

ADL-1700



Introduction

Congratulations on your purchase of the ADL 1700 Liquid Mu Peak Limiter, often referred to as the little brother of the Fairchild 670. The 1700 employs an all discrete tube design modeled after and a cross between the vintage UA 175-B and 177 limiter except we enhanced some features for added flexibility. Unlike an opto limiter, the 1700 uniquely reduces the Mu or gain as the input signal is increased.

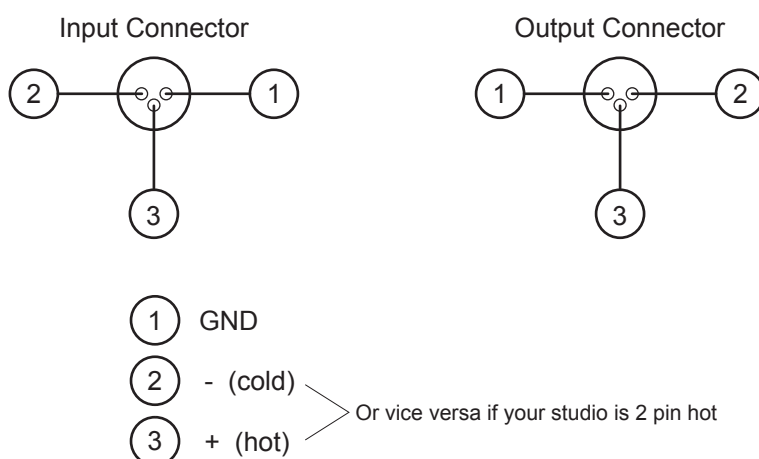
The 1700 has many practical applications for recording studios, tracking, mixing, stereo buss, vocals and instruments, live concert sound reinforcement as well as for film and broadcast work.

Installation

Audio Connections for Transformer Balance Systems

Back panel, XLR audio input and output are transformer balanced and floating, meaning there is no ground connection from pin 2 and pin 3. For optimum results your input signal should have an impedance of 600 ohms. Use good quality audio cables for best results (Mogami, Canare or Monster cable, etc) Pin 2 or pin 3 can be wired hot. Be consistent: if you wire pin 3 hot on the input, make sure to wire pin 3 hot on the output. Please follow diagram 1 for the proper audio hookup.

Diagram 1



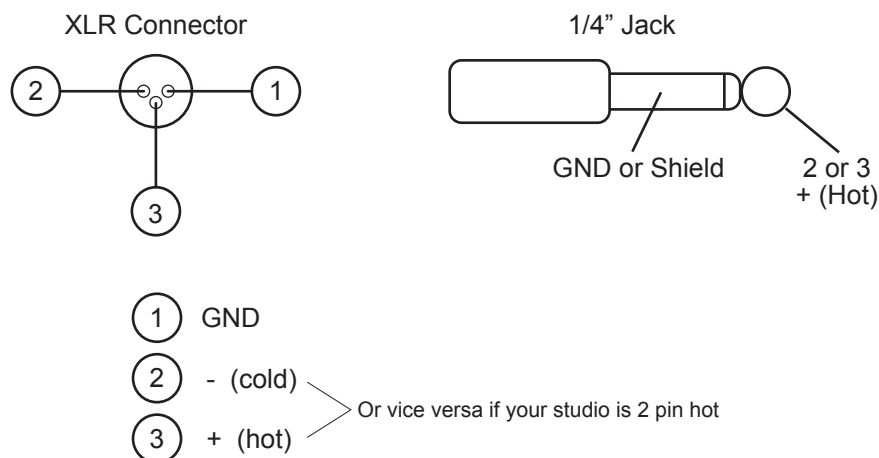
Audio Connections for Transformer Balance Systems

If the 1700 must be used in an unbalanced system please follow the three steps below:

1. Connect the ground or shield of your audio cable to pin 2 of the XLR
2. Connect the hot wire to pin 3 of the XLR
3. Repeat step 1 and 2 when using a 1/4" jack (see diagram 2)

Please note, this set up is for audio systems with pin 3 hot. If your audio system is pin 2 hot then connect the ground or shield of your audio cable to pin 3 and the hot to pin 2. Remember to keep it the same on both the input and output.

Diagram 2



AC Connections

The vacuum tubes in the 1700 operate at high voltages, 285-V and 105-V so please be careful. Disconnect power cable when servicing or changing tubes. Avoid touching the tubes with your fingers; instead we recommend rubber gardening gloves. All servicing must be performed by ADL or a trained technician. Do not operate with top cover off. Do not use near water and avoid any moisture. Always use a grounded AC receptacle.

ADL assumes no responsibility for possible injury from electric shock while servicing this product or operating it with the top cover off. Turning the unit off while not in use will increase component life. If you have any questions, please contact ADL. To further increase component life, please allow for adequate ventilation at rear of unit. Because of the heat generated by the tubes we also recommend one rack space above and below remain vacant for additional air flow.

1. Provided is an AC cable, please connect to back panel.
2. Connect AC plug to a properly grounded AC receptacle only.
3. Apply power and allow for 15 minute "warm-up" before using.

Fuse Replacement:

Should it become necessary to change the fuse, first turn the unit off and unplug the AC power cable from the receptacle. The fuse is located on the rear left side. Gently remove the fuse cover and discard bad fuse and replace with correct new fuse. Please note, if your unit is in constant need of new fuse, it may require a servicing so please contact us.

For 120-V 2-Amp Slow Blow 5x20mm

For 220-V 1-Amp Slow Blow 5x20mm

Front VU Meter Lamp:

To replace meter lamp simply unplug unit, remove top, unscrew faulty lamp and replace with new lamp. Radio Shack # 272-1128 or Chicago Lamp #606-CM 40.

Operations

The 1700 employs the 6BCA, variable Mu, dual triode to achieve its smooth, soft knee type compression. Control of the 6BC8 is handled by a 6H6, dual diode vacuum tube, which adds a musicality to the way the 1700 operates.

Like many classic tube compressors, the 1700 has a fixed point of threshold before compression. This means that increasing or decreasing the input level will vary the point at which the 1700 begins to compress.

The warmth and clarity of the 1700 is beneficial to everything from tracking to mastering. Please try not to over do it!

Controls

Input Gain Knob

Continuously variable, controls the amount of compression by altering the resistance in the grid circuits of V-1 (6BC8). Gain reduction is easily visible on the VU with the master select switch set to GR (Gain Reduction). As per the original design, jumpers are located on the main circuit board near the input transformer, clearly marked GAIN SELECT. Factory settings are for low gain or line level. High gain (microphone level) setting will deliver an extra 20 Db of gain.

Internal jumpers may be quickly reconfigured by removing the jumper that ties pins 2 and 3 and connecting pins 1 and 2. Limiting is accomplished as a function of jumper position, low gain position is -12db and high gain position is -22db. Please note any time the top is removed and a change is made, the unit must be off and the power cable must be detached.

Also located near the input transformer is an INPUT IMPEDANCE SELECT. Choosing the center most pins will configure the input transformer for hi impedance (200 ohms) (5:1 turns ratio) and using two jumpers is for low impedance (50 ohms) (10:1 turns ratio).

Output Gain Knob

Continuously variable, controls the amount of overall gain that the unit can produce. The amount of output gain is easily viewed on the VU meter with the meter select switch set to output. Once the input gain is set for the desired amount of gain reduction, the output gain may be increased or decreased depending on the amount of overall gain needed.

Bypass

The bypass switch allows for immediate A/B comparison between the 1700 and the raw signal connected to the input XLR. The switch is clearly marked and also has a red LED tip to indicate when you are bypassing the 1700.

90Hz High Pass Filter

Used to keep frequencies below 90hz from affecting the action of the compressor, resulting in a more dynamic low frequency spectrum when the compressor is in use. An indicator LED shows when the HPF is engaged

On/Off Power Switch

Located on the front panel.

Meter Select Switch

This is a three position high quality Grayhill switch linked to the VU meter. Each switch position is independently displayed one at a time on the large VU meter. Input indicates the amount of gain entering the 1700. GR indicates the amount of gain reduction that is controlled by the input gain knob. Output indicates the amount of output gain and is controlled by the output knob.

Ratio Switch

This is a four position Grayhill switch. Each setting will send your music to an independent tap located on the output transformer. Each tap is specially designed to compress a portion or a preset amount of your music. 2:1 ratio setting means that for every 2dB of music entering the detection circuit (6AL5), only one dB is allowed through the unit. As we move to the remaining three positions the formula remains the same but compression amount changes accordingly. The remaining presets are 4:1, 8:1 and 12:1.

Release Switch

This is a five position Grayhill switch. This switch is set according to taste and music type. The slow setting is generally used for vocals and narration, while the faster setting is best suited for program material with more extreme dynamic range.

Attack Switch

This switch is a six position Grayhill switch. Similar to the release switch, settings are to taste. The off or default position is a factory setting designed to produce the most organic compression characteristic unique to the 1700.

Balancing and Adjustment Trim Potts

Gain reduction adjustment is located below the VU meter. To set the GR, first set meter switch to GR which will indicate current reading on the VU meter. A reading above or below zero on the VU meter may be adjusted via GR ADJ. For input adjustment, set meter switch to input and adjust via METER ADJ until VU meter reads zero.

6BC8 Balance Procedure

Although we have painstakingly inspected all parts, components and workmanship, components and tubes do change over time requiring your unit to be serviced. A thumping sound while in compression may require replacing and readjusting the 6BC8 tube.

Depending on your warranty period, servicing should be completed by a qualified technician or sent directly to ADL. This balancing procedure requires that the unit is plugged in and receiving power. Located on the main circuit board is a 2-position header clearly marked (3-VAC test 3--J). Connect an AC 3-volt supply and remove input and output audio signal.

1. Set attack and release controls to approximate mid setting
2. Input and output attenuators fully counterclockwise (maximum gain)
3. Set meter switch to output
4. Turn output attenuator clockwise until an indication is observed in the meter
5. Located on the back and on both sides of the 6BC8 are two trim pots
6. The right most trim is used to balance the plate voltage (105-VDC)

7. The left most trim is used to balance the cathode voltage
8. Start by first adjusting the plate balance, then the cathode balance trim for minimum meter deflection.
9. Output gain fully clockwise (zero attenuation)
10. Repeat step 8. Note meter indication.
11. Adjust the plate balance trim slightly clockwise until a change in meter indication is observed. Then adjust cathode balance for a meter indication less than that noted in step 10.
12. If meter indication is less than that noted in step 10, perform step 11 repeatedly until absolute minimum meter indication is obtained.
13. Once the balancing procedure is completed, detach the 3-VAC (3-VAC test 3--J) cable, replace top and resume recording.
14. 6BC8 / 6BZ8, If this tube is changed or fails, it will effect meter reading requiring new GR meter adjustment

Please note: A minimum meter deflection of -20 dB will yield the best performance. If the two sections of the 6BC8 (high frequency twin triode) are not reasonably symmetrical, the tube will be noisy and cause a thumping sound when in compression. In the event that the balancing procedure does not yield a usable tube, it must be discarded and repeat balancing procedure with a new tube.

Specifications

Frequency Response	10 Hz ----- 30 K hz
Clip	+28 Dbu
Distortion	< 0.1% --10-GR =< 0.5%
Noise	--75 Dbu
Input/Output Impedance	600 ohm
Dimensions	Standard 19" 2-U depth 11-1/8"
Fuse	120-V 2-Amp Slow Blow 5x20mm
	220-V 1-Amp Slow Blow 5x20mm
Tube Compliment	V--1 6BC8, V--2 12AX7A
	V--3 12BH7A/12AU7A, V--4 6CL5
Shipping Weight	13 lb. or 15 Kg
Power Consumption	Watts 28-W

WARRANTY

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This manual was created 10-28-13. The content, wording, diagrams, photos, etc. of this manual are the sole property of ADL and may not in any way be reproduced, copied, transmitted, or transcribed in any language without written authorization from ADL.

Our warranty is express or implied and specific only for a new ADL 1700 clearly marked with a serial number issued by ADL and is in lieu of all other warranties. The ADL 1700 is covered by limited and conditional warranty starting from date of purchase for a period of one year. This warranty applies to the original client/owner (individual who first purchased the product) and may in no way be transferred to a second owner. ADL will perform multiple inspections, tests and burn-in procedure to insure you are receiving a product that is free from defects in materials and workmanship. If you receive a defective 1700 or damage was incurred in shipping, please notify us and we will arrange an exchange for a new unit. The terms and conditions of this one year warranty may only apply if the product was received by the purchaser in full working condition. In the event that your 1700 malfunctions due to improper installation, use in any way which would compromise the design of the unit, improper ventilation, alterations or modifications of any kind, it would immediately void/nullify your warranty. In the event that a 1700 is received as defective it must be sent back to our factory for repair. ADL will not assume responsibility or be held liable for any 1700 that is damaged in transit.