

review

# Grace 101



## Guided tour

The 101 comes in a single-rack-space half-width chassis; two of them would fit side by side nicely in a standard 19" tray. Construction is extremely solid and durable, yet cosmetically the 101 is about as far from the heavy-duty Mil Spec look as one can get (short of sporting lace filigree, I suppose). Instead, the front panel is a highly polished chromed mirror, with beveled edges and a curved profile, held on by four countersunk hex bolts. This will not go unnoticed in your rack! From left to right that front panel features:

- high-impedance instrument input
- phantom power (48 volts) on/off switch
- rotary gain switch
- two-color Peak indicator LED
- trim potentiometer
- highpass filter on/off switch
- power on/off switch with associated LED

The Gain switch is an 11-position precision silver contact rotary switch, offering 10 to 60 dB (-10 to 40 dB for the high-Z input) in 5-dB steps. (For ribbon mic aficionados, a high-gain version of the 101 is available with 10 dB more gain.) The Peak indicator, which monitors the signal in between the input and output amplifiers, lights green at -20 dBu, and turns red at +16 dBu (10 dB before clipping). The Trim pot, a conductive plastic fader, is an attenuator for the output amplifier; fully clockwise is no attenuation, fully counter-clockwise is -10 dB. The highpass filter has a 12 dB/octave slope at 75 Hz.

Around back the 101 uses a gold plated XLR-F jack for mic input, and both a gold plated XLR-M and a 1/4" TRS jack for balanced line-level output. The two jacks can operate simultaneously, handy for a variety of multing or signal distribution applications. (I suspect it's only a matter of time before manufacturers

The Grace model 101 is a single-channel solid-state microphone preamp. Built by Grace Design, the Boulder (Colorado) company known for their models 801 and 201 (8- and 2-channel mic preamps, respectively), the 101 shares several features with its higher-numbered brethren: In addition to a sexy chromed faceplate and a "transimpedance" gain stage under the hood, the Grace preamps all share a design goal of accurate, uncolored reproduction.

# Clarity and chrome

## MIC PREAMP

BY BOB ROSS

start labeling this feature “Zero Latency Monitor Output,” given this common usage when tracking to digital audio workstations.) Both the XLR and TRS jacks can feed unbalanced sources, though Grace strongly recommends using cables which leave pin 3 (or the ring) open to minimize distortion. A power input jack connects to the included 6V/800 mA wall wart.

### The inside scoop

Inside, the Grace 101 is a tribute to pristine manufacturing techniques. The circuit board is spacious and robust, populated with meticulously laid out surface-mount components. “No user serviceable parts” indeed, but also very likely no need for service: the 101 looks like it was designed to withstand a mortar attack.

Purists will appreciate that there are no electrolytic capacitors in the audio path. This preamp is transformerless, its circuitry fully balanced (electronically) throughout. Even the front-panel instrument input is balanced, though obviously it will also work with unbalanced guitars, synths, the usual suspects. According to Grace, the “transimpedance” gain stage offers constant bandwidth over a wide gain range, and it’s not prone to slew rate limiting, yielding a faster, more articulate reproduction of transients. For the number-hungry, two listed specs bear this out and are worth noting: Frequency response is  $\pm 3$  dB from 4.5 Hz–390 kHz (not a misprint; that’s three hundred ninety kilohertz!), and the output amplifiers possess a slew rate of 2000 volts per microsecond. (For comparison, quite a few well-respected pro audio products have achieved stellar sound using output devices in the 13–35 V/ $\mu$ s range.)

But you don’t listen to specs, and you don’t use a mic pre on the test bench with the lid off. It’s all about the sound...or, in the case of the Grace 101, the lack of a sound.

### Different species of mic preamps

Mic preamps can be grossly over-generalized as falling into one of two categories: There are those that have a characteristic sonic signature, preamps that impart a distinctive and (hopefully) euphonic coloration to every signal that passes through them. They are as much tone shapers, signal processors, literally distortion generators, as they are pure gain devices...and the best of these are coveted for their sound. These are the Character preamps.

And then there are the preamps that are windows—pure, pristine, transparent, invisible. They contribute nothing to the signal, but divulge the limits of what the microphone is capable of resolving with exacting clarity and precision. These are the Truth preamps...and the best of these are coveted for their accuracy.

The Grace 101 would appear to fall in the latter category. Almost to a fault. See, it’s very easy to appreciate a

good Character preamp: Plug in a mic, turn up the gain, sing a little, “Man, that sounds awesome!”. The contribution is overt. The appeal of the Grace is in its *lack* of a contribution. Plug a mic into the 101, turn up the gain, sing a little, “Man, that sounds...exactly like me singing.” On first listen, the thing about the Grace 101 that is most striking is...absolutely nothing. Only after repeated concentrated listening evaluations do the 101’s stringent standards become apparent.

### First honors—the flute

My first session was recording solo flute. I selected an AKG C 535 EB, a small-diaphragm cardioid condenser mic with a gentle lift above 2 kHz, parked it about 18" over the fingerholes, and plugged it into the Grace 101. For comparison, I had several other mic preamps to choose from, including a Demeter VTMP-2B (a 2-channel all-tube unit which costs considerably more than two channels of Grace 101 would), and the ubiquitous and affordable XDR preamps in a Mackie 1202 VLZ Pro, a unit I suspect many readers are familiar with.

Setting the gain on the 101 was effortless; with the Trim pot fully clockwise, 50 dB on the Gain control brought the level into the desired range. At least, I *think* it was 50 dB; besides the maximum and minimum values, there are no markings around the Gain switch, so you have to count clicks if you want a specific amount of gain. I didn’t find this to be an obstacle, as I’m usually looking at the meters on the tape deck or DAW when dialing in preamp gain anyway.

What I did find annoying was the 101’s black lettering on the lower curve of its chrome faceplate: Unless the 101 is mounted above eye level, it is absolutely impossible to read any of the front panel designations, and even then a certain amount of squinting and head tilting was necessary. I found myself mistaking the phantom power switch for the highpass filter switch on quite a few occasions until I forced myself to memorize their locations.

Anyway, there’s my flute sound. Yep, sounds like a flute. Umm... (fingers drumming on tabletop)...right. Do I like it? Uh, sure, what’s not to like? Nice balance of breath sounds/attack and fundamental, just enough key click to know it’s not a sample, hmm, you can really hear the room sound supporting the long tones...guess I’ll print it. Dum-dee-dum-dee-dum.... So. That’s the Grace 101. I, uh, guess maybe I’ll swap out the Grace and hear how the Mackie does on this flute.

Oh.  
Oh!!!

Where’d my natural timbral balance go? Where’d the room tone go? I don’t mean to suggest that the C 535 EB through the Mackie VLZ Pro sounded *bad*; it was certainly a perfectly usable flute sound. But little elements that had contributed to the “suspension of disbelief,” the things that made you forget you were listening to a recording, were missing. I patched the Grace 101 back in. Ah, there it was. Subtle, barely perceptible details of the flute sound returned. The Grace’s ability to translate early reflections to a tangible three-dimensional room sound (this is from a single mono mic, remember) was stunning. Not stunning in the “Omigosh, that’s amazing!” sense; just...sublime. August. Rewarding.

Gradually I came to appreciate the strengths of the Grace 101. While it adds nothing, it also seems to miss nothing. Whatever the mic captures is amplified and portrayed in acute, natural detail. Qualities that are specific to a particular mic are also revealed under this refined microscope, as became evident during my next session, while recording electric guitar.



## Guitar

For this particular recording I found myself with three dynamic mics clustered in front of a vintage Altec 12" speaker in a ported cabinet. Especially for "traditional" rock guitar tracks I like to blend multiple mics, making minor positional adjustments to use their in- or out-of-phase-ness for spectral variety. On this day the mics included a Shure SM57, an Electro-Voice RE15, and an Electro-Voice 635a. I started with the 57 into the Grace 101, but swapped mics and preamps around with joyful impunity.

The Grace seemed dead set on confounding all my preconceived notions about what these mics "really" sound like. Whenever I'd solo a mic through the 101, I'd hear some quality, some aspect of its timbral fabric, that was not evident through the Demeter or the Mackie. Some of those qualities were details that improved upon the other preamps, while others were conspicuous by the omission of some element that was a desirable part of the guitar sound.

In general, it seemed as though the Grace was magnifying both the strengths and the weaknesses of these particular microphones: The peakiness of the SM57 in the 3 kHz range was more clearly defined, yet deprived of some of its enchantment; the lack of proximity effect from the RE15 was more blatant, and revealed to potentially be either an asset or a liability; the bandwidth restrictions of the 635a were exposed in all their guitar-friendly glory.

Ultimately I found the slightly thickened, "chocolately" tube/transformer coloration of the Demeter to be more complimentary to the canonical rock'n'roll electric guitar sounds this project warranted. But the Grace's ability to extract every ounce of information from whatever mic was plugged into it is clearly an impressive and valuable feat.

## Traffic ambience—a test

While sampling stereo traffic ambience with a coincident pair of AKG C 451 B mics, I used the Grace on one channel to directly compare its sound to either the Demeter or the Mackie. Not surprisingly, in this context the differences appeared clear-cut—making it a pointless technique for actually capturing cohesive stereo tracks, but quite edifying for isolating the 101's sonic characteristics. (The random but statistically uniform distribution of fre-

quencies in distant city traffic bears a remote resemblance to pink noise, making it a convenient source for identifying gross response anomalies in an audio chain.)

The word "smooth" came to mind. Compared to either of the other preamps, the Grace 101 had a less pronounced emphasis in the upper midrange, allowing the microphone's extended high end to be more readily perceived without harshness or disproportionate brightness. Also apparent was the very linear bass and lower midrange of the 101: It reproduced details in the 150–600 Hz register with an openness and a neutrality that gave ambience a natural "fullness" without sounding "thick" or "fat."

The quickness of the output electronics seemed evident whenever transients occurred; no matter how closely I matched channel levels during steady-state signals, percussive impulses consistently registered higher and faster on the channel through the Grace. Overall the 101 presented a seemingly unbiased window that extended over the entire audio range with no conspicuous peaks or dips, no obvious distortions or shortcomings.

This neutrality may work against it at times. Using the high-impedance instrument input was rarely gratifying, despite the fact that there was nothing "wrong" at all with the sound from the guitars and basses I auditioned. Makes you realize how invaluable the subtle coloration of "character" preamps and direct boxes can be when recording direct instruments.

The 101 sounded fine: clean, crisp, round, full...and perhaps just a little bit boring. Its accuracy comes at the expense of mojo. However, the 101 might be the perfect DI for instruments that are destined for re-amplification; it outputs as unaltered a reproduction of your direct instrument sound as conceivable, leaving a *tabula rasa* for subsequent processing. Input impedance is 1 Megohm, making it compatible with the most finicky vintage pickups and piezos.

## Vocals

My final sessions with the Grace 101 were vocal overdubs (once again featuring the beautiful and talented torch singer Betsy Heart). Due to the depleted microphone inventory we had available, our choices came down to an MXL 2001P (one of the least expensive large-diaphragm condenser mics on the market) and a Sennheiser MD441U (arguably one of the finest moving-coil dynamic mics ever made).

We started with the MXL into the Grace 101. Previous sessions with

Betsy singing into the 2001P had yielded a slightly strident tone with a tad too much sibilance. I've also noticed that the built-in preamps in many inexpensive consoles can exacerbate that quality to a detrimental degree.

Yet into the 101 this inexpensive mic sounded so smooth and sweet I had to repatch it into the Mackie XDR preamp just to remind myself that I hadn't imagined those previous anomalies. Yep, that's what I'd remembered: A slight graininess, a hard edge to consonants and high frequency transients, a closed-in smearing of detail, and a 5 or 6 kHz peak that just makes digital recorders go "SPLAT!" But plug the mic back into the Grace 101—and now it's Courvoisier. Yes, the peak was still there, but it was somehow more manageable, more integrated into the whole vocal sound. The Grace 101 may very well elevate cheap condenser mics from an economic necessity to a viable creative color in their own right.

With a bona fide prestige mic like the Sennheiser 441 (atypical perhaps, but prestigious nonetheless), the Grace could really shine. Textural nuances in Betsy's low alto were reproduced with impressive clarity and focus, and her voice took on an immediacy and realism that threatened to challenge our "Live Or Memorex?" predictions repeatedly. And the bottom end was so even, never corpulent or unwieldy, that I found the highpass filter completely unnecessary.

## Hold the crayons

Anywhere natural realism is required the Grace seems to excel. I wouldn't hesitate to reach for a 101 to record piano, solo or section strings, entire ensembles in a great sounding concert hall. In a well-stocked studio there might be more appropriate choices for tracking rock drums (color and attitude being the name of that game), but I'd bet the 101 can be outstanding for jazz drums and orchestral percussion.

The Grace 101 is an exceedingly flat un-hyped preamp that unveils the strengths and weaknesses of the source mic with judicial objectivity. Unless you're really attuned to (and appreciate!) unenhanced exactitude, the "wow factor" is pretty low. It doesn't possess the magic of some Character preamps, but neither does it lock the user into a similar coloration on every signal. If accuracy in audio is your goal, the Grace 101 delivers.

**Price:** \$695

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