# 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®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 aquire 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-compteitive, 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®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®or API VPR 500VPR rack enclosure.

# FRONT PANEL CONTROLS

JDK AUDIO  V12

VU            GR
+18          ABOVE  dB
0                          -1
-10                       -3
-24                       -5
                          -7
                          -9
      -10                 -11
-20          0            -13
                          -16
-30          10
-40  dBu  15        LOCK
      THRESH
SOFT
KNEE
      2        4
THRUST®
            6
FLAT   1  :1  10
       RATIO
                    BYPASS
   8        12
4            16
0   dB   20
      GAIN

## 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

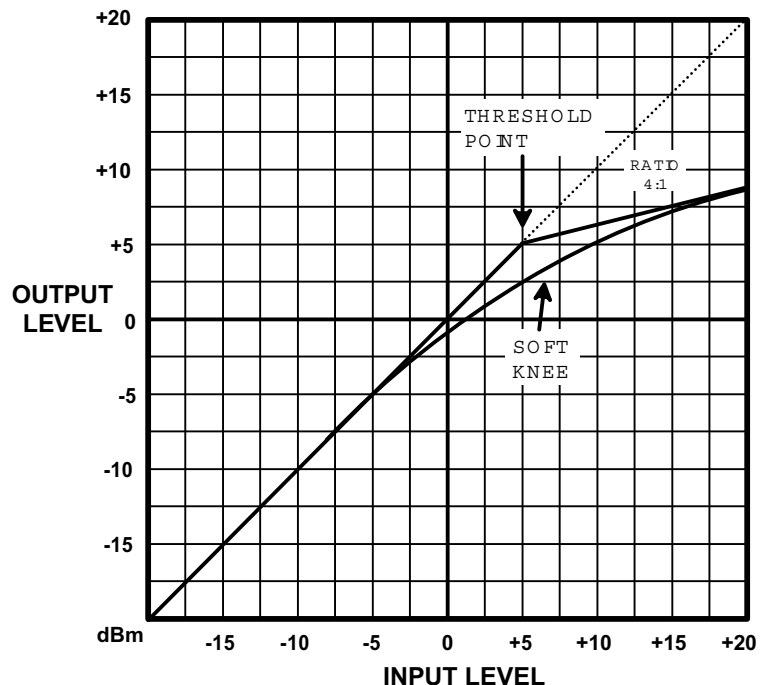This 8 segment LED meter shows gain reduction for the current input signal and compression controls settings. **Note:** *this meter will operate regardless the of BYPASS switch position.*

## 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).

THRESHOLD
POINT

RATIO
4:1

SOFT
KNEE

+20
+15
+10
+5
OUTPUT
LEVEL  0
-5
-10
-15
dBm   -15   -10   -5   0   +5   +10   +15   +20
**INPUT LEVEL**

# 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 units' 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.
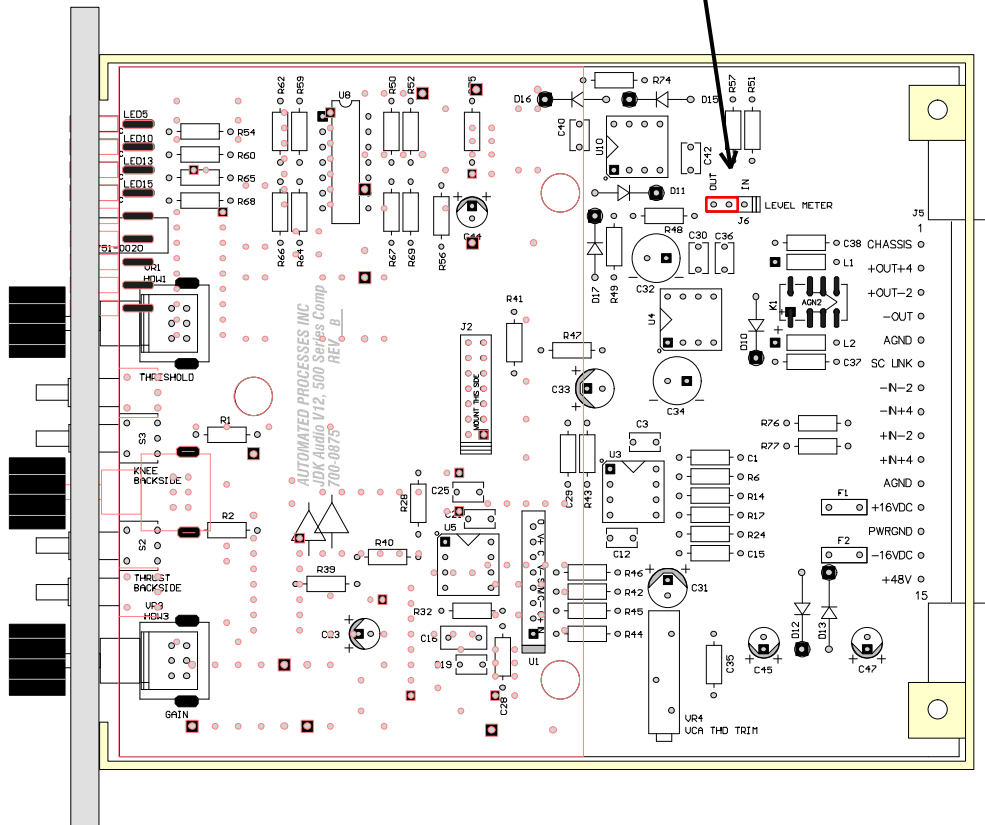
**GAIN**

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

<u>Front Connector</u>: None

<u>Rear Connector</u>: 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

<u>Compressor Controls:</u>
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)

This page intentionally left blank.

# 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:

<div align="center">

JDK Audio c/o API

8301 Patuxent Range Road

Jessup, MD 20794

</div>

<div align="center">

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

</div>

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.

F. THE WARRANTY GIVEN ON THIS PAGE IS THE SOLE WARRANTY GIVEN BY JDK AUDIO AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE WARRANTY GIVEN ON THIS PAGE SHALL BE STRICTLY LIMITED IN DURATION TO ONE (1) YEAR FROM THE DATE OF THE ORIGINAL PURCHASE FROM JDK AUDIO OR AN AUTHORIZED JDK AUDIO DEALER. UPON EXPIRATION OF THE APPLICABLE WARRANTY PERIOD JDK AUDIO SHALL HAVE NO FURTHER WARRANTY OBLIGATION OF ANY KIND. JDK AUDIO SHALL NOT BE LIABLE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES THAT MAY RESULT FROM ANY DEFECT IN THE JDK AUDIO PRODUCT OR ANY WARRANTY CLAIM.

G. This warranty provides specific legal rights and you may have other rights which vary from state to state.

JDK AUDIO

JDK Audio is a product line designed and manufactured by

API (Automated Processes, Inc.)
8301 Patuxent Range Road, Jessup MD, 20794
Ph: 301-776-7879     Fax: 301-776-8117
www.JDKaudio.com