

SUMMIT AUDIO, INC.

MODEL TLA-100A

Tube Leveling Amplifier



The Summit Audio Tube Leveling Amplifier is a technological hybrid of vacuum tube and solid state devices. The harmonious blend of old and new technologies produces the incredibly warm and smooth sound of vacuum tubes in a compression device that does not have the inherent disadvantages of older designs. Interfacing by the use of quarter-inch jacks and three-pin XLR connectors is quick and easy. The TLA-100A has been in continuous production since 1985.

Features Include:

- "SOFT KNEE" CHARACTERISTIC
- STEREO COUPLING CAPABILITY
- SWITCH SELECTABLE ATTACK AND RELEASE SETTINGS
- UNITY GAIN BYPASS SWITCH FOR A/B COMPARISON
- SIDE CHAIN ACCESS
- BALANCED INPUT
- BALANCED 990 OUTPUT
- EASE OF OPERATION
- TRANSFORMERLESS SIGNAL PATH
- HAND CRAFTED IN THE USA

Specifications:

Output: +4 dBu corresponds to 0 VU. The output is electronically balanced or unbalanced using 990 operational amplifiers. Output impedance is 75Ω. The recommended output load is 600Ω or more. Maximum output level is +25dBu.

Input: The input is also electronically balanced or unbalanced. Input impedance is 20K Ω. Maximum input level is +25 dBu.

Panel Size: Standard 19" by 3.5" (two units of rack space).

Depth Behind Panel: 10.5" in addition to user's I/O cabling.

Power: 35 watts, 115 or 230 volts operation, 50 or 60 Hz.

Components: (1) selected 12AX7A vacuum tube, (2) high reliability 990 discrete, operational amplifiers, (13) integrated circuits, (3) transistors, (1) compression cell.

Shipping Weight: 18 lbs. (8.17 kg.)



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APPROVED FOR ELECTRICAL SAFETY
DEPARTMENT OF BUILDING & SAFETY
CITY OF LOS ANGELES

Specifications subject to change without notice.
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INTRODUCTION

The Summit Audio Tube Leveling Amplifier is a hybrid of technologies. It contains both vacuum tube and solid state components. This combination of old and new technologies produces an incredibly warm and smooth sounding compression device without the inherent disadvantages of the older designs. Input connections are made using three pin XLR connectors. Features are as follows:

- . EASE OF OPERATION
- . "SOFT KNEE" CHARACTERISTIC
- . SWITCH SELECTABLE ATTACK AND RELEASE SETTINGS
- . SIDE CHAIN ACCESS
- . STEREO COUPLING CAPABILITY
- . BALANCED INPUT
- . 990 BALANCED OUTPUT STAGE (Transformer output available)
- . HAND CRAFTED IN THE U.S.A.

Having found this manual carefully unpack the TLA-100A and its power cord. Save the carton and packing material should it be needed. Before powering the unit read this manual, observing the cautions for HIGH VOLTAGE. Proceed by doing the following.

- .Check the line voltage switch
- .Determine the proper fuse size by referring to the specifications.
- .Check for meter illumination and the pilot lamp when the unit is powered up.

THE CONTROLS

- ATTACK SWITCH:** A three position switch with fast, medium and slow settings, which controls the time it takes the TLA-100A to respond to the input signal.
- RELEASE SWITCH:** Controls the time it takes the TLA-100A to return to unity again. A three position switch with fast, medium and slow settings. The release time is also effected by the program material. The slower the release time setting, the more the program material determines the release time.
- METER SWITCH:** Allows monitoring the output level of the TLA-100A, or the amount of gain reduction taking place.
- BYPASS SWITCH:** This is a three position switch. In the bypass position, the TLA-100A is removed from the audio path. In the middle (or in) position, the TLA-100A is switched into the audio path. In the left (or link) position, the stereo link signal is connected to its back panel connector. This allows stereo or mono operation of two units by front panel selection.
- GAIN:** Sets the voltage gain of the TLA-100A. It determines the output level, which can be monitored on the meter.
- GAIN REDUCTION:** Sets the amount of gain reduction taking place, and the operating point where on the ratio curve. The higher the gain reduction, the higher the ratio becomes.
- POWER:** A.C. power on and off.
- BAL./UNBAL. SWITCH:** A rear panel switch which changes the output and metering circuit, for proper operation, into balanced or unbalanced loads.

SPECIFICATIONS

OUTPUT: +4dbm corresponds to 0 VU. The output is electronically balanced or unbalanced using 990 operational amplifiers. Output impedance is 75 ohms. The recommended output load is 600 ohms or more. Maximum output is +25dbm. Also offered is an optional transformer coupled output.

INPUT: The input is also electronically balanced or unbalanced. Input impedance is 20k ohms. Maximum input level is +26dbm.

PANEL SIZE: Standard 19" by 3.5" (two units of rack space).

DEPTH BEHIND PANEL: 10.5" in addition to users I/O cabling.

POWER: 35 watts. 115-230 Volt. 50 or 60 Hz. Fuse size is .5 amp for 115 volt and .25 amp for 230 volt.

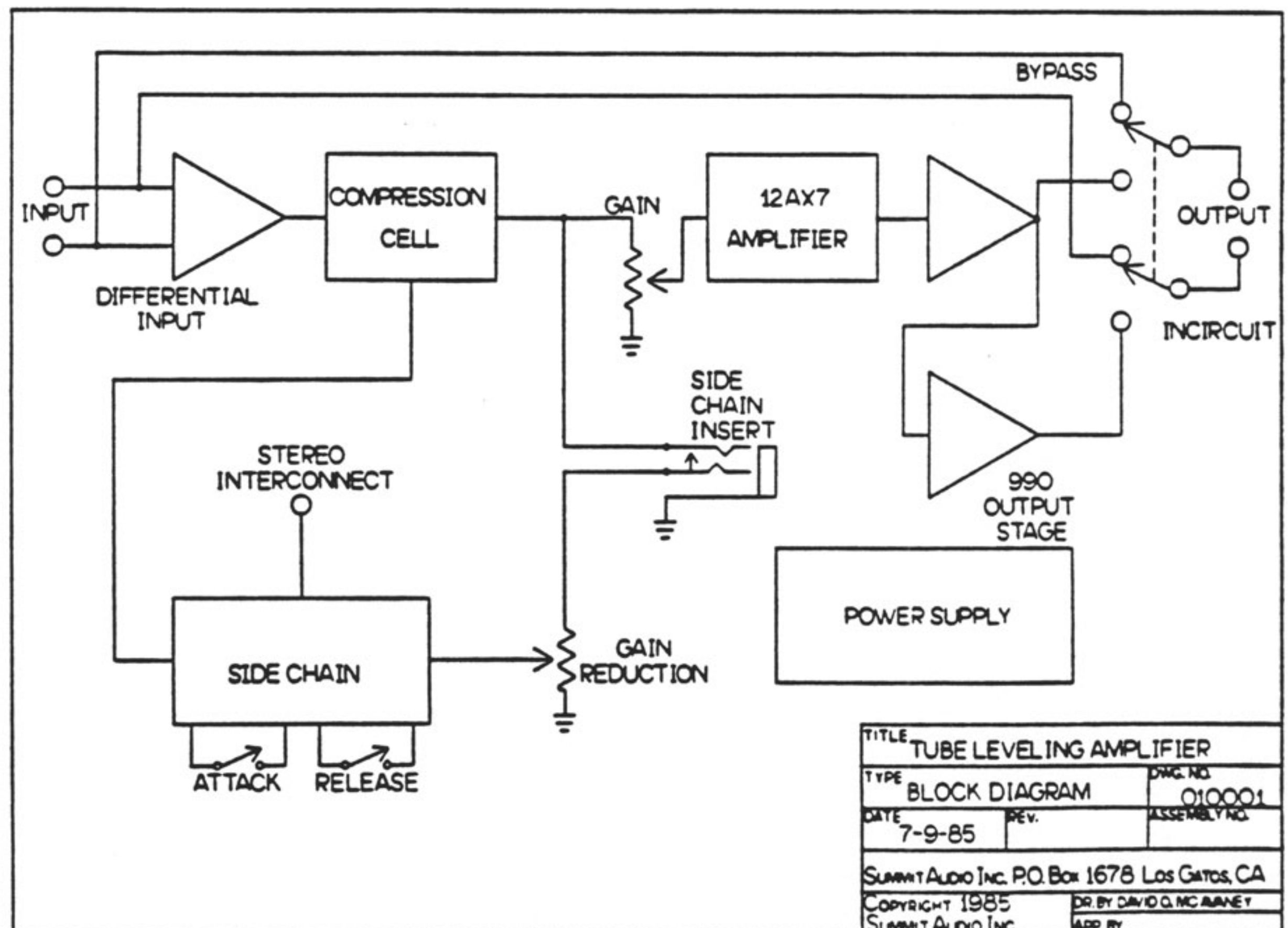
COMPONENTS: (1) 12AX7A Vacuum tube, (2) high reliability 990 operational amplifiers, (13) integrated circuits, (3) transistors, (1) COMPRESSION CELL.

SHIPPING WEIGHT: 16 Lbs.

CIRCUIT EXPLANATION

The TLA-100A features a vacuum tube amplifier driving an electronically balanced 990 output stage. All the signal amplification in the audio path takes place in the tube circuit. The 990 amplifiers provide a low output impedance for driving cables and 600 ohm loads. The 990 is a high performance op amp made of discrete parts, and then potted for thermal stability.

The input is electronically balanced, and directly feeds the unique compression cell. The SIDE CHAIN allows for stereo coupling, or the insertion of an equalizer. Due to the combination of tube and solid state circuitry long term drift of the compression circuit is minimal and tracking of two TLA-100As stereo linked is within .3db.

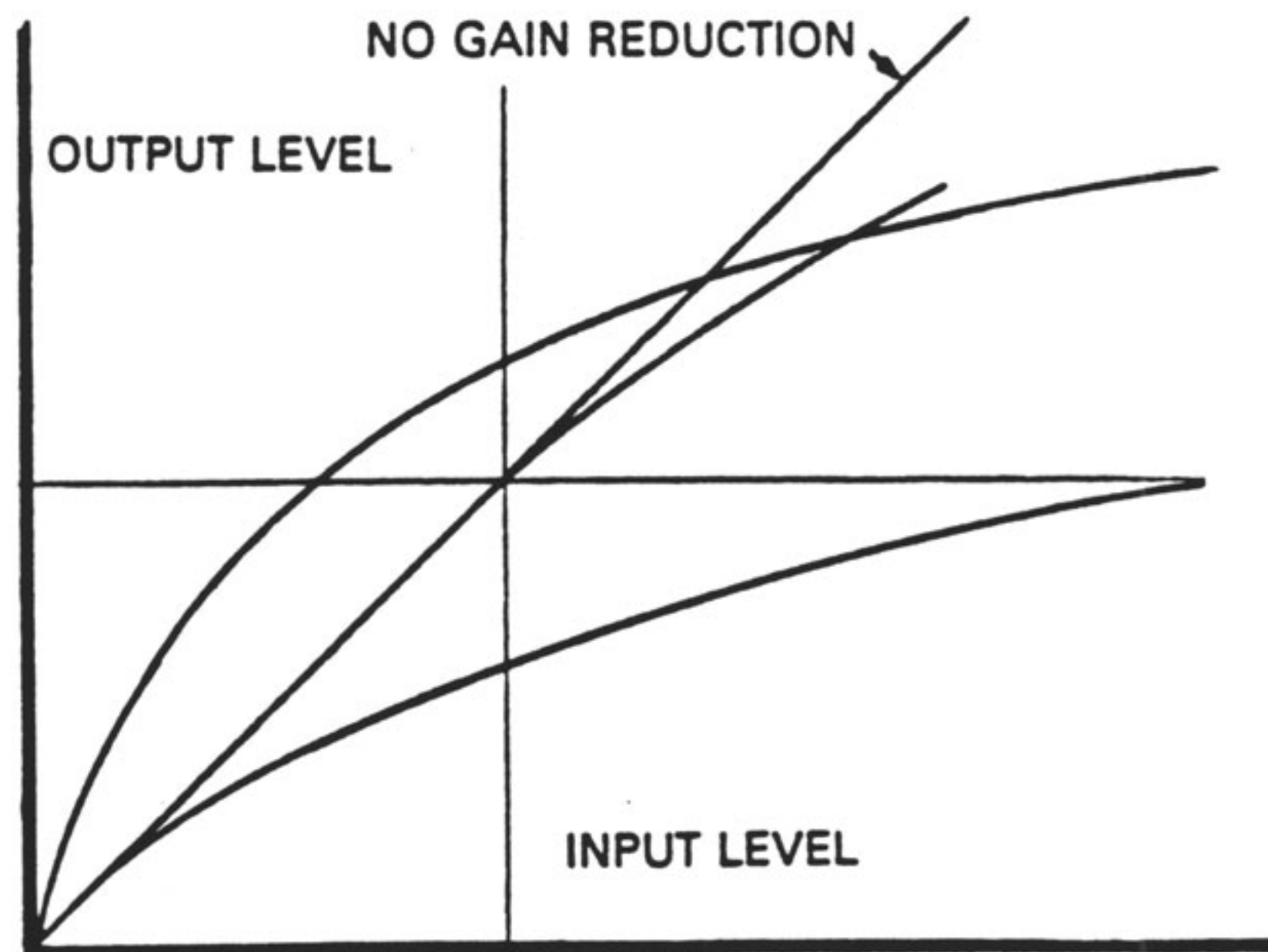


TLA-100 BLOCK DIAGRAM

OPERATION

The first step in the operation of any device using a vacuum tube is to apply power and let the unit fully warm up (15 minutes). After warm up, set the Gain Reduction control to 0 and adjust the Gain control for 0 UV on the meter. Switch the attack to slow and the release to fast. Now adjust for the desired amount of Gain Reduction and recheck the output level.

As the amount of gain reduction is increased, the processed audio follows a smooth reduction curve, thereby changing the compression ratio. In this way, compression may be easily controlled. If a large peak is detected, the unit will automatically increase the compression ratio to keep the audio output controlled. If a low compression ratio is desired, turn the gain reduction control until the meter indicates a small amount of gain reduction. If a higher ratio is desired, set the gain reduction control so the meter indicates a high amount of gain reduction. Try different attack and release settings, depending upon the program material and the desired effect.



TYPICAL GAIN REDUCTION CURVE FOR MODEL TLA-100.

STEREO INTERCONNECT

Insertion of a cable, with a 1/4" plug on each end, into two TLA-100As will operate them in stereo for mastering tapes and compressing other program material. To operate the TLA-100A in stereo, set the Attack and Release Switches the same, and set the Gain Reduction control to the same level on both units. The channel with the strongest peak will override both units.

The easiest way to do this is to set the Gain Reduction of each unit before they are stereo linked, then put the Bypass Switch on each unit into the link position. To disable the stereo link, only one switch needs to be in the non-linked position.

SIDE CHAIN INSERTION

This connection allows for the insertion of an equalizer in the side chain. By doing this, the TLA-100A becomes frequency selective. Program material with large amounts of low frequency may have the low frequencies attenuated in the side chain, causing the low frequency content to not affect the gain reduction. High frequency response of the side chain may be boosted to help prevent high frequency overload; it becomes a "de-esser" in this mode.

ELECTRICAL CONNECTIONS

SIDE CHAIN: TIP - SIGNAL TO EQUALIZER
 RING - SIGNAL FROM EQUALIZER
 SLEEVE - GROUND

INPUT CONNECTIONS:

UNBALANCED: PIN 1 - GROUND
 PIN 2 - GROUND
 PIN 3 - (+) SIGNAL

BALANCED: PIN 1 - GROUND
 PIN 2 - (-) SIGNAL
 PIN 3 - (+) SIGNAL

OUTPUT CONNECTIONS:

UNBALANCED: PIN 1 - GROUND
 PIN 2 - GROUND
 PIN 3 - (+) SIGNAL

BALANCED: PIN 1 - GROUND
 PIN 2 - (-) SIGNAL
 PIN 3 - (+) SIGNAL

Set the rear panel switch for the proper position.

STEREO LINK: TIP - SIGNAL
 SLEEVE - GROUND

Use a shielded patch cord with 1/4" plug

Because the TLA-100A contains heat generating devices, ample ventilation needs to be provided. Good ventilation will give long, trouble free operation.

Think Tubes!

See enclosed warranty card for information.