Crash Test #1

The V-Drum System

By Norman Weinberg

Okay, let's check this baby out — five speed, 480 cubes with dual carbs, 350 horses, covers the quarter in 4.6, and — *oh damn* — wrong hot rod! No, it's not the latest hand-built roadster from Italy. It's the new V-Drums from Roland. While they can't cover the quarter mile in under five seconds, the kit does have an amazing collection of features. Check out these standard specs: 12 stereo input jacks, 56-voice polyphony, 600 different drum sounds, 54 backing instruments (pianos, brass, and more), 50 drum kits, 16 chains each with 32 steps, eight audio outputs and a 64 x 160 segment LCD for on-screen editing.

Roland Sets The Bar Higher

In addition, this kit contains some special features, such as 30 different audio effects (reverbs, delays, flangers, and the like), a metronome with a range of 20-260 bpm that can count out loud, an internal sequencer and, well, read the next paragraph.

The Big News. If you've kept your ear to the street, you've heard the buzz about this kit. Yes, you can play it with brushes. Yes, the unit can sense where you play on the head and adjust the sound accordingly. And, yes, you can edit some parameters that are truly mind-blowing.

V-Drums use Roland's COSM (Composite Object Sound Modeling) technology to compute how a drum or cymbal might react to changes in performance in real time. For example, how does a drum's timbre change when played at the edge of the drum as opposed to the center of the drum? And more importantly, how does the sound change *as* you move from edge to center in real time? In addition to changing the sound's color based on the position of the stroke, the V-Drum's COSM engine generates timbral changes based upon a series of "what if" scenarios. What would this drum sound like if the shell was made of wood, steel or brass? What if the shell was only 1-1/2" deep? Or 5" deep? What would it

RATINGS

5 = *Excellent*
4 = *Very Good*
3 = *Good*
2 = *Fair*
1 = *Poor*

Drum Pads: 5
Bass Drum Pad: 4
Hi-Hat Pedal: 5
Triggering: 4.5
Sound Quality: 5
Editing: 5
Construction: 5
Sequencing: 3.5
Interface: 5
Value: 4

Overall Value: 4.6

SPECS

Prices: V-Pro Kit: $4,995. TD-10: $1,895. V-Basic Kit: $3,995. Expansion Package: $1,195.

V-Pro Package: Three PD-120 pads (snare and floor tom), two PD-100 pad (mounted tom), three PD-9 pads (cymbals), one kick pad (pedal not included), hi-hat pad and pedal, TD-10 Brain, all necessary cables.

Features: 12 Stereo trigger inputs, mix input, four stereo pairs output, 56 voice polyphony, 600 percussion sounds, 54 melodic instrument sounds, 16 chains (32 steps each), 30 effect types, built-in sequencer, extensive editing based on COSM technology, positional tracking, can be played with brushes.

sound like with a Pinstripe head and an external muffler using a condenser microphone inside the shell in a garage going through a parametric equalizer?

Are you starting to get the picture?

The Stand. The V-Drum rack-style stand is a beauty — strong tubular metal construction in a cool, deep blue color. The rack consists of three curved sections: the main front section, and two arms, each with two horizontal support bars for added stability.

My favorite thing about this stand is that it comes completely assembled. Just take it out of the box, swing out the two side arms, and place the pads on the mounting rods. The rods are attached to the tubular arms with a clamp that allows for adjustment on two planes.

The V-Basic Kit (TD-10K/B) is comparable to a four-piece acoustic kit. It comes with the rack stand, two PD-120 pads (snare and floor tom), one PD-100 pad (small tom), one PD-7 (hi-hat), one PD-9 (ride cymbal), the bass drum trigger pad, the hi-hat pedal mechanism and the brains of the system, the TD-10 sound module. It's a basic kit with everything one might need to get started.

Cables are included for each pad, as well as a set of clips to keep the cables organized around the stand. If you wish to go to the limit, you can add the V-Expansion kit, which turns the basic V-Drum kit into the full-blown system, containing another PD-120 and PD-100 for additional small and large toms, two PD-9 pads for cymbals and two extra cymbal mounts. As an extra convenience, adding the expansion kit only requires the removal of one of the stand's cross-pieces, so you won't need to totally dismember the rack to add additional drums and cymbals.

The Pads. The new Roland PD-100 and 120 pads are quite different than other electronic drum pads. Instead of a plastic body with a rubber playing surface, these instruments look very similar to "normal" acoustic drums. They consist of a wooden shell just over 4" deep with six tension casings. The counterhoop is made of metal with a rubberized coating that helps to make the kit quieter when played. The new drumhead mater-

ial (manufactured by Remo) looks and feels like a woven mesh fabric.

These PD-style pads are capable of detecting strokes on the surface of the head and strokes on the counterhoop (stereo). Like all the pads of the V-Drum system, a single stereo cable is used to connect the pad to the brain. You can use the six tension rods to adjust the tension of the head, which won't change the tone, but certainly does affect the feel of the playing surface. To further tweak the pads to your playing style, you can access the trigger functions inside the TD-10 brain to tell the unit what kind of trigger you're using on each input (PD pads 5, 7, and 9; PD-100 and 120, and a wide assortment of additional pads and external triggers). In addition, you can control the sensitivity, threshold, velocity curve (eight highly usable settings), scan time, retrigger cancel, mask time and crosstalk. With all this flexibility, you're sure to come up with a series of settings that fit your playing style like a glove. Roland's hi-hat pedal is also adjustable to better emulate your own personal feel requirements.

The PD-100 and 120 pads are single-headed instruments. Instead of using a bottom head, the lower portion of the drum has a bar that extends from one end of the shell to the other. On the top of this bar is the sensor — a small cone-shaped rubbery device that extends up to, and touches, the center of the head. Mounted to another section of the crossbar is a piezo that seems to be the sensor for the rim. There is no doubt that the PD-100 and 120 track, feel, and respond better than any other electronic surface on the market. The PD-9 cymbal pads that come with the kit have piezos under the main surface and FSRs under the rim, so the pad can sense if you're striking the edge for another sound or grabbing the edge to choke the cymbal.

The Back Panel. The TD-10's back panel contains jacks, jacks, and more jacks: 12 trigger-in jacks for the kit, a foot switch jack (used to select kits or start and stop the internal sequencer), the hi-hat control jack (for the hi-hat pedal), master audio outputs, three sets of additional stereo outputs, a stereo headphones jack, a "mix-in" jack (for connecting a CD or cassette player), a MIDI-Out and MIDI-In. Oh yeah, I forgot to mention that there is also a slot for a card (M-512E) that can store all the information from the entire TD-10, including all drum kits and sequencer performance data.

Performance. Once the pads are all cabled into the brain and the outputs are connected to an amp, it's time to do some playing. Roland has long been known for its outstanding drum sounds, and this box is no exception. The company has done a great job of programming useful factory kits that will keep a player's interest both in the store and after they take it home, as well as a few that seem to be intended for demonstrating what the unit can do, rather than a realistic performance.

When a kit is called up, the huge display screen offers the name of the kit and a good deal of additional information, including the kit's number indicated in huge, red LEDs. If the kit is programmed to respond to brush playing, the lower right portion of the screen displays a brush icon. Below the kit's name is a series of four abbreviations: AM for

ambiance, CL for compressor, EQ for equalization and FX for effects. The display indicates if these features are turned on or off for the entire drum kit in a very clever manner: the abbreviations are reverse highlighted when on, and plain text when off.

Let's take a quick look at the features that are available with these four options. Ambiance is adjusted in "Studio Settings." As you might expect from the name of this section, the Studio Settings parameters adjust the type of room, its size and wall material, the microphones used and the placement of ambient microphones. When selecting the performance space, you can choose between (from most dry to most open): beach, living room, bathroom, studio, garage, locker room, theater, cave, gymnasium and dome stadium. Once you've selected the performance space, you can adjust its size from tiny to small, medium, large or huge (be sure to check out the extremely cool 3-D revolving cube as you adjust the room's size).

If that's not enough variety for you, it's easy to change the room's walls from wood to plaster or glass (each change provides its own unique character to the sound). You can also select the microphone used to "record" the sound (condenser, dynamic, and "lo-fi"), and the mike's position in relation to the drum (outside, standard or inside). The last adjustment available in this area is the selection of the placement of the ambient microphones. You have the choice of a low position (similar to floor mikes) or a high position (similar to overheard mikes).

Once your settings have been tweaked to your taste, you can then adjust the ambiance output levels and output assignments. Individual adjustments for the head and rim surfaces are made by using a series of faders displayed on the screen. As the manual points out, if you think about the ambiance features as an outboard effects unit, the individual controls act as send levels while the output assignments act as return levels. By tweaking both, you can control your sound to a great degree.

Just like a real recording studio, the compressor equalization, and special effects settings are found in the "Control Room" section of the brain. In the mixer settings, you have access to the relative volumes of each instrument in the kit, their stereo placement, output assignment and group volume. The compressor/limiter has settings for threshold and compression ratio as well as attack, release and output levels. Hey, this works just like the real thing!

The EQ settings are really outstanding. Each input has its own individual EQ settings, and you can choose between peak, low-shelf and high-shelf filters and make adjustments to the sound by selecting Q, the center or corner frequency, and the gain (-15 to +15).

While the FX section of the studio parameters are quite impressive, they affect the entire drum kit, not each individual instrument. However, you've got a great amount of control over how much of the instrument's sound is affected by the chosen special effect. The V-Drums have 30 available effects, and just like a stand-alone rack unit, the tweakable parameters change depending on the effect you've chosen.

The Sounds. V-Drums come with enough sounds to keep you busy for weeks, but if tweaking sounds is your game, then this kit is a dream come true.

When you press the "Instrument" edit button, the screen takes you to the true land of V-Drums, where every parameter is at your command. The "List" function key takes you to a listing of every available sound, and there are plenty of them: 183 snares, 132 toms, and well, you get the idea. Sounds are divided between "V-Drum Sounds," normal drum sounds, and electronic sounds (from the Roland 808 and 909 machines). The instruments that aren't V-Drum instruments, such as cymbals and percussion voices, have limited editing options — only the pitch and the decay are adjustable. Sound from the 808 and 909 categories allow an analog interface that lets you set the tuning, the tone, and the decay. Other electronic drum and percussion sounds offer the ability to tweak the attack, tone, noise, decay, balance and blend of the sound. In other words, the controls mimic a true analog drum machine.

But this module really shines when editing sounds that are included in the V-Drum category. To give you a perspective of the editing choices, look at the parameters in Fig. 1 (and the ease of the editing layout) for a typical snare drum sound. Pretty damn impressive, no?

The Front Panel. The layout of the buttons, sliders, knobs and displays is logical and well organized. The data input section consists of up/down, left/right cursor buttons and a large value wheel. Master volume con-

Fig. 1. Editing Parameters

Shell
Material
Wood, Steel, Brass
Depth
From 1" to 6" in 1/2" increments

Head
Head Type
Clear, Coated, Pinstripe
Head Tuning
From -480 to +480 over an eight-octave range

Muffle
Muffling
Off, Tape 1, Tape 2 (heavier than 1), Doughnut 1, Doughnut 2

Strainer Adjustment (available only with snare drum sounds) *Off, Loose, Medium, Tight*

trols determine the mix-in level, the phone level, and the master output volume. In addition to the master knobs, there is a group fader section that controls the individual volumes of kick, snare, hi-hat, others (other drum and percussion sounds), backing (melodic instruments such as keyboards and guitars) and click. The sequencer and editing sections of the front panel are also arranged in an ergonomic manner. Along with the large LCD display and the four function buttons, navigating around the TD-10 is a breeze. A few hours with the manual and you should have the user-interface portion of this kit pretty well under control.

The Sequencer. The sequencer on the TD-10 brain is a four-track sequencer with assignments preconfigured for drums, part 1, part 2, and bass. There are 50 preset patterns and 50 user patterns available in memory. You can record drum tracks directly from the V-Drum pads, but if you wish to record any melodic instruments into a sequence, you'll need to use an external MIDI keyboard.

Each sequence can be up to 99 bars in length, and you can specify the parameters of your recording method. You can use a loop style of recording, where each pass of the sequence adds and mixes your current performance with what you recorded previously. Or you can tell the sequencer that you want each pass to replace any previously recorded data. Count-offs, quantizing, erasing selected measures, copying, appending and clearing patterns are all available features, but don't expect to be able to go into the sequencer and edit individual events. It just isn't possible. Consider the internal sequencer on the TD-10 as an advanced "scratch pad" and you'll be more than pleased with the results.

The Other Stuff. At any time, you can press the "Tool" button, then press "F-4," and have access to help screens that not only give you quick tips about a specific feature, but make use of a "jump" mode that will instantly take you to that portion of the interface. For example, use the help index to call up "MIDI," and you can be taken directly to the MIDI settings. However, call up the help screen for "PMA-5" and you'll see the following text: "Try the PMA-5 at your nearest Roland dealer." Was this really necessary? Wasn't there some other information that could have been added to the help screens instead of an advertisement?

The click can be adjusted to perform a variety of meters (0-13 beats per bar) in a variety of ways (note values of 2, 4, 8, and 16). If you want real counts, you can ask the click to give you "voice" and specify numbers, the "*ands*," triplet-style counts, or even sixteenths (*1 e + a*). If hearing your metronome counting out loud seems a little odd, you can choose a variety of instruments to play the click, including claves, wood blocks, triangles and an 808 kick drum. If that isn't enough, you can assign an ambiance level and an FX send level to the click, as well as determine the pan position and select the output as master or headphones only. Oh yes, don't forget that the click volume has its own fader, right on the front panel.

Many of the drum kits come with patterns that can be triggered by hitting the rim of a cymbal. By the way, several of the play-along patterns are a ton of fun! If you want to change that pad's position to a different one, it's very easy. You can select how the pattern can be played back in one of three ways: "loop" (plays the pattern over and over), "one shot" (plays the pattern a single time, then stops) and "tap" (each time you hit the pad you hear the pattern played note-by-note). Think about this last option for a while and I'm sure you'll come up with some very interesting ideas: timbales, sax solos, electric bass lines played with the bass drum pedal, and more. You can also assign two additional pads (connected to the TD-10 brain at the aux 1 and aux 2 inputs) to function as increment/decrement switches for patterns or drum kits.

You can select a different MIDI note number for each pad when you want to drive external synths, but the hi-hat will only fire one MIDI note number (the same note is sent for open, closed, and pedal hi-hat). The gate time for each individual pad can be adjusted between 0.1 and 8 seconds, but you can't specify individual MIDI channels for each pad. There is a "soft thru" setting available on the TD-10 so that you can merge the MIDI messages from the "MIDI-In" port to the "MIDI-Out" port. This is a nice feature if you wish to combine the V-Drums with another percussion controller.

You can take advantage of the V-Drum features of pressure sensitivity on the hi-hat, and position changes on the snare drum and ride cymbal when using the TD-10 as an external sound module for MIDI sequencing. The TD-10 is already set up to interpret

these subtle changes from MIDI's continuous controller messages (these are messages similar to using a synthesizer's pedals and wheels to add vibrato or change volume). The playing position on the snare drum head is determined by controller #16. Controller #17 determines the playing position on the ride cymbal, and controller #4 alters the hi-hat pressure. If your sequencer is already using controllers #4,#16, and #17 for other functions, you can easily change the TD-10's assignments.

The TD-10 manual and associated pad manuals are clear, concise, and easy to read. It would be nice if there were more tutorials and examples of some of the more advanced features, but all of the basic information is here and easy to access. The back of the TD-10 manual contains extensive information about preset kits, patterns and backing instruments, instrument lists, factory note-number settings, and MIDI implementation charts and messages. There is also a compact glossary and an index.

So, What Is It Really All About? I had a hard time getting a handle on this kit. Sure, it's big fun to play. The sounds are outstanding, the feel of the instrument is the best on the market, and the V-Drum editing parameters are totally unique to the industry. This kit is so new and revolutionary that it's difficult to compare with other electronic drum sets.

So why doesn't the kit allow for layering, stacking, or alternating sounds like other electronic kits? Why can't I program a cross-fade between different sounds? Why can't I specify a different MIDI channel for each pad? Where are my five-stage envelope controls?

Why are some pretty basic features missing on this kit? I think I might know the answer.

Previously, manufacturers hinted that their electronic drum kits could replace acoustic drums, but players didn't buy that concept. Most pushed the idea of electronic drums as a tool, as an additional complement to acoustic drums, or as a brand new instrument that just happens to be hit with sticks. But very few players actually sold their acoustic drums to go 100 percent electronic.

I believe that Roland had a new vision — this kit can actually substitute for acoustic drums in many settings. Some "basic features" are missing because they just aren't necessary anymore. With positional sensing of the ride cymbal, the pad doesn't need to cross-fade between four or five different samples to create a realistic timbre. With so many outstanding sounds on-board the TD-10, why would you even think about firing an external sound module? If this kit is the equivalent of an acoustic kit, it may not need the tricks and special features of layering or alternating sounds. Do you really need a five-stage envelope if you can custom-build your sound by selecting an instrument's size, shell type, head material, muffling, studio environment, microphone type and position and equalization and effects?

Is this kit the new standard for electronic drum kits in the future? I think so, and hope so. Play on it for an hour, and I know you'll agree that this is the next step in the evolutionary chain.