



Costa Mesa
CA 92626
USA

Telephone +1 866 302 1091
Email : sales@phoenixaudio.net

Owner's Manual

N90-DRC 500 FORMAT COMPRESSOR/GATE

Firstly, let us congratulate you on your purchase of the N90-DRC Compressor/Gate designed for the API 500 series Lunchbox or suitable compatible rack. We know you will be as pleased with it's sonic qualities as we are.

You are now the proud owner of a Compressor/Gate that has the advantages of more than 40 years experience in audio engineering, today's component and manufacturing technology, but still retaining "that sound" uniquely achievable through Class A design.

As you can tell, Phoenix Audio is dedicated to the development of Class A discrete technology used within high build-quality equipment.

**The N90-DRC uses our well proven and loved Class A output stage (DSOP-2).
You CAN hear the difference!!!**

The N90- DRC (David Rees Compressor) Compressor/Gate combines compression and gate facilities in a 500 series format.

Unlike the majority of other 500 series compressors, the N90-DRC is a single rack space unit. This gives the versatility of buying just a single channel, or as many channels as you prefer.

The compressor operates with the less common progressive control characteristics.

Gain reduction begins at well below, and ends somewhat above, the nominal ratio. The ratio knob indicates a range from 2 to 8 but these are midway values only.

The curves actually provide a spread of ratios from less than 1.5 to over 10.

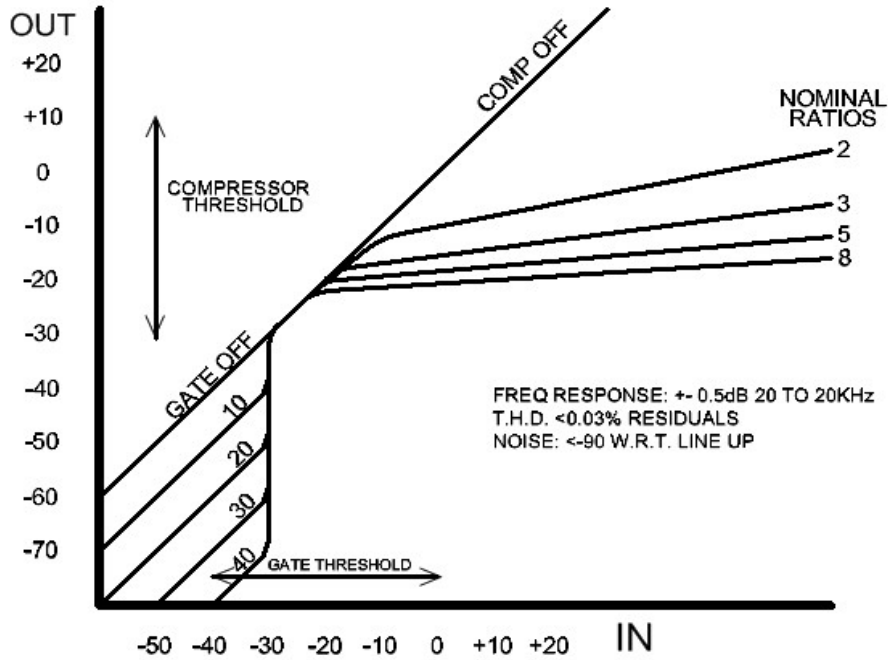
Musically the progressive curves are very kind - There is no sudden change on passing the threshold and audio processing is virtually "seamless". Rapid release times become inappropriate and the 30:1 range provided is ample. A fully automatic dual release is also available.

Technically the progressive curves are achieved using linear detection combined with logarithmic attenuation inside a closed control loop. The method is not suitable for "protective" limiters but is ideal for a compact wide ranging dynamics unit.

"Limiter sound" is still provided by the higher ratios and there is a choice of attack times.

The gate is more conventional, but it's release time is composite with a hold time followed by a fade time. This makes the gate very versatile in that as well as basic noise reduction it can also provide quite subtle changes to ambience or background.

The N90-DRC is designed to be driven by "ear". Each control knob indicates simply the range available and has a ring of marks to aid setting - Only experience can determine optimum settings for the occasion and these may well include the off buttons.



GATE: THRESHOLD: 0 to -40 ATTACK: <1mS
 DEPTH RANGE: 40 to 10 RELEASE: 100mS to 2 Sec
 (hold + fade time)

THRESHOLD SET AT -30 FOR ABOVE CURVES

COMP: THRESHOLD: +10 to -30 ATTACK: 5mS or 1mS (FAST)
 RATIO: 2 to 8 nom. RELEASE: 100mS to 3 Sec.
 MAKE UP: 0 to +15 (or AUTO 100mS to 5 Sec.)

THRESHOLD SET AT -20 FOR ABOVE CURVES

RATIO: 2 to 8 nom. RELEASE: 100mS to 3 Sec.
 MAKE UP: 0 to +15 (or AUTO 100mS to 5 Sec.)

THRESHOLD SET AT -20 FOR ABOVE CURVES

N90-DRC/500 Specifications

API 500 series compatible rack unit:

Class A (DSOP2) Output specs. Frequency response: 20Hz to 20kHz +/- 0.5dB,

Maximum Output = +15dBu @ 1kHz, Noise = -90dB @ 20Hz to 20kHz.

Input connections: XLR input on rear of API compatible rack

Phoenix Audio's unique Class A, transformer-less, True electronically balanced buffer amp input stage.

Compressor Section Rotary Controls:

Threshold Settings: From +10db to -30db

Ratio Settings: From 2 to 8

Release Settings: Release time of 0.1 seconds to 3 seconds

Compressor Section Switches

Bypass : engages or bypasses compressor section

Fast : Fast or auto attack times (1ms for fast or 15ms for slow/auto)

Auto : Auto release of compression

Gate Section Rotary Controls:

Threshold Settings: From 0db to -40db

Range Settings: From 40 to 10

Release Settings: Release time of 0.1 seconds to 2 seconds

Gate Section Switches:

Link: Ability to link multiple modules (up to 8).

Key: External input for gate section, connector is a TT Bantam connector

Gate: Switches the Gate in and out

Compression Meter: LED Metering. (Green = -3dbu, -6dbu -10dbu & -14dBu, Red= -20dBu and doubles as the *Gate Active* LED)

Typical Headroom: +26dB on output stage.

PHOENIX AUDIO N90-DRC

COMP BYP

COMP

THRSH

RATIO

FAST REL

AUTO

THRSH

GATE

LINK RNGE

KEY REL

GATE

EXT

GAIN

3

8

10

14

20

The image shows a Phoenix Audio N90-DRC compressor pedal. It features a black faceplate with several red knobs and silver switches. The controls include: a 'COMP BYP' switch at the top left; a 'COMP' knob with a scale from +10 to -30; a 'THRSH' knob; a 'RATIO' knob with a scale from 2 to 8; a 'FAST REL' knob; an 'AUTO' switch; a 'THRSH' knob with a scale from 0 to 40; a 'GATE' knob; a 'LINK RNGE' knob; a 'KEY REL' knob with a scale from 0.1 to 10; a 'GATE' knob with a scale from 0.1 to 2; an 'EXT' switch; a 'GAIN' knob with a scale from 0 to +15; and a vertical stack of five green LEDs labeled 'GATE' with values 3, 8, 10, 14, and 20. A gold phoenix logo is located at the bottom right. A blue line connects the 'GATE' knob to the 'GATE' LEDs.

COMPRESSOR SECTION

Comp/Byp Switch: This switch activates the compression circuit. It does not affect the gate circuit. The Bypass is a *soft* bypass. This means you can still have the benefit of the Class A Input buffer stage.

THRSH Rotary: This is the *Threshold* control for the compressor. Threshold Settings: From +10db to -30db. This sets the level at which the compression will start. If the input level exceeds the set value the compression circuit will start to compress the input signal.

Ratio Rotary: Ratio Settings From 2 to 8. This sets the ratio of the compression, or how much the compressor reigns-in signal that over-shoots the level set with the *Threshold* control. A lower setting (2) is more gentle at bringing the overshoot under control, whereas a higher setting (8) will be a more aggressive or “brick-wall” control. Or, (for instance) for every 8dB over the threshold the compressor will only allow 1dB to pass through.

Fast Switch: The *Fast* switch deals with attack times. The N90 has an auto attack time built-in that generally covers most situations. Occasionally a signal with very fast transients will need a faster attack time than the auto. Switching the *Fast* switch down will engage the faster attack-time. The auto time is around 15mS, and the Fast is around 1mS.

Rel Rotary: *Release* time from 0.1 seconds to 3 seconds. This controls the period of time between when the signal falls below the compression threshold and the compressor stop compressing the signal.

Auto Switch: The *Auto* switch is an *Auto Release* that takes over from the *Release* rotary control. Switching it down activates a dual timing circuit that uses combined release times that vary automatically with the input. The *Auto* automatically uses a fast release on fast transients and a longer release time on the slower transients. The Auto release is very *program sensitive* and is sometimes used for gain riding applications.

GATE SECTION

The gate section works independently from the compressor but is designed to complement its functionality. The gate is not designed to be a “Hard” cut-off gate control, but is designed to be an analogue gentle and musical gate that gently drops the background noise by -15dB making it less obvious that a gate has been employed.

THRSH Rotary: This is the *Threshold* control for the gate. Threshold settings: From 0 to -40.

Link Switch: The N90 can be linked in any multiple you like (up to 8 modules) by utilizing Pin 6 of the 500 Series compatible rack. Pin 6 is designated as the *Stereo Link* Pin. Usually Pin 6 is linked in pairs, or is bussed. Please see your 500 series compatible rack manual for information about how to link the pins.

When N90's are linked via Pin 6 it is always the left-most module that takes command when the units are in Link mode. The Link switch must be switched down for the N90 to be in link mode.

Link Scenario: If you have a rack with 8 x N90's installed and Pin 6 is “bussed” on channels 1 to 6. with channel 7 and 8 only linked to each other. Switching channels 1 to 6 *Link* Switch down will link the 6 modules together and all 6 channels will follow channel 1. If you then switch channels 3 and 4 *Link* Switch up, channels 2, 3, 5 and 6 will continue to follow channel 1, but channels 3 and 4 will work completely independently.

At all times channel 7 and 8 would operate independently of each other and the other channels, or could be linked together by switching both *Link* switches down, in which case channel 7 would take control of channel 8.

Key Switch: The Key switch determines which input the gate will use for its control signal. If the Key switch is up the gate circuit uses the signal on the input as its trigger source. If the Key switch is down the gate circuit will use an input applied to the Bantam TT jack on the front panel (EXT) as its trigger source.

Rel Rotary: *Release* time from 0.1 seconds to 2 seconds. This controls the period of time between when the signal falls below the gate threshold and the gate releasing the signal.

Gate Switch: Switching the gate switch down activates the gate circuit. This illuminates the 20 (Red) LED to show the gate is active.

EXT: This connector is a TT Bantam connector (6.35mm) An external trigger source can be sent to this connector (such as a snare input), and if the *Key* switch is down the gate circuit will be triggered by this.

Gain: Rotary control. This controls the *make-up gain* of the module. As compression often attenuates the signal, make-up gain is needed to bring the signal level back up again.