

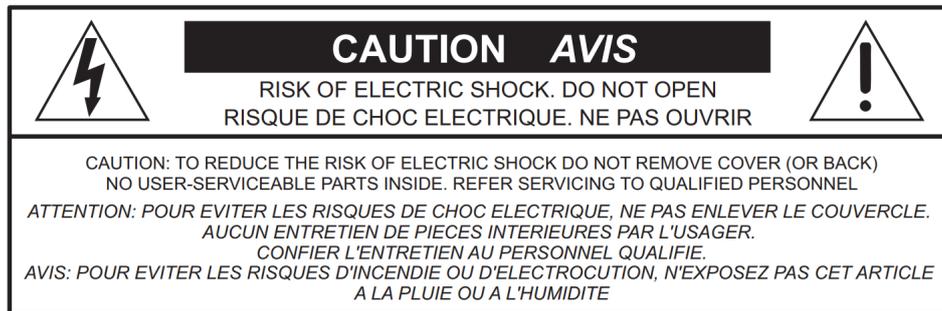
WAX

Précision 04

Owner's Manual

Important Safety Instructions

WAXP04



- 1) Read these instructions
- 2) Keep these instructions
- 3) Heed all warnings
- 4) Follow all instructions
- 5) Do not use this apparatus near water
- 6) Clean only with dry cloth
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized 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 are provided for your safety. If the plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as powersupply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 15) This apparatus shall not be exposed to dripping or splashing, and no object filled with liquids, such as vases, shall be placed on the apparatus.
- 16) This apparatus has been designed with Class-I construction and must be connected to a mains socket outlet with a protective earthing connection.
- 17) This apparatus has been equipped with a rocker-style AC mains power switch. This switch is located on the Power Supply Unit and should remain readily accessible to the user.



Avoid direct exposure to sunlight or temperatures inferior to 0°C, superior to 40°C

WARNING — To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



Correct disposal of this product. This symbol indicates that this product should not be disposed of with your household waste, according to the WEEE Directive (2002/96/EC) and your national law. This product should be handed over to an authorized collection site for recycling waste electrical and electronic equipment (EEE). Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste authority, or your household waste disposal service.

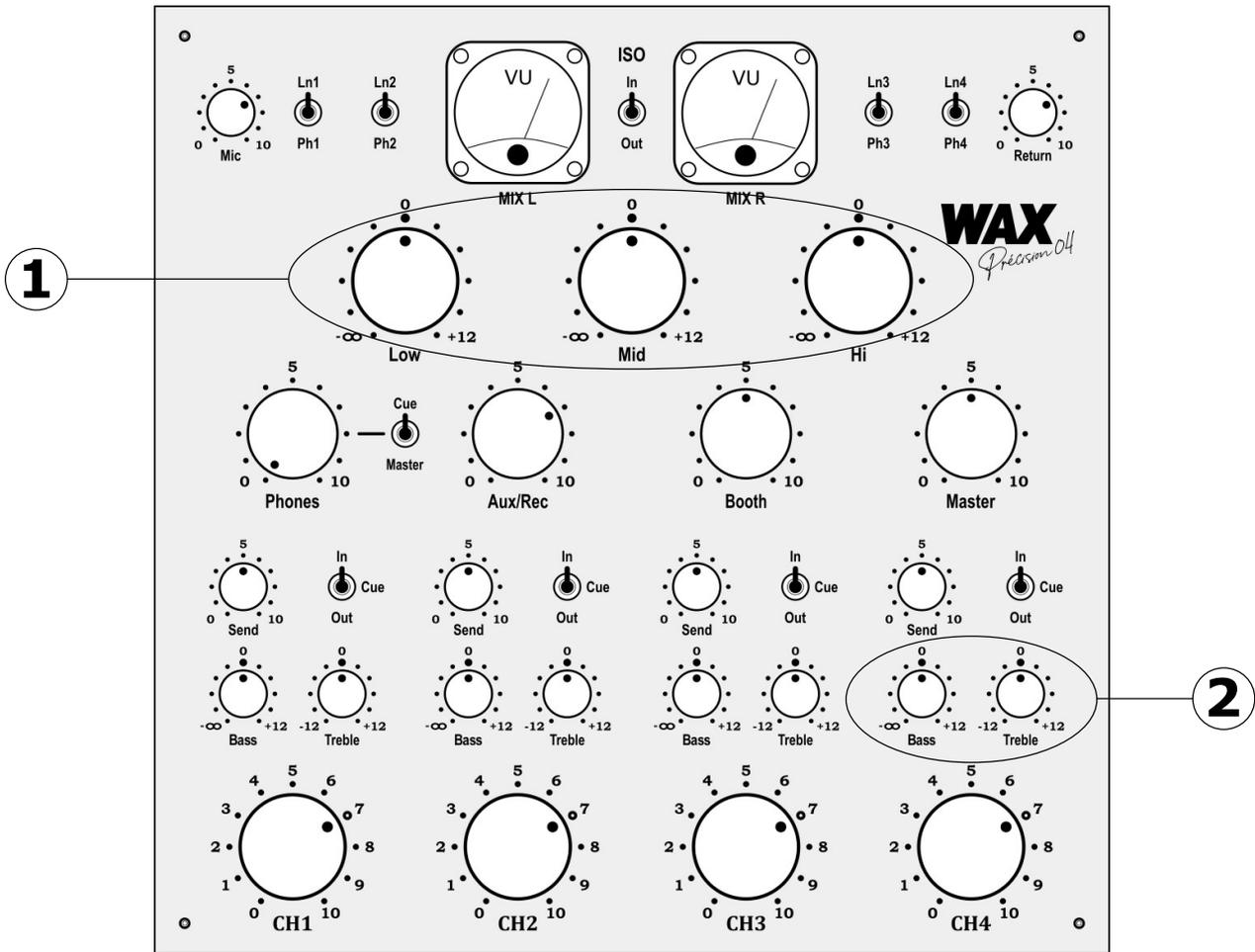


Features:

- 4 Precision Phono preamplifiers
- 3 level adjustable outputs + Phones
- FX send/return per channel
- Independant Mic input
- Asymmetric tone controls
- Phase matched, Linkwitz-Riley Master isolator
- Low noise, low distortion, low impedance design throughout
- Smart power/signal current management on 4 layer boards
- Handpicked ALPS RK27 potentiometers and polypropylene/polystyrene capacitors
- High quality MIYAMA Japan switches
- External low noise linear Power Supply
- Buffered VU metering
- Clean, intuitive layout and rock solid build quality
- Industrial laser engraved anodized aluminium panels, will not wear off
- AW-6061 aluminium knobs
- In depth testing of each stage on every unit
- Travel Case

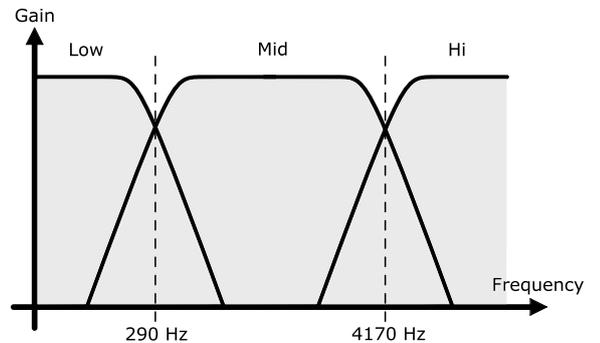
Unity Gain Settings:

0 VU = +4 dBu



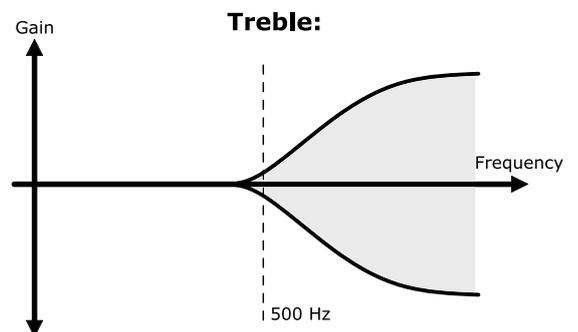
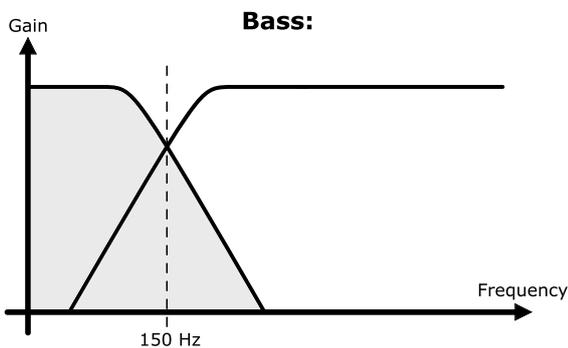
1) Master Isolator:

This powerful, 'filter-esque' Linkwitz-Riley 24 dB/octave crossover provides precise level control over the frequency bands and allows the most demanding artistic cuts/boosts. The three bands will remain in phase at all times and will sum perfectly flat when set to unity gain (the ISO in/out switch guarantees quick, noiseless unity gain recall).

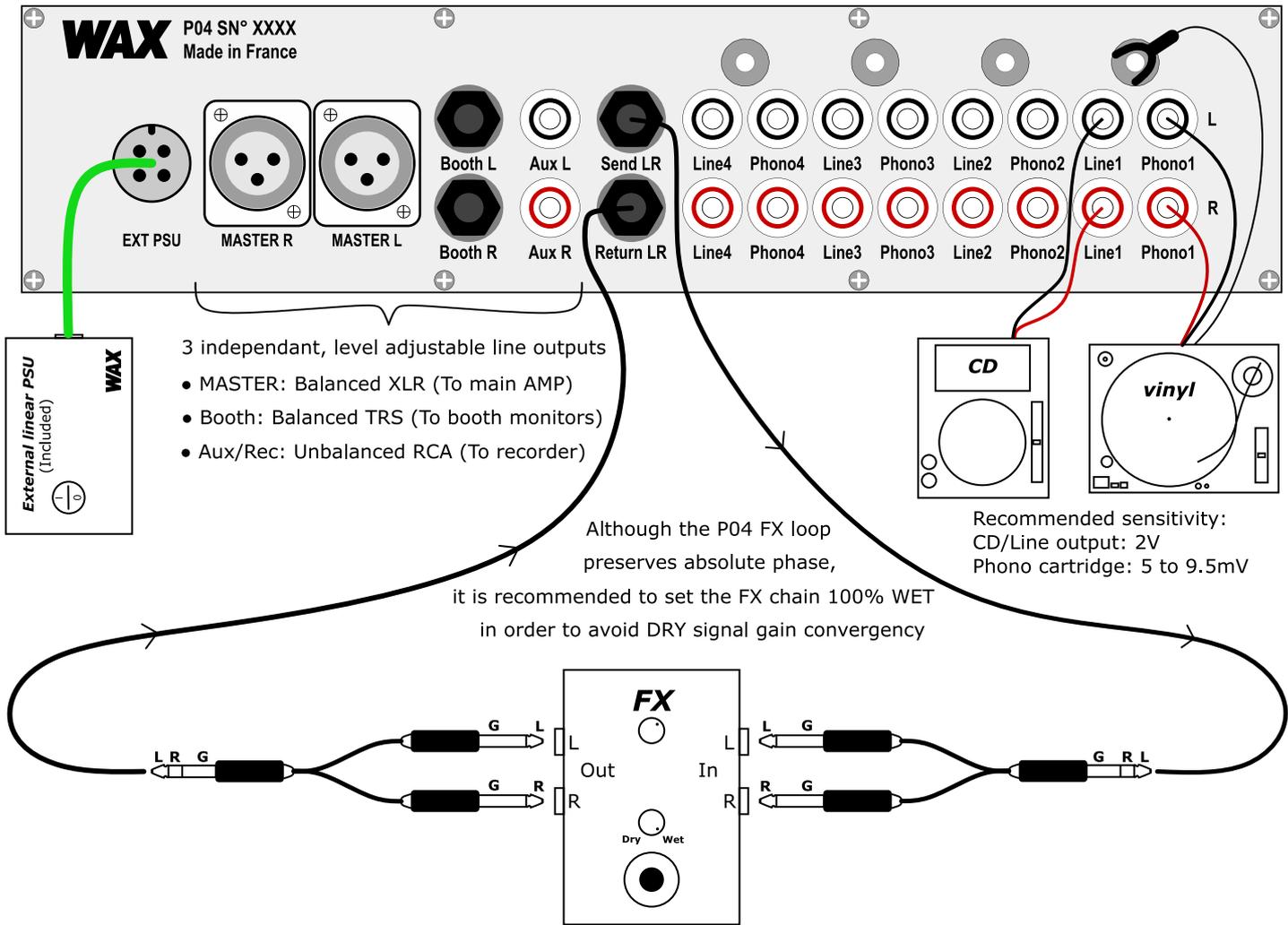


2) Channel EQ:

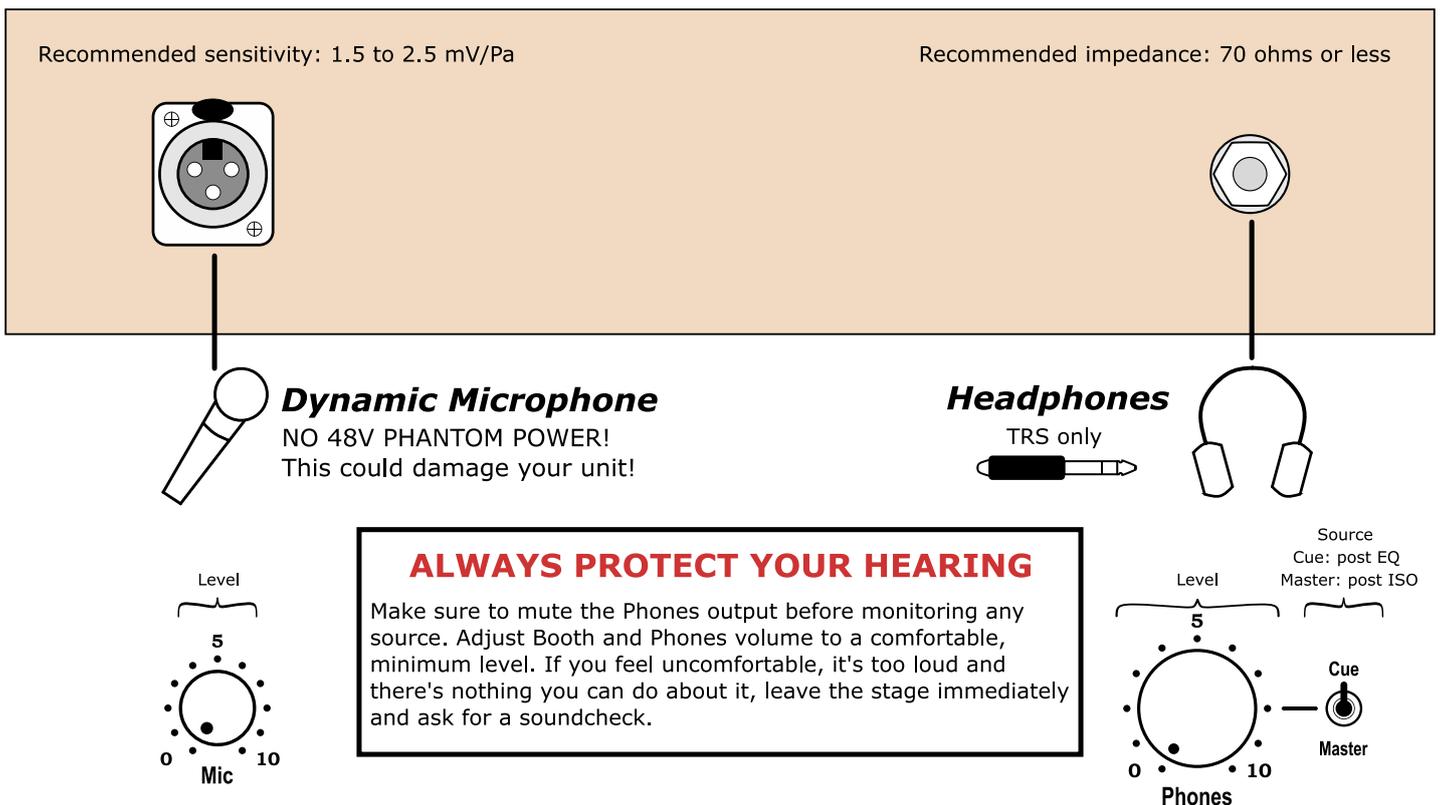
At 12 dB/octave, the Bass channel isolator is more subtle. Combined with the Treble shelving EQ, it will easily rectify a poor pressing. This asymmetric approach allows much deeper cuts at lower frequencies compared to a standard dual Baxandall design, while preserving a smooth, polished HF correction. Meticulous selection of components and accurate gain staging deliver organic EQing, even at full boost. Just like the Master ISO, the Channel EQ is completely transparent at unity gain. Their noise contribution and distortion are on par with our state-of-the-art test equipment noise floor.



Rear panel connections:



Front connections:



Quick Start:

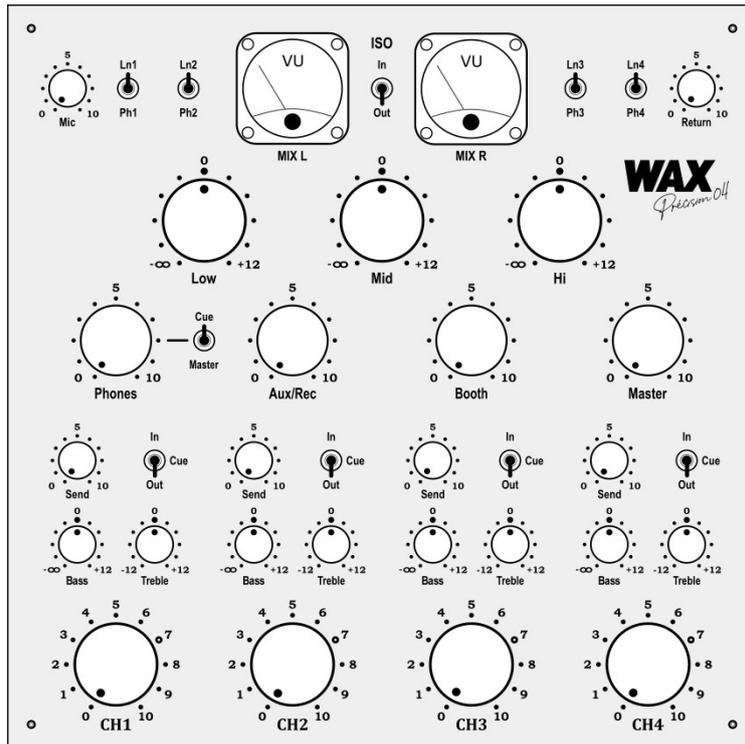


Fig.1

- 1• Zero down the controls just like Fig.1 above**
- 2• Make sure that the external PSU (Power Supply Unit) AC power switch is off before making any connections**
- 3• Make sure that your AC outlet voltage matches the indicated AC voltage on your PSU
If you're not sure about your AC outlet voltage, consult an electrician**
- 4• Connect your equipment (see page 5)**
- 5• Connect the included 4 pole power cable from your PSU to your Precision04 mixer**
- 6• Connect the linecord from your AC outlet to the IEC connector of your PSU**
- 7• Turn on your equipment and mixer from the sources to the speakers, do not use a global AC switch**
- 8• Start playing a vinyl or CD, select the source (Phono/Line) and slowly turn up the associated Channel volume potentiometer**
- 9• Once the VU meters start moving, slowly turn up the output volume (Master, Booth, Aux/Rec)**
- 10• Refer to the Unity Gain settings (see page 4) in order to optimize internal levels in accordance with your power amplifier level, booth monitors level, recorder sensitivity. If the loudness of the material you're playing varies extensively, try to keep extra headroom on the Channel volume potentiometers by lowering them down to 6 or 5 for example**
- 11• During the performance, if you notice the mix VU meters dipping too far in the red zone, adjust the Channel volume potentiometers accordingly**
- 12• Once you're finished, zero down the controls again (Fig.1 above) and turn off your equipment and mixer from the speakers to the sources, do not use a global AC switch**

Service/Troubleshooting:

CAUTION: The procedures described below are intended for qualified service personnel. We remind you that this device and its accessories do not contain any user-serviceable parts and must not be opened or modified by unqualified personnel. WAX electronics declines all responsibility and assumes no liability for any accidents or damage to physical assets resulting from the opening or servicing of this device by third parties.



The unit powers up (the backlighting of the VU meters is on) but there's no sound or it is behaving abnormally:

Check that the source selector (Phono/Line) switch is in the correct position. Check that none of the potentiometers on the mixer signal path is muted. Check the proper functioning of each element of the system independently (including sources, cables, power amp, speakers...) before contacting WAX electronics for assistance.

The unit does not power up:

Turn off the Power Supply Unit AC switch immediately and disconnect ALL the cables (power, audio, ground...) connected to the PSU and connected to the mixer itself. Check for signs of electrical failure (smoke, sparks, bad smell...).

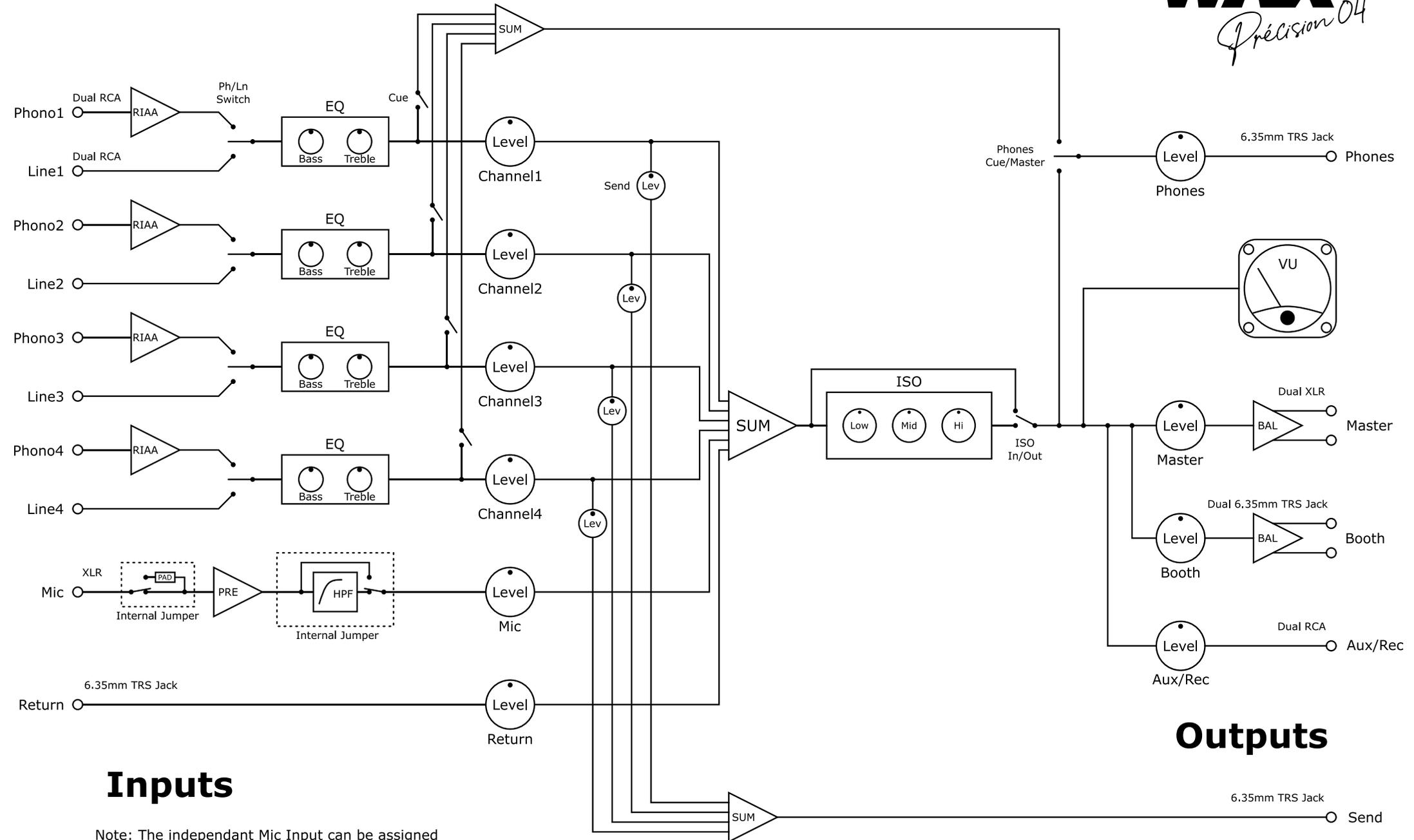
- There are signs of electrical failure: contact WAX electronics for assistance and do not power up the unit again.
- There are no signs of electrical failure: make sure that the mains cable is unplugged and extract the mains fuse. The fuse holder is located next to the IEC connector. Replace the mains fuse according to the mains voltage (115VAC:T630mA, 230VAC:T315mA). If the unit still does not power up, turn off the PSU AC switch immediately and disconnect ALL the cables again. Do not repeat this procedure and contact WAX electronics for assistance.

WAX electronics
contact@wax-electronics.com
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BLOCK DIAGRAM

V1.1 (Simplified)

WAX
Precision 04



Inputs

Note: The independent Mic Input can be assigned to a Line Input (cue/eq/fx) upon request.

Outputs

Technical Specifications

WAX Precision04

Last updated October 06 2023



General:

Type: 4 channel, 10in 5out analogue mixer preamplifier
Dimensions: 355x355x95mm
Weight: 5.1 Kg (excl. 1 Kg external linear PSU)
Line voltage: 115 or 230 Vac, 50/60 Hz
Max. power consumption: 35 W

Phono Inputs 1.2.3.4:

Type: Unbalanced, stereo, dual RCA, mm RIAA preamplifiers

Parameter	Value	Comments	Tools
RIAA Tracking	+0.2 / -0.1 dB	20 Hz - 20 kHz	AP SYS-2722 Neumann VMS80 RIAA
Max. Input Level	105 mVrms	1 kHz	WAX Wienbridge osc E1DA Cosmos ADC
THD+N	<0.004 %	at 1 kHz 12 mVrms, 20-20k BW Unweighted	WAX Wienbridge osc E1DA Cosmos ADC
Signal / Noise	>90 dB	12 mVrms ref. , 20-20k BW Unweighted	WAX Wienbridge osc E1DA Cosmos ADC
LR Crosstalk Atten.	>107 dB	at 1 kHz 12 mVrms L	WAX Wienbridge osc E1DA Cosmos ADC
Input Impedance	47 kΩ	200 pF Shunt	Schematic

Line Inputs 1.2.3.4:

Type: Unbalanced, stereo, dual RCA, independant line level stages

Frequ. Response	+0.1 / -0.1 dB	20 Hz - 20 kHz	AP SYS-2722
Max. Input Level	9.1 Vrms	1 kHz	AP SYS-2722
THD+N	<0.001 %	at 1 kHz 2 Vrms, 20-20k BW Unweighted	AP SYS-2722
Signal / Noise	>110 dB	2 Vrms ref. , 20-20k BW Unweighted	AP SYS-2722
LR Crosstalk Atten.	>92 dB	at 1 kHz 2 Vrms L	AP SYS-2722
Input Impedance	100 kΩ		Schematic

Mic Input:

Type: Balanced, mono, XLR, dynamic microphone preamplifier

-6 dB pad (internal switch): disengaged by default
120 Hz high pass filter (internal switch): engaged by default
Frequ. Response: +0.3 / -0.2 dB, 20 Hz - 20 kHz
Max. Input Level: 26 mVrms
Min. Input Impedance: 1.1 k Ω , differential

Return Input:

Type: Unbalanced, stereo, 6.35mm TRS jack, line level stage
Tip: Left
Ring: Right

Frequ. Response: +0.1 / -0.1 dB, 20 Hz - 20 kHz
Max. Input Level: 9 Vrms
Input Impedance: 22 k Ω

Master & Booth Outputs:

Type (Master): Balanced, stereo, dual XLR, line level stage

Type (Booth): Balanced, stereo, dual 6.35mm TRS jack, line level stage

Frequ. Response	+0.1 / -0.1 dB	20 Hz - 20 kHz	AP SYS-2722
Max. Output Level	+27 dBu	1 kHz	AP SYS-2722
THD+N	<0.001 %	at 1 kHz +4 dBu, 20-20k BW Unweighted	AP SYS-2722
Signal / Noise	>115 dB	+27 dBu ref. , 20-20k BW Unweighted	AP SYS-2722
LR Crosstalk Atten.	>100 dB	at 1 kHz +4 dBu L	AP SYS-2722
Output Impedance	125 Ω	Both Leg	Schematic

Aux/Rec Output:

Type: Unbalanced, stereo, dual RCA, line level stage

Frequ. Response	+0.1 / -0.1 dB	20 Hz - 20 kHz	AP SYS-2722
Max. Output Level	+21 dBu	1 kHz	AP SYS-2722
THD+N	<0.001 %	at 1 kHz +4 dBu, 20-20k BW Unweighted	AP SYS-2722
Signal / Noise	>110 dB	+21 dBu ref. , 20-20k BW Unweighted	AP SYS-2722
LR Crosstalk Atten.	>94 dB	at 1 kHz +4 dBu L	AP SYS-2722
Output Impedance	125 Ω		Schematic

Phones output:

Type: Unbalanced, stereo, 6.35mm TRS jack, headphone amplifier
Tip: Left
Ring: Right

Frequ. Response: +0.1 / -0.1 dB, 20 Hz - 20 kHz
Absolute Max. Output Power: 2 x 600 mWrms, 70 Ω load, 1 kHz, THD+N <0.1%
Output Impedance: 68 Ω

Send output:

Type: Unbalanced, stereo, 6.35mm TRS jack, line level stage
Tip: Left
Ring: Right

Frequ. Response: +0.1 / -0.1 dB, 20 Hz - 20 kHz
Absolute Max. Output Level: +21 dBu, 1 kHz, THD+N <0.1%
Output Impedance: 125 Ω

Channel EQ 1.2.3.4:

Type (Bass): 2 band, 12 dB / octave, phase matched, Linkwitz-Riley crossover/isolator

Gain: Full cut to +12 dB
Crossover Frequency: 150 Hz
Inter-band Phase Shift: <0.1°

Type (Treble): HF only Baxandall shelving tone control

Gain: -12 dB to +12 dB
1 dB Break Frequency : 500 Hz

Master Isolator:

Type: 3 band, 24 dB / octave, phase matched, Linkwitz-Riley crossover/isolator

Gain: Full cut to +12 dB
Low / Mid Crossover Frequency: 290 Hz
Mid / Hi Crossover Frequency: 4170 Hz
Inter-band Phase Shift: <0.1°

External Power Supply Unit:

Type: Low noise dual rail linear PSU

Noise Residual: <25 μ Vrms, WAXP04 load, no measurable output ripple

Global Performance:

Total Harmonic Distorsion + Noise: 0.001 %
RCA Line In to XLR Master Out, Channel EQ and Master ISO **engaged**
At 1 kHz 2 Vrms, Unity Gain, 20 Hz - 20 kHz Unweighted Bandwidth,
AP SYS-2722

Inter-channel crosstalk attenuation: >103 dB
At 1 kHz 2 Vrms (Line), at 1 kHz 12 mVrms (Phono), at 1 kHz 4 mVrms (Mic), Unity Gain,
AP SYS-2722, WAX Wienbridge osc