

TELEPHONE SIMULATOR LP-23

User's Manual



LAFONT AUDIO LABS

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Section 1. INTRODUCTION and PRECAUTIONS

1.1 Preface

Thank you for using this LAFONT product.

We have prepared this instruction manual to enable you to achieve optimum utility and performance from your new ADR/Foley processor LP-23.

We encourage you to read and make use of the material contained in this manual.

Installation and operating of the LP-23 is not complicated but the flexibility provided by its operating features merits familiarization with its connections and controls. We welcome your suggestions and comments on our products and on this manual.

1.2 Unpacking and inspection

Your new LAFONT LP-23 was carefully packed at the factory. Save all the packing material - they will prove valuable should it become necessary to transport or ship this product.

We recommend careful examination of the shipping carton and its contents for any sign of physical damage which may have occurred during transportation.

If damage is evident, notify the transportation company without delay. Only you, the consignee, may institute a claim against the carrier for damage.

If necessary, contact your supplier or, as last a resort, your LAFONT importing agent who will fully co-operate under such circumstances.

Your shipping carton should contain :

The LP-23

The a/c. power cable.

This instruction manual.

1.3 Mounting

Do not install this unit in a location subjected to rain, moisture, dust or mechanical vibrations. If the unit is installed in an equipment rack, console or other area along with high heat producing equipment, adequate ventilation should be provided to assure longest component life. Also, while internal circuits susceptible to hum pickup is sufficiently shielded from moderate electromagnetic fields, avoid mounting the unit immediately above or below large power transformers or any radiating equipment.

1.4 Power connection

Connection is made by means of an IEC standard power socket. Before connecting the unit to the mains power, ensure that the operating voltage is correct for your local supply.

The rear panel voltage label indicates the voltage required for satisfactory operation of the unit. Mains voltage change should be carried out by a qualified service technician only. To change the mains voltage, please refer to Power supply section.

Should the fuse need replacing, it should be replaced only with the same type and value of fuse.

For 115Vac, use 500mA/250V - 5 x 20mm slow blow fuse.

For 230Vac, use 315mA/250V - 5 x 20mm slow blow fuse.

1.5 Safety warning

For safe operation the LP-23 must be connected to a good mechanical ground. This provides a current path for any voltage which might appear on the chassis due to a severe electrical fault in the network. Without this path the unit might be a shock hazard. In addition a good quality ground on the chassis provides shielding from external fields and minimizes radiation of internal fields to the outside world.

This unit is fitted with 3-pin power socket. The earth lead should not be disconnected. Do not use a ground-lifting adapter and never cut the ground pin on a three-prong plug.

There are some instances where a hum or buzz will be introduced due to a phenomenon known as a ground loop. This results when there is a significant potential between the audio ground of the previous piece of equipment and the mechanical ground to which the LP-23 has been connected. If you encounter a problem with earth loops, remove the ground-lift link located inside the unit to isolate the signal earth from the chassis earth. Refer to Power supply section.

To prevent shock or fire hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not remove cover. Refer servicing to qualified personnel only.

Section 2

WARRANTY

Lafont Audio Labs warrants to the original purchaser all parts, except front panels, knobs, cases and cabinets of every Lafont product to be free from defects in materials or workmanship, as hereinafter provided, for one year from the original date of purchase.

Lafont Audio Labs will at his option, repair or replace any equipment covered by this warranty, which becomes defective, malfunctions or otherwise fails to conform with this warranty under normal use and service during the term of this warranty, at no charge for parts and labor.

This warranty does not cover defects, malfunctions or failures resulting from shipping or transit accidents, abuse, misuse, operation with faulty associated equipment, modification, alteration, tampering or normal wear and tear.

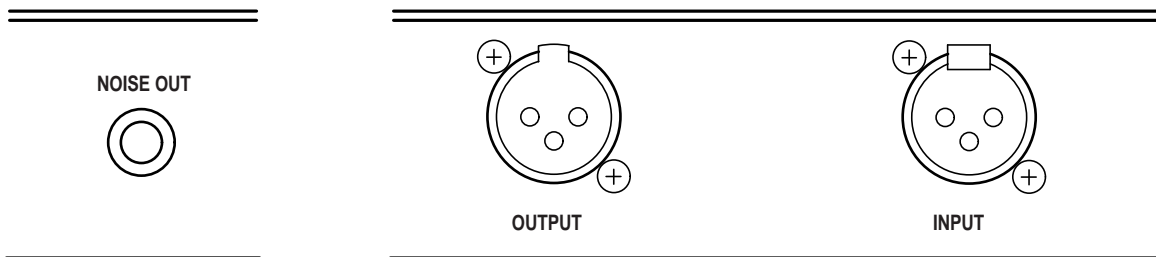
Lafont Audio Labs shall not be responsible for any incidental or consequential damages sustained by any customer as a result of or any cause associated with products including without the limitation the delivery or non-delivery thereof or the performance or non-performance thereof.

This is the only warranty applicable to Lafont products. In the interest of continuous product improvement and development Lafont Audio Labs reserves the right to change and modify any specification or feature whenever in our opinion, such a change produces an advantage mutual to our customers and ourselves without incurring any obligation to change or improve products manufactured prior thereto.

Section 3

SIGNAL CONNECTIONS

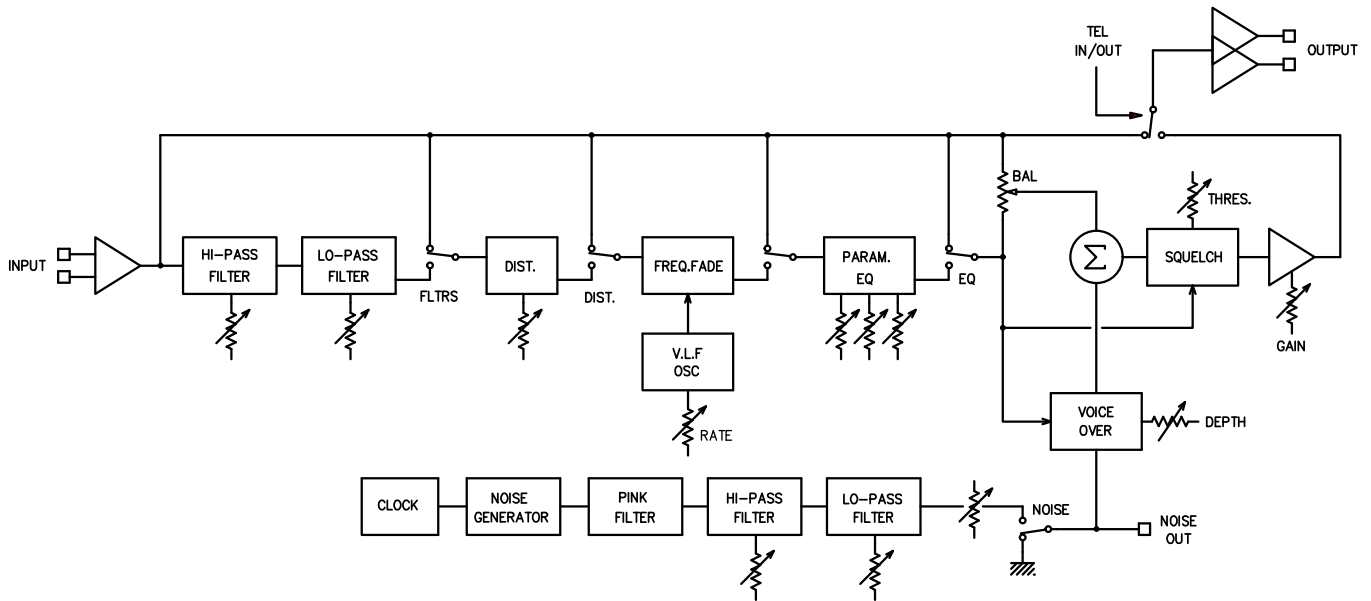
The inputs and the outputs of the LP-23 are fully balanced on XLR connectors. Current IEC wiring convention calls for pin 2 to be high/hot and pin 3 low/cold. In a balanced system, the distinction is arbitrary provided there are no phase inversions through the unit ; the LP-23 maintains phase. When inputs and/or outputs should be unbalanced, it is unimportant which of the two signal pin is grounded, so long as the same convention is used on all inputs and outputs. Nevertheless, in the interests of maintaining international standardization, we suggest the IEC recommendation is followed.



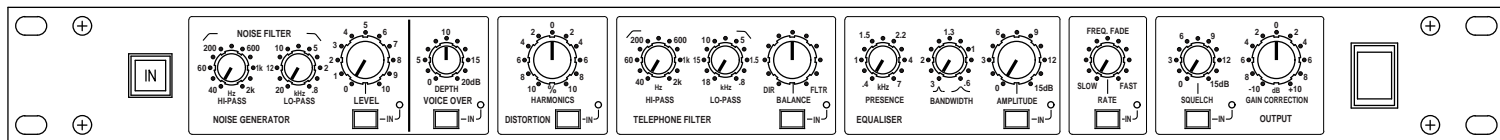
We recommend that two conductor shielded cable be used even in an installation using unbalanced wiring. This takes advantage of the ability of the input to reject common-mode noise (hum) and reduces the possibility of radio interference (RFI). Do not depend on the shield wire itself to complete the signal connection.

Section 4

BLOCK DIAGRAM



Most telephone simulators are mere filters that limit the frequency range of the processed signal. The LP-23 goes beyond. Not only it is equipped with extended range high-pass and low-pass filters, but it also has control over the distortion and various effects including squelch, fading and background noise. This will help the operator to simulate telephone, and wireless intercom sound easily, without patching in a multitude of outboard devices.

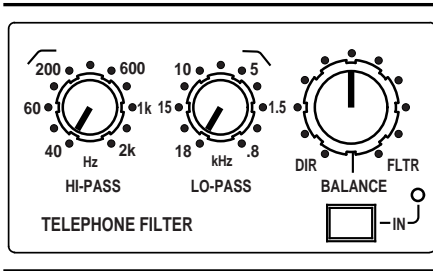


For an easy location of the major functions, the front panel is divided in section. Each section has its own bypass switch

At the left end of the front panel a changeover push button toggles between telephone signal and direct clean signal.

Section 5

OPERATING PROCEDURES



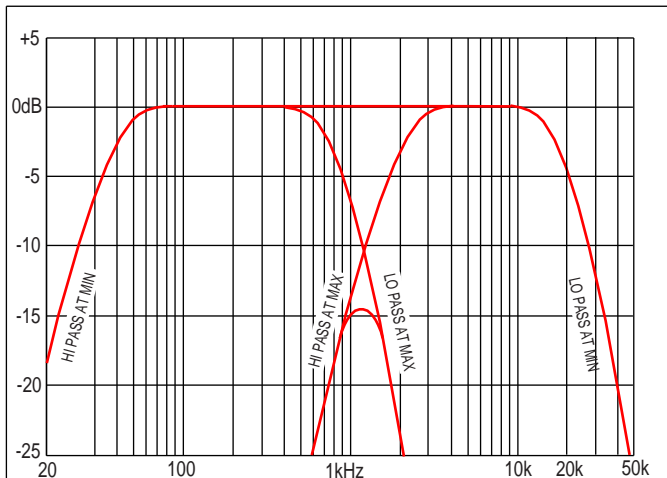
5.1.1 Telephone filter

This section located in the middle of the front panel includes two filters and a balance control.

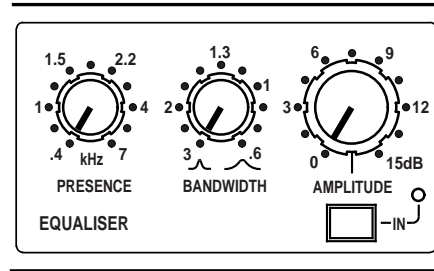
The IN button inserts or removes the low-pass and the high-pass filter section from the signal path. Both filters have a fixed slope of 12dB/octave. The high-pass is continuously variable from 35Hz to 2kHz while the low-pass filter ranges from 800Hz to 18kHz.

5.1.2 Balance control

A potentiometer is provided to adjust the balance between telephone processed signal and direct clean signal.



High pass and low pass filters

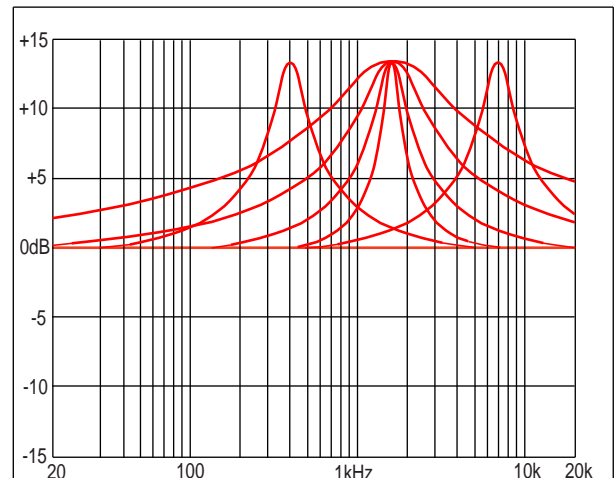


5.2 Equalizer

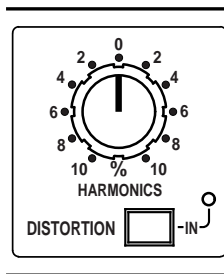
This one band parametric equalizer works like a bandpass filter with an adjustable boost control up to 15dB at center frequency.

The PRESENCE control sweep the frequency from 400Hz to 7kHz.

The variable bandwidth allows smooth transition from gentle enhancement to a hard resonant sound.



Presence equalizer



5.3 Adding distortion

Distortion can be added to the speech signal. The distortion amplifier is controlled by one potentiometer.

By turning the knob to the left or right of the center position it will add or subtract a percentage of signal with a high content of harmonics.

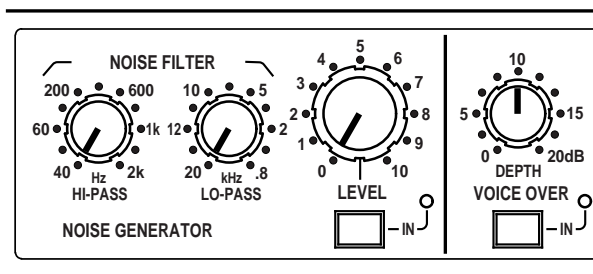
The potentiometer has a center detent. In the center position, the circuit adds no distortion. Distortion is independent of signal amplitude.

5.4 Noise generator

For a really dirty sound a background noise generator is provided. It is based on a digital random signal generator followed by a pink noise filter.

By depressing the IN switch the operator engages the noise generator. The noise path is separate path from the main signal path.

The noise level control ranges from infinity to -7dBu.



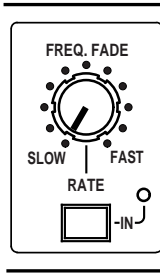
The pink noise is running continuously and is available on a separate jack socket for external process or sound level measuring purposes. The pink frequency response is linear from 20Hz to 30kHz.

The generator comes with its own set of filters. It is important that the signal and the background noise have individual filters to avoid uniform coloration and masking effects. More intelligible results are obtained by giving a different color to the noise than the signal. The hi-pass and the lo-pass filters have similar characteristics to the ones cited above, except for a slope of 12dB per octave.

Noise signal can be used alone and sweeping the filters frequency will give interesting wind effects.

5.5 Voice over

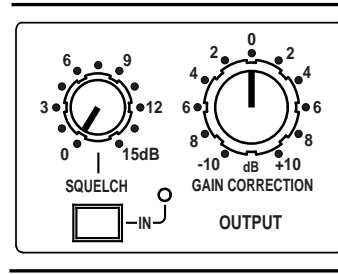
This circuit reduces the noise level when the speech signal is present. The depth of attenuation is adjustable from 0 to -20dB.



5.6 Fading

In conjunction with filtered background noise this section is used to simulate single side band radios (SSB), superheterodyne frequency fading, and other transmission loss effects.

The fading is controlled from a very low frequency oscillator. The sweep rate is adjustable from 2 sec. (fast), to 15 sec. (slow).



5.7 Squelch

The squelch works like a sharp noise gate which cuts speech signal and background noise.

It is particularly useful to simulate walkie-talkies or intercom systems.

The threshold of gate is variable from 0 to -15dB controlled with the squelch potentiometer.

5.8 Output gain correction

The output gain control compensate the power loss due to narrow bandwidth. It allows level matching between normal and telephone signal.