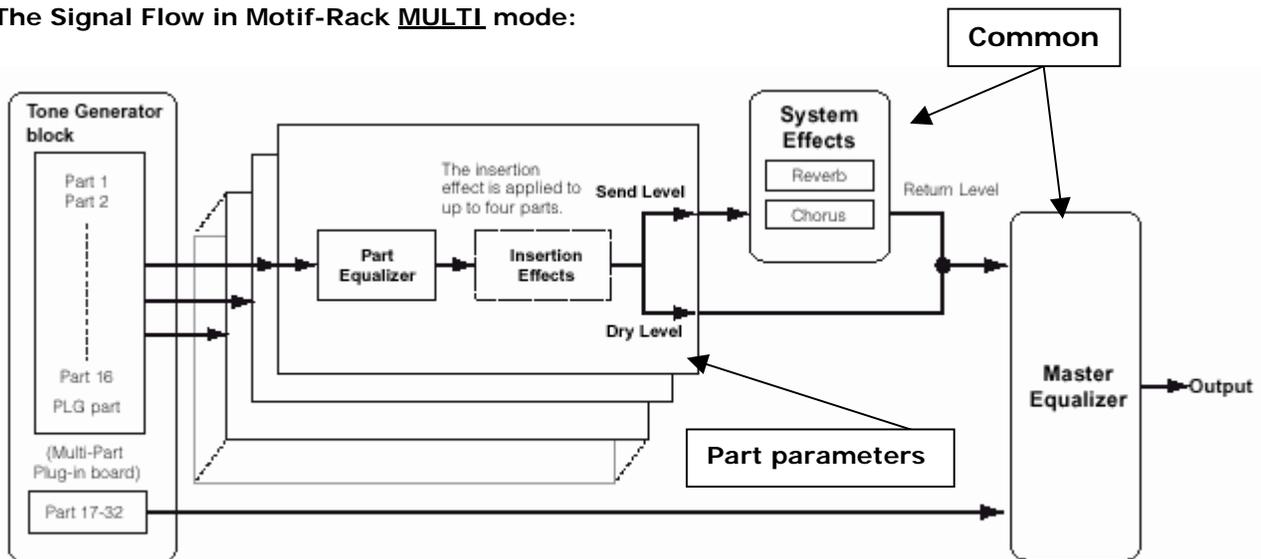




# POWER USER

## MUSIC PRODUCTION and PERFORMANCE MOTIF-RACK EFFECTS 101

The Signal Flow in Motif-Rack MULTI mode:



When you edit parameters, keep in mind that there are two different types:

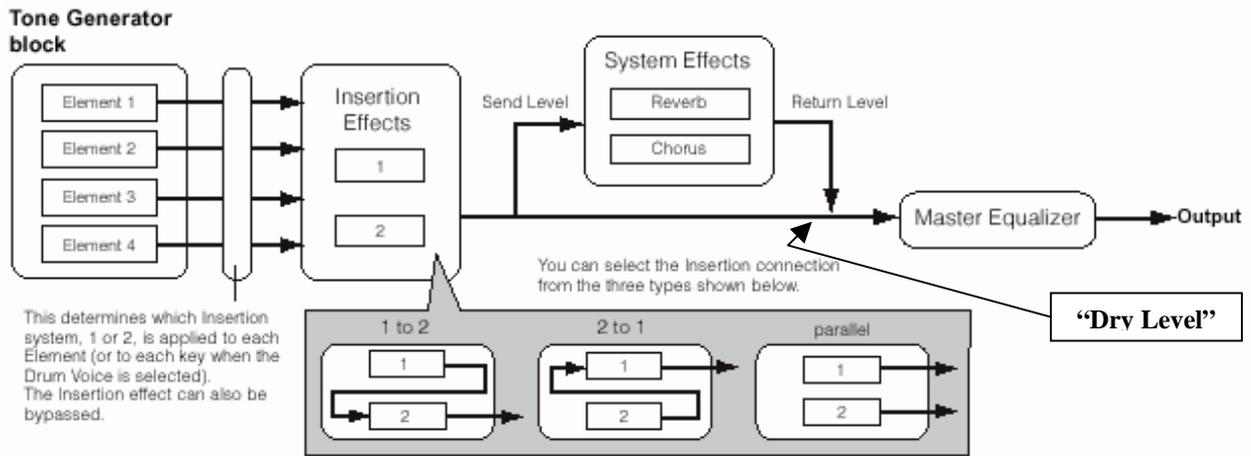
1) - Parameters common to all Parts, which include:

- System Effect settings edited in the Effect Edit mode
- Master Equalizer settings edited in the Multi **Common** Edit mode

2) - Parameters specific to individual Parts, which include:

- Part Equalizer settings edited in the Multi **Part** Edit mode
- On/off status of Insertion effects and Send Level settings for System effects edited in the Multi **Part** Edit mode
- The Part Equalizer is **not** applied to the Parts of Plug-in Board (PLG150/PLG100).
- The Insertion effects and System effect are not applied to the Parts of the Multi-part Plug-in board (PLG100-XG). It has its own Reverb, Chorus and Variation Effects.

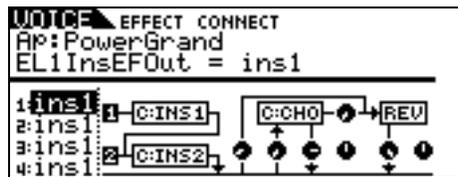
**The Signal Flow in Motif-Rack VOICE mode:**



When you edit in VOICE mode each Element can be individually assigned to the INSERTION EFFECTS block. The INSERTION EFFECTS are a DUAL UNIT – each having 107 algorithms. These two units are twins. As you can see the two units can be routed in *series* (1 to 2, or 2 to 1) or in *parallel* where each is independent. The INSERTION EFFECTS are edited as part of the Voice architecture, however, they can be recalled when a Voice is used in a Performance Multi or a Mix Multi. Insertion Effects can be assigned MIDI controllers so that the sound of the effect can be manipulated in real time from your MIDI keyboard controller or from a sequencer.

Following the Insertion Effects block you have a send opportunity to the SYSTEM EFFECTS (REVERB and CHORUS). All Elements in common are routed to the SYSTEM EFFECTS. There are separate sends to the REVERB and to the CHORUS or you can configure it so that signal goes in series through the Chorus before going to the Reverb with a send control in between. Each of these System effects has a return level control and a pan position control. Notice that not all signal has to go through the SYSTEM EFFECTS – the signal that does not is referred to as the DRY LEVEL signal (even though it may, in fact have the INSERTION EFFECT on it). We will see that only certain System Effect parameters can be manipulated in real time by the Control Setups - the REVERB Send amount (cc091) and the CHORUS Send amount (cc093).

Following the SYSTEM EFFECTS both the INSERTION/DRY signal and the SYSTEM EFFECT signal is combined before entering the MASTER EQ. The MASTER EQ is a programmable 5-band parametric equalizer. This means you have control over the Frequency, the Q or Width (the number of frequencies affected) and the Gain (+/- 18dB). The MASTER EQ can tailor each Voice individually for the response you need.



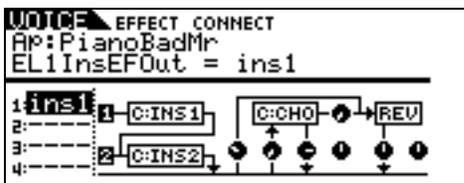
To view the EFFECT CONNECT screen in either VOICE mode or MULTI mode, you simply press the [EFFECT] button. Multiple presses of the [EFFECT] button will toggle between EFFECT EDIT parameters and the EFFECT CONNECT routing screen (shown above).

Navigation is accomplished using the PAGE [<]/[>] buttons and the UP/DOWN cursor arrows. As you highlight a processor (box) the screen will read out the selected EFFECT Type. As you highlight a knob icon, it will identify itself and its current value. You can use the DATA WHEEL to enter new values or types, as necessary.

## Motif-Rack Effects 101

### Signal flow in a Normal Voice:

There are up to 4 Elements (multi-sampled instruments) in a Normal Voice. They can be individually assigned to the INSERTION EFFECT block, which is a dual block (INS1 and INS2) that can be routed in series or in parallel (see the routing as 1-to-2, 2-to-1 or parallel). The two System Effects (Reverb and Chorus) each have their own send levels for all the Elements together. Then the entire signal goes through the Master EQ (a 5-band EQ) then on to the stereo output (System outputs). An important thing to understand about the VOICE mode effects is that the Dual Insertion Effect assignment can be recalled for four Parts when the Part is used in a multi-timbral setup.



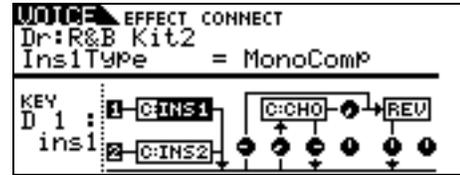
Signal flow direction →

The routing of INS1 and INS2 can be in series INS1→INS2 (shown above) or series INS2→INS1, or in parallel. You can have certain Elements go to INS1 and not INS2 or vice versa. The *knob* icons in the screen will identify themselves as you move the cursor to them. They are, left to right on the bottom row, REV SEND, CHORUS SEND, CHORUS RETURN, CHORUS PAN, REVERB RETURN, REVERB PAN. Located in between the Chorus processor and the Reverb processor is the Chorus-to-Reverb send amount. With this arrangement you can use the REVERB and CHORUS in series (Chorus→Reverb) or in parallel (use each send knob). This special Chorus→Reverb send connection is important. If you set the REVERB Send to 0, and instead use the Chorus send first, then use this special send control, it can be quite a different effect. Here's why—if you set the Chorus processor to a digital Delay, then *each* delay will have reverb. If you set this special in between connection to 0 and instead use the Reverb send separate from the Chorus send, then only the initial hit will have reverb but each repeat will be dry. This allows a series/parallel scenario to happen with the Reverb and Chorus processors. Please experiment with different effect algorithm assignments for each.

**Navigation:** Press EFFECT to view the connection screen. You can explore the EFFECT CONNECT

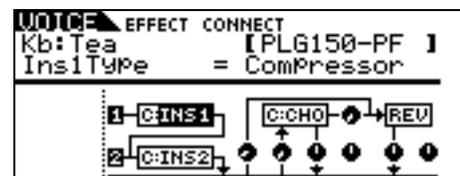
screen by using the PAGE buttons and the UP/DOWN cursor arrows. As you highlight each processor (box) it will read out the selected EFFECT algorithm on line three of the screen.

### Signal flow in a Drum Voice:



Each Drum (Key) can be routed to either one or the other of the Dual Insertion blocks. The routing of INS1 and INS2 can be in series INS1→INS2, in series INS2→INS1 or in parallel (shown above). In a Drum voice each KEY is a separate entity and has its own routing to the Effect algorithms selected for the KIT. Just as in a Normal Voice, one set of Insertion Effects can be selected for the entire KIT – you choose to use it or not, per Key. With this scenario it is possible to have reverb on a snare drum, and none on the kick drum. You can compress the snare drum on D1 (as shown above), while another drum Key has none. You can touch a key on your Controller while holding the [SHIFT] button on the Motif-Rack to recall the routing of each Drum Key, as necessary. A drum kit's special routing is maintained when the Kit is placed in a MULTI setup, when the KIT PART is selected as one of the four PARTS designated to recall its Insertion Effect. Also maintained are any individual drum Keys that are routed to individual outputs. The individual output assignments are recalled when the KIT PART is set to OUTPUT SELECT = "drum".

### Signal flow in a PLG150 PLUG-IN Voice:



The routing in a PLG150 series board is similar to that of a Normal Voice. The waveform of the PLG150 board is always treated as a *single* Element (whether it is in fact or not). For example, although the PLG150-PF (sampled piano board) has multi-Element Voices (up to four), they are delivered to the Motif-Rack as a whole. Each PLG150 board has to be considered because there are different technologies involved – this is why you cannot define an Element as a multi-sample - not all the Yamaha boards are based on

sample playback technology. Some of the PLG150 series boards will have their own built in Effect processing (on-board, so to speak), allowing you to use the Motif-Rack effects elsewhere.

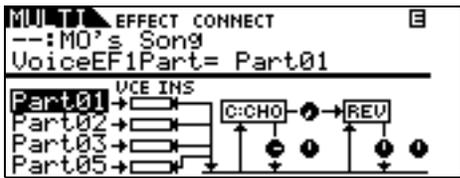
The PLG100-XG board has its own three System Effects (Reverb, Chorus and Variation). The PLG100-XG cannot use any of the Host product's processors nor can internal sounds use the effects on another PLG board. The PLG100-VH cannot be used with the Motif-Rack at all.

**PLG Board : On board Processing**

- PLG150-AN - Distortion, EQ
- PLG150-DX – no effects
- PLG150-DR – Reverb, Insertion
- PLG150-PC – Reverb, Insertion
- PLG150-PF – Reverb, Chorus, Insertion (fixed)\*
- PLG150-VL – no effects

\*The PLG150-PF allows the user simply to alter the pre-programmed effects. You cannot change or select the assigned effect. However, you can offset the available parameters. Remember the PLG150-PF is **pre**-programmed Piano category Voices. The Flange Piano is called this because the Flanger is the assigned effect processor. You can alter the speed and depth but you cannot select a Phaser or a Distortion on the Flange Piano. The other PLG-boards listed above that have Effects allow the user to program them completely. PLG Boards cannot use the PART EQ (PART EQ is reserved for the 16 internal PARTS only).

**Signal flow in a Multi:**

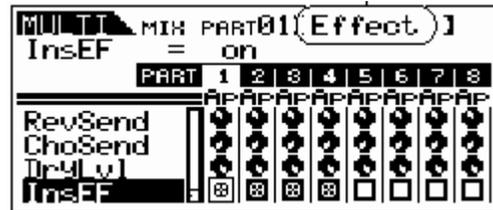


Any four Parts 01-16, PLG1-2\* can recall their Dual Insertion Effects routing from Voice mode (\*provided they contain PLG150 boards). The graphic above shows PARTS 01, 02, 03 and 05 are recalling their Voice mode insertion effect routing and any assigned real time controller functions assigned to control the effects. Notice the individual send knobs to the Reverb and Chorus processor are not shown on this screen, because each PART will have its own send amount. The individual Effect Sends screen will be found in the PART Edit area. The CHORUS RETURN, CHORUS PAN, REVERB RETURN and REVERB PAN are shown, as is the Chorus-to-Reverb send amount (located between the CHO and the REV).

**In MULTI (PERF) mode:** There are up to four Voices in the factory programmed Performance MULTI programs (found in the MULTI LIBRARY). User Multi programs, however, are not limited to

the number of PARTS you can place on a single MIDI channel – but common sense should prevail. When creating your own these can be a combination of internal and PLG150 series board Parts – each PLG150 series board can contribute one Voice (PLG100-XG Voices cannot be stored in Performance Multi)<sup>1</sup>. The DUAL INSERTION EFFECTS from Voice mode can be recalled for four active Parts. What actually happens is you 'activate' the Dual Insertion Effects that are programmed in at Voice edit level. You do not make changes to them in MULTI mode. The total signal is delivered to the Master EQ and then on to the System stereo outputs. Part of understanding this is that the Dual Insertion Effects are programmed at the Voice level where you can also assign physical controllers to manipulate certain parameters in real time. Only parameters that would yield some kind of useful result are available for real time manipulation. In other words, parameters that would naturally create some kind of unfortunate glitch will remain unavailable for real time manipulation (they will be grayed out – unavailable for assignment). Depending on your Voice mode assignments, it is possible that one controller will do several different things – perhaps doing different things to different layers simultaneously. The available parameters are detailed in the DATA LIST booklet that accompanies your Motif-Rack.

**In MULTI-channel MIX mode:** The Tone Generator block can have up to 33 parts, maximum. This occurs when expanded with PLG boards. Parts 1-16 are the basic AWM2 Motif-Rack engine (Normal/Drum Voices). Parts 17-32 are available if, *and only if*, you have a multi-timbral PLG100-XG board installed in slot 2; the 33rd part would be a PLG150 series board in the remaining slot (slot 1).



The DUAL INSERTION EFFECTS can be activated on any four Parts of the MULTI (shown above active on PARTS 1-4 – see the 'x' in the InsEF box). This includes Parts from the internal Motif-

<sup>1</sup> The PLG100-XG board follows the protocol of XG. All setup data for XG tone generators are stored in the sequence data and is made up of System Exclusive and Channel Control Change messages.

Rack (1-16) or a Plug-in Part 1-2, if it contains a PLG150 Series board (**not** the PLG100-XG - which has its own effects). Each of these Parts will have individual sends to each of the two System effects. And finally, all signals go through the Master EQ and then on to the System stereo outputs.

You can route PARTS 1-16 and/or PART P1 and P2 (Plug-in Parts) to individual outputs. You are given four individual outputs. When a PART is sent to an individual output, it can (if selected to do so) maintain its Dual Insertion Effect routing and controller setup from Voice mode. When a PART is assigned to an individual output, it is taken out of the System L&R outputs and therefore it is taken out of the System Effects (reverb and chorus) as well. And when you have edited a Drum Voice you can have it recall its unique routing per Drum Key and this is maintained when the drum kit is assigned to individual outputs. Even if a single drum is routed to a particular individual output, the routing is maintained in a MULTI by selecting "drum" on the OUTPUT SELECT screen.

#### Effects Background:

The algorithms (a fancy word for recipe or specific arrangement) in the Motif-Rack Effects are deep. Please refer to the DATA LIST booklet to see the individual parameters and effect types. On page 26-27 of the DATA LIST you will see a list of the different Effect Categories and Effect Names. Page 28-29 will list the parameters available in a convenient form to see them all and the ranges of control. This is worth a look. For the real "MIDIots": the MIDI Parameter Number is displayed so that you can assign it for remote control. The TABLE heading is for those that need to know the exact value of each setting – refer to the charts on pages 37-39 for exact values for each parameter setting. Basically settings are made to taste (by ear)...but knowing what is subjective and what is objective is what separates a bogus mix from a brilliant mix.

So much of working with sound is subjective (meaning it is up to you) but some of it is very objective (meaning there is a right and wrong). Sorry, but it's true. Knowing the difference between these two concepts is the key to greatness in the audio business. For example, when routing signal to an effect, do you return more than you send or send more than you return? "Gain staging" is the objective part of audio. Making sure that you work on the side of SIGNAL when dealing with the SIGNAL-to-NOISE ratio. Here is the rule: Send up to the limit of clean audio (that is, without clipping) and return just enough to taste. There are exceptions,

however. If you are sending signal to an effect processor that you have configured as an EQ, how much signal do you send? Again, this is not subjective. There is a right and wrong: You must send **all** of the signal through the EQ. If you were to return dry signal from certain routing scenarios you can cause 'phase cancellation' – a situation where you will be adversely affecting the signals integrity. Knowing what you are doing with effects can mean confident utilization with stunning results. Just experimenting willy-nilly can lead to bogus results. Of course, you could eventually wind up with something useable but... knowledge is power. By the way, the insertion effects do not let you make some of the typical beginner mistakes...often if a situation means you are going to return out of phase signal you do not get an opportunity to return the wrong signal.

#### The Processors

The **REVERB** processor (part of the SYSTEM effects) has 20 algorithms available. These algorithms are repeated in the Insertion effect processors. This is done so that the same algorithm can be used differently within the same piece of music. When working with a reverb algorithm you can select it by size environment: HALL, ROOM, STAGE, PLATE, WHITE ROOM (a room you design), TUNNEL, BASEMENT and CANYON. Yamaha was the first company to introduce digital DSP based effects that were based on the actual dimensions of the great concert 'Halls' of the world. 'Rooms' have a definite size factor to the space. A 'Stage' is usually a loud reverberant environment. A 'Plate' is a brilliant emulation of the old 10-foot boxes that used to contain these reverb chambers that used a transducer (driver) at one end and second transducer (microphone) at the other...in between was a large aluminum plate 1/64<sup>th</sup> of an inch thick. You sent signal from the mixing board's aux sends and returned up to a maximum of 5 seconds of cool reverb. This was the standard for drums and percussion "back in the day". The 'White Room' will help you design your own environment and can teach you about how the other presets were made. The White Room lets you set width-height-depth of the walls and the 'wall vary' lets you set the reflective texture of the surface from rug to steel. Also important in working with reverb is an understanding of how it works in the real world. In most listening situations you are hearing a certain amount of signal directly while the rest of the signal bounces off the environment you are standing in. If for example you are 30 feet from the stage you will hear a portion of the sound direct from the stage but most of it will bounce off of the walls, floor and ceiling to arrive at your position. Because we

often record and/or amplify musical signal with a technique called "close-miking", reverb became a necessary evil (if you will). Close-miking allows us to isolate a particular sound from others in the environment but there is a trade off. To regain some of the distancing we use artificial reverb to do the trick. Recognize that when you put a different amount of reverb on the snare than you do on the flute this does not occur in nature. All the musicians in the same room would naturally have the same reverberant environment with very subtle differences due to positioning in the room. This gets back to the subjective part of the audio business. SO WHAT? You can use effects to taste. There is no rule that says everyone has good taste. An important parameter in all the reverbs is the INITIAL DELAY this is the time before the reverb receives the signal and can help position the listener near-far from the instrument. The HPF and LPF are there to help you shape the reverb signal itself. There is a rule of thumb here: low frequencies reverberate less than high frequencies. Low frequencies tend to hit a surface like a wall and spread out while high frequencies hit a wall and bounce back into the room. This is why when you are sitting next door to the party you only hear the bass through the wall – all the high frequency content reverberates and stays in the source room. So use the HPF (high pass filter) to allow the highs to pass through to the reverb and block the lows from reverberating. Reverb on bass just adds MUD. MUD is not a subjective term but if it is what you want go for it (but yuck, it is mud). Low frequencies don't bounce back they tend to hug the walls and spread out. If you want cutting bass leave the bass "dry" (without reverb). New to the Motif-Rack are several algorithms from Yamaha's powerful ProR3 reverb. These are among the best reverbs ever available in a synthesizer! Period!

The **CHORUS** processor (also a part of the SYSTEM effects) and the 44 algorithms available are repeated in the Dual Insertion effects blocks, as well. These are not just chorus effects. They are short time period delays ranging from flanging, to chorusing/phasing and on out to multiple repeats and echoes. There are also tempo control delays that can be synchronized to the BPM of the music. To understand this processor, lets talk about delaying signal. We have two ears and sound arriving at our ears is identified by a very sophisticated setup (the ear-brain combination) It is much more difficult to fool the ear than the eye. But nonetheless it can be fooled from time to time. Flanging is a very short time delay. If two identical signals are perceived at your ear-brain, you will not be able to perceive them as two separate signals until one is delayed

slightly. Imagine 2 turntables in perfect synchronization playing the same record. You would perceive the second one as just making the first signal **louder** until you delayed one of them a bit. If one slips as little as 1ms behind the other you will perceive what we call "flanging". The actual name comes from two reel-to-reel tape decks playing the same 2-track material. The engineer would slow one down by placing his thumb momentarily on the metal *flange* (reel). The resulting swirling sound is called flanging. Any delay between exact sync and 4ms is considered flanging. Delay times of more than 4ms but less than 20ms are considered "chorusing" and somewhere beyond 20ms the ear-brain starts to perceive the delay as two distinctly separate events, we call this doubling or echo. Among the algorithms you will find: Chorus, Celeste, Symphonic, Ensemble Detune, Flanger, Tempo Flanger, Phaser, Tempo Phaser, Delay L/R, Echo, Cross Delay, Cross Delay Mono, Cross Delay Stereo, Tempo Delay Mono, Tempo Delay Stereo, and Tempo Cross Delay.

The **DUAL INSERTION EFFECT** is made up of two identical units, each of which has the same 107 algorithms. The effect types here can each be the subject of intense study. In addition to all the reverbs, delays, echoes, cross delays, tempo delays, etc., that are found in the System processor, you get some that are available nowhere else. The V-Flanger for example, is a simulation of a classic vintage flanger device. The Phasers faithfully reproduce the response of the old guitar stomp box of the '70's. The Early Reflections and Gate Reverb/Reverse Gate are great to recreate classic drum sounds. The Karaoke delays (basically cheesy repeats for that sing-along sound) – when you need *that* sound, nothing else will do. The Auto Pan has settings for front/rear as well as left/right to give a circular feel to a stereo panorama. There are many combination effect types, where one of the processors is doing *two* or *three* effects simultaneously, including:

- Distortion + Rotary Speaker
- Overdrive + Rotary Speaker
- Amp Simulator + Rotary Speaker
- Distortion + 2-way Rotary Speaker
- Overdrive + 2-way Rotary Speaker
- Amp Simulator + 2-way Rotary Speaker
- Distortion + Delay
- Overdrive + Delay
- Compressor + Distortion + Delay
- Compressor + Overdrive + Delay
- Auto-wah + Distortion
- Auto-wah + Overdrive
- Touch-wah + Distortion
- Touch-wah + Overdrive

Wah + Distortion + Delay  
Wah + Overdrive + Delay  
2-way Rotary Speaker  
Dual Rotary Speaker

Among the effects from the Yamaha Samplers A4000/5000 are the Lo-Fi (you can degrade the word length and sample frequency), Low Resolution, Noisy Delay, Attack Lo-Fi, Digital Turntable, Digital Scratch, Auto Synth, Tech Modulation, Jump, Isolator, Slice, Voice Cancel, Ambience, Talking Modulator, Beat Change, Ring Modulator, Dynamic Ring Modulator and Dynamic Filter.

There are two different Multi-band Compressor algorithms that are great for fixing and punching up specific frequency ranges. Multi-band compressors are used to bring out (punch up) specific frequency bands without raising overall gain. The Digital Turntable adds programmable "record surface noise" to your mix. You can control the amount and speed of the snaps, crackles and pops, even the amount of virtual dust on the stylus. Digital Scratch creates ripping scribbles and wild panning effects. Jump takes wild panning effects to the nth degree. Slice can divide the audio into musical packets that it can pan left and right in tempo. You can select a quarter note, eighth note or sixteenth note slice and there are 5 different pan envelopes and some 10 different pan types.

### **Why is it called an "Insertion Effect" and what is the difference between an INSERT Effect and a System Effect?**

On an audio mixing console you have a group of channels. Channels carry input to or returns from a multi-track. Each channel has an on/off button, a fader, EQ and a set of auxiliary sends. These 'aux' sends allow each channel to send a **portion** of the signal to what is called a bus (a group of wires carrying like signal). That bus can then be connected to an offsite effect processor in a rack. The return comes back to the board and is mixed to the stereo signal. That scenario is an example of what happens in Motif-Rack with the SYSTEM EFFECTS in MULTI mode. That is, when you are in a Multi-channel setup and on the MIX screens, the REVERB and the CHORUS Effects are arranged so that access is just like the auxiliary sends of a console. You have a send for each PART of the mix.

An Insertion Effect on an audio console is usually accessed via 'patch points' (interruption points in a channel's signal flow) that allow you to reroute **all** the signal of that channel via a patch-bay through the desired effect or device. Then the signal is returned to that channel. Another example of a 'real world' insert effect is when the

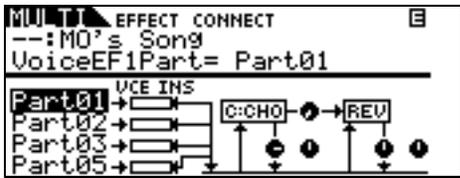
musician plugs directly into an effect prior to their signal even going to the console. You are inserting a processor on that specific channel alone (in-line). This is how the INSERTION EFFECT block works in a Motif-Rack MULTI.

Typically, a reverb effect is setup so that a portion of each sound is sent to it. This is the perfect example of what a System effect is about. However, things like rotary speaker or amp simulator are effects that you might want to isolate on a specific channel. Therefore these type effects are usually accessed as an Insertion Effect. One very important advantage of the Insertion Effect is that many of the parameters can be controlled in real time, during the playing performance. This control is beyond just the send level. In the real world, the size of the room does not change (hopefully) so System effects like reverb are pretty much "set it/forget it" – set a send level and leave it. However, changing the speed of the rotary speaker effect is something that you may want to perform during the song. One of the key differences between Inserts and System Effects is that you can assign real time control to Insert Effects for use during a performance.

Just how are you able to control certain parameters in an Insertion Effect? ...via MIDI commands, of course. In the hierarchy of modes in the Motif-Rack VOICE mode is the most important when it comes to programming. This is where Yamaha spent hours and hours developing the sounds you play. The programmer's with great care assembled the multi-samples into waveforms, and combined the waveforms into the Voice and worked with the envelopes, the response to velocity, the pitch, the tuning, the filters and so on. Each sample in the Motif-Rack has its own EQ. The meticulous programming goes on for months at a time. Of course part of the arsenal available to the programmers are the Effects. Take a close look at a Voice and its effect structure (again the graphic on the top of page 23 makes the routing clear). Notice the boxes or blocks: the Insertion Effect block, the System Effect block and the Master EQ block. Contrast this to the graphic on the bottom of the page, which shows the blocks during a MULTI MIX. The Dual Insertion Effect is available for any **four** Motif-Rack PART 1-16 or P1, P2 part (if they contain a PLG150 series board). But like an effect that is inserted 'in-line', the Insertion Effect is part of the Voice.

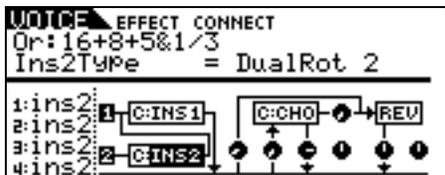
### **How do the diagrams on page 23 relate to the "EFFECT CONNECT" screen?**

Navigate to the Motif-Rack connection screen. From Voice mode or Multi mode simply press the [EFFECT] button.



When in MULTI mode, on the left side you can select the “Voice EF Part” for four of the PARTS of the Multi. That is, the Tone Generator block Part that will recall its VOICE mode INSERTION EFFECTS. Your choices are PART01 through PART16 or PARTP1 – PARTP2 or OFF. The default is PART01. In the screen shown above internal Parts 1, 2, 3 and 5 are recalling their Insertion Effects from Voice mode. As you move your cursor to the right in the CONNECT screen (using the PAGE [>] button) you can highlight the CHO or REV effect and select from among the different SYSTEM effect algorithms. Highlight a SYSTEM EFFECT and press the [EFFECT] button again to view the edit parameters for the selected effect type. So *where* do you edit the Insertion Effects? They are simply activated from Voice mode. You are expected to have edited the Voice in Voice mode where you assigned MIDI controllers that will allow you to manipulate the effect in real time. If you recall our analogy, the Insert Effects are ‘in-line’, like when the musician is in charge of the effect. The Chorus and Reverb are a part of the studio (system) and under the control of the engineer. The recording engineer doesn’t change the speed of the rotary on a Leslie (the organist does), nor does he step on the Distortion button in the guitar player’s rig (no guitar player would allow it). Those devices are under direct control of the performer themselves. Insertion effects are under control of that individual performer (in our case, the Voice mode assigned MIDI controllers). The analogy works fairly well.

When you go to this same EFFECT CONNECT screen in VOICE mode you will gain complete access to the INSERTION EFFECT parameters by highlighting the box INS1 or INS2, then pressing the [EFFECT] button again.



This will drop you down into the effect itself and let you see the various parameters. They do not appear in the MULTI CONNECT screen because the Insertion Effects are part of the VOICE mode. If you need to radically change an effect from the

original programming then you must create a USER Voice with your new Insertion Effect edits and STORE it. Make sure your MULTI ‘points’ to your newly edited Voice location and STORE your MIX – in other words, once you create, name and store a new USER Voice make sure you update your MULTI so that it selects your new User bank Voice. Your USER Voice will be located in Bank MSB/LSB = 63/8 USER 1 or 63/9 USER 2.

*How do you assign real time control to the effect parameters?*

In Voice edit you have 6 Control Sets that allow you to customize how the available effect parameters (and others) are controlled. When you are editing a PLG150 Series board you will have 2 Control Sets within the Motif-Rack Voice and as many as the particular PLG board has on its own (this varies per PLG150). Choose your assigned MIDI controls wisely, they will be available when you go to a Mix MULTI or a Performance MULTI. The Control Sets will let you assign physical controllers as SOURCES, and Motif-Rack parameters as “DESTINATIONS”. To view the CONTROL SETS, you must press the EDIT button to drop into VOICE EDIT. Use the PAGE [<]/[>] buttons to select the “CtrlSet” screen. Here you can program your MIDI controllers to various parts of the VOICE including the EFFECT processors. Use the DATA LIST booklet to view the MIDI PARAMETER NUMBER and its range. Control Sets and assignment of controllers will be the subject of our next Motif-Rack Power User.

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