IN THIS CHAPTER

- Getting keyboard sound terminology straight and calling up sounds
- Understanding and recognizing various types of effects
- Identifying the basic parameters for each effect type
- Access the audio tracks at www.dummies.com/go/pianokeyboardaio/

Chapter 1
Choosing Sounds and Effects

This chapter aims to help you get a handle on how to get different sounds out of your keyboard. Have you ever watched a guitar player in concert step on some little box with his foot at different parts of the song? Or rock his foot forward and back on a pedal? He's using effects to enhance and change his sound, turning different ones on and off for each part of the song. You can do the same with a keyboard.

Effects add qualities to the sound that the basic tone production method doesn't include, so using them can change the character of any sound. Over time, well-established groups of effects have developed, most of which are explained in this chapter.

Your keyboard already has some effects configured with each sound, and you may or may not have much control over them. Working with the effects may be as simple as flipping an on/off switch or may go into greater detail. Developing the ability to hear and identify the various types of effects helps you recognize them being used in the music you listen to and reproduce those sounds for the songs you want to play.

A likely reason you've chosen to play an electronic keyboard is that it offers more than one sound. Having a variety of sound keeps you interested in playing longer. Can you imagine hearing Mozart played by Jimi Hendrix? Chuck Berry played with a flute? Nirvana played on a harpsichord? Having the right sounds for the type of music you like to play is essential. And that's why a keyboardist is the luckiest musician of all. Your keyboard can transform into any instrument you want at the push of a button. No other player has that power, so use it wisely!

First Things First: Understanding Some Important Terminology

One of the most confusing things about shopping for keyboards, talking about them with your friends, or just using them is the crazy array of names used to describe the choice of sounds available. Even the term *sound* may not be that simple. Is "a sound" the re-creation of a single known instrument such as the piano or a pipe organ? The combination of multiple instruments being played at the same time, such as a whole orchestra or a big-band sax section? Two instruments being played together such as a guitar and a flute or an electric piano and a bass guitar?

All these things are possible, but this variety means you need a name for the individual "thing" a keyboard can reproduce, the combination of multiple "things," and so on. To make matters worse, each company has its own name for each of these "things."

This section tries to clear up this confusion and introduce you to a few concepts about the Musical Instrument Digital Interface (MIDI for short), covered in greater detail in Book 6 Chapter 3.

A sound by any other name: Recognizing the various terms

To keep things simple and clear, some refer to single "things" as *sounds,* and the combinations of "things" as *multipart sounds.* If only real life were so simple. Each manufacturer uses its own terms for these things, which creates a world of confusion. Take a look at Tables 1-1 and 1-2 to see what this means.

Table 1-1 shows a list of brand names and the name(s) they use for single sounds in their various keyboards.

TABLE 1-1

Brand Names and Individual-Sound Terminology

Brand Name	Terms for Individual Sounds
Casio	Tone (all)
Hammond/Suzuki	Voice (all)
Kawai	Internal Sound, Voice (all)
Korg	Program (synth, workstation), Sound (digital piano, arranger)
Kurzweil	Preset, Voice Preset (synth, stage piano), Preset Program, Sound Program (digital piano)
Moog	Preset, Patch (synth)
Nord	Program (all)
Roland	Patch (synth, workstation), Tone (digital piano, arranger), Registration (combo organ)
Yamaha	Voice, Sweet! Voice, Cool! Voice, Live! Voice, Mega Voice, Super Articulation Voice (all)

TABLE 1-2

Brand Names and Multiple-Sound Terminology

Brand Name	Terms for Multiple Sounds
Casio	Tone (all)
Kawai	User Setup (stage piano), Registration (digital pianos)
Korg	Combination (synth, workstation), Performance (arranger)
Kurzweil	MIDI Setup (synth, digital piano)
Roland	Performance (arranger, stage piano), Live Set (synth, workstation)
Yamaha	Performance (all)

What a crazy and confusing list of terms all meaning the same thing. Can't we all just get along?

If that wasn't confusing enough, some of these words have other meanings in music tech terms.

Tone can also mean the brightness or bassy quality of a sound. Many home stereos, guitar amplifiers, and other audio devices have a control for tone that doesn't change to another instrument sound; it affects the EQ (brightness and bass amount) of the device (more about EQ toward the end of this chapter).

Voice is sometimes used when describing how many notes you can play at the same time, which is called *polyphony* (which means "many voices"). A guitar is six-note polyphonic (it has six strings), and an acoustic piano is 88-note polyphonic. As a side note, many instruments can only play one note at a time (woodwinds, brass, the human voice, some analog synthesizers), and they're called *monophonic.* So a spec sheet for a keyboard may use the term *100-voice polyphony*, meaning it can produce 100 notes at the same time.

Preset can also mean a memory location that can't be changed or overwritten. Products that use this term list a number of Preset and User locations to describe what can't and can be changed.

Moving on to the multipart sounds, Table 1-2 shows how different brands refer to these sounds in their keyboards.

Makes you wish you had a scorecard to follow, doesn't it?

MIDI: Defining GM/GM2

As you look at web pages, literature, keyboard manuals, and keyboard front panels and displays, you're going to come across General MIDI logos. *General MIDI* (GM) is a standard that defines a set of sounds, instrumental effects, and numerous standard features so MIDI-based music can be shared among various devices (keyboards, computers, web pages, and even cellphones) and always sound the same. GM defines a set of 128 sounds that cover the most basic and universal group of instruments. So when you select a sound in the GM bank or group of sounds, it will sound similar to that same sound in any other brand or type of keyboard you have.


TECHNICAL STUFF

MIDI stands for *Musical Instrument Digital Interface,* a technology standard developed in 1983 by a number of keyboard companies to allow keyboards to "talk" to each other — to trigger sounds from one keyboard (the *master*) and have other keyboards (the *slave*) sound at the same time. This setup enabled layering of sounds between different keyboards and brands for a fuller sound. It has evolved into a universally supported and wonderful capability to not only play keyboards connected together but also to connect keyboards to computers for recording, sound editing, musical notation, and other activities. (MIDI is covered in more detail in Book 6 Chapter 3.)

General MIDI 2 (GM2) is an expanded set of sounds that adds more diversity and variety to the library, but the concept remains the same: guaranteed sound conformity so that songs and arrangements can be reproduced with consistency and accuracy no matter what the playback device.

These logos indicate that the product includes the complete General MIDI sound set and responds properly to sound selection commands via MIDI. Figure 1-1 shows an example of these logos.

FIGURE 1-1: The General MIDI (GM) logos.

The General MIDI logos are trademarks of MIDI Manufacturers Association (MMA) and used with permission.

Two other GM-like standards are brand specific. *GS* is a Roland standard that's similar to GM2, and *XG* is a Yamaha standard that goes even further than GM2. But the idea is the same (as far as sounds are concerned) — a pre-specified list of sounds that is always the same in products bearing the logo.

Knowing and Using Effects

Effects are used in electronic musical instruments, amplifiers, large sound systems in performance venues, and recording studios. Often, you don't think about them; they've become a natural part of the sound you associate with an instrument. Some are easy to identify because they add a signature color and quality to a sound, but others are seemingly invisible because they correct or enhance the basic tonal nature of a sound without adding anything noticeable.

Here are the most common groups of effects:

- **Tonal correction:** This effect is commonly called *EQ* for *equalizer* or *equalization*. It's like the basic treble and bass controls of a stereo but can be much fancier and more detailed.
- **Volume control:** *Volume* is often called *gain* in audio terms, but it means just what you think: the level of the sound. Effects such as a compressor, a limiter, and a preamp fall into this category.

- **Modulation:** *Modulation* is the broadest category of effects and the most obvious to hear. These effects add motion and color to your sound and can be subtle or wildly psychedelic. Popular effects include chorus, phase shifting, flanging, tremolo, and rotary speaker.
- **Tonal coloration:** This category is somewhat related to modulation but doesn't add motion. It just colors, or changes, the sound. Common candidates are distortion, amp models, and speaker simulators.
- **Ambience:** These effects simulate the characteristics of an environment such as a room, a large hall, a cathedral, or a canyon. Common effects are delay (distinct echoes) and reverb (a more indistinct wash of sound reflections).

Knowing these groupings, you can listen to a sound or a recording and start to define what you're hearing. If an acoustic piano sound seems to be very far away and has some subtle echoes, you should think reverb and perhaps some delay. When you hear a very "crunchy" clavinet (clav) sound with a thick, aggressive quality, you may rightfully assume it's being run through some distortion or perhaps an amp simulator (or a real guitar amp).

Meeting the Main Types of Effects

This book is about pianos and keyboards, not guitars or recording studios, so the following sections introduce you to only the most common effects you'll find and want to use in your instrument. This section covers onboard effects; you can buy additional boxes to run your keyboard through, but covering those would require a separate book.

Reverb

Reverb adds space around your notes and can make your sound seem farther away, even dreamy. It's short for *reverberation*, which describes the continuation of sound in a particular space after the original sound is produced and stops or decays away. Reverb produces a kind of hazy or blurred type of echo that's very pleasing to the ear and gives a sense of the space you're playing in.

The character of a reverb is defined by several factors, including the following:

- The overall size of the space you produce the sound in
- The number of surfaces the sound can bounce off of (how enclosed is the room, how high is the ceiling, and so on)

- The material of the walls (wood, concrete, glass, or whatever), which affects how much sound they absorb and how distinct the repetitions/reflections are

Put simply, various types of reverbs can make it sound like you're playing in all kinds of different spaces.

Keyboards typically give you a limited set of parameters you can use to adjust reverb. Here are the most common:

- **Mix or wet/dry mix:** *Mix* controls how much of your original, unaffected *(dry)* signal is passed on and how much of the reverberated *(wet)* signal is introduced. Often, just a little wet signal is good enough to produce a nice, not-too-sloppy sound. But sometimes a lot more of the wet signal is nice, giving your playing a spacious quality and majestic sound.

  The more notes you play or the faster the tempo, the less reverb you want to use. This way, all your playing can be clearly heard without blurring together.

TIP

- **Type:** *Type* is an overall selection that sets the size of the space and other associated parameters, or even the method of producing the reflections. Common choices are room, hall, stage, cathedral, and so on. You may sometimes see *plate* or *spring,* which is a form of artificial reflection where a sound is played into a box that contains a metal plate or large spring, which vibrates from the incoming sound waves.
- **Size:** The *size* control defines the overall size of your chosen simulated space. So a small room may seem like a tiny hallway or closet, and a large room may be 10 feet by 20 feet or 40 feet by 40 feet. The idea of a small cathedral or canyon may seem funny, but remember that the type of room is defined not only by its floor space but also by characteristics like ceiling height and the materials the walls are made of.
- **Reverb time:** This control simulates how long the sound reflections take to die away or stop sounding. It's casually described as a length — a short reverb, a long reverb — and the reflections are sometimes called the *reverb tail*.

On many simple keyboards and digital pianos, mix and type may be your only control choices. More advanced reverbs that offer deeper programmability include parameters such as

- **EQ:** Shapes the tone of the sound a bit.
- **Damping:** Simulates how much of the sound is absorbed; higher values cause the reflections to come back darker or less bright.

- **Pre-delay:** Pushes back the whole reflective simulation, so your original dry sound can be heard before the reflections start. Adding some pre-delay (or raising its existing value) helps your sound be clearer and more distinct before being wrapped in the ambience of the effect.


PLAY THIS

Track 132 plays examples of various reverb types.

Delay

Delay (sometimes called *echo*) is an ambience effect, adding the impression of space around your notes. But it works differently from reverb in that the reflections are distinct, clear echoes or repeats of the incoming notes. You've probably seen a cartoon where the character yells into the Grand Canyon and his exact words come back a few moments later. That's delay. Used very subtly, it adds some ambience to your playing; brought up more in the mix it becomes a highly rhythmic counterpoint to play against.

The most common delay parameters your keyboard will let you adjust are

- **Mix or wet/dry mix:** Determines how much of your dry signal is passed on and how much the distinct echoes *(wet sounds)* are introduced.
- **Delay time:** *Delay time* controls the timing of the repetitions — specifically, the interval of time between the original signal and each repeat. It's usually represented in milliseconds but can be set to note values or even rhythmic figures in more advanced instruments.
- **Feedback:** This parameter manipulates how many distinct repetitions will sound. At most settings, these repetitions decay in volume with each occurrence, so they seem to fade out.

  Be careful when adjusting this parameter! High feedback values can cause the repetitions to get louder and keep generating endlessly. Things can get very loud quickly and damage your speakers and/or hearing.
- **Damping:** *Damping* adjusts the brightness of each repetition to simulate the effect of sound absorption; each occurrence gets darker. Along with the level decay that may be built into feedback, damping helps keep your playing from sounding too cluttered.


WARNING


PLAY THIS

Track 133 demonstrates delay.

Chorus/flanging/phase shifting

Chorus, flanging, and phase shifting are modulation effects that produce a warm, swirling sort of thickened sound. Each one sounds different, but they're all closely related in concept and use.

PLAY THIS

Listen to Track 134 to hear flanging, chorus, and phase shifting demonstrated and compared.

Chorus

Chorus is produced by constantly varying the pitch of a slightly delayed copy of your sound. When this variation is mixed back with the original signal, it produces a pleasing, rich result. The chorus effect was first designed to sound like a choir of voices singing together, with the slight imperfections in tuning and timing that produced an ensemble sound.

Common chorus parameters to adjust on your keyboard include

- **Mix or wet/dry mix:** Controls how much of your dry signal is passed on and how much of the original-plus-varied *(wet)* signal is introduced. Unlike reverb, mix sounds better at higher, or wetter, values for chorus.
- **Depth:** This parameter indicates how much pitch variation is produced.
- **Rate/frequency:** This control adjusts the speed of the pitch variations. Very slow to medium sounds good; too fast, and your sound takes on a wobbly, underwater quality. But maybe that's what you want.

More advanced choruses may have some built-in EQ to shape the tone of the sound and may offer a delay time parameter to determine the amount of time the signal is delayed. This parameter setting can be the critical difference between chorus and flanging (see the following section): Values between 1 and 15 milliseconds produce flanging, and chorus starts at 20 milliseconds.

Flanging

Flanging is less warm than chorus because flanging's closer delay time sounds more metallic and less like close copies of the original signal. Flanging adds one critical additional parameter: feedback.

Feedback routes some of the output back to the input, so the whole process starts again but on an already-affected sound. This accentuates the sweep and creates some resonant peaks in the harmonics, not unlike resonance or Q in a filter. At extreme feedback settings, flanging can produce a whoosh sort of sound resembling a jet takeoff.

Phase shifting

Phase shifting differs from chorus and flanging in that it doesn't use a delay-line shifted copy of the incoming signal, which has all frequencies shifted by the same amount. Rather, it mixes a copy of the sound that has been shifted slightly out-of-phase by an all-pass filter, which shifts different frequencies by different amounts. (Check out the later section "Filter" for details on this control.) This produces a very rich, warm sound with more tonal peaks than chorus, because it has a feedback loop in its design like the flanger does. And it sounds less metallic than flanging because of the differing frequency shifts.

EQ

EQ allows you to boost or cut the level of various frequency ranges within your sound. You can find EQ settings (with names like rock, jazz, concert hall, acoustic, dance, and so on) on your music players and electronics. They show multiple columns, each representing a frequency or pitch area. If the bar is tall, it's boosting that range; if it's low, it's cutting the range. Figure 1-2 shows a common representation of this setup.

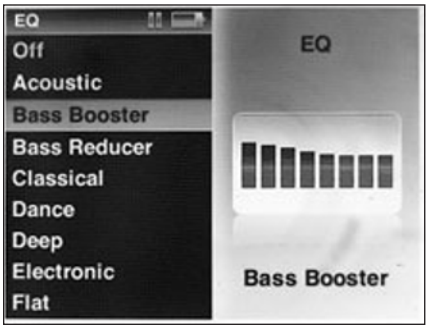

FIGURE 1-2: Visual representation of EQ.

Apple iPod equalizer screenshot courtesy of Jerry Kovarsky

Your keyboard's EQ function gives you control over various frequencies that you can shape to change the tonal nature of your sound. The frequency ranges are represented as numbers in hertz (Hz) and kilohertz (kHz or k), such as 100 Hz or 2.5 kHz (2,500 hertz). Low frequencies are called *bass*, or *lows*, middle frequencies are called *mids* (naturally), and upper frequencies are called *highs.* EQs come in a couple of common types:

- A *graphic EQ* (see Figure 1-3) offers 5 to 31 frequencies, called *bands*, which are fixed values that can be cut or boosted.
- A *hi-shelf EQ* cuts or boost frequencies above the value defined (like a brightness control).

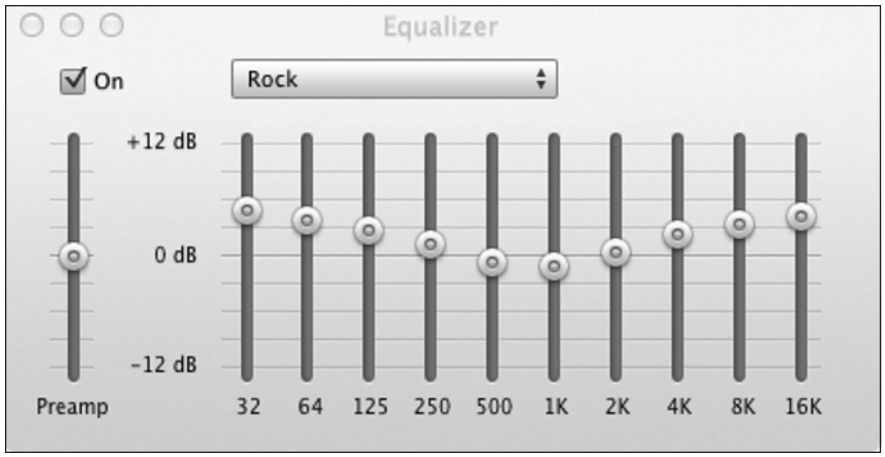

FIGURE 1-3:
A graphic EQ.

Apple iTunes equalizer screenshot courtesy of Jerry Kovarsky

- A *low-shelf EQ* cuts or boost frequencies below a defined value (like a bass control).
- A *parametric EQ* offers some number of bands (usually between two and four); you can freely select their frequencies, so you can use them to flexibly shape the sound any way you want, as shown in Figure 1-4.

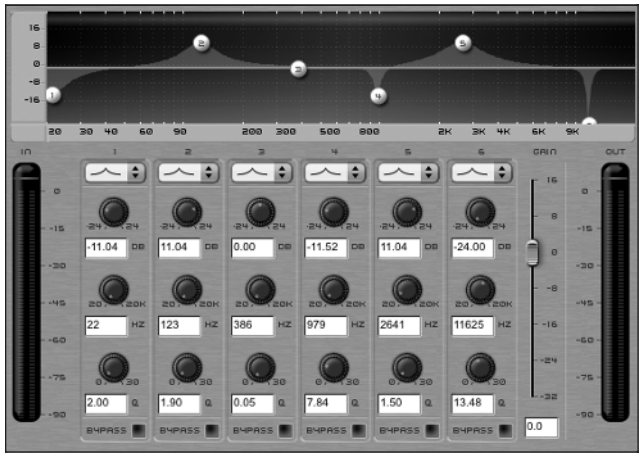

FIGURE 1-4:
A parametric EQ.

Bias SuperFreq-6 EQ screenshot courtesy of Jerry Kovarsky

Some EQs combine these concepts, with a low-shelf band followed by one or two parametric bands and a hi-shelf band on top, for example. Or the outer bands can be changed from shelving to parametric as needed.

Keyboards commonly offer these parametric EQ parameters:

- **Frequency:** The pitch or frequency center for the band of EQ.
- **Q:** The width of frequencies that the cut or boost affects, sometimes called *bandwidth.* With a wide Q, you affect a broad range of your sound. You can use very narrow Q to reduce a harsh frequency or noise or add some extra emphasis to a specific noise or character of a sound.
- **Gain:** The amount that a band is boosted (a positive value) or cut (a negative value).


TIP

Many people think they need to boost a band to improve the sound, but cutting a band can often be more effective. Reducing a frequency that is already covered by another sound (cutting bass so you can hear the bass guitar and bass drum better) is a good approach.


PLAY THIS

You can hear demonstrations of shelving and parametric EQs in Track 135.

Distortion

Distortion adds a dirty, harsh quality to your sound. You're most familiar with this concept in rock guitar; the crunching rhythmic figures of classic riffs like "Smoke on the Water" by Deep Purple and "Satisfaction" by the Rolling Stones are well-known examples. Varying levels of distortion may be called *overdrive*, *fuzz*, or *gain booster.*

Distortion is created by overloading the input to an amplifier, causing the circuitry to produce internal clipping or errors. Nowadays, electronics and software code can readily imitate it without the need for an actual guitar amp.

Here are some common distortion controls you can adjust:

- **Mix or wet/dry mix:** This option controls how much dry signal is passed on, and how much of the distorted *(wet)* signal is introduced. Because distortion can be a very heavy effect, you get a better sound if you mix some dry signal in for clarity, especially for keyboard sounds. For emulating rock guitar, you can never have too much distortion!
- **Type or model:** Many distortion effects are emulating other famous devices, be they classic guitar amplifiers, pedal effects (often called *stomp boxes*), or combinations thereof. The *type* control is where you decide which you want to use.

- **Input gain:** *Input gain* is the parameter that you turn up to produce the overloaded tone. Low values produce a slightly thicker, warmer sound, and higher values get crunchier up into full-out fuzz bliss.
- **Output level:** Because turning up the input increases the volume, you use this control to bring the overall level back down so you don't blow the roof off your home!
- **EQ:** Many distortion effects include some type of tone controls to help tame or shape the sound further. This setup can range from a single tone knob or parameter to multiband graphic and parametric equalizers. (The preceding section has info on these types of equalizers.)

PLAY THIS

Listen to Track 136 to hear various types of distortion demonstrated.

Rotary speaker

The *rotary speaker* effect emulates the famous spinning speaker cabinet (called a *Leslie*) invented for use with the Hammond organ. It was named after its creator, Donald Leslie, who wanted to make the organ sound more like a pipe organ, with its pipes spread out in a large space. What resulted is a strange yet wonderful-sounding contraption that has two spinning speakers inside. They spin at different speeds, producing a rich, moving quality to the sound. They can be switched to spin slowly or very quickly — a dramatic effect that organists use to build excitement for various parts of a song.

The rotary speaker is an integral part of the tonewheel organ sound but has also been used by rock guitar players, on other electric keyboard sounds, and even on vocals (John Lennon famously sang through one on the song "Tomorrow Never Knows").

This speaker is a complex effect that may or may not have more parameters to adjust (you may only have the option to toggle the speed control from slow to fast). That said, common adjustable factors include the following:

- **Horn/rotor speed:** The upper horn can rotate at two different speeds, each of which may be adjusted. Similarly, the lower spinning drum (the rotor) has a two-speed control as well.
- **Horn/rotor acceleration and deceleration:** These control the time the horn and rotor each take to transition from slow to fast and back again.
- **Mode:** *Mode* chooses whether the speaker is stopped or spinning. Completely stopping the speakers from spinning is called *brake,* and some designs allow all three states — brake, slow, fast — to be used. (Early Leslies had two settings: no spinning and spinning fast.)

- **Horn/rotor balance:** Microphones are usually placed by the rotary speaker to further amplify it in concert or to record it in the studio. This control positions the mic to be closer to the high horn (producing a brighter, thinner sound) or lower by the spinning drum (producing a bassier, heavier sound). More advanced designs allow you to choose the position and distance for each microphone.


PLAY THIS

Listen to Track 137 to hear the rotary speaker effect.

Filter

A *filter* is a tone-modifying control that allows certain frequencies to pass through while blocking others. The point at which it gradually starts to remove the frequencies is called the *filter cutoff*. Book 6 Chapter 3 talks more about filters.

Common tone parameters you can adjust on your keyboard are

- **Type:** The most common filter type is called a *low-pass,* which allows all frequencies below the cutoff to pass through, gradually removing everything above it. A *high-pass* filter does the opposite, only allowing frequencies above the cutoff to pass through.
- **Cutoff:** The point at which the filter gradually starts to remove frequencies by fading them out. Moving around this cutoff point (called *sweeping* the cutoff) produces a very cool sound, most often associated with synthesizer sounds.
- **Resonance or Q:** This parameter emphasizes frequencies close to either side of the cutoff, like a sharp, narrow band of EQ boost. It produces a nasal, piercing quality at high settings and sounds great when combined with the sweeping of the cutoff. A classic synth sound effect.


PLAY THIS

Check out Track 138 to hear demonstrations of various filters.

Wah-wah and auto-wah

The *wah-wah* is a filter placed into a rocking pedal to make it easy to sweep the cutoff with your foot while playing. Commonly used for guitar, it's also popular for keyboards, especially the clav.

The *auto-wah* (also called *envelope follow filter* or *envelope filter*) produces the sweep movement based on the incoming audio signal, so you don't need to move your foot. Each note or chord played triggers the sweep, letting you easily play highly rhythmic parts without wearing out your ankle. Common auto-wah parameters that keyboards let you adjust include the following:

- **Response/rate:** Controls the speed at which the filter opens up in reaction to the incoming signal.
- **Decay:** Sets the length of time the filter takes to close back down.
- **Range/manual/frequency:** Sets the frequency of the filter cutoff at the bottom and top of the sweep. This control is helpful to optimize the effect for the type of sound you're using it on (bass, type of keyboard sound, guitar). ***Note:*** This parameter is the only one that would be available for a wah-wah effect.
- **Sensitivity:** Adjusts the range of the sweep, based on the strength of the incoming signal. Low settings don't allow the range of the sweep to change much based on the incoming signal. At higher settings, soft levels produce very little sweep (a darker sound), and stronger signals produce a more full-range sweep.


TIP

Higher sensitivity helps produce the more expressive and dramatic auto-wah effect. But it needs to be adjusted to match your playing technique and how hard or soft your touch is. Adjust the setting up or down until it's easy to produce and control the range of sweep you like.


PLAY THIS

Track 139 plays examples of wah and auto-wah.

Choosing Effects for Each Type Of Sound

Certain instrument and effect combinations are matches made in rock-and-roll heaven! Some are commonly used based on musical genre (funk and wah-wah, for example), and others are associated with specific artists.

To help you get the sound you want for various songs, the following sections list the essential keyboard sounds and the effects commonly used and associated with them, often naming artists and songs as examples. ***Note:*** Reverb is used on pretty much everything, so it's not highlighted here.

Piano-type and synth sounds

You can use keyboard effects with many common piano sounds:

- **Acoustic piano:** Sometimes a little EQ can help modify a piano for a specific song or style of music. Classical sounds good with a less bright, more mellow sound, and rock works with a much brighter piano to stand out when drums

and guitars are playing. Some pop and rock music uses a little chorus on the piano (think of Journey's "Don't Stop Believin'"), and deeper chorus with more pitch variation (an increase of the depth parameter) helps make piano sound more honky-tonk.

- **Tine/Rhodes electric piano:** So many effects can work on this classic instrument:
  - **Phase shifting:** Use subtle phaser settings to get that Billy Joel "Just the Way You Are" sound, Steely Dan/Donald Fagen tunes (check out "Green Flower Street"), late 1980s Doobie Brothers ("Minute by Minute"), or the immortal sound of Richard Tee as featured on many Paul Simon, Grover Washington ("Just the Two of Us"), and Stuff recordings.
  - **Chorus:** Using a chorus helps to get the sound of Jamiroquai as well as the whole L.A. 1980s sound (think Al Jarreau, Toto, Quincy Jones, Chicago, and early Yellowjackets).
  - **Distortion/wah-wah:** To sound like vintage/early 1970s jazz, fusion, and rock artists, don't use any modulation effect. Do use EQ if needed to darken the sound a little bit. However, a little distortion (not too much) helps to get the aggressive solo sound of fusion players like Jan Hammer (Mahavishnu Orchestra's "Inner Mounting Flame"), Chick Corea (early *Return to Forever*), and George Duke (solo and with Frank Zappa), who often played through guitar amps. Many artists also used wah-wah, still a good way to "funk-up" electric piano (both tine and reed versions).
  - **Delay:** You can use delay to get the spacey sound of early electric Herbie Hancock ("Mwandishi" and "Headhunters"), Brian Auger ("Live Oblivion"), Ramsey Lewis ("Sun Goddess"), and many reggae and dub recordings.
- **Reed/Wurlitzer electric piano:** This electric piano wasn't processed with effects as much, but the number one application is putting a deep chorus on it to get that Supertramp sound ("Logical Song" and "Goodbye Stranger"). EQ and distortion can help to get a stronger rock sound.

  Many people like putting electric piano through a rotary speaker.


TIP

- **Clavinet:** Clavinet through a wah-wah or auto-wah is one of the classic sounds of funk music. Listen to songs like Stevie Wonder ("Higher Ground" and "Maybe Your Baby"), Billy Preston ("Outa-Space"), Rufus ("Tell Me Something Good"), Herbie Hancock ("Chameleon"), and the funkiest non-funk tune ever recorded, The Band's "Up on Cripple Creek." It was also prominently featured in reggae, like in Bob Marley/the Wailers "Burnin' and Lootin'" and "Get Up, Stand Up."

  Distortion also sounds good on clav, which often was played through a guitar amp. You can hear this effect in varying degrees on the aforementioned Billy Preston songs, Stevie Wonder ("We Can Work It Out"), Led Zeppelin ("Trampled Under Foot"), Phish's "Tubes," and the always-amazing John Medeski (Medeski Martin & Wood).

- **Tonewheel organ:** A lot of famous organists have pretty specific and well-known sounds:
  - Tonewheel organ and Leslie go hand in hand. Many jazz players are known for using only the brake and fast settings, whereas most rock, soul, and other players use the slow and fast speeds. Two prominent exceptions in rock/soul are Steve Winwood (solo and with Traffic and Blind Faith) and Booker T. (solo and with Booker T. & the MG's), who both favor brake and fast settings.
  - Progressive rocker Keith Emerson ran his organ through both Leslies and guitar amps to get more overdrive in his sound. He also used a distortion pedal effect on the smaller L-100 he'd abuse nightly to get feedback from it (find live versions of "Rondo" to hear/see this in action). Hard-rock organist Jon Lord (Deep Purple) stopped using a rotary speaker altogether, favoring using guitar amps to crank up his sound to match the rest of the band ("Machine Head" and "Made in Japan"). Jazz/rock organist Brian Auger is another famous non-Leslie user.
  - Tony Banks (Genesis) ran his tonewheel organ through a phase shifter and sometimes a chorus; listen to albums like *Wind and Wuthering, And Then There Were Three,* and *Duke.*
- **Synth sounds:** This group is a vast category, and basically, anything is possible. Have fun!

Guitar sounds

You really should add some effects to the guitar sounds coming out of your keyboard to make them more realistic and pleasing. Here are some ideas:

- **Guitar:** Guitar works well with a wide variety of effects. All the modulation effects can sound good, as do delay and reverb when you want to play more open, arpeggiated background parts. Andy Summers (The Police) and especially The Edge (U2) are famous for this. For stronger rock songs and solos, distortion and amp models become an important part of your needed sound. Wah-wah works well for some rock songs and certainly for funky tunes, and auto-wah is perfect for funk.
- **Bass guitar:** Bass is the one sound that doesn't want much reverb, if any. Keeping it dry helps to anchor the feel and clarity of a song's groove. Sometimes subtle chorus or flanging can work, especially on fretless bass. For heavier rock and metal music, distortion is appropriate. Auto-wah can work for some funk.

Other sounds

What to do with more-orchestral instruments? Less is more:

- **Wind/brass instruments:** These instruments rarely require anything more than a little reverb to taste.
- **Strings:** All acoustic instruments sound good with reverb. String parts in songs sometimes come from real strings or from electronic string synthesizers and such. Slight chorus or phasing adds animation and movement to these instruments.