

Chapter 1

Introducing the PC88

The PC88 is a self-contained portable keyboard that features quick and intuitive access to 64 (and optionally more) internal sounds derived from Kurzweil's renowned ROM samples. It can produce up to 32-note polyphony in full stereo, and lets you layer as many as 4 (and sometimes more) sounds at once. Built-in reverb and chorus are also provided, and there's a sophisticated on-board arpeggiator for composing, performing, or just fooling around.

Thirty-two versatile MIDI Setups are provided to let you start making great music immediately. You can also use these Setups as templates, or create new Setups from the Internal Voices.

Furthermore, the PC88 is a high-quality MIDI keyboard controller, with 88-key weighted action, adjustable velocity and pressure (aftertouch) curves, two programmable on-board wheels, four sliders, three buttons, and jacks for two footswitches and four continuous control pedals. Data on four independent MIDI channels can be sent simultaneously, using four different "zones", each of which has its own key range — which can overlap with any others — and its own controller definitions, as well as the ability to be muted or soloed instantly. Other features allow merging and remapping of incoming MIDI data (listening on all 16 channels), and the ability to go instantaneously from one complex setup to another.

Finally, the PC88 is a versatile multitimbral instrument that can be used to complement any MIDI setup. With the optional plug-in VGM™ (Voice/GM expansion) board, the PC88 becomes a top-of-the-line General MIDI instrument, for use in education, multimedia production, games, and other exciting applications. In addition to expanding the PC88's complement of sounds to match the General MIDI spec, the VGM board adds 12 sets of drum and percussion sounds, and doubles the PC88's maximum polyphony to 64 notes.



For People Who Never Read Manuals...

Read this chapter, at least. If you're an experienced MIDI musician, you will have no trouble getting the PC88 up and running right away, and that's what we'll do here. But even if you've mastered every other keyboard in the world, take some time to go through the manual and learn about the advanced features of the PC88. You'll discover some unique new ideas.

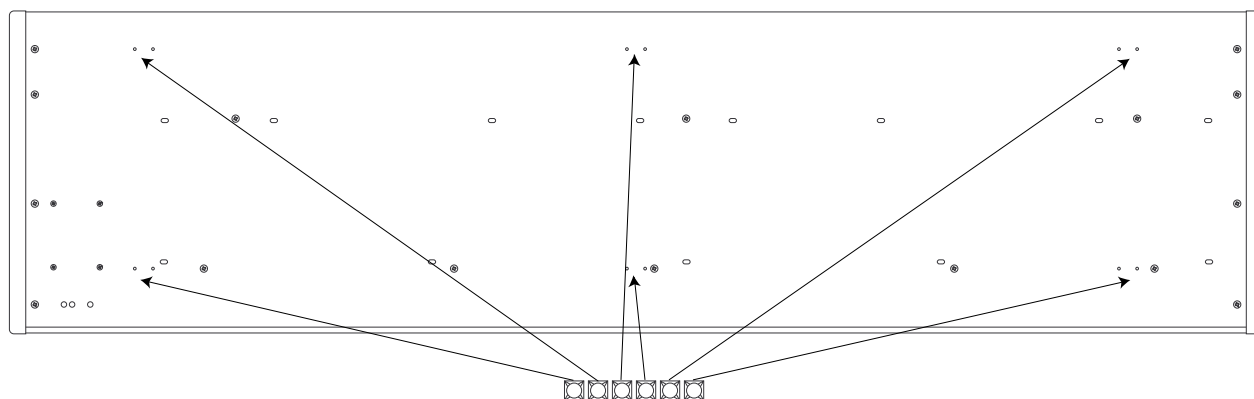
Unpacking the Unit...

is pretty straightforward. It's always a good idea to keep the box and packing material, in case you need to ship it for any reason. Your PC88 carton should contain the following:

- PC88 Performance Controller
- AC adapter
- switch pedal
- six adhesive-backed rubber feet
- manual
- warranty card

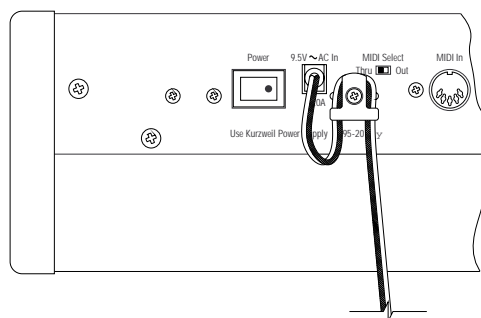
Setup

Set the PC88 on a keyboard stand or table. Always make sure the ends are supported — not just the middle. Use the stick-on rubber feet if you're putting the unit on a flat surface (or even if you might in the future). As shown in the following illustration, pairs of guide holes on the bottom of the PC88 show recommended locations for the feet. Remove the backing paper from each rubber foot, then attach to the bottom of the PC88, just forward of a pair of guide holes.



Plug the audio outputs into your mixer or amplifier, and set your system up to listen in stereo. If you have another MIDI instrument, run a cable from the PC88's **MIDI Out** jack to the MIDI In of that synth. Connect the supplied switch pedal to the jack labelled **Switch Pedals 1**.

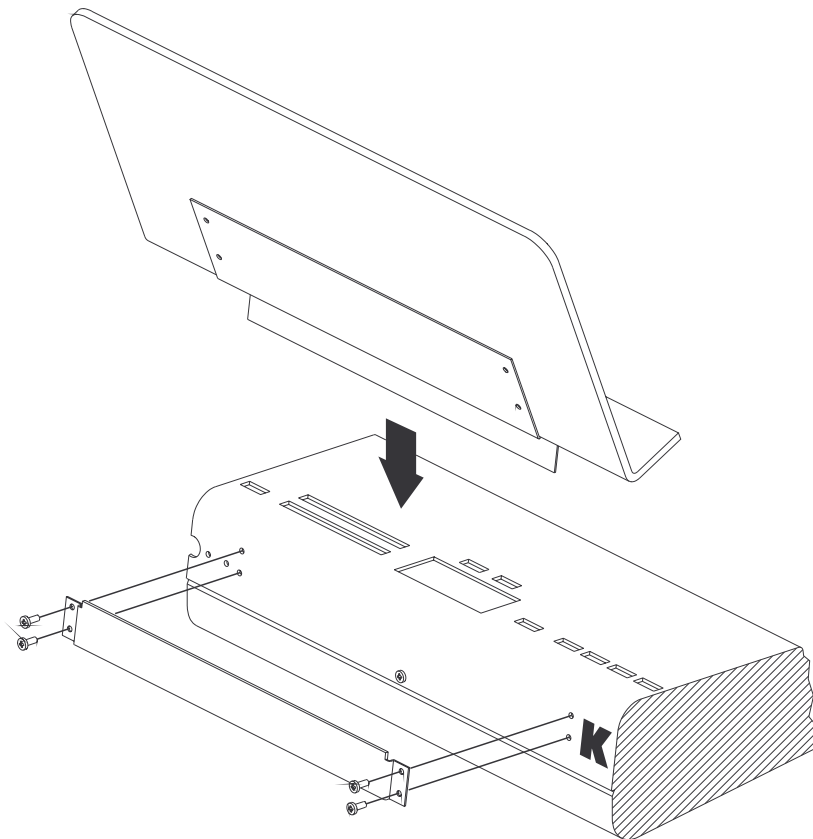
Locate the small plug at the end of the wire on the power supply. Locate the **9.5V~AC In** socket on the rear panel. Next to the socket is a protruding plastic strain relief "T". Wrap the wire once, not too tightly, around the strain relief, and insert the plug into the socket, as shown below.



Now plug the large end of the power supply into an AC socket. Turn on the power by pushing in the side of the switch with the white dot. The two-line LCD display in the middle of the instrument comes to life and welcomes you to the PC88. Turn up the audio, and we're ready to go.

Installing the Music Rack

Installing the PC88's optional music rack is a simple procedure that requires only a Phillips screwdriver. To install the music rack, first remove the four screws on the back panel of the PC88, as shown in the illustration below. Then, use these screws to attach the music rack bracket, making sure that the rounded edge of this bracket is towards the top. When you have installed this bracket, slide the music rack in from the top (as shown in the illustration).



Installing the PC88's optional music rack.

Demo Sequence

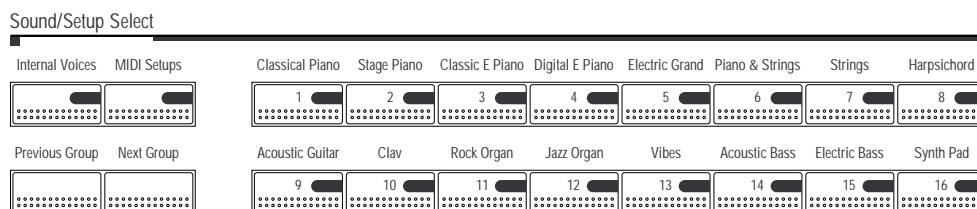
There is an onboard sequence you can play at any time to demonstrate the capabilities of the PC88 and impress your friends. A removable label shows that you start it by pressing the **Acoustic Bass** and **Synth Pad** Sound / Setup Select buttons simultaneously (buttons 14 and 16). It will play through to the end, but you can stop it by pressing the buttons again.



If your PC88 has a VGM board and software version 1.1 (or higher), more than one demo sequence is available for your listening pleasure. In this case, several instrument lights will blink after you press buttons 14 and 16 simultaneously, each one representing a different demo. Press any of the blinking lights to listen to one of the demo sequences. We think you'll want to listen to all the sequences, since they go a long way towards demonstrating the possibilities you have with your PC88.

Internal Voices

Let's explore the onboard instruments. When the PC88 is first turned on, the button labelled **Internal Voices** in the group of four buttons under the left side of the label **Sound/Setup Select**, is lit. Now the group of 16 numbered buttons to the immediate right of this can be used to choose from 16 families of instruments. Button number 1, **Classical Piano**, is lit right now. This is the selected voice; its name appears in the display. Press the other numbered buttons to select among the other voices. While you're doing that, play with the modulation wheel (the second one in from the left, or "Wheel 2") and the sustain pedal, and see how the sounds change. On most of the organ sounds, for example, pushing the modulation wheel brings in a rotating speaker effect.



To select a different instrument within a family, use the **Previous Group** and **Next Group** buttons. Each family contains 4 different instruments, arranged in Groups labelled (as you'll see on the display) A through D. (Press **Previous Group** and **Next Group** simultaneously at any time to return to Group A.) Press the Select button marked **Piano & Strings**, and then press the Previous Group button until the upper-right corner of the display says **A06**. This is a layered sound of a bright stage piano and a string pad. Hold a chord and move the slider in the **Assignable Controllers** section labelled C. Listen to how the timbre changes.

Assigning Controllers

Let's have Wheel 2 do something else. Find the group of buttons at the top of the panel labelled **Zone Parameters**. The topmost right button is labelled **Controllers**. Press that button so that its light comes on. The top line of the display reads **Wheel 1 1 UP**. Now press the **Controllers** button again, but this time hold it down while you move the modulation wheel slightly. The display changes to read **Wheel 1 2**. This is an example of a feature called "Intuitive Entry" which makes it possible to adjust parameters quickly without having to scroll through pages of them. The PC88's display now looks like this:

```
Zone:1   Wheel 2
Ctrl Num: 1 Mod Wh1
```

Right now, the lower line on the display tells us that Wheel 2 is controlling Modulation (MIDI Controller #1). Turn the big black knob on the panel under the label **Data Entry** — we'll be calling this the "Alpha Wheel" — clockwise until the lower line of the display says **Ctrl Num: 10 Pan**. Wheel 2 has now been configured as a pan control. Play a passage of short notes while you quickly move the wheel. The notes will appear at different points in the stereo spectrum depending on the position of the wheel.

Exiting from PC88 Menus

You can exit from any PC88 menu by going directly to Internal Voices mode or MIDI Setups mode. You do not have to explicitly exit from the menu; the PC88 will change modes automatically, as soon as you press the **Internal Voices** or **MIDI Setups** button. For example, to return to Internal Voices mode without changing the controller assignment in the above example, press **Internal Voices** (which will begin blinking), then press one of the Sound Select buttons, **Harpsichord** for example. Notice that the **Internal Voices** button stops blinking when you select a sound. (Since we didn't save the controller assignment when we selected this Internal Voice, the wheel resumes its modulation function.)

MIDI Setups

We've been dealing with one instrument so far, but the PC88 lets us play with four at a time. Multiple instrument setups are called, logically enough, "MIDI Setups", or just "Setups". You get to them by pressing the button marked (you guessed it) **MIDI Setups**. Do it now. It blinks, awaiting your selection of a Setup.

In the **Sound/Setup Select** section, press the Button numbered **16**, and press the **Previous Group** button until the top line of the display reads "S016 Volume Sliders." This Setup consists of four "zones", each with its own instrument. You know that four zones are playing, because all four of the Zone buttons to the left of the display (right under the heading **Zone Select & Assignable Controllers**) are showing green lights. All of the zones in this setup cover the entire keyboard, so any note you play will sound four different instruments simultaneously. Additionally, each of the four zones has an assignable slider programmed to send MIDI Volume commands on its channel. As is common practice (but not required), Sliders A, B, C, and D are controllers for zones 1, 2, 3, and 4, respectively.

The light in each of the Zone buttons can show three colors: green, orange, or red, or it can be off. Green means "active"; orange means "muted"; red means "soloed"; and dark means "off" or inactive. There's one more mode for a zone, and that's "current". The current zone is the one whose parameters are showing in the display. Since you've just selected the setup, the current zone is indicated by a number 1 through 4 on the second line of the display just before the name of the program assigned to that zone. Any zone, regardless of whether it is on or off, can be the current one. The PC88's display shows you the following right now:

Setup ID number	Setup name
S016	Volume Sliders
A16 1:	Stage Piano
Setup group & button	Current Zone's number & Program name

Look at the display and see if Zone 1 is current. If it isn't, press the **Zone 1** button.

Press the **Zone 1** button (again). Its light changes to orange. The zone is now muted, and the next time you play a note, a portion of the sound won't be audible. Press the **Zone 1** button again to make it active (green). To mute any other zone, press its button once to make it current, then again to mute.

To mute all but one zone, press the **Solo** button to the right of the Zone buttons. It glows red. The current zone's button also turns red, showing it's being soloed. Even if the zone was muted, soloing it turns it on. (However, if the zone were off — dark — soloing wouldn't bring it to life.) To solo a different zone, press its button to make it current. To turn off the Solo function, press **Solo** again.

Let's edit the Setup. For this tutorial, keep all the sliders up, so you will be able to hear the zones as you work on them. In the **Zone Parameters** section, select **Key Range**. As shown

below, the display now shows the current zone and its program number on the top line of the display, and the first two Key Range parameters in the bottom of the display.

Current Zone		Bank & Program number for current Zone	
Zone:1		0:001	
Low:C -1		Hi:G 9	
Para- Value	meter	Para- Value	meter

Press the **Solo** button. We can now work on the key range of Zone 1, without being confused by other zones sounding.

The display tells us that the range of the zone is set to C-1 to G9, which is the entire MIDI range. (For reference, C4 is middle C.) Push the right cursor button immediately under the display (it's labelled >>>) once, so that the underline cursor on the display is under the "Hi" value. Turn the Alpha wheel counterclockwise until the "Hi" note reads "B2". Press the **Acoustic Bass** button in the Sound Select group, and (if necessary) press the **Previous Group** button until the upper right of the display shows "0:013". You've chosen Internal Voice number 13. The result is that you have an acoustic bass sound that plays from the bottom of the keyboard up to the third B.

Press the **Zone 2** button to listen to and work on the second zone (still in Solo mode). Let's use a different technique to set the key limits of this zone. With the cursor under the "Hi" value, press and hold the Enter button in the numeric keypad to the right of the Alpha wheel. While you're holding it, play the note B4 (the B above the key marked "C4"). The display shows that the note you've played has become the high limit of the zone. Use the <<< button to move the cursor to the Low limit, press and hold **Enter**, and play C3 (an octave below C4). The low limit is now defined as C3. This is another example of the "Intuitive entry" editing technique.

Now let's put a different program into this zone. Press the button labelled **Strings** and the **Previous Group** button (if necessary) until the display reads 0:006 in the top right corner. You've chosen the first internal string sound for this zone. Go to **Zone 3**, set the range from C5 (an octave above C4) to B6, and select **Digital E Piano** as the voice. If you want to see the name of the program, and not just the number, press the **Program** button. This menu allows you to select any of the programs by scrolling, pressing the sound select buttons, or by typing in program numbers. For now, (if necessary) press the **Previous Group** button until the display shows Program # 3, Digital EPiano. Note the asterisk (*) next to the Zone number; this tells you that the current Zone is soloed.

```
Zone:3*      0:003
003 Digital EPiano
```

Now you have two octaves of electric piano, but it's pitched rather high. Press the **Transpose** button, and move the Alpha wheel counterclockwise until the display says "Transposition: -12". This brings the sound of the zone down an octave, without changing its position on the keyboard.

```
Zone:3*      0:003
TransPosition: -12
```

For **Zone 4**, use the top octave of the keyboard (C7-C8), and select your own instrument and transposition. Now you've got a complete Setup. Just for fun, change the Hi limit of Zone 2 (the strings) to C8. Since zones can overlap freely, this will extend the string sound so that it acts as a "pad" underneath the sounds in the upper two zones. Now press the **Solo** button to turn it off, and listen to all four of your newly edited zones.

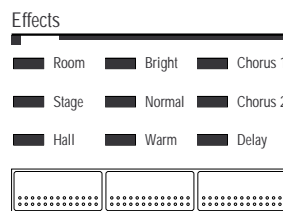
If you would like to store this Setup, press the **Store** button, and see "Replace Setup 16?" Now, move the alpha wheel clockwise until it stops asking to replace existing setups, and instead says, "Save Setup 33?" (or "Save Setup 65?" if you have VGM installed). Press the **Enter** button now, and it will save the new Setup.

Exiting Without Changing a Setup

If you don't want to save the Setup, press **MIDI Setups** followed by the sound select button that lights up when you press **MIDI Setups**; this returns you to the unedited Setup. Alternatively, you can go directly to Internal Voices mode (without saving the edits you made to the Setup) by pressing **Internal Voices** followed by one of the sound select buttons. More details about naming and saving setups may be found in Chapter 5

Effects

Our last stop on this get-acquainted tour is setting the effects. You may have noticed as you were changing instruments in the Internal Voices mode that the **Effects** lights changed as well, and so did the reverb and chorus. The PC88 is capable of generating a huge variety of reverb and delay effects, and each Internal Voice comes with its own effect assigned to it.



You can change the effect assigned to a Voice. Go back to Internal Voices mode. Press the left-most button under the **Effects** label to toggle among **Room**, **Stage**, and **Hall**-type reverbs. The lights show what you have selected. You can also select no reverb at all: the lights go off. The middle button lets you adjust the tone color of the reverb: **Bright**, **Normal**, or **Warm**. The right button lets you choose from among two **Chorus** effects, a **Delay**, or no effect. The reverb and the effects selections are independent of each other, so you can use one without the other. The effects settings are remembered with each Internal Voice, so if you select a different Voice and then come back to this one, the effects will be as you left them.

Just the Beginning!

That's the quick tour, which should give you some idea of the capabilities of the PC88. If anything we've covered so far was confusing, or you have questions about any aspect of what you've just done, feel free to jump around this manual to look up the things that interest you. In the next chapter we'll start again from the beginning, in depth.

A Note About the VGM Board and the PC88mx



The PC88 has many important extra features when the optional VGM™ (Voice / GM expansion) board is installed, although the basic operation is the same with or without the board. In those places in the manual where a special explanation is needed for a VGM board feature, we've put the VGM logo in the margin. By the way, when you start up the PC88 a message will appear on its display to indicate whether or not a VGM board is installed.

The PC88mx model comes with the VGM board already installed. Refer to the sections of this manual with the VGM logo in the margin for information on the PC88mx's features.

Checking Battery Voltage Level

Your PC88 stores Setups you've created, as well as information about your effects and group preferences, in internal memory. This memory is backed by a lithium battery that will last 3-5 years. Although a start-up message alerts you to a low battery level, you may want to check the battery voltage from time to time. As a safeguard, you may want to back up your Setups to an external device with the **Dump all Setups** option on the **Global** menu.

Internal Voices and ROM Setups are not dependent on battery-backed memory.

To check the battery level:

1. Press the **4**, **5**, and **6** buttons simultaneously. The top line of the PC88's display will look something like this:
`SCAN 2.4 W=123 B=2.9`
2. Check the part of the display labelled "B=x.x". This is the battery voltage level. It should normally be 2.8 or higher. When this value declines to 2.4 or below, you should have your Kurzweil dealer replace the battery. Note that when the battery voltage level is 2.4 there is less than two months of battery life remaining; when the battery voltage level is 2.0 or below, memory failure is likely.
3. Press **Cancel** and **Enter** simultaneously to return to normal PC88 operation.