

YAMAHA

pf80/pf70

ELECTRONIC PIANO

PIANO ELECTRONIQUE

ELEKTRONISCHES KLAVIER

OWNER'S MANUAL

MANUEL D'UTILISATION

BEDIENUNGSANLEITUNG

INTRODUCTION

Congratulations on your purchase of a Yamaha PF80/70 Electronic Piano. The PF80/70 are the latest in the renowned pf Piano Series—electronic pianos with all the character, tone, and dynamics of their acoustic and electric counterparts. Both models feature Yamaha's FM tone generation system to recreate acoustic and electric instrument voices that are warm, rich, and vibrant. It is the world's most accurate tone generation system; the basis for our incredible DX Series synthesizers. Simply, the PF80/70 have a remarkable "acoustic" quality that surpasses all comparably priced instruments.

The PF80/70 electronic pianos are also eminently controllable, thanks to Yamaha design technology. At the touch of a button, you can select from a variety of voices: acoustic pianos, electric pianos, harpsichord, clavi., and vibraphone. The subtlety, tone, and power of your music is reproduced through an internal stereo amplifier and two built-in speakers. What's more, you have full control over tone, stereo tremolo and chorus, soft pedal intensity, and a variety of other functions. Both pianos are also MIDI-compatible. With MIDI (Musical Instrument Digital Interface), the PF80/70 can share information with other MIDI instruments like DX synthesizers, tone generators and sequencers. With a Yamaha PF80/70, you can control an entire MIDI ensemble!

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PRECAUTIONS

1. Location

Choose the installation location for the PF80/70 with care. Avoid locations exposed to direct sunlight or other sources of heat. Also avoid locations subject to vibration, excessive dust, cold or moisture.

2. Cleaning

Do not attempt to clean the exterior with chemical solvents; this may damage the finish. Clean with a soft, dry cloth.

3. Service and Modifications

Do not open the casing or attempt to make your own repairs or modifications to any part of the instrument. Such actions may not only result in electrical shock or damage, but will also void the product warranty. Refer all servicing to a qualified Yamaha service agent.

4. Relocation

When moving the instrument be sure to unplug the AC mains cord as well as all other connecting cables.

5. Handling

Avoid using excessive force on the switches and slide controls, dropping or rough handling. Although the PF80/70 is ruggedly constructed using reliable solid-state circuitry, it is still a fine instrument that should be treated with care.

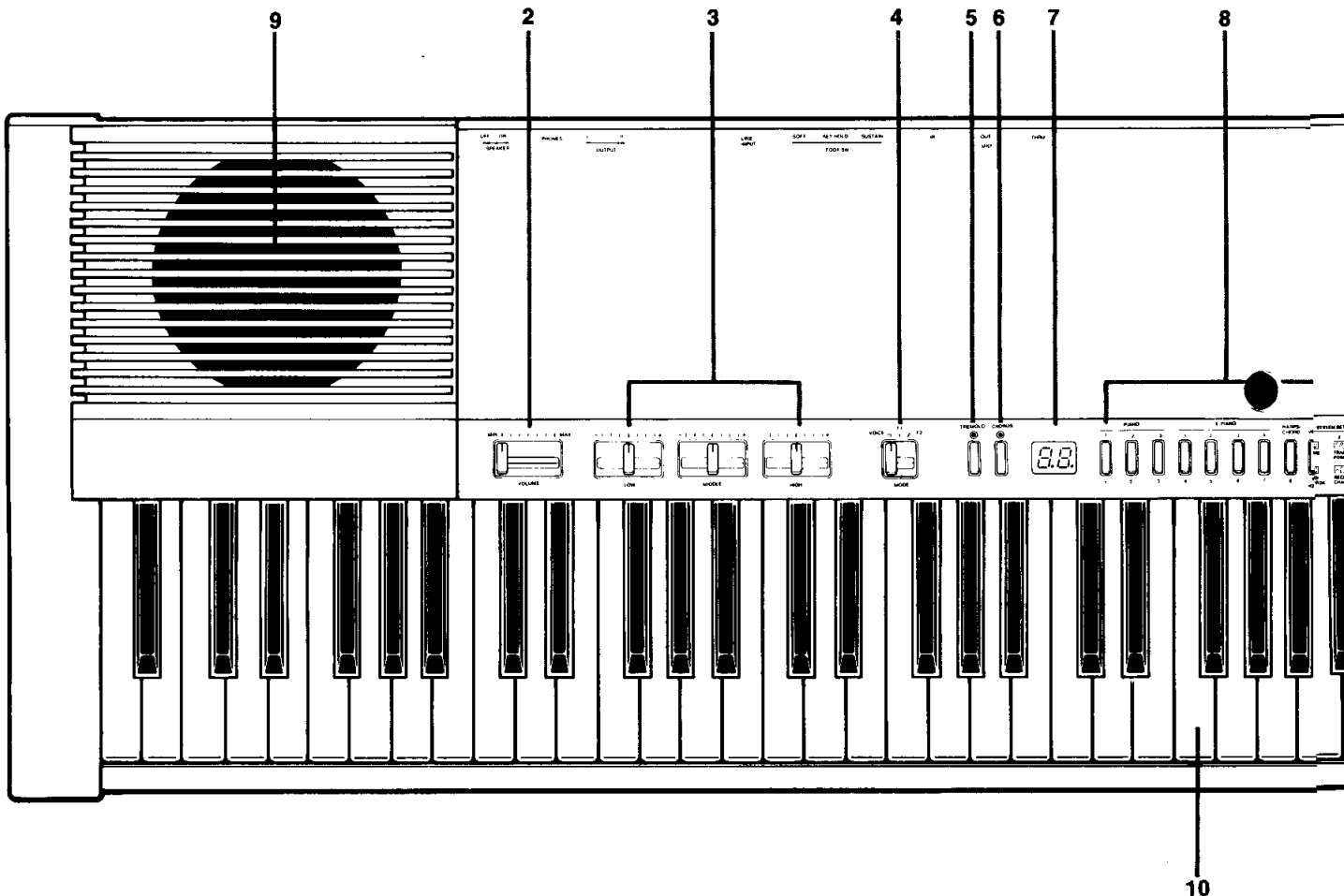
6. Electrical Storms (Lightning)

Digital circuitry such as that used in the PF80/70 is sensitive to voltage spikes and surges. In the event of an electrical storm, the instrument should be turned off and unplugged from the AC power outlet.

7. Electromagnetic Fields

The digital circuitry of the PF80/70 can be adversely affected by the electromagnetic fields produced by television sets, radio receivers, transmitters, transceivers, etc. To prevent possible random malfunctions, the PF80/70 should be kept several feet from any electromagnetic source.

FRONT PANEL CONTROLS/BASIC OPERATION



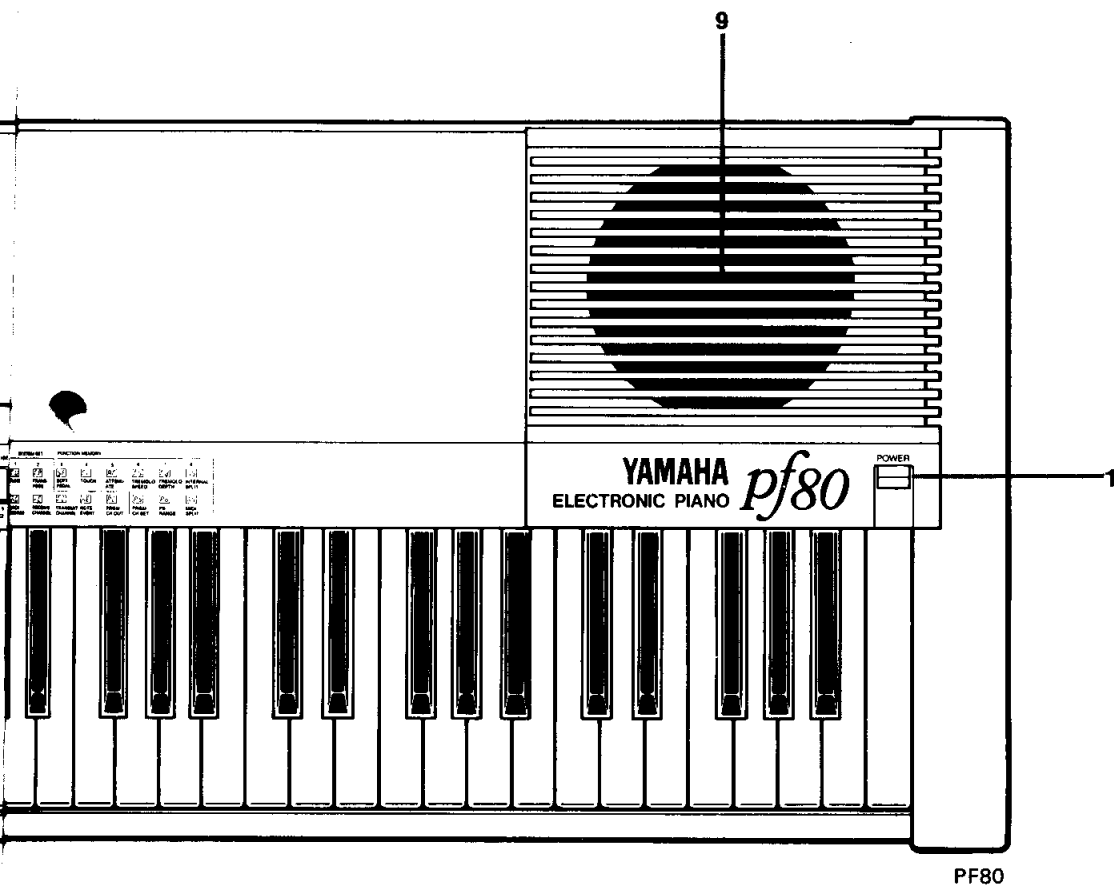
1. POWER SWITCH

Push in the power switch to turn the PF80/70's power ON. When the power is turned ON the LED display will light, display "PF" for a few seconds, and then display the number of the voice selected prior to turning the power OFF (if the VOICE Mode is selected: see "4. MODE SELECTOR").

Press the POWER switch a second time to turn power OFF.

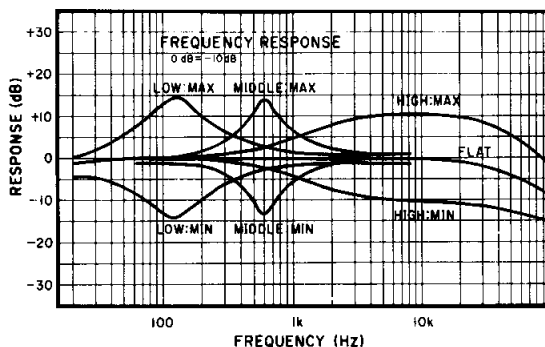
2. VOLUME CONTROL

This linear control adjusts the volume of the PF80/70's internal speaker system, the signal level of the rear-panel OUTPUT I and II jacks, and the headphones level. Moving the VOLUME control to the left reduces volume; moving it to the right increases volume. When using the OUTPUT jacks to feed an external amplification system, the VOLUME control should be set to approximately one increment below the MAX. All further volume adjustments should be made on the external amplification system (or recording equipment).



3. 3-BAND EQUALIZER (LOW, MIDDLE and HIGH CONTROLS)

The HIGH, MIDDLE and LOW controls constitute a versatile three-band equalizer system which allows you to tailor the overall frequency characteristics of the PF80/70's sound to your needs. The LOW and MIDDLE controls give a maximum of 12 dB boost or cut in their respective frequency ranges, while the HIGH range can be boosted or cut by approximately 10 dB. The LOW control adjusts a frequency range centered at 100 Hz, the MIDDLE control adjusts the range centered at 600 Hz, and the HIGH control boosts or cuts the range around 6 kHz.



4. MODE SELECTOR

This selector switch selects one of the following three modes: VOICE, FUNCTION 1 or FUNCTION 2. When playing the PF80/70, the selector will normally be in the VOICE mode. In the VOICE mode the 10 selector switches to the right of the LED display are used to select the 10 preset voices. The F1 (FUNCTION 1) and F2 (FUNCTION 2) modes permit access to the 16 programmable functions provided by the PF80/70. These include tuning, effects settings, pedal operation, and MIDI functions including keyboard split. The functions will be described in detail in the "THE FUNCTION MODES" section of this manual.

5. TREMOLO SWITCH

Press this switch (LED indicator will light) to turn the stereo tremolo effect ON. This dynamic tremolo effect is applied to the currently selected voice, producing a true stereo tremolo effect in which the sound appears to sweep back and forth between the stereo speakers. The tremolo effect is also sent in stereo through the OUTPUT I and OUTPUT II jacks. In order for the stereo tremolo to be effective when using external amplification, the OUTPUT I and II jacks must feed the left and right channels of a stereo sound system.

The ON/OFF status of the tremolo effect can be individually programmed and memorized for each voice simply by selecting a voice and turning the effect ON or OFF. That way, the effect will automatically be turned ON or OFF according to the voice you select. The speed and depth of the tremolo effect can also be programmed for each voice in the FUNCTION 1 mode. Once programmed, this data will be retained even when the instrument is turned OFF.

6. CHORUS SWITCH

Press this switch (the LED indicator will light) to turn the stereo chorus effect ON. The stereo chorus effect is applied to the currently selected voice, producing a pleasant swirling multiple-instrument effect. The chorus effect is also sent in stereo through the OUTPUT I and OUTPUT II jacks. In order for the stereo chorus to be effective when using external amplification, the OUTPUT I and II jacks must feed the left and right channels of a stereo sound system.

The ON/OFF status of the chorus effect can be individually programmed and memorized for each voice simply by selecting a voice and turning the effect ON or OFF. That way, the effect will automatically be turned ON or OFF according to the voice you select. Once programmed, this data will be retained even when the instrument is turned OFF.

7. LED DISPLAY

In the VOICE mode, this two-digit LED display shows the selected voice number. In the F1 or F2 FUNCTION modes, it displays the currently selected function in alphanumeric form (see character chart, below) as well as the programmed value for that function (a number or ON/OFF status).

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|-------|------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | A | B | C | D | E | F |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | A | B | C | D | E | F |
| G | H | I | K | L | M | N | O | P | R | S | T | U | Dot | Minus | Flat |
| G | H | , | L | ā | n | ō | P | r | S | r | U | . | - | b | |

8. VOICE/FUNCTION SELECTORS

In the VOICE mode (as set by the MODE SELECTOR), these 10 switches select the PF80/70's preset voices. Voices 1 through 3 are acoustic piano voices, 4 through 7 are electric piano voices, 8 is harpsichord, 9 is vibes, and 10 is a clavichord. Simply press the corresponding selector to call the desired voice.

In the F1 or F2 modes, selectors 1 through 8 call the corresponding functions of each mode (F1-1 through F1-8, or F2-1 through F2-8), while selectors 9 and 10 are used for data entry. Function mode operation will be described in detail in the following section: "THE FUNCTION MODES."

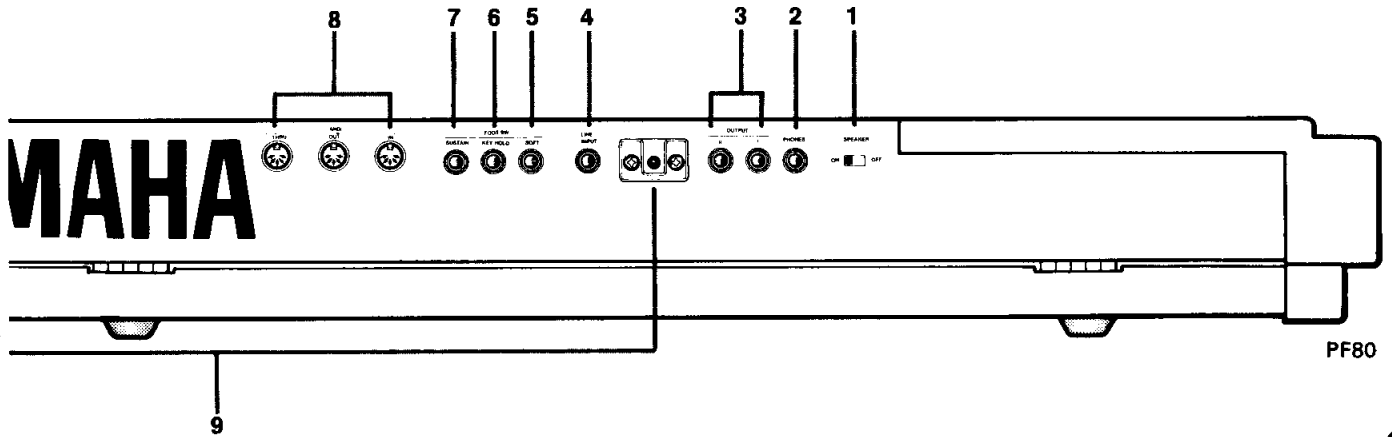
9. STEREO SPEAKERS

The PF80/70 features a powerful 18-watt + 18-watt stereo amplifier and speaker system, so that you can enjoy superb sound and playability without having to use external amplification. The PF80/70 uses high-quality 12-centimeter full range speakers, delivering the PF sound with clarity and dynamic power. The internal speakers can be turned OFF when using external amplification by using the SPEAKER ON/OFF switch on the rear-panel (See "REAR PANEL/CONNECTIONS" section).

10. KEYBOARD

The PF keyboard is a superb example of Yamaha musical instrument craftsmanship, offering the feel and response of a real acoustic piano keyboard. The PF70 is equipped with keys, while the PF80 has a full-size 88-note keyboard. Both instruments have 16-note polyphonic output, meaning that you can play up to 16 notes simultaneously.

REAR PANEL/CONNECTIONS



1. SPEAKER ON/OFF SWITCH

This switch turns the PF80/70's internal speaker system ON or OFF. This makes it possible to turn OFF the built-in speakers when using external amplification. Normally, however, the speakers should be ON.

2. PHONES JACK

This jack accepts any standard pair of stereo headphones. Plugging in a pair of headphones does not affect output from the OUTPUT I and II jacks, but the internal speaker system will be automatically turned OFF. The PF80/70 signal is sent to the PHONES jack in stereo, so you will get the full effect of stereo tremolo and chorus even when monitoring via headphones.

3. OUTPUT JACKS (I and II)

The stereo PF80/70 signal is sent at line level through the OUTPUT jacks. The left channel signal is sent through the OUTPUT II jack, and the right channel signal is sent through OUTPUT I. Rated output level and impedance is -10 dB/600 ohms. Use the signals from the OUTPUT jacks when plugging into external amplification systems or recording equipment. The OUTPUT I and II signals should not be combined into one channel using a mixer, as this will degrade the quality of the tremolo and chorus effects.

4. LINE INPUT JACK

The LINE INPUT jack will accept any external line level signal, so that you can hear it through the PF80/70's internal stereo amplifier and speaker system. You can plug in a rhythm machine, cassette deck, or another keyboard, and monitor its sound, along with the PF80/70's sound through the internal amp/speaker system. The volume of the external source can be controlled via its own volume control. When a signal is fed to the LINE INPUT jack, it is mixed with the PF80/70's signal, and the combined signal is output through the PHONES and OUTPUT I/II jacks. Rated input level is -10 dB.

5. SOFT PEDAL JACK

This jack accepts an optional Yamaha FC4 or FC5 Foot Controller which can be used to turn the SOFT effect ON or OFF. Press down on the pedal to turn the effect ON, release to turn OFF.

Pressing the SOFT pedal normally mutes the sound of the selected voice, producing a round, mellow tone. With the harpsichord voice, however, the effect is that the normally multi-string sound becomes a single-string sound (i.e. one string is muted).

The supplied FC8 Foot Controller can also be plugged into this jack to activate the SOFT effect.

6. KEY HOLD PEDAL JACK

An optional Yamaha FC4 or FC5 Foot Controller plugged into this jack functions in a similar way to the sostenuto pedal on some acoustic pianos. If you hold a note (or chord) down, and then press the sostenuto pedal before you release the note(s), that note (or chord) will sustain until you release the pedal or the sound dies away naturally. Any notes that you play after holding down the pedal will not sustain. This can be very useful for certain things that would otherwise require three hands. The supplied FC8 Foot Controller can also be plugged into this jack to activate the KEY HOLD effect.

- ★ The maximum number of notes that can be played simultaneously on the PF80/70 is 16. If 16 notes are held using KEY HOLD then no more notes can be played. For example, if 4 notes are held using KEY HOLD, then 12 more notes may be played simultaneously.

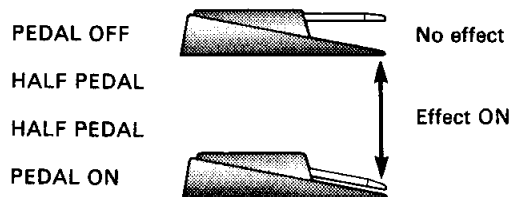
7. SUSTAIN PEDAL JACK

The supplied FC8 Foot Controller should normally be plugged into this jack to activate a piano-like pedal-sustain effect. Press down on the pedal to sustain, release to damp.

The FC8 also permits half-pedal sustain effects. That is, when the pedal is pressed only half way, a shorter, more damped sustain is produced. The FC8 actually has 4 sustain levels (see illustration). While a Yamaha FC4 or FC5 Foot Controller could also be used to activate the SUSTAIN effect, these Foot Controllers do not permit half-pedal effects.

About the FC8 Footswitch

- When the FC8 is used as a sustain pedal for the PF80/70, 4 levels of sustain are available.
- If the FC8 is used for SOFT or KEY HOLD effect control, only two states—ON and OFF—are available.
- The FC8 will only produce ON/OFF sustain control when used with the PF10 or PF15 Electronic Pianos.
- The half-pedal sustain effect is not noticeable on some voices.



8. MIDI TERMINALS (IN, OUT and THRU)

5 pin DIN terminals enable the PF80/70 to communicate with other MIDI compatible music equipment.

MIDI OUT:

MIDI data from the PF80/70 can be transmitted to other MIDI keyboards, tone generators, or sequencers via this terminal.

MIDI IN:

MIDI data from a sequencer, MIDI keyboard or other type of MIDI transmitter can be received through this terminal.

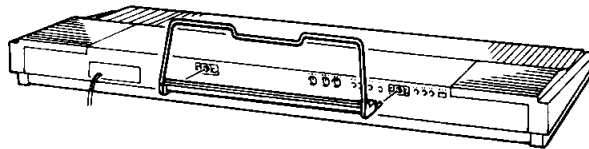
MIDI THRU:

This terminal outputs the same data received from the MIDI IN terminal so that you can send the identical data to other MIDI equipment.

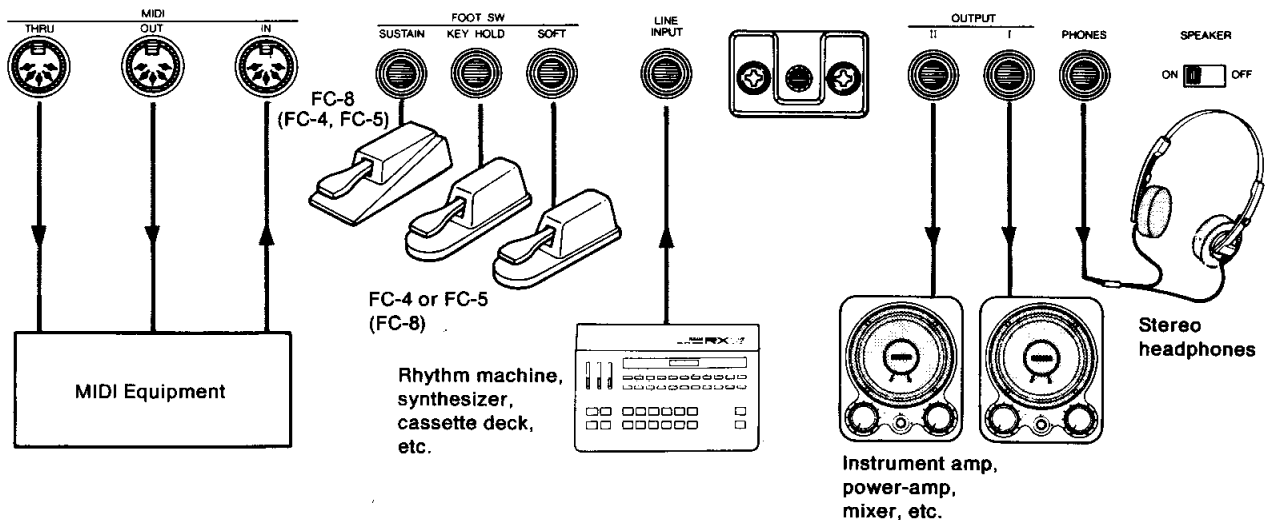
MIDI cables must be used for all MIDI connections.

9. MUSIC STAND SOCKETS

The supplied music stand can be plugged into these sockets as shown in the illustration below.



CONNECTIONS

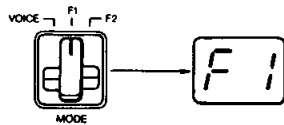


THE FUNCTION MODES

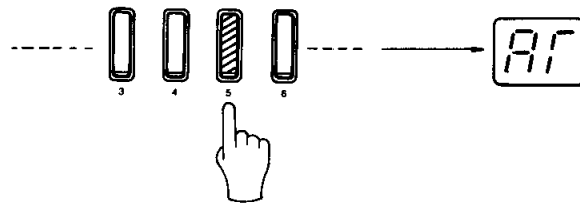
The two function modes in the PF80/70 (F1 and F2) give you access to 16 different functions (8 in each mode). When either function mode is selected the desired function within that mode is called by pressing the appropriately numbered selector button. The same buttons are used for voice selection in the VOICE mode, but in the FUNCTION modes the grey numerals and symbols below the selector buttons are used rather than the white voice numbers and names printed above the buttons.

Selecting the Functions in the Function Mode

For example, to call function F1-5, first select the F1 function mode by using the MODE selector switch.



Then press selector button number 5.



Only selector buttons 1 through 8 are actually used to select the functions in each mode. Buttons 9 and 10 (-1 and +1) are used to decrement and increment the programmed value of the selected function. There are a few exceptions which will be described in the actual function descriptions that follow.

The chart given below lists all the functions available in the F1 and F2 modes. This chart is also printed on the PF80/70 panel to the right of the selector buttons.

| | SYSTEM SET | | FUNCTION MEMORY | | | | | |
|------------|------------|-----------------|------------------|------------|-------------|---------------|---------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| F1 → | TU | TP | SP | TR | AT | TS | TD | IS |
| FUNCTION 1 | TUNE | TRANSPOSE | SOFT PEDAL | TOUCH | ATTENUATE | TREMOLO SPEED | TREMOLO DEPTH | INTERNAL SPLIT |
| F2 → | MD | RC | TC | NE | PC | PS | PB | MS |
| FUNCTION 2 | MIDI MERGE | RECEIVE CHANNEL | TRANSMIT CHANNEL | NOTE EVENT | PRGM CH OUT | PRGM CH SET | PB RANGE | MIDI SPLIT |

The LED Display in the Function Modes

When either the F1 or F2 modes are selected using the MODE switch, the name of the selected mode (F1 or F2) will appear on the LED display until the desired function within that mode is selected.

When any function is called, the LED display will alternately show the character abbreviation of the function name (as shown in the function chart above) and the programmed value. This way you will always know which function is currently selected.

8. MIDI TERMINALS (IN, OUT and THRU)

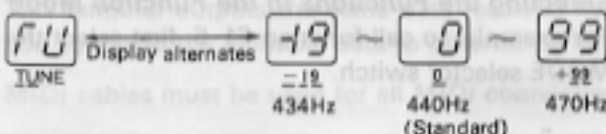
All-Voice and Individual Functions

Some of the PF80/70 functions affect all of the voices simultaneously (indicated as "SYSTEM SET" on the panel chart), while others affect the voices individually (indicated as "FUNCTION MEMORY" on the panel chart). This will be indicated in the functions descriptions that follow as either "** ALL VOICES **" or "** INDIVIDUAL **".

In cases where a function can be set differently for each voice, you must first choose a voice while in the VOICE mode and then switch to the FUNCTION mode to adjust the function information for that voice must be selected in the VOICE mode prior to selecting the F1 or F2 mode and calling the function.

FUNCTION MODE 1

F1-1: TUNE ALL VOICES



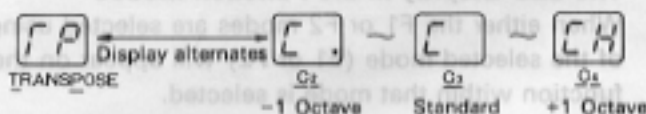
This function makes it possible to tune the PF80/70 to other instruments. The data range is from -19 to 99. 0 corresponds to standard keyboard pitch (A = 440 Hz). Use the -1 and +1 buttons (selector buttons 9 and 10) to increment and decrement the TUNE value. The diagram below shows the approximate relationship between TUNE settings and the resulting keyboard pitch.

| Normally usable tuning range. | | | | | | | | | | | Standard | | |
|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|-------------------------|--|
| -63 | -19 | -7 | -3 | 0 | 3 | 7 | 10 | 13 | 17 | 63 | 99 | Set value | |
| | | | | | | | | | | | | | |
| 421 | 434 | 438 | 439 | 440 | 441 | 442 | 443 | 444 | 445 | 459 | 470 | Pitch (Hz) | |
| | | 45 | 57 | 61 | 64 | 67 | 71 | 74 | 77 | 81 | 127 | MIDI OUT (Transmission) | |
| 0 | 45 | 57 | 61 | 64 | 67 | 71 | 74 | 77 | 81 | 127 | | MIDI IN (Reception) | |

MIDI NOTE:

If the F2-4 NOTE EVENT function is turned ON (this function will be described later), the tuning data will be transmitted via the MIDI OUT terminal when the F1-1 TUNE function is used. This tuning data can be used to simultaneously adjust the pitch of the Yamaha DX1, DX5 synthesizers or TX7, TX116, TX816 tone generators. In this case, it is possible to tune below the normal PF80/70 lower tuning limit of -19. When tuning values lower than -19 are selected, a dot will appear to the right of the second digit on the LED display. Refer to the illustration above.

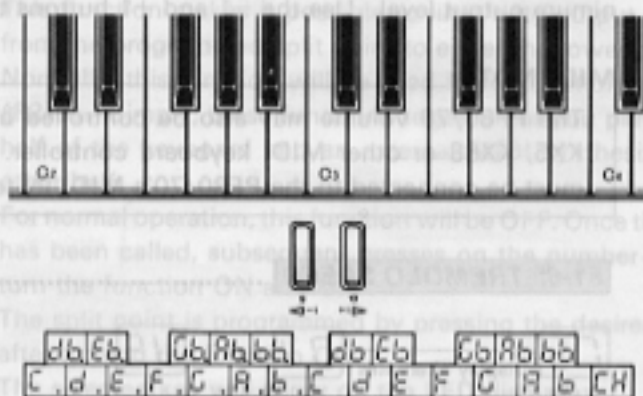
F1-2: TRANSPOSE ALL VOICES



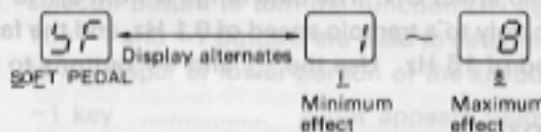
This function makes it possible to transpose the pitch of the keyboard up or down in semitone steps within a range of 2 octaves (from C2 to C4). When the TRANSPOSE function is called, the LED display will show the current pitch of the C3 (middle C) key. Normally this will be "C".

You can either use the -1 and +1 keys to decrease or increase the keyboard pitch in semitone steps, or, right after you call the TRANSPOSE function, press the note on the keyboard that represents the key you want to TRANSPOSE to and the PF80/70 will be put in that key. For example, if you call the TRANSPOSE function and then press the E key above middle C, the pitch of the entire keyboard will be transposed up one third (4 semitones).

If you transpose up (from "C") by an interval of one fifth (7 semitones), the LED will show "G", while transposing down one fourth (5 semitones) produces a display of "G.". The dot after the key name indicates keys below middle C. The illustration below shows the relationship between the keyboard and the TRANSPOSE function LED display.

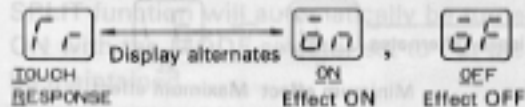


F1-3: SOFT PEDAL INTENSITY **INDIVIDUAL**



This function adjusts the intensity or "depth" of the soft pedal effect applied when a foot controller plugged into the rear-panel SOFT pedal jack is pressed. The data range is from 1 to 8. A setting of 1 produces the minimum (least) effect when the pedal is pressed, and a setting of 8 produces maximum effect. Use the -1 and +1 buttons to increase or decrease the programmed value.

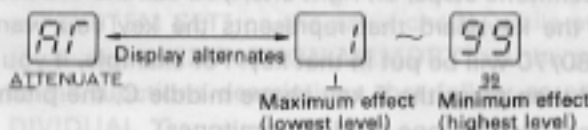
F1-4: TOUCH (VELOCITY) ON/OFF **INDIVIDUAL**



This function turns the PF80/70's touch response ON or OFF. When ON, the piano keyboard responds like an acoustic piano's keyboard, producing higher volume and modified timbre the harder a key is struck. When OFF, all notes sound at the same volume no matter how hard the keys are struck. It is useful, for example, to turn the touch response OFF for the harpsichord voice since real harpsichords have very limited dynamics (variations in volume).

Pressing the number-4 function button alternately turns TOUCH ON or OFF. The -1 and +1 keys can also be used.

★ Touch response data is always output through the MIDI OUT terminal, whether this function is ON or OFF.

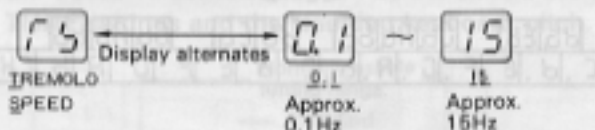
F1-5: ATTENUATE**INDIVIDUAL**

It is possible to reduce the volume of each individual voice over a broad range. This makes it possible to set up the optimum volume balance when switching from one voice to another.

The data range for this function is from 1 to 99. A setting of 99 (the normal setting) gives the maximum output level of a voice, while a setting of 1 produces the minimum output level. Use the -1 and +1 buttons to set the desired value.

MIDI NOTE:

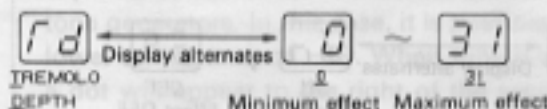
The PF80/70 volume may also be controlled by the volume controller of a KX5, KX88 or other MIDI keyboard controller. The MIDI control keyboard must be connected to the PF80/70's MIDI IN terminal.

F1-6: TREMOLO SPEED**INDIVIDUAL**

This function sets the speed of the tremolo effect for each individual voice with the tremolo effect ON. The data range is from 0.1 to 15. A 0.1 setting corresponds approximately to a tremolo speed of 0.1 Hz, and the fastest setting, 15, corresponds to a speed of 15 Hz. Use the -1 and +1 buttons to set the desired value.

MIDI NOTE:

The tremolo speed can also be controlled by a Foot Controller connected to an external MIDI keyboard. The PF80/70's TREMOLO effect must be turned ON and the external MIDI keyboard must be connected to the PF80/70's MIDI IN terminal.

F1-7: TREMOLO DEPTH**INDIVIDUAL**

This function sets the depth of the tremolo effect individually for voices with the tremolo effect ON. The data range is from 0 to 31. A setting of 0 produces minimum effect. 31 produces the strongest (greatest depth) tremolo effect. Use the -1 and +1 buttons to set the desired value.

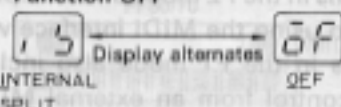
MIDI NOTE:

The tremolo depth can also be controlled by the modulation wheel of an external MIDI keyboard. The PF80/70's TREMOLO effect must be ON and the external MIDI keyboard must be connected to the PF80/70's MIDI IN terminal.

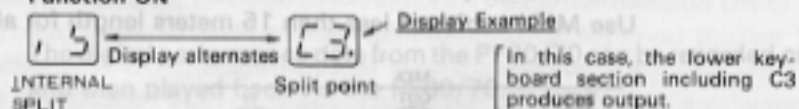
F1-8: INTERNAL SPLIT

INDIVIDUAL

Function OFF



Function ON



This function makes it possible to limit note output to a range of keys extending from the programmed split point to either the lower or upper end of the keyboard. Normally, this function will be used in conjunction with the MIDI SPLIT function (F2-8). Simply, these functions together let you play the PF80/70 sound on one half of the keyboard and an external MIDI synthesizer or tone generator on the other half.

For normal operation, this function will be OFF. Once the INTERNAL SPLIT function has been called, subsequent presses on the number-8 selector button alternately turn the function ON and OFF.

The split point is programmed by pressing the desired key on the piano keyboard after turning the function ON.

The selected key will show on the LED display.

If a black key is chosen as the split point, a dot will appear following the first character in the LED display. For example, if you press C3#, the LED display will show " C3# ".

If you press the wrong key and need to reprogram the split point, press the number-8 selector button to turn the function ON again, and press the correct key.

The -1 and +1 buttons are used to determine whether note output will be restricted to the upper or lower portion of the keyboard:

-1 key a dot appears following the second character of the LED display (C3#) and all keys below and including the split key will sound.

+1 key there will be no dot following the second LED character (C3) and all keys above the split key will sound.

Setting the INTERNAL SPLIT point as described also sets the F2-8 MIDI SPLIT point. These two functions—F1-8 and F2-8—are interactive. When the split point is set for one, the same point is automatically set for the other.

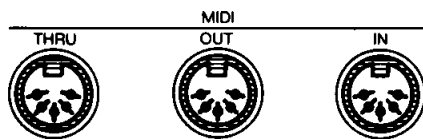
If the power is turned ON with the MODE selector set to VOICE or F1, the INTERNAL SPLIT function will automatically be turned OFF. If, however, the power is turned ON with the MODE selector set to F2, the previous INTERNAL SPLIT setting will be maintained.



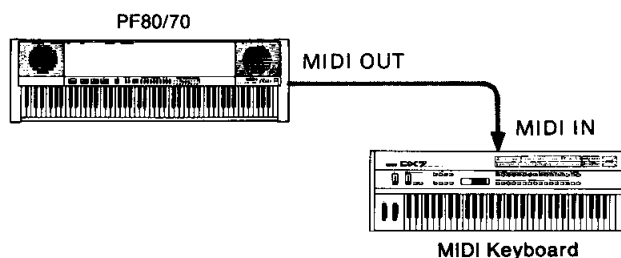
MIDI SYSTEM EXAMPLES

The PF80/70 are equipped with MIDI (Musical Instrument Digital Interface) interfaces that permit them to control and be controlled by other MIDI music equipment. The functions in the F2 mode all correspond to various MIDI parameters that must be set prior to using the MIDI interface with other equipment. A few of the functions in the F1 mode also include parameters which can be transmitted via MIDI control from an external MIDI synthesizer. (Refer to "F1 MIDI NOTE".)

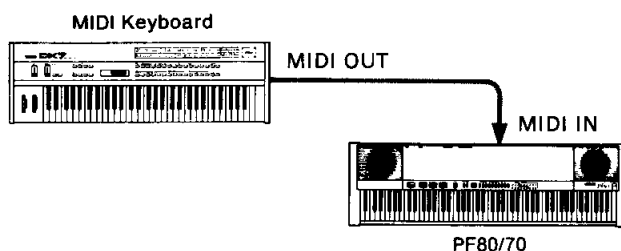
Use MIDI cables of less than 15 meters length for all MIDI connections.



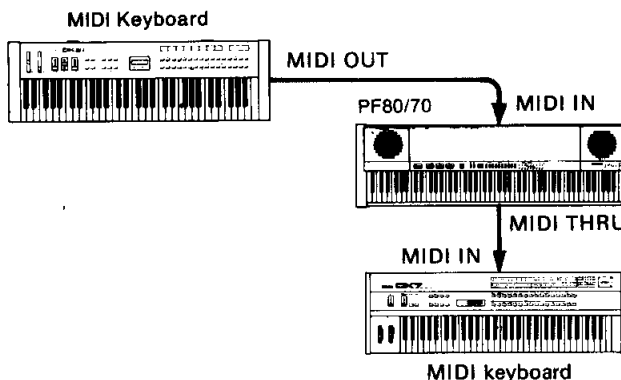
Connecting to a MIDI Keyboard



With this system it is possible to control a second synthesizer from the PF80/70. The two keyboards can be set to different voices and played simultaneously. Since the PF80/70 also have LINE IN terminals, it is possible to connect the external keyboard's output to this input and monitor its sound via the PF80/70 speaker system along with the PF80/70 sound.

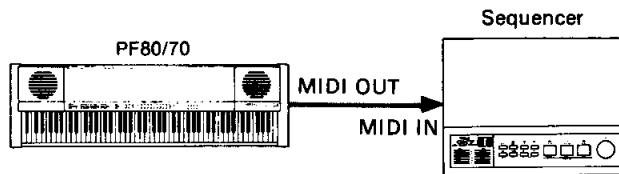


It is also possible to control the PF80/70 from an external MIDI synthesizer.

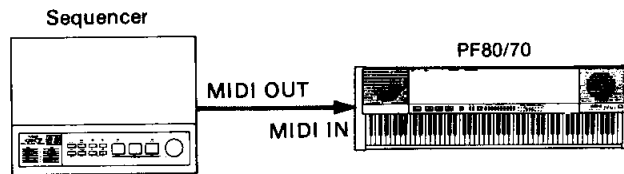


By connecting the PF80/70 MIDI THRU terminal to the MIDI IN terminal of a third keyboard, both the PF80/70 and the third keyboard may be controlled simultaneously.

Connecting to a MIDI Sequencer

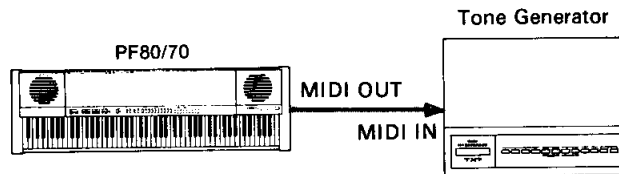


The digital performance data from the PF80/70 can be recorded on a MIDI sequencer and then played back via the PF80/70.



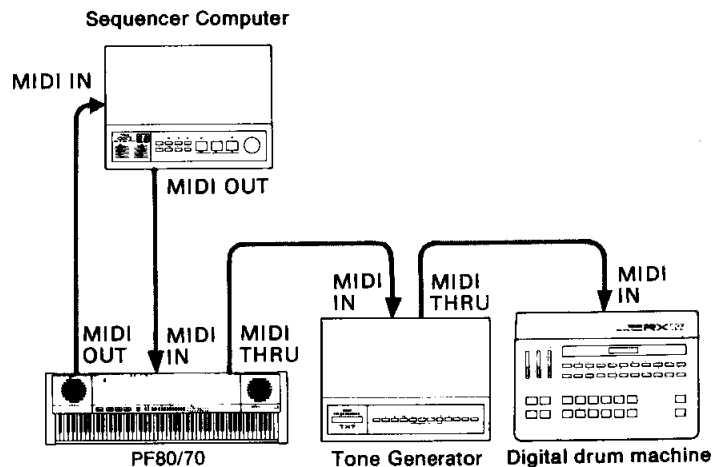
For playback, the sequencer sends the digital performance data back to the PF80/70 via the MIDI interface.

Connecting to a Tone Generator



Extremely rich, thick dual-voice sounds can be produced by controlling an external tone generator unit from the PF80/70. It is also possible to play the PF80/70 sound on one section of the keyboard and the external tone generator sound on the other section by using the appropriate MIDI SPLIT function (F2-8).

MIDI System Connections



Using the MIDI interface it is possible to create a vast number of MIDI systems to fit different musical needs. The system shown permits automatic dual-voice sequence playback with synchronized rhythm from a digital drum machine.

FUNCTION MODE 2

EXAMPLES

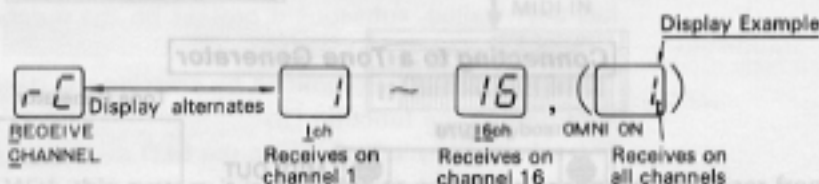
F2-1: MIDI MERGE ALL VOICES



When turned ON, the MIDI MERGE function "mixes" the MIDI signals received at the MIDI IN terminal with the MIDI data produced by the PF80/70, and transmits the combined signal through the MIDI OUT terminal. This makes it possible to combine the MIDI music data from the PF80/70 with that of another MIDI keyboard or sequencer, and also to control a third MIDI keyboard or tone generator with the data from both. Pressing the number 1 selector button after this function is called alternately turns MIDI MERGE ON and OFF. The -1 and +1 buttons may also be used to turn this function ON and OFF.

This function is automatically turned OFF when the power to the instrument is turned ON.

F2-2: MIDI RECEIVE CHANNEL ALL VOICES



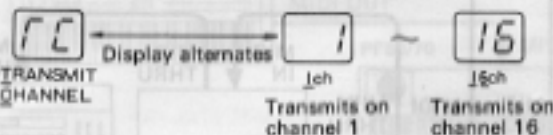
This function determines on which of the 16 available MIDI channels the PF80/70 will receive MIDI data from external MIDI equipment. An OMNI mode is also available, so that data can be received on all channels. Normally, the MIDI receive channel must be matched to the transmission channel of the external equipment from which the PF80/70 is to receive MIDI data.

Use the -1 and +1 buttons to select the desired MIDI channel number: 1 through 16.

Pressing the number 2 selector button alternately turns the OMNI mode ON and OFF. When the OMNI mode is ON, a dot will appear in the LED display.

If the power is turned ON with the MODE selector set to VOICE or F1, the OMNI mode will automatically be selected. If, however, the power is turned on with the MODE selector set to F2, however, the previous MIDI RECEIVE CHANNEL setting will be maintained.

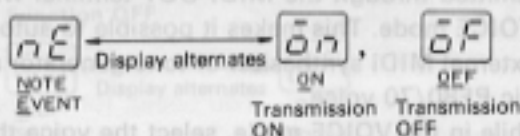
F2-3: MIDI TRANSMIT CHANNEL ALL VOICES



This function determines on which of the 16 available MIDI channels the PF80/70 will transmit MIDI music data to other MIDI equipment. Normally, MIDI channel that the PF80/70 is transmitting on must be the same as the channel set on the receiving equipment.

Use the -1 and +1 buttons to select the desired MIDI channel number: 1 through 16.

F2-4: NOTE EVENT OUTPUT ALL VOICES



This function turns MIDI NOTE EVENT data transmission ON or OFF. This function also turns transmission of MIDI Control Change and System Exclusive data ON or OFF. MIDI NOTE EVENT data is transmitted through the MIDI OUT terminal only when this function is ON. Pressing the number-4 selector button alternately turns this function ON and OFF. The -1 and +1 keys can also be used to turn this function ON and OFF.

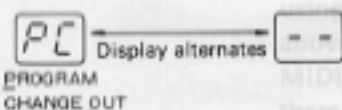
Since this function should normally be ON, it is automatically activated whenever the power to the instrument is turned ON. If NOTE EVENT OUTPUT is turned OFF, the PF80/70 will not control an external MIDI synthesizer or tone generator even if connected to its MIDI IN terminal.

When the F2-1 MIDI MERGE function is ON, MIDI data received at the MIDI IN terminal is not affected by the NOTE EVENT data.

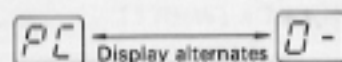
F2-5: PROGRAM CHANGE OUT ALL VOICES

This function transmits any MIDI program change number—from 0 to 99—through the MIDI OUT terminal. In most MIDI synthesizers and tone generators, the MIDI program change number corresponds to the voice selection function. If, for example, program change number 12 is received by a MIDI synthesizer, the correspondingly number voice (12) will be selected. Thus, with the PROGRAM CHANGE OUT function it is possible to select voices on an external MIDI keyboard or tone generator right from the PF80/70 controls.

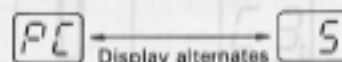
When this function is called, the character function abbreviation will be displayed alternately with a pair of dashes.



You can then input the desired program change number using the selector buttons (1–10). Two digits must be entered (press selector button number 10 to enter a 0).

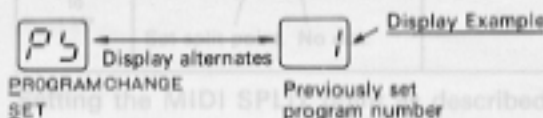


For example, to input program change number 5, press 10 followed by 5 (equivalent to "05").



The MIDI program change data is transmitted immediately after you enter the second digit. To cancel, enter two 0's (press 10 twice) or select F1 mode or voice mode. Call the F2-5 function again to enter new data.

F2-6: PROGRAM CHANGE SET INDIVIDUAL

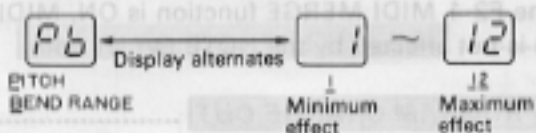


These two functions—F1-8 and F2-6—are interactive. When the split point is set for one, the same point is automatically set for the other.

This function makes it possible to program a specific program change number to be transmitted through the MIDI OUT terminal when a specific voice is selected in the VOICE mode. This makes it possible to automatically select a specific voice on an external MIDI synthesizer or tone generator at the same time that you select a specific PF80/70 voice.

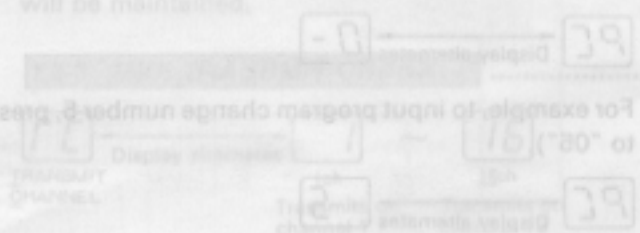
First, while in the VOICE mode, select the voice that you plan to use to call for a program change on your external MIDI equipment. Then select the F2-6 PROGRAM CHANGE SET function and enter the program number that you want your external equipment to change to whenever you choose that specific PF80/70 voice. Two digits must be entered (press selector button number 10 to enter a 0). For example, to input program change number 5, press 10 followed by 5 (equivalent to "05"). To enter program change number 12, press 1 followed by 2. Enter two 0's (press 10 twice) to turn OFF the program change number output for the selected voice. Repeat the entire procedure to enter new data.

F2-7: PITCH BEND RANGE **INDIVIDUAL**

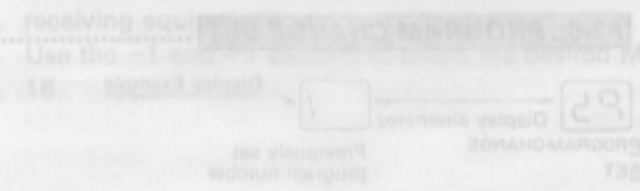


The PF80/70 is capable of receiving MIDI pitch bend data from an external MIDI keyboard through the MIDI IN terminal. Moving the pitch wheel on the external MIDI keyboard will vary the pitch of the PF80/70. This function sets the range over which the PF80/70's pitch can be varied under external pitch bend control. The data range is from 1 to 12 with each increment representing one semitone. When set to 12, for example, the pitch can be varied up and down by one octave. A setting of 7 will give a plus/minus one fifth pitch bend range.

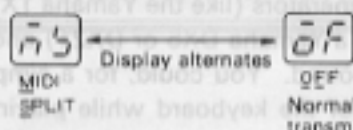
Use the -1 and +1 buttons to select the MIDI channel number: 1 through 16. Pressing the number 2 selector button turns the OMNI mode ON and OFF. When the OMNI mode is ON, a dot will appear in the LED display. If you can then input the desired program change number using the selector buttons, the power is turned on with the MODE selector set to F2. However, the MIDI RECEIVE CHANNEL setting will be maintained.



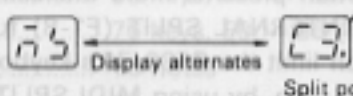
For example, to input program change number 5, press 10 followed by 5 (equivalent to "05"). The MIDI program change data is transmitted immediately after you enter the second digit. To cancel, enter two 0's (press 10 twice) or select F1 mode or voice mode. Can the F2 function again to enter new data.



Function OFF



Function ON



Display Example

In this case, the lower keyboard section including the C3 is transmitted on the MIDI channel set using the F2-3 TRANSMIT CHANNEL function, and the upper keyboard section is transmitted on the programmed MIDI channel + 1.

This function allows you to split the keyboard at any desired point and transmit the lower and upper keyboard data on different MIDI channels.

For normal operation this function will be OFF. Once the MIDI SPLIT function has been called, subsequent presses on the number-8 selector button alternately turn the function ON and OFF.

The split point is programmed by pressing the corresponding key on the piano keyboard after turning the function ON.

The selected key will show on the LED display.


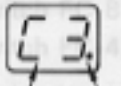

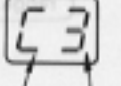
If a black key is chosen as the split point, a dot will appear following the first character on the LED display. For example, if you press C3#, the LED display will show "C3."

If you press the wrong key and need to reprogram the split point, press the number-8 selector button twice to turn the function OFF and then ON again, and press the correct key.

The -1 and +1 buttons are used to determine which MIDI channels will be used for transmission of the upper and lower keyboard data:

-1 key a dot will appear following the second character of the LED display (C3.) and all keys below and including the split key will be transmitted on the MIDI channel that was set using the F2-3 TRANSMIT CHANNEL function. All keys above the split point will be transmitted on the programmed MIDI channel number + 1.

+1 key there will be no dot following the second LED character (C3) and all keys above the split key will be transmitted on the MIDI channel that was set using the F2-3 TRANSMIT CHANNEL function. All keys below and including the split point will be transmitted on the programmed MIDI channel +1.

| Select switch | Display Example | Lower keyboard section including split point | Upper keyboard section |
|---|---|---|---|
|  |  Set split point. Dot. | Transmitted on MIDI channel set using F2-3 TRANSMIT CHANNEL function. | Transmitted on the programmed MIDI channel +1 from MIDI channel set using F2-3 TRANSMIT CHANNEL function. |
|  |  Set split point. No dot. | Transmitted on the programmed MIDI channel +1 from channel set using F2-3 MIDI TRANSMIT CHANNEL function. | Transmitted on MIDI channel set using F2-3 TRANSMIT CHANNEL function. |

Setting the MIDI SPLIT point as described also sets the F1-8 INTERNAL SPLIT point. These two functions—F1-8 and F2-8—are interactive. When the split point is set for one, the same point is automatically set for the other.

USING THE MIDI AND INTERNAL SPLIT FUNCTIONS

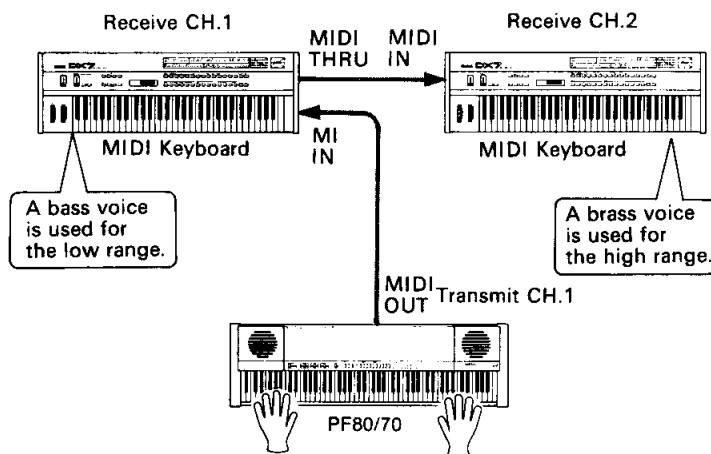
The MIDI SPLIT function is useful for driving two external MIDI tone generators from different sections of the PF80/70's keyboard. You could use a couple of MIDI synthesizers or tone generators (like the Yamaha TX7s), or one dual tone generator MIDI synthesizer (like a Yamaha DX5 or DX21) and thus add a greater dimension of versatility to your sound. You could, for a simple example, play a bass voice on the lower section of the keyboard while playing a brass voice on the upper keyboard.

The MIDI SPLIT function presents more interesting possibilities when used in conjunction with the INTERNAL SPLIT (F1-8) function. Using the INTERNAL SPLIT function you can limit the PF80/70's keyboard output to either the upper or lower keyboard, and then, by using MIDI SPLIT, you can set up the PF80/70 to drive an external MIDI synthesizer or tone generator with the remaining keyboard section.

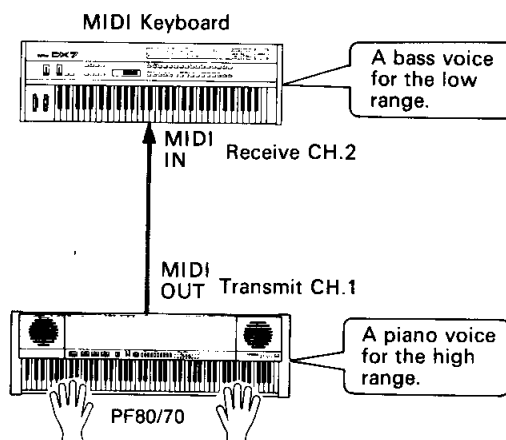
You can also combine the PF80/70's sound with one external MIDI tone generator on one section of the keyboard, and play a different MIDI tone generator with the other section.

A broad range of possibilities are available, and it's up to you and your imagination to create the system that is most suitable to your own musical needs.

MIDI SPLIT function only



INTERNAL SPLIT function



GENERAL SPECIFICATIONS

Keyboard

PF80..... 88 keys, A-1 ~ C7 (normal)
 PF70..... 76 keys, E0 ~ G6 (normal)

Simultaneous Note Output 16 notes

Voices 10 voices

Memory contents

Common for all voices Tune, transpose, MIDI reception channel, MIDI transmission channel, note event ON/OFF

Separate for each voice Tremolo ON/OFF, chorus ON/OFF, soft pedal intensity, touch response ON/OFF, attenuate, tremolo speed, tremolo depth, internal split, program change number, pitch blend range, MIDI split

Controls..... Volume, three band equalizer, speaker ON/OFF

Foot switch..... Soft ON/OFF, keyhold ON/OFF, sustain ON/OFF

Display 2 digits, 8 segments LED

Speaker..... 16cm (6.3") x 2 (8 ohms)

Internal Amp Output 18(W) x 2

Output terminals

OUTPUT I, II..... Regulation monaural jack, rated output level -10dB/output impedance 600 ohms, *noise level less than -65 dB (VOLUME: MAX, EQUALIZER: Center)

PHONE..... Regulation stereo jack

Input terminal

LINE INPUT Regulation monaural jack, rated input level -10dB

MIDI terminals..... IN, OUT, THRU

Power Requirements..... US & CANADA : 120V 50/60Hz
 GENERAL : 110-120/220-240V 50/60Hz

Power consumption..... US, CANADA & GENERAL : 100W

Dimensions (W x H x D)

PF80..... 1330(W) x 120(H) x 390(D)mm (52.4" x 4.7" x 15.4")

PF70..... 1170(W) x 120(H) x 390(D)mm (46.0" x 4.7" x 15.4")

Weight

PF80..... 33.5kg (738.7lbs)

PF70..... 29kg (639.5lbs)

Standard Accessories..... Foot switch FC-8 (sustain ON/OFF), music score stand

Optional Accessories..... Foot switch FC-4, FC-5 (soft ON/OFF, key hold ON/OFF)

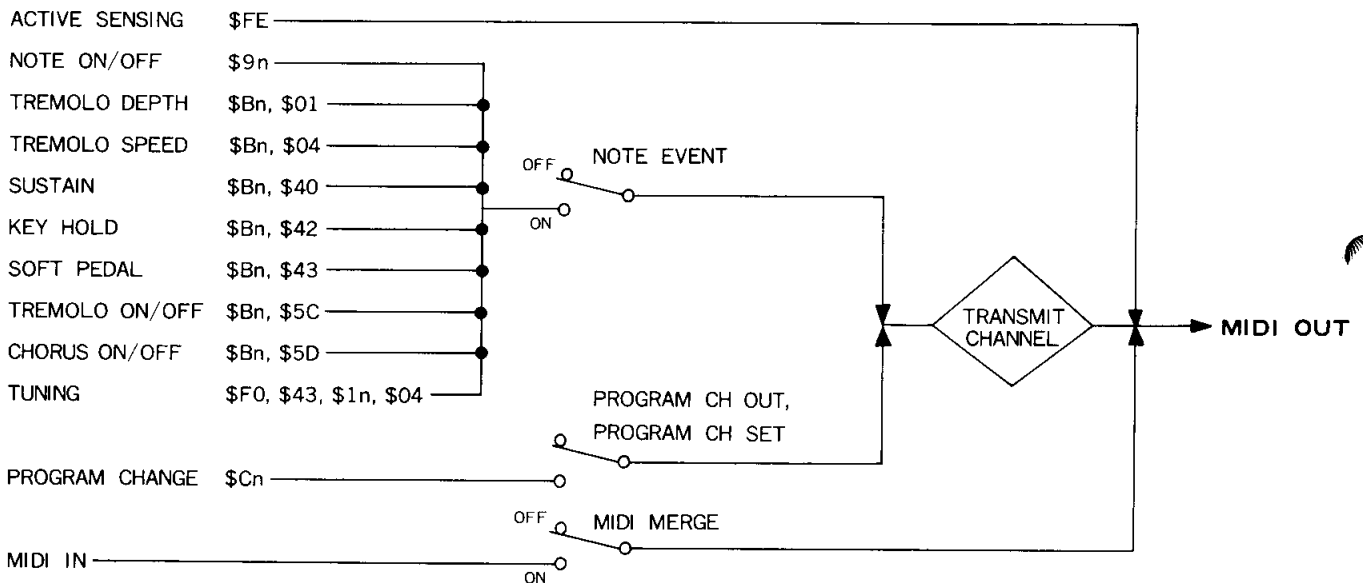
* 12.47kHz, -6dB/oct. filter compensated

● 0dB = 0.775Vr.m.s.

● Specifications and appearance are subject to change without notice

MIDI DATA FORMAT

1. Transmission Parameters



2. Transmission Data

All MIDI data is transmitted on the programmed MIDI TRANSMIT CHANNEL. When MIDI MERGE is ON, MIDI data received at the MIDI IN terminal is also transmitted via MIDI OUT.

2-1. Channel Information

2-1-1 Channel Voice Message

(1) Key On/Off

| | | |
|-----------|--------------|---|
| Status | 1001nnnn(9n) | n=channel no. |
| Note. no. | 0kkkkkkk | k=16(E-1)~115(G7): PF70 k=9(A-1) ~ 120(C8): PF80 |
| Velocity | 01000000 | v=0~127 (v=1~127: key on, v=0: key off) |

Transmitted when NOTE EVENT setting is ON.

(2) Control Change

| | | |
|--------------|--------------------|----------------------|
| Status | 1011nnnn(Bn) | n=channel no. |
| Control no. | 0ccccccc | |
| Control code | 0vvvvvvv | |
| Control no. | C=1: tremolo depth | Control code V=3~127 |
| | C=4: tremolo speed | V=1~127 |

| | |
|------------------|-----------------|
| C=64: sustain | V=0, 8, 12, 127 |
| C=66: key hold | V=0, 127 |
| C=67: soft pedal | V=0, 127 |
| C=92: tremolo | V=0, 127 |
| C=93: chorus | V=0, 127 |

Transmitted when NOTE EVENT setting is ON.

(3) Program Change

| | | |
|-------------|--------------|---------------|
| Status | 1100nnnn(Cn) | n=channel no. |
| Program no. | 0ppppppp | p=0~98 |

In the VOICE mode, the program number programmed for each voice using the PROGRAM CH SET function is output whenever a voice is selected. Using the PROGRAM CH OUT function of the F-1 mode, the number shown on the LED display is output.

2-2 System Information

2-2-1 System Real-Time Message

Active sensing

| | |
|--------|--------------|
| Status | 11111110(FE) |
|--------|--------------|

Transmitted once approximately every 200 milliseconds.

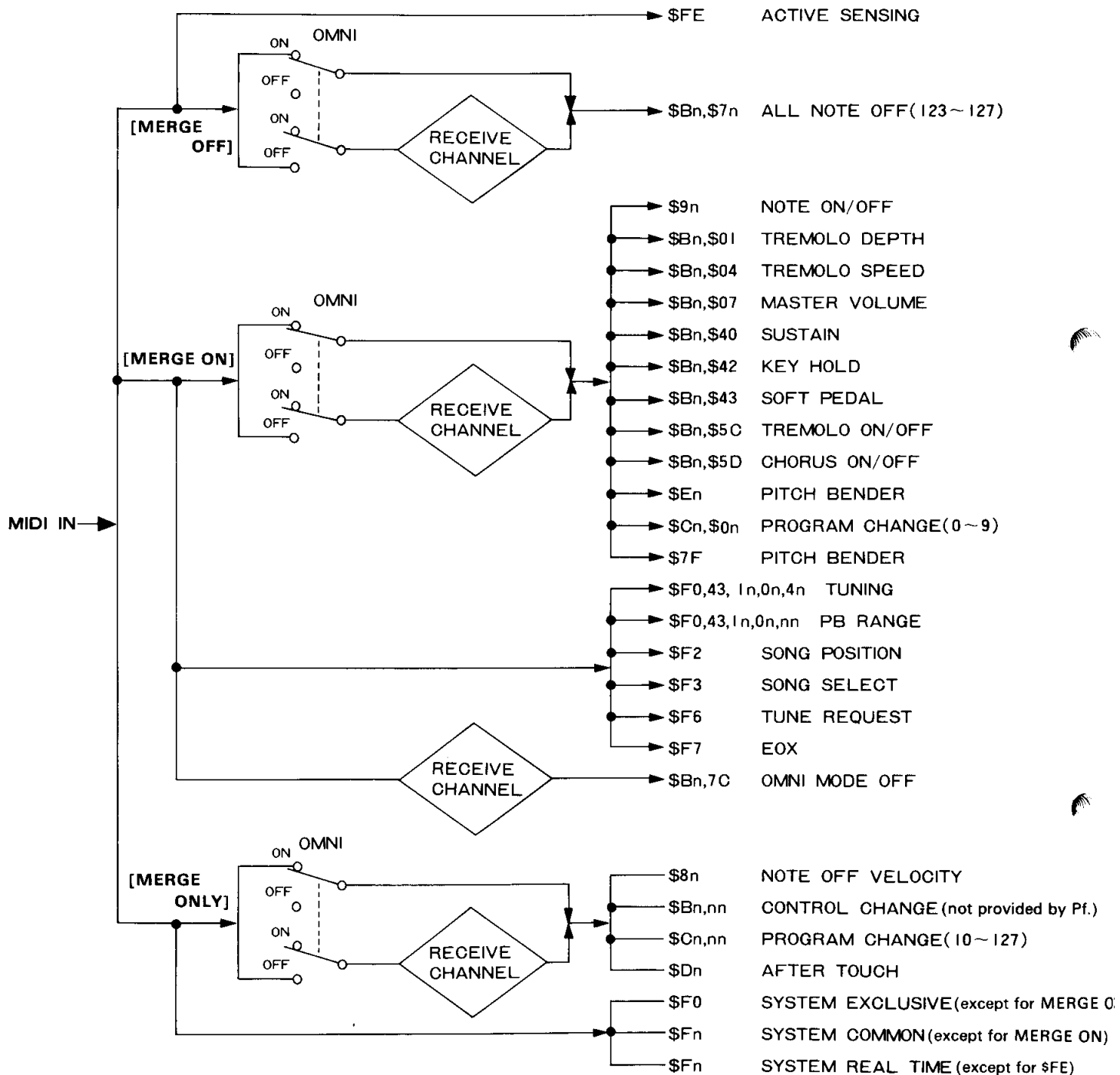
2-2-2 System Exclusive Message

(1) Parameter Change

| | | |
|---------------------|--------------|---------------|
| Status | 11110000(F0) | |
| ID no. | 01000011(43) | |
| Substatus/ch. no. | 0001nnnn(1n) | n=channel no. |
| Parameter group no. | 00010010(12) | |
| Parameter no. | 0ppppppp | |
| Data | 0ddddd | d=45~127 |
| EOX | 11110111(F7) | |

Only TUNE data in the system exclusive information group is transmitted by the PF80/70. Transmitted when the NOTE EVENT setting is ON.

3. Reception Parameters



4. Reception Data

When a specific MIDI receive channel has been selected using the MIDI RECEIVE CHANNEL function, and the OMNI mode is OFF, MIDI data will be received only on the specified channel. MIDI data will be received on all channels when the OMNI mode is ON.

According to the setting of the MIDI MERGE function, the following situations occur:

★ **MERGE OFF**

The PF80/70 will be controlled by MIDI data received at the MIDI IN terminal, but received MIDI data will not be transmitted via MIDI OUT. Only MIDI data produced by the PF80/70 will be output.

★ **MERGE ON**

MIDI data received at the MIDI IN terminal will control the PF80/70, and will also be transmitted via MIDI OUT. The received MIDI data will be mixed with and transmitted together with MIDI data produced by the PF80/70.

★ **MERGE ONLY (MERGE ON)**

All MIDI data received at the MIDI IN terminal pertaining to functions which are not included in the PF80/70 will be output via MIDI OUT (same function as MIDI THRU terminal).

4-1. Channel Information

4-1-1 Channel Voice Message

(1) Key Off

| | | |
|----------|--------------|------------------|
| Status | 1000nnnn(8n) | n=channel no. |
| Note no. | 0kkkkkkk | k=0(C-2)~127(G8) |
| Velocity | 00000000(00) | |

"MERGE ONLY" operation.

(2) Key On/Off

| | | |
|----------|--------------|---------------------------------|
| Status | 1001nnnn(9n) | n=channel no. |
| Note no. | 0kkkkkkk | k=0(C-2)~127(G8) |
| Velocity | 0vvvvvvv | v=0: key off v=1~127: key on |

The key on note level will vary according to the received velocity value.

The range of this instrument is C#-2 to G8. If a higher or lower key number is received, it will be output within the range limits. For example, if a C-2 note is received it will be output as C-1.

"MERGE ON" operation.

(3) Control Change

| | | |
|--------------|--------------|---------------|
| Status | 1011nnnn(Bn) | n=channel no. |
| Control no. | 0ccccccc | |
| Control code | 0vvvvvvv | |

a) "MERGE OFF" operation.

| | |
|----------------------|--------------|
| Control no. | Control code |
| C=127: all notes OFF | V=123~127 |

b) "MERGE ON" operation.

| | |
|--------------------|--------------------------------------|
| Control no. | Control code |
| C=1: tremolo depth | V=0~127 (V=1~127: ON, V=0: OFF) |
| C=4: tremolo speed | V=0~127 |
| C=7: master volume | V=0~127 |
| C=64: sustain | V=0~127 (V=127: ON, V=0~126: OFF) |
| C=66: key hold | V=0, 127 (V=127: ON, V=0: OFF) |
| C=67: soft pedal | V=0, 127 (V=127: ON, V=0: OFF) |
| C=92: tremolo | V=0, 127 |
| C=93: chorus | V=0, 127 |

c) "MERGE ONLY" operation.

All control change data not included in a) and b).

(4) Program Change

| | | |
|-------------|--------------|---------------|
| Status | 1100nnnn(Cn) | n=channel no. |
| Program no. | 0ppppppp | p=0~127 |

"MERGE ON" operation for p=0~9, "MERGE ONLY" operation for p=10~127.

(5) After Touch

| | | |
|---------------|----------|---------------|
| Status | 1101nnnn | n=channel no. |
| Control value | 0vvvvvvv | v=0~127 |

(6) Pitch Bend

| | | |
|-----------|----------|---------------|
| Status | 1110nnnn | n=channel no. |
| Code(LSB) | 0uuuuuuu | |
| Code(MSB) | 0vvvvvvv | |

"MERGE ON" operation. Functions only on MSB data:

| | | |
|-----|----------|---------------|
| MSB | 00000000 | Lowest value |
| | 01000000 | Center value |
| | 01111111 | Highest value |

4-1-2 Channel Mode Message

| | | |
|--------|----------|---------------|
| Status | 1011nnnn | n=channel no. |
| | 0ccccccc | |
| | 0vvvvvvv | |

Only after touch data is included in the channel mode message group. "MERGE OFF" operation. The control number and value are as follows:

| | |
|-------|-----|
| C=123 | V=0 |
|-------|-----|

4-2 System Information

4-2-1 System Real-Time Message

a) "MERGE OFF" operation.

| | |
|----------------|--------------|
| Active sensing | |
| Status | 11111110(FE) |

Sensing begins when this code is received once. If status and data are not received within 300 milliseconds the MIDI receive buffer will be cleared and the currently output note will be turned OFF.

b) "MERGE ONLY" operation.

All system real-time message data not included in a).

4-2-2 System Exclusive Message

| | |
|-------------------|----------------------------------|
| Status | 11110000(F0) |
| ID no. | 01000011(43) |
| Substatus/ch. no. | 0001nnnn(1n) n=channel no. |
| Model no. | 0mmmmmmm (0m) |
| | m=04: DX1, DX5, KX88, PF70, PF80 |
| | m=08: DX7 |
| | m=0C: DX9 |
| Parameter no. | nnnnnnnn |
| Data | 0ddddddd |
| EOX | 11110111(F7) |

a) "MERGE ON" operation.

Tuning data

| | |
|---------------|--|
| Parameter no. | 00101000(40): DX1, DX5, KX88, PF70, PF80 |
| | 00101001(41): DX9 |
| Data | 0ddddddd d=0~127 |

Pitch bend range

| | |
|---------------|--|
| Parameter no. | 00000011(03): DX1, DX5, KX88, PF70, PF80 |
| | 00101001(41): DX7 |
| | 00101011(43): DX9 |
| Data | 0ddddddd d=0~12 |

b) "MERGE ONLY" operation.

All system exclusive message data not included in a).

4-2-3 System Common Message

a) "MERGE OFF" operation.

| | |
|--------|----------------------|
| Status | 11110001(F1) message |
| Status | 11110100(F4) message |
| Status | 11110101(F5) message |

b) "MERGE ON" operation.

Song position pointer.

| | |
|---------------|--------------|
| Status | 11110010(F2) |
| Low position | 0LLLLLLL |
| High position | Ohhhhhhh |

| | | |
|---------------|--------------|---------|
| Song select. | | |
| Status | 11110011(F3) | |
| Song no. | 0sssssss | s=0~127 |
| Tune request. | | |
| Status | 11110110(F6) | |
| EOX | | |
| Status | 11110111(F7) | |

c) "MERGE ONLY" operation.

All system common message data not included in a) and b).

| Function ... | Transmitted | Recognized | Remarks |
|---|------------------------------|-------------------------|---|
| Basic Default | 1 - 16 | 1 - 16 | memorized |
| Channel Changed | 1 - 16 | 1 - 16 | |
| Mode Default | 3 | 1 | |
| Mode Messages | x | OMNION, OMNIOFF | |
| Mode Altered | XXXXXXXXXXXXXXXX | x | |
| Note Number : True voice | 9 - 120 XXXXXXXXXXXXXXXX | 0 - 127 1 - 127 | |
| Velocity Note ON | o 9nH, v=1-127 | x1: o v=1-127 | |
| Velocity Note OFF | x 9nH, v=0 | x1: x | |
| After Key's | x | x | |
| Touch Ch's | x | x | |
| Pitch Bender | x | o 0 - 12 semi | 7 bit resolution |
| Control | 1 : o 4 : o 7 : x | X1: o X1: o o | X2: Tremolo depth X2: Tremolo speed Master volume |
| Change | 64 : o 66 : o 67 : o | X1: o X1: o X1: o | Sustain Key hold Soft pedal |
| | 92 : o 93 : o | X1: o X1: o | Tremolo on/off Chorus on/off |
| Prog Change : True # | o 0 - 98 XXXXXXXXXXXXXXXX | o 0 - 9 0 - 9 | |
| System Exclusive | o | X1: o | Tuning, etc. |
| System : Song Pos | x | x | |
| System : Song Sel | x | x | |
| Common : Tune | x | x | |
| System : Clock | x | x | |
| Real Time : Commands | x | x | |
| Aux : Local ON/OFF | x | x | |
| Aux : All Notes OFF | x | o (123-127) | |
| Mes- : Active Sense | o | o | |
| sages: Reset | x | x | |
| Notes: Received messages are merged to MIDI OUT when MIDI merge switch is on. | | | |
| X1 = These messages are transmitted when note event switch is on. | | | |
| X2 = These messages are recognized when F1 or F2 switch is on. | | | |
| Mode 1 | OMNI ON, POLY | Mode 2 : OMNI ON, MONO | o : Yes |
| Mode 3 | OMNI OFF, POLY | Mode 4 : OMNI OFF, MONO | x : No |

| Function ... | Transmitted | Recognized | Remarks |
|---|------------------------------|----------------------------|---|
| Basic Default | 1 - 16 | 1 - 16 | memorized |
| Channel Changed | 1 - 16 | 1 - 16 | |
| Mode Default | 3 | 1 | |
| Mode Messages | x | OMNION, OMNIOFF | |
| Mode Altered | XXXXXXXXXXXXXXXX | x | |
| Note Number : True voice | 16 - 115 XXXXXXXXXXXXXXXX | 0 - 127 1 - 127 | |
| Velocity Note ON | o 9nH, v=1-127 X1 | o v=1-127 | |
| Velocity Note OFF | x 9nH, v=0 X1 | x | |
| After Key's | x | x | |
| Touch Ch's | x | x | |
| Pitch Bender | x | o 0 - 12 semi | 7 bit resolution |
| Control | 1 : o 4 : o 7 : x | X1 : o X1 : o o | X2 : Tremolo depth X2 : Tremolo speed Master volume |
| Change | 64 : o 66 : o 67 : o | X1 : o X1 : o X1 : o | Sustain Key hold Soft pedal |
| | 92 : o 93 : o | X1 : o X1 : o | Tremolo on/off Chorus on/off |
| Prog Change : True # | o 0 - 98 XXXXXXXXXXXXXXXX | o 0 - 9 0 - 9 | |
| System Exclusive | o | X1 : o | Tuning, etc. |
| System : Song Pos | x | x | |
| System : Song Sel | x | x | |
| Common : Tune | x | x | |
| System : Clock | x | x | |
| Real Time : Commands | x | x | |
| Aux : Local ON/OFF | x | x | |
| Aux : All Notes OFF | x | o (123-127) | |
| Mes- : Active Sense | o | o | |
| sages : Reset | x | x | |
| Notes: Received messages are merged to MIDI OUT when MIDI merge switch is on. | | | |
| X1 = These messages are transmitted when note event switch is on. | | | |
| X2 = These messages are recognized when F1 or F2 switch is on. | | | |
| Mode 1 | OMNI ON, POLY | Mode 2 : OMNI ON, MONO | o : Yes |
| Mode 3 | OMNI OFF, POLY | Mode 4 : OMNI OFF, MONO | x : No |

INITIAL SETTINGS

| | TREMOLO | CHORUS | F1-1 TUNE | F1-2 TRANSPOSE | F1-3 SOFT PEDAL | F1-4 TOUCH | F1-5 ATTENU- ATE | F1-6 TREMOLO SPEED | F1-7 TREMOLO DEPTH | F1-8 INTERNAL SPLIT |
|---------------|---------|--------|--------------|-------------------|-----------------------|---------------|------------------------|--------------------------|--------------------------|---------------------------|
| 1 PIANO 1 | OFF | OFF | | | 4 | ON | 99 | 0.9 | 11 | C5 |
| 2 PIANO 2 | OFF | OFF | | | 5 | ON | 99 | 0.9 | 11 | C5 |
| 3 PIANO 3 | OFF | ON | | | 7 | ON | 99 | 0.9 | 11 | C5 |
| 4 E PIANO 1 | OFF | ON | | | 6 | ON | 99 | 2.6 | 31 | C5 |
| 5 E PIANO 2 | ON | OFF | 0 | | 7 | ON | 99 | 2.6 | 31 | C5 |
| 6 E PIANO 3 | OFF | OFF | | | 4 | ON | 99 | 2.6 | 31 | C5 |
| 7 E PIANO 4 | OFF | ON | | | 5 | ON | 99 | 2.6 | 31 | C5 |
| 8 HARPSICHORD | OFF | OFF | | | 7 | ON | 99 | 0.9 | 11 | C5 |
| 9 VIBE | ON | ON | | | 7 | ON | 99 | 3.6 | 31 | C5 |
| 10 CLAVI | OFF | ON | | | 4 | ON | 99 | 0.9 | 11 | C5 |

| | F2-1 MIDI MERGE | F2-2 RECEIVE CHANNEL | F2-3 TRANSMIT CHANNEL | F2-4 NOTE EVENT | F2-5 PRGM CH OUT | F2-6 PRGM CH SET | F2-7 PB RANGE | F2-8 MIDI SPLIT |
|---------------|-----------------------|----------------------------|-----------------------------|-----------------------|------------------------|------------------------|---------------------|-----------------------|
| 1 PIANO 1 | | | | | | 1 | 12 | C5 |
| 2 PIANO 2 | | | | | | 2 | 12 | C5 |
| 3 PIANO 3 | | | | | | 3 | 12 | C5 |
| 4 E PIANO 1 | | | | | | 4 | 12 | C5 |
| 5 E PIANO 2 | | | | | | 5 | 12 | C5 |
| 6 E PIANO 3 | OFF | OMNI ON | 1 ch | ON | | 6 | 12 | C5 |
| 7 E PIANO 4 | | | | | | 7 | 12 | C5 |
| 8 HARPSICHORD | | | | | | 8 | 12 | C5 |
| 9 VIBE | | | | | | 9 | 12 | C5 |
| 10 CLAVI | | | | | | 10 | 12 | C5 |

YAMAHA pf80/pf70 DATA MEMO

DATE: _____

PROGRAMMER: _____

| | TREMOLO | CHORUS | F1-1 TUNE | F1-2 TRANPOSE | F1-3 SOFT PEDAL | F1-4 TOUCH | F1-5 ATTENU- ATE | F1-6 TREMOLO SPEED | F1-7 TREMOLO DEPTH | F1-8 INTERNAL SPLIT |
|----|-------------|--------|--------------|------------------|-----------------------|---------------|------------------------|--------------------------|--------------------------|---------------------------|
| 1 | PIANO 1 | | | | | | | | | |
| 2 | PIANO 2 | | | | | | | | | |
| 3 | PIANO 3 | | | | | | | | | |
| 4 | E PIANO 1 | | | | | | | | | |
| 5 | E PIANO 2 | | | | | | | | | |
| 6 | E PIANO 3 | | | | | | | | | |
| 7 | E PIANO 4 | | | | | | | | | |
| 8 | HARPSICHORD | | | | | | | | | |
| 9 | VIBE | | | | | | | | | |
| 10 | CLAVI. | | | | | | | | | |

| | F2-1 MIDI MERGE | F2-2 RECEIVE CHANNEL | F2-3 TRANSMIT CHANNEL | F2-4 NOTE EVENT | F2-5 PRGM CH OUT | F2-6 PRGM CH SET | F2-7 PB RANGE | F2-8 MIDI SPLIT |
|----|-----------------------|----------------------------|-----------------------------|-----------------------|------------------------|------------------------|---------------------|-----------------------|
| 1 | PIANO 1 | | | | | | | |
| 2 | PIANO 2 | | | | | | | |
| 3 | PIANO 3 | | | | | | | |
| 4 | E PIANO 1 | | | | | | | |
| 5 | E PIANO 2 | | | | | | | |
| 6 | E PIANO 3 | | | | | | | |
| 7 | E PIANO 4 | | | | | | | |
| 8 | HARPSICHORD | | | | | | | |
| 9 | VIBE | | | | | | | |
| 10 | CLAVI. | | | | | | | |

SINCE 1887



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