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# Inward Connections

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## (http://www.inwardconnections.com Brute, Magnum, and Vogad, 500- series modules

REVIEWED BY ADAM KAGAN (/REVIEWS/BY/ADAM-KAGAN)

Inward Connections from Los Angeles has been quietly producing ultra-high-end tube and solid-state mic preamps, compressors, EQs, and summing amps for about 20 years. The now legendary Vac Rac modular processing system and the TSL-3 stereo tube limiter grace the racks of top engineers and studios and have become many mixers' secret weapon on rock vocals and drum buses. Recently, Inward Connections set out to build a series of modules for the 500-series format, and after a lot of field testing and user feedback, a handful of modules based on a newly designed, discrete op-amp were born. From this line, I tried out the Magnum mic preamp, the Vogad VCA compressor, and the Brute opto-cell compressor. These are solid-state but share the clarity and musical color of their Vac Rac cousins. Custom, all-discrete VF-600 amplifier blocks along with high quality transformers give these modules exceptional dynamic range, extended frequency response and very musical characteristics.

First up is the Magnum mic preamp, which, like all the Inward modules, has a simple gunmetal-black front panel with white screened labels. The two large knobs for gain and output trims along with switches for phantom power, gain, polarity-reverse and -20 dB pad are joined by a flexible, three-way hi-pass filter that goes from 70 Hz up to 200 Hz. Also on the front panel is a 1/4" hi-Z instrument input for guitars or keyboards. In the studio, I used the Magnum to record snare, male vocals, and piano. The Magnum has up to 80 dB of gain, so it can handle any mic or sound source with ease, and its low noise floor and extremely high headroom gave me plenty of options for balancing input gain versus output trim for subtle color variations. For instance, you can turn the output trim down and pump the gain knob for some thickness and attitude, or lower the gain and turn up the output trim to provide more headroom and a more transparent tone. On the Magnum, these gain-staging differences are subtle, but worth the time to master. I would classify the Magnum as clean and warm, with an open and natural tone. The bottom end on vocals was tight but cozy, and the very open high end sounded natural and never harsh. On snare, the transients came through clearly while the transformer slowed down the transients just enough to provide a classic, clean and warm snare tone. On piano, I found the tone very natural, with a slightly forward midrange that would help a grand piano sit nicely in a typical pop mix. Overall, the Magnum provides a similar sound to high-voltage, discrete mic preamps, with just a hint of transformer color. This is definitely a gem in a 500-series mic preamp.

Next up is the Vogad VCA compressor. Again, this module is based on the discrete VF-600 amplifier, but this module has a transformerless front end and a tranny on the output. Also finished in gunmetal-black with white screening, the Vogad has the familiar Vac Rac-style knobs for threshold, attack, release, compression ratio, and makeup gain. Along with these knobs are switches for bypass, link, and the fantastic 250 Hz hi-pass filter for the detector circuit. A ten-segment LED bar meter displays gain reduction from 2–20 dB. This piece boasts fantastic frequency response, noise floor, and distortion specs, making it one of

the clearest and quietest compressors I can think of. I like VCA compressors for tracking, --and I also like the ability to dial in very fast attack times. The Vogad's attack goes from a super-fast 0.2 ms up to a moderately fast 20 ms, while the release ranges from a moderately slow 100 ms all the way up to 3 s. The compression ratio starts at a mellow 2:1 and climbs up to 30:1 for some serious limiting, and in keeping with the versatility theme, the threshold broadly sweeps from -40 to +22 dB. Together, the ratio, threshold, and time constants allow more types of dynamic control than almost any compressor I can think of. In the studio, I tracked and mixed vocals, bass, and drums through the Vogad, and I could always easily dial in a compression setting that provided musical dynamic control without dulling the signal or adding distortion. On snare and kick drum, the attack times allowed me to either smooth out the snap or dial it back in a bit, without killing the low end of the drum, making a pair of these guys ideal for a drum subgroup. On vocals, the Vogad could provide subtle dynamic rides, or bring the vocal right up to the front of a mix, with no pumping artifacts. Similarly, basses could be smoothed out or downright smashed into submission, also with no distortion on the low end. Like I said, I like VCA compressors, especially for tracking, and the Vogad hits the nail on the head with its extreme versatility and very open, natural tone.

Last is the Brute opto-cell limiter. The Inward Connections TSL-3 tube limiter, which came about around 1990, has already proven to be a classic piece of gear, and the Brute will likely be right alongside it. The Brute shares the same opto-cell circuit as the TSL-3, but it employs the VF-600 discrete amplifier for its amplifier section instead of tubes. This module sports a familiar, retro-styled VU meter; large gain-reduction and output-level knobs; and bypass, link, and my now favorite 250 Hz hi-pass detector-circuit roll-off switch. While this guy has input and output transformers and impressive specs, with a signal-to-noise level of over 95 dB and 50 kHz bandwidth, its main attribute is its sound. Everything I ran through the Brute sounded better! Really. Most opto limiters are one-trick ponies, excelling at either subtle gain-riding, or wholesale crushing, but the Brute works its magic at almost any setting you can dial up. My favorite setting

for the Vac Rac Limiter is “stun”, with both the reduction and output gain at maximum. This setting makes rock vocals come forward with all the attitude you could hope for and no harshness or pumping. The Brute demonstrates this trick as well, and you shouldn’t be afraid to turn both knobs all the way to 20. Speaking of this, the stepped knobs allow simple recall but still provide enough variation so you don’t feel stuck in a setting that isn’t quite dialed in. On lead vocals, the singer seems to take a step closer to the mic, no matter if the gain reduction needle was only slightly bouncing or completely buried. Both acoustic and electric guitars benefitted from the Brute’s color, gaining a slightly warmer, more aggressive tone that set them solidly in place in a mix, showing that a pair of these on a drum, vocal, or instrumental subgroup will add the glue that makes mixes sound expensive. The detector-circuit hi-pass filter usually stayed in the active position, but on some sources, switching it out provided an additional color option for the compressor. As my final compliment, I will admit that I have always had trouble tracking vocals through opto-cell limiters, like an LA-2A, because I can never find a setting that provides the gain control I want without too many compression artifacts or the occasional obliterated note. The Brute somehow overcomes this limitation, and I would feel very comfortable tracking vocals using only the Brute as my limiter. Don’t sleep on this box — it will make you smile every time you patch it in!

Also, check out the other 500-series modules from Inward Connections, available from Vintage King Audio. (\$700-\$850 street; [www.inwardconnections.com](http://www.inwardconnections.com), [www.vintageking.com](http://www.vintageking.com))