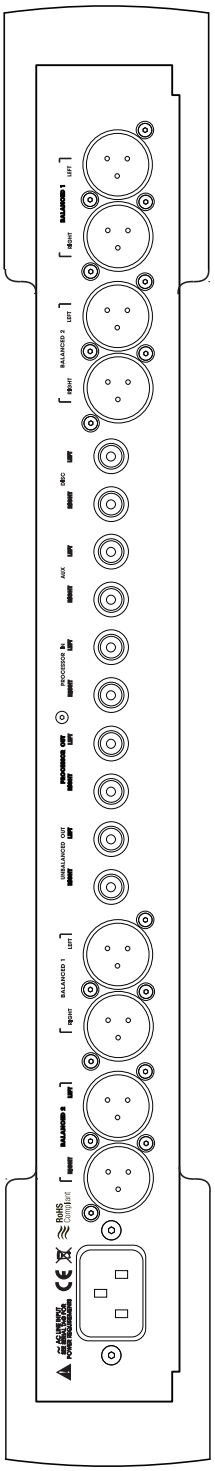
THIS SYMBOL IS INTENDED TO ALERT YOU OF THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE UNIT.

WARNING:TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. TO AVOID ELECTRICAL SHOCK, DO NOT OPEN THE UNIT. REFER SERVICING TO QUALIFIED PERSONNEL.

CAUTION -

- Never install or remove the power cord from the chassis unless it has been disconnected from the AC power source first.
- Never pull on the power cord when removing it from an AC power source. Grasp it by the plug.
- Do not leave the power cord connected to an AC power source unless it is connected to the unit.
- It is recommend that during extended periods of non-use that the units power cord be unplugged from its AC power source.
- Route the AC power cord so that it will not be damaged or walked on.

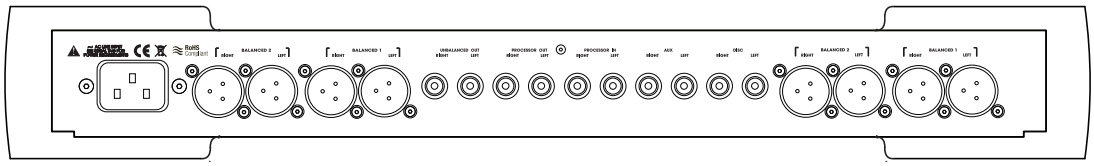
This preamplifier is a precision device, designed in an effort to provide the listener with unmatched sound quality, design, and construction. In order to operate your preamplifier properly and to realize all of the capabilities of the 07X PREAMPLIFIER we recommend that you read this entire manual carefully.



Illustrated below is the rear panel of the 07X. The connections are standard and typical of any audio preamplifier. Any unknown features should be adequately explained by the function descriptions on the following page.

Both sets of balanced receptacles on the left side are identical stereo outputs suitable for connection to multiple amplifiers. The two sets of balanced receptacles on the right side are separate input channels.

Make sure during installation that the AC power connections are interrupted to the preamplifier and all other components are off. While the diagram may be self explanatory, we strongly recommend that you read the front panel description on the following page for use instructions.



1. The first four buttons select the input source.

2. The PROCESSOR button switches in an audio processor (surround sound, equalizer, etc.)

3. The MONO button combines the left and right audio channels.

4. The BYPASS button will cause the gain to drop to unity, bypassing the normal 12dB standard gain of the 07x.

5. Volume and balance setting is indicated by the decibel (dB) display.

FOR VOLUME ADJUSTMENT: The volume display shows "relative" volume level. When the display reads "99" there is no decibel attenuation, "00" is the maximum decibel attenuation, and level changes occur in 1dB increments.

FOR BALANCE ADJUSTMENT: In the window next to the number display are three indicator LEDs, MAIN, LEFT, and RIGHT. In the MAIN mode (blue LED) the display readout shows volume level. In the LEFT mode (white LED) the display readout shows left balance level. In the RIGHT mode (red LED) the display readout shows right balance level. In addition the display will flash on and o when the volume is muted.

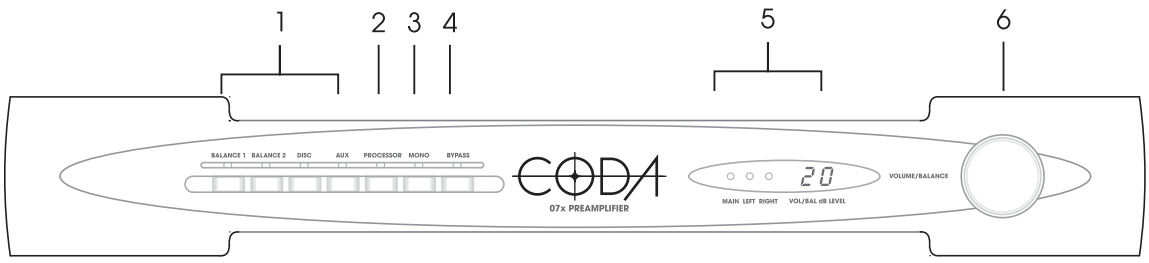
When adjusting individual channel level for balancing purposes, the display shows "actual" decibel level. In other words, the default value of "0" on the LEFT or RIGHT channel mode, shows that the channel is not attenuated. A value of "99" shows the channel is -99 db below full volume.

6. The VOLUME/BALANCE is controlled by the optical encoder control . Clockwise rotation increases level, counter clockwise rotation decreases level. Left balance is selected by pressing the knob once, and adjusting the level. Right balance is made by pressing the knob again, and adjusting the level. Pressing the knob once again will bring it back to being a volume control.

7. To adjust the GAIN of each input (to match the levels of all the components in the system), press and hold its selector button while you press the volume knob - then release them both. The display will switch to "00" and the selected input light will flash.

Turn the volume knob clockwise to raise the input gain up to +18db or turn counter clockwise to reduce the input level up to -99 db (note that the signs "-"or "+" are not displayed).

To switch back to MAIN, press any button or the knob, or wait fifteen seconds.



REMOTE OPERATION

The 07x can be operated by remote control. The MX-450 Learning Remote is included with the amplifier. For instructions on using the MX-450 itself see the on screen manual included in the remote.

The circuitry used in the FET PREAMPLIFIER 07x is the result of an advanced and complete design process combining innovation and prove fundamentals. This process avoids both the limitations of total adherence to convention and the flaws resulting from inappropriate applications of clever circuit gimmicks.

Impedance isolation and matching is derived from FETs. While careful design can yield good results from any device type, FETs consistently have the edge in voltage gain, low noise, low interaction, and interface applications.

FETs are inherently transconductance devices, meaning that an input voltage controls an output current. Unlike conventional transistors, FETs have extremely high input impedance (about 10 meg ohm - similar to vacuum tubes). The FET "senses" the audio signal without drawing current from the source. This eliminates complex interactions with the source, allows maximum performance from each system element, and greatly reduces the chance of cable characteristics altering the sound. The absence of input current in FETs allows high bias currents for linearity and speed without sacricing DC parameters.

Noise is kept low by multiple paralleling of input devices, careful selection of circuit impedances, and pre-screening of devices. The Class A complimentary followers used to drive the preamplifier output are of such speed, linearity, and low output impedance that no feedback correction is required or used. The advantage of this is that the circuit's perfect stability and transient response are preserved into a wide range of dicult and unpredictable loads. Variation in sound, which could occur through interactions with interconnect cables and other system elements are thus avoided.

Until recently, perfect volume controls (attenuators) did not exist. This is because conventional stereo potentiometers have serious channel mistracking (20% typically), become noisy with age, wear out, and have poor resolution of level - particularly when operated by a motor as required for remote operation. In an attempt to solve these problems, many manufacturers have been using "switched attenuators", which are discrete, resistor ladders built on rotary switches. But while these eliminate channel mistracking, they introduce new problems, including limited resolution, stepping transients, and cannot be operated remotely. And they still wear out.

They limit resolution because the most contacts available on rotary switches are thirty-one. This requires two or three dB steps in order to get enough range out of the attenuator, which isn't a fine enough resolution for most listeners. Switched attenuators also introduce switching transients (a "click" or "pop") each time they change positions.

This noise comes from two sources. The first is mechanical noise from the switch itself as its ball-detent mechanism moves from detent to detent. But a more troublesome source is the voltage difference caused by the change in the musical waveform during the time it takes the switch to move from one position to the next. The greater the voltage difference, the louder the transient.

1. Finishes - All exterior and interior metal parts are anodized. While paint may be more impact resistant, the anodized surface is more resistant to solvents and prevents corrosion. Moreover, the anodized parts' appearance can be enhanced by either graining or bead-blasting the surface.

2. Circuit Board - Circuit boards are fiberglass epoxy with gold plating over a tin/nickel barrier. This gold layer will not corrode, while the barrier plate prevents the gold from migrating to the lower copper layer and detracting from its appearance.

3. Resistors - All are high reliability metal film 1% resistors.

4. Capacitors - All capacitors are of high quality. The only electrolytics used are in the power supply where large numbers provide enormous filtering capacitance for the supply.

5. Semiconductors - There are no integrated circuits (IC) to be found in the circuit path. Very high quality dual FETs are the only source of voltage gain and were selected for their superb noise performance and precision matching. The remaining semiconductors are also of very high quality, each possessing parameters ideally suited for the specific application.

6. Connectors - Coda employs a standard RCA configuration with a gold plated case. The balanced connectors are Neutriks from Switzerland.

7. Wire - All signal wire has been eliminated whenever possible. Where wire is used, Coda employs silver plated copper, 141 strand, 18 gauge wire with a silicone insulation.

Frequency Response:
-3dB @ 5Hz to 200kHz

Distortion:
<.005% from 10Hz to 40kHz @ 5V peak into 600 ohms or higher, shunted by 1000pF or less.

Gain:
12dB plus 0-18dB variable per input in 1dB steps. Unity gain when Bypass feature is enabled.

Maximum Output:
10V peak

Noise:
<110dBA referenced to 1V output

Input Impedance:
20 kOhms balanced or unbalanced

Output Impedance:
50 Ohms non-reactive unbalanced
100 Ohms non-reactive balanced

Crosstalk:
90dB @ 20kHz

Power Supply Specifications:
Regulated supply with shielded toroidal transformer and 19,800uF of low-ESR capacitance and capacitors smoothing the regulator outputs.

Dimensions:

Height:	2.5” Faceplate, 2.85” Overall
Width:	18” Faceplate, 17.0” Chassis
Depth:	9.75” Overall
Weight:	14.0 lbs Shipping
Power Consumption:	10 Watts

The interior of the unit requires no special care. If it becomes necessary to clean the exterior, a simple dusting may be all that is required. If a cleaner is necessary, any dilute commercial ammonia based product will be appropriate. NEVER use any abrasive rags, cleaners or chemical solvents on Coda products.

When handling the unit, take care not to mar the aluminum. Aluminum is a medium hardness metal and can be scratched by the harder tool steels.

Avoid exposing the unit to direct sunlight, and keep it away from sources of intense heat.

Do not throw away the carton or associated packing material. They are ideal if you need to pack the unit for moving and in the unlikely event that servicing is needed, they will be necessary for safe shipment.

Be sure to provide adequate insurance when shipping.

I. Warranty - Any failure of the Coda product, hereafter known as the product or original product, to operate or to meet specifications, applicable at time of manufacture, due to a manufacturing defect or component failure, will be corrected by Coda Technologies without charge for parts or labor, for a period of ten years from date of original purchase. Coda Technologies will provide for surface transportation to and from the factory for a period of one year from date of original purchase.

II. Procedure - If the product should require service under warranty contact Coda Technologies at the location on the back cover of this manual for shipping instructions. Products purchased outside of the United States will be covered by the warranty conditions extended by the importing distributor which may differ from those given above.

III. Exclusion of Coverage - Coda Technologies is not obligated to service the product in certain conditions, as according to the following subsections.

a. The product has been damaged through:
    i. operation not in accordance with the instructions in this manual
    ii. abuse, tampering, modification or accident
    iii. serial number defacement

B. The product has been transferred to a third party. In this case the warranty
I is valid for 5 years from date of manufacture as determined from the serial number

c. The product has been transported outside of the United States of America.

In these conditions any service will be made at Coda Technologies sole option.

IV. Total Loss and Replacement - If the product is submitted for service due to a severe malfunction which has caused damage sufficient enough to make a repair attempt infeasible, the product will be replaced with another unit of equal or superior specifications. Coda Technologies product line is frequently updated and changed, and the specific model and version of the original product may be discontinued at any time without notice. In this case no guarantees are made that the replacement unit will be visually similar to the original product.

V. Subjective Differences - No guarantee is made that the product will perform to any specifications that cannot be measured and confirmed with precision audio analysis equipment. Coda Technologies is only obligated to make repairs which will bring the product into compliance with the specifications stated in this manual.

VI. Unnecessary Service - In all conditions, if the product is submitted for service and found to be operated without fault and within specifications, shipping charges will be billed to the customer.

This warranty gives you specific legal rights. You may have other rights which vary from state to state.

Disclaimer - Coda Technologies cannot be held responsible for any damage caused by their products, including but not limited to:

a. Damage to speakers caused by failure of a Coda Technologies product to mute or disable itself as expected or described in its manual.

b. Damage caused by connecting a load to a Coda Technologies product having an improper impedance as described in the products manual.

c. Damage caused by defects in design, construction or component quality.

Fill in this registration sheet and fax or mail it to Coda Technologies to ensure you are in our warranty system. This will facilitate warranty service should it become necessary.

It is recommended that you retain a copy of this form for your own records. Coda Technologies' address and fax number are located on the back of this manual.

MODEL DESIGNATION: _____

SERIAL NUMBER: _____

DATE OF PURCHASE: _____

PLACE OF PURCHASE

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

OWNER INFORMATION

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

NOTES: _____

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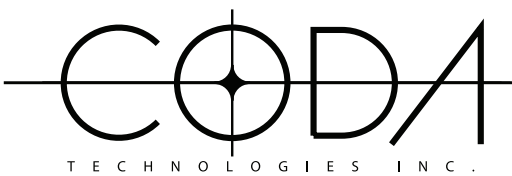

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