

# JDK AUDIO

## API 500 Series COMPRESSOR

### MODEL V12



## INTRODUCTION

Thank you for choosing this JDK Audio V12 Compressor. The V12 is a single channel compressor in the API 500 Series format, featuring API's patented award winning compressor circuit. This is one channel of the JDK Audio R22 rackmount compressor. The design includes the patented THRUST<sup>®</sup> switch to protect the sensitive high frequency content of the audio signal, even under the most vigorous of compression ratios.

## HISTORY

This is the same compressor circuit originally designed into all ATI Paragon mixing consoles. Audio Toys, Inc. (ATI) was founded in 1988 to manufacture audio equipment for live sound reinforcement use. The most revered product was the API Paragon P40 and later, its successor, the Paragon II mixing console. Paragons could be found on many of the top tours of the past 20 years. One of the many distinctive features of the Paragon was the inclusion of on-board dynamics processing - a gate and a compressor, both of which were the favorites of many of the best live engineers on the road. The compressor circuit from the Paragon is faithfully replicated in the JDK V12.

ATI was able to acquire API in 1999. Today, the engineering approach and manufacturing processes of ATI have been incorporated into the company which has become API.

The perfect companion to your JKD V10 mic-preamp and JDK V14 EQ, the V12 compressor provides comprehensive easy-to-use control of the audio signal with metering of both gain reduction and either output or input signal level. While there are no Attack or Release controls, the V12 uses an automatic timing circuit, which automatically varies the attack and release characteristics in response to the audio signal passing through the unit. This results in very pleasing audio compression without the potential clicks and pops of either hard-edged attack or super-fast release times.

## LAYOUT

The JDK Audio V12 is a single channel compressor in the popular API 500 Series format. This architecture, pioneered by API, has since expanded to include a variety of other manufacturers who have banded together in the VPR Alliance. While free, voluntary and completely non-competitive, the VPR Alliance helps consumers with the assurance that other manufacturers' products work together in a powered rack to insure signal integrity and operational safety among different brands.

Each channel of the V12 features switches for the patented THRUST<sup>®</sup> circuit, hard or soft knee, link, and bypass. Compressor controls are set via 31-position detented potentiometers for threshold, compression ratio, and output makeup gain. The pair of LED meters show signal levels and gain reduction, with an additional LED to indicate when the input signal is above the set threshold level.

A rear panel 'finger' type edge connector fits the mating connector of a Lunchbox<sup>®</sup> or API VPR 500VPR rack enclosure.

# FRONT PANEL CONTROLS



## VU METER

This 4 segment LED meter shows either output (default) or input signal level. See Jumper Options section for changing metered signal.

## ABOVE LED

LED will light when the input signal is above the set threshold level. **Note:** this LED will light regardless of the BYPASS switch position.

## GR METER

This 8 segment LED meter shows gain reduction for the current input signal and compression controls settings.

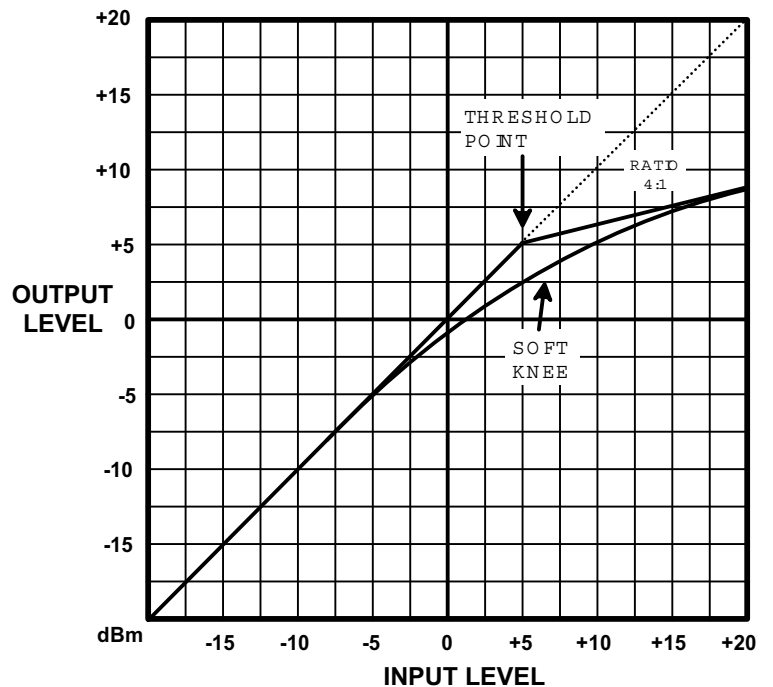
**Note:** this meter will operate regardless of the BYPASS switch position.

## THRESHOLD

The THRESHhold control sets the signal level above which compression will occur and can be adjusted from -40dBu to +15dBu.

## SOFT / HARD KNEE

When in the up "Soft" setting, compressor threshold knee is "rounded" (see graph).



## FRONT PANEL CONTROLS - continued



### LINK

The Link switch activates the DC control voltage with other units in the API 500 Series enclosure.

**NOTE:** Unlike the JDK R22 or other master/slave linked compressor pairs, where the master unit's control circuit becomes the master control for both units while the slave unit's controls are disabled, the V12 operates in a slightly different manner.

Each V12 with the Link active will contribute their gain reduction DC control voltage to a **common summed link bus** with each unit's front panel controls **independently** determining how much gain reduction each unit will produce. In addition, each V12 with Link active will have the gain reduced by the amount of the **summed control voltage from all the units active on the common Link Bus**. This allows for linking together into a common control bus for tasks such as maintaining stereo image or surround image during compression, or affecting one audio signal with another's dynamic characteristics. **The makeup Gain control enters the circuit after all of the link functions.**

The DC Link Bus exists in the Lunchbox and is tied from channel to channel with zero ohm jumpers that can be clipped out if desired to limit the ability to link channels or create a division for multiple independent buses. The API 500VPR rack and the API 1608 console have solder pads that allow you to connect with insulated wire as few or as many slots together as desired to create the DC Link Bus.

### RATIO

This control sets the compressor ratio, which is variable from 1:1 to 10:1.

### THRUST®

When the patented THRUST circuit is engaged, a high-pass filter is placed in front of the RMS detector. The result is preserved punchy bottom end while still compressing the overall signal.

### IN / BYPASS

When in the up (IN) position, audio passes through the V12's compressor controls. The BYPASS is a hard relay bypass. If the unit loses power, it will default to the bypass position. This switch is NOT linked as part of the link mode, so you can still switch in and out each channel independently.

### GAIN

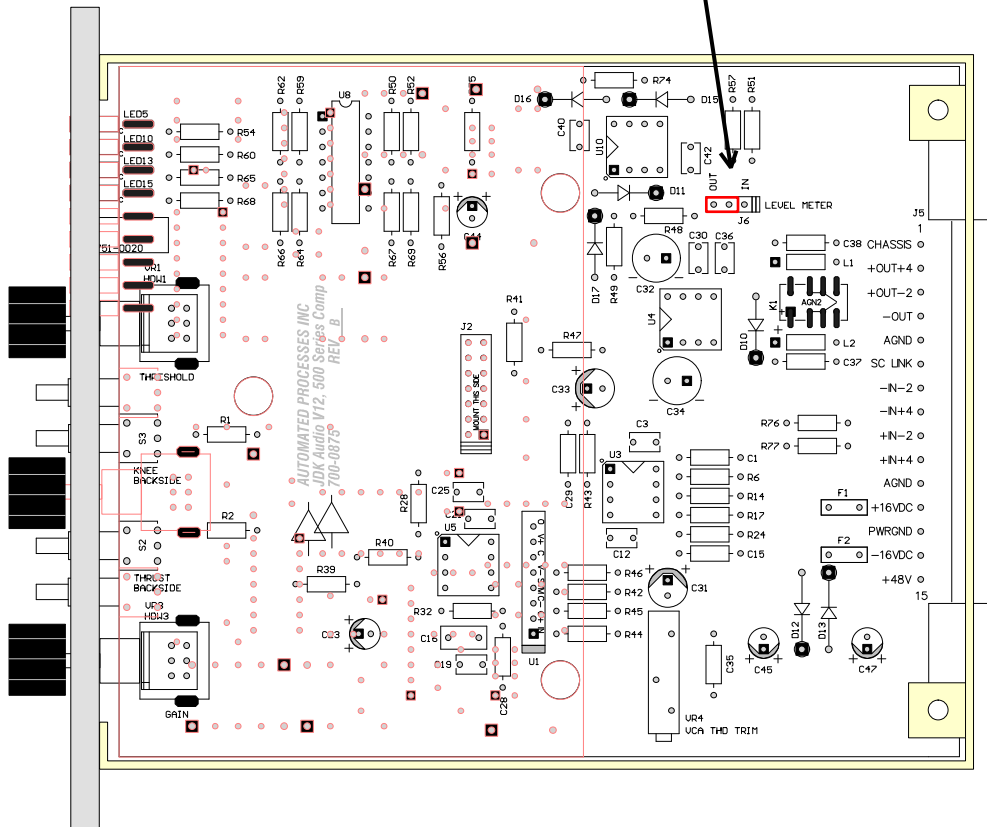
This control adds a variable 0dB to +20dB of make-up gain to compensate for compression level loss.

# JUMPER OPTIONS

## LEVEL METER JUMPER

This jumper allows you to select the front VU LED meter to show either OUTPUT level or INPUT level. The default position shows OUTPUT level.

VU LEVEL METER SOURCE  
SELECTION JUMPER  
SHOWN IN 'OUT' POSITION



## Technical Specifications - V-12

Front Connector: None

Rear Connector: API 500 Series Edge Connector -  
Balanced Input (pin 2 hot) on edge connector  
Balanced Output (pin 2 hot) on edge connector

Input Impedance: 15KOhms Balanced  
Bandwidth: +/- 0.5db, 20Hz - 50kHz  
THD+N @ 1kHz, +4dBu: <0.005%  
Maximum Level: +19dBu  
Signal-to-Noise Ratio: -88dBu (comp in), -92dBu (bypass), -106dB  
Crosstalk: <84dB @ 20kHz  
DC Bus Link: Switchable common summed DC Bus Link  
Meter: -20 to +3 VU Output Level, 0 to -15 dB Gain Reduction, switchable

Compressor Controls:

Threshold Range: -40dBu to +15dBu  
Ratio Range: 1:1 to 10:1  
Makeup Gain Range: 0dB to +20dB  
Hard or Soft Knee switchable  
Flat or Thrust side chain filter switchable  
Attack Time: Program and Control Adaptive, 10mSec to 40mSec  
Release Time: Program and Control Adaptive, 30mSec to 400mSec

Power Consumption: +/- 16VDC @ 105mA

Size: 1.5" x 5.25" x 7" Deep

Weight: 16oz

(Specifications subject to change without notice)

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## JDK Audio Product Warranty

- a. **Warranty Information:** This product carries a one year parts and labor warranty from date of purchase. JDK Audio does not cover claims for damage due to alteration and/or abuse. This warranty is limited to failures during normal use, which are due to defects in material or workmanship. If any defects are found in the materials or workmanship, or if the product fails to function properly during the applicable warranty period, JDK Audio, at its option, will repair or replace the product.
- b. JDK Audio reserves the right to inspect any products that may be the subject of any warranty claims before repair or replacement is carried out. Final determination of warranty coverage lies solely with JDK Audio.
- c. This warranty is extended to the original purchaser and to anyone who may subsequently purchase this product within the applicable warranty period. Proof of purchase may be required.
- d. To obtain service:
  - a. Call JDK Audio c/o API at 301-776-7879, 8:30 AM to 5 PM Monday through Friday (Eastern Time) to get a Return Authorization (RA). Products returned without an RA number may not be accepted.
  - b. Pack the defective part by wrapping in plastic and cushioning material. Seal securely in an approved shipping container. If you do not have a sufficient shipping container, ask JDK Audio for advice when calling for the RA number.
  - c. Include a note explaining the problem and conditions of the service request. Include your complete return address (no P.O. Boxes, please)
  - d. Ship the product freight prepaid to:

JDK Audio c/o API  
8301 Patuxent Range Road  
Jessup, MD 20794

**IMPORTANT: Be sure the RA number is plainly written on the shipping carton**

- e. This is your sole warranty. JDK Audio does not authorize any third party, including any dealer or sales representative, to assume liability on behalf of JDK Audio or to make any warranty for JDK Audio.
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