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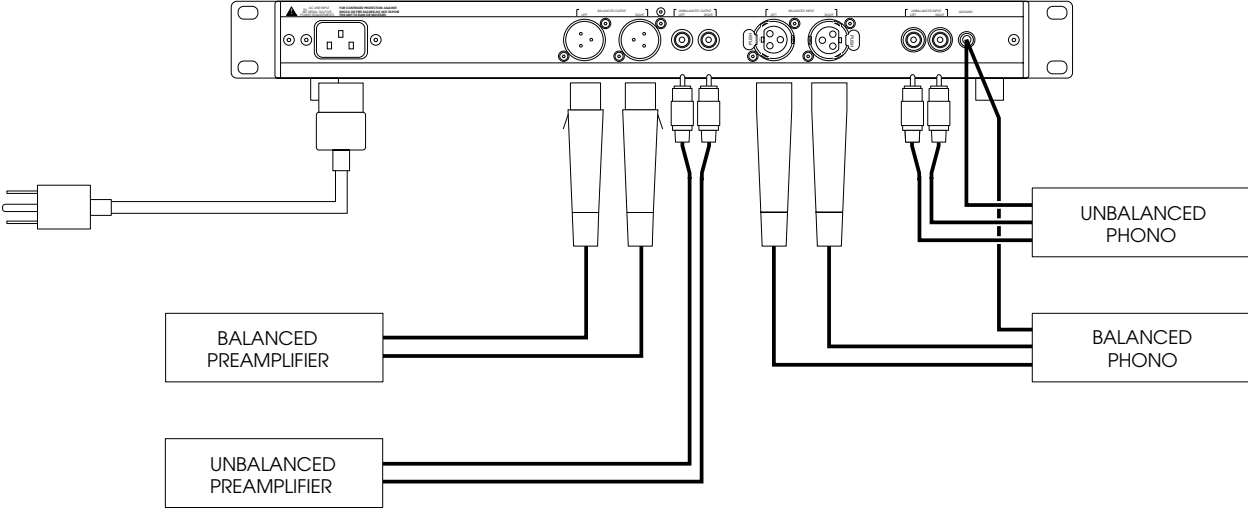
CAUTION		
	WARNING	
CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE , REFER SERVICING TO QUALIFIED SERVICE PERSONNEL .		
	THIS SYMBOL IS TO ALERT YOU OF THE PRESENCE OF UNINSULATED DANGEROUS VOLTAGE WITHIN THE UNIT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE 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 nonuse 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 is a precision device, designed in an effort to provide the listener with unmatched sound quality, design, and construction. In order to operate your FET Phono Preamplifier 03p properly and to realize all of its capacities, we recommend that you read this entire manual carefully.

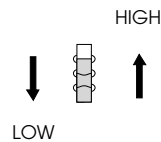
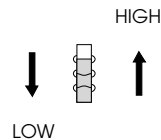
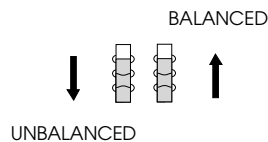
The first section of the installation instructions for the FET Phono Preamp 03p is a diagram of the basic configuration required to bring the preamp into an operating mode. These brief steps will allow you to begin operating your system. Make sure during installation that all other components are off, and AC power connections are interrupted to the phono preamp. While the diagram may be self explanatory, we strongly recommend that you read the detailed instructions following this introductory section.



I. Set up and Installation

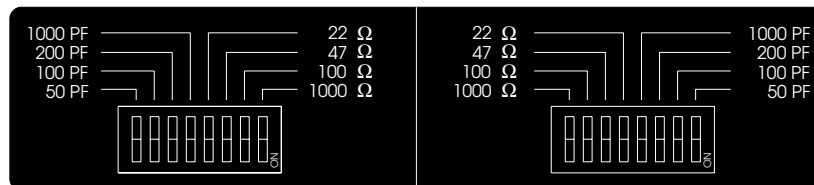
WARNING: NEVER OPERATE THIS UNIT WITH THE TOP COVER REMOVED. NEVER MAKE ANY INTERNAL ADJUSTMENTS WHILE THIS UNIT IS CONNECTED TO AN AC POWER SOURCE.

1. Prior to installing the unit, you may select balanced or unbalanced inputs as well as set gain and loading for each channel. With the unit unplugged, remove the cover using the supplied Allen key. The default input is "Unbalanced" and the default gain is "Low", such as would be used with a high output Moving Coil or a Moving Magnet cartridge. The "High" setting will provide an additional 20dB of gain, if necessary, for lower output cartridges.



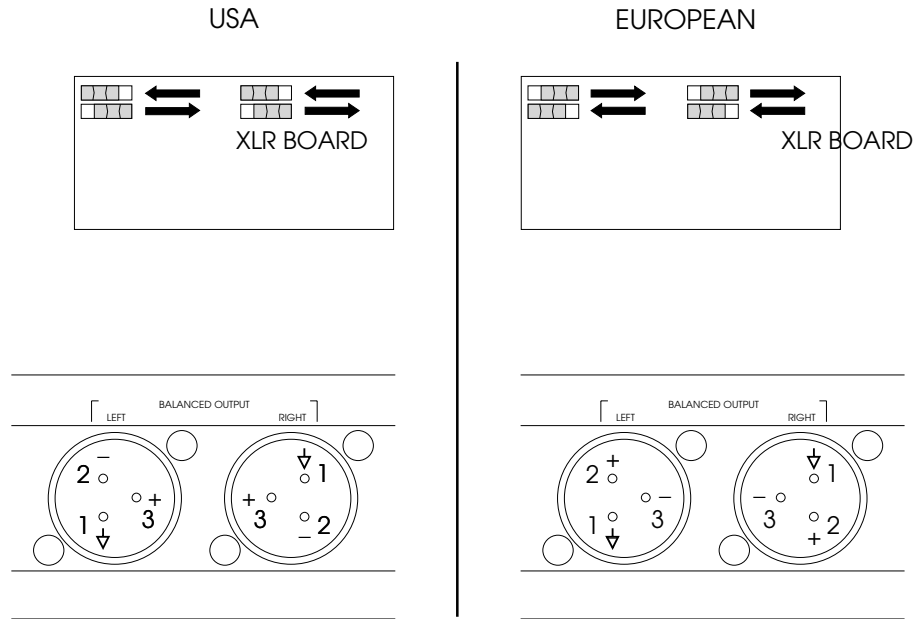
2. In order to set the input loading, it will be necessary to toggle the DIP switches which are located on the main board of the preamplifier. Each one of these switches connects a resistor or capacitor in parallel with the input and so adjusts the load value. The default values are 47K ohm and 50pF. Refer to the diagram below, which is repeated inside the unit, to determine the values which need to be switched in for your cartridge. Replace the cover after setting the switches.

3. The balanced outputs are equipped with switchable phasing due to differences in the




USA/EUROPEAN standards . The default setting is EUROPEAN but may be switched according to the following diagram .

Note: These switches may also be used for selecting absolute phase .



4. Position the FET Phono Preamplifier 03p in the space which you have chosen, leaving enough space to connect the ancillary components of your audio system, and the AC power cord for the preamplifier. Although this unit has the ability to reject external fields that produce system noise, it is recommended that the unit not be placed near any sources of strong electromagnetic energy.

5. Before installing the preamplifier make sure all of the power switches of any associated components are switched off. If any of your other audio components do not have power switches, make sure they are unplugged from their AC power source.

 **Note:** The Operating Voltage of the FET Phono Preamplifier 03p is convertable in order that it may be used worldwide. Contact your dealer to arrange altering the operating voltage.

II. Source-Output, and Power Connections

The input and output connectors are clearly marked on the rear lip of the top cover. It is important to remember the correct left or right channel orientation. The function and channel markings on the rear panel correspond to the front panel controls and their signal paths.

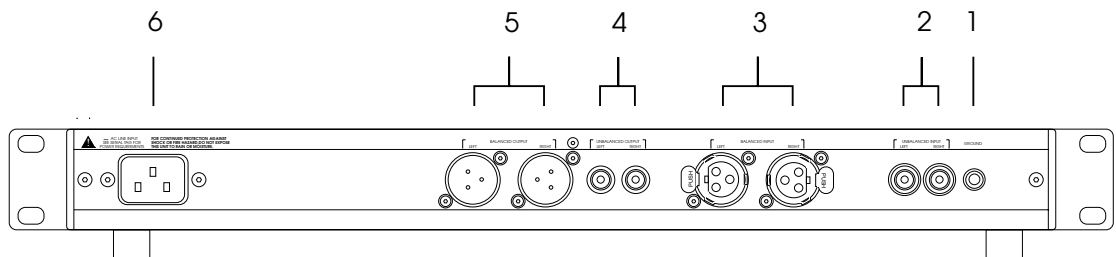
They are:

- 1.The GROUND post should be attached to the ground wire from a turntable.
- 2.The UNBALANCED INPUT should be attached to the unbalanced outputs of a turntable.
- 3.The BALANCED INPUT should be attached to the balanced outputs of a turntable.

NOTE: DO NOT USE BOTH BALANCED AND UNBALANCED INPUTS AT THE SAME TIME.

- 4.The UNBALANCED OUTPUT should be attached to the line level unbalanced inputs of a preamplifier.
- 5.The BALANCED OUTPUT should be attached to the line level balanced inputs of a preamplifier.

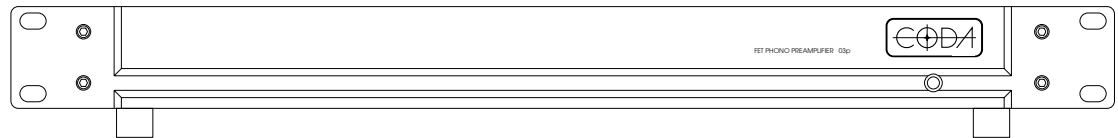
6.The AC LINE INPUT should be attached to the power cable provided. After making the appropriate connections insert the three prong safety plug into an appropriate AC power source. Once the FET Phono Preamplifier 03p is properly connected, the LED on the front panel will light. At this point, you may switch on your chosen ancillary components including the preamplifier and power amplifier.



III. Front Panel

There are no front panel controls. All controls are inside and are to be selected prior to operation (see pages 4 and 5). The only function on the front panel is a power indicator LED.

Caution: If a power interruption occurs to the system, reduce the output level control of your preamplifier. The resumption of power may produce high output voltages on turn on, which may cause damage to a preamplifier, amplifier or speakers .



I. Design Philosophy and Approach

The circuitry utilized in your FET Phono Preamplifier 03p is the result of an advanced and complete design process combining innovation and proven fundamentals. This process avoids both the limitations of total adherence to convention and the flaws resulting from inappropriate application of clever circuit gimmicks. Our approach demands painstaking consideration of every facet of each design choice regardless of how small. Analytical, as well as subjective techniques are all applied in an open-minded fashion with “no compromise” musical perfection as the goal. The resulting refinement of the product escapes simple explanation. With this in mind, we present here a few design highlights and concepts.

Primary voltage gain is derived from FETs. While careful design can yield good results from any device type, FETs consistently seem to have the edge in voltage gain and interface applications. This is borne out by superior sonic qualities observed in subjective testing. FETs are inherently transconductance devices, meaning that an input voltage controls an output current. In other words, it “senses” the audio signal without drawing current from the source to provide an output. This eliminates complex interactions with the source allowing maximum performance from each system element and greatly reducing the chance of cable characteristics altering the sound. The absence of input current in FETs also allows high bias currents for linearity and speed without sacrificing DC parameters.

While excellent capacitors for coupling use exist, there can be no doubt that a signal path free of coupling caps yields the best possible signal integrity. The DC stability of the circuit eliminates the need for any questionable DC servo circuits or input or output coupling capacitors. We make no AC compromises for DC performance, however. Our key design choices provide not only inherent DC stability, but also optimized AC performance throughout the audio region and well beyond. These choices include the use of top quality dual FETs in differential configurations. Because the signal in these stages is handled in a balanced manner, rejection of unwanted noise and modulation from external sources is extremely high. This rejection extends even to noise which may originate within the circuit from support circuitry such as current sources. Stray RF signals are also rejected well.

Since the necessary equalization requires the use of capacitors, we use only high grade film types. These and other equalization components were carefully chosen to maintain response to within .2db of RIAA standard. An additional subsonic rolloff at 14 Hz serves to reduce IM Distortion.

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 preamp 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 difficult and unpredictable loads. Variation in sound which could occur through interactions with interconnect cables and other system

elements are thus avoided. A simple, very high performance inverter provides a fully balanced output on the phono preamplifier which allows the user to take advantage of the balanced inputs on many preamplifiers. The most commonly acknowledged advantage of this is rejection of stray noise pickup, but improvements in distortion and bandwidth may occur also.

The requirements of a power supply for flawless audio reproduction are straightforward but important. The supplies in the FET Phono Preamplifier 03p take a very direct approach to high performance. First, a top quality shielded toroid transformer with plenty of reserve current capability is used. The shielding eliminates strong fields which could induce hum into sensitive circuitry. About 25,000 uF of capacitance with very low ESR and inductance provides good passive filtering. A reference voltage is developed by delivering a constant current to zener diodes. The resulting voltage is heavily filtered and delivered to each stage through independent class A followers which completely decouples the stages. The resulting non-reactive low impedance over an extremely wide bandwidth yields a perfect power source for the individual circuits. The simplicity and absolute stability of the supplies removes the chance of unpredictable interactions which may occur with the more elaborate, high feedback circuitry often used.

Most companies in the upper end of the audio industry use either sheet metal or formed aluminum. By contrast, the FET Phono Preamplifier 03p has all structural parts made of machined extruded aluminum. The advantage of this over an all stamped chassis is that the machined metal can be worked more precisely allowing us to work on tighter tolerances and use PC mounted parts more easily. Moreover such a design allows easier servicing either for repair or for future upgrading. From the standpoint of appearance, a machined surface can be contoured in a far more precise manner, giving the final product a more seamless appearance.

II. Parts' Quality

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 Boards - 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 have been eliminated where possible on the basis that "no cap is better than the best cap." Where they are used in the active part of the circuitry, they are high quality film caps. 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 this product. Very high quality dual FETs are used for 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 output connectors are Neutriks from Switzerland. These are black chrome finished with gold contacts.

8. 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.

CIRCUIT SPECIFICATIONS

Frequency Response:	+/- .2 dB of RIAA with subsonic roll off @ 14 Hz
Distortion:	< .01 % from 20 Hz to 20 kHz @ 3Volts peak into 600 ohms or higher , shunted by 1000 pf or less .
Gain:	with unbalanced in and unbalanced out 37 dB @ 1 kHz with balanced in and unbalanced out 37 dB @ 1 kHz with unbalanced in and balanced out 46 dB @ 1 kHz with balanced in and balanced out 46 dB @ 1 kHz An internal switch can increase gain 20 dB
Maximum Output:	12 Volts peak
Noise:	> 87 dB referenced to 1 Volt output
Input Capacitance:	100 pF to 1000 pF
Input Impedance:	22 Ohms to 47 k Ohms
Output Impedance:	75 ohms non-reactive unbalanced 150 ohms non-reactive balanced
Crosstalk:	70 dB @ 20 kHz

POWER SUPPLY

Independently regulated with shielded toroidal transformer and 25,000 uF of capacitance

DIMENSIONS

Height:	1.75" Faceplate, 2.35" Overall
Width:	19.0" Faceplate, 17.0" Chassis
Depth:	9.75" Overall
Weight:	14 lbs. Shipping
Power Consumption:	10 Watts

The interior of the unit requires no special care, due to the use of sealed controls and gold plating on contacts. 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 the preamp.

When removing the cover to set the loading switches or otherwise 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.

If you wish to rack mount your FET Phono Preamp 03P, it is advised to place nylon washers under the heads of the mounting screws to avoid scratching the anodized finish.

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 FET Phono Preamplifier 03p 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 Inc. without charge for parts, or labor for a period of **ten years** from date of original purchase. Coda Technologies, Inc. will provide for surface transportation to and from the factory from an authorized Coda Technologies, Inc. dealer for a period of one year from date of purchase.

II. Procedure- **If the FET Phono Preamplifier 03p should require service under warranty, take it with proof of purchase date, with its carton and packing material, to a Coda Technologies, Inc. dealer.** The dealer will arrange for service. Direct shipments to the factory will be accepted at the discretion of the company. Coda Technologies, Inc. products purchased outside of the U.S. will be covered by those warranty conditions extended by the importing distributor which may differ in some respects from those given above. Warranty service, if required, is the responsibility of the importing distributor. If a Coda Technologies, Inc. product is removed from the country of original purchase, Coda Technologies, Inc. distributors or dealers are not obligated by the conditions of this warranty and repairs will be affected at their discretion.

III. Exclusion of Coverage- At the sole opinion of Coda Technologies, Inc. the following situations are specifically excluded from coverage:

1. Any FET Phono Preamplifier 03p not operated in accordance with the instructions contained in this manual, or otherwise subjected to abuse, tampering, modification, accidental damage, or serial number defacement.
2. Damage to other property caused by any defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss, or any other damage whether incidental, consequential, or otherwise.
3. It is Coda Technologies, Inc. policy to extend coverage when reasonable doubt exist; however, freight charges will be billed for any units returned under warranty and found by the company to be operating according to specification.

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

Coda Technologies, Inc. continually researches new techniques, designs, and construction methods and so reserves the right to introduce refinements into current product lines without notice or obligation. The company may offer product modifications to make these refinements available to earlier production units.

Fill in and retain this copy of the warranty registration sheet for your records .

MODEL DESIGNATION: _____

SERIAL NUMBER: _____

DATE OF PURCHASE:

PLACE OF PURCHASE

Dealer: _____

Address: _____

City: _____ State: ____ Zip: _____

Phone: _____

PURCHASER

Name: _____

Address: _____

City: _____ State: ____ Zip: _____

Phone: _____

NOTES: _____

Please fill in and send this copy of the warranty registration sheet to Coda Technologies, Inc. Include copy of proof of purchase.

MODEL DESIGNATION: _____

SERIAL NUMBER: _____

DATE OF PURCHASE: _____

PLACE OF PURCHASE

Dealer: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

PURCHASER

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

NOTES: _____

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