YAMAHA

CP5 / CP50

STAGE PIANO

Reference Manual

Contents

Reference Guides

Your CP5 or CP50 stage piano comes with three different reference guides — the *Owner's Manual*, the *Reference Manual* (this document), and the *Data List*. While the *Owner's Manual* is packaged together with the stage piano as a hardcopy booklet, this *Reference Manual* and the *Data List* are provided as pdf documents on the bundled CD-ROM.

Owner's Manual **(hardcopy booklet)**

The *Owner's Manual* describes how to set up your CP5 or CP50 and how to perform basic operations.

Reference Manual **(this pdf document)**

This *Reference Manual* describes the internal design of your CP5 or CP50 and the various parameters that can be adjusted and set.

Data List **(pdf document)**

The *Data List* document provides a list of all CP5 or CP50 presets (or Performances); a breakdown of the types of Modulation Effect and Power-Amplifier / Compressor* blocks available for selection; a list of the parameters that can be set for each of these blocks; and MIDI-related reference material. (*: CP5 only)

Using this *Reference Manual*

- The first page of the section *Internal Design of the CP5 & CP50* contains a block diagram illustrating the various components of your stage piano's sound production system, and by clicking any of the ▶ arrows within this diagram, you can conveniently jump to a description of the corresponding component.

- Using the tabs along the right side of each page from the *Reference* section, you can easily access details regarding the parts making up each Performance and the various setting areas opened by pressing buttons on the control panel. These tabs also serve as a useful means of quickly getting to grips with the internal design of your CP5 or CP50 and with how the various setting areas and control-panel buttons are related to each other. Furthermore, you can also click on the *Internal Design of the CP5 & CP50* and *Appendix* tabs at the top and bottom of the list to jump to the corresponding sections.

- You can click on any page number from the *Table of Contents* or within descriptive text to jump to the corresponding page.

- By clicking on items or topics you would like to read about from the *Bookmarks* index on the left of the main pdf display window, you can jump to the corresponding page. (Click the *Bookmarks* tab in the top-left corner to open this index if it is not already displayed.)

- For information on a specific topic, function, or feature, select *Find* or *Search* from the Adobe Reader *Edit* menu and enter a keyword to locate the related information anywhere within this document.

NOTE The most-recent version of Adobe Reader can be downloaded from the following web page.
http://www.adobe.com/products/reader/

NOTE The names and positions of menu items may vary depending on the version of Adobe Reader being used.

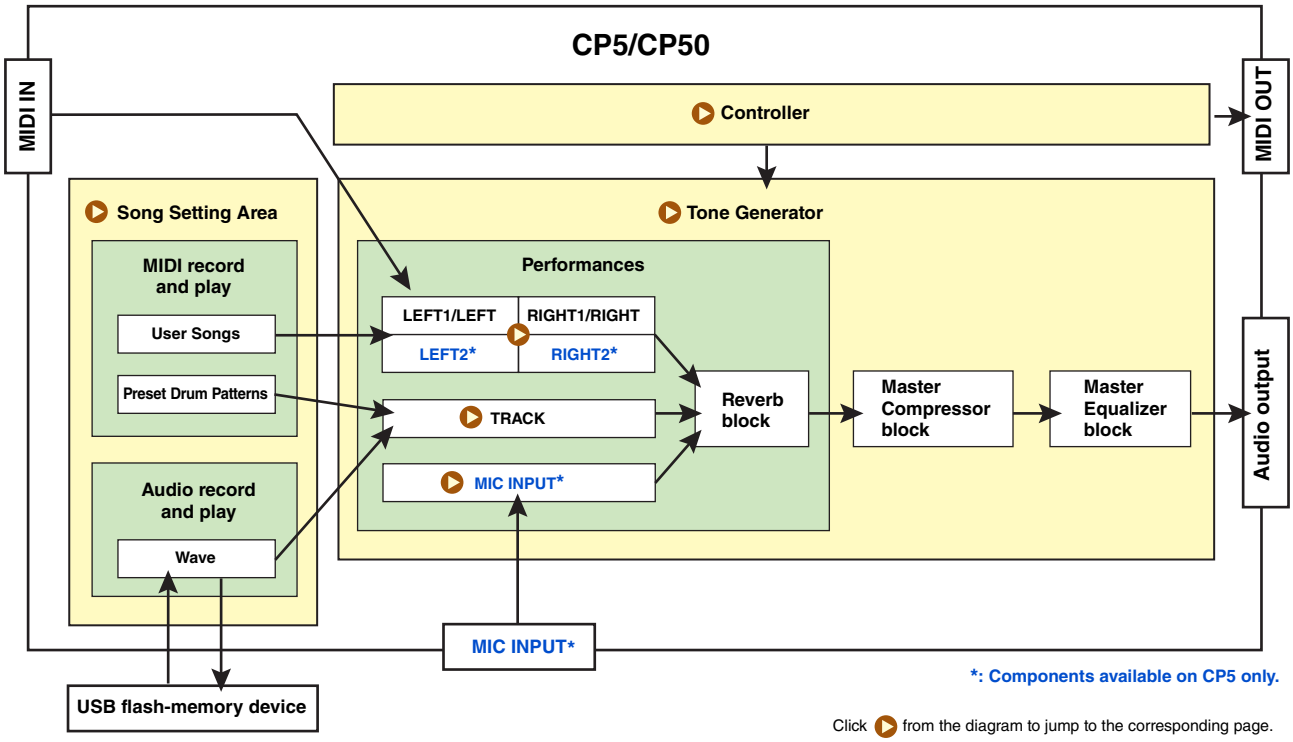
Information

- The illustrations and LCD screens as shown in this manual are for instructional purposes only, and may appear somewhat different from those on your instrument.
- The company names and product names in this manual are the trademarks or registered trademarks of their respective companies.

Internal Design of the CP5 & CP50

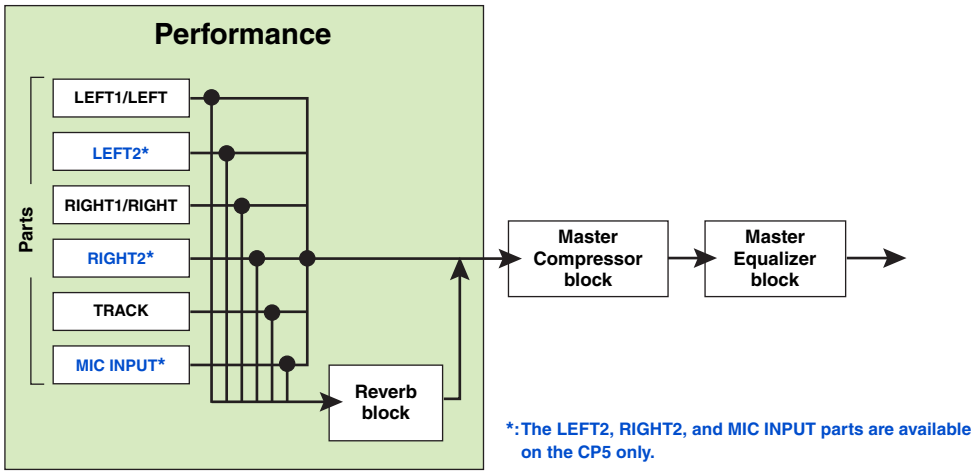
Principal Components

The internal design of your CP5 or CP50 is divided into three main sections — namely, the Tone Generator, the Song Setting area, and the Controller.



Tone Generator

Your stage piano's Tone Generator produces sounds based on performance data that you create by playing the keyboard, operating the sequencer, and using various controllers. In specific terms, the Tone Generator is made up of Performances, a Master Compressor block, and a Master Equalizer block. The term “Performance” is used to describe a single preset that allows a number of voices to be produced together.
Meanwhile, the Master Compressor block and the Master Equalizer block are used to adjust the dynamics and tone of the sounds produced by individual Performances. Master Compressor and Master Equalizer settings are stored separately from Performances; therefore, they affect the stage piano as a whole and can be adjusted to perfectly match the environment in which it is being played. The basic flow of signals between these components is as follows.



Each Performance comprises a number of different parts and a Reverb block. As shown below, CP5 Performances contain six different parts, while CP50 Performances have three. Furthermore, the types of sound that can be handled vary from part to part. For more information on parts, see page 5.

■ CP5 Parts

- Left and right parts: LEFT1, LEFT2, RIGHT1, and RIGHT2
- TRACK part
- MIC INPUT part

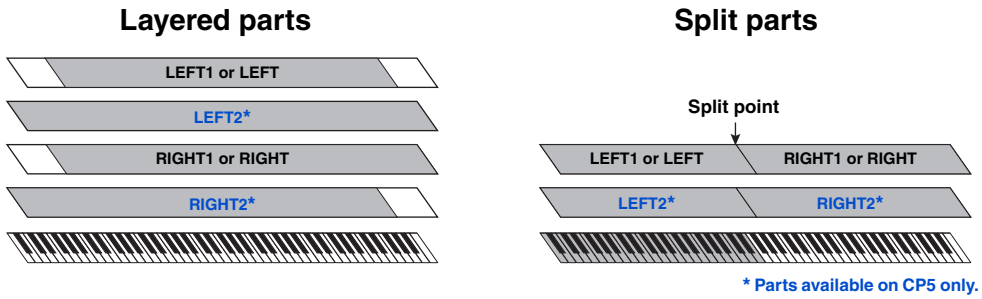
■ CP50 Parts

- Left and right parts: LEFT and RIGHT
- TRACK part

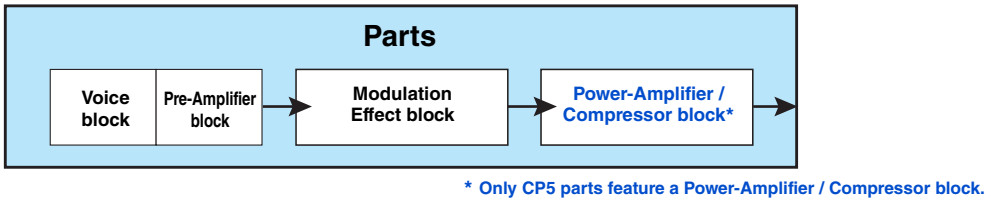
The sound of each Performance is completed by applying a common reverb effect to the sound of each of the selected parts. As a final step, furthermore, the sound of the stage piano itself can be perfectly matched to its playing environment by setting the Master Compressor and Master Equalizer blocks, which affect all Performances in the same way.

Left & Right Parts

The left and right parts that make up each Performance respond to your playing of the keyboard or to MIDI input and use the built-in Tone Generator to produce the appropriate sounds in response. The CP5 has four such parts — LEFT1, LEFT2, RIGHT1, and RIGHT2 — while the CP50 has two — LEFT and RIGHT. Regardless of the number available, you can freely arrange these parts in a layered configuration or a split configuration for left and right hands to best suit your playing style. When layering parts, overlapping playing sections are defined by setting note limits for each (page 32). When splitting parts, meanwhile, a split point is set (page 31) so that notes to the left and right of that point can be played using the left and right parts, respectively. Layering and splitting can be setup using the Split parameter (page 31) from the Common Settings area.



Each CP5 part is subdivided into four distinct blocks known as the Voice block, the Pre-Amplifier block, the Modulation Effect block, and the Power-Amplifier / Compressor block. In the CP50, meanwhile, three blocks are used for each part — namely, the Voice block, the Pre-Amplifier block, and the Modulation Effect block.



In these blocks, we have recreated the unique sounds not only of acoustic pianos and classic electric pianos, but also of a wide range of effect units, amplifiers, and other devices commonly used with each in actual performance and recording settings. Using the Piano Customize function to freely assemble blocks, you can both replicate standard vintage settings and also create original hardware combinations that would never be possible in the real world. Furthermore, your CP5 or CP50 also comes complete with many other voices such as strings and guitars, and these can be combined with piano voices to produce unique, exciting sounds.

Each Performance allows the sounds produced by its various parts to be sent through the common Reverb block for finishing. In addition, Performances also contain a Common Settings area that allows a name, a keyboard mode, and controller parameters to be set for each. These common settings can be used to make final adjustments to the individual Performances that you create.

Meanwhile, your CP5 or CP50 is pre-loaded with an impressive selection of Preset Performances, specially created by artfully combining the above-described parts and blocks to produce just the right sounds. Finally, the Master Compressor and Master Equalizer blocks, which affect all Performances in the same way, can be used to ensure that the sound of your stage piano is always perfectly matched to its playing environment.

Roles of Blocks & Common Settings Area

The roles of each of the blocks and the Common Settings area that make up CP5 and CP50 parts are as follows.

■ Voice Block

The Voice block is used to specify the type of musical-instrument sound that will be produced for the corresponding part by the Tone Generator. Using a range of advanced sound-synthesis techniques, your CP5 or CP50 can faithfully reproduce the unique sonic characteristics of a broad spectrum of acoustic pianos and classic electric pianos. In addition to piano sounds, furthermore, Voice blocks also offer a selection of other types of musical instruments, such as strings, guitar, and bass, and these are conveniently arranged into different instrument categories. For more information regarding piano voices (as selected from the PIANO and E.PIANO categories), refer to *Voice Block* (page 12) from the *Reference* section below. For more information regarding other instrument categories and voices, refer to the *Data List* pdf document.

■ Pre-Amplifier Block

The Pre-Amplifier block is used to set pre-amplifier parameters and to make other adjustments uniquely affecting piano voices. As such, this block is available only when a piano voice has been selected (from the PIANO or E.PIANO category). In addition to pre-amplifiers actually used with various types of pianos in live performance settings, the Pre-Amplifier block also replicates many other parameters perfectly configured for the enhancement of piano sounds. Whenever you select a voice from the PIANO or E.PIANO category within the Voice block, a specific set of parameters for that particular voice will be made available in the Pre-Amplifier block. For details on Pre-Amplifier block parameters, see *Pre-Amplifier Block* (page 13) from the *Reference* section below.

■ Modulation Effect Block

Within each Modulation Effect block, you will find a versatile collection of modulation-type effects that are indispensable to piano sound design for stage and recording environments. Positioned immediately after the Voice and Pre-Amplifier blocks for the corresponding part, this block processes to the raw instrument sound. Whenever a non-piano voice is selected within the Voice block, furthermore, the Modulation Effect block functions as an insertion effect. Using Modulation Effect blocks, individual parts can be processed with different effects, each of which features a number of freely-adjustable parameters. For details on the types of modulation effect available for use and the corresponding parameters, see Modulation Effect Block (page 15) from the Reference section below.

■ Power-Amplifier / Compressor Block (CP5 only)

For further shaping of voices, the Power-Amplifier / Compressor block contained within each CP5 part can be used to select either a power amplifier or a compressor, each of which is modeled with remarkable levels of precision. Positioned immediately after the part's Modulation Effect block, this block adjusts the overall tone. Whenever a non-piano voice is selected within the Voice block, furthermore, the Power-Amplifier / Compressor block functions as an insert-type effect. Using Power-Amplifier / Compressor blocks, individual parts can be processed with different effects, each of which features a number of freely-adjustable parameters. For details on the types of power-amplifier and the compressor available for use and the corresponding parameters, see *Power-Amplifier / Compressor Block* (page 25) from the *Reference* section below.

■ Common Settings Area

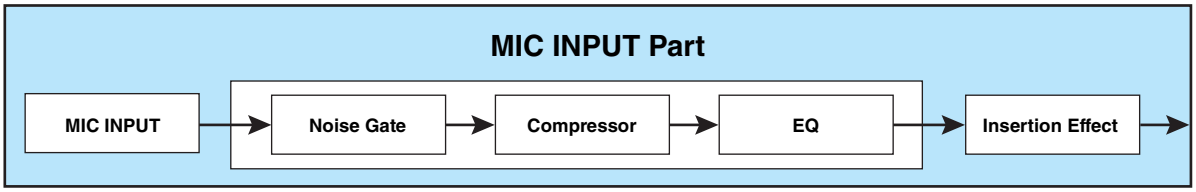
The Common Settings area is used to assign names to your Performances, to specify a keyboard mode for the left and right parts, and to setup controllers. If you wish to use your CP5 or CP50 as a master keyboard for controlling other MIDI devices, the relevant settings are made here. For details on Common Settings area parameters, see *Common* (page 31) from the *Reference* section below.

TRACK Part

Each CP5 or CP50 Performance can also contain a backing track for playing back as an accompaniment to your keyboard performances. Three different types of backing track can be selected — namely, Preset Drum Patterns, User Songs, and Wave files. Whenever you select a Preset Drum Pattern or a Wave file located on a USB flash-memory device, the TRACK part can be used to set its volume, pan, and reverb send level. For more details on these parameters, see *TRACK Part* (page 39) from the *Reference* section below.

MIC INPUT Part (CP5 only)

With the CP5, a microphone can be plugged into the MIC INPUT connector so that you can conveniently sing along as you play. Each CP5 Performance features a MIC INPUT part that can be used to adjust the volume, pan, and effect settings for the audio input via this connector. Furthermore, this audio can also be processed using a noise gate, compressor, equalizer, and insertion effect. For more details, see *MIC INPUT Part* (page 40) from the *Reference* section below.



Reverb Block

The Reverb block on your CP5 or CP50 provides a host of exquisite reverb algorithms originally developed by Yamaha for use in professional-audio applications. This block allows a common reverb effect to be applied to all parts from the current Performance, and each features a number of freely configurable parameters. For details on the types of reverb effect available for use and the corresponding parameters, see *Reverb* (page 42) from the *Reference* section below.

Makeup of Performance Memories

Your CP5 or CP50 can store Performances in three main memory areas — namely, the Preset Performance memory, the User Performance memory, and an External Performance memory. The specific roles of each of these memory areas are described below.

Preset Performance Memory

Accessed using the [PRE] button, the Preset Performance memory is used to hold the Performance presets that come ready-made with your CP5 or CP50. This memory area contains three individual memory banks — PRE1, PRE2, and PRE3. Each time you press the [PRE] button, a different Preset Performance memory bank will be selected. Four memory groups (A, B, C, and D) are contained within each memory bank, and each one of these groups can hold ten Performances. Press one of the group buttons [A] to [D] followed by one of the number buttons [1] to [10] to choose the corresponding Performance from the currently selected External Performance memory bank. In order that they will always be available for use, Preset Performances cannot be overwritten with other Performances that you have modified or created. As such, the Preset Performance memory is read-only.

NOTE Performance 1 from Group A within the PRE1 memory bank will always be selected when you press the [PRE] button while holding down the [EXIT] button.

NOTE For a list of all Preset Performances, see the *Data List* pdf document.

User Performance Memory

Accessed using the [USER] button, the User Performance memory is used to store original Performances that you have created. This memory area contains three individual memory banks — USR1, USR2, and USR3. Each time you press the [USER] button, a different User Performance memory bank will be selected. Four memory groups (A, B, C, and D) are contained within each memory bank, and each one of these groups can hold ten Performances. Press one of the group buttons [A] to [D] followed by one of the number buttons [1] to [10] to choose the corresponding Performance from the currently selected User Performance memory bank. In the stage piano's default condition, the User Performance memory contains exactly the same content as the Preset Performance memory.

NOTICE

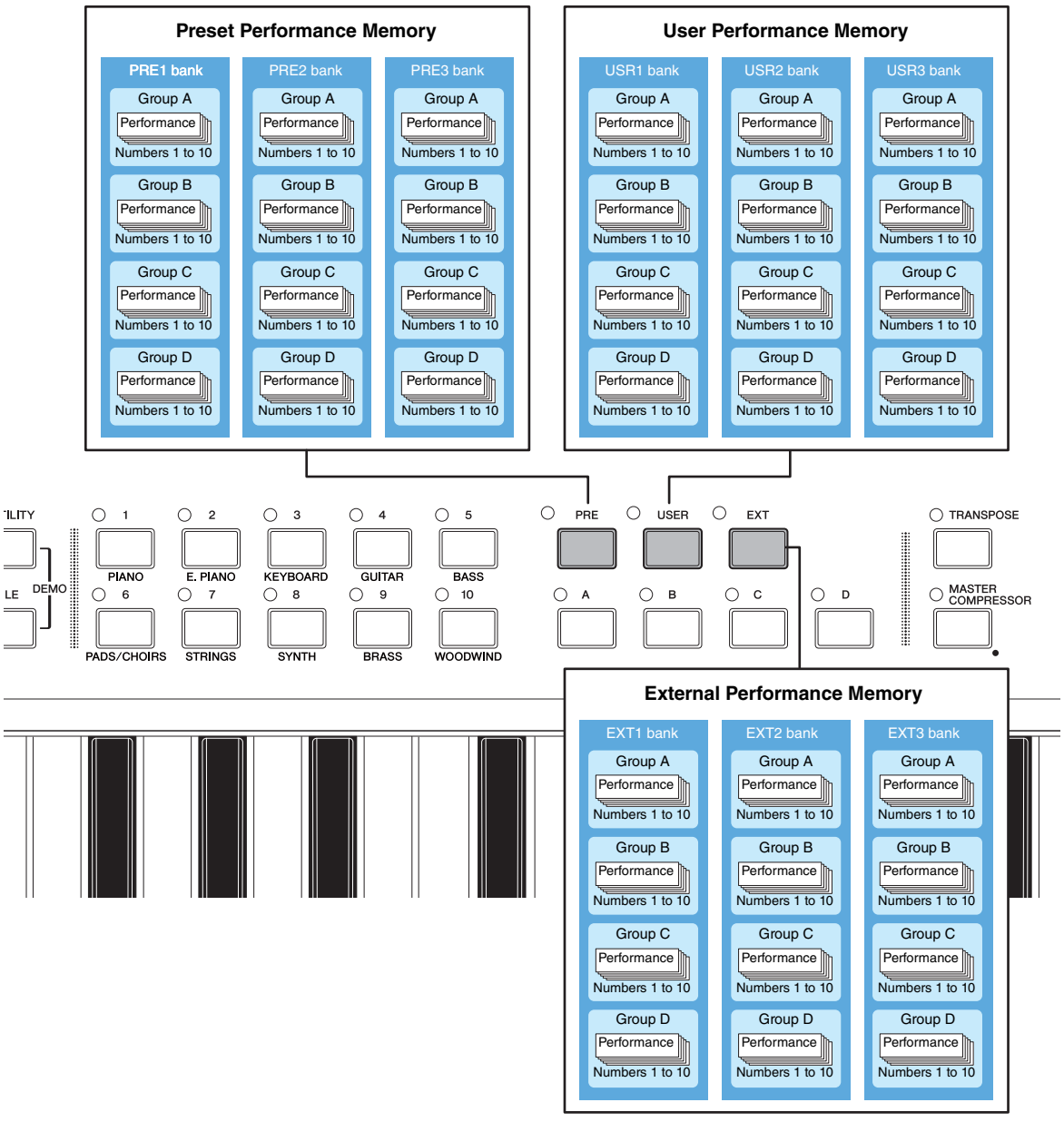
If you overwrite a Performance in the User Performance memory, it will be permanently deleted. In order to avoid loosing irreplaceable data, therefore, you should take special care when selecting where to store newly-created Performances.

NOTE Performance 1 from Group A within the USR1 memory bank will always be selected when you press the [USER] button while holding down the [EXIT] button.

External Performance Memory

Accessed using the [EXT] button, an External Performance memory is read into your CP5 or CP50 from a plugged-in USB flash-memory device. This memory area can be used to store original Performances that you have created, and it contains three individual memory banks — EXT1, EXT2, and EXT3. Each time you press the [EXT] button, a different External Performance memory bank will be selected. Four memory groups (A, B, C, and D) are contained within each memory bank, and each one of these groups can hold ten Performances. Press one of the group buttons [A] to [D] followed by one of the number buttons [1] to [10] to choose the corresponding Performance from the currently selected External Performance memory bank. In order to use an External Performance memory stored on a USB flash-memory device, the memory device must be plugged into your CP5 or CP50, and the stage piano must have loaded the corresponding data into a dedicated section of its internal memory (DRAM).

NOTE Performance 1 from Group A within the EXT1 memory bank will always be selected when you press the [EXT] button while holding down the [EXIT] button.



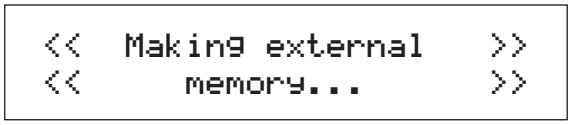
HINT

Using External Performance Memories

In order to save Performances in an External Performance memory or to use an External Performance memory from a USB flash-memory device, the USB flash-memory device in question must be plugged into your CP5 or CP50. When you do so, the stage piano will behave in a number of different ways depending on whether or not it already contains an External Performance memory and when the USB flash-memory device was last plugged in. Each of these actions is described below.

■ Root directory does not contain an External Performance memory:

As soon as you plug in a USB flash-memory device, your stage piano will check its root directory for an External Performance memory. If none exists, it will create one in the form of a file named EXTBANK.C5E or EXTBANK.C6E.

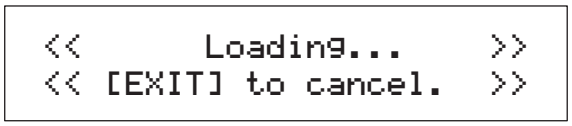


■ Root directory contains an External Performance memory:

If an External Performance memory already exists in the root directory of the USB flash-memory device, the action taken will — as described below — depend on whether or not that specific memory device was previously plugged in and removed after you turned on the stage piano.

• Not previously plugged in after turning on the stage piano:

If the USB flash-memory device is being plugged in for the first time after turning on your CP5 or CP50, the data from its External Performance memory will be automatically loaded into a dedicated section of the instrument's internal memory (DRAM).



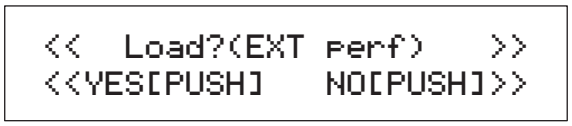
NOTE If a different USB flash-memory device has already been plugged in and removed after turning on the stage piano, the instrument will operate in line with the description from *Previously plugged in after turning on the stage piano* (below).

NOTICE

Whenever an External Performance memory from a USB flash-memory device is loaded into the stage piano, all External Performance memory data from the DRAM and data in the Edit Buffer will be overwritten. Before plugging in a USB flash-memory device, therefore, be sure to store any important External Performances residing in the DRAM and any Performances located within the Edit Buffer and containing unsaved modifications.

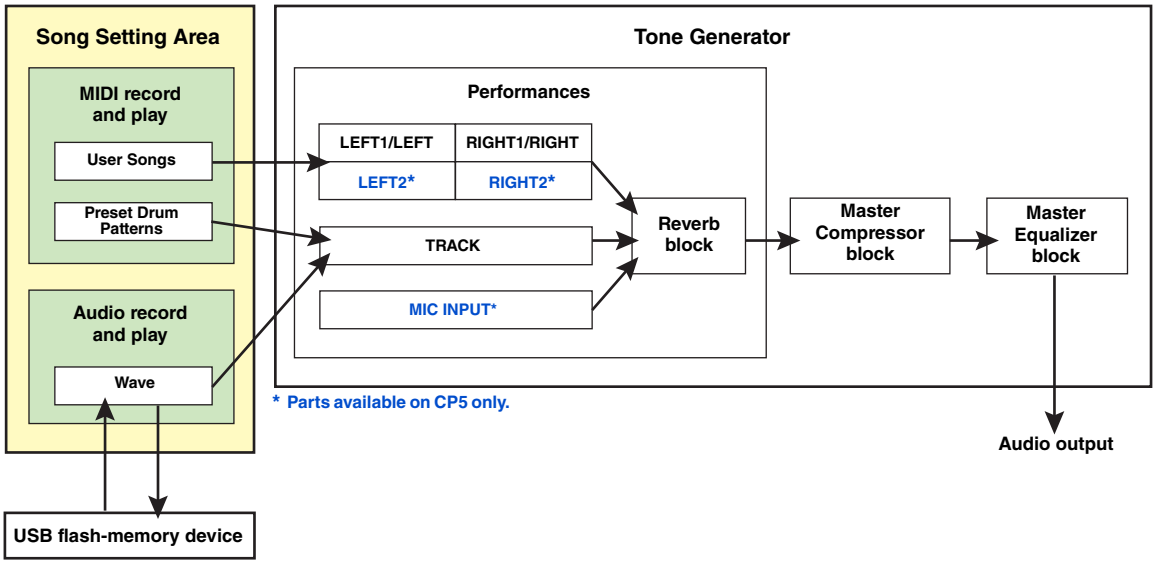
• Previously plugged in after turning on the stage piano:

Whenever you plug in a USB flash-memory device that has already been plugged in and removed at least once after turning on the stage piano, you will be asked whether or not its External Performance memory should be loaded. If the External Performance memory currently loaded into the stage piano contains irreplaceable Performances with unsaved modifications, be sure to press Knob 3 (*NO [PUSH]*) at this time.



Song Setting Area

The Song Setting area is used to record and play MIDI sequences and audio files for use as Performance backing tracks. MIDI sequences can take the form of built-in Preset Drum Patterns (playback only) or User Songs that you can both record and play. Meanwhile, the Song Setting area's audio functions allow you to record Wave files to a USB flash-memory device and to play back Wave files previously stored on such a device.



Recording MIDI & Audio Data

Recording of User Songs and Wave files is carried out using the Record screen (page 37). In the case of User Songs, you record your keyboard performance as MIDI data, and this can be played back using the sound created by the current Performance's left and right parts. When creating Wave files for direct storage as audio data on a USB flash-memory device, meanwhile, you can record your keyboard performance together with the Preset Drum Pattern or User Song set as the backing track. It should be noted that Preset Drum Patterns cannot be re-recorded as MIDI data on the stage piano, and that recorded MIDI data cannot be stored as Preset Drum Patterns.

Playing MIDI & Audio Data

For each Performance, you can choose a single Preset Drum Pattern, User Song, or Wave file for playback as a backing track, and this selection is made on the Song Setting screen (page 35). The actual part(s) that will be used for playback will depend on the type of backing track that you select. Preset Drum Patterns and Wave files are handled by the TRACK part (page 7) from the Tone Generator's currently-selected Performance, and within this part, you can set the backing track's volume, pan, and effect send level.

Preset Drum Patterns are MIDI sequences that play built-in drum kit sounds totally unrelated to the voices selected for the Performance's left and right parts; therefore, they will always play back using the drum kit sounds selected on the Song Setting screen, regardless of left and right part settings. User Songs, on the other hand, are handled by left and right parts (page 5), and for this reason, the sound that they produce will be affected by these parts' voice and effect settings. As these MIDI sequences are recorded using the sound of the left and right parts, they function perfectly as backing tracks for the corresponding Performance.

Controller

Your stage piano's Controller consists of the keyboard, pitch bend wheel, knobs, foot pedals, and other input devices used while playing. It is important to bear in mind that the keyboard itself does not generate any sound; instead, it sends note, velocity, and other performance-related signals to a tone generator, which then produces sounds in response. In the same way, the other Controller devices also send signals to the tone generator whenever they are operated. Specifically speaking, the signals produced and sent by the keyboard and other devices are MIDI messages, and therefore, they can also be sent to other MIDI devices or a computer via the MIDI OUT connector or the USB TO HOST port. Please note, however, that data produced by the knobs is not output from the instrument in this way.

Reference

This section provides a detailed description of the parameters used to configure your CP5 or CP50.

Left & Right Parts

The following describes the parameters that can be set for left and right parts on a block-by-block basis. These descriptions apply to the LEFT1, LEFT2, RIGHT1, and RIGHT2 parts on the CP5, and to the LEFT and RIGHT parts on the CP50.

Voice Block

The Voice block is used to set a basic sound for the currently selected part.

Configuring Voice Parameters

Edit Sequence	Press the [VOICE] button → Turn Knob 1 and Knob 2 or press buttons [1] to [10]

Voices on your CP5 or CP50 are arranged into a number of different categories based on instrument type or sound characteristics (i.e., piano, guitar, bass, etc.). For the purpose of explanation, this section will introduce the voices from the PIANO and E.PIANO (electric piano) categories as typical examples of the voices available on your stage piano. For details regarding all categories and voices, refer to the *Data List* pdf document.

Voice name	Description
PIANO Category	
CF Grand*	The CF Grand piano has a straightforward sound, making it suitable for practically all musical genres. Featuring a broad dynamic range, this piano type provides for highly expressive performances.
S6 Grand* (CP5 only)	In contrast to the two CF-series pianos, the S6 Grand has a more compact, woody sound. Allowing you to play with both warmth and power, it is ideal for a diverse range of musical genres.
E. PIANO Category	
CP80*	Reproducing the classic sound of the Yamaha CP80 Electric Grand Piano, the CP80 piano type can also be used to recreate an unique “Eighties” feel by boosting the high frequencies with the accompanying pre-amplifier.
CP88*	The CP88 piano and accompanying pre-amplifier deliver a nostalgia-laden sound distinctive of the Yamaha CP80 Electric Grand Piano, particularly in the mid-frequency range.
71Rd I (CP5 only)	The 71Rd I is the earliest-sounding of the CP5's Rd-series electric pianos. With the soft attack and fast decay distinctive of felt hammers, it produces a mellow, hollow tone.
73Rd I (CP5 only)	The 73Rd I piano replicates an electric piano with rubber-topped hammers, and compared to the 71 Rd I, it has a slightly brighter, more sustained tone. Overall, this Rd-series piano produces a dark, heavy sound.
75Rd I	The 75Rd I piano reproduces the bright, sustained sound of an electric piano featuring high-performance versions of tines, pickups, and other sound-generating components.
78Rd II (CP5 only)	Replicating the effect of plastic hammers and a high-fidelity, integrated-circuit pre-amplifier, the 78Rd II boasts the brightest sound of the Rd series.
Dyno (CP5 only)	The Dyno piano type significantly boosts the high-frequency range of the 78Rd II to give a sparkling “Eighties” sound.
69Wr	In contrast to the Rd piano types provided by the CP5 or CP50. the 69Wr is characterized by a gentle attack and fast decay. Furthermore, this piano type features a tight dynamic range.
77Wr	Rounding off the vintage electric piano lineup of CP5 or CP50, the 77Wr piano type features a stronger attack and more brilliant overall tone than the 69Wr.
DX Legend	The DX Legend reproduces the indispensable vintage sound of the DX electric piano, which remains a classic even to this day.

Voice name	Description
DX Woody	With its rich, woody body, the DX Woody voice delivers a mellower electric-piano sound.
DX FTine	Recreating a classic voice from the DX electric piano, the DX FTine shows off the characteristic attack sound of this instrument.
DX 7 II	With the body portion of the sound changing in response to how you play, the DX 7 II will allow you to experience the wonderful richness of expression for which the DX electric piano was renowned.
DX Mellow	The DX Mellow voice is gentle and well suited to ballads; however, powerful playing will still produce a much harder sound.
DX Crisp	Although relatively full-bodied, the DX Crisp remains highly present within an ensemble thanks to its unique attack sound.

NOTE Piano types marked with an asterisk (*) can have their tuning adjusted by setting the *TunCrv* parameter (Tuning Curve) to "stretch" (page 44).

Pre-Amplifier Block

The Pre-Amplifier block has an effect on the sound only when a voice from the PIANO or E.PIANO category has been selected for the part in question. In such a case, furthermore, a unique set of parameters specifically for the selected type of piano will be made available in this block.

Configuring Pre-Amplifier Block Parameters

Edit Sequence	Press and hold the [PRE-AMP] button (for at least one second) → Navigate to the required page using the [◄ PAGE] and [PAGE ►] buttons → Turn Knobs 1 to 3

Pre-Amplifier block parameters are chosen automatically based on the type of piano voice selected so that the sound of that voice can be perfectly adjusted. For this reason, the parameters displayed will vary from voice to voice. In the following table, you will find a description of all of this block's parameters in alphabetic order.

	On-screen name (and full name)	Associated voices	Description
B	Bass	CP80, CP88, 71Rd I, 73Rd I, 75Rd I, 78Rd II, Dyno, 69Wr, and 77Wr	This parameter is used to adjust the volume of the low-frequency component.
	Brill. (Brilliance)	CP80 and CP88	This parameter is used to adjust the brightness of the sounds produced.
D	DampReso (Damper Resonance Level)	CF Grand and S6 Grand	This parameter is used in combination with a connected Sustain pedal to recreate the sound of strings resonating in response to pressing of an acoustic piano's damper pedal. In specific terms, the *DampReso* parameter sets the depth of this resonance. **Setting values:** -16 to +16
	Decay (Decay Time)	All piano voices	This parameter is used to adjust how fast a note decays while the key is being held down. **Setting values:** -16 to +16 **NOTE** The same setting can be made using the *EGDcy* parameter (page 29) from the Part Setting screen.
	Depth (Vibrato Depth)	71Rd I, 73Rd I, 75Rd I, 78Rd II, 69Wr, and 77Wr	This parameter is used to adjust the depth of the pre-amplifier vibrato.
G	Gain (Input Gain)	All voices from E.PIANO category	This parameter is used to adjust the volume of the signal input into the Pre-Amplifier block.

	On-screen name (and full name)	Associated voices	Description
H	Hammer (Hammer Stiffness)	CP5 only — CF Grand, S6 Grand, CP80, CP88, 71Rd I, 73Rd I, 75Rd I, 78Rd II, Dyno, 69Wr, and 77Wr	This parameter is used to adjust the apparent softness or hardness of the piano sound in much the same way as if softer or harder hammers were used to strike the strings. It is available on the CP5 only. **Setting values:** Soft2, Soft1, Normal, Hard1, and Hard2
	High	DX Legend, DX Woody, DX FTine, DX 7 II, DX Mellow, and DX Crisp	This parameter is used to adjust the volume of the high-frequency component.
	HighMid (High Middle)	DX Legend, DX Woody, DX FTine, DX 7 II, DX Mellow, and DX Crisp	This parameter is used to adjust the volume of the high-middle frequency component.
K	Key-off (Key-off Noise Level)	CF Grand, S6 Grand, CP80, CP88, 71Rd I, 73Rd I, 75Rd I, 78Rd II, Dyno, 69Wr, and 77Wr	This parameter is used to recreate the sound of dampers pressing against the strings when you remove your fingers from the keyboard. In specific terms, the *Key-off* parameter sets the volume of this key-off noise. **Setting values:** -16 to +16
L	Low	DX Legend, DX Woody, DX FTine, DX 7 II, DX Mellow, and DX Crisp	This parameter is used to adjust the volume of the low-frequency component.
	LowMid (Low middle)	DX Legend, DX Woody, DX FTine, DX 7 II, DX Mellow, and DX Crisp	This parameter is used to adjust the volume of the low-middle frequency component.
M	Middle	CP80 and CP88	This parameter is used to adjust the volume of the mid-frequency component.
	MidBoost (Mid Boost)	69Wr and 77Wr	This parameter is used to adjust the volume of the mid-frequency component.
N	Normal	Dyno	This parameter is used to adjust the volume of the mid-frequency component.
O	Overtone	Dyno	This parameter is used to adjust the volume of the high-frequency component.
R	Release (Release Time)	All piano voices	This parameter is used to adjust how fast a note decays after the key is released. **Setting values:** -16 to +16 **NOTE** The same setting can be made using the *EGRel* parameter (page 29) from the Part Setting screen.
S	Speed (Vibrato Speed)	71Rd I, 73Rd I, 75Rd I, and 78Rd II	This parameter is used to adjust the speed of the pre-amplifier vibrato.
	StrkPos (Striking Position)	71Rd I, 73Rd II, 75Rd I, 78Rd II, Dyno, 69Wr, and 77Wr	This parameter is used to replicate the effect of changing the position at which the resonators are struck by the hammers. **Setting values:** Top3 to Top1, Default, or Rear1 to Rear3
T	Treble	CP80, CP88, 71Rd I, 73Rd , 75Rd I, 78Rd II, 69Wr, and 77Wr	This parameter is used to adjust the volume of the high-frequency component.
V	Volume	All voices from E.PIANO category	This parameter is used to adjust the output volume. If set to 100 or greater when 71Rd I, 73Rd I, 75Rd I, 78Rd II, Dyno, 69Wr, or 77Wr has been set as the part's voice, drive will also be added to the sound.

NOTE Output from the Pre-Amplifier block will be muted briefly whenever one of the following tone-control parameters is modified.

- CP80 or CP88 pre-amplifier: *Bass*, *Middle*, *Treble*, or *Brill*
- 71Rd I, 73Rd I, or 75Rd I pre-amplifier: *Bass*
- 78Rd II pre-amplifier: *Treble*
- Dyno pre-amplifier: *Bass* or *Overtone*

Modulation Effect Block

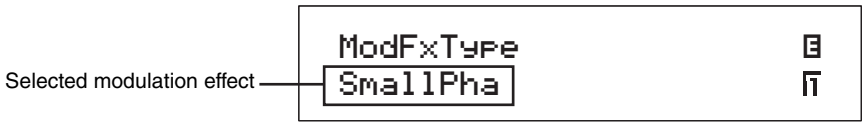
Using a Modulation Effect block, an audio effect can be applied to the part's voice in order to modify its spatial characteristics.

Selecting Modulation Effect Block Types

Edit Sequence	Press and hold the [MOD-FX] button (for at least one second) → Navigate to Page 1 using the [◄ PAGE] button if necessary → Turn Knobs 1 to 3

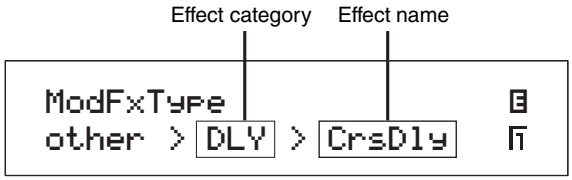
The following tables identify and describe the different types of effect that can be selected in each Modulation Effect block. If you have selected a voice from the PIANO or E.PIANO category for the current part, this block's selection page will give priority to a group of effects specially designed for piano voices (i.e., the modulation effects). A range of additional general-purpose effects can also be selected from the block's Other group. Meanwhile, if you have selected a non-piano voice, all of these effects — including those primarily for piano voices — will be available for selection by category as insertion effects.

For PIANO and E.PIANO voices:



On-screen name (and full name)	Description
SmallPha (Small Phaser)	Small Phaser operates like a vintage phaser, applying a unique sweeping effect.
Max90	Max90 emulates a vintage phaser, producing a more traditional-sounding effect.
Max100	Another vintage-type phaser, Max100 can modify the sound in a number of different ways based on its Mode parameter setting.
Flanger	The Flanger effect reproduces the sound of a vintage flanger.
TouchWah (Touch Wah)	Touch Wah produces a classic filter-sweep effect in response to how hard or soft the keyboard is played.
PedalWah (Pedal Wah)	Another classic filter-sweep effect, Pedal Wah is operated using a pedal or another controller. In order to use this effect, it is necessary to specify which controller is to be used, and this can be done by selecting the controller on Page 4 of the Common Settings screen (page 34) and setting "MdEffect" as its destination.
Chorus	The Chorus effect applies a standard chorus.
D Chorus	D Chorus produces a chorus effect that is more natural sounding, softer, and wider.
816Cho (816Chorus)	Famous for combining eight DX7s in a single rack unit, Yamaha's TX816 featured a thick, detuned chorus sound that is reproduced here by the 816Chorus modulation effect.
Sympho (Symphonic)	Symphonic uses multi-stage modulation to produce a wider-sounding chorus.
Other	The Other group contains general-purpose effects that are suitable for use with voices other than those from the PIANO and E.PIANO categories. Within this group, you can select from a wide range of effects in a number of different categories. See the table on the following page for more details regarding these categories and effects.

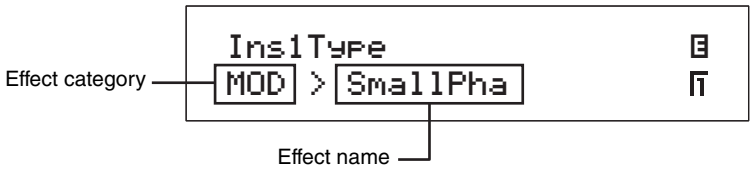
After selecting Other as the modulation effect type, you will be able to use Knobs 2 and 3 to choose effect categories and individual effects. The following table identifies and describes the different types of effect that are available for selection within the Other group.



On-screen name (and full name)	Description
Effect category: Delay (DLY)	
CrsDly (Cross Delay)	Cross Delay contains two individual delays with cross-over feedback to produce a sound that swirls between the left and right channels.
T-CrsDly (Tempo Cross Delay)	Tempo Cross Delay processes sound in the same way as Cross Delay, but allows the delay times to be synchronized with the playback tempo.
T-DlyMono (Tempo Delay Mono)	Tempo Delay Mono is a monaural delay effect that allows the delay time to be synchronized with the playback tempo.
T-DlySt (Tempo Delay Stereo)	Tempo Delay Stereo is a stereo delay effect that allows the delay time to be synchronized with the playback tempo.
DlyLR (Delay LR)	Delay LR features a pair of left and right feedback-type delays.
DlyLCR (Delay LCR)	Delay LCR features three individual delays, one each for the left, center, and right.
DlyLR(St) (Delay LR (Stereo))	Delay LR (Stereo) processes sound in the same way as Delay LR but has fully independent left and right channels.
Effect category: Chorus (CHO)	
G Cho (G Chorus)	G Chorus produces a rich, deep chorus with complex modulation.
2Mod (2 Modulator)	2 Modulator is a chorus effect allowing pitch and amplitude modulation to be adjusted for a more natural, spacious tone.
SPX Cho (SPX Chorus)	The SPX Chorus effect enhances modulation and spaciousness using a three-phase LFO.
Ensemble (Ensemble Detune)	Ensemble Detune adds a slightly pitch-shifted sound to produce a modulation-free chorus.
Effect category: Flanger (FLG)	
ClscFlg (Classic Flanger)	As its name suggests, Classic Flanger produces a conventional flanger effect.
T-Flg (Tempo Flanger)	Tempo Flanger features an LFO that can be synchronized with the playback tempo.
DynaFlg (Dynamic Flanger)	The Dynamic Flanger effect can control its delay modulation in real time based on the level of the input signal.
Effect category: Phaser (PHA)	
T-Pha (Tempo Phaser)	Tempo Phaser features an LFO that can be synchronized with the playback tempo.
DynaPha (Dynamic Phaser)	The Dynamic Phaser effect can control its phase shift in real time based on the level of the input signal.
Effect category: Tremolo & Rotary (T&R)	
AutoPan (Auto Pan)	Auto Pan is an effect that cyclically moves the sound between left and right in the stereo field.
Tremolo	Tremolo is used to cyclically modulate the volume of the input signal.
Rotary (Rotary Speaker)	Rotary Speaker simulates the unique sound of a classic rotary-type speaker.

On-screen name (and full name)	Description
Effect category: Distortion (DST)	
AmpSim1 (Amp Simulator 1)	Amp Simulator 1 replicates the sound produced by guitar amplifiers.
AmpSim2 (Amp Simulator 2)	Amp Simulator 2 replicates the sound produced by guitar amplifiers.
CmpDst (Compressor-Distortion)	Compressor & Distortion combines compression and distortion effects.
CmpDst+ (Compression-Distortion-Delay)	The Compression-Distortion-Delay effect combines compression, distortion, and delay effects.
Effect category: Compressor (CMP)	
ClscCmp (Classic Compressor)	Relatively fast-acting, the Classic Compressor effect is well suited to solo performances.
MCmp (Multiband Compressor)	Multiband Compressor can be used to apply compression independently in three specific frequency bands.
Effect category: Lo-fi (L-F)	
Lo-Fi	Lo-Fi is used to creatively degrade the audio quality of the incoming signal.
Noisy	The Noisy effect can be used to intentionally add noise to the input signal.
D-Turn (Digital Turntable)	Digital Turntable adds the noise, clicks, and pops characteristic of old analog records.
Effect category: Tech (TEC)	
RingMod (Ring Modulator)	Ring Modulator gives the input signal a more metallic sounding character.
DynaRing (Dynamic Ring Modulator)	The Dynamic Ring Modulator effect can control its oscillator frequency in real time based on the level of the input signal.
DynaFlt (Dynamic Filter)	Dynamic Filter can control its filter cutoff frequency in real time based on the level of the input signal.
Auto Syn (Auto Synth)	The Auto Syn effect uses delay and modulation to make the input signal sound as if it was produced using a synthesizer.
Isoltr (Isolator)	Isolator uses powerful filters to control the volume of individual frequency bands.
TechMod (Tech Modulation)	The Tech Modulation effect applies a special type of modulation to the input signal.
Effect category: Misc (MSC)	
EQ501 (EQ 501)	EQ 501 is a five-band equalizer utilizing Yamaha's Virtual Circuitry Modeling (VCM) technology.
Enhans (Harmonic Enhancer)	Harmonic Enhancer adds higher-order harmonics to enhance a sound's presence.
TalkMod (Talking Modulator)	The Talking Modulator effect adds a vowel-type formant to the input signal.
PchChg (Pitch Change)	As its name suggests, Pitch Change can modify the pitch of the input signal.
ER (Early Reflections)	Early Reflections is a type of reverb effect that replicates the sound of the input signal being reflected once or twice off a simulated room's hard surfaces without the subsequent full reverberation.

For non-piano voices:



In the case of non-piano voices, effects can be selected from the categories that make up the Other group as described above. In addition, the modulation effects, which are primarily for PIANO and E.PIANO voices, are grouped together in the MOD category. For more details regarding these effects, see *For PIANO and E.PIANO voices* (page 15). All effects for non-piano voices function as insertion effects.

Configuring Modulation Effect Block Parameters

Edit Sequence	Press and hold the [MOD FX] button (for at least one second) → Navigate to the second and subsequent pages using the [◄ PAGE] and [PAGE ►] buttons → Turn Knobs 1 to 3

Each Modulation Block effect is configured using a different set of parameters, which adjust the sound of the effect in various ways. The following tables will describe the functions of each of these parameters in alphabetic order, first for the modulation effects (specially designed for PIANO and E.PIANO voices) and then for the effects from the Other group.

NOTE For more details on the specific parameters associated with each different type of effect, see the Modulation Effect parameter list in the *Data List* pdf document.

Parameters for modulation effects

	On-screen name (and full name)	Associated effects	Description
B	Bottom	Touch Wah and Pedal Wah	This parameter is used to set the lowest point in the filter's sweep range.
C	Color	Small Phaser	This parameter is used to adjust the way in which the phaser sweeps.
D	Delay	Symphonic	This parameter is used to set an offset for the modulation delay time.
	Depth	Flanger, Chorus, 816Chorus, and Symphonic	This parameter is used to adjust the depth of modulation.
	Drive	Small Phaser and Max90	This parameter is used to set the phaser's input level.
		Touch Wah and Pedal Wah	This parameter is used to adjust the way in which the sound distorts.
F	Feedback	Flanger and 816Chorus	This parameter is used adjust the degree to which output from the effect is fed back into its input.
M	Manual	Flanger	This parameter is used to set the offset value for delay modulation.
	Mix	Flanger, Chorus, 816Chorus, and Symphonic	This parameter is used to adjust the volume of the wet sound (i.e., the sound produced by the effect).
	Mode	Max100	This parameter is used to select the phaser mode.
P	PdlCtrl (Pedal Control)	Pedal Wah	This parameter is used to set the cutoff frequency for the wah filter.
	Phase	816Chorus	This parameter is used to set the phase offset for the chorus effect.

	On-screen name (and full name)	Associated effects	Description
R	Rate	Small Phaser	This parameter is used to adjust the modulation speed.
	Reso (Resonance Offset)	Touch Wah and Pedal Wah	This parameter is used to set the resonance offset value.
S	Sens. (Sensitivity)	Touch Wah	This parameter is used to adjust how sensitive the filter-sweep effect is to playing velocity.
	Speed	Max90, Max100, Flanger, Chorus, 816Chorus, and Symphonic	This parameter is used to adjust the modulation speed.
T	Top	Touch Wah and Pedal Wah	This parameter is used to set the highest point in the filter's sweep range.
	Type	Max90	This parameter is used to select the phaser type.
		D Chorus	This parameter is used to select the chorus type.

Parameters for Other effects

	On-screen name (and full name)	Description
A	AEG Phase	This parameter is used to offset the AEG phase.
	AM Depth	This parameter is used to set the depth of amplitude modulation.
	AM Inverse R	This parameter is used to adjust the phase of the right channel's amplitude modulation.
	AM Speed	This parameter is used to adjust the speed of amplitude modulation.
	AM Wave	This parameter is used to select a waveform for amplitude modulation.
	AMP Type	This parameter is used to set the type of amplifier to be simulated.
	Analog Feel	This parameter is used to add the sonic characteristics of an analog flanger to the effect sound.
	Attack	This parameter is used to set the amount of time that elapses between arrival of an input signal and activation of the compressor.
	Attack Time	This parameter is used to adjust the envelope follower's attack time.
B	Bit Assign	This parameter is used to set the way in which the *Word Length* setting affects the input signal.
C	Click Density	This parameter is used to adjust the frequency of clicks added to the input signal.
	Click Level	This parameter is used to adjust the volume of clicks added to the input signal.
	Common Release	Affecting all three compression bands, this parameter is used to set the amount of time that elapses until the sound is no longer being compressed.
	Compress	This parameter is used to set the input-signal level at which the compressor starts to process the sound (i.e., the threshold).
D	Decay	This parameter is used to control the way in which the reverb sound decays.
	Delay Level C	This parameter is used to set the delay volume for the center channel.
	Delay Mix	This parameter is used to set the delay volume in cases where multiple effects are applied.
	Delay Offset	This parameter is used to set an offset for the modulation delay time.
	Delay Time	This parameter is used to set the delay time as a note value or absolute time.
	Delay Time C, L, R	These parameters are used to set delay times for the center, left, and right channels.
	Delay Time L>R	This parameter is used to set the time that elapses between input of sound via the left channel and output via the right channel.
	Delay Time Ofst R	This parameter is used to set the delay time for the right channel as an offset.

	On-screen name (and full name)	Description
D	Delay Time R>L	This parameter is used to set the time that elapses between input of sound via the right channel and output via the left channel.
	Density	Reverb effects: This parameter is used to set the reverb density.
		Early Reflections: This parameter is used to set the density of early reflections.
	Depth	This parameter is used to set the depth of the simulated room.
	Detune	This parameter is used to set the degree to which pitches are detuned.
	Device	This parameter is used to select one of a number of devices that distort the sound in different ways.
	Diffusion	This parameter is used to adjust the spaciousness of the sound produced.
	Direction	This parameter is used to set the direction of envelope-follower modulation.
	Divide Freq High	This parameter is used to set the mid-to-high frequency when splitting the sound into three bands.
	Divide Freq Low	This parameter is used to set the low-to-mid frequency when splitting the sound into three bands.
	Drive	Distortion effects, Noisy, and Slice: This parameter is used to adjust the way in which the sound distorts.
		Miscellaneous effects: This parameter is used to set the degree to which the effect is applied.
	Drive Horn	This parameter is used to set the depth of modulation produced through rotation of the high-frequency horn.
	Drive Rotor	This parameter is used to set the depth of modulation produced through rotation of the low-frequency rotor.
	Dry Level	This parameter is used to adjust the volume of the dry sound (i.e., the unprocessed sound).
	Dry LPF Cutoff Frequency	This parameter is used to set the cutoff frequency for the low pass filter applied to the dry sound.
	Dry Mix Level	This parameter is used to adjust the volume of the dry sound (i.e., the unprocessed sound).
	Dry Send to Noise	This parameter is used to adjust how much of the dry signal is sent to the noise effect.
	Dry/Wet Balance	This parameter is used to set the balance between the dry sound and the wet sound (i.e., the sound produced by the effect).
	Dyna Level Offset	This parameter is used to set an offset for adjusting the level of the envelope follower's output.
	Dyna Threshold Level	This parameter is used to set the minimum level at which the envelope follower affects the input signal.
E	Edge	This parameter is used to specify a curve that determines how the sound is distorted.
	Emphasis	This parameter is used to change the high-frequency characteristics of the processed sound.
	EQ Frequency	This parameter is used to set the EQ frequency.
	EQ Gain	This parameter is used to set how much the EQ will boost or cut the sound at the corresponding frequency.
	EQ High Frequency	This parameter is used to set the center frequency of the high-frequency EQ band.
	EQ High Gain	This parameter is used to set the amount by which the high-frequency EQ band is boosted or cut.
	EQ Low Frequency	This parameter is used to set the center frequency of the low-frequency EQ band.
	EQ Low Gain	This parameter is used to set the amount by which the low-frequency EQ band is boosted or cut.
	EQ Mid Frequency	This parameter is used to set the center frequency of the mid-frequency EQ band.
	EQ Mid Gain	This parameter is used to set the amount by which the mid-frequency EQ band is boosted or cut.

	On-screen name (and full name)	Description
E	EQ Mid Width	This parameter is used to set the width of the mid-frequency EQ band.
	EQ Width	This parameter is used to set the width of the mid-frequency EQ band.
	ER/Rev Balance	This parameter is used to set the relative volumes of early reflections and reverberation.
F	F/R Depth	This parameter is used to set the front-to-rear pan depth (and has an effect only when *Pan Direction* is set to “Lturn” or “Rturn”).
	FB Hi Damp Ofst R	This parameter is used to set the decay level for right-channel high frequencies as an offset.
	FB Level Ofst R	This parameter is used to set the right-channel feedback level as an offset.
	Feedback High Damp	This parameter is used to set the rate of decay for feedback high frequencies (with smaller values representing faster decay speeds).
	Feedback Level	Reverb effects and Early Reflections: This parameter is used to set the feedback level for the initial delay sound.
		Delay effects, Chorus effects, Flanger effects, Tech effects, and Compression-Distortion-Delay: This parameter is used to set how much of the delay sound is fed back into the effect’s input (with negative values indicating that its phase is inverted).
		Tempo Phaser and Dynamic Phaser: This parameter is used to set how much of the phaser output is fed back into the effect’s input (with negative values indicating that its phase is inverted).
	Feedback Level 1, 2	These parameters are used to set the feedback level for the first and second delay sounds.
	Feedback Time	This parameter is used to set the feedback delay time.
	Feedback Time 1, 2, L, R	These parameters are used to set the delay time for feedback delay 1, feedback delay 2, the left feedback delay, and the right feedback delay.
	Filter Type	Lo-Fi: This parameter is used to select a tonal characteristic.
		Dynamic Filter: This parameter is used to select a filter type.
	Fine 1, 2	These parameters are used to fine tune the first and second pitch settings.
H	Height	This parameter is used to set the height of the simulated room.
	High Attack	This parameter is used to set the amount of time that elapses before compression is fully applied in the high-frequency band.
	High Gain	This parameter is used to set the output level of the high-frequency band.
	High Level	This parameter is used to set the high-frequency level.
	High Mute	This parameter is used to activate and deactivate high-frequency muting.
	High Ratio	REV-X Hall and REV-X Room: This parameter is used to adjust the high-frequency component.
		Multiband Compressor: This parameter is used to set the compression ratio for the high-frequency band.
	High Threshold	This parameter is used to set the input-signal level at which the compressor starts to process the sound in the high-frequency band.
	Horn Speed Fast	This parameter is used to set the speed of rotation of the high-frequency horn at the “fast” setting.
	Horn Speed SLow	This parameter is used to set the speed of rotation of the high-frequency horn at the “slow” setting.
I	Initial Delay	This parameter is used to set the amount of time that elapses before early reflections are produced.
	Initial Delay 1, 2	These parameters are used to set the amount of time that elapses before the first and second early reflections are produced.
	Initial Delay Lch, Rch	These parameters are used to set the amount of time that elapses before the left and right early reflections are produced.
	Input Mode	This parameter is used to switch between mono and stereo input.
	Input Select	This parameter is used to select an input channel.

	On-screen name (and full name)	Description
L	L/R Depth	This parameter is used to set the depth of the left-right panning effect.
	L/R Diffusion	This parameter is used to set the difference between left and right delay times in order to produce a more spacious sound.
	Lag	This parameter is used to set a time lag for delay times specified in terms of note lengths.
	LFO Depth	SPX Chorus, Classic Flanger, and Ring Modulator: This parameter is used to set the depth of modulation.
		Tempo Phaser: This parameter is used to set the depth of phase modulation.
	LFO Phase Difference	This parameter is used to set the left-right phase difference between modulation waveforms (where a setting of 64 represents zero degrees or no phase difference).
	LFO Speed	Chorus effects, Flanger effects, Tremolo, and Ring Modulator: This parameter is used to set the modulation frequency.
		Tempo Flanger and Tempo Phaser: This parameter is used to set the modulation speed in terms of note lengths.
		Auto Pan: This parameter is used to set the auto-pan frequency.
	LFO Wave	Flanger effects and Ring Modulator: This parameter is used to select a modulation waveform.
		Auto Pan: This parameter is used to set the panning curve.
	Liveness	This parameter is used to set the way in which early reflections decay.
	Low Attack	This parameter is used to set the amount of time that elapses before compression is fully applied in the low-frequency band.
	Low Gain	This parameter is used to set the output level of the low-frequency band.
	Low Level	This parameter is used to set the low-frequency level.
	Low Mute	This parameter is used to activate and deactivate low-frequency muting.
	Low Ratio	REV-X Hall and REV-X Room: This parameter is used to adjust the low-frequency component.
		Multiband Compressor: This parameter is used to set the compression ratio for the low-frequency band.
	Low Threshold	This parameter is used to set the input-signal level at which the compressor starts to process the sound in the low-frequency band.
	LPF Resonance	This parameter is used to set the resonance of the input signal's low-pass filter.
M	Mic L-R Angle	This parameter is used to set the left-right inclination of the microphone used to capture the speaker's output.
	Mid Attack	This parameter is used to set the amount of time that elapses before compression is fully applied in the mid-frequency band.
	Mid Gain	This parameter is used to set the output level of the mid-frequency band.
	Mid Level	This parameter is used to set the mid-frequency level.
	Mid Mute	This parameter is used to activate and deactivate mid-frequency muting.
	Mid Ratio	This parameter is used to set the compression ratio for the mid-frequency band.
	Mid Threshold	This parameter is used to set the input-signal level at which the compressor starts to process the sound in the mid-frequency band.
	Mix Level	This parameter is used to set how much of the effect sound is mixed back into the dry sound.
	Mod Depth	This parameter is used to set the depth of modulation.
	Mod Depth Ofst R	This parameter is used to set the modulation depth for the right channel as an offset.
	Mod Feedback	This parameter is used to set the amount of the output signal that is fed back to the modulation.
	Mod Gain	This parameter is used to adjust the modulation gain level.

	On-screen name (and full name)	Description
M	Mod LPF Cutoff Frequency	This parameter is used to set the cutoff frequency for the low pass filter applied to the modulated sound.
	Mod LPF Resonance	This parameter is used to set the resonance of the modulated sound's low-pass filter.
	Mod Mix Balance	Noisy: This parameter is used to set the mix balance for the modulated element.
		Tech Modulation: This parameter is used to adjust the volume of the modulated sound.
	Mod Speed	This parameter is used to adjust the speed of modulation.
	Mod Wave Type	This parameter is used to select the modulation waveform.
	Modulation Phase	This parameter is used to set the left-right phase difference between modulation waveforms.
	Move Speed	This parameter is used to set the amount of time that elapses until the sound set using the *Vowel* parameter is produced.
N	Noise Level	This parameter is used to adjust the noise level.
	Noise LPF Cutoff Frequency	This parameter is used to set the cutoff frequency for the low pass filter applied to noise.
	Noise LPF Q	This parameter is used to set the resonance of the low pass filter applied to noise.
	Noise Mod Depth	This parameter is used to set the depth of noise modulation.
	Noise Mod Speed	This parameter is used to set the speed of noise modulation.
	Noise Tone	This parameter is used to adjust how the noise sounds.
O	On/Off Switch	This parameter is used to activate and deactivate the isolator in order that changes in the tone can be rapidly produced.
	OSC Frequency Coarse	This parameter is used to set the frequency of modulation of the input waveform.
	OSC Frequency Fine	This parameter is used to fine tune the frequency of modulation of the input waveform.
	Output Gain	These parameters are used to set the level of the sound output by the effect.
	Output Level	
	Output Level 1, 2	These parameters are used to set the levels of the sounds output by the first and second effects.
	Over Drive	This parameter is used to adjust the way in which the sound distorts.
P	Pan 1, 2	These parameters are used to adjust the first and second pan settings.
	Pan Direction	This parameter is used to select an auto-pan type.
	Phase Shift Offset	This parameter is used to set the offset value for phase modulation.
	Pitch 1, 2	These parameters are used to adjust the first and second pitch settings in semitone units.
	PM Depth	This parameter is used to set the depth of pitch modulation.
	Pre Mod HPF Cutoff Frequency	This parameter is used to set the cutoff frequency for the pre-modulation high-pass filter.
	Pre-LPF Cutoff Frequency	This parameter is used to set the cutoff frequency for the low-pass filter.
	Pre-LPF Resonance	This parameter is used to set the resonance of the input signal's low-pass filter.
	Presence	Often seen on guitar amplifiers and the like, this parameter is used to control the high-frequency band.
R	Ratio	This parameter is used to set the compression ratio.
	Release	This parameter is used to set the amount of time over which the compressor stops compressing the sound.
	Release Curve	This parameter is used to select a release curve for the envelope follower.
	Release Time	This parameter is used to adjust the envelope follower's release time.

	On-screen name (and full name)	Description
R	Resonance	This parameter is used to set the resonance of the filter.
	Reverb Delay	This parameter is used to set the interval between early reflections and subsequent full reverberation.
	Reverb Time	This parameter is used to set how long it takes for the reverb sound to fade to silence.
	Room Size	This parameter is used to set the size of the simulated room in which the instrument is being played.
	Rotor Speed Fast	This parameter is used to set the speed of rotation of the low-frequency rotor at the “fast” setting.
	Rotor Speed Slow	This parameter is used to set the speed of rotation of the low-frequency rotor at the “slow” setting.
	Rotor/Horn Balance	This parameter is used to set the relative volumes of the high-frequency horn and the low-frequency rotor.
S	Sampling Freq. Control	This parameter is used to set the sampling frequency.
	Sensitivity	Dynamic Flanger, Dynamic Phaser, and Tech effects: This parameter is used to set how sensitive the modulation is to changes in the input level.
		VCM Touch Wah: This parameter is used to set how sensitive the wah filter is to changes in the input level.
	Slow-Fast Time of Horn	This parameter is used to set how long it takes for the high-frequency horn to switch between fast and slow rotation speeds.
	Slow-Fast Time of Rotor	This parameter is used to set how long it takes for the low-frequency rotor to switch between fast and slow rotation speeds.
	Space Type	This parameter is used to select the type of space simulation to be applied.
	Speaker Type	This parameter is used to select the type of speaker to be simulated.
	Speed Control	This parameter is used to set the rotation speed as “fast” or “slow”.
	Spread	This parameter is used to set how wide the effect's output sounds.
	Stage	This parameter is used to set the number of phase-shifter steps.
T	Threshold	This parameter is used to set the input-signal level at which the effect starts to process the sound.
	Type	This parameter is used to select a reflected-sound type.
V	Vowel	This parameter is used to select a vowel type.
W	Wall Vary	This parameter is used to specify the type of wall in the simulated room (with higher values producing more diffuse reflections).
	Width	This parameter is used to set the width of the simulated room.
	Word Length	This parameter is used to set the resolution of the distorted signal (i.e., how coarse the output sounds).

Power-Amplifier / Compressor Block (CP5 only)

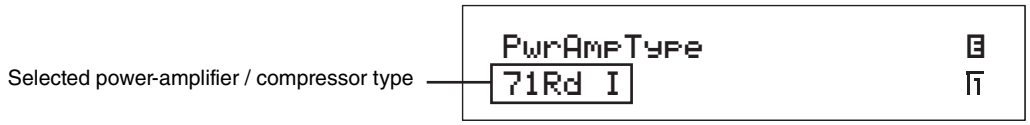
Using the Power-Amplifier / Compressor block, you can choose either a faithful recreation of one of many power amplifiers used with electric pianos or a compressor to further enhance the sound created by the currently-selected part's Voice and Modulation Effect blocks. This block is available on the CP5 only.

Selecting Power-Amplifier / Compressor Block Types

Edit Sequence	Press and hold the [PWR-AMP] button (for at least one second) → Navigate to Page 1 using the [◄ PAGE] button if necessary → Turn Knobs 1 to 3

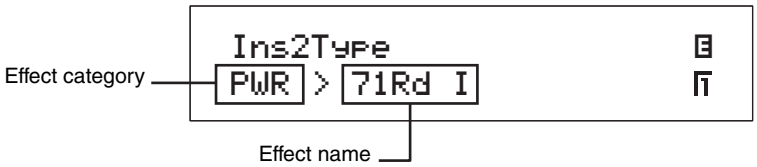
The following table identifies and describes the different power amplifier / compressor types available within the Power-Amplifier / Compressor block. If you have selected a voice from the PIANO or E.PIANO category for the current part, this block's selection page will give priority to power amplifiers and a compressor specially designed for piano voices. Furthermore, a range of general-purpose effects can also be selected from the block's Other group. Meanwhile, if you have selected a non-piano voice, the power amplifiers, the compressor, and all other effects will be available for selection as insertion effects.

For PIANO and E.PIANO voices:



On-screen name (and full name)	Description
71Rd I (PowerAmp 71Rd I)	PowerAmp 71Rd I is ideal for enhancing the acoustic nuances of electric pianos.
73Rd I (PowerAmp 73Rd I)	Also intended for use with electric pianos, the 73Rd I power-amp/speaker combination produces a more spacious tone.
75Rd I (PowerAmp 75Rd I)	PowerAmp 75Rd I is an electric-piano power amplifier that realizes a powerful, all-engulfing tone.
78Rd II (PowerAmp 78Rd II)	Particularly well suited to chorus-type effects, the 78Rd II power-amp/speaker combination is characterized by a clear, highly-present tone.
69Wr (PowerAmp 69Wr)	The 69Wr power amplifier enhances low-end punch while enriching the overall electric-piano sound.
77Wr (Power Amp 77Wr)	A higher degree of presence can be added to electric piano voices using the 77Wr power amplifier.
Clean (Clean Amp)	Modeling an ideal power amplifier, Clean Amp boosts sounds evenly across the entire frequency spectrum.
Comp376 (Compressor 376)	Compressor 376 is a vintage-type compressor that can be used to control the dynamics of your piano sounds.
Other	The Other group contains general-purpose effects that are suitable for use with voices other than those from the PIANO and E.PIANO categories. Within this group, you can select from a wide range of effects in a number of different categories. These categories and effects are identical to those from the Modulation Effect block, and more details can be obtained from the table on page 16.

For non-piano voices:



In the case of non-piano voices, effects are selected from the categories that make up the Other group as described above. In addition, the power amplifiers and the compressor designed for PIANO and E.PIANO voices are grouped together in the PWR category. See For PIANO and E.PIANO voices (page 25) for more details on these. All effects for non-piano voices function as insertion effects.

Configuring Power-Amplifier / Compressor Block Parameters

Edit Sequence	Press and hold the [PWR-AMP] button (for at least one second) → Navigate to the second and subsequent pages using the [◄ PAGE] and [PAGE ►] buttons → Turn Knobs 1 to 3

Each power-amplifier / compressor type is configured using a different set of parameters, which adjust the sound produced by the block in various ways. All parameters for the power amplifiers and the compressor specially designed for PIANO and E.PIANO voices are described in alphabetic order in the following table. The effects from the Other group are identical to those from the Modulation Effect block, and details on their parameters can be obtained from the table on page 19.

NOTE For more details on the specific parameters associated with each different type of effect, see the Power-Amplifier / Compressor parameter list in the *Data List* pdf document.

Power-Amplifier & Compressor Parameters

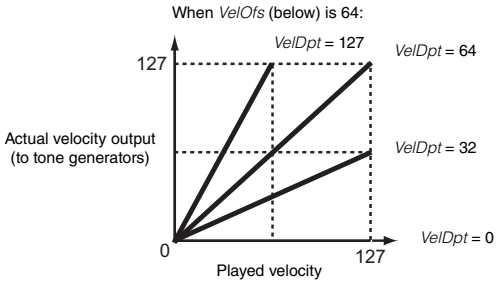
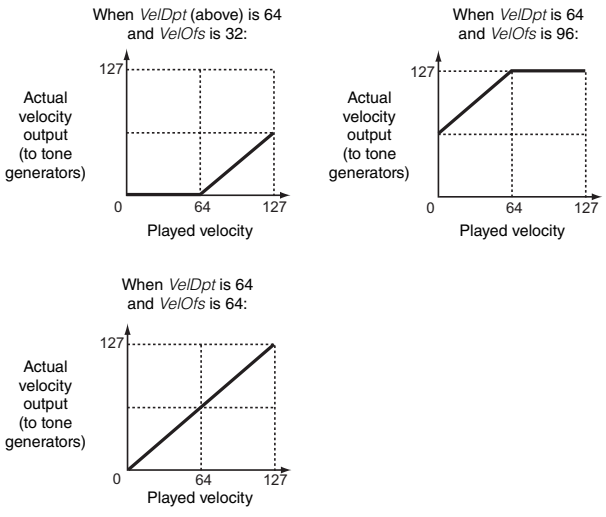
	On-screen name (and full name)	Associated effects	Description
A	Attack	Compressor 376	This parameter is used to set the amount of time that elapses between arrival of an input signal and activation of the compressor.
D	Drive	Compressor 376	This parameter is used to adjust the degree to which compression is applied.
L	LineBal (Line Balance)	PowerAmp 71Rd I/73Rd I/ 75Rd I/78Rd II/69Wr/77Wr	This parameter is used to adjust the balance between the speaker output (S) and line output (L).
O	Output	PowerAmp 71Rd I/73Rd I/ 75Rd I/78Rd II/69Wr/77Wr, Compressor 376, and Clean Amp	This parameter is used to set the output level.
R	Ratio	Compressor 376	This parameter is used to set the compression ratio.
	Release	Compressor 376	This parameter is used to set the amount of time over which the compressor stops compressing the sound.

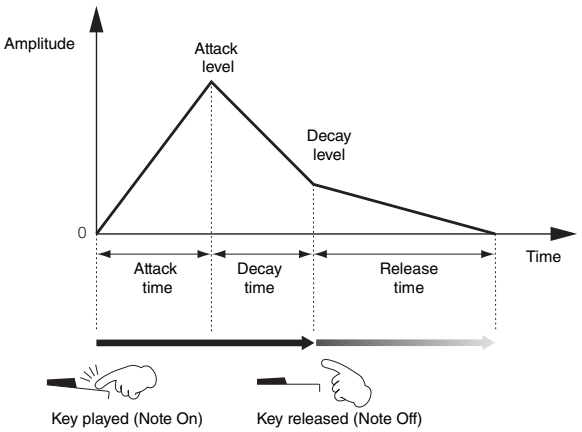
Other Settings for Left & Right

This section describes how to set volume, panning, note limits, and other parameters for left and right parts. The Part Setting screen is shown on page 11.

Edit Sequence	Press and hold (for at least one second) the [LEFT 1], [LEFT 2], [RIGHT 1], or [RIGHT 2] button (CP5), or the [LEFT] or [RIGHT] button (CP50) → Navigate to the required page using the [◄ PAGE] and [PAGE ►] buttons → Turn or press Knobs 1 to 3

Page	On-screen name (and full name)	Description
1	Volume	This parameter is used to adjust the part's output level. **Setting values:** 0 to 127
	Pan	This parameter is used to adjust the part's stereo panning. **Setting values:** L63 (far left) to C (center) to R63 (far right)
	RevSend (Reverb Send)	This parameter is used to set how much of the part's output signal is sent to the Reverb block. Higher values produce a more pronounced reverb sound. **Setting values:** 0 to 127
2	NoteSht (Note Shift)	This parameter is used to adjust the part's pitch in steps of one semitone. **Setting values:** -24 to +24 (semitones)
	Detune	This parameter is used to fine tune the part's pitch in steps of 0.1 Hertz. **Setting values:** -12.8 to +12.7 (Hz)
	PBRange (Pitch Bend Range)	This parameter is used to set the degree to which the Pitch Bend wheel changes the pitch of the current part in steps of one semitone. With a setting of 12, for example, the Pitch Bend wheel can change the pitch between -12 (i.e., one octave down) and +12 (i.e., one octave up). **Setting values:** 0 to 12
3	TuningNo. (Micro Tuning Number)	This parameter is used to select a musical tuning system. In total, your CP5 or CP50 can replicate seven tuning systems. While the Equal Temperament tuning system has now become standard for pianos, a wide number of other systems were developed over the years before it was adopted, and these systems invariably paved the way for the birth of new musical styles. By selecting a different tuning system, you can play tunes from the corresponding styles of music and enjoy their unique nuances. **Setting values:** **00 Equal Temp (Equal Temperament)** The range of pitches in each octave is divided equally into twelve parts, with each half-step evenly spaced in pitch. Today, this is by far the most popular tuning system for pianos. **01 PureMaj (Pure Major)** **02 PureMin (Pure Minor)** These two tuning systems preserve the pure mathematical intervals of each scale, especially for triad chords (root, third, fifth). These characteristics are best heard in vocal harmonies — such as choirs and a cappella singing. **03 Pythag (Pythagorean)** This scale was devised by the famous Greek philosopher, Pythagoras, and is created from a series of perfect fifths, which are collapsed into a single octave. The thirds in this tuning are not so smooth, but the fourths and fifths are beautiful and suitable for certain leads. **04 MeanTn (Mean Tone)** This scale was created as an improvement on the Pythagorean scale by making the major third interval sound smoother. It was especially popular from the latter part of the 16th century to the end of the 18th century, with Handel being one of its most notable users.

Page	On-screen name (and full name)	Description
3	TuningNo. (Micro Tuning Number)	**05 Werckmeist (Werckmeister)** **06 Kirnberger** The Werckmeister and Kirnberger scales improve the mean-tone and Pythagorean scales by combining them in different ways. Both are uniquely characterized by the way in which modulation can change the nuances of individual songs. Often applied during the time of Bach and Beethoven, they are used today to reproduce the music of that era on harpsichords.
	TunRoot (Micro Tuning Root)	This parameter is used to select the root note for the part's tuning system. No setting is required in the case of certain tuning systems. **Setting values:** C to B
4	PrtMode (Part Mode)	This parameter is used to specify the part's playing mode. **Setting values:** mono (monophonic) or poly (polyphonic) **mono** Only one note will be sounded at any time, regardless of how many keys are played. For many instrument sounds (such as bass and synth lead), this allows a more natural and smoother sounding legato performance than "poly". **poly** Multiple notes and chords can be played.
	VelDpt (Velocity Sensitivity Depth)	This parameter is used to define how the velocity with which the keys are played affects the MIDI velocities actually sent from the current part. As shown in the graph below, the larger the value set, the greater the degree to which MIDI velocities vary in response to changes in the playing velocity (i.e., the steeper the slope of the graph). If a value of 0 is set, the MIDI velocities are totally unaffected by different playing velocities, resulting in a response similar to that of an organ, where playing strength has practically no effect on the sound produced. **Setting values:** 0 to 127 
	VelOfs (Velocity Sensitivity Offset)	This parameter is used to raise or lower all MIDI velocities sent from the current part. As shown in the graphs, 64 is subtracted from the value set here to determine the actual amount by which the MIDI velocities are adjusted. That said, however, if the resultant MIDI velocity is less than 1, a value of 1 is set; similarly, if the resultant MIDI velocity is greater than 127, a value of 127 is set. **Setting values:** 0 to 127 

Page	On-screen name (and full name)	Description
5	PortaSw (Portamento Switch)	This parameter is used to turn the portamento effect on or off for the current part. **Setting values:** on or off
	Time (Portamento Time)	This parameter is used to set the amount of time it takes for portamento pitch sweeps with the current part. **Setting values:** 0 to 127
	Mode (Portamento Mode)	This parameter is used to specify how the current part's playing style will affect the way in which portamento is applied. **Setting values:** fingr (Finger mode) or full (Full mode) **fingr** Portamento is only applied when you play legato (i.e., playing the next note before releasing the previous one). **full** Portamento is applied to all notes.
6	F.Cutof (Filter Cutoff)	The term "cutoff frequency" is used to describe the center frequency at which a filter cuts unwanted frequencies. By setting the cutoff frequency, you can change the way in which the filter affects the sound of the part. This parameter is used to increase or decrease the cutoff frequency relative to that set for the current part. **Setting values:** -64 to +0 to +63
	F.Reso (Filter Resonance)	This parameter is used to increase or decrease the filter resonance relative to that set for the current part. **Setting values:** -64 to +0 to +63
7	EGAtk (AEG Attack Time) EGDcy (AEG Decay Time) EGRel (AEG Release Time)	These parameters are used to adjust the attack, decay, and release times for the part's amplitude envelope generator. The higher the value set, the longer it will take for the amplitude to reach the next level (i.e., the slower the change in volume). **Setting values:** -16 to +16 **EGAtk (AEG Attack Time)** Sets the amount of time it takes for the amplitude to reach its maximum level after a key is played. **EGDcy (AEG Decay Time)** Sets the amount of time it takes for the amplitude to drop to the decay level after reaching its maximum. **EGRel (AEG Release Time)** Sets the amount of time it takes for the amplitude to drop to zero after the key is released.  **NOTE** The *EGDcy* and *EGRel* settings can also be adjusted using the *Decay* and *Release* parameters (page 13) from the Pre-Amplifier block.
8	NoteLimit (Note Limits)	These parameters are used to define a keyboard section for the current part. Specifically, Knob 1 is used to set the lowest note in the section; Knob 2 is used to set the highest. **Setting values:** C-2 to G8

Page	On-screen name (and full name)	Description
9	RcvCC (Receive Control Change) RcvPB (Receive Pitch Bend)	These parameters are used to turn on or off the receipt of Control Change and other MIDI messages by the current part. **Setting values:** on or off **NOTE** When *RcvCC* is set to "off", all other control-change receive parameters (with the exception of *RcvPB*) will become unavailable.
0 (10)	**CP5 parts:** RcvFC1 (Receive Foot Controller 1) RcvFC2 (Receive Foot Controller 2) RcvFS (Receive Assignable Foot Switch) **CP50 parts:** RcvFC (Receive Foot Controller) RcvFS (Receive Assignable Foot Switch)	
A (11)	RcvSus (Receive Sustain Pedal) RcvVol (Receive Volume) RcvPan (Receive Pan)	

Common Settings Area

The Common Settings area is used to set parameters affecting all left and right parts in the current Performance. The Common Settings screen extends over five individual pages.

Setting Performance Names & Playing Modes (Pages 1 and 2)

Edit Sequence	Press the [COMMON] button → Navigate to Page 1 or 2 using the [◄ PAGE] and [PAGE ►] buttons → Turn or press Knobs 1 and 2

Page	On-screen name	Description
1	Name	Names can be up to 10 characters in length, and details on how they are set can be found in the *Basic Operations* section of the *Owner's Manual* booklet.
	Cursor	Knob 1 can be turned to move the cursor within the *Name* field.
	Data	Knob 2 can be turned to change the character at the current cursor position. **Setting values:** • Lower case letters ..... abcdefghijklmnopqrstuvwxyz • Upper case letters ..... ABCDEFGHIJKLMNOPQRSTUVWXYZ • Numbers and symbols ..... 0123456789!"#$%&'()*+,-./:;<=>?@[\]^_`{|}~
2	Split	This parameter is used to specify whether or not the keyboard will be split into upper and lower sections, overriding the individual parts' *NoteLimit* settings. When set to "on", the Performance's left and right parts are assigned to sections above and below the key set using the *Point* parameter. When *Split* is set to "off", meanwhile, the individual parts' *NoteLimit* settings (page 29) will apply. **Setting values:** on or off
	Point (Split Point)	This parameter is used to set the point (or key) at which the keyboard is split between left and right parts. **Setting values:** C-2 to G8
	ZoneEdit	Press Knob 3 to open the Zone Edit screen (page 32).

Zone Edit Screen

Settings are made on the Zone Edit screen when your CP5 or CP50 is to be used as a master keyboard. By setting the *ZoneSw* parameter to "on", you can split the keyboard into a maximum of four zones, and if these zones are then assigned to the built-in Tone Generator and external musical devices, it will be possible to play them all from the stage piano's keyboard. To access the Zone Edit screen, press Knob 3 (*ZoneEdit [PUSH]*) from Page 2 of the Common Settings screen.

Edit Sequence	Press the [COMMON] button → Navigate to Page 2 using the [◄ PAGE] and [PAGE ►] buttons → Press Knob 3 (ZoneEdit [PUSH])

Page	On-screen name (and full name)	Description
All pages	Zone	This parameter is used to select the zone to be edited. As Page 1 affects all zones, however, this parameter's setting is displayed as "COMMON" on that page. **Setting values:** zone1, zone2, zone3, or zone4
1	ZoneSw (Zone Switch)	This parameter is used to turn on and off splitting of the keyboard into four distinct zones.
2	Target	This parameter is used to select a destination for control signals from the current zone. **Setting values:** off .....The current zone will be disabled. TG.....The current zone will control the built-in Tone Generator. MIDI.....The current zone will control another musical device connected to the stage piano. both .....The current zone will control both the built-in Tone Generator and another musical device connected to the stage piano.
	TransCh (Transmit Channel)	This parameter is used to select a MIDI transmit channel for control signals from the current zone. A setting may be made only when Target is set to "MIDI" or "both". **Setting values:** 1 to 16
3	Octave	This parameter is used to transpose the current zone in units of one octave. **Setting values:** -3 to +0 to +3
	Trnsps (Transpose)	This parameter is used to transpose the current zone in units of one semitone. **Setting values:** -11 to +0 to +11 (semitones)
4	NoteLimit (Note Limits)	These parameters are used to define a keyboard section for the current zone. Specifically, Knob 2 is used to set the lowest note; Knob 3, the highest. **Setting values:** C-2 to G8
5	MIDIBankSel (MIDI Bank Select)	Set by turning Knobs 2 and 3, these parameters can be used to specify bank select MSB, bank select LSB, and program change values to be sent to the corresponding external musical device as MIDI messages. In this way, you can select a sound to be played by the current zone. It should be noted that the actual sounds produced will depend on the type of musical device being used. Meanwhile, if these parameters are set to "off", no bank select MSB, bank select LSB, or program change values will be send as MIDI messages from the zone in question. **Setting values:** MIDIBankSel..... off, 0 to 127 MIDIPgmChg..... off, 1 to 128
6	MIDIPgmChg (MIDI Program Change)	
7	Volume	This parameter is used to adjust the volume of the current zone. **Setting values:** 0 to 127
	Pan	This parameter is used to adjust the stereo panning of the current zone. **Setting values:** L63 to C to R63

Page	On-screen name (and full name)	Description
8	**CP5 zones:** TxFC1 (Transmit Foot Controller 1) TxFC2 (Transmit Foot Controller 2) **CP50 zones:** TxFC (Transmit Foot Controller)	These parameters are used to turn on or off the transmission of MIDI messages generated by Foot Controller 1, Foot Controller 2, Sustain pedal, the assignable foot switch, and the Pitch Bend wheel from the current zone. **Setting values:** on or off
9	TxSus (Transmit Sustain Pedal) TxFS (Transmit Foot Switch)	
0 (10)	TxPB (Transmit Pitch Bend Wheel)	

Setting Controllers (Pages 3 to 5)

Edit Sequence	Press the [COMMON] button → Navigate to Page 3, 4, or 5 using the [◄ PAGE] and [PAGE ►] buttons → Turn Knobs 1 to 3

Page	On-screen name (and full name)	Description
Pages 3 to 5	Source	This parameter is used to select the controller to be edited. **Setting values:** **CP5 Performances:** PB (Pitch Bend wheel), FC1 (Foot Controller 1), FC2 (Foot Controller 2), FS (assignable foot switch) **CP50 Performances:** PB (Pitch Bend wheel), FC (Foot Controller), FS (assignable foot switch) FC1 or FC2 (CP5) / FC (CP50) Foot controller(s) connected to the FOOT CONTROLLER jack(s) FS Foot switch connected to the ASSIGNABLE jack
3 4	**CP5:** L1Dest (LEFT1 Destination) L2Dest (LEFT2 Destination) R1Dest (RIGHT1 Destination) R2Dest (RIGHT2 Destination) **CP50:** LDest (LEFT Destination) RDest (RIGHT Destination)	These parameters are used to assign the controllers selected using Source with a function for the corresponding part. **Setting values:** As follows.
5	Mode (Switch Mode)	This parameter is available only when *Source* has been set to "FS". It is used to specify whether the controller in question will operate as a latch-type or momentary-type switch. Latch-type switches remain on or off after being operated, while momentary-type switches remain on only while they are being operated. **Setting values:** momentary or latch

Source	Destination
PB (Pitch Bend)	off or modFx (modulation effect)
FC1 or FC2 (CP5 Foot Controller 1 or 2) / FC (CP50 Foot Controller)	off, volume, or modFx
FS (assignable foot switch)	off, vibrato, modFx, or pwrAmp (CP5 only)

NOTE If "modFx" is selected as a destination with Source set to "PB", "FC1", "FC2", or "FC", you can then use the corresponding controller to adjust one of the parameters from the Modulation Effect block up or down with respect to the current setting. For details on the actual parameter that will be assigned, see the Modulation Effect block's parameter list in the *Data List* pdf document. Specifically, the parameter marked ● in the *Control* field will be assigned to the controller.

NOTE If *Source* is set to "FS", the function assigned as the destination can be turned on and off by pressing the controller in question. If the destination is specified as "vibrato", "modFx", or "pwrAmp", pressing the controller will have the same effect as pressing the [PRE-AMP], [MOD-FX], or [PWR-AMP] button. For details on how this will affect the sound, refer to the *Quick Guide* section from the *Owner's Manual* booklet.

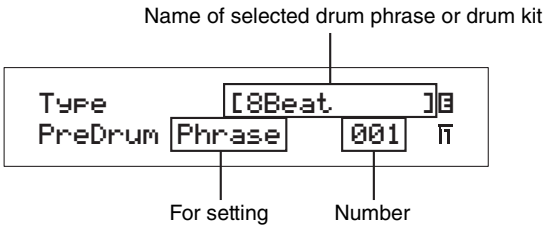
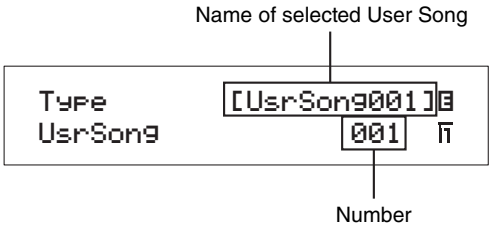
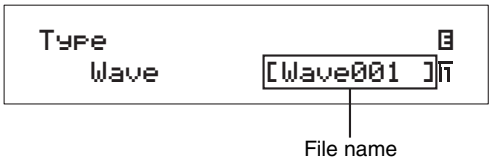
Song Setting Area

The Song Setting area is used to configure tracks used to provide backing to your performances. The Song Setting screen displayed by pressing the [SONG SETTING] button will be covered first of all, and this will be followed by a description of the Record screen, which is accessed using the [REC] button.

Song Setting Screen

This section describes the selection of a backing track, setting of a tempo, and other similar operations performed via the Song Setting screen, which contains three pages.

Edit Sequence	Press the [SONG SETTING] button → Navigate to the required page using the [◄ PAGE] and [PAGE ►] buttons → Turn or press Knobs 1 to 3

Page	On-screen name (and full name)	Description
1	Type	This parameter is used to indicate the type of data to be used as the backing track. **Setting values:** PreDrum (Preset Drum Pattern), UsrSong (User Song), or Wave (Wave file) **NOTE** For more details regarding these setting values, refer to page 3 of *Internal Design of the CP5 & CP50*. **When *Type* is set to "PreDrum":**  Turn Knob 2 to switch between "Phrase" and "Kit" as the type of setting to be made. If you choose "Phrase", you will be able to select a drum phrase number using Knob 3. Meanwhile, if you choose "Kit", you will be able to select a drum kit (i.e., a set of drum sounds) using Knob 3. The name of the selected phrase or kit will be shown at the top-right of the display. **When *Type* is set to "UsrSong":**  Turn Knob 3 to select a User Song number. The name of the selected User Song will be shown at the top-right of the display. **When *Type* is set to "Wave":**  Turn Knob 3 to select a Wave file from the root directory of the USB flash-memory device plugged into your CP5 or CP50.

Page	On-screen name (and full name)	Description
2	Tempo	This parameter is used to select the playback tempo for the backing track and metronome. The tempo can also be adjusted using the *Tempo* parameter from the Record screen (page 37). **Setting values:** 30 to 300 **NOTE** To synchronize the backing-track tempo with that of an external MIDI device or DAW application, set the *MIDISyn* parameter (page 46) from Page 6 of the Utility screen to “ext” or “auto”. When “ext” is selected or when “auto” is selected and MIDI Clock messages are being received from an external source, the tempo will be displayed as “ext” and modification will not be possible.
	Beat	This parameter is used to set a time signature for the backing track and metronome. The time signature can also be adjusted using the *Beat* parameter from the Record screen (page 37). **Setting values:** 1/4 to 16/4, 1/8 to 16/8, 1/16 to 16/16
3	StartKey	This parameter is used to set a note that can be played either to start playback of the selected backing track or to start recording. Hold down the [■] (Stop) button and press the [►/❚❚] (Play / Pause) button to set playback or recording to Standby condition. In this condition, the Key-on Start function will start playback or recording whenever the key corresponding to the note set here is played. If you select “all”, any key can be played to start playback or recording. **Setting values:** C-2 to G8 or all
	AutoKeyOn	This parameter is used to control whether or not Standby condition for backing track playback using the Key-on Start function will be activated automatically whenever the current Performance is selected. Whenever you select a Performance having this parameter set to “on”, the lamp to the top-left of the [►/❚❚] (Play / Pause) button will start to flash and playback can then be started by playing the key set using the *StartKey* parameter. **Setting values:** off or on
4	Rename	Press Knob 1 to open the Rename screen and modify the name of the selected backing-track data. Renaming is only possible when you have set *Type* from Page 1 to “UsrSong” or “Wave”. On this screen, you can turn Knob 1 (*Cursor*) to move the cursor within the displayed name. Then, using Knob 2 (*Data*), you can change the character at the cursor position. When you have finished renaming the data, press the [ENTER] button to return to Page 3 of the Song Setting screen. Alternatively, you can press the [EXIT] button to return without renaming the data. **NOTE** If you have selected a Wave file recorded using your CP5 or CP50, be sure to leave the 7th and 8th characters in the file name – namely, } and { – unchanged. If these characters were to be modified, the replay volume on your stage piano would become extremely low as a result. **⚠CAUTION** **If you have selected a Wave file that was not recorded using your CP5 or CP50, be sure not to add } and { as the 7th and 8th characters of the file name. Failure to observe this precaution could lead to extremely high volumes upon playback (as the output level is increased automatically whenever these characters are in the positions indicated).**
	Delete	Knob 2 can be pressed on this page to delete unneeded backing data. When you do so, you will be asked to confirm that you wish to proceed with deletion. Deletion is only possible when you have set *Type* from Page 1 to “UsrSong” or “Wave”. To delete the data, press either Knob 1 (*YES [PUSH]*) or the [ENTER] button. To cancel the deletion process, press either Knob 3 (*NO [PUSH]*) or the [EXIT] button.
4	MemInfo (Memory Information)	Press Knob 3 to call up a screen providing information on the Sequence Memory — a specific area of memory used to store User Songs. The items shown on this screen are as follows. **Free** This field displays the amount of free space in the Sequence Memory. The free memory is also displayed as a percentage of the area’s overall capacity. **Total** This field displays the total size of the Sequence Memory.

Record Screen

The Record screen allows you to record User Songs or Wave files for use as backing tracks, and it contains four individual pages.

Edit Sequence	Press the [RECORD] button → Navigate to the required page using the [◄ PAGE] and [PAGE ►] buttons → Turn or press Knobs 1 to 3

Page	On-screen name (and full name)	Description
1	Rec (Recording Type)	Modified using Knob 1, this parameter specifies the type of data to be recorded. Select "Song" to record your performance as a User Song, or select "Wave" to record it as a Wave file on a USB flash-memory device plugged into the stage piano. **Setting values:** Song (User Song) or Wave (Wave file) **Song** If *Type* has been set to "UsrSong" on the Song Setting screen (page 35), indicating that a User Song is to be used as the backing track, the User Song selected on that screen will be used to record your performance data. Alternatively, if *Type* has been set to "PreDrum" or "Wave", indicating that a Preset Drum Pattern or Wave file is to be used as the backing track, an empty User Song will be automatically selected for recording of your performance data. If, however, no empty User Songs are available, a message will be displayed to notify you of this. In order to proceed with recording in such a case, you will first of all need to delete an unneeded User Song via the Song Setting screen (page 35). **Wave** When this option is selected, your performance will be stored as a Wave file on a USB flash-memory device plugged into the stage piano, and an unused name will be automatically chosen for that file.
	Name	This parameter is available only when Rec is set to "Wave". In such a case, press Knob 3 to open the Name screen and specify a new name for the Wave file to be recorded. On this screen, you can turn Knob 1 (*Cursor*) to move the cursor within the displayed name. Then, using Knob 2 (*Data*), you can change the character at the cursor position. Wave file names can contain upper case letters, numbers, and symbols. When you have finished specifying a name, press the [ENTER] button to return to Page 1 of the Record screen. If a Wave file with the same name already exists on the USB flash-memory device plugged into your CP5 or CP50, an error message will be displayed when you try to start recording. In such a case, specify a different name and press the [ENTER] button once again. To return to the Record screen without specifying a new name, press the [EXIT] button. Name screen Name=[WAVE001] (Cursor) (Data) **NOTE** Whenever Wave files are being recorded on your CP5 or CP50, the characters } and { are automatically added to the file name at the 7th and 8th positions, and they cannot be changed on this screen. Although names can be edited after recording, these two characters should not be removed. When compared with the volume of performances on the keyboard, the volume of Wave files recorded on the stage piano is extremely low; accordingly, the playback level is automatically increased for Wave files with } and { characters in the positions indicated in order to maintain a good balance between keyboard and playback levels.

Page	On-screen name (and full name)	Description
2	Mode	This parameter is used to select a recording mode. It is not available, however, when Rec has been set to “Wave”. **Setting values:** replace or overdub **replace** Any data contained within the User Song selected for recording will be overwritten with your new performance data. **overdub** Your new performance data will be added to any data contained within the User Song selected for recording.
	Meas (Measure)	This parameter is used to select the start point for recording. It is not available, however, when Rec has been set to “Wave”. **Setting values:** 001 to 999 **NOTE** If you have selected a User Song already containing data for recording, the Meas parameter can be set to any measure up to the last one containing data.
3	Tempo	This parameter is used to select the playback tempo for the backing track and metronome. When *Rec* has been set to “Song”, this tempo will be used for playback after recording. The tempo can also be adjusted using the *Tempo* parameter from the Song Setting screen (page 35). **Setting values:** 30 to 300 **NOTE** To synchronize the backing-track tempo with that of an external MIDI device or DAW application, set the *MIDISyn* parameter (page 46) from Page 6 of the Utility screen to “ext” or “auto”. When “ext” is selected or when “auto” is selected and MIDI Clock messages are being received from an external source, the tempo will be displayed as “ext” and modification will not be possible.
	Beat	This parameter is used to set a time signature for the backing track and metronome. The time signature can also be adjusted using the *Beat* parameter from the Song Setting screen (page 35). **Setting values:** 1/4 to 16/4, 1/8 to 16/8, 1/16 to 16/16
	Click	This parameter is used to turn the metronome on and off. The same setting can be made using the *Click* parameter from Page 7 of the Utility screen. **Setting values:** on or off
4	RecCount	This parameter is used to turn count-in at the start of recording on or off. The same setting can be made using the *RecCnt* parameter from Page 7 of the Utility screen. **Setting values:** on or off
	Undo	This parameter becomes available whenever recordings have been made, and it allows you to undo the most recent. When you press Knob 3 to undo a recording, you will be asked to confirm that you wish to proceed. To do so, press either Knob 1 (*YES [PUSH]*) or the [ENTER] button. To cancel the undo process, press either Knob 3 (*NO [PUSH]*) or the [EXIT] button. It should be noted that this parameter will not become available when *Rec* has been set to “Wave”.

TRACK Part

Whenever a Preset Drum Pattern or a Wave file has been selected as the Performance's backing track, the corresponding data will be assigned to the TRACK part. The following provides a detailed description of the parameters used to configure this part.

Edit Sequence	Press and hold the [TRACK] button (for at least one second) → Turn Knobs 1 to 3

On-screen name (and full name)	Description
Volume	This parameter is used to adjust the part's output level. It can also be set at any time using the [TRACK] knob on the control panel. **Setting values:** 0 to 127
Pan	This parameter is used to adjust the part's stereo panning. It is available only when a Preset Drum Pattern has been selected for use as the backing track. **Setting values:** L63 (far left) to C (center) to R63 (far right)
RevSend (Reverb Send)	This parameter is used to set how much of the part's output signal is sent to the Reverb block. Higher values produce a more pronounced reverb sound. It is available only when a Preset Drum Pattern has been selected for use as the backing track. **Setting values:** 0 to 127

MIC INPUT Part (CP5 only)

This section provides a detailed description of the parameters used to configure the CP5's MIC INPUT part. The setting screen for this part contains two pages.

Edit Sequence	Press and hold the [MIC INPUT] button (for at least one second) → Navigate to the required page using the [◄ PAGE] and [PAGE ►] buttons → Turn or press Knobs 1 to 3

Page	On-screen name (and full name)	Description
1	Volume	This parameter is used to adjust the part's output level. It can also be set at any time using the [MIC INPUT] knob on the control panel. **Setting values:** 0 to 127
	Pan	This parameter is used to adjust the part's stereo panning. **Setting values:** L63 (far left) to C (center) to R63 (far right)
	RevSend (Reverb Send)	This parameter is used to set how much of the part's output signal is sent to the Reverb block. Higher values produce a more pronounced reverb sound. **Setting values:** 0 to 127
2	MicFx (Mic Effects)	By pressing Knob 1 on this page, you can open the Mic Effects screen (see below) in order to configure the compressor, noise gate, and EQ that act on the microphone input.
	MicIns (Mic Insert Effect)	By pressing Knob 2 on this page, you can open the Mic Insert Effect screen (page 41) in order to select and configure an insertion effect for the microphone input.

Mic Effects Screen

From the Mic Effects screen, you can set parameters affecting the compressor, noise gate, and EQ that act on audio signals input via the MIC INPUT jack. This screen contains a total of seven pages.

Edit Sequence	Press and hold the [MIC INPUT] button (for at least one second) → Navigate to Page 2 using the [PAGE ►] button → Press Knob 1 → Navigate to the required page using the [◄ PAGE] and [PAGE ►] buttons → Turn Knobs 1 to 3

Page	On-screen name (and full name)	Description
1	NoiseSw (Noise Gate Switch)	This parameter is used to turn on or off the noise gate for microphone input signals. **Setting values:** on or off
	CompSw (Compressor Switch)	This parameter is used to turn on or off the compression of microphone input signals. **Setting values:** on or off
2	NoisAtk (Noise Gate Attack)	This parameter is used to set the amount of time that elapses between arrival of an input signal and activation of the noise gate. **Setting values:** 1ms to 40ms
	NoisRel (Noise Gate Release)	This parameter is used to set the amount of time over which the noise gate stops silencing the input signal. **Setting values:** 10ms to 680ms
	NoisTh (Noise Threshold)	This parameter is used to set the level at which the noise gate starts silencing the input signal. **Setting values:** -73dB to -30dB
3	CompAtk (Compressor Attack)	This parameter is used to set the amount of time that elapses between arrival of an input signal and activation of the compressor. **Setting values:** 1ms to 40ms
	CompRel (Compressor Release)	This parameter is used to set the amount of time over which the compressor stops compressing the sound. **Setting values:** 10ms to 680ms

Page	On-screen name (and full name)	Description
3	CompTh (Compressor Threshold)	This parameter is used to set the input level at which the compressor starts compressing the sound. **Setting values:** -48dB to -6dB
4	CompRat (Compression Ratio)	This parameter is used to set the compression ratio. **Setting values:** 1.0 to 20.0
	CompOut (Compressor Output Level)	This parameter is used to adjust the compressor's output level. **Setting values:** 0 to 127
5	L.Freq (Low Frequency)	This parameter is used to set a low-band frequency for boosting or cutting of the sound. **Setting values:** 32Hz to 2.0kHz
	L.Gain (Low Gain)	This parameter is used to set the degree to which low-band frequencies will be boosted or cut. **Setting values:** -12dB to +12dB
6	M.Freq (Mid Frequency)	This parameter is used to set a mid-band frequency around which the sound will be boosted or cut. **Setting values:** 100Hz to 10.0kHz
	M.Gain (Mid Gain)	This parameter is used to set the degree to which mid-band frequencies will be boosted or cut. **Setting values:** -12dB to +12dB
	M.Width (Mid Width)	This parameter is used to set the width of the mid-frequency EQ band. **Setting values:** 0.1 to 12.0
7	H.Freq (High Frequency)	This parameter is used to set a high-band frequency for boosting or cutting of the sound. **Setting values:** 500Hz to 16.0kHz
	H.Gain (High Gain)	This parameter is used to set the degree to which high-band frequencies will be boosted or cut. **Setting values:** -12dB to +12dB

Mic Insert Effect Screen

From the Mic Insert Effect screen, you can select and configure an insertion effect to process audio signals input via the MIC INPUT jack. Depending on the effect selected, this screen can contain up to six pages.

Edit Sequence	Press and hold the [MIC INPUT] button (for at least one second) → Navigate to Page 2 using the [PAGE ►] button or [2] button → Press Knob 2 → Navigate to the required page using the [◄ PAGE] and [PAGE ►] buttons → Turn Knobs 1 to 3

Page	On-screen name (and full name)	Description
1	MicInsType (Mic Insert Effect Type)	This parameter is used to select a category and effect type for the MIC INPUT part's audio signals. These categories and effects are identical to those from the Modulation Effect block's Other group, and more details can be obtained from the table on page 16.
2 to 6	Effect parameters	The parameters presented on Page 2 onward will depend on the *MicInsType* settings. For more details, see *Parameters for non-piano voice effects* (page 19).

Settings for All Parts

Reverb Block

This section describes the parameters used to configure the reverb effect that is applied to all of the parts from each of your stage piano's Performances. Settings for these parameters are made via the Reverb screen, which contains two pages.

Edit Sequence	Press and hold the [REVERB] button (for at least one second) → Navigate to the required page using the [◄ PAGE] and [PAGE ►] buttons → Turn Knobs 1 to 3

Page	On-screen name (and full name)	Description	
1	RevType (Reverb Type)	This parameter is used to select the type of reverb to be applied. **Setting values:** RichHall, RichPlt, RichRoom, WoodRoom, Room1, Room2, Stage1, or Stage2	
		RichHall (Rich Hall)	Emulation of hall acoustics with a rich, deep reverb sound.
		RichPlt (Rich Plate)	Emulation of a rich, sustained plate reverb sound.
		RichRoom (Rich Room)	Emulation of room acoustics with a gentle reverb sound.
		WoodRoom (Woody Room)	Emulation of room acoustics with a warm reverb sound.
		Room1	Emulation of room acoustics with a crisp reverb sound.
		Room2	Emulation of room acoustics with a deeper reverb sound.
		Stage1	Emulation of stage acoustics with a wide, sustained reverb sound.
		Stage2	Emulation of the reverb typical of a smaller stage.
2	RevTime (Reverb Time)	This parameter is used to set how long it takes in seconds for the reverb sound to fade to silence. **Setting values:** WoodRoom.....0.3s to 10.0s Other reverb types.....0.3s to 30.0s	
	HPF (High-pass Filter Cutoff)	This parameter is used to set the cutoff frequency for the Reverb block's high-pass filter. **Setting values:** 20Hz to 8.0kHz	
	FBHiDamp (Feedback High Damping)	This parameter is used to adjust the brightness' of the reverb sound. At higher settings, it takes longer for the high-frequency component to decay, producing a brighter overall reverb sound. This parameter is not displayed on-screen when *RevType* has been set to "WoodRoom". **Setting values:** 0.1 to 1.0	

Settings for All Performances

Master Compressor Block

This section describes the parameters used to configure the compressor applied to all of the Performances on your CP5 or CP50. These settings are made via the Master Compressor screen, which contains seven pages.

Edit Sequence	[Press and hold the [MASTER COMPRESSOR] button (for at least one second) → Navigate to the required page using the [◄ PAGE] and [PAGE ►] buttons → Turn Knobs 1 to 3

Page	On-screen name (and full name)	Description
1	LowTh (Low Threshold)	This parameter is used to set the input-signal level at which the compressor starts to process the sound in the low-frequency band. **Setting values:** -54dB to -6dB
	LowAtk (Low Attack)	This parameter is used to set the amount of time that elapses between arrival of an input signal and activation of compression in the low-frequency band. **Setting values:** 1ms to 200ms
2	LowRat (Low Ratio)	This parameter is used to set the compression ratio for the low-frequency band. **Setting values:** 1.0 to 20.0
	LowGain (Low Gain)	This parameter is used to set the output level of the low-frequency band. **Setting values:** -∞ to +18dB
3	MidTh (Mid Threshold)	This parameter is used to set the input-signal level at which the compressor starts to process the sound in the mid-frequency band. **Setting values:** -54dB to -6dB
	MidAtk (Mid Attack)	This parameter is used to set the amount of time that elapses between arrival of an input signal and activation of compression in the mid-frequency band. **Setting values:** 1ms to 200ms
4	MidRat (Mid Ratio)	This parameter is used to set the compression ratio for the mid-frequency band. **Setting values:** 1.0 to 20.0
	MidGain (Mid Gain)	This parameter is used to set the output level of the mid-frequency band. **Setting values:** -∞ to +18dB
5	HiTh (High Threshold)	This parameter is used to set the input-signal level at which the compressor starts to process the sound in the high-frequency band. **Setting values:** -54dB to -6dB
	HiAtk (High Attack)	This parameter is used to set the amount of time that elapses between arrival of an input signal and activation of compression in the high-frequency band. **Setting values:** 1ms to 200ms
6	HiRat (High Ratio)	This parameter is used to set the compression ratio for the high-frequency band. **Setting values:** 1.0 to 20.0
	HiGain (High Gain)	This parameter is used to set the output level of the high-frequency band. **Setting values:** -∞ to +18dB
7	DivFrqL (Dividing Frequency Low)	This parameter is used to set the low-to-mid frequency when splitting the sound into three bands. **Setting values:** 16Hz to 20kHz
	DivFrqH (Dividing Frequency High)	This parameter is used to set the mid-to-high frequency when splitting the sound into three bands. **Setting values:** 16Hz to 20kHz
	CmnRel (Common Release)	Affecting all three compression bands, this parameter is used to set the amount of time that elapses until the sound is no longer being compressed. **Setting values:** 10ms to 3000ms

Utility Area

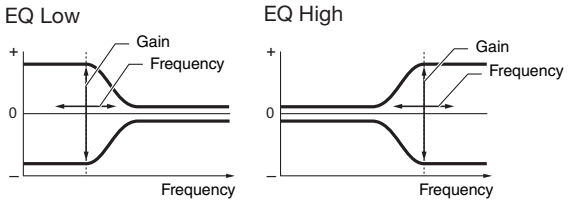
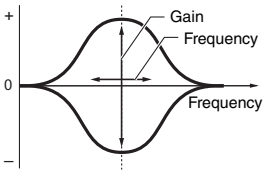
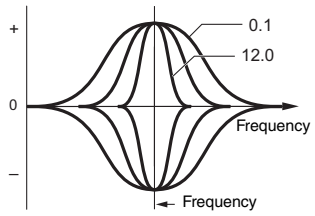
This section describes the utility parameters that affect the entire CP5 or CP50 system. Settings for these parameters are made via the Utility screen, which contains thirteen pages.

Edit Sequence	Press the [UTILITY] button → Navigate to the required page using the [◄ PAGE] and [PAGE ►] buttons → Turn or press Knobs 1 to 3

Page	On-screen name (and full name)	Description	
1	MasterTune (Master Tuning)	This parameter is used to adjust the tuning of all sounds produced by the stage piano's built-in Tone Generator in units of one cent. **NOTE** The CP5 or CP50 default tuning is 440 Hz for A3, and 4 cents are roughly equivalent to 1 Hz. **Setting values:** -102.4 to +102.3 (cents)	
2	VelCrv (Velocity Curve)	This parameter is used to select a curve for determining how the actual velocities will be generated and transmitted according to the strength with which you play notes on the keyboard. **Setting values:** norm (Normal), soft, hard, wide, or fixed	
		norm (Normal)	The Normal curve produces velocities in direct proportion to the strength of your keyboard playing.
		soft	The Soft curve makes it easier to produce high velocities across the entire keyboard.
		hard	The Hard curve makes it more difficult to produce high velocities across the entire keyboard.
		wide	The Wide curve accentuates your playing strength by producing lower velocities in response to softer playing and louder velocities in response to harder playing. As such, you can use this setting to expand the dynamic range of your performances.
		fixed	The Fixed curve can be used to send a fixed velocity to the Tone Generator regardless of how hard or soft you play the keyboard. When selected, you can adjust *FixdLvl* using Knob 2 to set the actual velocity to be sent between 1 and 127.
	FixdLvl (Fixed Level)	This parameter is available only when *VelCrv* has been set to "fixed". Regardless of the actual strength of playing, velocities at this level will be sent for all keys played. **Setting values:** 1 to 127	
	TunCrv (Tuning Curve)	This parameter is used to select one of two tuning characteristics for the entire keyboard. **Setting values:** flat or stretch	
		flat	With the Flat curve, the frequency (in Hertz) doubles for each octave increment between keys across the entire keyboard.
		stretch	The Stretch curve models the characteristic response of an acoustic piano. When compared with the Flat curve, lower keys are tuned slightly flatter; higher keys, slightly sharper.
		NOTE Not all piano voices are affected by the "stretch" setting. For more details, refer to the PIANO and E.PIANO voice lists (page 12).	
3	SusPedal (Sustain Pedal)	This parameter is used to indicate the type of foot controller plugged into the SUSTAIN foot-switch jack on the rear panel. **Setting values:** FC3(HalfOn), FC3(HalfOff), or FC4/5	
		FC3(HalfOn)	Choose this setting when using the bundled FC3 foot controller for half-damper playing.
		FC3(HalfOff)	Choose this setting when using the bundled FC3 foot controller but not the half-damper playing technique.
		FC4/5	Choose this setting when using an optional FC4 or FC5 foot controller.

Page	On-screen name (and full name)	Description	
4	CtrlAsn (Controller Assign)	This parameter is used to select the controller to be assigned. **Setting values:** **For the CP5** FC1 (Foot Controller 1), FC2 (Foot Controller 2), or FS (assignable foot switch) **For the CP50** FC (Foot Controller) or FS (assignable foot switch)	
		FC1 or FC2 (CP5) / FC (CP50)	Foot controller connected to the corresponding FOOT CONTROLLER jack
		FS	Foot switch connected to the ASSIGNABLE jack
	CtrlNo (Control Number)	This parameter is used to specify a control change number for the controller selected using *CtrlAsn*. **Setting values:** **If *CtrlAsn* is set to "FC1", "FC2", or "FC"** 00 (off), or 01 to 95 **If *CtrlAsn* is set to "FS"** 00 (off), 01 to 95, 98 (Ply/Stop), 99 (PcInc), or 100 (PcDec)	
5	RcvCh (Receive Channel)	This parameter is used to set the channel on which to receive MIDI messages. **Setting values:** 1 to 16, omni, or off	
		omni	Messages will be received on all MIDI channels.
	TxCh (Transmit Channel)	This parameter is used to set the channel on which to transmit MIDI messages produced by playing the keyboard and operating controllers. **Setting values:** 1 to 16, or off **NOTE** If the *ZoneSw* parameter from the Common Settings area's Zone Edit screen is set to "on", the *TxCh* parameter will have no effect and MIDI messages will be transmitted in line with that screen's *TransCh* settings (page 32).	
	LocalSw (Local Control Switch)	This parameter is used to turn local control on and off. When "off" is selected, the stage piano's built-in Tone Generator is essentially disconnected from the keyboard and controllers, and no sound will be produced in response to playing of the keyboard. The stage piano does, however, continue to transmit MIDI messages when *LocalSw* has been set to "off", and the Tone Generator will continue to produce sound in response to MIDI messages received from external devices. **Setting values:** on or off	
6	DevNo. (Device Number)	This parameter is used to set a MIDI device number for your CP5 or CP50. In order to successfully exchange Bulk Dump data, parameter changes, or other system exclusive messages, this number must match the Device Number of the external MIDI device. **Setting values:** 1 to 16, all, or off	
		all	System exclusive messages for all MIDI device numbers will be received. Meanwhile, data will be transmitted from the stage piano using Device Number 1.
		off	No exchange of Bulk Dump data, parameter settings, or other system exclusive messages with other devices will be possible. In addition, an error message may be displayed if you attempt to perform such an operation.
	In/Out (MIDI In/Out)	This parameter is used to specify the interface to be used for exchanging MIDI messages. **Setting values:** MIDI or USB	
		MIDI	The MIDI connectors will be used.
		USB	The USB TO HOST port will be used.
		NOTE It is not possible to exchange MIDI messages via the MIDI connectors and the USB TO HOST port at the same time. Be sure, therefore, to set this parameter correctly in accordance with your equipment setup.	

Page	On-screen name (and full name)	Description	
6	MIDISyn (MIDI Synchronization)	This parameter is used to specify whether playback of User Songs or Preset Drum Patterns on your CP5 or CP50 is to be synchronized with the built-in clock or with an external clock from a connected MIDI device. **Setting values:** int (internal), ext (external), or auto	
		int (Internal)	Playback will be synchronized with the built-in clock. Use this setting when your CP5 or CP50 is to be used alone or as the master clock source for other equipment.
		ext (External)	Playback will be synchronized with an external clock on another MIDI device. Use this setting when the external MIDI device is to be used as master. In such a case, be sure to setup the external MIDI device to transmit MIDI Clock messages to the stage piano.
		auto	MIDI Clock messages received from an external device will be prioritized over the stage piano's current tempo. In other words, playback will be synchronized to MIDI Clock messages whenever they are received, and the internal tempo will be used in all other cases. This setting is useful when you wish to alternate between synchronization with the external and built-in clocks (by turning the former on and off).
7	TrnsRcvSw (Transmit & Receive Switch)	This parameter is used to specify whether Bank Select and Program Change MIDI messages are to be exchanged between the stage piano and external MIDI devices. **Setting values:** off, bank (Bank Select), pgm (Program Change), bank&pgm (Bank Select & Program Change)	
		off	Neither Bank Select nor Program Change MIDI messages will be transmitted and received.
		bank (Bank Select)	Bank Select MIDI messages will be transmitted and received, but Program Change MIDI messages will not.
		pgm (Program Change)	Program Change MIDI messages will be transmitted and received, but Bank Select MIDI messages will not.
		bank&pgm (Bank Select & Program Change)	Both Bank Select and Program Change MIDI messages will be transmitted and received.
	Click	This parameter is used to turn the metronome on and off. The same operation can be performed using the *Click* parameter from Page 3 of the Record screen (page 37). **Setting values:** on or off	
	RecCnt (Record Count-in)	This parameter is used to turn count-in at the start of recording on or off. The same setting can be made using the *RecCnt* parameter from Page 4 of the Record screen. **Setting values:** on or off	
8	MIDIClock (MIDI Clock)	This parameter is used to enable ("on") or disable ("off") the sending of MIDI Clock messages (i.e., F8 Timing Clock) via the MIDI OUT connector. **Setting values:** on or off	
	MIDICtrl (MIDI Control)	This parameter is used to specify whether or not System Realtime messages (i.e., FA Start, FB Continue, and FC Stop) will be sent and received via MIDI. **Setting values:** off, in, out, in/out off .....System Realtime messages are neither sent nor received. in .....System Realtime messages are received but not sent. out .....System Realtime messages are sent but not received. in/out.....System Realtime messages are sent and received.	
9, 0 (10)	MEQ (Master Equalizer Band)	This parameter is used to select the master-equalizer frequency band to be set. **Setting values:** **For the CP5** Low, LowMid, Mid, HighMid, or High **For the CP50** Low, Mid, or High	

Page	On-screen name (and full name)	Description
9	Shape	This parameter is used to specify whether shelving or peaking equalization is to be applied within the two end bands — namely, Low and High. It is available only when *MEQ* has been set to “Low” or “High”. **Setting values:** shelv (Shelving EQ), peak (Peaking EQ) **shelv** Signals at all frequencies either above (“High”) or below (“Low”) the specified frequency will be uniformly boosted or cut.  **peak** Signals within a band of frequencies around the specified frequency will be boosted or cut in a localized fashion. 
	Gain	This parameter is used to specify how much signal levels in the vicinity of the frequency set using the *Freq* parameter will be boosted or cut. Gain levels for the individual frequency bands can also be set using the [MASTER EQUALIZER] knobs on the control panel. **Setting values:** -12dB to +12dB
0 (10)	Freq (Frequency)	This parameter is used to set the central frequency around which levels will be cut or boosted. **Setting values:** **Low** When Shape is set to “shelv”: 32Hz to 2.0kHz When Shape is set to “peak”: 63Hz to 2.0kHz **LowMid, Mid, and HighMid** 100Hz to 10.0kHz **High** 500Hz to 16.0kHz
	Q (Resonance)	This parameter is used to create a range of different frequency-curve characteristics in the vicinity of the frequency set using the *Freq* parameter. If you set a large value, a narrower band of frequencies will be boosted or cut, and the tone will change markedly around the center frequency. If you set a smaller value, a wider band of frequencies will be boosted or cut, and the tone will change more gradually around the center frequency. **Setting values:** 0.1 to 12.0  **NOTE** The *Q* parameter is unavailable for the Low and High bands when their respective Shape parameters have been set to “shelv”.

Page	On-screen name (and full name)	Description
A (11)	Bright (Brightness)	This parameter is used to set the brightness of the stage piano's display. **Setting values:** 1 to 4 (brightest) **NOTE** The brightness can also be reduced by holding down the [UTILITY] button and pressing the [◄ PAGE] button, and it can be increased by holding down the [UTILITY] button and pressing the [PAGE ►] button.
	AutoLoad	This parameter is used to turn on or off automatic loading of an *All* file (page 51) from the plugged-in USB flash-memory device when the stage piano is turned on. In order to use this function, the name of the *All* file for automatic loading must be set to either "AUTOLOAD.C5A" (CP5) or "AUTOLOAD.C6A" (CP50). Furthermore, the auto-load file must be saved to the root directory of a USB flash-memory device, and that device must be plugged into your stage piano before it is turned on. **Setting values:** on or off
B (12)	StartUp	This parameter is used to select the Performance to be automatically selected when you turn on your CP5 or CP50. **Setting values:** PRE1: A01 to D10, PRE2: A01 to D10, PRE3: A01 to D10 USR1: A01 to D10, USR2: A01 to D10, USR3: A01 to D10 EXT1: A01 to D10, EXT2: A01 to D10, EXT3: A01 to D10
C (13)	BulkDmp	Using the Bulk Dump function, all data for the currently-selected Performance can be sent to a computer or external MIDI device in the form of MIDI system exclusive data (i.e., bulk data). Press Knob 1 to perform a Bulk Dump. When asked to confirm that you wish to proceed, press Knob 1 (*YES [PUSH]*) or the [ENTER] button to do so. Alternatively, if you do not wish to proceed, press Knob 3 (*NO [PUSH]*) or the [EXIT] button. **NOTE** In order to utilize the Bulk Dump function, the DevNo. parameter (page 45) must be used to set the stage piano's device number correctly. For more details on Bulk Dump procedures, refer to the *Owner's Manual* booklet.
	FactSet (Factory Reset)	The Factory Set function can be used to restore the stage piano's User Memory to its initial condition. Press Knob 2 to perform a Factory Reset. When asked to confirm that you wish to proceed, press Knob 1 (*YES [PUSH]*) or the [ENTER] button to do so. Alternatively, if you do not wish to proceed, press Knob 3 (*NO [PUSH]*) or the [EXIT] button. ***NOTICE*** **Whenever the Factory Set function is used to restore initial settings, all Performance data, all User Songs, and system settings (i.e., from the Utility area, the Master Compressor block, and the Transpose area, etc.) within User Memory will be reset to the default condition. Care should, therefore, be taken to avoid overwriting irreplaceable data. Furthermore, it is wise to regularly create backup copies of important Performance data and system settings on a USB flash-memory device, computer, or the like.**

File Area

Using the File area, you can perform a range of file management operations such as saving the entire content of the stage piano's User Memory on a USB flash-memory device and restoring data previously saved on this type of device. The File screen contains two pages, and its functions are described below.

Edit Sequence	Press the [FILE] button → Navigate to the required page using the [◄ PAGE] and [PAGE ►] buttons → Turn or press Knobs 1 to 3

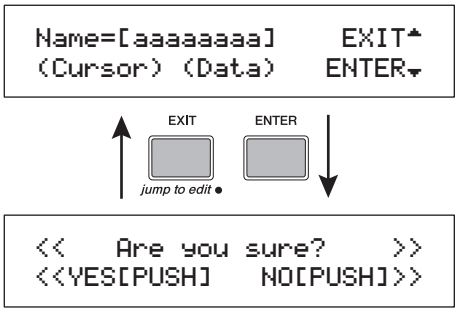
Page	On-screen name (and full name)	Description
1	Save	This function is used to create files containing CP5 or CP50 data within the root directory of the plugged-in USB flash-memory device. The Save screen can be opened by pressing Knob 1. See page 50 for details regarding the content of this screen.
	Load	This function is used to read files containing CP5 or CP50 data from the root directory of the plugged-in USB flash-memory device. The Load screen can be opened by pressing Knob 2. See page 51 for details regarding the content of this screen. ***NOTICE*** **Whenever data is loaded from a USB flash-memory device, all data at the specified destination will be overwritten. It is wise, therefore, to regularly create backup copies of important Performances on a USB flash-memory device or the like.**
	Rename	This function is used to rename the *All* file on the plugged-in USB flash-memory device. The Rename screen can be opened by pressing Knob 3. See page 53 for details regarding the content of this screen.
2	Delete	This function is used to delete the *All* file from the plugged-in USB flash-memory device. The Delete screen can be opened by pressing Knob 1. See page 53 for details regarding the content of this screen.
	Format	This function is used to format the plugged-in USB flash-memory device, initializing the entire content of its memory. Press Knob 2 to perform a Format operation. When asked to confirm that you wish to proceed, press Knob 1 (*YES [PUSH]*) or the [ENTER] button to do so. Alternatively, if you do not wish to proceed, press Knob 3 (*NO [PUSH]*) or the [EXIT] button to return to Page 2 of the File screen. ***NOTICE*** **When a USB flash-memory device is formatted, all data saved on it will be permanently erased. Before formatting a memory device, therefore, ensure that it contains no irreplaceable data.**
	MemInfo (Memory Info)	This function is used to confirm how much free space is available on the plugged-in USB flash-memory device. When you press Knob 3, the following details will be displayed. **Free** This value indicates the amount of free space currently available on the USB flash-memory device plugged into your CP5 or CP50. The free memory is also displayed as a percentage of the device's overall capacity. **Total** This value indicates the total memory capacity of the USB flash-memory device plugged into your CP5 or CP50.

Save

The parameters to be set on the Save screen are as follows.

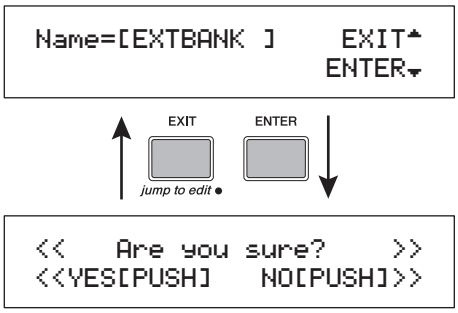
On-screen name (and full name)	Description	
Type	This parameter is used to specify the type of file to be saved on the USB flash-memory device. When you have specified the appropriate type, press the [ENTER] button to proceed. To return to Page 1 of the File screen without saving data, press the [EXIT] button. **Setting values:** All, Ext (External), or SMF (Standard MIDI File)	
	All	All User Performance memory data, all User Songs, and system settings (i.e., from the Utility area, the Master Equalizer block, and the Transpose area, etc.) will be saved as a single file. The extension .C5A is used for CP5 data; the extension .C6A, for CP50 data. The External Performance memory is not part of the User Memory and will not, therefore, be included in this file.
	Ext	All External Performance memory data will be saved as a single file. CP5 data will be given the file name EXTBANK.C5E; CP50 data, the filename EXTBANK.C6E.
	SMF	The selected User Song will be saved as a MIDI file with the extension .MID.

If *Type* has been set to "All":



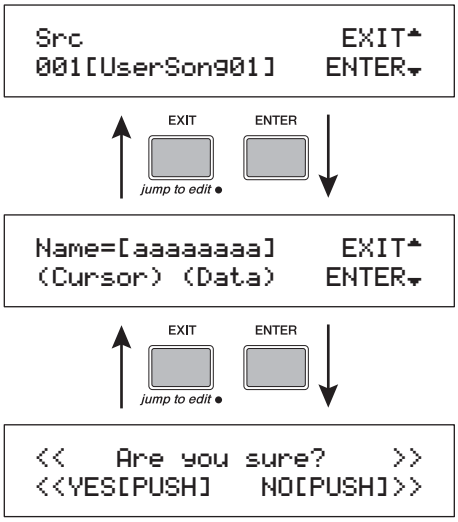
On-screen name (and full name)	Description
Name	This parameter is used to specify a name for the All file to be saved. You can turn Knob 1 (*Cursor*) to move the cursor within the displayed name. Then, using Knob 2 (*Data*), you can change the character at the cursor position. The name of an *All* file can contain upper case letters, numbers, and symbols. After you have finished naming the file, press the [ENTER] button. When asked to confirm that you wish to proceed, press either Knob 1 (*YES [PUSH]*) or the [ENTER] button to save the data, or press either Knob 3 (*NO [PUSH]*) or the [EXIT] button to return to the Name screen.

If *Type* has been set to "Ext":



On-screen name (and full name)	Description
Name	The name of the External Performance data file is displayed in the *Name* field. This will always be "EXTBANK" and cannot be changed. When you press the [ENTER] button, you will be asked to confirm that you wish to proceed. Press either Knob 1 (*YES [PUSH]*) or the [ENTER] button to save the data, or press either Knob 3 (*NO [PUSH]*) or the [EXIT] button to return to the *Name* screen. **NOTE** Each USB flash-memory device can contain just one External Performance memory file (i.e., EXTBANK.C5E for the CP5 or EXTBANK.C6E for the CP50).

If *Type* has been set to "SMF":



On-screen name (and full name)	Description
Src (Source)	Turn Knob 1 to select the User Song to be saved. Note that this screen will only be displayed if User Song data has been recorded. Press the [ENTER] button to proceed to the screen for naming the User Song to be saved. Alternatively, you can press the [EXIT] button to return to the *Type* screen.
Name	This parameter is used to specify a file name for the User Song to be saved. You can turn Knob 1 (*Cursor*) to move the cursor within the displayed name. Then, using Knob 2 (*Data*), you can change the character at the cursor position. User Song names can contain upper case letters, numbers, and symbols. After you have finished naming the file, press the [ENTER] button. When asked to confirm that you wish to proceed, press either Knob 1 (*YES [PUSH]*) or the [ENTER] button to save the data, or press either Knob 3 (*NO [PUSH]*) or the [EXIT] button to return to the *Name* screen.

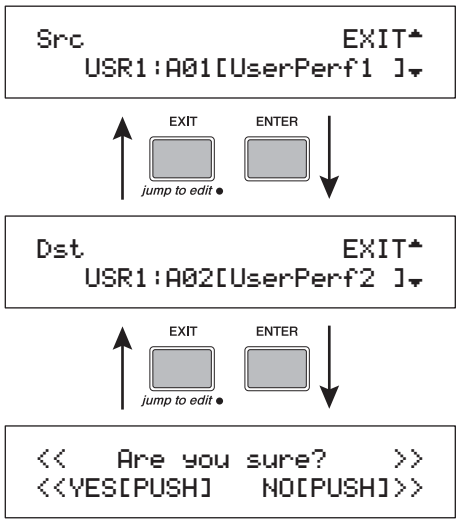
Load

The parameters to be set on the Load screen are as follows.

On-screen name (and full name)	Description	
Type	This parameter is used to specify the type of file to be loaded into your CP5 or CP50. When you have selected the required type, press the [ENTER] button. Alternatively, you can press the [EXIT] button to return to Page 1 of the File screen. If no files of the specified type are present in the root directory of the USB flash-memory device plugged into your CP5 or CP50, it will not be possible to proceed to the next page using the [ENTER] button. **Setting values:** All, Perf (Performance), Ext (External), or SMF (Standard MIDI File)	
	All	Data from the specified file* will be loaded into the stage piano's User Memory, overwriting everything except the External Performance data. (*: CP5 data has the extension .C5A; CP50 data, the extension .C6A.)

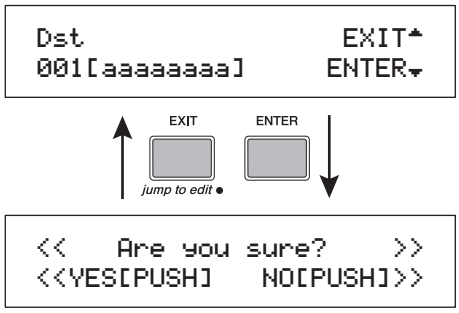
On-screen name (and full name)	Description	
Type	Perf	A single performance from the specified file* will be loaded into the stage piano's User Memory, overwriting the User Performance selected using the *Dst* parameter (below). (*: CP5 data has the extension .C5A; CP50 data, the extension .C6A.)
	Ext	An entire External Performance memory* will be loaded into the stage piano. (*: CP5 data is named "EXTBANK.C5E"; CP50 data is named "EXTBANK.C6E".)
	SMF	A standard MIDI file, which has the extension .MID, will be loaded into the stage piano.
File	This parameter is used to select the file to be loaded. Whenever Type has been specified as "Ext", it will be set to "001[EXTBANK]". File EXIT▲ 001[aaaaaaaa] ENTER▼ When you have selected the required file, press the [ENTER] button. If "All" or "Ext" has been set for *Type*, you will be asked to confirm that you wish to proceed with loading. Press either Knob 1 (*YES [PUSH]*) or the [ENTER] button to do so. Alternatively, if you have selected "Perf" or "SMF", follow the procedure described below to load the required data. To return to the File page without loading any data, press either Knob 3 (*NO [PUSH]*) or the [EXIT] button.	

If *Type* has been set to "Perf":



On-screen name (and full name)	Description
Src (Source)	These parameters are used to specify a single Performance to be loaded from the selected file. Specify a User Performance memory bank (USR1 to USR3) using Knob 1, and specify a group (A to D) and number (01 to 10) using Knob 2. Furthermore, you can also select "all" for the group and number using Knob 2, indicating that all Performances from the User Performance memory bank specified using Knob 1 will be loaded. Press the [ENTER] button to proceed to a page allowing a destination to be selected for the loaded data. Alternatively, you can press the [EXIT] button to return to the *File* page.
Dst (Destination)	These parameters are used to select the User Performance to hold the loaded data. Specify a User Performance memory bank (USR1 to USR3) using Knob 1, and specify a group (A to D) and number (01 to 10) using Knob 2. If "all" has been selected for Src above, this parameter will also be set to "all", meaning that data will be loaded into all Performances from the User Performance memory bank selected with Knob 1. After you have specified a destination, press the [ENTER] button. When asked to confirm that you wish to proceed, press either Knob 1 (*YES [PUSH]*) or the [ENTER] button to load the data, or press either Knob 3 (*NO [PUSH]*) or the [EXIT] button to return to the *Dst* page.

If *Type* has been set to "SMF":



On-screen name (and full name)	Description
Dst (Destination)	This parameter is used to select a User Song number (1 to 128) to hold the loaded data.

Rename

The parameters to be set on the Rename screen are as follows.

On-screen name (and full name)	Description
Type	This field displays the type of file to be renamed. Only *All* files can be remained, and therefore, this setting cannot be changed. Press the [ENTER] button to proceed to the next page. To return to Page 1 of the File screen without renaming data, press the [EXIT] button. If no *All* file is present in the root directory of the USB flash-memory device plugged into your CP5 or CP50, it will not be possible to proceed to the next page using the [ENTER] button.
File	This parameter is used to select the file to be renamed. File EXIT 001[aaaaaaa] ENTER When you have selected the required file, press the [ENTER] button. To return to the *File* page without loading any data, press either Knob 3 (*NO [PUSH]*) or the [EXIT] button.
Name	This parameter is used to specify a new name for the selected file. You can turn Knob 1 (Cursor) to move the cursor within the displayed name. Then, using Knob 2 (Data), you can change the character at the cursor position. File names can contain upper case letters, numbers, and symbols. When you have specified a new name, press the [ENTER] button to complete the renaming process. Alternatively, you can press the [EXIT] button to return to the File page.

Delete

The parameters to be set on the Delete screen are as follows.

On-screen name (and full name)	Description
Type	This field displays the type of file to be deleted. Only All files can be deleted, and therefore, this setting cannot be changed. To proceed to the next page, press the [ENTER] button. Alternatively, you can press the [EXIT] button to return to Page 2 of the File screen. If no All file is present in the root directory of the USB flash-memory device plugged into your CP5 or CP50, it will not be possible to proceed to the next page using the [ENTER] button.
File	This parameter is used to select the file to be deleted. File EXIT 001[aaaaaaaa] ENTER When you press the [ENTER] button, you will be asked to confirm that you wish to proceed. Press either Knob 1 (*YES [PUSH]*) or the [ENTER] button to delete the data, or press either Knob 3 (*NO [PUSH]*) or the [EXIT] button to return to the File page.

Appendix

MIDI

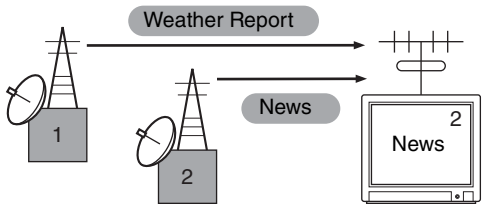
Musical Instrument Digital Interface (MIDI) is a global standard designed to allow performance, voice, and other data to be transferred between musical instruments As such, data communication is assured even between musical instruments and equipment from different manufacturers.
In addition to data generated by playing the keyboard or selecting a Performance, a wide range of other information types — such as tempo and instrument controls — can also be exchanged via MIDI. Using the powerful functionality provided by this technology, therefore, you can not only play other instruments using your CP5 or CP50 keyboard and controllers, but you can also change pan and reverb settings for each part and adjust audio effect settings. In fact, practically all of the parameters that can be set using the CP5 or CP50 control panel can also be remotely controlled from another MIDI device.

In this section, data and values will be displayed in binary, decimal, and hexadecimal formats. In order to indicate hexadecimal values, an “H” is displayed at the beginning of the data line or after the values themselves. Furthermore, “n” is used to represent an arbitrary integer (or whole number).

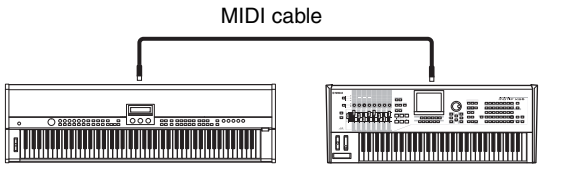
MIDI Channels

Any item of MIDI performance data can be transmitted and received on one of sixteen MIDI channels. Therefore, performance data for up to sixteen different instrument parts can be simultaneously exchanged over a single MIDI cable.

MIDI channels are very similar in nature to TV channels, in that each TV station transmits its broadcasts on a specific channel. Your TV, for example, receives many different programs at the same time from different TV stations, and you select which program to watch by choosing the corresponding channel.



In much the same way, multiple transmitting devices in a MIDI system can each be set to send data on a separate channel (i.e., a MIDI Transmit channel), which link with the system’s receiving devices via MIDI cables. If a receiving device’s MIDI channel (i.e., a MIDI Receive channel) matches a MIDI Transmit channel, the receiving device will produce sound according to the data sent by the corresponding transmitting device. For details regarding MIDI Transmit and MIDI Receive channels, see page 45 of the Reference section.



Supported MIDI Message Types

Broadly speaking, MIDI messages can be divided into two groups — channel messages and system messages. A description of each different type of channel message and system message supported by the CP5 or CP50 is provided below. Further details can be found in the *MIDI Data Format* and *MIDI Implementation Chart* sections of the *Data List* booklet.

Channel Messages

MIDI channel messages contain performance-related information, and each one is sent on a specific MIDI channel.

■ Note On & Note Off

Note On and Note Off messages are generated when a keyboard is played. Specifically, a Note On message is produced when a key is pressed; a Note Off message, when it is released. Each of these messages contains a specific note number corresponding to the key that was pressed, in addition to a velocity value indicating how hard the key was struck.
MIDI note numbers range from 0 (C -2) to 127 (G8), with middle C (C3) represented by 60. Velocity values, which are contained within Note On messages only, range from 1 to 127.

■ Control Change

MIDI Control Change messages are used to control volume, stereo panning, and many other parameters, and as shown below, each message type has its own unique control number.

Bank Select MSB (Control No. 0)
Bank Select LSB (Control No. 32)

Bank Select MSB and LSB messages are used to remotely select a memory bank from another MIDI device. The actual bank to be selected is determined by combining the MSB and LSB values. In terms of the CP5 or CP50, a Performance bank can be set using the LSB value. Any selection will not, however, become effective until the next Program Change message is received. Whenever selecting a Performance from a new memory bank in this way, therefore, it is good practice to send a Bank Select MSB message, a Bank Select LSB message, and a Program Change message together in this order. For more details on memory banks and Performances, see the *Data List* booklet.

Bank Entry MSB (Control No. 6)
Bank Entry LSB (Control No. 38)

Bank Entry MSB and LSB messages are used to set the parameter selected using RPN MSB and RPN LSB messages (see below). The actual value to be set is determined by combining the MSB and LSB values.

Main Volume (Control No. 7)

Main Volume messages can be used to adjust the volume of each part. Setting a value of 127 produces maximum volume, while 0 silences the part in question. These messages can be useful when adjusting the relative volumes of each part.

Pan (Control No. 10)

Pan messages can be used to adjust the stereo panning of each part. Setting a value of 127 moves the sound fully to the right, while 0 moves it to the far left and 64 places it in the middle of the stereo field.

Expression (Control No. 11)

Expression messages can be used to change the level of expression or intonation of each part. Setting a value of 127 produces maximum volume, while 0 silences the part in question. These messages can be useful when you wish to adjust the volume to add expression during performances.

Hold 1 (Control No. 64)

Hold 1 messages can be used to modify the sound of notes in the same way as a piano's Sustain pedal. Setting a value between 64 and 127 turns sustain on, while values between 0 and 63 turn it off. When turned on, notes will sustain longer than normal after the corresponding Note Off message is received.

Sostenuto (Control No. 66)

Sostenuto messages can be used to modify the sound of notes in the same way as a piano's Sostenuto pedal. Setting a value between 64 and 127 turns sostenuto on, while values between 0 and 63 turn it off. If sostenuto is turned on while the note generated by a specific Note On message is playing, it will be sustained longer until the corresponding Note Off message is received.

Soft (Control No. 67)

Soft messages can be used to modify the sound of notes in the same way as a piano's Soft pedal. Setting a value between 64 and 127 turns soft on, reducing the volume and slightly softening the timbre; meanwhile, values between 0 and 63 turn it off.

Release Time (Control No. 72)

Release Time messages can be used to adjust the AEG release time for each part. Values of 0 to 127 correspond to offset values of -64 to +63, which are used to reduce or increase the release time accordingly.

Decay Time (Control No. 75)

Decay Time messages can be used to adjust the AEG decay time for each part. Setting values of 0 to 127 correspond to offset values of -64 to +63, which are used to reduce or increase the decay time accordingly. The larger the value, the longer it takes for the sound to decay after the initial attack.

Effect 1 Depth (reverb send level) (Control No. 91)

Effect 1 Depth messages can be used to adjust a reverb effect's send level.

Data Increment (Control No. 96)
Data Decrement (Control No. 97)

Data Increment and Data Decrement messages can be used to increment and decrement pitch bend sensitivity, fine tune, or coarse tune in steps of 1 (assuming that the parameter to be adjusted has been set in advance using RPN messages (see below)).

RPN LSB (registered parameter number LSB) (Control No. 100)
RPN MSB (registered parameter number MSB) (Control No. 101)

RPN LSB and MSB messages are used primarily to facilitate the setting of offset values for pitch bend sensitivity, tuning, and other part parameters. In specific terms, the parameter to be modified is first selected using these messages, and the above-mentioned Data Increment and Data Decrement messages are then used to change the parameter setting. It should be noted that, once an RPN has been set, all subsequent data entry messages on the same channel will affect the selected parameter. After setting a parameter based on these messages, therefore, it is wise to set the RPN to Null (7FH, 7FH) in order to avoid unexpected changes. Your CP5 or CP50 supports selection of the following parameters using RPN LSB and MSB messages.

RPN MSB	RPN LSB	Parameter name
00H	00H	Pitch Bend Sensitivity
7FH	7FH	RPN Null

Channel Mode Messages

2nd byte	3rd byte	Message
120	0	All Sound Off
121	0	Reset All Controllers
123	0	All Notes Off

All Sound Off (Control No. 120)

All Sound Off messages are used to silence all sounds being generated by both parts. Note that the status of channel messages such as Hold 1 and Sostenuto is maintained in such a case.

Reset All Controllers (Control No. 121)

A Reset All Controllers message is used to return each of the following controllers to their default values.

Controller	Default value
Pitch Bend	0 (center)
Expression	127 (maximum)
Hold 1	0 (off)
Sostenuto	0 (off)
Soft	0 (off)
RPN	Number not specified; internal data will not be changed.

All Notes Off (Controller No.123)

An All Notes Off message is used to turn off all notes for each part. If, however, Hold 1 or Sostenuto is turned on at this time, notes will continue to play until these controllers are turned off.

Omni Mode Off (Control No.124)

Omni Mode Off messages have the same effect as an All Notes Off message. In addition, this message also sets the instrument's receive channel to 1.

Omni Mode On (Control No. 125)

Omni Mode On messages have the same effect as an All Notes Off message. In addition, this message also sets the instrument's receive channel to "omni".

■ Program Change

MIDI Program Change messages are used to select different Performances. When combined with Bank Select MSB and LSB messages, furthermore, it is possible to select Performances from any of the instrument's memory banks via MIDI.
For more details on memory banks and Performances, see the *Data List* booklet.

NOTE Program change numbers (0 to 127) are one less than the corresponding number in the *Data List* document. To select program No. 16, for example, you would need to send a message with program change number 15.

■ Pitch Bend

Pitch Bend messages are continuous controller messages that allow the pitch of designated notes to be raised or lowered by a specified amount over a specified duration.

System Messages

Rather than being associated with a specific channel, MIDI system messages are used for synchronization of devices and other behavior of the instrument as a whole.

■ System Exclusive Messages

Used to perform bulk data dumps and to change parameters, MIDI system exclusive messages contain a device number, allowing them to operate as if on a unique MIDI channel. In order for this type of message to be exchanged between devices, both the sending and receiving devices must be set to the same device number. Using system exclusive messages, you can control practically every parameter on the CP5 or CP50 from another MIDI device.

■ System Realtime Messages

Active Sensing (FEH)

Active Sensing is a type of MIDI message used to prevent unexpected results in cases where a MIDI cable is disconnected or damaged while the instrument is being played. Upon the receipt of an Active Sensing message, the CP5 or CP50 will begin to monitor the status of connected MIDI cables. If no MIDI data is received over the next 300 ms, the instrument will conclude that a problem has occurred with a MIDI cable, and in response, it will act as if an All Notes Off message and a Reset All Controllers message had been received.

Timing Clock (F8H)

Timing Clock messages are transmitted with a fixed interval (i.e., 24 times per 1/4 note) to synchronize connected MIDI instruments. To specify whether to use the stage piano's internal clock or clock signals received via MIDI, press the [UTILITY] button followed by the [6] button, and then set the *MIDISyn* parameter as required.

Yamaha Web Site (English only)
http://www.yamahasynth.com/

Yamaha Manual Library
http://www.yamaha.co.jp/manual/

U.R.G., Pro Audio & Digital Instrument Division, Yamaha Corporation

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