

# OPERATING MANUAL FOR ESOTERIC SOUND SURFACE NOISE REDUCER



## INTRODUCTION

Surface noise from phonograph records is usually the result of minute imperfections, abrasions and scratches to the playing surface of the record. While use of a graphic equalizer or "scratch filter" to remove ticks and scratches is somewhat effective, such filters reduce or eliminate the highs found on records. The Surface Noise Reducer can identify and remove most clicks and pops found on Lp's and even 78's and other vintage records. It is also very effective in reducing ignition noise from FM radio broadcasts. When used judiciously, it can often improve the quality grade of records by several grades with minimal degradation to either audiophile or vintage records. The Esoteric Surface Noise Reducer acts only on the clicks or pops without effecting program material.

## CONNECTION

The following represents a typical connection scheme, but should not be interpreted as the only way to connect the device. Your specific system and requirements may alter the connection scheme somewhat. Be careful to observe the basic requirements in order to obtain maximum results.

You must have a stereo phono pickup and stereo amplifier. Connect the right and left tape outputs of your phono preamp or receiver to the input connectors of the Surface Noise Reducer. Make sure that there are no intermediate devices. The Surface Noise Reducer must come first. All other denoising and equalizing devices, such as the Esoteric Re-Equalizer, must be connected following the Surface Noise Reducer. In the event that you are attempting to denoise from a truly mono source such as a single track tape recording, make connection to only one of the Surface Noise Reducer inputs. Connect the outputs of the Surface Noise Reducer to the inputs for the tape monitor or to the next sound processing device you may have, such as a Packburn Noise Reduction unit, or OWL, or graphic equalizer, etc.

## TAPE RECORDING THE RESULTS

There are several ways of making tape recordings of the improved sound. Here are a few suggestions: 1) Connect the tape recorder at the end of the chain of denoising instrument(s) and monitor either the "source" signal when just listening or the "tape" signal when taping or playing tapes. 2) Employ a "wye" connector to feed the output of the denoising instrument(s) to both amplifier tape monitor and to tape deck input. The output of the tape deck can then be connected to an unused amplifier "aux" input.

## OPERATION

1. While playing loud music portions from a record, advance the "DISTORTION LIMITING" control till the "THD" LED illuminates. Now back off the DISTORTION LIMITING control slightly.
2. Advance the "QUIETING" control till the "NOISE REDUCTION" LED flashes indicating that clicks and pops are removed.

3. Carefully adjust the "QUIETING" control for maximum reduction of noise possible without introduction of distortion.
4. If you notice distortion during loud peaks of sound, advance the "DISTORTION LIMITING" control further till the "THD" LED illuminates and thus inhibits the "NOISE REDUCTION" LED and the resultant distortion. This may require careful adjustment of both controls and some interaction will be observed.
5. If the "THD" LED blinks on clicks and pops, it is adjusted too high. The "THD" LED should only rarely come on if at all.

## HINTS

1. Note: In some rare instances, noise reduction will have to be severely compromised in order to prevent distortion. Certain discs contain an extremely low level of very fine ticks. Some discs display some distortion from worn groove walls and exhibit a "fuzzy" sound. These may cause the unit to trigger unnecessarily and attempt to remove the above characteristics with unsatisfactory results. Such cases will require critical adjustment and compromise.
2. When using single channel sources, as from a tape recording where the source is identical mono from both tracks, only one channel must be connected to the Surface Noise Reducer explained under "connection." In that instance, very careful adjustment of the controls will be necessitated.
3. The Surface Noise Reducer can also be used with stereo FM tuners in order to remove ignition and atmospheric noise. Employ the same adjustment procedure.
4. As a final suggestion, let your ears determine the exact setting of the controls and use the LED indicators only as guide for approximate settings.

## OPERATION WITH VINTAGE RECORDS

1. Do not expect the same degree of noise reduction as that obtained from LP's. As the quantity of impulse noise is several orders of magnitude greater, we must focus on the more discernible clicks.
2. A certain degree of "frying bacon" crackle can be removed by careful adjustment of both controls. It may be necessary to adjust the controls for different parts of the record. This is especially useful if taping and then editing the recording.

## PROBLEMS

*If no noise reduction is observed, check the following:* 1) "THD" control set too high. 2) There is a "mono" connection ahead of the SNR. Make sure you can play stereo

recordings and hear the separation. Any mono connection must be after the SNR. 3) You are using an old mono phono pickup or have a stereo pickup strapped to mono. 4) You should be able to turn the "NOISE REDUCTION" control too high and cause distortion, try this to verify unit is operating correctly. 5) You are expecting too much-compare your results to our demo tape.

*If no sound is heard when in the "IN" position, check the following:* 1) SNR is not plugged in. 2) Input and output connections are reversed. 3) There is an internal defect, return unit for repair.

## **SPECIFICATIONS**

DISTORTION	Less than 0.02%
HUM & NOISE	95 dB below rated output
RESPONSE:	20 - 20 kHz +/- 0.2 dB
GAIN:	Unity
MAX OUTPUT:	6.5 Volts RMS
INPUT IMP:	50 kOhms
OUTPUT IMP:	50 Ohms
CONTROLS:	BYPASS/IN, DISTORTION LIMITING, QUIETING
LED'S:	THD, NOISE REDUCTION
POWER:	120 VAC/60 Hz, 230 VAC/50 Hz - on request for foreign applications
CONSTRUCTION:	Black anodized aluminum case, gold-plated connectors
SIZE:	19" X 1.75" X 7," standard EIA minimum-height rack mount

## **- WARRANTY -**

This product has been manufactured to precise standards and rigid quality control. Return authorization must be obtained before making any return. **Unit should be returned in it's original packing otherwise cost of repair for damage incurred will be charged.** We can advise you as to alternate proper packing should this not be available. Such returns should be accompanied by a payment of \$8.00 shipping and handling. It is fully warranted against defective materials or workmanship under the normal use for the warranty period of 1 year from time of purchase to the original owner. Repairs, adjustment for defects or replacement of parts will be performed free of charge, except:

- a) If equipment has been damaged by accident or mishandling.
- b) If equipment has been serviced or modified by other than our authorized agents.
- c) In case of theft, loss, fire or other calamities by an Act of God.

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